

MIAMI-DADE COUNTY
DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS (DTPW)

ADDENDUM NO. 1
October 15, 2021

PROJECT: Roadway Improvements to NW 37th Avenue from NW 36th Street to NW 79th Street Project No. 20210093

BID DUE DATE: October 27, 2021; 02:00 P.M.

FROM: Miami-Dade County DTPW
Capital Improvements Division
111 NW First Street, 14th Floor
Miami, FL 33128
305.375.2930

TO: Prospective Bidders and Interested Parties

This Addendum forms part of the project solicitation documents and will be incorporated into the Contract Documents, as applicable. Insofar as the Original Contract Documents, Drawings and Specifications are inconsistent, this Addendum shall govern. Please acknowledge receipt of this Addendum, at the time of bid submittal to Miami-Dade County, in the space provided on the "Acknowledgement of Addenda Form" provided with the project solicitation documents. Failure to acknowledge receipt of all addenda may be cause for disqualification.

CHANGES TO THE ADVERTISEMENT FOR BIDS:

A. Bid Submittal Deadline:

1. Bid Submittal Deadline has been changed from October 20, 2021, to October 27, 2021. Time and place remain unchanged.

B. Contractor's Certification and Experience Requirements: Delete in its entirety and replace with the following:

As per Certificate of Competency Requirement: Delete Article 1 on its entirety and replace with the following:

- 1 Include with the bid submittal package, copies of certifications and documentation that demonstrate that at the time of Bid and pursuant to the requirements of Section 10-3 of the Code of Miami-Dade County, Florida and these Solicitation Documents, the Bidder holds a valid, current, and active:
 - a. Certificate of Competency from the County's Construction Trades Qualifying Board as a General Engineering Contractor or a Specialty Engineering Contractor, commensurate to the requirements of the Scope of Work, in one or more engineering crafts to include paving engineering contractor. The specialty contractor shall subcontract with a qualified contractor any work which is incidental to the specialty but is specified in the aforementioned Code as being the work of other than that of the Engineering Specialty for which certified; or
 - b. Pursuant to Section 255.20, F.S. and in lieu of the above, the County may consider a bid from a bidder that is a duly licensed Contractor in good standing that has been prequalified and considered eligible by the Florida Department of Transportation (FDOT) under Section 337.14, F.S. and Chapter 14-22, Florida Administrative Code, to perform the work described in the Contract Documents. Contractors seeking consideration under this Paragraph shall submit along with the Bid Documents for review and consideration, current copy(ies) of their FDOT Certificate(s) of Qualification, Certification of Work Underway, and

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Status of Contract(s) On Hand. Acceptable FDOT prequalification(s) necessary to perform the Work specified in the Contract Documents include Flexible Paving and Drainage Work Classes.

As to the Experience Requirement: Delete Subarticle b and replace with the following:

- b. Pursuant to Section 255.20, F.S. and in lieu of the above, the County may consider a bid from a Bidder that is a duly licensed Contractor in good standing that has been prequalified and considered eligible by the Florida Department of Transportation (FDOT) under Section 337.14, F.S. and Chapter 14-22, Florida Administrative Code, to perform the work described in the Contract Documents. Contractors seeking consideration under this Paragraph shall submit along with the Bid Documents for review and consideration, current copy(ies) of their FDOT Certificate(s) of Qualification, Certification of Work Underway, and Status of Contract(s) On Hand. Acceptable FDOT prequalification(s) necessary to perform the Work specified in the Contract Documents include Flexible Paving and Drainage Work Classes, Certification of Work Underway, and Status of Contract(s) On Hand.

CHANGES TO THE BID FORM:

- A. Delete Bid Form dated 09/16/2021 in its entirety and replace it with the attached Revised Bid Form for Addendum No. 1, dated 10/14/2021. Changes are as follows:

- 1. General for Water and Sewer Items (WS):

- a. Pay item notes were added to the Bid Form for clarity. The pay item notes specify the pay item numbers corresponding to the items from WASD of Volumes IV and VI, under Measurement and Payments. Prospect Bidders will only submit the attached bid form dated 10/13/2021, which contains all items of work.
- b. Quantities from the following pay items were changed due to the proposed 12" stub out added in this addendum:
 - 1) Pay Item No. WS-1050-12-427, "For selling and delivering to the Department ductile iron pipe (12"-13.9")-inches and fittings for water main", changed its quantity from 1228 LF to 1278 LF.
 - 2) Pay Item No. WS-1050-13-427, "For installing (12"-13.9")-inch ductile iron pipe and fittings for water main", changed its quantity from 1461 LF to 1511 LF.
 - 3) Pay Item No. WS-1050-12-0712, "For selling and delivering to the Department M.J. resilient seated gate valves (12"-13.9") complete with valve box, lid and riser pipe.", changed its quantity from 16 EA to 17 EA.
 - 4) Pay Item No. WS-1050-13-0712, "For installing M.J. resilient seated gate valve (12"-13.9") complete with valve box, lid and riser pipe.", changed its quantity from 16 EA to 17 EA
 - 5) Pay item No. WS-1050-13-0712, "For installing M.J. resilient seated gate valve (12"-13.9") complete with valve box, lid and riser pipe.", changed its quantity from 16 EA to 17 EA.
- c. The following pay items have been deleted:
 - 6) Pay item WS-1060-21-2540, "For cutting and plugging existing/proposed (6.0-7.9") gravity sewer pipes."
 - 7) Pay item WS-1060-21-2550, "For cutting and plugging existing/proposed (8.0 - 9.9") gravity sewer pipes."

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- 8) Pay item WS-1060-21-2560, "For cutting and plugging existing/proposed (10.0 - 11.9") gravity sewer pipes."
- 9) Pay item WS-1060-21-2570, "For cutting and plugging existing/proposed (12.0 - 13.9") gravity sewer pipes."
- 10) Pay item WS-1060-21-2580, "For cutting and plugging existing/proposed (14.0 - 15.9") gravity sewer pipes."
- d. The following pay item has been added:
 - 11) Pay item No. WS-1050-14-0214, "For Making Cut-In Connection to Existing (2" - 3.9")-Inch Water Main, Including Capping the Existing Water Main", has been added with a quantity of 1 EA.
- 2. Changes to DTPW items:
 - 12) Delete pay item No. 443-70-4 - Exfiltration drain (24" diameter) (bituminous coated corrugated steel pipe culvert) (2 2/3" x 1/2", 16 gauge) (Includes the cost of perforated pipe, ballast rock, excavation and backfilling with select fill material) – and replace it with pay item No. 443-70-4-3 - French Drain (24" diameter perforated pipe; trench depth 15 ft. BLS)
 - 13) Delete pay item No. 443-70-36A - EXFILTRATION DRAIN 36" DIAMETER - (Includes the cost of perforated pipe, ballast rock, excavation plastic filter fabric and back filling with selected fill material)– and replace it with pay item No. 443-70-6-3 - French Drain (36" diameter perforated pipe; trench depth 15 ft. BLS)

CHANGES TO THE INSTRUCTIONS TO BIDDERS:

As to Article 3, Bidder Qualifications:

Article 3.01, Certificate of Competency Requirement: Delete in its entirety and replace with the following:

3.01 Certificate of Competency Requirement:

- A. Include with the bid submittal package, copies of certifications and documentation that demonstrate that at the time of Bid and pursuant to the requirements of Section 10-3 of the Code of Miami-Dade County, Florida and these Solicitation Documents, the Bidder holds a valid, current, and active:
 - 1. Certificate of Competency from the County's Construction Trades Qualifying Board as a General Engineering Contractor or a Specialty Engineering Contractor, commensurate to the requirements of the Scope of Work, in one or more engineering crafts to include paving engineering contractor. The specialty contractor shall subcontract with a qualified contractor any work which is incidental to the specialty but is specified in the aforementioned Code as being the work of other than that of the Engineering Specialty for which certified; or
 - 2. Pursuant to Section 255.20, F.S. and in lieu of the above, the County may consider a bid from a Bidder that is a duly licensed Contractor in good standing that has been prequalified and considered eligible by the Florida Department of Transportation (FDOT) under Section 337.14, F.S. and Chapter 14-22, Florida Administrative Code, to perform the work described in the Contract Documents. Contractors seeking consideration under this Paragraph shall submit

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along with the Bid Documents for review and consideration, current copy(ies) of their FDOT Certificate(s) of Qualification, Certification of Work Underway, and Status of Contract(s) On Hand. Acceptable FDOT prequalification(s) necessary to perform the Work specified in the Contract Documents include Flexible Paving and Drainage Work Classes.

CHANGES TO DTPW CONSTRUCTION SPECIFICATIONS:

A. Section 443 French Drain, article G, Subarticle 3:

1. Delete pay item No. 443-70-4 - Exfiltration drain (24" diameter) (bituminous coated corrugated steel pipe culvert) (2 2/3" x 1/2", 16 gauge) (Includes the cost of perforated pipe, ballast rock, excavation and backfilling with select fill material) – and replace it with pay item No. 443-70-4-3 - French Drain (24" diameter perforated pipe; trench depth 15 ft. BLS).
2. Delete pay item No. 443-70-36A - EXFILTRATION DRAIN 36" DIAMETER - (Includes the cost of perforated pipe, ballast rock, excavation plastic filter fabric and back filling with selected fill material)– and replace it with pay item No. 443-70-6-3 - French Drain (36" diameter perforated pipe; trench depth 15 ft. BLS).

CHANGES TO TECHNICAL SPECIFICATIONS:

B. Volume 4 - WASD Technical Specifications for the Proposed Water Main. Changes performed have been highlighted in yellow.

1. Delete Section 6.13 - Connections to Existing System, in its entirety, and replace with attached Revised Section 6.13 - Connections to Existing System for Addendum No. 1.
2. Delete Section 8.00 - Measurement and Payment, in its entirety, and replace with Revised Section 8.00 - Measurement and Payment for Addendum No. 1.

C. Volume 6 - WASD Technical Specifications for Proposed Sanitary Sewer System

1. Delete Section 1.00 – Scope, in its entirety, and replace with Revised Section 1.00 - Scope for Addendum No. 1. Changes to this section are enclosed in revision clouds on attached section.
2. Delete Section 3.00 – Sequence of Construction and General Information, in its entirety, and replace with Revised Section 3.00 - Sequence of Construction and General Information for Addendum No. 1. Changes to this section are enclosed in revision clouds on attached section.
3. Delete Section 5.04.1 – Pipe and Fittings – PVC C-900, in its entirety, and replace with Revised Section 5.04.1 – Pipe and Fittings – PVC C-900 for Addendum No. 1. Changes to this section are enclosed in revision clouds on attached section.
4. Delete Section 6.00 – Abandonment of Sanitary Sewers, in its entirety, and replace with Revised Section 6.00 – Abandonment of Sanitary Sewers for Addendum No. 1. Changes to this section are enclosed in revision clouds on attached section.
5. Delete Section 8.00 – Measurement and Payment, in its entirety, and replace with Revised Section 8.00 - Measurement and Payment for Addendum No. 1. Changes to this section are enclosed in a revision cloud on attached section.

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6. Delete Section 06100 - Closed-Bottom Fiberglass-Reinforced Manholes from Attachments and replace them with attached Revised Section 06100. Changes performed are highlighted on the attached section.
7. Add attached Standard Precast Concrete Doghouse Manhole to Appendix B of Volume 6 - WASD Technical Specifications.

CHANGES TO THE PLANS:

- A. Volume 3 - Roadway Improvement Plans. Changes performed have been highlighted in yellow.
 1. Delete sheet No. 5, Summary of Quantities, in its entirety, and replace with attached Revised sheet No. 5 Summary of Quantities for Addendum No. 1.
- B. Volume 5 - WASD Plans for Proposed Water Main. Changes performed are enclosed in revision clouds.
 1. Delete sheet no. P47, Plan and Profile, and replace with the attached Revised Sheet P47 Plan and Profile for Addendum No. 1.
 2. Delete sheet no. P95, Temporary Traffic Control Plan, and replace with the attached Revised Sheet P95 Temporary Traffic Control Plan for Addendum No. 1.
 3. Delete sheet no. P50, Plan and Profile, and replace with the attached Revised Sheet P50, Plan and Profile for Addendum No. 1.
- C. Volume 7 - WASD Plans for Proposed Sanitary Sewer System. Changes performed are enclosed in revision clouds.
 1. Delete set of plans, in its entirety, and replace with attached Revised Set of Plans for Addendum No. 1.

END OF ADDENDUM NO. 1

Note: Water and Sewer Revised Plans are incorporated as individual attachments found in the following link:

[Click for Addendum No. 1](#)



Alfredo E. Muñoz, P.E.

Chief, Capital Improvements Division

Department of Transportation and Public Works (DTPW)

AM:rb

cc: Roxana Bayarre, P.E. DTPW	Fernando Mardones, DTPW	Alejandro Barrios, DTPW
Rene Idarraga, P.E., DTPW	Marcia Martin, ISD	Clerk of the Board
Katherine Fernandez, DTPW	Jackeline Fusel, ISD	Project File
Miguel Soria, DTPW	Luis, Eduardo M., WASD	

Revised Bid Form for Addendum No. 1

Bid Form

PROJECT TITLE: Roadway Improvements to NW 37th Avenue from NW 36 St to NW 79th Street

PROJECT NO: 20210093

IF THIS PROPOSAL IS ACCEPTED, THE UNDERSIGNED AGREES TO COMPLETE ALL WORK UNDER THIS CONTRACT WITHIN ONE THOUSAND NINETY FIVE (1095) CALENDAR DAYS AFTER THE EFFECTIVE DATE ESTABLISHED IN THE "NOTICE TO PROCEED WITH CONTRACT WORK".

Item No	Quantity	Unit	Description	Written Unit Amount	Unit Price	Total
102-1A	1.0	L.S.	MAINTENANCE OF TRAFFIC			
Pay Item No. 102-1A includes WASD Items No. 1 and 78 from the Water Main, and 1 and 60 from the Gravity Sewer.						
102-3A	40,500.0	C.Y.	COMMERCIAL MATERIAL FOR DRIVEWAY MAINTENANCE			
102-61	150.0	EA.	BUSINESS SIGNS (Temporary, Post Mounted)			
102-74-1	254,430.0	EA/DAY	BARRICADES (TEMPORARY- TYPE I, II, VP & DRUM).			
102-74-2	10,080.0	EA/DAY	BARRICADES (Temporary, Type III, 6')			
102-77	8,360.0	EA/DAY	HIGH INTENSITY FLASHING LIGHTS (TEMPORARY, TYPE "B")			
102-78	1,574.0	EA.	REFLECTIVE PAVEMENT MARKER (Temporary) (This item is contingent upon field conditions and may be increased or decreased by the Engineer)			
102-91-1A	169,560.0	L.F.	PAVEMENT MARKING TEMPORARY (Solid) (Any width) (Yellow or White) (Paint)			
102-99	1,488.0	EA/DAY	VARIABLE MESSAGE SIGN (Temporary)			
102-60A	32,250.0	EA/DAY	WORK ZONE SIGNS			
102-76A	4,410.0	EA/DAY	ADVANCE WARNING ARROW PANEL			

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Item No	Quantity	Unit	Description	Written Unit Amount	Unit Price	Total
102-91A	26,960.0	L.F.	PAVEMENT MARKING TEMPORARY (Skip) (Any width) (Yellow or White) (Paint) (10' stripe, 30' space)			
104-10-3	28,700.0	L.F.	Sediment Barrier			
104-18	124.0	EA.	Inlet Protection System			
110-1-1B	1.0	L.S.	CLEARING AND GRUBBING			
120-1	31,489.0	C.Y.	REGULAR EXCAVATION			
120-6	776.0	C.Y.	EMBANKMENT (This item is contingent upon field conditions and may be increased, decreased or eliminated by the Engineer)			
160-4	92,342.0	S.Y.	TYPE "B" STABILIZATION (12" Thick) (Min. C.B.R. 30)			
200-1-10	106,448.0	S.Y.	LIMEROCK BASE (8" Thick, Primed)			
Pay Item No. 200-1-10 contains 9,486 SY and 310 SY of WASD Items No. 59 and 61 from the Water Main, and 4,200 SY and 110 SY of WASD Items No. 52 and 54 from the Gravity Sewer.						
327-70-5	2,514.0	S.Y.	MILLING EXISTING ASPHALT PAVEMENT (2" average depth)			
327-70-1A	6,525.0	S.Y.	MILLING EXISTING ASPHALT PAVEMENT (1 Inch average depth)			
Pay Item 327-70-1A is WASD Pay Item No. 63 from the Water Main.						

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Item No	Quantity	Unit	Description	Written Unit Amount	Unit Price	Total
327-70-6A	1,207.0	S.Y.	MILLING EXISTING ASPHALT PAVEMENT (1 1/2" average depth)			
Pay Item 327-70-6A is WASD Pay Item No. 65 from the Water Main.						
334-1-13	161.4	TON	SUPERPAVE ASPHALTIC CONCRETE (Traffic C)			
Pay Item No. 334-1-13 contains 310 SY (approximately 17.1 Tons) of WASD Item No. 62 from the Water Main, and 110 SY (approximately 6.1 Tons) of WASD Item No. 55 from the Gravity Sewer.						
334-2-13-2	10,025.6	TON	Hot Mix Asphalt, Traffic C, SP-12.5			
Pay Item No. 334-2-13-2 contains 9,486 SY (approximately 521.7 Tons) of WASD Item No. 60 from the Water Main, and 4,200 SY (approximately 231 Tons) of WASD Item No. 53 from the Gravity Sewer.						
337-7-21A	204.7	TON	ASPHALTIC CONCRETE FRICTION COURSE (FC-9.5) (RUBBER) (1" Thick)			
Pay Item No. 337-7-21A contains 1,207 SY (approximately 66.4 Tons) of WASD Item No. 66 from the Water Main.						
337-8-42	4,995.4	TON	Hot Mix Asphalt Friction Course, Traffic C, FC-9.5, PG 76-22			
Pay Item No. 337-8-32 contains 6,525 SY (approximately 358.9 Tons) of WASD Item No. 64 from the Water Main.						
339-1	307.0	TON	MISCELLANEOUS ASPHALT PAVEMENT			
Pay Item No. 339-1 contains 1,036 SY (approximately 57 Tons) of WASD Item No. 56 from the Gravity Sewer.						

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Item No	Quantity	Unit	Description	Written Unit Amount	Unit Price	Total
425-1-201	3.0	EA.	INLETS (Curb) Type (P-9) (< 10')			
425-1-203	1.0	EA	INLETS, Curb, Type 9, J Bot, <10'			
425-1-311	6.0	EA.	INLETS (CURB)(TYPE P-1) < 10'			
425-1-312	2.0	EA.	INLET CURB TYPE P-1 (>10')			
425-1-321	3.0	EA.	INLETS (CURB)(TYPE P-2) < 10'			
425-1-322A	1.0	EA.	INLET CURB Type P-2 > 10'			
425-1-331C	5.0	EA.	INLET CURB TYPE P-3 < 10'			
425-1-351	32.0	EA.	INLET CURB (TYPE P-5)< 10'			
425-1-353	3.0	EA.	INLETS (Curb) (TYPE P-5) (>10')			
425-1-361	2.0	EA.	INLET, CURB (Type P-6) < 10'			
425-1-451B	1.0	EA.	INLET (Curb) Type J-5 (<10')			
425-1-452	1.0	EA	INLET (Curb) Type J-5 (>10')			

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Item No	Quantity	Unit	Description	Written Unit Amount	Unit Price	Total
425-1-463	2.0	EA	INLET CURB (Type J-6) < 10'			
425-1-462	1.0	EA	INLET (Curb) Type J-6 (>10')			
425-1-721	18.0	EA.	INLET (Gutter) Type P-11 (<10')			
425-1-722	1.0	EA	INLET (Gutter) Type P-11 (>10')			
425-1-909-1	23.0	EA	INLET (CURB) TYPE J-11, <10'			
425-1-909-2	9.0	EA	INLET (CURB) TYPE J-11, >10'			
425-1-311C	1.0	EA	INLETS (CURB)(TYPE P-1) < 10' (SPECIAL)			
425-1-901C	9.0	EA.	INLETS (Special) (< 10')			
425-2-41B	15.0	EA.	MANHOLE (Type P-7) (< 10')			
425-2-42C	3.0	EA	MANHOLES (P-7) (>10')			
425-2-71C	8.0	EA.	MANHOLE (J-7) (<10')			
425-2-71B	10.0	EA.	MANHOLE J-7 > 10'			

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Item No	Quantity	Unit	Description	Written Unit Amount	Unit Price	Total
425-6	98.0	EA.	ADJUST EXISTING VALVE BOXES (MIAMI-DADE COUNTY ONLY) (This item is contingent upon field conditions and may be increased, decreased or eliminated by the Engineer)			
425-5B	17.0	EA.	ADJUST MANHOLE - MIAMI-DADE COUNTY ONLY - (This item is contingent upon field conditions and may be increased, decreased or eliminated by the Engineer)			
430-1-136	1.0	L.S.	Relocate 36" Stormsewer Pipe			
Pay Item 430-1-136 is WASD Pay Item No. 47 from the Sanitary Sewer System.						
430-175-115	3,251.0	L.F.	PIPE CULVERT OPTIONAL MATERIAL, Round Shape, 15"			
430-175-118	252.0	L.F.	PIPE CULVERT OPTIONAL MATERIAL, Round Shape, 18"			
430-175-124	975.0	L.F.	PIPE CULVERT OPTIONAL MATERIAL, Round Shape, 24"			
430-175-136	105.0	L.F.	PIPE CULVERT OPTIONAL MATERIAL, Round Shape, 36"			
430-175-215	233.0	L.F.	PIPE CULVERT, OPTIONAL MATERIAL, Other Elip/Arch, 15"			
443-70-4-3	170.0	L.F.	French Drain (24" diameter perforated pipe; trench depth 15 ft. BLS)			
443-70-6-3	9,128.0	L.F.	French Drain (36" diameter perforated pipe; trench depth 15 ft. BLS)			
520-1-10	14,282.0	L.F.	CONCRETE CURB & GUTTER (Type F) (6" Curb, 18" Gutter) (Includes cost of limerock base and subgrade)			
Pay Item No. 520-1-10 contains 50 LF of WASD Item No. 70 from the Water Main, and 42 LF of WASD Item No. 58 from the Gravity Sewer.						

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Item No	Quantity	Unit	Description	Written Unit Amount	Unit Price	Total
520-2-12	13,515.0	L.F.	CONCRETE CURB (Type "D")			
520-3A	13,901.0	L.F.	CONCRETE VALLEY GUTTER (Any type)			
522-1(1)	17,099.2	S.Y.	CONCRETE SIDEWALK [4" THICK, 3,000 P.S.I. CONCRETE AT 28 DAYS (Includes the cost of pedestrian ramps and sidewalk curbs)			
Pay Item No. 522-1(1) contains 362 SF (approximately 40.25 SY) and 10 EA (approximately 53 SY) of WASD Items No. 69 and 75 from the Water Main, and 270 SF (approximately 30 SY) of WASD Items No. 57 from the Gravity Sewer.						
522-2(1)	6,472.0	S.Y.	CONCRETE SIDEWALK (6" THICK) (Includes driveways)			
527-2	1,459.0	S.F.	DETECTABLE WARNING ON WALKING SURFACE			
Pay Item No. 527-2 contains 80 SF of WASD Item No. 76 from the Water Main.						
536-1-01	400.0	L.F.	GUARDRAIL (Roadway) (Includes the cost of shop bent panels)			
536-9	4.0	EA.	END ANCHORAGE (TYPE IV)			
549-0A	1,449.0	L.F.	DEMOLITION AND REMOVAL OF CHAIN LINK FENCE			
550-2-6B	1,215.0	L.F.	NEW CHAIN LINK FENCE TYPE "B" (6' HIGH)			
550-60-232	7.0	EA	Fence Gate, Type B, Sliding/Cantilever, 6.1 – 12' Opening			
550-60-235	4.0	EA	Fence Gate, Type B, Sliding/Cantilever, 20.1 – 24' Opening			

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Item No	Quantity	Unit	Description	Written Unit Amount	Unit Price	Total
575-1-1	2,019.0	S.Y.	SODDING (Pensacola Bahia or match existing) (includes watering)			
Pay Item No. 575-1-1 contains 24 SY of WASD Item No. 71 from the Water Main, and 983 SY of WASD Item No.59 from the Gravity Sewer.						
580-327-10	90.0	EA.	TREE REMOVAL (Under 12" to 6")			
580-327-24	1.0	EA.	REMOVAL OF TREES (Greater than 24" diameter, up to 36" diameter)			
580-327-23A	116.0	EA.	TREE REMOVAL (12" to 24" diameter)			
630-2-11	14,013.0	L.F.	CONDUIT, Furnish & Install, Open Trench			
630-2-12	4,190.0	L.F.	CONDUIT, Furnish & Install, Directional Bore			
632-7-1	4.0	P.I.	TRAFFIC CONTROL CABLE			
632-7-6	4.0	P.I.	SIGNAL CABLE, REMOVE- INTERSECTION			
635-2-11	218.0	EA.	PULL & SPLICE BOX, Furnish & Install, 13" x 24" COVER SIZE			
639-1-122	4.0	AS.	Electrical Power Service, Furnish & Install, Underground, Meter Purchased by Contractor			
639-2-1	3,705.0	L.F.	SERVICE WIRE[(#6 AWG with THW insulation)(Three conductor set)(Black,white and green)]			

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Item No	Quantity	Unit	Description	Written Unit Amount	Unit Price	Total
641-2-12	1.0	EA.	PRESTRESSED CONCRETE POLES (Furnish & Install) (Type P-II Service Pole)			
641-2-60	4.0	EA	Prestressed Concrete Pole, Complete pole Removal – Pedestal/Service Pole			
646-1-11	23.0	EA.	ALUMINUM SIGNALS POLE, (Furnish & Install) (Pedestal)			
646-1-60	1.0	EA	Aluminum Signals Pole, Remove			
649-21-1	11.0	EA.	Steel Mast Arm Assembly, Furnish & Install, Single Arm 30'			
649-21-3	2.0	EA.	Steel Mast Arm Assembly, Furnish & Install, Single Arm 40'			
649-21-6	2.0	EA.	Steel Mast Arm Assembly, (F&I), Single Arm 50'			
649-21-15	1.0	EA.	Steel Mast Arm Assembly, Furnish & Install, Single Arm 70'			
650-1-14	23.0	AS.	TRAFFIC SIGNAL, FURNISH & INSTALL, ALUMINUM, 3 SECTION, 1 WAY			
650-1-18	11.0	AS.	TRAFFIC SIGNAL, FURNISH & INSTALL, ALUMINUM, 5 SECTION STRAIGHT, 1 WAY			
650-1-60	34.0	AS.	TRAFFIC SIGNAL, Remove- Poles to Remain)			
653-1-11	32.0	AS.	PEDESTRIAN SIGNAL, FURNISH & INSTALL, LED COUNTDOWN, 1 WAY			

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Item No	Quantity	Unit	Description	Written Unit Amount	Unit Price	Total
653-1-60	24.0	AS.	Pedestrian Signal, Remove Ped Signal – Pole/Pedestal to remain			
660-1-109B	19.0	EA	LOOP DETECTOR, INDUCTIVE (F & I) (Type 9, 2Ch, SS, RM)			
660-2-101	3.0	AS.	LOOP ASSEMBLY			
660-2-106	34.0	AS.	LOOP ASSEMBLY, F&I, Type F			
Pay Item No. 660-2-106 contains 5 EA of WASD Item No. 77 from the Water Main.						
665-1-11	16.0	EA.	PEDESTRIAN DETECTOR, FURNISH & INSTALL, STANDARD			
665-1-60	13.0	EA	Pedestrian Detector, Remove-Pole/Pedestal to Remain			
670-5-140	4.0	AS.	TRAFFIC CONTROLLER ASSEMBLY (Furnish & Install) (Model 2070)			
670-5-400	2.0	AS.	Traffic Controller Assembly (Modify)			
670-5-600	4.0	AS.	Traffic Controller Assembly, Remove controller with cabinet			
690-40	11.0	EA.	REMOVE MAST ARM ASSEMBLY			
690-80-1	1.0	P.I.	REMOVE SPAN WIRE ASSEMBLY			

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Item No	Quantity	Unit	Description	Written Unit Amount	Unit Price	Total
700-5-21	18.0	EA.	INTERNALLY ILLUMINATED SIGN, FURNISH, & INSTALL OVERHEAD MOUNT, UP TO 12 SF			
700-5-60	14.0	EA	Internally Illuminated Sign, Remove			
700-1-11B	229.0	AS.	SINGLE POST SIGN, F&I Ground Mount, Up to 12 SF			
700-1-12C	30.0	AS.	SINGLE POST SIGN, Furnish & Install Ground Mount, 12-20 SF			
700-1-50	8.0	AS.	Single Post Sign, Relocate			
700-1-60	53.0	AS.	SINGLE POST SIGN, REMOVE			
700-2-12	13.0	AS.	Multi- Post Sign, F&I Ground Mount, 12-20 SF			
700-3-501	2.0	EA.	SIGN PANEL, RELOCATE, UP TO 12 SF			
705-11-1	1.0	EA.	DELINEATOR (Flexible Tubular)			
Pay Item 705-11-1 is part of WASD Item No. 74 from the Water Main						
706-1-12	50.0	EA.	REFLECTIVE PAVEMENT MARKERS (class B, mono or bi-directional, all colors)			
Pay Item 706-1-12 is part of WASD Item No. 74 from the Water Main						
706-1-12A	1,310.0	EA.	REFLECTIVE PAVEMENT MARKERS PERMANENT (BI-Directional) amber/amber			

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Item No	Quantity	Unit	Description	Written Unit Amount	Unit Price	Total
706-1-12B	264.0	EA.	REFLECTIVE PAVEMENT MARKERS PERMANENT (Clear and Red)			
710-11-121	29,697.0	L.F.	PAINTED PAVEMENT MARKINGS (Standard, White, solid, 6")			
710-11-122	87.0	L.F.	PAINTED PAVEMENT MARKINGS, STANDARD, WHITE, SOLID, 8"			
710-11-123	6,743.0	L.F.	PAINTED PAVEMENT MARKINGS, STANDARD, WHITE, SOLID, 12"			
710-11-124	28.0	L.F.	PAINTED PAVEMENT MARKINGS (Standard, White, solid, 18")			
710-11-125	1,495.0	L.F.	PAINTED PAVEMENT MARKINGS (Standard, White, solid, 24")			
710-11-141B	110.0	L.F.	PAINTED PAVEMENT MARKINGS (Standard) (White) (Skip) (6") (10/30)			
710-11-160	72.0	EA.	PAINTED PAVEMENT MARKINGS (Standard)(White)(Message)			
710-11-170	167.0	EA	PAINTED PAVEMENT MARKING (Standard) (White) (Arrows)			
710-11-221	26,977.0	L.F.	PAINTED PAVEMENT MARKINGS (Standard, Yellow, solid, 6")			
710-11-224	456.0	L.F.	PAINTED PAVEMENT MARKINGS, STANDARD, YELLOW, SOLID, 18"			
710-11-241	50.0	L.F.	PAINTED PAVEMENT MARKINGS (Standard) (Yellow) (Skip) (6")			

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Item No	Quantity	Unit	Description	Written Unit Amount	Unit Price	Total
710-11-241B	2,840.0	L.F.	PAINTED PAVEMENT MARKINGS, Standard, Yellow, Skip 10'-30', 6"			
711-11-123	6,941.0	L.F.	THERMOPLASTIC (White) (Solid) (12")			
Pay Item No. 711-11-123 contains 198 LF of WASD Item No. 74 from the Water Main.						
711-11-124	28.0	L.F.	THERMOPLASTIC (White) (Solid) (18")			
711-11-125	1,595.0	L.F.	THERMOPLASTIC (White) (Solid) (24")			
Pay Item No. 711-11-125 contains 100 LF of WASD Item No. 74 from the Water Main.						
711-11-160	72.0	EA.	THERMOPLASTIC (White) (Message)			
711-11-170	171.0	EA	THERMOPLASTIC (White) (Arrows)			
Pay Item No. 711-11-170 contains 4 EA of WASD Item No. 74 from the Water Main.						
711-11-224	456.0	L.F.	THERMOPLASTIC (Yellow) (Solid) (18")			
711-11-221	28,257.0	L.F.	THERMOPLASTIC (Yellow) (Solid) (6")			
Pay Item No. 711-11-221 contains 1280 LF of WASD Item No. 74 from the Water Main.						
711-11-241B	2,840.0	L.F.	THERMOPLASTIC (Standard) (Yellow) (Skip 10'-30') (6")			
711-11-121	30,889.0	L.F.	THERMOPLASTIC (White) (Solid) (6")			
Pay Item No. 711-11-121 contains 1192 LF of WASD Item No. 74 from the Water Main.						

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Item No	Quantity	Unit	Description	Written Unit Amount	Unit Price	Total
711-11-122	87.0	L.F.	THERMOPLASTIC (White) (Solid) (8")			
711-11-141B	110.0	L.F.	THERMOPLASTIC, STD (White) (10/30) (Skip) (6")			
711-11-241	50.0	L.F.	THERMOPLASTIC (Yellow) (Skip) (6")			
715-1-12	1,080.0	L.F.	LIGHTING - CONDUCTORS (F & I) (No. 8 to No. 6)			
715-1-13	46,681.0	L.F.	LIGHTING - CONDUCTORS (F&I) (No. 4 to No. 2)			
715-1-14	970.0	L.F.	LIGHTING - CONDUCTORS (F&I) (No. 1 to No. 0)			
715-4-70	67.0	EA	LIGHT POLE COMPLETE, Remove Pole and Foundation			
715-4-122	80.0	EA.	Light Pole Complete, F&I, Wind Speed 150, Pole Height 45'			
715-5-50	1.0	EA.	LUMINAIRE & BRACKET ARM (Remove)			
715-7-11A	4.0	EA	LOAD CENTER (Secondary Voltage)			
715-11-11F	9.0	EA.	LUMINAIRE (Furnish & Install) (Roadway) (Cobra Head)			
715-500-1C	83.0	EA.	POLE CABLE DISTRIBUTION SYSTEM (FURNISH AND INSTALL)			

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Item No	Quantity	Unit	Description	Written Unit Amount	Unit Price	Total
715-511-135	3.0	EA	LIGHT POLE COMPLETE, Special Design, F&I, Single Arm Shoulder Mount, Aluminum, 35'			
WS-1050-10-006	500.0	C.Y.	For removal, transport, and legal disposal of debris and unsuitable material not shown on the plans.			
Pay item WS-1050-10-006 corresponds to pay item no.57 of Proposed Water Main of WASD						
WS-1050-10-010	800.0	S.F.	For sheeting and shoring ordered left in place by the Engineer.			
WS-1050-10-011	900.0	L.F.	For trench overcut in one-foot depth increments			
Pay item WS-1050-10-011 corresponds to pay item no.73 of Proposed Water Main of WASD						
WS-1050-10-012	500.0	C.Y.	For furnishing and installing additional suitable backfill material.			
Pay item WS-1050-10-012 corresponds to pay item no.58 of Proposed Water Main of WASD						
WS-1050-10-1316A	1.0	L.S.	Furnish and Install Microtunnel			
Pay item WS-1050-10-1316A corresponds to pay item no.23 of Proposed Water Main of WASD						
WS-1050-10-1316B	1.0	L.S.	Furnish and Install Microtunnel			
Pay item WS-1050-10-1316B corresponds to pay item no.24 of Proposed Water Main of WASD						
WS-1050-10-1316C	1.0	L.S.	Furnish and Install Microtunnel			
Pay item WS-1050-10-1316C corresponds to pay item no.25 of Proposed Water Main of WASD						

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Item No	Quantity	Unit	Description	Written Unit Amount	Unit Price	Total
WS-1050-11-0013	42.0	EA.	For constructing Air Release Valve Assemblies (ARV's)			
Pay item WS-1050-11-0013 corresponds to pay item no.52 of Proposed Water Main of WASD						
WS-1050-11-014	35.0	EA.	For constructing Flushing Valve Outlet assemblies (FVO's).			
Pay item WS-1050-11-014 corresponds to pay item no.53 of Proposed Water Main of WASD						
WS-1050-11-0015A	22.0	S.Y.	Constructing 8-inch reinforced concrete protective slab, per WASD Standard Detail GS 1.2, as ordered by the Engineer			
Pay item WS-1050-11-0015A corresponds to pay item no.59 of Proposed Water Main of WASD						
WS-1050-11-0017A	13.0	EA	Furnish and Install 1-inch single service, complete.			
Pay item WS-1050-11-0017A corresponds to pay item no.46 of Proposed Water Main of WASD						
WS-1050-11-0019	10,072.0	L.F.	For furnishing & Install polyethylene encasement as directed by the Engineer.			
Pay item WS-1050-11-0019 corresponds to pay item no.69 of Proposed Water Main of WASD						
WS-1050-11-0019A	5,906.0	L.F.	For furnishing & Install V-Bio polyethylene encasement as directed by the Engineer.			
Pay item WS-1050-11-0019A corresponds to pay item no.68 of Proposed Water Main of WASD						
WS-1050-11-0020A	5.0	EA	Furnish and Install Dual Service (1")- All incidentals, Complete.			
Pay item WS-1050-11-0020A corresponds to pay item no.47 of Proposed Water Main of WASD						
WS-1050-11-0120A	6.0	EA	Furnish and Install Dual Service (1 1/2")- All incidentals, Complete.			
Pay item WS-1050-11-0120A corresponds to pay item no.48 of Proposed Water Main of WASD						

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Item No	Quantity	Unit	Description	Written Unit Amount	Unit Price	Total
WS-1050-11-0217A	18.0	EA	Furnish and Install Single Service (2")-All incidentals included			
Pay item WS-1050-11-0217A corresponds to pay item no.49of Proposed Water Main of WASD						
WS-1050-11-0220A	2.0	EA	Furnish and Install Dual Service (2")-All incidentals included			
Pay item WS-1050-11-0220A corresponds to pay item no.50of Proposed Water Main of WASD						
WS-1050-11-0317A	2.0	EA	Furnish and Install Single Service (3")-All incidentals included			
Pay item WS-1050-11-0317A corresponds to pay item no.51of Proposed Water Main of WASD						
WS-1050-11-0403	1.0	EA	Furnish and Install Tapping Sleeve (6.0" – 7.9")			
Pay item WS-1050-11-0403 corresponds to pay item no.29of Proposed Water Main of WASD						
WS-1050-11-0503	1.0	EA	Furnish and Install Tapping Sleeve (8.0" – 9.9")			
Pay item WS-1050-11-0503 corresponds to pay item no.28 of Proposed Water Main of WASD						
WS-1050-11-0703	1.0	EA	Furnish and Install Tapping Sleeve (12" – 13.9")			
Pay item WS-1050-11-0703 corresponds to pay item no.26 of Proposed Water Main of WASD						
WS-1050-11-0703A	2.0	EA	Furnish and Install Tapping Sleeve (12" – 13.9"), Cut and Cap Existing Water Main.			
Pay item WS-1050-11-0703A corresponds to pay item no.27 of Proposed Water Main of WASD						
WS-1050-11-1803	1.0	L.F.	Furnish and Install Tapping Sleeve (60.0" or larger)			
Pay item WS-1050-11-1803 corresponds to pay item no.30 of Proposed Water Main of WASD						

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Item No	Quantity	Unit	Description	Written Unit Amount	Unit Price	Total
WS-1050-11-5213	100.0	L.F.	For Furnishing and Installing 30" Steel Casings for Water Main			
Pay item WS-1050-11-5213 corresponds to pay item no.22 of Proposed Water Main of WASD						
WS-1050-12-0016	27.0	EA.	Selling and Delivering to the Department Fire Hydrant Assemblies, Complete.			
Pay item WS-1050-12-0016 corresponds to pay item no.55 of Proposed Water Main of WASD						
WS-1060-12-111	11.0	EA	For Selling and Delivering to the Department Sanitary Sewer Precast Manhole (0-6').			
Pay item WS-1060-12-111 corresponds to pay item no.2 of Proposed Gravity Sewer						
WS-1060-12-112	10.0	EA	For Selling and Delivering to the Department Sanitary Sewer Precast Manhole (6-8').			
Pay item WS-1060-12-112 corresponds to pay item no.4 of Proposed Gravity Sewer						
WS-1060-12-113	8.0	EA	For Selling and Delivering to the Department Sanitary Sewer Precast Manhole (8-10').			
Pay item WS-1060-12-113 corresponds to pay item no.6 of Proposed Gravity Sewer						
WS-1060-12-114	2.0	EA	For Selling and Delivering to the Department Sanitary Sewer Precast Manhole (10-12').			
Pay item WS-1060-12-114 corresponds to pay item no.8 of Proposed Gravity Sewer						
WS-1060-12-165	1.0	EA	For Selling and Delivering to the Department Sanitary Sewer Fiberglass Reinforced Plastic (FRP) Manhole (12-14').			
Pay item WS-1060-12-165 corresponds to pay item no.10 of Proposed Gravity Sewer						
WS-1060-12-213	1.0	EA	For Selling and Delivering to the Department Sanitary Sewer Precast Drop Manhole (8-10').			
Pay item WS-1060-12-213 corresponds to pay item no.12 of Proposed Gravity Sewer						

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Item No	Quantity	Unit	Description	Written Unit Amount	Unit Price	Total
WS-1050-12-226	70.0	L.F.	For Selling and Delivering to the Department PVC Pipe (10"-11.9")-inches and Fittings for Water Main.			
Pay item WS-1050-12-226 corresponds to pay item no.12 of Proposed Water Main of WASD						
WS-1060-12-265	1.0	EA	For Selling and Delivering to the Department Sanitary Sewer Precast Fiberglass Reinforced Plastic (FRP) Drop Manhole (12-14').			
Pay item WS-1060-12-265 corresponds to pay item no.14 of Proposed Gravity Sewer						
WS-1050-12-0412	31.0	EA.	For selling and delivering to the Department M.J. resilient seated gate valves (6"-7.9") complete with valve box, lid and riser pipe.			
Pay item WS-1050-12-0412 corresponds to pay item no.44 of Proposed Water Main of WASD						
WS-1050-12-0424	537.0	L.F.	For selling and delivering to the Department ductile iron pipe (6"-7.9") and fittings for water main.			
Pay item WS-1050-12-0424 corresponds to pay item no.20 of Proposed Water Main of WASD						
WS-1050-12-0424A	135.0	L.F.	For selling and delivering to the Department Zinc-Coated Ductile Iron Pipe (6"-7.9") and Fittings for Water Main.			
Pay item WS-1050-12-0424A corresponds to pay item no.18 of Proposed Water Main of WASD						
WS-1050-12-425	123.0	L.F.	For selling and delivering to the Department ductile iron pipe (8"-9.9") and fittings for water main.			
Pay item WS-1050-12-425 corresponds to pay item no.16 of Proposed Water Main of WASD						
WS-1050-12-425A	30.0	L.F.	For selling and delivering to the Department Zinc-Coated Ductile Iron Pipe (8"-9.9") and Fittings for Water Main.			
Pay item WS-1050-12-425A corresponds to pay item no.14 of Proposed Water Main of WASD						
WS-1050-12-426	50.0	L.F.	For selling and delivering to the Department ductile iron pipe (10"-11.9")-inches and fittings for water main.			
Pay item WS-1050-12-426 corresponds to pay item no.10 of Proposed Water Main of WASD						

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Item No	Quantity	Unit	Description	Written Unit Amount	Unit Price	Total
WS-1050-12-427	1,278.0	L.F.	For selling and delivering to the Department ductile iron pipe (12"-13.9")-inches and fittings for water main.			
Pay item WS-1050-12-427 corresponds to pay item no.8 of Proposed Water Main of WASD						
WS-1050-12-427A	233.0	L.F.	For selling and delivering to the Department Zinc-Coated Ductile Iron pipe (12"-13.9")-inches and fittings for water main.			
Pay item WS-1050-12-427A corresponds to pay item no.6 of Proposed Water Main of WASD						
WS-1050-12-0429	8,134.0	L.F.	For selling and delivering to the Department ductile iron pipe (16.0 -17.9") and fittings for water main.			
Pay item WS-1050-12-0429 corresponds to pay item no.4 of Proposed Water Main of WASD						
WS-1050-12-0429A	5,508.0	L.F.	For Selling and Delivering to the Department Zinc-Coated Ductile Iron Pipe (16.0 -17.9") and Fittings for Water Main.			
Pay item WS-1050-12-0429A corresponds to pay item no. 2 of Proposed Water Main of WASD						
WS-1050-12-0512	7.0	EA.	For selling and delivering to the Department M.J. resilient seated gate valves (8"-9.9") complete with valve box, lid and riser pipe.			
Pay item WS-1050-12-0512 corresponds to pay item no.42 of Proposed Water Main of WASD						
WS-1050-12-0612	3.0	EA.	For selling and delivering to the Department M.J. resilient seated gate valves (10"-11.9") complete with valve box, lid and riser pipe.			
Pay item WS-1050-12-0612 corresponds to pay item no.40 of Proposed Water Main of WASD						
WS-1050-12-0712	17.0	EA	For selling and delivering to the Department M.J. resilient seated gate valves (12"-13.9") complete with valve box, lid and riser pipe.			
Pay item WS-1050-12-0712 corresponds to pay item no.38 of Proposed Water Main of WASD						
WS-1050-12-0912	31.0	EA.	For selling and delivering to the Department M.J. resilient seated gate valve (16"-17.9") complete with valve box, lid and riser pipe.			
Pay item WS-1050-12-0912 corresponds to pay item no.36 of Proposed Water Main of WASD						

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Bid Form

PROJECT TITLE: Roadway Improvements to NW 37th Avenue from NW 36 St to NW 79th Street

PROJECT NO: 20210093

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Item No	Quantity	Unit	Description	Written Unit Amount	Unit Price	Total
WS-1060-12-2250	4,248.0	L.F.	For Selling and Delivering to the Department PVC (C-900) Pipe and Fittings (8.0 -9.9") for Gravity Sewer.			
Pay item WS-1060-12-2250 corresponds to pay item no.16 of Proposed Gravity Sewer						
WS-1060-12-2260	4,158.0	L.F.	For Selling and Delivering to the Department PVC (C-900) Pipe and Fittings (10.0 -11.9") for Gravity Sewer.			
Pay item WS-1060-12-2260 corresponds to pay item no.21 of Proposed Gravity Sewer						
WS-1060-12-2270	60.0	L.F.	For Selling and Delivering to the Department PVC (C-900) Pipe and Fittings (12.0 -13.9") for Gravity Sewer.			
Pay item WS-1060-12-2270 corresponds to pay item no.27 of Proposed Gravity Sewer						
WS-1060-12-2280	40.0	L.F.	For Selling and Delivering to the Department PVC (C-900) Pipe and Fittings (14.0 -15.9") for Gravity Sewer.			
Pay item WS-1060-12-2280 corresponds to pay item no.29 of Proposed Gravity Sewer						
WS-1050-13-0016	27.0	EA.	installing fire hydrant assemblies with guard posts, complete.			
Pay item WS-1050-13-0016 corresponds to pay item no.56 of Proposed Water Main of WASD						
WS-1060-13-111	11.0	EA	For Installing Sanitary Sewer Precast Manhole (0-6').			
Pay item WS-1060-13-111 corresponds to pay item no.3 of Proposed Gravity Sewer						
WS-1060-13-112	10.0	EA	For Installing Sanitary Sewer Precast Manhole (6-8').			
Pay item WS-1060-13-112 corresponds to pay item no.5 of Proposed Gravity Sewer						
WS-1060-13-113	8.0	EA	For Installing Sanitary Sewer Precast Manhole (8-10').			
Pay item WS-1060-13-113 corresponds to pay item no.7 of Proposed Gravity Sewer						

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Item No	Quantity	Unit	Description	Written Unit Amount	Unit Price	Total
WS-1060-13-114	2.0	EA	For Installing Sanitary Sewer Precast Manhole (10-12').			
Pay item WS-1060-13-114 corresponds to pay item no.9 of Proposed Gravity Sewer						
WS-1060-13-165	1.0	EA	For Installing Sanitary Sewer Fiberglass Reinforced Plastic (FRP) Manhole (12-14').			
Pay item WS-1060-13-165 corresponds to pay item no.11 of Proposed Gravity Sewer						
WS-1060-13-213	1.0	EA	For Installing Sanitary Sewer Precast Drop Manhole (8-10').			
Pay item WS-1060-13-213 corresponds to pay item no.13 of Proposed Gravity Sewer						
WS-1050-13-226	70.0	L.F.	For installing (10"-11.9")-inch PVC pipe and fittings for water main.			
Pay item WS-1050-13-226 corresponds to pay item no.13 of Proposed Water Main of WASD						
WS-1060-13-265	1.0	EA	For Installing Sanitary Sewer Precast Fiberglass Reinforced Plastic (FRP) Drop Manhole (12-14').			
Pay item WS-1060-13-265 corresponds to pay item no.15 of Proposed Gravity Sewer						
WS-1050-13-0412	31.0	EA	For installing M.J. resilient seated gate valve (6"-7.9") complete with valve box, lid and riser pipe.			
Pay item WS-1050-13-0412 corresponds to pay item no.45 of Proposed Water Main of WASD						
WS-1050-13-424	672.0	L.F.	For installing (6"-7.9")-inch ductile iron pipe and fittings for water main.			
Pay item WS-1050-13-424 corresponds to pay item no.19 of Proposed Water Main of WASD						
WS-1050-13-425	153.0	L.F.	For installing (8"-9.9")-inch ductile iron pipe and fittings for water main			
Pay item WS-1050-13-425 corresponds to pay item no.15 of Proposed Water Main of WASD						

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Item No	Quantity	Unit	Description	Written Unit Amount	Unit Price	Total
WS-1050-13-426	50.0	L.F.	For installing (10"-11.9")-inch ductile iron pipe and fittings for water main.			
Pay item WS-1050-13-426 corresponds to pay item no.11 of Proposed Water Main of WASD						
WS-1050-13-427	1,511.0	L.F.	For installing (12"-13.9")-inch ductile iron pipe and fittings for water main			
Pay item WS-1050-13-427 corresponds to pay item no.7 of Proposed Water Main of WASD						
WS-1050-13-429A	13,642.0	L.F.	For installing (16"-17.9")-inch ductile iron pipe and fittings for water main			
Pay item WS-1050-13-429A corresponds to pay item no.3 of Proposed Water Main of WASD						
WS-1050-13-0512	7.0	EA.	For installing M.J. resilient seated gate valve (8"-9.9") complete with valve box, lid and riser pipe.			
Pay item WS-1050-13-0512 corresponds to pay item no.43 of Proposed Water Main of WASD						
WS-1050-13-0612	3.0	EA	For installing M.J. resilient seated gate valve (10"-11.9") complete with valve box, lid and riser pipe.			
Pay item WS-1050-13-0612 corresponds to pay item no.41 of Proposed Water Main of WASD						
WS-1050-13-0712	17.0	EA	For installing M.J. resilient seated gate valve (12"-13.9") complete with valve box, lid and riser pipe.			
Pay item WS-1050-13-0712 corresponds to pay item no.39 of Proposed Water Main of WASD						
WS-1050-13-0912	31.0	EA.	For installing M.J. resilient seated gate valve (16"-17.9") complete with valve box, lid and riser pipe.			
Pay item WS-1050-13-0912 corresponds to pay item no.37 of Proposed Water Main of WASD						
WS-1060-13-2251	1,208.0	L.F.	For Installing (8.0 -9.9") PVC (C900) Pipe and Fittings for Gravity Sewer Main (0 - 6').			
Pay item WS-1060-13-2251 corresponds to pay item no.17 of Proposed Gravity Sewer						

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Item No	Quantity	Unit	Description	Written Unit Amount	Unit Price	Total
WS-1060-13-2252	1,547.0	L.F.	For Installing (8.0 -9.9") PVC (C900) Pipe and Fittings for Gravity Sewer Main (6 - 8').			
Pay item WS-1060-13-2252 corresponds to pay item no.18 of Proposed Gravity Sewer						
WS-1060-13-2253	870.0	L.F.	For Installing (8.0 -9.9") PVC (C900) Pipe and Fittings for Gravity Sewer Main (8-10').			
Pay item WS-1060-13-2253 corresponds to pay item no.19 of Proposed Gravity Sewer						
WS-1060-13-2254	623.0	L.F.	For Installing (8.0 -9.9") PVC (C900) Pipe and Fittings for Gravity Sewer Main (10-12').			
Pay item WS-1060-13-2254 corresponds to pay item no.20 of Proposed Gravity Sewer						
WS-1060-13-2261	778.0	L.F.	For Installing (10.0 -11.9") PVC (C900) Pipe and Fittings for Gravity Sewer Main (0 - 6').			
Pay item WS-1060-13-2261 corresponds to pay item no.22 of Proposed Gravity Sewer						
WS-1060-13-2262	1,596.0	L.F.	For Installing (10.0 -11.9") PVC (C900) Pipe and Fittings for Gravity Sewer Main (6 - 8').			
Pay item WS-1060-13-2262 corresponds to pay item no.23 of Proposed Gravity Sewer						
WS-1060-13-2263	958.0	L.F.	For Installing (10.0 -11.9") PVC (C900) Pipe and Fittings for Gravity Sewer Main (8 - 10').			
Pay item WS-1060-13-2263 corresponds to pay item no.24 of Proposed Gravity Sewer						
WS-1060-13-2264	384.0	L.F.	For Installing (10.0 -11.9") PVC (C900) Pipe and Fittings for Gravity Sewer Main (10 - 12').			
Pay item WS-1060-13-2264 corresponds to pay item no.25 of Proposed Gravity Sewer						
WS-1060-13-2265	402.0	L.F.	For Installing (10.0 -11.9") PVC (C900) Pipe and Fittings for Gravity Sewer Main (12 - 14').			
Pay item WS-1060-13-2265 corresponds to pay item no.26 of Proposed Gravity Sewer						

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Item No	Quantity	Unit	Description	Written Unit Amount	Unit Price	Total
WS-1060-13-2273	60.0	L.F.	For Installing (12.0 -13.9") PVC (C900) Pipe and Fittings for Gravity Sewer Main (8 - 10').			
Pay item WS-1060-13-2273 corresponds to pay item no.28 of Proposed Gravity Sewer						
WS-1060-13-2285	40.0	L.F.	For Installing (14.0 -15.9") PVC (C900) Pipe and Fittings for Gravity Sewer Main (12 - 14').			
Pay item WS-1060-13-2285 corresponds to pay item no.30 of Proposed Gravity Sewer						
WS-1050-14-0214	1.0	EA.	For making cut-in connection to existing (2" - 3.9")-inch water main, including capping the existing water main.			
Pay item WS-1050-14-0214 corresponds to pay item no.35 of Proposed Water Main of WASD						
WS-1050-14-0414	3.0	EA	For making cut-in connection to existing (6.0" - 7.9")-inch water main, including capping the existing water main.			
Pay item WS-1050-14-0414 corresponds to pay item no.34 of Proposed Water Main of WASD						
WS-1050-14-0514	7.0	EA.	For making cut-in connection to existing (8.0" - 9.9")-inch water main, including capping the existing water main.			
Pay item WS-1050-14-0514 corresponds to pay item no.33 of Proposed Water Main of WASD						
WS-1050-14-0614	5.0	EA.	For making cut-in connection to existing (10.0" - 11.9")-inch water main, including capping the existing water main.			
Pay item WS-1050-14-0614 corresponds to pay item no.32 of Proposed Water Main of WASD						
WS-1050-14-0714	2.0	EA.	For making cut-in connection to existing (12.0" - 13.9")-inch water main, including capping the existing water main.			
Pay item WS-1050-14-0714 corresponds to pay item no.31 of Proposed Water Main of WASD						
WS-1050-17-0016	4.0	EA	Remove and Salvage Existing Fire Hydrant Assembly with Elbow/Shoe and Guard Posts			
Pay item WS-1050-17-0016 corresponds to pay item no.54 of Proposed Water Main of WASD						

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Item No	Quantity	Unit	Description	Written Unit Amount	Unit Price	Total
WS-1060-21-2740	48.0	EA	Furnishing and Installing (6.0-7.9") Clean-Out Assembly for Sewer Laterals			
Pay item WS-1060-21-2740 corresponds to pay item no.33 of Proposed Gravity Sewer						
WS-1060-22-2252	7.0	EA	For Selling and Delivering to the Department 8"x6" PVC Tee Branch Connection for Deep Sewers			
Pay item WS-1060-22-2252 corresponds to pay item no.38 of Proposed Gravity Sewer						
WS-1060-22-2262	13.0	EA	For Selling and Delivering to the Department 10"x6" PVC Tee Branch Connection for Deep Sewers			
Pay item WS-1060-22-2262 corresponds to pay item no.40 of Proposed Gravity Sewer						
WS-1060-22-2651	18.0	EA	For Selling and Delivering to the Department 8"x6" PVC Wye Branch Connection for Shallow Sewers			
Pay item WS-1060-22-2651 corresponds to pay item no.34 of Proposed Gravity Sewer						
WS-1060-22-2661	10.0	EA	For Selling and Delivering to the Department 10"x6" PVC Wye Branch Connection for Shallow Sewers			
Pay item WS-1060-22-2661 corresponds to pay item no.36 of Proposed Gravity Sewer						
WS-1060-22-2840	1,047.0	L.F.	For Selling and Delivering to the Department (6.0-7.9") PVC (C-900) Pipe for Sanitary Sewer Lateral.			
Pay item WS-1060-22-2840 corresponds to pay item no.31 of Proposed Gravity Sewer						
WS-1060-23-2252	7.0	EA	For Installing 8"x6" PVC Tee Branch Connection for Deep Sewers			
Pay item WS-1060-23-2252 corresponds to pay item no.39 of Proposed Gravity Sewer						
WS-1060-23-2262	13.0	EA	For Installing 10"x6" PVC Tee Branch Connection for Deep Sewers			
Pay item WS-1060-23-2262 corresponds to pay item no.41 of Proposed Gravity Sewer						

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Item No	Quantity	Unit	Description	Written Unit Amount	Unit Price	Total
WS-1060-23-2651	18.0	EA	For Installing 8"x6" PVC Wye Branch Connection for Shallow Sewers			
Pay item WS-1060-23-2651 corresponds to pay item no.35 of Proposed Gravity Sewer						
WS-1060-23-2661	10.0	EA	For Installing 10"x6" PVC Wye Branch Connection for Shallow Sewers			
Pay item WS-1060-23-2661 corresponds to pay item no.37 of Proposed Gravity Sewer						
WS-1060-23-2840	1,047.0	L.F.	For Installing (6.0-7.9") PVC (C-900) Pipe for Sanitary Sewer Lateral.			
Pay item WS-1060-23-2840 corresponds to pay item no.32 of Proposed Gravity Sewer						

Total: _____

The bidder understands and agrees that the above total is inclusive of all work necessary to complete the job as described in the plans and specifications.

Quantities are established and are included only for the purpose of facilitating the uniform comparison of bids submitted. The County shall not be held responsible if the quantities are not accurate and all computations for compensation shall be based upon the actual work performed, whether greater or less than estimated quantities.

Tax Identification Number: _____

D.C. Certificate of competency No: _____

Bidder's Name: _____

Bidder's telephone Number: _____

Bidder's address: _____

Bid Form

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BIDDER ACKNOWLEDGES THAT INCLUDED IN THE VARIOUS ITEMS OF THE PROPOSAL AND IN THE TOTAL BID PRICE ARE COSTS FOR COMPLYING WITH THE FLORIDA TRENCH SAFETY ACT (90-96), LAWS OF FLA. EFFECTIVE OCTOBER 1st, 1990. 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
A.					
B.					
C.					
D.					

FAILURE TO COMPLETE THE ABOVE MAY RESULT IN THE BID BEING DECLARED NON-RESPONSIVE

6.13 CONNECTIONS TO EXISTING SYSTEM

A. General

1. **All connections to existing mains of the Miami-Dade Water and Sewer Department shall be made under the direct supervision of Department personnel. Valves separating the main being installed from existing mains shall be operated by Department personnel upon request by the Contractor. Under no circumstances shall any of these valves be operated by the Contractor's personnel.**
2. **All connections to existing mains of COH shall be made under the direct supervision of COH/ Department personnel. Valves separating the main being installed from existing mains shall be operated by Department personnel upon request by the Contractor. Under no circumstances shall any of these valves be operated by the Contractor's personnel.**
3. The Contractor's attention is called to the fact that connections to existing mains may involve the removal of a concrete anchor and cast iron plug; also that the existing mains may be cast iron with poured lead, sulfur compound, or rubber gasket type joints, concrete with flanged outlet connections, galvanized iron with threaded joints, or others. The Contractor should be equipped with the proper tools and equipment to make connections to any one or more of these types of existing mains. New gaskets shall always be installed, regardless of the condition of the existing one. Other joint accessories, such as nuts, bolts and glands, shall be reused only if judged to be in good condition by the Engineer, unless otherwise specified in Section 3.00 "Sequence of Construction and General Information."
4. All necessary sheeting, shoring, dewatering, excavation, backfill and compaction, surface repairs, and other items and work appurtenant to or incidental to the work shall be performed by the Contractor. The Contractor shall include all costs for items and work provided by him for this type of connection in his price or prices bid under the various Quotation Items. No other compensation will be provided.

B. Water Facilities

1. Any proposed length of pipe, fitting, or valve to be installed as an integral part to an active main, shall be swabbed on the inside with calcium hypochlorite, HTH, Perchloron, or approved equal, mixed in solution with water. The quality of hypochlorite shall in all cases be subject to the approval of the Engineer whose representative shall be present at all times while this phase of the work is in progress. The installation shall be made as swiftly as possible after service has been halted in the pipeline and any water in the ditch shall be kept below the level of the length of pipe, fitting, or valve. The pipeline shall then be placed in service by Department personnel.
2. In the event any existing customers will be without water while a connection is being made, the Contractor shall notify them when the water will be

turned off and when he estimates service will be resumed. In some instances, these connections may have to be made at night.

- C. Contractor shall follow MD-WASD Standard Detail WS-4.13 for proposed pipe interconnection with existing 2-inch COH Water Main at intersection of NW 48 St. and NW 37 Ave. Services shall include as well cut, plug and abandon existing 2-inch WM after prop. 16-inch DIP WM is in service.

8.00 MEASUREMENT AND PAYMENT

A. General:

1. Payment for all the work completed under this Project shall be made in accordance with the provisions of the "Special Conditions" on the basis of the specific provisions of this section of the Specifications.
2. The Contractor will be paid each month the value of the work completed during the preceding month (less retainage) and the invoiced cost including applicable sales taxes and shipping value (less retainage) of materials not already used, but which have been furnished by the Contractor under the Specifications, provided that such materials have been delivered, properly stored and inspected by the Engineer and that payment therefore has been satisfactorily certified by the Contractor to the Engineer. Remaining cost for materials (less retainage) will be paid at the same time as installation. Any payment for materials which are not used will be withheld from the final payment.
3. The Contractor shall receive and accept the compensation as provided in the Quotation, the RPQ and "Invoices and Payments" of the "Special Conditions" as full payment for furnishing all labor, materials, tools and equipment, for performing all operations necessary to complete the work under this Contract, and also in full payment for all loss or damages arising from the nature of the Work, or from the action of the elements or from unforeseen difficulties which may be encountered during the prosecution of the work until the final acceptance by the Department.
4. The cost breakdown (or Schedule of Values) referred to herein is defined in "Schedule of Values" of the "Special Conditions." The cost breakdown (Schedule of Values) approved by the Engineer will be used as the basis for making progress payments and for determining the cost of extra work which is the same or similar (as determined by the Engineer) to that defined in the "Schedule of Values."
5. The prices stated in the Quotation includes full compensation for overhead and profit, all costs and expenses for taxes, labor, equipment, furnishing and repairing small tools and ordinary equipment, mobilization, home office expenses and general supervision, materials, commissions, transportation charges and expenses, patent fees and royalties, bond, insurance, labor for handling materials during inspection, together with any and all other costs and expenses for performing and completing the work as shown on the Plans and specified herein. In addition, the Contractor shall include the actual cost of social security taxes, unemployment insurance, worker's compensation, fringe benefits, inclusive of life and health insurance, union dues, pension, pension plans, vacations, and insurance and contractor's public liability and property damage insurance involved in the work based on the actual wages paid to such labor and all other general costs and profits, prorated to each item.
6. Unless otherwise specifically stated elsewhere herein, the Contractor shall include in the prices bid all materials, electrical supply, fuel, lubricants, temporary equipment, temporary wiring, temporary piping and fittings, pumps, gages, and all other items of whatever nature required to completely test, balance, disinfect if required, and put into fully operational condition all equipment and/or systems supplied by either the Department or the Contractor and installed as a part of this Project. Further, any test

materials supplied by the Contractor shall be completely satisfactory to the Department. Any decision as to whether a particular material is suitable for test purposes shall be at the sole discretion of the Engineer whose decision shall be final. Any material considered not suitable shall be immediately replaced by the Contractor with suitable material and no extra compensation will be allowed."

7. It is the intent of the Department to obtain a complete and working installation under this Contract, and any items of labor, equipment or materials which may reasonably be assumed as necessary to accomplish this end shall be supplied whether or not they are specifically shown on the Plans or stated herein.
8. For purposes of determining the monthly payments to be made to the Contractor for work accomplished, the value of the work completed shall be determined in the following manner:
 - a. Excavation, installation of pipe, valves and fittings, water services, fire hydrants, completed backfill, plugging existing mains and temporary paving repairs shall constitute seventy-five percent **(75%)** of the price bid for these Quotation Items.
 - b. Submittal of the PSM's daily progress reports and/or field book notes and monthly as-builts of the work that has been performed to date (all documents subject to approval and acceptance by the Department) shall constitute ten percent **(10%)** of the price bid for these Quotation Items.
 - c. Completion of all interior work in the pipeline including cleaning, hydrostatic testing, and disinfection of water mains, shall constitute five percent **(5%)** of the price bid for these Quotation Items.
 - d. Submittal of the final as-builts to the satisfaction of the Engineer, completion of all surface repairs, restoration of public or private facilities, appurtenances, and all other work not provided for under other Quotation Items shall constitute the remaining ten percent **(10%)** of the price bid for these Quotation Items.

B. Prices Bid:

1. The price bid for each item shall be stated in both words and figures in the appropriate places in the Quotation form. All blank spaces for bid prices must be filled in with ink, or with a typewriter. The Bidder is further directed that any and all alterations, changes, corrections and modifications, made to the Quotation forms prior to submission of bids, must be initialed by the Bidder. Non-compliance by the Bidder of this directive may be grounds for rejection of his bid.
2. In the event that there is a discrepancy between the price written in words and the price written in numbers, the price written in words shall govern except where the number of units multiplied by the unit price shown in numbers equals the total price for that bid item. In such case the unit price shown in numbers shall govern over the unit price shown in words.
3. Where an error is made in the calculation of the total bid price of an item, the unit price shall govern.
4. If the bidder makes an error in his addition of the total bid prices of the applicable items in the Quotation, the correct sum of its applicable bid item totals shall be the Total Bid.

5. It has been determined that the County is not exempt from the payment of Florida State Sales Tax under this Contract. All items of materials, equipment and supplies furnished by the Contractor and remaining a part of the completed Project are subject to this Tax. The Bidder shall include a sufficient amount of money to pay for this Tax in his bid price. Sufficient money to pay the Tax for all miscellaneous materials and minor items shown on the Plans, specified herein, or necessary for the work, and which will remain a part of the completed Project, shall also be included in the price or prices bid, and no other compensation will be provided.

C. Quotation Items:

It is intended that all work required to complete this Project will be included in the various bid items as follows:

Item No. 1

For performing preparatory work and operations in mobilizing for beginning the work of the Project, including preparation and acceptance of Maintenance of Traffic Plan (MOT), but excluding materials and permit costs, both of which are paid under other payment items, shall include, but not be limited to; preparation, submission and acceptance of the MOT, first by the Department and if acceptable to the Department, submission to and acceptance by all other governing authorities; supply, submission and correction of all "Pre-Approved Product Lists" and/or shop drawings; ordering the said equipment and materials in a timely fashion; those operations necessary for the movement of personnel, equipment, supplies and incidentals to the Project site and for the establishment of temporary offices, buildings, safety equipment and first aid supplies, sanitary and other facilities; the cost of reestablishing the design baseline, vertical control points and reference points, and establishing proposed pipeline location; the cost of MOT and permit preparation/submission/acceptance; the costs of bonds, required insurance and other preconstruction expense but excluding the actual cost of permits, which are paid under a separate dedicated allowance account and excluding the cost of materials which are paid under another bid item(s).

Not inclusive of the costs incurred in the provision of traffic control and the costs incurred in the provision of off-duty police officers that are to be paid for under separate Bid Items.

The mobilization item will be paid in the following manner:

Contracts with a contract duration of up to and including one hundred twenty (120) calendar days will be paid in two (2) separate payments, each equal to fifty (50) percent of the amount bid for this item.

Contracts with a contract duration of over one hundred twenty (120) calendar days will be paid in four (4) separate payments, each equal to twenty-five (25) percent of the amount bid for this item.

The two or four payments will be made with the first two or four payment draws and is conditioned upon progress satisfactory to the Engineer being made pursuant to the accepted Project.

The total amount of the partial payments may not exceed ten (10) percent of the original Subtotal of the bid items. Any remaining amount will be paid upon completion of all work on the Contract. Retainage, as specified in the "General Covenants and Conditions" and any Special Provisions will apply to these payments.

Since this item is bid as an aggregate sum, payment will be in accordance with the cost breakdown as approved by the Engineer and measured as required by and satisfactory to the Engineer.

Item Nos. 2, 6, 14, 18

For furnishing and delivering to the Department zinc-coated ductile iron pipe and pipe fittings for water mains of the nominal sizes specified in these bid items will be paid at the unit price bid times the number of linear feet accepted by the Engineer, which payment shall be full compensation for furnishing zinc-coated ductile iron pipe, pipe fittings, solid sleeves and specials; joint materials; joint thrust restraints; tie rods and eyebolts; corporation stops for testing and chlorination; vegetable soap lubricant; pipe bedding; backfill materials; temporary pavement materials; transportation and handling costs delivered ditchside; all shop drawing preparation and correction cost for material furnished under this item; all material and equipment required to clean, disinfect and test the main and fittings; and all other appurtenant and miscellaneous items (not included in another bid item) required for a complete and satisfactory installation.

The quantity for payment shall be the horizontal projection of the center line of the permanently installed and accepted pipe (of the particular bid item), including the length of fittings along the run, measured to the nearest one-tenth of a foot from P.I. to P.I. of bends and to the seat of the bell at the end of any particular line. The laying length of reducers, wyes, tees and crosses will be measured as pipe of the size of the largest diameter, and measured only once, only along run of wyes, tees and crosses so that the length of the outlets, even if of equal size to the run, will not be included in the measured length of lines connected to said outlets.

Item Nos. 3, 7, 15, 19

For installing zinc-coated ductile iron pipe and pipe fittings for water mains of the nominal sizes specified in these bid items will be paid for at the unit price bid times the number of linear feet installed and accepted by the Engineer. The price per foot for installing pipe and pipe fittings shall be full compensation for the completed pipeline, ready for service, and shall include, but not be limited to; exploratory excavation; excavation; sheeting and shoring if necessary; complying with the Florida Statutes "Trench Safety Act"; dewatering the excavation; transporting and unloading the pipe, fittings and all other materials not specified in other bid items from delivery trucks at the job site (trench side) and placing them into position in the trench; installing zinc-coated ductile iron pipe, pipe fittings, solid sleeves and specials; installing joint materials; installing joint thrust restraints; making thrust resistant joints; installing tie rods and eyebolts; cutting and installing nipples; making all connections within the lines themselves; tapping the main for corporation stops for testing and chlorination; cleaning, testing and disinfecting the pipe and fittings; placing and compacting backfill; removal and disposal of excess or unsuitable fill material, where required; maintaining access to residences and

businesses along the route of the main; protecting existing utilities along the route of the main; making temporary paving repairs; complying with work hour restrictions; satisfying all requirements of the Project permits; preparation and submittal of PSM's daily progress reports and/or field notes and monthly as-builts of the work that has been performed to date; moving and replacing utilities, fences, trees, landscaping, shrubs, mail boxes, sprinkler systems, shoulders, asphalt paths, curb & gutter, asphalt and plain concrete driveways, traffic separators and all other similar items, to original locations and to equal or better than original conditions; and all other appurtenant and miscellaneous items and work (not included in another bid item) including final cleanup for a complete, satisfactory and functional installation.

The quantity for payment shall be the horizontal projection of the center line of the permanently installed and accepted pipe (of the particular bid item), including the length of fittings along the run, measured to the nearest one-tenth of a foot from P.I. to P.I. of bends and to the seat of the bell at the end of any particular line. The laying length of reducers, wyes, tees and crosses will be measured as pipe of the size of the largest diameter, and measured only once, only along run of wyes, tees and crosses so that the length of the outlets, even if of equal size to the run, will not be included in the measured length of lines connected to said outlets.

Complete monthly redline as-builts shall be condition for approval of monthly progress payment requests.

Item No. 4, 8, 10, 16, 20

For furnishing and delivering to the Department ductile iron pipe and pipe fittings for water mains of the nominal size specified in this bid item will be paid at the unit price bid times the number of linear feet accepted by the Engineer, which payment shall be full compensation for furnishing ductile iron pipe, pipe fittings, solid sleeves and specials; joint materials; joint thrust restraints; tie rods and eyebolts; corporation stops for testing and chlorination; vegetable soap lubricant; pipe bedding; backfill materials; temporary pavement materials; transportation and handling costs delivered ditchside; all shop drawing preparation and correction cost for material furnished under this item; all material and equipment required to clean, disinfect and test the main and fittings; and all other appurtenant and miscellaneous items (not included in another bid item) required for a complete and satisfactory installation.

The quantity for payment shall be the horizontal projection of the center line of the permanently installed and accepted pipe (of the particular bid item), including the length of fittings along the run, measured to the nearest one-tenth of a foot from P.I. to P.I. of bends and to the seat of the bell at the end of any particular line. The laying length of reducers, wyes, tees, and crosses will be measured as pipe of the size of the largest diameter, and measured only once, only along run of wyes, tees and crosses so that the length of the outlets, even if of equal size to the run, will not be included in the measured length of lines connected to said outlets.

Item No. 5, 9, 11, 17, 21

For installing ductile iron pipe and pipe fittings for water mains of the nominal size specified in this bid item will be paid for at the unit price bid times the number of linear feet installed and accepted by the Engineer. The price per foot for installing pipe and pipe fittings shall be full compensation for the completed pipeline, ready

for service, and shall include, but not be limited to; exploratory excavation; excavation; sheeting and shoring if necessary; complying with the Florida Statutes "Trench Safety Act"; dewatering the excavation; transporting and unloading the pipe, fittings and all other materials not specified in other bid items from delivery trucks at the job site (trench side) and placing them into position in the trench; installing ductile iron pipe, pipe fittings, solid sleeves and specials; installing joint materials; installing joint thrust restraints; making thrust resistant joints; installing tie rods and eyebolts; cutting and installing nipples; making all connections within the lines themselves; tapping the main for corporation stops for testing and chlorination; cleaning, testing and disinfecting the pipe and fittings; placing and compacting backfill; removal and disposal of excess or unsuitable fill material, where required; maintaining access to residences and businesses along the route of the main; protecting existing utilities along the route of the main; making temporary paving repairs; complying with work hour restrictions; satisfying all requirements of the Project permits; preparation and submittal of PSM's daily progress reports and/or field notes and monthly as-builts of the work that has been performed to date; moving and replacing utilities, fences, trees, landscaping, shrubs, mail boxes, sprinkler systems, shoulders, asphalt paths, curb & gutter, asphalt and plain concrete driveways, traffic separators and all other similar items, to original locations and to equal or better than original conditions; and all other appurtenant and miscellaneous items and work (not included in another bid item) including final cleanup for a complete, satisfactory and functional installation.

The quantity for payment shall be the horizontal projection of the center line of the permanently installed and accepted pipe (of the particular bid item), including the length of fittings along the run, measured to the nearest one-tenth of a foot from P.I. to P.I. of bends and to the seat of the bell at the end of any particular line. The laying length of reducers, wyes, tees and crosses will be measured as pipe of the size of the largest diameter, and measured only once, only along run of wyes, tees and crosses so that the length of the outlets, even if of equal size to the run, will not be included in the measured length of lines connected to said outlets.

Complete monthly redline as-builts shall be condition for approval of monthly progress payment requests.

Item No. 12

For furnishing and delivering to the Department PVC C-900 DR 18 pipe and poly-wrapped ductile iron fittings for water mains of the nominal sizes specified in this bid item will be paid at the unit price bid times the number of linear feet accepted by the Engineer, which payment shall be full compensation for furnishing PVC C-900 DR 18 pipe, pipe fittings, solid sleeves and specials; joint materials; joint thrust restraints; tie rods and eyebolts; corporation stops for testing and chlorination; vegetable soap lubricant; pipe bedding; backfill materials; temporary pavement materials; transportation and handling costs delivered ditchside; all shop drawing preparation and correction cost for material furnished under this item; all material and equipment required to clean, disinfect and test the main and fittings; and all other appurtenant and miscellaneous items (not included in another bid item) required for a complete and satisfactory installation.

The quantity for payment shall be the horizontal projection of the center line of the permanently installed and accepted pipe (of the particular bid item), including the length of fittings along the run, measured to the nearest one-tenth of a foot from

P.I. to P.I. of bends and to the seat of the bell at the end of any particular line. The laying length of reducers, wyes, tees and crosses will be measured as pipe of the size of the largest diameter, and measured only once, only along run of wyes, tees and crosses so that the length of the outlets, even if of equal size to the run, will not be included in the measured length of lines connected to said outlets.

This pipe section represents a temporary solution to bypass the flow from COH system to WASD.

Once additional Water Mains are installed as part of Water/ Sewer-Phase II project, this pipe section will be abandoned in place.

Item No. 13

For installing PVC C-900 DR 18 pipe and poly-wrapped ductile iron fittings for water mains of the nominal sizes specified in these bid items will be paid for at the unit price bid times the number of linear feet installed and accepted by the Engineer. The price per foot for installing pipe and pipe fittings shall be full compensation for the completed pipeline, ready for service, and shall include, but not be limited to; exploratory excavation; excavation; sheeting and shoring if necessary; complying with the Florida Statutes "Trench Safety Act"; dewatering the excavation; transporting and unloading the pipe, fittings and all other materials not specified in other bid items from delivery trucks at the job site (trench side) and placing them into position in the trench; installing PVC C900 DR 18 pipe, pipe fittings, solid sleeves and specials; installing joint materials; installing joint thrust restraints; making thrust resistant joints; installing tie rods and eyebolts; cutting and installing nipples; making all connections within the lines themselves; tapping the main for corporation stops for testing and chlorination; cleaning, testing and disinfecting the pipe and fittings; placing and compacting backfill; removal and disposal of excess or unsuitable fill material, where required; maintaining access to residences and businesses along the route of the main; protecting existing utilities along the route of the main; making temporary paving repairs; complying with work hour restrictions; satisfying all requirements of the Project permits; preparation and submittal of PSM's daily progress reports and/or field notes and monthly as-builts of the work that has been performed to date; moving and replacing utilities, fences, trees, landscaping, shrubs, mail boxes, sprinkler systems, shoulders, asphalt paths, curb & gutter, asphalt and plain concrete driveways, traffic separators and all other similar items, to original locations and to equal or better than original conditions; and all other appurtenant and miscellaneous items and work (not included in another bid item) including final cleanup for a complete, satisfactory and functional installation.

The quantity for payment shall be the horizontal projection of the center line of the permanently installed and accepted pipe (of the particular bid item), including the length of fittings along the run, measured to the nearest one-tenth of a foot from P.I. to P.I. of bends and to the seat of the bell at the end of any particular line. The laying length of reducers, wyes, tees and crosses will be measured as pipe of the size of the largest diameter, and measured only once, only along run of wyes, tees and crosses so that the length of the outlets, even if of equal size to the run, will not be included in the measured length of lines connected to said outlets.

Complete monthly redline as-builts shall be condition for approval of monthly progress payment requests.

Item No. 22

For furnishing and installing steel casings for water mains for MDT's crossings of the nominal size specified in this bid item; will be paid for at the unit price bid times the number of linear feet installed and accepted by the Engineer. The price per foot for installing steel casing shall be full compensation for furnishing casing; transportation and handling costs delivered ditchside; all shop drawing preparation and correction cost for material furnished under this item; completed installation, ready for service, and shall include, but not be limited to; exploratory excavation; excavation; sheeting and shoring if necessary; complying with the Florida Statutes "Trench Safety Act"; dewatering the excavation; transporting and unloading the casing and all other materials not specified in other bid items from delivery trucks at the job site (trench side) and placing them into position in the trench; complying with work hour restrictions; satisfying all requirements of the Project permits; preparation and submittal of PSM's daily progress reports and/or field notes and monthly as-builts of the work that has been performed to date; moving and replacing utilities, fences, trees, landscaping, shrubs, mail boxes, sprinkler systems, shoulders, asphalt paths, curb & gutter, asphalt and plain concrete driveways, traffic separators and all other similar items, to original locations and to equal or better than original conditions; and all other appurtenant and miscellaneous items and work (not included in another bid item) including final cleanup for a complete, satisfactory and functional installation.

Item No. 23

For furnishing materials, labor, and equipment to perform microtunnel underneath the FDOT-SFRTA easement will be paid from the unit price established by the Contractor for this purpose which represents the amount the Contractor feels is necessary for the complete installation, under the supervision of Department forces, and satisfactory work accepted by the Engineer, and shall include, but not be limited to; preparation of a quality control manual for the shaft construction and microtunneling operation; preparation of a detailed schedule of work for the shaft construction and microtunneling operation; exploratory excavation to verify existing utilities; excavation; constructing the jacking and receiving shafts; dewatering the excavation; sheeting and shoring when required for complying with the Trench Safety Act; providing safe watertight shafts to the satisfaction of the Department, the Engineer, and FDOT-SFRTA; preparation of the staging areas; furnishing approximately 68 LF of 30-inch steel casing pipe and spacers; executing the microtunneling operations; furnishing all materials and equipment required to clean and test the installations; cleaning and testing the installations; placing and compacting backfill; furnishing grout to fill annular spaces between casing pipes and carrier pipes; furnishing additional suitable backfill material, if required; temporary and permanent paving repairs around the excavation outside the shaft perimeters, if required; transportation and handling costs; coordination with Department forces; and all other appurtenant and miscellaneous items and work (not included in another bid item) for a complete, satisfactory, and functional installation.

Item No. 24

For furnishing materials, labor, and equipment to perform microtunnel underneath the FEC easement will be paid from the unit price established by the Contractor for this purpose which represents the amount the Contractor feels is necessary for the complete installation, under the supervision of Department forces, and satisfactory work accepted by the Engineer, and shall include, but not be limited to; preparation of a quality control manual for the shaft construction and microtunneling operation; preparation of a detailed schedule of work for the shaft construction and microtunneling operation; exploratory excavation to verify existing utilities; excavation; constructing the jacking and receiving shafts; dewatering the excavation; sheeting and shoring when required for complying with the Trench Safety Act; providing safe watertight shafts to the satisfaction of the Department, the Engineer, and FEC; preparation of the staging areas; furnishing approximately 300 LF of 30-inch steel casing pipe and spacers; executing the microtunneling operations; furnishing all materials and equipment required to clean and test the installations; cleaning and testing the installations; placing and compacting backfill; furnishing grout to fill annular spaces between casing pipes and carrier pipes; furnishing additional suitable backfill material, if required; temporary and permanent paving repairs around the excavation outside the shaft perimeters, if required; transportation and handling costs; coordination with Department forces; and all other appurtenant and miscellaneous items and work (not included in another bid item) for a complete, satisfactory, and functional installation.

Item No. 25

For furnishing materials, labor, and equipment to perform microtunnel underneath the FDOT-SFRTA easement will be paid from the unit price established by the Contractor for this purpose which represents the amount the Contractor feels is necessary for the complete installation, under the supervision of Department forces, and satisfactory work accepted by the Engineer, and shall include, but not be limited to; preparation of a quality control manual for the shaft construction and microtunneling operation; preparation of a detailed schedule of work for the shaft construction and microtunneling operation; exploratory excavation to verify existing utilities; excavation; constructing the jacking and receiving shafts; dewatering the excavation; sheeting and shoring when required for complying with the Trench Safety Act; providing safe watertight shafts to the satisfaction of the Department, the Engineer, and FDOT-SFRTA; preparation of the staging areas; furnishing approximately 149 LF of 30-inch steel casing pipe and spacers; executing the microtunneling operations; furnishing all materials and equipment required to clean and test the installations; cleaning and testing the installations; placing and compacting backfill; furnishing grout to fill annular spaces between casing pipes and carrier pipes; furnishing additional suitable backfill material, if required; temporary and permanent paving repairs around the excavation outside the shaft perimeters, if required; transportation and handling costs; coordination with Department forces; and all other appurtenant and miscellaneous items and work (not included in another bid item) for a complete, satisfactory, and functional installation.

Item No. 26

For making a tapping connection to an existing (12") water main at:

NW 36 St. and NW 37 Ave. (STA 20+51±)

including furnishing and installing a tapping sleeve (stainless steel) and tapping valve, as shown on the Plans, complete, will be paid from the aggregate sum established by the Contractor for this purpose which represents the amount the Contractor feels is necessary for the complete installation and satisfactory work accepted by the Engineer, ready for service, and shall include, but not be limited to, exploratory excavation to verify the main size and material prior to ordering the tapping sleeve; excavation; sheeting and shoring if necessary; complying with the Florida Statutes "Trench Safety Act"; dewatering the excavation; furnishing and installing tapping sleeve, tapping valve, piping, fittings, joint materials, restraintment, riser pipes, valve box and covers with concrete collars, and other necessary materials; pressure testing the tapping sleeve; pressure testing the tapping valve in both directions before installation; placing concrete valve support pad; unloading tapping machine from Department's vehicle, positioning it in trench to be bolted to the valve and loading tapping machine onto Department's vehicle after tapping operation is completed by Department forces; assisting Department's forces in performing the tapping operation; furnishing all materials and equipment required to clean, test and disinfect the connection; cleaning, testing and disinfecting the connection; making thrust resistant joints; placing and compacting backfill; temporary and permanent paving repairs outside the main trench line, if necessary; transportation and handling costs; coordinating with Department forces; and all other appurtenant and miscellaneous items and work (not included in another bid item) for a complete, satisfactory, and functional installation.

Since this item is bid as an aggregate sum, payment will be in accordance with the cost breakdown as approved by the Engineer and measured as required by and satisfactory to the Engineer.

Item No. 27

For making tapping connection(s) to existing (12") water main(s) at:

North of NW 41 St. and NW 37 Ave. (STA 37+02±)

NW 46 St. and NW 37 Ave. (STA 46+88±)

including furnishing and installing tapping sleeve(s) (stainless steel) and tapping valve(s), and cutting and capping existing mains, as shown on the Plans, complete, will be paid for at the unit price bid times the number of connections installed and accepted. The price bid shall be full compensation for each complete installation, ready for service, and shall include, but not be limited to, exploratory excavation to verify the main size and material prior to ordering the tapping sleeve; excavation; sheeting and shoring if necessary; complying with the Florida Statutes "Trench Safety Act"; dewatering the excavation; furnishing and installing tapping sleeve, tapping valve, piping, fittings, joint materials, restraintment, riser pipes, valve box and covers with concrete collars, and other necessary materials; pressure testing the tapping sleeve; pressure testing the tapping valve in both directions before installation; placing concrete valve support pad; unloading tapping machine from Department's vehicle, positioning it in trench to be bolted to the valve and loading tapping machine onto Department's vehicle after tapping operation is completed by Department forces; assisting Department's forces in performing the tapping operation; furnishing all materials and equipment required to clean, test and disinfect the connection; cleaning, testing and disinfecting the connection; making

thrust resistant joints; furnishing and installing plugs and caps on the existing main and placing it out of service; placing and compacting backfill; temporary and permanent paving repairs outside the main trench line, if necessary; legal disposal of removed pipe and debris; transportation and handling costs; coordinating with Department forces; and all other appurtenant and miscellaneous items and work (not included in another bid item) for a complete, satisfactory, and functional installation.

Note: This Bid Item will only pay for plugs on existing water mains that will be permanently left in place at the referenced location. Plugs and caps on proposed mains will not be paid for as part of this Bid Item. Plugs and caps on the end of the proposed mains shall be paid for as part of the Bid Item for the pipeline installation.

Item No. 28

For making tapping connection(s) to existing (8") water main(s) at:

South of NW 46 St. and NW 37 Ave. (STA 43+74±)

including furnishing and installing tapping sleeve(s) (stainless steel) and tapping valve(s), and cutting and capping existing mains, as shown on the Plans, complete, will be paid for at the unit price bid times the number of connections installed and accepted. The price bid shall be full compensation for each complete installation, ready for service, and shall include, but not be limited to, exploratory excavation to verify the main size and material prior to ordering the tapping sleeve; excavation; sheeting and shoring if necessary; complying with the Florida Statutes "Trench Safety Act"; dewatering the excavation; furnishing and installing tapping sleeve, tapping valve, piping, fittings, joint materials, restraintment, riser pipes, valve box and covers with concrete collars, and other necessary materials; pressure testing the tapping sleeve; pressure testing the tapping valve in both directions before installation; placing concrete valve support pad; unloading tapping machine from Department's vehicle, positioning it in trench to be bolted to the valve and loading tapping machine onto Department's vehicle after tapping operation is completed by Department forces; assisting Department's forces in performing the tapping operation; furnishing all materials and equipment required to clean, test and disinfect the connection; cleaning, testing and disinfecting the connection; making thrust resistant joints; furnishing and installing plugs and caps on the existing main and placing it out of service; placing and compacting backfill; temporary and permanent paving repairs outside the main trench line, if necessary; legal disposal of removed pipe and debris; transportation and handling costs; coordinating with Department forces; and all other appurtenant and miscellaneous items and work (not included in another bid item) for a complete, satisfactory, and functional installation.

Note: This Bid Item will only pay for plugs on existing water mains that will be permanently left in place at the referenced location. Plugs and caps on proposed mains will not be paid for as part of this Bid Item. Plugs and caps on the end of the proposed mains shall be paid for as part of the Bid Item for the pipeline installation.

Item No. 29

For making a tapping connection to an existing (6") water main at:

South of NW 67 St. and NW 37 Ave. (STA 112+76±)

including furnishing and installing a tapping sleeve (stainless steel) and tapping valve, and cutting and capping existing mains, as shown on the Plans, complete, will be paid from the aggregate sum established by the Contractor for this purpose which represents the amount the Contractor feels is necessary for the complete installation and satisfactory work accepted by the Engineer, ready for service, and shall include, but not be limited to, exploratory excavation to verify the main size and material prior to ordering the tapping sleeve; excavation; sheeting and shoring if necessary; complying with the Florida Statutes "Trench Safety Act"; dewatering the excavation; furnishing and installing tapping sleeve, tapping valve, piping, fittings, joint materials, restraintment, riser pipes, valve box and covers with concrete collars, and other necessary materials; pressure testing the tapping sleeve; pressure testing the tapping valve in both directions before installation; placing concrete valve support pad; unloading tapping machine from Department's vehicle, positioning it in trench to be bolted to the valve and loading tapping machine onto Department's vehicle after tapping operation is completed by Department forces; assisting Department's forces in performing the tapping operation; furnishing all materials and equipment required to clean, test and disinfect the connection; cleaning, testing and disinfecting the connection; making thrust resistant joints; furnishing and installing plugs and caps on the existing main and placing it out of service; placing and compacting backfill; temporary and permanent paving repairs outside the main trench line, if necessary; legal disposal of removed pipe and debris; transportation and handling costs; coordinating with Department forces; and all other appurtenant and miscellaneous items and work (not included in another bid item) for a complete, satisfactory, and functional installation.

Since this item is bid as an aggregate sum, payment will be in accordance with the cost breakdown as approved by the Engineer and measured as required by and satisfactory to the Engineer.

Note: This Bid Item will only pay for plugs on existing water mains that will be permanently left in place at the referenced location. Plugs and caps on proposed mains will not be paid for as part of this Bid Item. Plugs and caps on the end of the proposed mains shall be paid for as part of the Bid Item for the pipeline installation.

Item No. 30

For making a tapping connection to an existing 60-inch concrete water main at:

NW 67 St. and NW 37 Ave. (STA 114+21±)

including furnishing and installing 60"x16" tapping saddle and 16" tapping valve, as shown on the Plans, complete, will be paid from the aggregate sum established by the Contractor for this purpose which represents the amount the Contractor feels is necessary for the complete installation and satisfactory work accepted by the Engineer, ready for service, and shall include, but not be limited to, exploratory excavation to verify the main size and material prior to ordering the tapping saddle; excavation; sheeting and shoring if necessary; complying with the Florida Statutes "Trench Safety Act"; dewatering the excavation; furnishing and installing tapping saddle, tapping valve, piping, fittings, joint materials, restraintment, riser pipes,

valve box and covers with concrete collars, and other necessary materials; obtaining the services of a tapping specialist to tap the existing water main; preparation of the existing main for installation of the saddle; pressure testing the tapping saddle; pressure testing the tapping valve in both directions before installation; placing concrete valve support pad; tapping the existing main; encasing the installed tapping saddle in concrete; furnishing all materials and equipment required to clean, test and disinfect the connection; cleaning, testing and disinfecting the connection; making thrust resistant joints; placing and compacting backfill; temporary and permanent paving repairs outside the main trench line, if necessary; transportation and handling costs; coordinating with Department forces; and all other appurtenant and miscellaneous items and work (not included in another bid item) for a complete, satisfactory, and functional installation.

Since this item is bid as an aggregate sum, payment will be in accordance with the cost breakdown as approved by the Engineer and measured as required by and satisfactory to the Engineer.

Item No. 31

For making cut-in connection(s) to existing (12") water main(s) at:

NW 36 St. and NW 37 Ave. (STA 20+69±)

NW 36 St. and NW 37 Ave. (STA 146+42±)

as shown on the Plans, complete, will be paid for at the unit price bid times the number of connections installed and accepted by the Engineer. The price bid shall be full compensation for each complete installation, ready for service, and shall include, but not be limited to, exploratory excavation to verify the main size and material; excavation; sheeting and shoring if necessary; complying with the Florida Statutes "Trench Safety Act"; dewatering the excavation; cutting the existing main, removing section of existing pipe and connecting the proposed water main to the existing main; furnishing and installing any required pipe, valves and fittings, valve box and lids with concrete collars, riser pipe, restraintment, and other necessary materials; installing solid sleeves; making thrust restrained joints; installing plugs and caps on the existing main and placing it out of service, if required; legal disposal of removed pipe and debris; furnishing all materials and equipment required to clean, test and disinfect the connection; cleaning, disinfecting and testing the connection; placing and compacting backfill; furnishing additional suitable backfill material, if required; temporary and permanent paving repairs around the connection outside the trench line, if required; transportation and handling costs; coordination with Department forces; and all other appurtenant and miscellaneous items and work (not included in another bid item) for a complete, satisfactory, and functional installation.

Note: This Bid Item will only pay for plugs on existing water mains that will be permanently left in place at the referenced location. Plugs and caps on proposed mains will not be paid for as part of this Bid Item. Plugs and caps on the end of the proposed mains shall be paid for as part of the Bid Item for the pipeline installation.

Item No. 32

For making cut-in connection(s) to existing (10") water main(s) at:

NW 60 St. and NW 37 Ave. (STA 94+43±)

NW 62 St. and NW 37 Ave. (STA 101+16±)

NW 67 St. and NW 37 Ave. (2) (STA 114+51±) (STA 114+53±)

NW 71 St. and NW 37 Ave. (STA 127+90±)

as shown on the Plans, complete, will be paid for at the unit price bid times the number of connections installed and accepted by the Engineer. The price bid shall be full compensation for each complete installation, ready for service, and shall include, but not be limited to, exploratory excavation to verify the main size and material; excavation; sheeting and shoring if necessary; complying with the Florida Statutes "Trench Safety Act"; dewatering the excavation; cutting the existing main, removing section of existing pipe and connecting the proposed water main to the existing main; furnishing and installing any required pipe, valves and fittings, valve box and lids with concrete collars, riser pipe, restraintment, and other necessary materials; installing solid sleeves; making thrust restrained joints; installing plugs and caps on the existing main and placing it out of service, if required; legal disposal of removed pipe and debris; furnishing all materials and equipment required to clean, test and disinfect the connection; cleaning, disinfecting and testing the connection; placing and compacting backfill; furnishing additional suitable backfill material, if required; temporary and permanent paving repairs around the connection outside the trench line, if required; transportation and handling costs; coordination with Department forces; and all other appurtenant and miscellaneous items and work (not included in another bid item) for a complete, satisfactory, and functional installation.

Note: This Bid Item will only pay for plugs on existing water mains that will be permanently left in place at the referenced location. Plugs and caps on proposed mains will not be paid for as part of this Bid Item. Plugs and caps on the end of the proposed mains shall be paid for as part of the Bid Item for the pipeline installation.

Item No. 33

For making cut-in connection(s) to existing (8") water main(s) at:

NW 41 St. and NW 37 Ave. (STA 33+86±)

NW 47 St. and NW 37 Ave. (STA 49+84±)

NW 67 St. and NW 37 Ave. (STA 114+39±)

South of NW 73 St. and NW 37 Ave. (STA 136+42±)

NW 74 St. and NW 37 Ave. (STA 138+94±)

NW 79 St. and NW 37 Ave. (STA 154+12±)

NW 82 St. and NW 37 Ave. (STA 164+61±)

as shown on the Plans, complete, will be paid for at the unit price bid times the number of connections installed and accepted by the Engineer. The price bid shall be full compensation for each complete installation, ready for service, and shall include, but not be limited to, exploratory excavation to verify the main size and material; excavation; sheeting and shoring if necessary; complying with the Florida Statutes "Trench Safety Act"; dewatering the excavation; cutting the existing main, removing section of existing pipe and connecting the proposed water main to the existing main; furnishing and installing any required pipe, valves and fittings, valve box and lids with concrete collars, riser pipe, restraintment, and other necessary materials; installing solid sleeves; making thrust restrained joints; installing plugs

and caps on the existing main and placing it out of service, if required; legal disposal of removed pipe and debris; furnishing all materials and equipment required to clean, test and disinfect the connection; cleaning, disinfecting and testing the connection; placing and compacting backfill; furnishing additional suitable backfill material, if required; temporary and permanent paving repairs around the connection outside the trench line, if required; transportation and handling costs; coordination with Department forces; and all other appurtenant and miscellaneous items and work (not included in another bid item) for a complete, satisfactory, and functional installation.

Note: This Bid Item will only pay for plugs on existing water mains that will be permanently left in place at the referenced location. Plugs and caps on proposed mains will not be paid for as part of this Bid Item. Plugs and caps on the end of the proposed mains shall be paid for as part of the Bid Item for the pipeline installation.

Item No. 34

For making cut-in connection(s) to existing (6") water main(s) at:

NW 37 Ct. and NW 37 Ave. (STA 122+63±)

South of NW 73 St. and NW 37 Ave. (STA 137+12±)

NW 81 St. and NW 37 Ave. (STA 161+42±)

as shown on the Plans, complete, will be paid for at the unit price bid times the number of connections installed and accepted by the Engineer. The price bid shall be full compensation for each complete installation, ready for service, and shall include, but not be limited to, exploratory excavation to verify the main size and material; excavation; sheeting and shoring if necessary; complying with the Florida Statutes "Trench Safety Act"; dewatering the excavation; cutting the existing main, removing section of existing pipe and connecting the proposed water main to the existing main; furnishing and installing any required pipe, valves and fittings, valve box and lids with concrete collars, riser pipe, restraintment, and other necessary materials; installing solid sleeves; making thrust restrained joints; installing plugs and caps on the existing main and placing it out of service, if required; legal disposal of removed pipe and debris; furnishing all materials and equipment required to clean, test and disinfect the connection; cleaning, disinfecting and testing the connection; placing and compacting backfill; furnishing additional suitable backfill material, if required; temporary and permanent paving repairs around the connection outside the trench line, if required; transportation and handling costs; coordination with Department forces; and all other appurtenant and miscellaneous items and work (not included in another bid item) for a complete, satisfactory, and functional installation.

Note: This Bid Item will only pay for plugs on existing water mains that will be permanently left in place at the referenced location. Plugs and caps on proposed mains will not be paid for as part of this Bid Item. Plugs and caps on the end of the proposed mains shall be paid for as part of the Bid Item for the pipeline installation.

Item No. 35

For making cut-in connection to existing (2") Water Main at:
NW 48 ST and NW 37 Ave. (STA 52+78.58)

as shown on the Plans, complete, will be paid for at the unit price bid times the number of connections installed and accepted by the Engineer. The price bid shall be full compensation for each complete installation in accordance with Department Standard Detail WS 4.13; , ready for service, and shall include, but not be limited to, excavation; complying with the Florida Statutes "Trench Safety Act"; dewatering the excavation; furnishing and installing corporation stops; furnishing and installing HDPE pipe or tubing, couplings, unions, service terminal fittings, valves and other miscellaneous fittings; placing and compacting backfill; temporary paving repairs or driving casing pipe under the pavement; saw-cutting,; furnishing all materials and equipment necessary to clean, test and disinfect the main, install plugs and place out of service existing water mains at locations indicated on the plans; together with all other required items and work to provide a complete, satisfactory, and functional installations.

Item No. 36

For furnishing and delivering to the Department 16-inch mechanical joint resilient-seated gate valves for water main, valve box & lid and riser pipe, complete, will be paid at the unit price bid times the number of valves accepted by the Engineer. The price bid shall be full compensation for furnishing all materials and supplies required for each complete and satisfactory installation, ready for service and shall include, but not be limited to; furnishing 16-inch mechanical joint resilient-seated gate valves; furnishing valve box & lid and riser pipe; furnishing joint materials; transportation and handling costs; and all other appurtenant and miscellaneous items and work required for a complete installation.

Item No. 37

For installing 16-inch mechanical joint resilient-seated gate valves for water main, valve boxes & lids and riser pipe, complete, will be paid at the unit price bid price times the number of valves installed by the Contractor and accepted by the Engineer. The price bid shall be full compensation for furnishing all materials and supplies required for each complete and satisfactory installation, ready for service and shall include, but not be limited to; complying with the Florida Statutes "Trench Safety Act"; exploratory excavation; excavation; dewatering the excavation; transporting and unloading the valve at the installation location; installing gate valves complete with valve box & lids and riser pipe; placing and compacting backfill; furnishing additional suitable backfill material, if required; installing joint materials as required; cleaning, testing and disinfecting; and all other appurtenant and miscellaneous items (not included in another bid item) required for a complete, functional and acceptable installation.

Item No. 38

For furnishing and delivering to the Department 12-inch mechanical joint resilient-seated gate valves for water main, valve box & lid and riser pipe, complete, will be paid at the unit price bid times the number of valves accepted by the Engineer. The price bid shall be full compensation for furnishing all materials and supplies required for each complete and satisfactory installation, ready for service and shall include, but not be limited to; furnishing 12-inch mechanical joint resilient-seated gate valves; furnishing valve box & lid and riser pipe; furnishing joint materials;

transportation and handling costs; and all other appurtenant and miscellaneous items and work required for a complete installation.

Item No. 39

For installing 12-inch mechanical joint resilient-seated gate valves for water main, valve boxes & lids and riser pipe, complete, will be paid at the unit price bid price times the number of valves installed by the Contractor and accepted by the Engineer. The price bid shall be full compensation for furnishing all materials and supplies required for each complete and satisfactory installation, ready for service and shall include, but not be limited to; complying with the Florida Statutes "Trench Safety Act"; exploratory excavation; excavation; dewatering the excavation; transporting and unloading the valve at the installation location; installing gate valves complete with valve box & lids and riser pipe; placing and compacting backfill; furnishing additional suitable backfill material, if required; installing joint materials as required; cleaning, testing and disinfecting; and all other appurtenant and miscellaneous items (not included in another bid item) required for a complete, functional and acceptable installation.

Item No. 40

For furnishing and delivering to the Department 10-inch mechanical joint resilient-seated gate valves for water main, valve box & lid and riser pipe, complete, will be paid at the unit price bid times the number of valves accepted by the Engineer. The price bid shall be full compensation for furnishing all materials and supplies required for each complete and satisfactory installation, ready for service and shall include, but not be limited to; furnishing 10-inch mechanical joint resilient-seated gate valves; furnishing valve box & lid and riser pipe; furnishing joint materials; transportation and handling costs; and all other appurtenant and miscellaneous items and work required for a complete installation.

Item No. 41

For installing 10-inch mechanical joint resilient-seated gate valves for water main, valve boxes & lids and riser pipe, complete, will be paid at the unit price bid price times the number of valves installed by the Contractor and accepted by the Engineer. The price bid shall be full compensation for furnishing all materials and supplies required for each complete and satisfactory installation, ready for service and shall include, but not be limited to; complying with the Florida Statutes "Trench Safety Act"; exploratory excavation; excavation; dewatering the excavation; transporting and unloading the valve at the installation location; installing gate valves complete with valve box & lids and riser pipe; placing and compacting backfill; furnishing additional suitable backfill material, if required; installing joint materials as required; cleaning, testing and disinfecting; and all other appurtenant and miscellaneous items (not included in another bid item) required for a complete, functional and acceptable installation.

Item No. 42

For furnishing and delivering to the Department 8-inch mechanical joint resilient-seated gate valves for water main, valve box & lid and riser pipe, complete, will be paid at the unit price bid times the number of valves accepted by the Engineer. The price bid shall be full compensation for furnishing all materials and supplies required for each complete and satisfactory installation, ready for service and shall include, but not be limited to; furnishing 12-inch mechanical joint resilient-seated

gate valves; furnishing valve box & lid and riser pipe; furnishing joint materials; transportation and handling costs; and all other appurtenant and miscellaneous items and work required for a complete installation.

Item No. 43

For installing 8-inch mechanical joint resilient-seated gate valves for water main, valve boxes & lids and riser pipe, complete, will be paid at the unit price bid price times the number of valves installed by the Contractor and accepted by the Engineer. The price bid shall be full compensation for furnishing all materials and supplies required for each complete and satisfactory installation, ready for service and shall include, but not be limited to; complying with the Florida Statutes "Trench Safety Act"; exploratory excavation; excavation; dewatering the excavation; transporting and unloading the valve at the installation location; installing gate valves complete with valve box & lids and riser pipe; placing and compacting backfill; furnishing additional suitable backfill material, if required; installing joint materials as required; cleaning, testing and disinfecting; and all other appurtenant and miscellaneous items (not included in another bid item) required for a complete, functional and acceptable installation.

Item No. 44

For furnishing and delivering to the Department 6-inch mechanical joint resilient-seated gate valves for water main, valve box & lid and riser pipe, complete, will be paid at the unit price bid times the number of valves accepted by the Engineer. The price bid shall be full compensation for furnishing all materials and supplies required for each complete and satisfactory installation, ready for service and shall include, but not be limited to; furnishing 6-inch mechanical joint resilient-seated gate valves; furnishing valve box & lid and riser pipe; furnishing joint materials; transportation and handling costs; and all other appurtenant and miscellaneous items and work required for a complete installation.

Item No. 45

For installing 6-inch mechanical joint resilient-seated gate valves for water main, valve boxes & lids and riser pipe, complete, will be paid at the unit price bid price times the number of valves installed by the Contractor and accepted by the Engineer. The price bid shall be full compensation for furnishing all materials and supplies required for each complete and satisfactory installation, ready for service and shall include, but not be limited to; complying with the Florida Statutes "Trench Safety Act"; exploratory excavation; excavation; dewatering the excavation; transporting and unloading the valve at the installation location; installing gate valves complete with valve box & lids and riser pipe; placing and compacting backfill; furnishing additional suitable backfill material, if required; installing joint materials as required; cleaning, testing and disinfecting; and all other appurtenant and miscellaneous items (not included in another bid item) required for a complete, functional and acceptable installation.

Item No. 46

For furnishing and installing 1-inch single services (both short and long), including reconnection of customer's service pipe and meter transfer, will be paid for at the unit price bid for each type of service times the number of that type of service installed. The price bid per service shall be full compensation for its complete construction, ready for connection or reconnection as appropriate, and shall

include, but not be limited to, furnishing and installing all materials in accordance with Department Standard Details WS 2.10 and WS 2.16 as applicable to each type of service; excavation; complying with the Florida Statutes "Trench Safety Act"; dewatering the excavation; furnishing and installing corporation stops; furnishing and installing HDPE pipe or tubing, couplings, unions, service terminal fittings, valves and other miscellaneous fittings; furnishing and installing meter boxes with lids for services; furnishing and installing perforated spacers and tail pieces; transporting and unloading pipe, tubing, meter boxes, lids, fittings, valves, and all other materials not specified in other bid items from delivery trucks at the job site and placing them into position; tapping the main; placing and compacting backfill; temporary paving repairs or driving casing pipe under the pavement; saw-cutting, demolition and legal disposal of two flags of sidewalk together with the meter box where there is an existing meter box and service or one flag of sidewalk if no service exists; constructing a three-foot square reinforced concrete meter box support slab where no sidewalk exists; furnishing all materials and equipment necessary to clean, test and disinfect the service connections; testing and disinfecting the service connections; disconnection of existing water service at existing meter box and re-connection to new meter box as directed by the Engineer, if required; furnishing and installing copper service pipe of size to match existing and all other materials necessary to reconnect customer's existing water service to new single service downstream of the meter, if required; for backfilling and compacting area where existing water meter box has been removed, if required; salvage, cleaning, transport, unloading and storage of existing cast iron meter box lids to a Department storage yard as directed by the Engineer; coordination with Department forces; complying with work hour restrictions; moving and replacing utilities, trees, shrubs, fences, walls, mail boxes, sprinkler systems, shoulders, asphalt paths, curb, gutter, driveways and all other similar, appurtenant and miscellaneous items and work (not included in another bid item) disturbed by construction, or as directed by the Engineer, to original or immediately adjacent locations and to equal or better than original conditions, together with all other required items and work to provide a complete, satisfactory, and functional installations.

Sidewalk restoration repairs for the installation of water services are to be paid for under a separate Quotation Item.

The Contractor shall provide a Schedule of Values for furnishing and installing all individual materials and activities; including removal, transport and disposal; that are a part of this work with prices satisfactory to the Engineer. Material/activity prices will be used should deletions be required by field conditions and as directed by the Engineer.

Item No. 47

For furnishing and installing 1-inch dual services (both short and long), including reconnection of customer's service pipe and meter transfer, will be paid for at the unit price bid for each type of service times the number of that type of service installed. The price bid per service shall be full compensation for its complete construction, ready for connection or reconnection as appropriate, and shall include, but not be limited to, furnishing and installing all materials in accordance with Department Standard Details WS 2.12 and WS 2.16 as applicable to each type of service; excavation; complying with the Florida Statutes "Trench Safety

Act"; dewatering the excavation; furnishing and installing corporation stops; furnishing and installing HDPE pipe or tubing, couplings, unions, service terminal fittings, valves and other miscellaneous fittings; furnishing and installing meter boxes with lids for services; furnishing and installing perforated spacers and tail pieces; transporting and unloading pipe, tubing, meter boxes, lids, fittings, valves, and all other materials not specified in other bid items from delivery trucks at the job site and placing them into position; tapping the main; placing and compacting backfill; temporary paving repairs or driving casing pipe under the pavement; saw-cutting, demolition and legal disposal of two flags of sidewalk together with the meter box where there is an existing meter box and service or one flag of sidewalk if no service exists; constructing a three-foot square reinforced concrete meter box support slab where no sidewalk exists; furnishing all materials and equipment necessary to clean, test and disinfect the service connections; testing and disinfecting the service connections; disconnection of existing water service at existing meter box and re-connection to new meter box as directed by the Engineer, if required; furnishing and installing copper service pipe of size to match existing and all other materials necessary to reconnect customer's existing water service to new single service downstream of the meter, if required; for backfilling and compacting area where existing water meter box has been removed, if required; salvage, cleaning, transport, unloading and storage of existing cast iron meter box lids to a Department storage yard as directed by the Engineer; coordination with Department forces; complying with work hour restrictions; moving and replacing utilities, trees, shrubs, fences, walls, mail boxes, sprinkler systems, shoulders, asphalt paths, curb, gutter, driveways and all other similar, appurtenant and miscellaneous items and work (not included in another bid item) disturbed by construction, or as directed by the Engineer, to original or immediately adjacent locations and to equal or better than original conditions, together with all other required items and work to provide a complete, satisfactory, and functional installations.

Item No. 48

For furnishing and installing 1½-inch single services (both short and long), including reconnection of customer's service pipe and meter transfer, will be paid for at the unit price bid for each type of service times the number of that type of service installed. The price bid per service shall be full compensation for its complete construction, ready for connection or reconnection as appropriate, and shall include, but not be limited to, furnishing and installing all materials in accordance with Department Standard Detail WS 2.16; excavation; complying with the Florida Statutes "Trench Safety Act"; dewatering the excavation; furnishing and installing corporation stops; furnishing and installing HDPE pipe or tubing, couplings, unions, service terminal fittings, valves and other miscellaneous fittings; furnishing and installing meter boxes with lids for services; furnishing and installing perforated spacers and tail pieces; transporting and unloading pipe, tubing, meter boxes, lids, fittings, valves, and all other materials not specified in other bid items from delivery trucks at the job site and placing them into position; tapping the main; placing and compacting backfill; temporary paving repairs or driving casing pipe under the pavement; saw-cutting, demolition and legal disposal of sidewalk together with the meter box where there is an existing meter box and service; constructing a five-foot square reinforced concrete meter box support slab where no sidewalk exists; furnishing all materials and equipment necessary to clean, test and disinfect the service connections; testing and disinfecting the service

connections; disconnection of existing water service at existing meter box and re-connection to new meter box as directed by the Engineer, if required; furnishing and installing brass service pipe of size to match existing and all other materials necessary to reconnect customer's existing water service to new single service downstream of the meter, if required; for backfilling and compacting area where existing water meter box has been removed, if required; salvage, cleaning, transport, unloading and storage of existing cast iron meter box lids to a Department storage yard as directed by the Engineer; coordination with Department forces; complying with work hour restrictions; moving and replacing utilities, trees, shrubs, fences, walls, mail boxes, sprinkler systems, shoulders, asphalt paths, curb, gutter, concrete and stamped concrete driveways and all other similar, appurtenant and miscellaneous items and work (not included in another bid item) disturbed by construction, or as directed by the Engineer, to original or immediately adjacent locations and to equal or better than original conditions, together with all other required items and work to provide a complete, satisfactory, and functional installations.

Sidewalk restoration repairs for the installation of water services are to be paid for under a separate Quotation Item.

The Contractor shall provide a Schedule of Values for furnishing and installing all individual materials and activities; including removal, transport and disposal; that are a part of this work with prices satisfactory to the Engineer. Material/activity prices will be used should deletions be required by field conditions and as directed by the Engineer.

Item No. 49

For furnishing and installing 2-inch single services (both short and long), including reconnection of customer's service pipe and meter transfer, will be paid for at the unit price bid for each type of service times the number of that type of service installed. The price bid per service shall be full compensation for its complete construction, ready for connection or reconnection as appropriate, and shall include, but not be limited to, furnishing and installing all materials in accordance with Department Standard Detail WS 2.16; excavation; complying with the Florida Statutes "Trench Safety Act"; dewatering the excavation; furnishing and installing corporation stops; furnishing and installing HDPE pipe or tubing, couplings, unions, service terminal fittings, valves and other miscellaneous fittings; furnishing and installing meter boxes with lids for services; furnishing and installing perforated spacers and tail pieces; transporting and unloading pipe, tubing, meter boxes, lids, fittings, valves, and all other materials not specified in other bid items from delivery trucks at the job site and placing them into position; tapping the main; placing and compacting backfill; temporary paving repairs or driving casing pipe under the pavement; saw-cutting, demolition and legal disposal of sidewalk together with the meter box where there is an existing meter box and service; constructing a five-foot square reinforced concrete meter box support slab where no sidewalk exists; furnishing all materials and equipment necessary to clean, test and disinfect the service connections; testing and disinfecting the service connections; disconnection of existing water service at existing meter box and re-connection to new meter box as directed by the Engineer, if required; furnishing and installing brass service pipe of size to match existing and all other materials necessary to reconnect customer's existing water service to new single service downstream of the meter, if required; for backfilling and compacting area where existing water

meter box has been removed, if required; salvage, cleaning, transport, unloading and storage of existing cast iron meter box lids to a Department storage yard as directed by the Engineer; coordination with Department forces; complying with work hour restrictions; moving and replacing utilities, trees, shrubs, fences, walls, mail boxes, sprinkler systems, shoulders, asphalt paths, curb, gutter, concrete and stamped concrete driveways and all other similar, appurtenant and miscellaneous items and work (not included in another bid item) disturbed by construction, or as directed by the Engineer, to original or immediately adjacent locations and to equal or better than original conditions, together with all other required items and work to provide a complete, satisfactory, and functional installations.

Sidewalk restoration repairs for the installation of water services are to be paid for under a separate Quotation Item.

The Contractor shall provide a Schedule of Values for furnishing and installing all individual materials and activities; including removal, transport and disposal; that are a part of this work with prices satisfactory to the Engineer. Material/activity prices will be used should deletions be required by field conditions and as directed by the Engineer.

Item No. 50

For furnishing and installing 2-inch dual services (both short and long), including reconnection of customer's service pipe and meter transfer, will be paid for at the unit price bid for each type of service times the number of that type of service installed. The price bid per service shall be full compensation for its complete construction, ready for connection or reconnection as appropriate, and shall include, but not be limited to, furnishing and installing all materials in accordance with Department Standard Details WS 2.12 and WS 2.16 as applicable to each type of service; excavation; complying with the Florida Statutes "Trench Safety Act"; dewatering the excavation; furnishing and installing corporation stops; furnishing and installing HDPE pipe or tubing, couplings, unions, service terminal fittings, valves and other miscellaneous fittings; furnishing and installing meter boxes with lids for services; furnishing and installing perforated spacers and tail pieces; transporting and unloading pipe, tubing, meter boxes, lids, fittings, valves, and all other materials not specified in other bid items from delivery trucks at the job site and placing them into position; tapping the main; placing and compacting backfill; temporary paving repairs or driving casing pipe under the pavement; saw-cutting, demolition and legal disposal of two flags of sidewalk together with the meter box where there is an existing meter box and service or one flag of sidewalk if no service exists; constructing a three-foot square reinforced concrete meter box support slab where no sidewalk exists; furnishing all materials and equipment necessary to clean, test and disinfect the service connections; testing and disinfecting the service connections; disconnection of existing water service at existing meter box and re-connection to new meter box as directed by the Engineer, if required; furnishing and installing copper service pipe of size to match existing and all other materials necessary to reconnect customer's existing water service to new single service downstream of the meter, if required; for backfilling and compacting area where existing water meter box has been removed, if required; salvage, cleaning, transport, unloading and storage of existing cast iron meter box lids to a Department storage yard as directed by the Engineer; coordination with Department forces; complying with work hour restrictions;

moving and replacing utilities, trees, shrubs, fences, walls, mail boxes, sprinkler systems, shoulders, asphalt paths, curb, gutter, driveways and all other similar, appurtenant and miscellaneous items and work (not included in another bid item) disturbed by construction, or as directed by the Engineer, to original or immediately adjacent locations and to equal or better than original conditions, together with all other required items and work to provide a complete, satisfactory, and functional installations.

Item No. 51

For furnishing and installing 3-inch single services (both short and long), including reconnection of customer's service pipe and meter transfer, will be paid for at the unit price bid for each type of service times the number of that type of service installed. The price bid per service shall be full compensation for its complete construction, ready for connection or reconnection as appropriate, and shall include, but not be limited to, furnishing and installing all materials in accordance with Department Standard Detail WS 2.16; excavation; complying with the Florida Statutes "Trench Safety Act"; dewatering the excavation; furnishing and installing corporation stops; furnishing and installing HDPE pipe or tubing, couplings, unions, service terminal fittings, valves and other miscellaneous fittings; furnishing and installing meter boxes with lids for services; furnishing and installing perforated spacers and tail pieces; transporting and unloading pipe, tubing, meter boxes, lids, fittings, valves, and all other materials not specified in other bid items from delivery trucks at the job site and placing them into position; tapping the main; placing and compacting backfill; temporary paving repairs or driving casing pipe under the pavement; saw-cutting, demolition and legal disposal of sidewalk together with the meter box where there is an existing meter box and service; constructing a five-foot square reinforced concrete meter box support slab where no sidewalk exists; furnishing all materials and equipment necessary to clean, test and disinfect the service connections; testing and disinfecting the service connections; disconnection of existing water service at existing meter box and re-connection to new meter box as directed by the Engineer, if required; furnishing and installing brass service pipe of size to match existing and all other materials necessary to reconnect customer's existing water service to new single service downstream of the meter, if required; for backfilling and compacting area where existing water meter box has been removed, if required; salvage, cleaning, transport, unloading and storage of existing cast iron meter box lids to a Department storage yard as directed by the Engineer; coordination with Department forces; complying with work hour restrictions; moving and replacing utilities, trees, shrubs, fences, walls, mail boxes, sprinkler systems, shoulders, asphalt paths, curb, gutter, concrete and stamped concrete driveways and all other similar, appurtenant and miscellaneous items and work (not included in another bid item) disturbed by construction, or as directed by the Engineer, to original or immediately adjacent locations and to equal or better than original conditions, together with all other required items and work to provide a complete, satisfactory, and functional installations.

Sidewalk restoration repairs for the installation of water services are to be paid for under a separate Quotation Item.

The Contractor shall provide a Schedule of Values for furnishing and installing all individual materials and activities; including removal, transport and disposal; that are a part of this work with prices satisfactory to the Engineer. Material/activity

prices will be used should deletions be required by field conditions and as directed by the Engineer.

Item No. 52 - Contingent Item

For constructing Air Release Valve Assemblies (ARVs) for water mains at the locations shown on the Plans, or where directed by the Engineer in the field, complete as shown in Department Standard Detail WS 1.60, will be paid for at the unit price bid times the number of assemblies installed and accepted by the Engineer. The price bid shall be full compensation for each complete installation, ready for service, and shall include, but not be limited to, excavation; sheeting and shoring if necessary; complying with the Florida Statutes "Trench Safety Act"; tapping the main; furnishing and installing corporation stop with tapping saddle (as required); brass coupling; PVC pipe and fittings, including cutting and threading as required; threaded bronze ball valve with lever; No. 3 valve box and cover set in concrete; constructing concrete support slabs, if necessary; transportation and handling costs; placing and compacting backfill; temporary paving; permanent paving outside of the main trench line, if necessary; and all other appurtenant and miscellaneous items and work for a complete, satisfactory, and functional installation.

Item No. 53

For constructing Flushing Valve Outlet Assemblies (FVOs), at the locations shown on the Plans, complete as shown in Department Standard Detail WS 1.61, will be paid for at the unit price bid times the number of assemblies installed and accepted by the Engineer. The price bid shall be full compensation for each complete installation, ready for service, and shall include, but not be limited to, excavation; sheeting and shoring if necessary; complying with the Florida Statutes "Trench Safety Act"; tapping the ductile iron cap or plug; furnishing and installing brass nipples, bends, and couplings; PVC pipe and fittings, including cutting and threading as required; threaded bronze ball valve with lever; No. 3 valve box and cover set in concrete; 6-mil polyethylene sheet; placing concrete for concrete anchor; placing and compacting backfill; constructing concrete support slabs, if necessary; transportation and handling costs; temporary paving; permanent paving outside of the main trench line, if necessary; and all other appurtenant and miscellaneous items and work for a complete, satisfactory and functional installation.

Item No. 54

For removing and salvaging fire hydrant assembly with guard posts, complete, will be paid for at the unit price bid times the number of hydrants removed by the Contractor and accepted by the Engineer. The price per hydrant shall be full compensation for a complete removal and shall include, but not be limited to salvaging the fire hydrant assembly by excavating and removing the entire assembly including the bottom shoe; carefully cleaning the fire hydrant assembly of any thrust block concrete; cleaning, loading, transporting, unloading and storing the fire hydrant assembly in a Department storage yard as directed by the Engineer. The Contractor shall remove the existing guard posts. Fire hydrant feed mains shall be cut, plugged and thrust blocked if they are to remain connected to an active main line. Lines which are deactivated (i.e. not connected to an active main) shall be abandoned or removed as called for on the Plans. The price per hydrant assembly removal shall be full compensation for furnishing all labor,

materials and supplies required for a complete removal per the aforementioned, and no extra compensation will be allowed.

Sidewalk restoration repairs for the removal of fire hydrants are to be paid for under a separate Quotation Item.

Item No. 55

For furnishing and delivering to the Department fire hydrant assemblies with guard posts, complete, will be paid for at the unit price bid times the number of hydrants installed by the Contractor and accepted by the Engineer. The price per hydrant shall be full compensation for furnishing all materials and supplies required for a complete installation.

Item No. 56

For installing fire hydrant assemblies with guard posts, complete, will be paid for at the unit price bid times the number of hydrants installed by the Contractor and accepted by the Engineer. The price per hydrant shall be full compensation for a complete installation and shall include, but not be limited to, excavation; sheeting and shoring if necessary; complying with the Florida Statutes "Trench Safety Act"; dewatering the excavation; transporting and unloading the hydrant assembly from delivery trucks at the job site (trench side) and placing them into position in the installation location; placing the hydrant in the trench and connecting it to the 6-inch hydrant branch run; furnishing and installing joint materials; furnishing and installing joint thrust restraints making thrust resistant joints; furnishing and installing tie-rod and eyebolts; installing a concrete anchor at the hydrant elbow; cleaning, testing and disinfecting the entire assembly; placing and compacting backfill; removal and disposal of excess fill material, where required; saw-cutting, demolition and legal disposal of one flag of sidewalk, if required; constructing concrete protective slab around the fire hydrants in non-sidewalk areas; furnishing, installing and painting two guard posts, if required, including the concrete bases and filling posts with concrete; lubricating the hydrant, if required; touch-up painting of the hydrant, if required; making all surface repairs, including temporary and permanent pavement repairs around the hydrant, if any, and all other similar items; out-of-the-ditch-line permanent pavement repairs around the hydrant, if any, dirt and rock roadways, and all similar items; and all other appurtenant and miscellaneous items and work (not included in another bid item) for a complete, functional and acceptable installation.

Sidewalk restoration repairs for the installation of fire hydrants are to be paid for under a separate Quotation Item.

Item No. 57 - Contingent Item

For removal, transport, and legal disposal of unsuitable backfill materials, including tipping fees, as ordered by the Engineer, will be paid for at the unit price bid times the number of cubic yards removed and legally disposed of, as measured by the truckload to the satisfaction of the Engineer.

Item No. 58 - Contingent Item

For furnishing and installing additional suitable backfill material, will be paid for at the unit price bid times the number of cubic yards of additional trench backfill furnished and installed, as directed by the Engineer, in the field and includes

removal of unsuitable material, loading, hauling, legal disposal off-site and tipping fees. The additional trench backfill shall be measured along the main within the limits of the trench as defined by the Department Standard Details appended hereto. The use of additional trench backfill shall be paid for only when and where approved by the Engineer prior to installation.

Item No. 59 - Contingent Item

For furnishing and constructing 8-inch reinforced concrete protective slab in areas of low ground cover per Department Standard Detail GS 1.2, will be paid for at the unit price bid times the number of square yards of concrete placed. The price shall be full compensation for all work including furnishing all labor, equipment, and materials required for constructing the 8-inch reinforced protective slab. This bid item shall be used only at locations approved by the Engineer where the minimum cover over the main cannot be obtained.

Item No. 60

For constructing limerock base for **Type "I"** permanent pavement repairs, will be paid for at the unit price bid times the number of square yards of such base required, installed, and accepted as measured along the main within the limits defined by details on the Plans and/or the Department Standard Details appended hereto. Greater widths are at the Contractor's option and expense. The price bid shall be full compensation for furnishing all materials, labor and equipment required for a complete limerock base installation ready to receive the tack coat and surface course. Limerock base for permanent pavement repairs installed outside the main trench line limits as shown in the Department Standard Details under other bid items will be paid for under those items; it will not be separately measured and paid for under this item.

Item No. 61

For constructing **Type "I"** asphaltic concrete surface course permanent pavement repairs, will be paid for at the unit price bid times the number of square yards of such surface course installed and accepted as measured along the main within the limits defined by details on the Plans and/or the Department Standard Details appended hereto. Greater widths are at the Contractor's option and expense. The price bid shall be full compensation for furnishing all materials, labor and equipment required for a complete machine-laid asphaltic concrete surface course installation. Asphaltic surface course for permanent pavement repairs installed outside the main trench line limits as shown in the Department Standard Details under other bid items will be paid for under those items; it will not be separately measured and paid for under this item.

Item No. 62

For constructing limerock base for **Type "II"** permanent pavement repairs, will be paid for at the unit price bid times the number of square yards of such base required, installed and accepted as measured along the main within the limits defined by details on the Plans and/or the Department Standard Details appended hereto. Greater widths are at the Contractor's option and expense. The price bid shall be full compensation for furnishing all materials, labor and equipment required for a complete limerock base installation ready to receive the tack coat and surface course. Limerock base for permanent pavement repairs installed outside the main trench line limits as shown in the Department Standard Details

under other bid items will be paid for under those items; it will not be separately measured and paid for under this item.

Item No. 63

For constructing **Type "II"** asphaltic concrete surface course permanent pavement repairs, will be paid for at the unit price bid times the number of square yards of such surface course installed and accepted as measured along the main within the limits defined by details on the Plans and/or the Department Standard Details appended hereto. Greater widths are at the Contractor's option and expense. The price bid shall be full compensation for furnishing all materials, labor and equipment required for a complete machine-laid asphaltic concrete surface course installation. Asphaltic surface course for permanent pavement repairs installed outside the main trench line limits as shown in the Department Standard Details under other bid items will be paid for under those items; it will not be separately measured and paid for under this item.

Item No. 64 - Contingent Item

For cold milling roadway surface course for permanent pavement repairs (nominal 1 inch thick), will be paid for at the unit price bid times the number of square yards of such surface course milled and required as measured along the curb within the limits defined by details on the Plans and/or the Department Standard Details appended hereto and as approved by the Engineer. Greater widths are at the Contractor's option and expense. The price bid shall be full compensation for furnishing all materials, labor and equipment required for milling of surfaces indicated. Asphalt cold milling shall be performed using an automated pavement planer capable of maintaining an accurate depth. Cold milling equipment shall meet the approval of the Engineer and the governing agency having jurisdiction at the location of the pavement milling operation. The Engineer's word as to the acceptability of the equipment shall be final.

Item No. 65 - Contingent Item

For constructing **Type "V"** permanent pavement repairs for roadway (nominal 1 inch thick machine-laid asphaltic concrete friction surface overlay) will be paid for at the unit price bid times the number of square yards of overlay, installed where directed by and to the satisfaction of the Engineer, which price shall be full compensation for furnishing all labor, material, and equipment for a complete installation; and shall include asphalt pavement driveways in roadways, as required and directed by the Engineer. After the pavement has been milled and the existing pavement removed, a tack coat shall be applied as specified above. Type "V" pavement repairs, if required, will usually be in addition to the required Type "I" or Type "M" pavement repairs. The latest applicable standard for the friction course from the governing authority shall be used. Temporary pavement markings for roadways shall be included in this bid item.

Item No. 66 - Contingent Item

For cold milling **FDOT** roadway surface course for permanent pavement repairs (nominal 1-1/2 inch thick), will be paid for at the unit price bid times the number of square yards of such surface course milled and required as measured along the curb within the limits defined by details on the Plans and/or the Department Standard Details appended hereto and as approved by the Engineer. Greater widths are at the Contractor's option and expense. The price bid shall be full

compensation for furnishing all materials, labor and equipment required for milling of surfaces indicated. Asphalt cold milling shall be performed using an automated pavement planer capable of maintaining an accurate depth. Cold milling equipment shall meet the approval of the Engineer and the governing agency having jurisdiction at the location of the pavement milling operation. The Engineer's word as to the acceptability of the equipment shall be final.

Item No. 67 - Contingent Item

For constructing **Type "V"** permanent pavement repairs for **FDOT** roadway (nominal 1-1/2 inch thick machine-laid asphaltic concrete wearing surface overlay Friction Course 9.5 with rubber) will be paid for at the unit price bid times the number of square yards of overlay, installed where directed by and to the satisfaction of the Engineer, which price shall be full compensation for furnishing all labor, material, and equipment for a complete installation. After the pavement has been milled and the existing pavement removed, a tack coat shall be applied as specified above. Type "V" pavement repairs, if required, will usually be in addition to the required Type "II" pavement repairs. The latest applicable standard for the friction course from the governing authority shall be used. Temporary pavement markings for **FDOT** roadways shall be included in this bid item.

Item No. 68

For furnishing and installing V-Bio polyethylene encasement for any size ductile iron pipe, fitting or valve, will be paid for at the unit price bid times the number of feet installed and accepted, as measured to the nearest foot along the horizontal projection of the pipe. The price bid shall be full compensation for furnishing all materials, labor and equipment required for a complete polyethylene encasement for any size ductile iron pipe, fitting or valve.

Item No. 69

For furnishing and installing polyethylene encasement for any size zinc-coated ductile iron pipe, fitting or valve, will be paid for at the unit price bid times the number of feet installed and accepted, as measured to the nearest foot along the horizontal projection of the pipe. The price bid shall be full compensation for furnishing all materials, labor and equipment required for a complete polyethylene encasement for any size ductile iron pipe, fitting or valve.

Item No. 70 - Contingent Item

For constructing concrete sidewalk restoration to match existing, will be paid for at the unit price bid times the number of square feet of such sidewalk required, installed, and accepted by the Engineer, and the price bid shall be full compensation for furnishing all labor, materials, and equipment for a complete installation.

Item No. 71 - Contingent Item

For constructing concrete curb and gutter restoration to match existing, will be paid for at the unit price bid times the number of linear feet of such curb and gutter required and placed as measured along the curb, installed where directed by the Engineer, and the price bid shall be full compensation for furnishing all labor and equipment for a complete installation.

Item No. 72 - Contingent Item

For restoring sodded areas, will be paid at the unit price bid times the number of square yards of sod placed, and the price bid shall be full compensation for furnishing all labor, materials, and equipment for a complete restoration.

Item No. 73 - Contingent Item

For trench overcut in one-foot depth increments, will be paid for at the unit price bid per linear foot, for any size pipe to be installed in the trench times the number of linear feet of overcut excavated, times the number of one-foot increments of depth as ordered by the Engineer. There shall be no more than six (6) one-foot increments of depth in any one location. The number of linear feet excavated shall be the length in feet of the horizontal projection of the centerline of the trench, measured to the nearest foot, between the limits established by the Engineer in the field. The price per linear foot for trench overcut shall be full compensation for the completed work and shall include, but not be limited to, excavating to the specified depth as directed by the Engineer, placing, leveling and compacting suitable select backfill material to the level specified. Suitable select backfill shall be obtained from material excavated from the site. If sufficient material is not available from the site, additional material shall be furnished by the Contractor at no additional cost to the Department.

Item No. 74 - Contingent Item

For sheeting and shoring ordered left in place by the Engineer, will be paid for at the unit price bid per square foot, measured from tip to cut-off times the horizontal length, regardless of thickness, times the number of linear feet of sheeting and shoring left in place as accepted by the Engineer. Payment shall be full compensation for cutting off and for all salvage and potential reuse value of the material. Sheetting and shoring left in place without the Engineer's approval will be at the Contractor's expense.

Item No. 75

For replacing pavement markings damaged, removed, or obliterated by Contractor's operation, will be paid for from the aggregate sum amount bid by the Contractor for this purpose. Such amounts represent the amount the contractor feels is necessary to comply with the governing agency's requirements. Any portion of this fund, remaining after the work has been paid for will remain with the Contractor. Conversely, no requests for additional reimbursement will be approved. Reflective Pavement Markers shall also be furnished and installed under this item and there will be no additional compensation paid for this work.

Since this item is bid as an aggregate sum, no other special provisions for measurement will be necessary.

Item No. 76- Contingent Item

For constructing pedestrian curb ramp restoration including new ramp construction per FDOT Design Standards Index No. 304, as required and directed by the Engineer, will be paid for at the unit price bid times the number of pedestrian curb ramps restored or constructed. The price bid shall be full compensation for all work including furnishing all labor, equipment, and material required for constructing formwork, placing concrete, protecting restored pedestrian curb ramp removed or damaged under this Project. Pedestrian curb ramp shall be built per

the requirements of FDOT Design Standards Index No. 304 "Detectable Warnings and Sidewalk Curb Ramps." Payment will be made only if pedestrian curb ramp restoration is encountered within the limits of construction. All other replacement due to removal or damage as a result of the Contractor's operations shall be at the Contractor's expense. Use of this item must have prior written approval of the Engineer in order for the Contractor to receive payment.

Item No. 77 - Contingent Item

For constructing pedestrian curb ramp detectable warnings per FDOT Design Standards Index No. 304, as required and directed by the Engineer, will be paid for at the unit price bid times the number of square feet of detectable warnings constructed. The price bid shall be full compensation for all work including furnishing all labor, equipment, and material required for constructing the detectable warnings per the requirements of FDOT Design Standards Index No. 304 "Detectable Warnings and Sidewalk Curb Ramps." Payment will be made only if detectable warnings are required within the limits of construction. All other replacement due to removal or damage as a result of the Contractor's operations shall be at the Contractor's expense. Use of this item must have prior written approval of the Engineer in order for the Contractor to receive payment.

Item No. 78 - Contingent Item

For replacing traffic loop detection assemblies, complete, will be paid at the unit price bid times the times the number of loop detectors. The price bid shall include all work to replace the existing loop detector damaged by the construction and restored to a fully functioning condition.

Item No. 79

For furnishing traffic control, will be paid for from the aggregate sum amount established by the Contractor for this purpose. Such amount represents the amount the Contractor feels is necessary to provide sufficient flagmen, signs, barricades, and similar items and work for directing traffic and maintaining safety during all times of work and other times as directed by the Engineer, FDOT, the municipalities' Public Works Department and any other governing authority. Any portion of this fund remaining after all authorized payments have been made will remain with the Contractor. Conversely, no requests for additional payments will be approved.

Payment to the Contractor under this item will be by monthly percentage corresponding to the percentage of the Project's work items completed and paid for each month, as approved by the Engineer.

Item No. 80 - SUBTOTAL

Sum of Item Nos. 1 through 79.

Item No. 81 - Dedicated Allowance

This item establishes a fund for reimbursement of the cost of providing off-duty police officers as required for this project. Payment shall only reimburse the Contractor for the cost of the off-duty police officers for hours on duty at the work site; no overhead, travel time or other additional costs will be allowed. Any portion of this fund remaining after all authorized payments have been made will be withheld from contract payment and will remain with the County.

Item No. 82 - Dedicated Allowance

This item establishes a fund for reimbursement of the cost of all required construction permits and fees, if authorized by the Engineer. Payment shall reimburse the Contractor for only the cost of the construction permit and fee. Any question or whether a construction permit or fee is required shall be decided by the Engineer whose word shall be final. Any portion of this fund remaining after all authorized payments have been made will be withheld from Project payments and will remain with the County.

Item No. 83 - Contingency Allowance

For unforeseen conditions, minor construction changes and Quantity Adjustments, additional work not covered by other items, if ordered by the Engineer.

This account is for all labor, materials, equipment and services necessary for modification or extra work required to complete the Project due to unforeseen conditions, unforeseen conflicts between existing elements of work and the proposed work; for minor changes required to resolve any unforeseen conditions, Revised Regulations, Technological and Products Development, Operational Changes, Schedule Requirements, Program Interface, Emergencies and other Miscellaneous Costs; and for adjustments to estimated quantities shown on the unit prices of the Quotation to conform to actual quantities installed; and associated time related to this work only if ordered by the Engineer.

Payment to the Contractor under the Contingency Allowance will only be made for work ordered in writing by the Engineer, in accordance with Section 13 "Extra Work and Payment Therefore" of the "General Covenants and Conditions." Any portion of these accounts remaining after all authorized payments have been made will be withheld from Contract payments and will remain with the County.

A non-compensable time extension shall be included in the Contingency Allowance work when approved by the Engineer.

Item No. 84- TOTAL BID

Sum of Item Nos. 80, 81, 82 and 83.

Note:

Since Item Nos. 52, 57, 58, 59, 64, 65, 66, 67, 70, 71, 72, 73, 74, 76, 77 and 78 are Contingent Items, and because of the nature of the Dedicated Allowance, Item Nos. 81 and 82, and the Contingency Allowance, Item No. 83, they may or may not be used at the option of the Department. Any overrun or under run provisions contained within the Project Documents shall not be applicable to these items.

**END OF
TECHNICAL SPECIFICATIONS**

1.00 SCOPE

NOT PART OF THIS CONTRACT

The Project, including mobilization and demobilization, consists of furnishing and installing approximately 9,553 linear feet of 15-inch, 12-inch, 10-inch, 8-inch, and 6-inch, PVC C900 DR14 pipe, including installation of thirty-two (32) manholes and two (2) drop manholes; installation of sewer laterals cutting, plugging and abandonment of existing sewer laterals, removal of existing asphalt pavement, sidewalk and sod, removal, transport, salvage, and legal disposal of demolition material; replacement of traffic loop detection assemblies; traffic control; temporary and permanent replacement of any pavement, driveways, sidewalk, concrete median, curb and gutter, sod, landscaping and pavement markings damaged by the construction of the Project and all other appurtenant and miscellaneous items and work for a complete and fully functional installation.

NOT PART OF THIS CONTRACT

NW 37 Ave is the limit/boundary between City of Hialeah and Miami Dade County. The purpose of this project is to transfer areas that are being served by the City of Hialeah to Miami Dade Water and Sewer Department (M-D WASD). Contractor shall be required to have constant coordination with the City of Hialeah for the disconnection of existing sewer laterals and installation of new sewer laterals that will be maintained/operated by M-D WASD.

Also, Contractor is advised that as part of this project, there is a Memorandum of Agreement (MOA) between Miami Dade County Department of Transportation and Public Works (M-D DTPW) and M-D WASD. DTPW will advertise this project as part of their Roadway project along NW 37 Ave, from NW 36 ST to NW 79 ST (M-D DTPW Project No. 20040330). Said Roadway project involves Roadway, Drainage and Lighting improvements. Contractor shall be required to have constant coordination with the Contractor in charge of the Roadway project. Roadway project will include full road restoration within their project limits.

In addition, a proposed Water Main project along NW 37 Ave, from NW 36 ST to NW 82 ST (PCTS No. 16054, ER No. W017329), will be advertised with the Roadway project and with this gravity sewer project. Since the proposed gravity sewer and water main projects include the same project limits, Contractor in charge of the gravity sewer installation will need to be in constant coordination with the Contractor in charge of the water main installation. It is also valid to mention that certain items regarding pavement restoration such as Type V, Milling, and Pavement markings will be included only as part of the proposed water main project. For more details about this, please see sections 6.18 and 6.19 as part of these Technical Specifications.

The Project is located in Section 08, 09, 16, 17, 21 and 22 Township 53 S, Range 41 E, City of Miami, Miami-Dade County, Florida.

3.00 SEQUENCE OF CONSTRUCTION AND GENERAL INFORMATION

A. General:

1. See "General Covenants and Conditions," Section 43 Standard Work Hours and Construction Management Overtime, for Standard Work Hours restrictions, reimbursement of Department Inspector overtime costs, and for a list of construction activities that do not require reimbursement of Department Inspector overtime costs.
2. The Department has established a "Pre-Approved Product List" for products that are to be used in the construction of water and sewer facilities. See Section 5.00.1 "Shop Drawings" for requirements and instructions on the submittal process. Contractors and suppliers can submit the "Pre-Approved Product List(s)" for the products that they intend to use in the construction of the water and/or sewer facilities for the Project. Products listed in the "Pre-Approved Product List" do not require submittal of shop drawings to the Department. Shop drawing submittal is still required for products not found on the "Pre-Approved Product List."
3. Following receipt of "Notice to Proceed" with the work, the Contractor shall notify the Engineer at least five (5) days before he is ready to start actual construction, to allow the Department time to make arrangements for inspection of the work.
4. Contractor's PSM shall reestablish the design baseline, vertical control points and reference points, and establish proposed pipeline location in accordance with Section 6.00 "Construction Methods."
5. The Contractor's equipment must be in first class operating condition, including safety features, proper mufflers and other silencing accessories. All equipment must be properly lubricated on a special maintenance type schedule to reduce noise, including tracks, rollers, idlers, sheaves and other noise producing components. Care must be taken to prevent oil spillage of any kind or oil dripping from equipment.
6. If the equipment used proves less than satisfactory and is unduly or needlessly disturbing the neighbors, in the opinion of the Engineer, he will have the right to order the Contractor to immediately modify the equipment to make it satisfactory, or to change to other equipment that is satisfactory at no additional cost to the Department.
7. During construction the Contractor shall, by sprinkling with water or by other means approved by the Engineer, eliminate dust annoyance to adjacent property owners. No additional compensation will be paid to the Contractor for any costs incurred in complying with the provisions herein.
8. Valves between the existing system and new work being installed hereunder shall only be operated by Department forces. The Contractor's personnel, under no circumstances, shall operate any such valve. This shall also apply to valves installed during the Project which are put into service prior to final acceptance (i.e. part of the Project is activated).
9. All items shall be performed by the Contractor with special emphasis on the fact that numerous standard and miscellaneous construction phases are not mentioned specifically but shall be performed by the Contractor as required for a completed Project.
10. Water in the trench shall be kept below the level of the pipe to prevent the entry of debris and contaminants into the pipe.

- a. In instances where Section 6.06.1 "Alternate Method of Construction" is approved by the Engineer and used for the Project: During construction, the Contractor shall install a temporary plug, or other means approved by the Engineer, on the open end of the pipe in order to prevent debris and trench water backwash from entering the pipe during trench excavation ahead of the installed pipe. The plug shall remain in place until the following length of pipe is ready to be installed. No additional compensation will be paid to the Contractor for any costs incurred in complying with the provisions herein.
11. The Contractor is required to install nightcaps, plugs or other devices acceptable to the Engineer at the open ends of the pipe installation at the end the workday. This requirement shall apply to installations both above and below the water table.
12. No separate payment shall be made for the cost of labor and materials required for the removal of nightcaps, plugs, bulkheads or external blocking and bracing of adjacent mains, for the supplying of water for cleaning and testing, nor for the interconnecting work to adjacent mains unless listed separately in the Quotation, and the cost of this work shall be included in other applicable items of work.
13. Mains shall be cleaned at the intervals specified elsewhere herein and tested in sections as specified in the Sequence below unless otherwise permitted by the Engineer.
14. Mains shall be cleaned in accordance with Section 6.15 "Cleaning and Testing."
15. Water mains shall be disinfected in accordance with Section 6.15.1 "Disinfecting Water Facilities."
16. The Contractor shall be responsible for positively anchoring the pipe, valves, and fittings against movement from internal pressure by installing thrust blocks, restrained joints, bulkheads, ties, external blocking and bracing or other devices where required, or by installing sufficient pipe beyond the valve end to serve as the thrust anchor for the section under test.
17. Pipelines for potable water mains shall be pressure tested at 150 psi for a minimum of two (2) hours in accordance with FDOH requirements. The Department may, at its option, allow for a 100-psi pressure test based on the plan design, condition of the existing system or material limitation.
18. The Contractor is advised that he is required to furnish all labor, materials and equipment necessary to pressure test each valve furnished by either the Department or the Contractor bi-directionally, prior to installation, to the satisfaction of the Engineer. If the valves are available, the tests shall be performed prior to the start of Construction. Otherwise, the tests shall be performed as soon as the valves are available to afford the maximum time for any corrective work required. The Contractor shall include all costs for this requirement under the appropriate Quotation Item(s), and no other compensation will be provided.
19. The installation of air release devices, flushing valve outlet assemblies and other appurtenances, cleanup, property restoration, paving repairs, cleaning and testing of the main shall follow as closely behind the

installation of the main as possible, followed by a final cleanup and inspection. In performing the work in the above-described sequence, all requirements of the Specifications shall be strictly followed, particularly those pertaining to leakage tests, prompt paving repairs and cleanup as the work progresses.

20. The Contractor shall show and include in his schedule for each section of water main to be tested and placed in service, thirty-five (35) days for the activities (such as for example, flushing, pressure testing, chlorination, sampling and testing, etc.) required for testing and certification. For each such section of sewer main he shall include and show a period of fourteen (14) days. All time for these activities shall be included in the total number of calendar days allowed for construction of the Project (or number of calendar days allowed for construction of the water and/or sewer portions of joint projects such as JPAs) and no extra time will be allowed.
21. The Contractor is advised that, if the work of this project includes work in the public right of way, that work may be shut down by the roadway governing authority during the period from the beginning of the Thanksgiving holiday through the end of the New Year holiday or some portion(s) of that period. Unless otherwise specifically called out herein, or granted by the Engineer in writing, no extension of Project time will be allowed due to such a shutdown. If any extension of time is allowed, it will be of a non-compensable nature. All costs of such a shutdown including any demobilization/re-mobilization costs shall be the sole responsibility of the Contractor and no extra compensation will be allowed. Upon ending of any such shutdown, the Contractor shall immediately resume construction operations unless otherwise ordered by the Engineer in writing.
22. The Contractor shall fully comply with any special working hours, and with all other requirements of the Permits, at no additional cost to the Department. Working hours noted in permits or the specifications are subject to change. In the event that changed working hours effects the work of the Contractor, the Contractor's sole remedy shall be a non-compensable time extension. Said extension to be full compensation for all direct and indirect costs, including but not limited to loss of efficiency, loss of opportunity, increased bond or insurance premiums, or home office or extended overhead, incurred by the Contractor as a result of such change, and no additional compensation shall be considered. Night work may be required as a part of the construction.
23. New or altered water mains or sewage force mains constructed of polyvinyl chloride pipe shall be pressure and leak tested in accordance with ANSI/AWWA C605, "Underground Installation of Polyvinyl Chloride (PVC) and Molecularly Oriented Polyvinyl Chloride (PVCO) Pressure Pipe and Fittings," latest revision, and any ductile iron mains shall be pressure and leak tested in accordance with ANSI/AWWA C600, "Installation of Ductile-Iron Mains and Their Appurtenances," latest revision; both standards as incorporated in Florida Administrative Code (FAC) Rule 62-555.330.
24. New or altered potable water mains, including fire hydrant leads and services, that will be under Department control and have an inside diameter of three inches or larger shall be disinfected and bacteriologically evaluated in accordance with FAC Rule 62-555.340. Note that the above requirements are minimum, and the Department may require more

- stringent procedures and routinely requires all services of whatever size be tested and disinfected along with the main. These more stringent or extensive requirements shall be performed by the Contractor and no extra compensation will be allowed.
25. All pipe and fittings installed under this project shall be color coded or marked as required by FAC Rule 62-555.320(21)(b)3, using blue as a predominant color to differentiate drinking water from reclaimed or other water and green as the predominant color for sanitary sewage facilities. Underground plastic pipe shall be solid-wall colored pipe, shall have a co-extruded colored external skin, or shall be white or black pipe with colored stripes incorporated into, or applied to, the pipe wall; and underground metal or concrete pipe shall have colored stripes applied to the pipe wall. Pipe striped during manufacturing of the pipe shall have continuous stripes that run parallel to the axis of the pipe, that are located at no greater than 90-degree intervals around the pipe, and that will remain intact during and after installation of the pipe. If tape or paint is used to stripe pipe during installation of the pipe, the tape or paint shall be applied in a continuous line that runs parallel to the axis of the pipe and that is located along the top of the pipe; for pipes with an internal diameter of 24 inches or greater, tape or paint shall be applied in continuous lines along each side of the pipe as well as along the top of the pipe. Striping shall be continuous and run the full length of the pipe. Aboveground pipe shall be painted shall be color coded or marked like underground pipe.
 26. The Contractor shall take steps to provide accessibility for local traffic. The construction in this area shall proceed as quickly as possible and paving shall follow immediately to reduce inconvenience to residents in this area of the project.
 27. The Contractor shall take pictures of the work site, in accordance with Section 3.04 "Construction Photographs," prior to the start of any construction.
 28. The Contractor is advised that, during the construction of the Project, the Construction Manager may require the Contractor to adjust the location of the proposed valves, fire hydrants and meter boxes from the locations shown on the Plans. This relocation(s) shall be performed at no additional cost to the Department.
 29. Locations of solid sleeves are for general information only. Exact location of solid sleeves shall be determined in the field by the Engineer. Prior to installation of solid sleeves, the pipe and fittings shall be hosed and kept clean, then swabbed with disinfectant, as necessary. Water in trench shall be kept below the pipe invert.
 30. Taps on Existing Water Mains:
 - a. Unless otherwise specified, all taps of tap diameter 20 inches and smaller made via a tapping sleeve and tapping valve into non-concrete water mains or taps of the same maximum diameter made into existing tapping flange outlets on water mains of any material, will be made by Department forces.
 - 1) For Department Capital Improvement Projects constructed under the CICC 7040 MCC or CICC 7360 MCC programs, or an Open Competitive Contract, the tapping connection will be made at no cost to the Contractor.

- 2) For projects constructed as part of a Design Build, or for projects that are a part of a Joint Participation Agreement (JPA), Memorandum of Understanding (MOU) or Memorandum of Agreement (MOA) with the State of Florida, Miami-Dade County or a municipality of Miami-Dade County, the Contractor shall pay the corresponding tapping fees before Department forces can perform the tap. For current tapping fees contact the Department's Utilities Development Division at 786-268-5360.

31. Taps on Existing Sewage Force Mains:

- a. Taps of any size to sewage force mains shall be made by a tapping specialist with credentials acceptable to the Department. See Section 6.10 "Installation of Tapping Sleeves and Tapping Valves."

B. Project Notes:

1. Existing Asbestos Cement Pipe:

- a. The Contractor shall obtain the services of a State of Florida Licensed Asbestos Contractor for all asbestos pipe handling, and the removal and disposal of the portion of existing pipe that is removed.
- b. See Section 15104 "Working with Asbestos Cement Pipe (ACP)" included herein as an Attachment to these Specifications.
- c. See "MDWASD Environmental Practices Guidelines, Environmental Compliance Section (ECS), Regulatory Compliance & Monitoring Division - Asbestos Specification - AC Pipe EPG-37," appended to these Specifications.

2. Existing Main that is to be Abandoned in Place:

- a. Existing main that is to be cut, capped, and abandoned in place shall be filled with flowable fill. See Section 6.16 "Abandonment of Sanitary Sewers."

3. Project Coordination:

- a. This project has MOA with the Department of Transportation and Public Works for Phase I of the Proposed Gravity Sewer system. Contractor needs to coordinate with Public Works Department. Also, this project requires coordination with the City of Hialeah for all the cutting, capping, and abandoning of existing sewer laterals located at the east side of NW 37 Ave matching proposed locations shown on the plans.

4. The Contractor is alerted to the fact that there are several areas within the Project limits where the existing tree canopies extend into the public right-of-way and cover the paved area. The cost of any tree pruning, arborist, permit or other work required by the agency having jurisdiction shall be the responsibility of the Contractor.

5. The Project is to be constructed across multiple roadway jurisdictions, including but not limited to, City of Hialeah, Miami Dade Transit, Department of Transportation and Public Works. The Contractor is

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required to obtain permits from and comply with all permit conditions of, all agencies having jurisdiction over the rights-of-way being impacted by this Project. All costs for compliance with permit requirements will be included in the prices bid and no extra compensation will be allowed.

6. **All existing sewers (gravity mains and laterals) shall remain in service until new proposed gravity mains and laterals have been constructed and are ready to be placed into service.**

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7. Contractor shall reconnect all existing laterals to new proposed sewer laterals where indicated in plans and as per detail provided in the plans and specifications.

C. Sequence of Construction:

CICC 7040 MCC Contracts - CICC 7360 MCC Contracts - Open Competitive Contracts

The general sequence of construction shall be as follows, but **a detailed sequence of construction shall be submitted by the Contractor and approved by the Engineer before any work is started.** The Department reserves the right to make changes to the sequence as necessary to facilitate the work or to minimize conflict with operations and no extra compensation will be allowed.

CAPITALIZED ITEMS INDICATE WORK OR FUNCTIONS TO BE PERFORMED BY DEPARTMENT FORCES. All other items shall be performed by the Contractor with special emphasis on the fact that numerous standard and miscellaneous construction phases are not mentioned specifically but shall be performed by the Contractor as required for a complete Project.

Note: For simplicity, the Sequence of Construction below will not detail the following items. **These shall be the responsibility of the Contractor and no extra compensation will be allowed.**

- a. Contractor's field verification of all information provided in the Plans and to determine the type, location, elevation and extent of any utilities which may not have been shown on the Plans.
- b. Contractor's operations involving tapping existing mains shall include:
 - 1) Excavate existing main and install the tapping sleeve and tapping valve.
 - 2) Pressure test the tapping sleeve and valve prior to the tap.
 - 3) After a successful pressure test perform the tap as specified herein.
- c. The cleaning of the main with a pig.
 - 1) Openings shall be left in the main to allow for the cleaning of the main with a pig.
 - 2) The pigging of the main shall be done before the installation of valves.
- d. The installation of valves, fire hydrant branch mains, fire hydrants, bends, solid sleeves, air release valves, flushing valve outlets and water service lines. However, they shall be constructed in

sequence with the installation of the main as the work progresses and after installation shall be tested and disinfected (water facilities) in sequence with the testing and disinfecting (water facilities) of the main.

- e. The removal of existing fire hydrants and capping of the existing fire hydrant mains, as shown on the Plans, and salvage and transport to a Department facility.
1. Submit complete "Pre-Approved Product List(s)" and/or shop drawings package to the Engineer in accordance with Section 5.00.1 "Shop Drawings." Obtain all pipe, valves, fittings and appurtenant items to begin the work.
2. Notify "Sunshine State One-Call of Florida Inc., 811," forty-eight (48) hours prior to any excavation. Locate all utilities along the route of the Project.
3. Contractor's PSM shall reestablish the design baseline, vertical control points and reference points, and establish proposed pipeline location in accordance with Section 6.00 "Construction Methods."
4. After Nos. 2 and 3 above have been completed, the Contractor shall meet with the Department Inspector at the Project site and perform a pre-construction walk-through along the entire route of the Project to identify possible problems or conflicts with the proposed pipeline location.
5. Begin project by installing proposed sanitary sewer MH 1 at STA 28+42.15 (Baseline along CL along NW 37 Avenue) (north of SR 112) and continue installing the proposed 8-in gravity line north to the proposed MH 2 at STA 31+44.20. Install lateral services as the work progresses as shown on the plans. Perform exfiltration, infiltration, and lamping tests (as per section 6.15 "Cleaning and Testing") between manholes. No more than three manhole sections or 1000 feet of sewer (whichever is the lesser) shall be tested at any one time.
6. Continue installing the proposed 8-in gravity line north to the proposed MH 2 until STA. 33+45.84 (intersection of NW 41 St), where MH 3 will be installed. Install lateral services as the work progresses as shown on the plans. Perform exfiltration, infiltration, and lamping tests (as per section 6.15 "Cleaning and Testing") between manholes. No more than three manhole sections or 1000 feet of sewer (whichever is the lesser) shall be tested at any one time.
7. Continue installing the proposed 8-in gravity line north to the proposed MH 3 along NW 37 Avenue until STA. 33+82.77 (intersection of NW 41 St), where MH 4 will be installed. Perform exfiltration, infiltration, and lamping tests (as per section 6.15 "Cleaning and Testing") between manholes. No more than three manhole sections or 1000 feet of sewer (whichever is the lesser) shall be tested at any one time.

8. On MH 4 (intersection of NW 41 St), install approximately 42 LF of 10-in gravity line to the east until Sta. 33+79.42 (O/S 60.0 RT). Install temporary plug, that will be later removed to continue installation of proposed sanitary sewer to the east and connected to MH 34, as part of Phase II of this project.
9. Continue installing the proposed 10-in gravity line north from the proposed MH 4 until STA. 35+96.77, where MH 5 will be installed. Install lateral services as the work progresses as shown on the plans. Perform exfiltration, infiltration, and lamping tests (as per section 6.15 "Cleaning and Testing") between manholes. No more than three manhole sections or 1000 feet of sewer (whichever is the lesser) shall be tested at any one time.
10. Continue installing the proposed 10-in gravity line north to the proposed MH 5 until STA. 39+36.30, where MH 6 will be installed. Install lateral services as the work progresses as shown on the plans. Perform exfiltration, infiltration, and lamping tests (as per section 6.15 "Cleaning and Testing") between manholes. No more than three manhole sections or 1000 feet of sewer (whichever is the lesser) shall be tested at any one time.
11. Continue installing the proposed 10-in gravity line north to the proposed MH 6 along NW 37 Avenue until STA. 43+19.96, where MH 7 will be installed. Install lateral services as the work progresses as shown on the plans. Perform exfiltration, infiltration, and lamping tests (as per section 6.15 "Cleaning and Testing") between manholes. No more than three manhole sections or 1000 feet of sewer (whichever is the lesser) shall be tested at any one time.
12. Continue installing the proposed 10-in gravity line north to the proposed MH 7 along NW 37 Avenue until STA. 46+82.23 (intersection of NW 46 ST), where MH 7A will be installed. Install lateral services as the work progresses as shown on the plans. Perform exfiltration, infiltration, and lamping tests (as per section 6.15 "Cleaning and Testing") between manholes. No more than three manhole sections or 1000 feet of sewer (whichever is the lesser) shall be tested at any one time.
13. Continue installing the proposed 10-in gravity line north to the proposed MH 7A along NW 37 Avenue until STA. 47+22.10 (intersection of NW 46 ST), where MH 8 will be installed. Perform exfiltration, infiltration, and lamping tests (as per section 6.15 "Cleaning and Testing") between manholes. No more than three manhole sections or 1000 feet of sewer (whichever is the lesser) shall be tested at any one time.
14. Move to STA. 52+38.28, and install doghouse MH 11, continue installing the proposed 8-in gravity line south along NW 37 Ave. until Sta. 49+70.58, where doghouse MH 10 will be installed. Install lateral services as the work progresses as shown on the plans. Perform exfiltration, infiltration, and lamping tests (as per section 6.15 "Cleaning and Testing") between manholes. No more than three manhole sections or 1000 feet of sewer (whichever is the lesser) shall be tested at any one time. **Flows through**

COH existing sanitary sewer lines should be maintained until proposed sanitary sewer system is being certified and in service. Please see Doghouse manhole detail for more references.

15. Continue installing the proposed 8-in gravity line south to the proposed MH 10 along NW 37 Avenue until STA. 47+94.27, where MH 9 will be installed. Install lateral services as the work progresses as shown on the plans. Perform exfiltration, infiltration, and lamping tests (as per section 6.15 "Cleaning and Testing") between manholes. No more than three manhole sections or 1000 feet of sewer (whichever is the lesser) shall be tested at any one time.
16. Continue installing the proposed 8-in gravity line south to the proposed MH 9 along NW 37 Avenue until STA. 47+22.10 (intersection of NW 46 St), where MH 8 has been installed. Perform exfiltration, infiltration, and lamping tests (as per section 6.15 "Cleaning and Testing") between manholes. No more than three manhole sections or 1000 feet of sewer (whichever is the lesser) shall be tested at any one time.
17. On MH 8 (intersection of NW 46 St), install approximately 40 LF of 15-in gravity line to the east until Sta. 47+14.67 (O/S 59.7 RT). Install temporary plug, that will be later removed to continue installation of proposed sanitary sewer to the east and connected to MH 39, as part of Phase II of this project.
18. Move to STA. 113+63.31 (south side of intersection of NW 67 ST), and install MH 17, continue installing the proposed 10-in gravity line south along NW 37 Ave. until connect to MH 16 at Sta. 110+20.94. Install lateral services as the work progresses as shown on the plans. Perform exfiltration, infiltration, and lamping tests (as per section 6.15 "Cleaning and Testing") between manholes. No more than three manhole sections or 1000 feet of sewer (whichever is the lesser) shall be tested at any one time.
19. Continue installing the proposed 10-in gravity line south to the proposed MH 16 along NW 37 Avenue until STA. 106+28.33, where MH 15 will be installed. Install lateral services as the work progresses as shown on the plans. Perform exfiltration, infiltration, and lamping tests (as per section 6.15 "Cleaning and Testing") between manholes. No more than three manhole sections or 1000 feet of sewer (whichever is the lesser) shall be tested at any one time.
20. Continue installing the proposed 10-in gravity line south to the proposed MH 15 along NW 37 Avenue until STA. 103+23.00, where MH 14 will be installed. Install lateral services as the work progresses as shown on the plans. Perform exfiltration, infiltration, and lamping tests (as per section 6.15 "Cleaning and Testing") between manholes. No more than three manhole sections or 1000 feet of sewer (whichever is the lesser) shall be tested at any one time.

21. Continue installing the proposed 10-in gravity line south to the proposed MH 14 along NW 37 Avenue until STA. 101+70.14, where MH 13 will be installed. Install lateral services as the work progresses as shown on the plans. Perform exfiltration, infiltration, and lamping tests (as per section 6.15 "Cleaning and Testing") between manholes. No more than three manhole sections or 1000 feet of sewer (whichever is the lesser) shall be tested at any one time.
22. Continue installing the proposed 10-in gravity line south to the proposed MH 13 along NW 37 Avenue until STA. 101+02.96 (intersection of NW 62 ST), where MH 12 will be installed. Perform exfiltration, infiltration, and lamping tests (as per section 6.15 "Cleaning and Testing") between manholes. No more than three manhole sections or 1000 feet of sewer (whichever is the lesser) shall be tested at any one time.
23. On MH 12, install approximately 60 LF of 12-inch gravity sewer line going east along NW 62 St. until R/W limits of NW 37 Ave. Install temporary plug, that will be later removed to continue installation of proposed sanitary sewer to the east and connected to MH 55, as part of Phase II of this project.
24. Move to STA. 114+52.52 (north side of intersection of NW 67 ST), and install MH 18, continue installing the proposed 8-in gravity line north along NW 37 Ave. until connect to MH 19 at Sta. 118+46.58. Install lateral services as the work progresses as shown on the plans. Perform exfiltration, infiltration, and lamping tests (as per section 6.15 "Cleaning and Testing") between manholes. No more than three manhole sections or 1000 feet of sewer (whichever is the lesser) shall be tested at any one time.
25. On MH 18, install approximately 36 LF of 8-inch gravity sewer line going east along NW 67 St. until R/W limits of NW 37 Ave. Install temporary plug, that will be later removed to continue installation of proposed sanitary sewer to the east and connected to MH 57, as part of Phase II of this project.
26. Move to proposed MH 19 and continue installing the proposed 8-in gravity line north along NW 37 Avenue until STA. 122+37.71, where MH 20 will be installed. Install lateral services as the work progresses as shown on the plans. Perform exfiltration, infiltration, and lamping tests (as per section 6.15 "Cleaning and Testing") between manholes. No more than three manhole sections or 1000 feet of sewer (whichever is the lesser) shall be tested at any one time.
27. Continue installing the proposed 8-in gravity line north to the proposed MH 20 along NW 37 Avenue until STA. 125+89.39, where MH 21 will be installed. Install lateral services as the work progresses as shown on the plans. Perform exfiltration, infiltration, and lamping tests (as per section 6.15 "Cleaning and Testing") between manholes. No more than three manhole sections or 1000 feet of sewer (whichever is the lesser) shall be

tested at any one time.

28. Continue installing the proposed 8-in gravity line north to the proposed MH 21 along NW 37 Avenue until STA. 127+77.40 (intersection of NW 71 ST), where MH 22 will be installed. Install lateral services as the work progresses as shown on the plans. Perform exfiltration, infiltration, and lamping tests (as per section 6.15 "Cleaning and Testing") between manholes. No more than three manhole sections or 1000 feet of sewer (whichever is the lesser) shall be tested at any one time.
29. On MH 22, install approximately 52 LF of 8-inch gravity sewer line going east along NW 71 St. until R/W limits of NW 37 Ave. Install temporary plug, that will be later removed to continue installation of proposed sanitary sewer to the east and connected to MH 63, as part of Phase II of this project.
30. Move to STA. 139+22.14 (intersection of NW 74 ST), and install MH 25, continue installing the proposed 8-in gravity line south along NW 37 Ave. until connect to MH 24 at Sta. 135+50.00. Install lateral services as the work progresses as shown on the plans. Perform exfiltration, infiltration, and lamping tests (as per section 6.15 "Cleaning and Testing") between manholes. No more than three manhole sections or 1000 feet of sewer (whichever is the lesser) shall be tested at any one time.
31. On MH 25, install approximately 45 LF of 8-inch gravity sewer line going east along NW 74 St. until R/W limits of NW 37 Ave. Install temporary plug, that will be later removed to continue installation of proposed sanitary sewer to the east and connected to MH 66, as part of Phase II of this project.
32. Continue installing the proposed 8-in gravity line south to the proposed MH 24 along NW 37 Avenue until STA. 131+60.00, where MH 23 will be installed. Install lateral services as the work progresses as shown on the plans. Perform exfiltration, infiltration, and lamping tests (as per section 6.15 "Cleaning and Testing") between manholes. No more than three manhole sections or 1000 feet of sewer (whichever is the lesser) shall be tested at any one time.
33. Continue installing the proposed 8-in gravity line south to the proposed MH 23 along NW 37 Avenue until STA. 127+77.40, where MH 22 has been installed. Install lateral services as the work progresses as shown on the plans. Perform exfiltration, infiltration, and lamping tests (as per section 6.15 "Cleaning and Testing") between manholes. No more than three manhole sections or 1000 feet of sewer (whichever is the lesser) shall be tested at any one time.
34. Move to STA. 143+75.00 (north side of FEC railroad), and install MH 26, continue installing the proposed 8-in gravity line north along NW 37 Ave. until connect to MH 27 at Sta. 146+50.75 (intersection of NW 76 ST). Install lateral services as the work progresses as shown on the plans. Perform

exfiltration, infiltration, and lamping tests (as per section 6.15 "Cleaning and Testing") between manholes. No more than three manhole sections or 1000 feet of sewer (whichever is the lesser) shall be tested at any one time.

35. Continue installing the proposed 10-in gravity line north to the proposed MH 27 along NW 37 Avenue until STA. 150+43.17, where MH 28 will be installed. Install lateral services as the work progresses as shown on the plans. Perform exfiltration, infiltration, and lamping tests (as per section 6.15 "Cleaning and Testing") between manholes. No more than three manhole sections or 1000 feet of sewer (whichever is the lesser) shall be tested at any one time.
36. Continue installing the proposed 10-in gravity line north to the proposed MH 28 along NW 37 Avenue until STA. 154+31.12 (south side of intersection of NW 79 ST), where MH 29 will be installed. Install lateral services as the work progresses as shown on the plans. Perform exfiltration, infiltration, and lamping tests (as per section 6.15 "Cleaning and Testing") between manholes. No more than three manhole sections or 1000 feet of sewer (whichever is the lesser) shall be tested at any one time.
37. On MH 29, install approximately 47 LF of 10-inch gravity sewer line going east along NW 79 St. until R/W limits of NW 37 Ave. Install temporary plug, that will be later removed to continue installation of proposed sanitary sewer to the east and connected to MH 95, as part of Phase II of this project.
38. Move to STA. 155+29.77 (north side of intersection of NW 79 ST), and install MH 30, continue installing the proposed 8-in gravity line north along NW 37 Ave. until connect to MH 31 at Sta. 157+85.70 (intersection of NW 80 ST). Install lateral services as the work progresses as shown on the plans. Perform exfiltration, infiltration, and lamping tests (as per section 6.15 "Cleaning and Testing") between manholes. No more than three manhole sections or 1000 feet of sewer (whichever is the lesser) shall be tested at any one time.
39. Move to STA. 163+76.97 (south side of intersection of NW 82 ST), and install MH 33, continue installing the proposed 10-in gravity line south along NW 37 Ave. until Sta. 160+89.34 (south side of intersection of NW 81 ST), where MH 32 will be installed. Install lateral services as the work progresses as shown on the plans. Perform exfiltration, infiltration, and lamping tests (as per section 6.15 "Cleaning and Testing") between manholes. No more than three manhole sections or 1000 feet of sewer (whichever is the lesser) shall be tested at any one time.
40. Continue installing the proposed 10-in gravity line south to the proposed MH 32 along NW 37 Avenue until STA. 157+85.70 (intersection of NW 80 ST), where MH 31 has been installed. Install lateral services as the work progresses as shown on the plans. Perform exfiltration, infiltration, and lamping tests (as per section 6.15 "Cleaning and Testing") between manholes. No more than three manhole sections or 1000 feet of sewer

(whichever is the lesser) shall be tested at any one time.

41. On MH 31, install approximately 54 LF of 10-inch gravity sewer line going east along NW 80 St. until R/W limits of NW 37 Ave. Install temporary plug, that will be later removed to continue installation of proposed sanitary sewer to the east and connected to MH 105, as part of Phase II of this project.

42. Connect existing 8-inch PVC gravity sewer lines to doghouse MH 11 and MH 10 as per WASD STD detail SS 3.1. Cut/ plug existing gravity sewer lines that connects to the existing gravity sewer line that belongs to City of Hialeah.

43. Connect all proposed sewer laterals to existing laterals serving properties/ business on the east side of NW 37 Ave. Cut/ plug and abandon in place all existing sewer laterals that serve properties to the east side of NW 37 Ave and belong to City of Hialeah. Contractor shall coordinate this sewer lateral disconnections process with City of Hialeah personnel.

44. Contractor to be aware that this project has been sub-divided into two (2) different phases (Phase I and Phase II). Phase I of the proposed gravity sewer system includes sewer installation along NW 37 Ave. Phase II of the proposed gravity sewer system includes sewer installation on the east side of NW 37 Ave and involves interconnections to existing manholes and proposed Pump Stations projects developed under different contracts. The certification and placement of lines into service will be subjected to certification/ final certification/ placement into service of Pump station projects. Final completion will not be accepted until the whole system is in service and all existing lateral flows are transferred to new sewer laterals.

45. Contractor shall coordinate with Miami Dade Transit (MDT) prior commencement of Construction phase. This project includes sewer pipe installation close to Metrorail Hialeah corridor (NW 79 ST and NW 37 Ave) ROW limits.

46. Perform and complete all pavement, driveway, sidewalk, landscape and sod restoration work to the satisfaction of the Engineer as shown on the Pavement Restoration Plan. Contractor is advised that this project has a Interdepartmental Memorandum of Agreement (MOA) with Miami Dade County Department of Transportation and Public Works, and final restoration from NW 36 St to NW 79 St will be included as part of Roadway Set of Plans under DTPW Project No. 20040330. Also, quantities required for Milling and Type V Pavement restoration along NW 37 Ave, from NW 79 St to NW 82 St have been already included as part of the proposed 16-inch Water main project along NW 37 Ave (PCTS No. 16054, ER No. W017329).

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47. Complete all remaining miscellaneous and appurtenant work, including restoration of damaged survey control points, final inspection, and cleanup.

5.04.1 PIPE AND FITTINGS - POLY VINYL CHLORIDE (PVC C-900)

PVC C900: AWWA C900, PVC (CI) Pipe for sewer mains and laterals shall conform to ANSI/AWWA C900, "Polyvinyl Chloride (PVC) Pressure Pipe, 4 In. Through 12 In., for Water Distribution", except as otherwise modified herein. The dimensions and pressure classes shall be for Dimension Ratio 25 (DR25) for PVC pipe with equivalent cast iron pipe outside diameters. Gravity sewer pipe shall be green in color and shall be installed for gravity mains and laterals.

AWWA C900 pipe shall be made from PVC thermoplastic having a cell classification of 12454 virgin compounds as defined in ASTM Standard D 1784. The AWWA C900 pipe shall be push-on type, with bells, spigots and elastomeric gaskets in accordance with ASTM Standard D 3139, "Specification for Joints for Plastic Pressure Pipes Using Flexible Elastomeric Seals". The gaskets shall conform to ASTM Standard F477 and shall be synthetic rubber. One gasket shall be furnished with each length of elastomeric gasket bell-end pipe. Pipe spigots shall be beveled. Pipe bells shall be extruded integral with the pipe barrel with a thickness equal to or greater than that of the barrel. Nominal laid length of AWWA C900, PVC (CI) pipe shall be 20 feet.

The AWWA C900 pipe shall be green for sewer and double labeled (180 degrees apart) with the following at intervals of not more than five (5) feet:

Date of manufacture - Manufacturer's Name & Code

Nominal size - "(CI)" - "PVC" - "DR25"

Cell classification - "SEWER PIPE"

GRAVITY SEWER PIPE EMBEDMENT MATERIAL – PVC Mains and Laterals

- A. Clean self-compacting fill shall be brought to the sight for gravity sewer mains and laterals to provide bedding to the springline of the PVC pipe as shown on the Department Standard Details.

Pipe Bedding for Gravity Sewer Mains: Well graded pearock, 1/4-inch to 3/4-inch maximum rock size or well graded No. 57 Stone, maximum rock size of 1-1/2-inches.

Pipe Bedding for Gravity Sewer Laterals: Well graded pearock, 1/4-inch to 3/4-inch maximum rock size.

- B. Initial backfill used to backfill to 6-inches to 1 foot above the PVC gravity main shall be well graded Class I or II Soil Classification (pearock or 57 stone) as defined by ASTM D2487 with a max rock size of 3/4-inch. The minimum trench width shall be the pipe width plus 24-inches (12-inches on each side).

Class I – angular rock 1/4-inch to 3/4-inch well graded stone including washed and graded limerock

Class II – Gravel and/or sand with little or no fines – maximum rock size of 1.5-inch.

- C. New pipe bedding (foundation) and initial backfill material shall always be furnished by the Contractor from a quarry. The pipe bedding material shall extend from 6-inches below the pipe to the springline to prevent haunching. Material for initial backfill shall be furnished by the Contractor. The Contractor shall prevent damage to the PVC gravity main during compaction by the use of soils which require limited mechanical compaction to achieve

the required density. Excavated backfill material can be used above the material furnished for the initial backfill.

- D. On-site suitable excavated material may be used to backfill the trench above the initial backfill at the top of the pipe. Unsuitable excavated material (muck, debris, etc.) shall be replaced with suitable backfill material.
- E. If after excavating to the depth of the pipe foundation, it is the opinion of the Engineer that the soil at that depth is unsatisfactory as foundation material because it contains marl, muck, organic matter, or other unsuitable material, the excavation shall be continued up to thirty (30) inches deeper, except if a suitable foundation material is exposed at a lesser depth, in which case further excavation will not be required. New suitable pipe bedding materials shall be added to this depth.

SLEEVES AND COUPLINGS

A. Stainless steel repair clamps shall be used for gravity sewer main connections.

B. Connections to laterals shall be done with a hard coupling or a flexible coupling with a shear ring.

LATERALS AND CLEANOUTS

- A. Sewer laterals shall be constructed of the same materials as the sewer main. Pipe bedding, backfill and compaction shall be the same as the gravity sewer main.
- B. Sewer later cleanout shall be 6-inch minimum in size as shown in Standard Detail SS 22.0 sheets 1 and 2. Clean out top fitting shall be a 6 PVC-DWV Female Adapter 4803-101 with screw in cap 6 PVC-DWV C/O Plug 4818-106. It shall be installed using Polyvinyl Chloride (PVC) AWWA C 900/C905 or SDR 26 wye type fitting, 45 degree bend, riser pipe and threaded clean-out plug. It shall have a concrete box and lid as shown on standard details. Cleanouts in the sidewalk shall have a ADA compliant meter box (USF 7715), cleanouts in driving surfaces shall be installed with a valve box.

A magnetic marker for sewer service shall be tied to the terminal end of each sanitary service. Markers shall be either Omni Marker #75027 or 3M 1403-1265 green sanitary marker, or equivalent.

Aggregate backfill with a maximum 3/4-inch gravel size (pearock) shall be used to provide the slope required of the sanitary sewer lateral, 1/8-inch per foot

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6.16 ABANDONMENT OF SANITARY SEWERS

A. General

1. Sanitary sewer abandonment consists of demolition and removal of any portion of existing sanitary sewer mains and structures and the abandonment in place of sanitary sewer mains and structures as shown on the Plans.
2. During placement of the fill, compensate for any irregularities in the sewer pipe, such as obstructions, open joints, or broken pipe to ensure no voids remain unfilled.
3. Perform demolition work prior to starting fill placement. Clean placement areas of sewers and manholes of debris that may hinder fill placement. Remove excessive amounts of sludge and any other substances that may degrade performance of the fill.
4. Remove free water prior to starting fill placement.

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B. Removal of Sanitary Sewerage

1. Existing sanitary sewer mains and structures that are to be cut, plugged and abandoned shall be pumped out prior to installation of fill.
2. Under no circumstances shall sludge or other debris removed during cleaning, or sewer main removal or abandonment operations, be dumped or spilled into the streets, ditches, storm drains or other sanitary sewers. However, water decanted from removed solids shall be returned to the sewer.
3. The Contractor is advised that he shall not dispose of this material by dumping on private or public property, by sale to others, or any means other than those given below. Any load of material, or any portion thereof, disposed of in a non-permitted fashion will result in a charge to the Contractor in the amount of \$500.00 per load, or any portion thereof, which sum will be deducted by the Department from any monies due the Contractor. Additionally, the Contractor shall be back charged for any fines, penalties, or other costs or damages imposed upon the Department by any agency or private party as a result of improper disposal by the Contractor.
4. The Contractor shall keep his haul route and work area(s) neat and clean and reasonably free of odor, and shall bear all responsibility for the cleanup of any spill which occurs during the transport of cleaning or surface preparation by-products and the cleanup of any such material which is authorized by or pursuant to this Contract and in accord with applicable law or regulations. The Contractor shall immediately cleanup any such spill or waste. If the Contractor fails to cleanup such spill or waste immediately, the Department shall have the right to cleanup or arrange for its cleanup and shall charge to the Contractor all costs, including administrative cost and overhead, incurred by the Department in connection with such cleanup. The Department shall also charge to the Contractor any costs incurred or penalties imposed on the Department as a result of any spill, dump or discard. Under no circumstances is this spilled material to be discharged into the waterways or any place other than where authorized to do so by the appropriate authority. The term "Contractor" as used in this section shall include the Contractor's subcontractors and other Contractors.

5. The general requirements for vehicles hauling such waste materials are as follows: Transport vehicles must be of type(s) approved for this application by the political jurisdiction involved. General requirements are that the vehicles have watertight bodies, that they may be properly equipped and fitted with seals and covers to prohibit material spillage or drainage, and that they be cleaned as often as is necessary to prevent the deposit of material on the roadways. Vehicles must be loaded within legal weight limits and operated safely within all traffic and speed regulations.
6. The routes used by the Contractor for the conveyance of this material on a regular basis shall be subject to approval by the governing authority having jurisdiction over such routes.
7. All waste materials and debris removed during these operations shall be, if sufficiently dewatered (at least 20 percent solids and no visible moisture), conveyed directly to the County's Class I sanitary landfill, the South Dade Solid Waste Disposal Facility, 24000 S.W. 97th Avenue, Miami, Florida. Solids which are too wet for direct deposit at the landfill shall be conveyed to and deposited on the Plant's "cleanout" pad established to receive and drain/dry this material. All cost for such removal and disposal, including tipping fees, shall be paid by the Contractor.
8. Material cleaned from the sewer shall be removed from the site for disposal as each truck is filled and at the end of each work shift.
9. Copies of records of all disposal shall be furnished to the Engineer, indicating disposal site, date, amount, and a brief description of material disposed. Under no circumstances will the Contractor be allowed to accumulate debris, etc., on the site of work beyond the stated time, except in totally enclosed containers and as acceptable to the Department.

C. Sewage Structures

1. Remove manhole frames and covers and any castings from the existing manholes, as shown on the Plans. Deliver these castings to the Department's storage yard.
2. Demolish and remove precast concrete adjustment rings, or brick and mortar corbel and chimney, or other pipeline structure, to a minimum depth of 4 feet below finished grade. The structure may be removed to a greater depth, but not deeper than 18 inches above the crown of the abandoned sewer.
3. If the adjacent sewer lines are not to be filled, place temporary plugs in each line connecting to the manhole in preparation for filling the manhole.
4. Punch holes in the bottoms of the manhole structures to prevent them from holding water. Place and compact backfill in remaining hole in compliance with these Specifications.

D. Gravity Sewer Pipelines

1. Abandon sewer lines by completely filling the sewer line with flowable fill.
2. Place flowable fill to fill the volume between the manholes as completely as practicable. Continuously place flowable fill from manhole to manhole with no intermediate pour points, but not exceeding 500 feet in length.
3. Have the filling operation performed by experienced crews with equipment to monitor density of the flowable fill and to control pressure.
4. Temporarily plug sewer lines which are to remain in operation during pouring/pumping to keep the lines free of flowable fill.

5. Pump flowable fill through bulkheads constructed for placement of two 2-inch PVC pipes or use other suitable construction methods to contain the flowable fill in the lines to be abandoned. These pipes will act as injection points or vents for placement of flowable fill.
6. Place flowable fill under pressure flow conditions into a properly vented open system until flowable fill emerges from the vent pipes. Pump flowable fill with sufficient pressure to overcome friction and to fill the sewer from the downstream end, to discharge at the upstream end.
7. Inject flowable fill through replaced ballast using grouting equipment and a series of grout pipes discharging at the bottom of the placement, allowing the fill to rise through the ballast effectively filling all voids. Alternatively, sequentially place individual pieces of ballast at the same time as flowable fill is placed. Do not fill with ballast more than 50 percent of the volume at any level to prevent nesting and void formation.
8. Remediate placement of flowable fill which does not fill voids in a sewer, in manhole or other structures, or where voids develop due to excessive shrinkage or bleeding of the fill by using pressure grouting either from inside the sewer or from the surface.
9. See Section 03375 "Flowable Fill" included herein as an Attachment to these Specifications.

E. Sewage Force Mains

1. Abandon sewer lines by completely filling the sewer line with flowable fill.
2. Place flowable fill to fill the volume of the pipe to be abandoned.
3. Have the filling operation performed by experienced crews with equipment to monitor density of the flowable fill and to control pressure.
4. Pump flowable fill through bulkheads constructed for placement of two 2-inch PVC pipes or use other suitable construction methods to contain the flowable fill in the lines to be abandoned. These pipes will act as injection points or vents for placement of flowable fill.
5. Place flowable fill under pressure flow conditions into a properly vented open system until flowable fill emerges from the vent pipes. Pump flowable fill with sufficient pressure to overcome friction and to fill the sewer from the downstream end, to discharge at the upstream end. If flowable fill does not emerge from the vent move to the other opening and pump the flowable fill.
6. Inject flowable fill through replaced ballast using grouting equipment and a series of grout pipes discharging at the bottom of the placement, allowing the fill to rise through the ballast effectively filling all voids. Alternatively, sequentially place individual pieces of ballast at the same time as flowable fill is placed. Do not fill with ballast more than 50 percent of the volume at any level to prevent nesting and void formation.
7. See Section 03375 "Flowable Fill" included herein as an Attachment to these Specifications.

NOT PART
OF THIS
CONTRACT

Contractor is advised that existing sanitary sewer system is maintained by City of Hialeah and the abandonment/disconnection of all pipes must be coordinated with City of Hialeah's representative.

8.00 MEASUREMENT AND PAYMENT

A. General:

1. Payment for all the work completed under this Project shall be made in accordance with the provisions of the "Special Conditions" on the basis of the specific provisions of this section of the Specifications.
2. The Contractor will be paid each month the value of the work completed during the preceding month (less retainage) and the invoiced cost including applicable sales taxes and shipping value (less retainage) of materials not already used, but which have been furnished by the Contractor under the Specifications, provided that such materials have been delivered, properly stored and inspected by the Engineer and that payment therefore has been satisfactorily certified by the Contractor to the Engineer. Remaining cost for materials (less retainage) will be paid at the same time as installation. Any payment for materials which are not used will be withheld from the final payment.
3. The Contractor shall receive and accept the compensation as provided in the Quotation, the RPQ and "Invoices and Payments" of the "Special Conditions" as full payment for furnishing all labor, materials, tools and equipment, for performing all operations necessary to complete the work under this Contract, and also in full payment for all loss or damages arising from the nature of the Work, or from the action of the elements or from unforeseen difficulties which may be encountered during the prosecution of the work until the final acceptance by the Department.
4. The cost breakdown (or Schedule of Values) referred to herein is defined in "Schedule of Values" of the "Special Conditions." The cost breakdown (Schedule of Values) approved by the Engineer will be used as the basis for making progress payments and for determining the cost of extra work which is the same or similar (as determined by the Engineer) to that defined in the "Schedule of Values."
5. The prices stated in the Quotation includes full compensation for overhead and profit, all costs and expenses for taxes, labor, equipment, furnishing and repairing small tools and ordinary equipment, mobilization, home office expenses and general supervision, materials, commissions, transportation charges and expenses, patent fees and royalties, bond, insurance, labor for handling materials during inspection, together with any and all other costs and expenses for performing and completing the work as shown on the Plans and specified herein. In addition, the Contractor shall include the actual cost of social security taxes, unemployment insurance, worker's compensation, fringe benefits, inclusive of life and health insurance, union dues, pension, pension plans, vacations, and insurance and contractor's public liability and property damage insurance involved in the work based on the actual wages paid to such labor and all other general costs and profits, prorated to each item.
6. Unless otherwise specifically stated elsewhere herein, the Contractor shall include in the prices bid all materials, electrical supply, fuel, lubricants, temporary equipment, temporary wiring, temporary piping and fittings, pumps, gages, and all other items of whatever nature required to completely test, balance, disinfect if required, and put into fully operational condition all equipment and/or systems supplied by either the Department or the Contractor and installed as a part of this Project. Further, any test

materials supplied by the Contractor shall be completely satisfactory to the Department. Any decision as to whether a particular material is suitable for test purposes shall be at the sole discretion of the Engineer whose decision shall be final. Any material considered not suitable shall be immediately replaced by the Contractor with suitable material and no extra compensation will be allowed."

7. It is the intent of the Department to obtain a complete and working installation under this Contract, and any items of labor, equipment or materials which may reasonably be assumed as necessary to accomplish this end shall be supplied whether or not they are specifically shown on the Plans or stated herein.
8. For purposes of determining the monthly payments to be made to the Contractor for work accomplished, the value of the work completed shall be determined in the following manner:
 - a. Excavation, installation of pipe, valves and fittings, water services, fire hydrants, completed backfill, plugging existing mains and temporary paving repairs shall constitute seventy-five percent **(75%)** of the price bid for these Quotation Items.
 - b. Submittal of the PSM's daily progress reports and/or field book notes and monthly as-builts of the work that has been performed to date (all documents subject to approval and acceptance by the Department) shall constitute ten percent **(10%)** of the price bid for these Quotation Items.
 - c. Completion of all interior work in the pipeline including cleaning, hydrostatic testing, and disinfection of water mains, shall constitute five percent **(5%)** of the price bid for these Quotation Items.
 - d. Submittal of the final as-builts to the satisfaction of the Engineer, completion of all surface repairs, restoration of public or private facilities, appurtenances, and all other work not provided for under other Quotation Items shall constitute the remaining ten percent **(10%)** of the price bid for these Quotation Items.

B. Prices Bid:

1. The price bid for each item shall be stated in both words and figures in the appropriate places in the Quotation form. All blank spaces for bid prices must be filled in with ink, or with a typewriter. The Bidder is further directed that any and all alterations, changes, corrections and modifications, made to the Quotation forms prior to submission of bids, must be initialed by the Bidder. Non-compliance by the Bidder of this directive may be grounds for rejection of his bid.
2. In the event that there is a discrepancy between the price written in words and the price written in numbers, the price written in words shall govern except where the number of units multiplied by the unit price shown in numbers equals the total price for that bid item. In such case the unit price shown in numbers shall govern over the unit price shown in words.
3. Where an error is made in the calculation of the total bid price of an item, the unit price shall govern.
4. If the bidder makes an error in his addition of the total bid prices of the applicable items in the Quotation, the correct sum of its applicable bid item totals shall be the Total Bid.

5. It has been determined that the County is not exempt from the payment of Florida State Sales Tax under this Contract. All items of materials, equipment and supplies furnished by the Contractor and remaining a part of the completed Project are subject to this Tax. The Bidder shall include a sufficient amount of money to pay for this Tax in his bid price. Sufficient money to pay the Tax for all miscellaneous materials and minor items shown on the Plans, specified herein, or necessary for the work, and which will remain a part of the completed Project, shall also be included in the price or prices bid, and no other compensation will be provided.

C. Quotation Items:

It is intended that all work required to complete this Project will be included in the various bid items as follows:

Item No. 1

For performing preparatory work and operations in mobilizing for beginning the work of the Project, including preparation and acceptance of Maintenance of Traffic Plan (MOT), but excluding materials and permit costs, both of which are paid under other payment items, shall include, but not be limited to; preparation, submission and acceptance of the MOT, first by the Department and if acceptable to the Department, submission to and acceptance by all other governing authorities; supply, submission and correction of all "Pre-Approved Product Lists" and/or shop drawings; ordering the said equipment and materials in a timely fashion; those operations necessary for the movement of personnel, equipment, supplies and incidentals to the Project site and for the establishment of temporary offices, buildings, safety equipment and first aid supplies, sanitary and other facilities; the cost of reestablishing the design baseline, vertical control points and reference points, and establishing proposed pipeline location; the cost of MOT and permit preparation/submission/acceptance; the costs of bonds, required insurance and other preconstruction expense but excluding the actual cost of permits, which are paid under a separate dedicated allowance account and excluding the cost of materials which are paid under another bid item(s).

Not inclusive of the costs incurred in the provision of traffic control and the costs incurred in the provision of off-duty police officers that are to be paid for under separate Bid Items.

The mobilization item will be paid in the following manner:

Contracts with a contract duration of up to and including one hundred twenty (120) calendar days will be paid in two (2) separate payments, each equal to fifty (50) percent of the amount bid for this item.

Contracts with a contract duration of over one hundred twenty (120) calendar days will be paid in four (4) separate payments, each equal to twenty-five (25) percent of the amount bid for this item.

The two or four payments will be made with the first two or four payment draws and is conditioned upon progress satisfactory to the Engineer being made pursuant to the accepted Project.

The total amount of the partial payments may not exceed ten (10) percent of the original Subtotal of the bid items. Any remaining amount will be paid upon completion of all work on the Contract. Retainage, as specified in the "General Covenants and Conditions" and any Special Provisions will apply to these payments.

Since this item is bid as an aggregate sum, payment will be in accordance with the cost breakdown as approved by the Engineer and measured as required by and satisfactory to the Engineer.

Item No. 2

For furnishing and delivering to the Department standard precast concrete manholes with frames and covers (0-6 ft.), will be paid at the unit price bid times the number of manholes accepted by the Engineer, sold and delivered. The price bid shall be full compensation for all materials for furnishing and delivering the manhole and shall include but not be limited to; transportation and handling costs; bedding; excavation; back filling; sheeting and shoring if necessary; and all miscellaneous items required for a complete and satisfactory installation and operation; furnishing cast iron frames and covers, infiltration inserts and sealing system, masonry; brick; pipe for stub-outs; manhole couplings; paint for the manhole inside and out; joint materials including vegetable soap lubricant; additional suitable backfill material, if required; setting frames and covers; temporary paving; permanent pavement if out of the ditch line; replacing utilities, shrubs, mail boxes, sprinkler systems, concrete, brick or rockbed walkways, and all other similar items, to original locations and to equal or better than original conditions; satisfying all requirements of the appended permits, and all other appurtenant and miscellaneous items including final cleanup.

Item No. 3

For installing standard precast concrete manholes complete with frames and covers (0-6 ft.), will be paid at the unit price bid times the number of manholes installed and accepted in the depth range of the proposal item. The price bid shall be full compensation for installation of the manhole and shall include but not be limited to; bedding; excavation; back filling; sheeting and shoring if necessary; de-watering the excavation; installing manhole and all miscellaneous items required for a complete and satisfactory installation and operation; unloading materials from delivery trucks along the site of the work; cast iron frames and covers, infiltration inserts and sealing system, masonry; brick; and placing them into position in the trench; cutting Ductile Iron pipe for stub-outs; installing pipe stub-outs; couplings; painting the manhole inside and out; furnishing and installing joint materials including vegetable soap lubricant; placing and compacting backfill; installing and compacting additional suitable backfill material, if required; making all connections to the lines; supporting and protecting existing utilities as required; masonry work; setting frames and covers; installation of concrete collars in unpaved areas, as required; temporary paving installation and removal; permanent pavement if out of the ditch line; replacing utilities, shrubs, mail boxes, sprinkler systems, concrete, brick or rockbed walkways, and all other similar items, to original locations and to equal or better than original conditions; satisfying all requirements of the appended permits, and all other appurtenant and miscellaneous work including final cleanup.

Item No. 4

For furnishing and delivering to the Department standard precast concrete manholes with frames and covers (6-8 ft.), will be paid at the unit price bid times the number of manholes accepted by the Engineer, sold and delivered. The price bid shall be full compensation for all materials for furnishing and delivering the manhole and shall include but not be limited to; transportation and handling costs; bedding; excavation; back filling; sheeting and shoring if necessary; and all miscellaneous items required for a complete and satisfactory installation and operation; furnishing cast iron frames and covers, infiltration inserts and sealing system, masonry; brick; pipe for stub-outs; manhole couplings; paint for the manhole inside and out; joint materials including vegetable soap lubricant; additional suitable backfill material, if required; setting frames and covers; temporary paving; permanent pavement if out of the ditch line; replacing utilities, shrubs, mail boxes, sprinkler systems, concrete, brick or rockbed walkways, and all other similar items, to original locations and to equal or better than original conditions; satisfying all requirements of the appended permits, and all other appurtenant and miscellaneous items including final cleanup.

Item No. 5

For installing standard precast concrete manholes complete with frames and covers (6-8 ft.), will be paid at the unit price bid times the number of manholes installed and accepted in the depth range of the proposal item. The price bid shall be full compensation for installation of the manhole and shall include but not be limited to; bedding; excavation; back filling; sheeting and shoring if necessary; dewatering the excavation; installing manhole and all miscellaneous items required for a complete and satisfactory installation and operation; unloading materials from delivery trucks along the site of the work; cast iron frames and covers, infiltration inserts and sealing system, masonry; brick; and placing them into position in the trench; cutting Ductile Iron pipe for stub-outs; installing pipe stub-outs; couplings; painting the manhole inside and out; furnishing and installing joint materials including vegetable soap lubricant; placing and compacting backfill; installing and compacting additional suitable backfill material, if required; making all connections to the lines; supporting and protecting existing utilities as required; masonry work; setting frames and covers; installation of concrete collars in unpaved areas, as required; temporary paving installation and removal; permanent pavement if out of the ditch line; replacing utilities, shrubs, mail boxes, sprinkler systems, concrete, brick or rockbed walkways, and all other similar items, to original locations and to equal or better than original conditions; satisfying all requirements of the appended permits, and all other appurtenant and miscellaneous work including final cleanup.

Item No. 6

For furnishing and delivering to the Department standard precast concrete manholes with frames and covers (8-10 ft.), will be paid at the unit price bid times the number of manholes accepted by the Engineer, sold and delivered. The price bid shall be full compensation for all materials for furnishing and delivering the manhole and shall include but not be limited to; transportation and handling costs; bedding; excavation; back filling; sheeting and shoring if necessary; and all miscellaneous items required for a complete and satisfactory installation and operation; furnishing cast iron frames and covers, infiltration inserts and sealing system, masonry; brick; pipe for stub-outs; manhole couplings; paint for the manhole inside and out; joint materials including vegetable soap lubricant;

additional suitable backfill material, if required; setting frames and covers; temporary paving; permanent pavement if out of the ditch line; replacing utilities, shrubs, mail boxes, sprinkler systems, concrete, brick or rockbed walkways, and all other similar items, to original locations and to equal or better than original conditions; satisfying all requirements of the appended permits, and all other appurtenant and miscellaneous items including final cleanup.

Item No. 7

For installing standard precast concrete manholes complete with frames and covers (8-10 ft.), will be paid at the unit price bid times the number of manholes installed and accepted in the depth range of the proposal item. The price bid shall be full compensation for installation of the manhole and shall include but not be limited to; bedding; excavation; back filling; sheeting and shoring if necessary; dewatering the excavation; installing manhole and all miscellaneous items required for a complete and satisfactory installation and operation; unloading materials from delivery trucks along the site of the work; cast iron frames and covers, infiltration inserts and sealing system, masonry; brick; and placing them into position in the trench; cutting Ductile Iron pipe for stub-outs; installing pipe stub-outs; couplings; painting the manhole inside and out; furnishing and installing joint materials including vegetable soap lubricant; placing and compacting backfill; installing and compacting additional suitable backfill material, if required; making all connections to the lines; supporting and protecting existing utilities as required; masonry work; setting frames and covers; installation of concrete collars in unpaved areas, as required; temporary paving installation and removal; permanent pavement if out of the ditch line; replacing utilities, shrubs, mail boxes, sprinkler systems, concrete, brick or rockbed walkways, and all other similar items, to original locations and to equal or better than original conditions; satisfying all requirements of the appended permits, and all other appurtenant and miscellaneous work including final cleanup.

Item No. 8

For furnishing and delivering to the Department standard precast concrete manholes with frames and covers (10-12 ft.), will be paid at the unit price bid times the number of manholes accepted by the Engineer, sold and delivered. The price bid shall be full compensation for all materials for furnishing and delivering the manhole and shall include but not be limited to; transportation and handling costs; bedding; excavation; back filling; sheeting and shoring if necessary; and all miscellaneous items required for a complete and satisfactory installation and operation; furnishing cast iron frames and covers, infiltration inserts and sealing system, masonry; brick; pipe for stub-outs; manhole couplings; paint for the manhole inside and out; joint materials including vegetable soap lubricant; additional suitable backfill material, if required; setting frames and covers; temporary paving; permanent pavement if out of the ditch line; replacing utilities, shrubs, mail boxes, sprinkler systems, concrete, brick or rockbed walkways, and all other similar items, to original locations and to equal or better than original conditions; satisfying all requirements of the appended permits, and all other appurtenant and miscellaneous items including final cleanup.

Item No. 9

For installing standard precast concrete manholes complete with frames and covers (10-12 ft.), will be paid at the unit price bid times the number of manholes installed and accepted in the depth range of the proposal item. The price bid shall

be full compensation for installation of the manhole and shall include but not be limited to; bedding; excavation; back filling; sheeting and shoring if necessary; dewatering the excavation; installing manhole and all miscellaneous items required for a complete and satisfactory installation and operation; unloading materials from delivery trucks along the site of the work; cast iron frames and covers, infiltration inserts and sealing system, masonry; brick; and placing them into position in the trench; cutting Ductile Iron pipe for stub-outs; installing pipe stub-outs; couplings; painting the manhole inside and out; furnishing and installing joint materials including vegetable soap lubricant; placing and compacting backfill; installing and compacting additional suitable backfill material, if required; making all connections to the lines; supporting and protecting existing utilities as required; masonry work; setting frames and covers; installation of concrete collars in unpaved areas, as required; temporary paving installation and removal; permanent pavement if out of the ditch line; replacing utilities, shrubs, mail boxes, sprinkler systems, concrete, brick or rockbed walkways, and all other similar items, to original locations and to equal or better than original conditions; satisfying all requirements of the appended permits, and all other appurtenant and miscellaneous work including final cleanup.

Item No. 10

For furnishing and delivering to the Department fiberglass reinforced (FRP) manholes with frames and covers (12-14 ft.), will be paid at the unit price bid times the number of manholes accepted by the Engineer, sold and delivered. The price bid shall be full compensation for all materials for furnishing and delivering the manhole and shall include but not be limited to; transportation and handling costs; bedding; excavation; back filling; sheeting and shoring if necessary; and all miscellaneous items required for a complete and satisfactory installation and operation; furnishing cast iron frames and covers, infiltration inserts and sealing system, masonry; brick; pipe for stub-outs; manhole couplings; paint for the manhole inside and out; joint materials including vegetable soap lubricant; additional suitable backfill material, if required; setting frames and covers; temporary paving; permanent pavement if out of the ditch line; replacing utilities, shrubs, mail boxes, sprinkler systems, concrete, brick or rockbed walkways, and all other similar items, to original locations and to equal or better than original conditions; satisfying all requirements of the appended permits, and all other appurtenant and miscellaneous items including final cleanup.

Item No. 11

For installing fiberglass reinforced (FRP) manholes complete with frames and covers (12-14 ft.), will be paid at the unit price bid times the number of manholes installed and accepted in the depth range of the proposal item. The price bid shall be full compensation for installation of the manhole and shall include but not be limited to; bedding; excavation; back filling; sheeting and shoring if necessary; dewatering the excavation; installing manhole and all miscellaneous items required for a complete and satisfactory installation and operation; unloading materials from delivery trucks along the site of the work; cast iron frames and covers, infiltration inserts and sealing system, masonry; brick; and placing them into position in the trench; cutting Ductile Iron pipe for stub-outs; installing pipe stub-outs; couplings; painting the manhole inside and out; furnishing and installing joint materials including vegetable soap lubricant; placing and compacting backfill; installing and compacting additional suitable backfill material, if required; making all connections to the lines; supporting and protecting existing utilities as required; masonry work;

setting frames and covers; installation of concrete collars in unpaved areas, as required; temporary paving installation and removal; permanent pavement if out of the ditch line; replacing utilities, shrubs, mail boxes, sprinkler systems, concrete, brick or rockbed walkways, and all other similar items, to original locations and to equal or better than original conditions; satisfying all requirements of the appended permits, and all other appurtenant and miscellaneous work including final cleanup.

Item No. 12

For furnishing and delivering to the Department precast concrete manholes with drop-connection, with frames and covers (8-10 ft.), will be paid at the unit price bid times the number of manholes accepted by the Engineer, sold and delivered. The price bid shall be full compensation for all materials for furnishing and delivering the manhole and shall include but not be limited to; transportation and handling costs; bedding; excavation; back filling; sheeting and shoring if necessary; and all miscellaneous items required for a complete and satisfactory installation and operation; furnishing cast iron frames and covers, infiltration inserts and sealing system, masonry; brick; pipe for stub-outs; manhole couplings; paint for the manhole inside and out; concrete protective coating; joint materials including vegetable soap lubricant; additional suitable backfill material, if required; setting frames and covers; temporary paving; permanent pavement if out of the ditch line; replacing utilities, shrubs, mail boxes, sprinkler systems, concrete, brick or rockbed walkways, and all other similar items, to original locations and to equal or better than original conditions; satisfying all requirements of the appended permits, and all other appurtenant and miscellaneous items including final cleanup.

Item No. 13

For installing standard precast concrete manholes with drop-connection, complete with frames and covers (8-10 ft.), will be paid at the unit price bid times the number of manholes installed and accepted in the depth range of the proposal item. The price bid shall be full compensation for installation of the manhole and shall include but not be limited to; bedding; excavation; back filling; sheeting and shoring if necessary; de-watering the excavation; installing manhole and all miscellaneous items required for a complete and satisfactory installation and operation; unloading materials from delivery trucks along the site of the work; cast iron frames and covers, infiltration inserts and sealing system, masonry; brick; and placing them into position in the trench; cutting Ductile Iron pipe for stub-outs; installing pipe stub-outs; couplings; painting the manhole inside and out; applying department-approved concrete protective coating; furnishing and installing joint materials including vegetable soap lubricant; placing and compacting backfill; installing and compacting additional suitable backfill material, if required; making all connections to the lines; supporting and protecting existing utilities as required; masonry work; setting frames and covers; installation of concrete collars in unpaved areas, as required; temporary paving installation and removal; permanent pavement if out of the ditch line; replacing utilities, shrubs, mail boxes, sprinkler systems, concrete, brick or rockbed walkways, and all other similar items, to original locations and to equal or better than original conditions; satisfying all requirements of the appended permits, and all other appurtenant and miscellaneous work including final cleanup.

Item No. 14

For furnishing and delivering to the Department fiberglass reinforced (FRP) manholes with drop-connection, with frames and covers (12-14 ft.), will be paid at the unit price bid times the number of manholes accepted by the Engineer, sold and delivered. The price bid shall be full compensation for all materials for furnishing and delivering the manhole and shall include but not be limited to; transportation and handling costs; bedding; excavation; back filling; sheeting and shoring if necessary; and all miscellaneous items required for a complete and satisfactory installation and operation; furnishing cast iron frames and covers, infiltration inserts and sealing system, masonry; brick; pipe for stub-outs; manhole couplings; paint for the manhole inside and out; concrete protective coating; joint materials including vegetable soap lubricant; additional suitable backfill material, if required; setting frames and covers; temporary paving; permanent pavement if out of the ditch line; replacing utilities, shrubs, mail boxes, sprinkler systems, concrete, brick or rockbed walkways, and all other similar items, to original locations and to equal or better than original conditions; satisfying all requirements of the appended permits, and all other appurtenant and miscellaneous items including final cleanup.

Item No. 15

For installing fiberglass reinforced (FRP) manholes with drop-connection, complete with frames and covers (12-14 ft.), will be paid at the unit price bid times the number of manholes installed and accepted in the depth range of the proposal item. The price bid shall be full compensation for installation of the manhole and shall include but not be limited to; bedding; excavation; back filling; sheeting and shoring if necessary; de-watering the excavation; installing manhole and all miscellaneous items required for a complete and satisfactory installation and operation; unloading materials from delivery trucks along the site of the work; cast iron frames and covers, infiltration inserts and sealing system, masonry; brick; and placing them into position in the trench; cutting Ductile Iron pipe for stub-outs; installing pipe stub-outs; couplings; painting the manhole inside and out; applying department-approved concrete protective coating; furnishing and installing joint materials including vegetable soap lubricant; placing and compacting backfill; installing and compacting additional suitable backfill material, if required; making all connections to the lines; supporting and protecting existing utilities as required; masonry work; setting frames and covers; installation of concrete collars in unpaved areas, as required; temporary paving installation and removal; permanent pavement if out of the ditch line; replacing utilities, shrubs, mail boxes, sprinkler systems, concrete, brick or rockbed walkways, and all other similar items, to original locations and to equal or better than original conditions; satisfying all requirements of the appended permits, and all other appurtenant and miscellaneous work including final cleanup.

Item No. 16

For furnishing and delivering to the Department 8-inch PVC pipe and fittings for sanitary sewer, will be paid for at the unit price bid per lineal foot times the number of feet accepted by the Engineer, which payment shall be full compensation for furnishing pipe, fittings (except those included under other pay items) and specials; backfill materials; materials for making connections to existing structures, including modifications to existing mains or structures, if necessary; additional approved couplings if necessary; temporary and

permanent pavement materials; transportation and handling cost delivered ditchside; unloading the pipe and fittings from delivery trucks at the job site (trench side) and placing the pipe and fittings into position in the trench; furnishing and delivering all joint materials; gaskets or other joint restraints to restrain pipes at location specified in the plans or required by the Engineer; furnishing and delivering all materials and equipment required to and test the sewer main; and all other appurtenant and miscellaneous items required for a complete and satisfactory installation. The quantity for payment shall be the horizontal projection of the centerline of the accepted pipe, measured to the nearest one-tenth of a foot from P.I. to P.I. of fittings and to the seat of the bell at the end of any particular run.

Item No. 17

For installing 8-inch PVC pipe and fittings for sanitary sewer (depth of 0-6 ft.), which will be paid for at the unit price bid times the number of linear feet installed and accepted, which payment shall be full compensation for installing the gravity main complete except for those out in another bid and shall include but not be limited to; pipe & fittings (but excluding tees and wyes for services), pipe bedding; excavation and backfilling; furnishing and installing of new pipe bedding; placing and compaction of suitable trench backfill; furnishing, placing, and compacting additional suitable backfill, if required; disposing of excess or unsuitable fill material; removal and replacing miscellaneous structures; changing pipe grade; concrete pavements (crosswalk), traffic separators, sprinkler systems; saw cutting existing pavement; exploratory and construction excavation; sheeting and shoring to control trench width; de-watering the excavation; slab covered trench restoration and desilting; making thrust restrained joints; installing all joint materials including thrust-resistant materials; supporting and protecting existing utilities along the route of the lines themselves; installing gaskets or other joint restraints to restrain pipes at location specified in the plans or required by the Engineer; cleaning and testing main including CCTV inspection upon completion; replacing utilities, catch basins, manholes, grass, shrubs, mail boxes, concrete crosswalk, fences, walls, sprinkler systems, and shoulder, and all other similar items, to original locations and to equal or better than original condition; other details within Plans and this specifications; project record document and all other appurtenant and miscellaneous items and work including final cleanup for the complete and satisfactory installation. The quantity for payment shall be the horizontal projection of the center line of the permanently installed and accepted pipe, measured to the nearest one-tenth of a foot from P.I. to P.I. of the seat of the bell at the end of any particular run.

Item No. 18

For installing 8-inch PVC pipe and fittings for sanitary sewer (depth of 6-8 ft.), which will be paid for at the unit price bid times the number of linear feet installed and accepted, which payment shall be full compensation for installing the gravity main complete except for those out in another bid and shall include but not be limited to; pipe & fittings (but excluding tees and wyes for services), pipe bedding; excavation and backfilling; furnishing and installing of new pipe bedding; placing and compaction of suitable trench backfill; furnishing, placing, and compacting additional suitable backfill, if required; disposing of excess or unsuitable fill material; removal and replacing miscellaneous structures;

changing pipe grade; concrete pavements (crosswalk), traffic separators, sprinkler systems; saw cutting existing pavement; exploratory and construction excavation; sheeting and shoring to control trench width; de-watering the excavation; slab covered trench restoration and desilting; making thrust restrained joints; installing all joint materials including thrust-resistant materials; supporting and protecting existing utilities along the route of the lines themselves; installing gaskets or other joint restraints to restrain pipes at location specified in the plans or required by the Engineer; cleaning and testing main including CCTV inspection upon completion; replacing utilities, catch basins, manholes, grass, shrubs, mail boxes, concrete crosswalk, fences, walls, sprinkler systems, and shoulder, and all other similar items, to original locations and to equal or better than original condition; other details within Plans and this specifications; project record document and all other appurtenant and miscellaneous items and work including final cleanup for the complete and satisfactory installation. The quantity for payment shall be the horizontal projection of the center line of the permanently installed and accepted pipe, measured to the nearest one-tenth of a foot from P.I. to P.I. of the seat of the bell at the end of any particular run.

Item No. 19

For installing 8-inch PVC pipe and fittings for sanitary sewer (depth of 8-10 ft.), which will be paid for at the unit price bid times the number of linear feet installed and accepted, which payment shall be full compensation for installing the gravity main complete except for those out in another bid and shall include but not be limited to; pipe & fittings (but excluding tees and wyes for services), pipe bedding; excavation and backfilling; furnishing and installing of new pipe bedding; placing and compaction of suitable trench backfill; furnishing, placing, and compacting additional suitable backfill, if required; disposing of excess or unsuitable fill material; removal and replacing miscellaneous structures; changing pipe grade; concrete pavements (crosswalk), traffic separators, sprinkler systems; saw cutting existing pavement; exploratory and construction excavation; sheeting and shoring to control trench width; de-watering the excavation; slab covered trench restoration and desilting; making thrust restrained joints; installing all joint materials including thrust-resistant materials; supporting and protecting existing utilities along the route of the lines themselves; installing gaskets or other joint restraints to restrain pipes at location specified in the plans or required by the Engineer; cleaning and testing main including CCTV inspection upon completion; replacing utilities, catch basins, manholes, grass, shrubs, mail boxes, concrete crosswalk, fences, walls, sprinkler systems, and shoulder, and all other similar items, to original locations and to equal or better than original condition; other details within Plans and this specifications; project record document and all other appurtenant and miscellaneous items and work including final cleanup for the complete and satisfactory installation. The quantity for payment shall be the horizontal projection of the center line of the permanently installed and accepted pipe, measured to the nearest one-tenth of a foot from P.I. to P.I. of the seat of the bell at the end of any particular run.

Item No. 20

For installing 8-inch PVC pipe and fittings for sanitary sewer (depth of 10-12 ft.), which will be paid for at the unit price bid times the number of linear feet installed

and accepted, which payment shall be full compensation for installing the gravity main complete except for those out in another bid and shall include but not be limited to; pipe & fittings (but excluding tees and wyes for services), pipe bedding; excavation and backfilling; furnishing and installing of new pipe bedding; placing and compaction of suitable trench backfill; furnishing, placing, and compacting additional suitable backfill, if required; disposing of excess or unsuitable fill material; removal and replacing miscellaneous structures; changing pipe grade; concrete pavements (crosswalk), traffic separators, sprinkler systems; saw cutting existing pavement; exploratory and construction excavation; sheeting and shoring to control trench width; de-watering the excavation; slab covered trench restoration and desilting; making thrust restrained joints; installing all joint materials including thrust-resistant materials; supporting and protecting existing utilities along the route of the lines themselves; installing gaskets or other joint restraints to restrain pipes at location specified in the plans or required by the Engineer; cleaning and testing main including CCTV inspection upon completion; replacing utilities, catch basins, manholes, grass, shrubs, mail boxes, concrete crosswalk, fences, walls, sprinkler systems, and shoulder, and all other similar items, to original locations and to equal or better than original condition; other details within Plans and this specifications; project record document and all other appurtenant and miscellaneous items and work including final cleanup for the complete and satisfactory installation. The quantity for payment shall be the horizontal projection of the center line of the permanently installed and accepted pipe, measured to the nearest one-tenth of a foot from P.I. to P.I. of the seat of the bell at the end of any particular run.

Item No. 21

For furnishing and delivering to the Department 10-inch PVC pipe and fittings for sanitary sewer, will be paid for at the unit price bid per lineal foot times the number of feet accepted by the Engineer, which payment shall be full compensation for furnishing pipe, fittings (except those included under other pay items) and specials; backfill materials; materials for making connections to existing structures, including modifications to existing mains or structures, if necessary; additional approved couplings if necessary; temporary and permanent pavement materials; transportation and handling cost delivered ditchside; unloading the pipe and fittings from delivery trucks at the job site (trench side) and placing the pipe and fittings into position in the trench; furnishing and delivering all joint materials; gaskets or other joint restraints to restrain pipes at location specified in the plans or required by the Engineer; furnishing and delivering all materials and equipment required to and test the sewer main; and all other appurtenant and miscellaneous items required for a complete and satisfactory installation. The quantity for payment shall be the horizontal projection of the centerline of the accepted pipe, measured to the nearest one-tenth of a foot from P.I. to P.I. of fittings and to the seat of the bell at the end of any particular run.

Item No. 22

For installing 10-inch PVC pipe and fittings for sanitary sewer (depth of 0-6 ft.), which will be paid for at the unit price bid times the number of linear feet installed and accepted, which payment shall be full compensation for installing the gravity main complete except for those out in another bid and shall include but not be

limited to; pipe & fittings (but excluding tees and wyes for services), pipe bedding; excavation and backfilling; furnishing and installing of new pipe bedding; placing and compaction of suitable trench backfill; furnishing, placing, and compacting additional suitable backfill, if required; disposing of excess or unsuitable fill material; removal and replacing miscellaneous structures; changing pipe grade; concrete pavements (crosswalk), traffic separators, sprinkler systems; saw cutting existing pavement; exploratory and construction excavation; sheeting and shoring to control trench width; de-watering the excavation; slab covered trench restoration and desilting; making thrust restrained joints; installing all joint materials including thrust-resistant materials; supporting and protecting existing utilities along the route of the lines themselves; installing gaskets or other joint restraints to restrain pipes at location specified in the plans or required by the Engineer; cleaning and testing main including CCTV inspection upon completion; replacing utilities, catch basins, manholes, grass, shrubs, mail boxes, concrete crosswalk, fences, walls, sprinkler systems, and shoulder, and all other similar items, to original locations and to equal or better than original condition; other details within Plans and this specifications; project record document and all other appurtenant and miscellaneous items and work including final cleanup for the complete and satisfactory installation. The quantity for payment shall be the horizontal projection of the center line of the permanently installed and accepted pipe, measured to the nearest one-tenth of a foot from P.I. to P.I. of the seat of the bell at the end of any particular run.

Item No. 23

For installing 10-inch PVC pipe and fittings for sanitary sewer (depth of 6-8 ft.), which will be paid for at the unit price bid times the number of linear feet installed and accepted, which payment shall be full compensation for installing the gravity main complete except for those out in another bid and shall include but not be limited to; pipe & fittings (but excluding tees and wyes for services), pipe bedding; excavation and backfilling; furnishing and installing of new pipe bedding; placing and compaction of suitable trench backfill; furnishing, placing, and compacting additional suitable backfill, if required; disposing of excess or unsuitable fill material; removal and replacing miscellaneous structures; changing pipe grade; concrete pavements (crosswalk), traffic separators, sprinkler systems; saw cutting existing pavement; exploratory and construction excavation; sheeting and shoring to control trench width; de-watering the excavation; slab covered trench restoration and desilting; making thrust restrained joints; installing all joint materials including thrust-resistant materials; supporting and protecting existing utilities along the route of the lines themselves; installing gaskets or other joint restraints to restrain pipes at location specified in the plans or required by the Engineer; cleaning and testing main including CCTV inspection upon completion; replacing utilities, catch basins, manholes, grass, shrubs, mail boxes, concrete crosswalk, fences, walls, sprinkler systems, and shoulder, and all other similar items, to original locations and to equal or better than original condition; other details within Plans and this specifications; project record document and all other appurtenant and miscellaneous items and work including final cleanup for the complete and satisfactory installation. The quantity for payment shall be the horizontal projection of the center line of the permanently installed and accepted pipe, measured to the nearest one-tenth of a foot from P.I. to P.I. of the seat of the

bell at the end of any particular run.

Item No. 24

For installing 10-inch PVC pipe and fittings for sanitary sewer (depth of 8-10 ft.), which will be paid for at the unit price bid times the number of linear feet installed and accepted, which payment shall be full compensation for installing the gravity main complete except for those out in another bid and shall include but not be limited to; pipe & fittings (but excluding tees and wyes for services), pipe bedding; excavation and backfilling; furnishing and installing of new pipe bedding; placing and compaction of suitable trench backfill; furnishing, placing, and compacting additional suitable backfill, if required; disposing of excess or unsuitable fill material; removal and replacing miscellaneous structures; changing pipe grade; concrete pavements (crosswalk), traffic separators, sprinkler systems; saw cutting existing pavement; exploratory and construction excavation; sheeting and shoring to control trench width; de-watering the excavation; slab covered trench restoration and desilting; making thrust restrained joints; installing all joint materials including thrust-resistant materials; supporting and protecting existing utilities along the route of the lines themselves; installing gaskets or other joint restraints to restrain pipes at location specified in the plans or required by the Engineer; cleaning and testing main including CCTV inspection upon completion; replacing utilities, catch basins, manholes, grass, shrubs, mail boxes, concrete crosswalk, fences, walls, sprinkler systems, and shoulder, and all other similar items, to original locations and to equal or better than original condition; other details within Plans and this specifications; project record document and all other appurtenant and miscellaneous items and work including final cleanup for the complete and satisfactory installation. The quantity for payment shall be the horizontal projection of the center line of the permanently installed and accepted pipe, measured to the nearest one-tenth of a foot from P.I. to P.I. of the seat of the bell at the end of any particular run.

Item No. 25

For installing 10-inch PVC pipe and fittings for sanitary sewer (depth of 10-12 ft.), which will be paid for at the unit price bid times the number of linear feet installed and accepted, which payment shall be full compensation for installing the gravity main complete except for those out in another bid and shall include but not be limited to; pipe & fittings (but excluding tees and wyes for services), pipe bedding; excavation and backfilling; furnishing and installing of new pipe bedding; placing and compaction of suitable trench backfill; furnishing, placing, and compacting additional suitable backfill, if required; disposing of excess or unsuitable fill material; removal and replacing miscellaneous structures; changing pipe grade; concrete pavements (crosswalk), traffic separators, sprinkler systems; saw cutting existing pavement; exploratory and construction excavation; sheeting and shoring to control trench width; de-watering the excavation; slab covered trench restoration and desilting; making thrust restrained joints; installing all joint materials including thrust-resistant materials; supporting and protecting existing utilities along the route of the lines themselves; installing gaskets or other joint restraints to restrain pipes at location specified in the plans or required by the Engineer; cleaning and testing main including CCTV inspection upon completion; replacing utilities, catch basins, manholes, grass, shrubs, mail boxes, concrete crosswalk, fences, walls,

sprinkler systems, and shoulder, and all other similar items, to original locations and to equal or better than original condition; other details within Plans and this specifications; project record document and all other appurtenant and miscellaneous items and work including final cleanup for the complete and satisfactory installation. The quantity for payment shall be the horizontal projection of the center line of the permanently installed and accepted pipe, measured to the nearest one-tenth of a foot from P.I. to P.I. of the seat of the bell at the end of any particular run.

Item No. 26

For installing 10-inch PVC pipe and fittings for sanitary sewer (depth of 12-14 ft.), which will be paid for at the unit price bid times the number of linear feet installed and accepted, which payment shall be full compensation for installing the gravity main complete except for those out in another bid and shall include but not be limited to; pipe & fittings (but excluding tees and wyes for services), pipe bedding; excavation and backfilling; furnishing and installing of new pipe bedding; placing and compaction of suitable trench backfill; furnishing, placing, and compacting additional suitable backfill, if required; disposing of excess or unsuitable fill material; removal and replacing miscellaneous structures; changing pipe grade; concrete pavements (crosswalk), traffic separators, sprinkler systems; saw cutting existing pavement; exploratory and construction excavation; sheeting and shoring to control trench width; de-watering the excavation; slab covered trench restoration and desilting; making thrust restrained joints; installing all joint materials including thrust-resistant materials; supporting and protecting existing utilities along the route of the lines themselves; installing gaskets or other joint restraints to restrain pipes at location specified in the plans or required by the Engineer; cleaning and testing main including CCTV inspection upon completion; replacing utilities, catch basins, manholes, grass, shrubs, mail boxes, concrete crosswalk, fences, walls, sprinkler systems, and shoulder, and all other similar items, to original locations and to equal or better than original condition; other details within Plans and this specifications; project record document and all other appurtenant and miscellaneous items and work including final cleanup for the complete and satisfactory installation. The quantity for payment shall be the horizontal projection of the center line of the permanently installed and accepted pipe, measured to the nearest one-tenth of a foot from P.I. to P.I. of the seat of the bell at the end of any particular run.

Item No. 27

For furnishing and delivering to the Department 12-inch PVC pipe and fittings for sanitary sewer, will be paid for at the unit price bid per lineal foot times the number of feet accepted by the Engineer, which payment shall be full compensation for furnishing pipe, fittings (except those included under other pay items) and specials; backfill materials; materials for making connections to existing structures, including modifications to existing mains or structures, if necessary; additional approved couplings if necessary; temporary and permanent pavement materials; transportation and handling cost delivered ditchside; unloading the pipe and fittings from delivery trucks at the job site (trench side) and placing the pipe and fittings into position in the trench; furnishing and delivering all joint materials; gaskets or other joint restraints to restrain pipes at location specified in the plans or required by the Engineer;

furnishing and delivering all materials and equipment required to and test the sewer main; and all other appurtenant and miscellaneous items required for a complete and satisfactory installation. The quantity for payment shall be the horizontal projection of the centerline of the accepted pipe, measured to the nearest one-tenth of a foot from P.I. to P.I. of fittings and to the seat of the bell at the end of any particular run.

Item No. 28

For installing 12-inch PVC pipe and fittings for sanitary sewer (depth of 8-10 ft.), which will be paid for at the unit price bid times the number of linear feet installed and accepted, which payment shall be full compensation for installing the gravity main complete except for those out in another bid and shall include but not be limited to; pipe & fittings (but excluding tees and wyes for services), pipe bedding; excavation and backfilling; furnishing and installing of new pipe bedding; placing and compaction of suitable trench backfill; furnishing, placing, and compacting additional suitable backfill, if required; disposing of excess or unsuitable fill material; removal and replacing miscellaneous structures; changing pipe grade; concrete pavements (crosswalk), traffic separators, sprinkler systems; saw cutting existing pavement; exploratory and construction excavation; sheeting and shoring to control trench width; de-watering the excavation; slab covered trench restoration and desilting; making thrust restrained joints; installing all joint materials including thrust-resistant materials; supporting and protecting existing utilities along the route of the lines themselves; installing gaskets or other joint restraints to restrain pipes at location specified in the plans or required by the Engineer; cleaning and testing main including CCTV inspection upon completion; replacing utilities, catch basins, manholes, grass, shrubs, mail boxes, concrete crosswalk, fences, walls, sprinkler systems, and shoulder, and all other similar items, to original locations and to equal or better than original condition; other details within Plans and this specifications; project record document and all other appurtenant and miscellaneous items and work including final cleanup for the complete and satisfactory installation. The quantity for payment shall be the horizontal projection of the center line of the permanently installed and accepted pipe, measured to the nearest one-tenth of a foot from P.I. to P.I. of the seat of the bell at the end of any particular run.

Item No. 29

For furnishing and delivering to the Department 15-inch PVC pipe and fittings for sanitary sewer, will be paid for at the unit price bid per lineal foot times the number of feet accepted by the Engineer, which payment shall be full compensation for furnishing pipe, fittings (except those included under other pay items) and specials; backfill materials; materials for making connections to existing structures, including modifications to existing mains or structures, if necessary; additional approved couplings if necessary; temporary and permanent pavement materials; transportation and handling cost delivered ditchside; unloading the pipe and fittings from delivery trucks at the job site (trench side) and placing the pipe and fittings into position in the trench; furnishing and delivering all joint materials; gaskets or other joint restraints to restrain pipes at location specified in the plans or required by the Engineer; furnishing and delivering all materials and equipment required to and test the sewer main; and all other appurtenant and miscellaneous items required for a

complete and satisfactory installation. The quantity for payment shall be the horizontal projection of the centerline of the accepted pipe, measured to the nearest one-tenth of a foot from P.I. to P.I. of fittings and to the seat of the bell at the end of any particular run.

Item No. 30

For installing 15-inch PVC pipe and fittings for sanitary sewer (depth of 12-14 ft.), which will be paid for at the unit price bid times the number of linear feet installed and accepted, which payment shall be full compensation for installing the gravity main complete except for those out in another bid and shall include but not be limited to; pipe & fittings (but excluding tees and wyes for services), pipe bedding; excavation and backfilling; furnishing and installing of new pipe bedding; placing and compaction of suitable trench backfill; furnishing, placing, and compacting additional suitable backfill, if required; disposing of excess or unsuitable fill material; removal and replacing miscellaneous structures; changing pipe grade; concrete pavements (crosswalk), traffic separators, sprinkler systems; saw cutting existing pavement; exploratory and construction excavation; sheeting and shoring to control trench width; de-watering the excavation; slab covered trench restoration and desilting; making thrust restrained joints; installing all joint materials including thrust-resistant materials; supporting and protecting existing utilities along the route of the lines themselves; installing gaskets or other joint restraints to restrain pipes at location specified in the plans or required by the Engineer; cleaning and testing main including CCTV inspection upon completion; replacing utilities, catch basins, manholes, grass, shrubs, mail boxes, concrete crosswalk, fences, walls, sprinkler systems, and shoulder, and all other similar items, to original locations and to equal or better than original condition; other details within Plans and this specifications; project record document and all other appurtenant and miscellaneous items and work including final cleanup for the complete and satisfactory installation. The quantity for payment shall be the horizontal projection of the center line of the permanently installed and accepted pipe, measured to the nearest one-tenth of a foot from P.I. to P.I. of the seat of the bell at the end of any particular run.

Item No. 31

For furnishing and delivering to the Department 6-inch PVC pipe for sewer service lateral, will be paid for at the unit price bid per lineal foot times the number of feet accepted by the Engineer, which payment shall be full compensation for pipe and pipe fittings (but excluding tees or wyes at the main trunk line for services and pipe stub outs at manhole); and all other appropriate work required for a complete and satisfactory installation. The quantity for payment shall be the horizontal projection of the centerline of the accepted pipe, measured to the nearest one-tenth of a foot from P.I. to P.I. of fittings and to the seat of the bell at the end of any particular run.

Item No. 32

For installing 6-inch PVC pipe for sewer service lateral, will be paid for at the unit price bid per lineal foot times the number of feet installed and accepted by the Engineer, which payment shall be full compensation for pipe and pipe fittings (but excluding tees or wyes at the main trunk line for services and pipe stub outs at manhole); and all other appropriate work required for a complete and satisfactory installation. The quantity for payment shall be the horizontal projection of the center

line of the permanently installed and accepted pipe, including the length of valves and fittings along the run, measured to the nearest one-tenth of a foot from P.I. to P.I. of fittings and to the seat of the bell at the end of any particular run.

Item No. 33

For furnishing and installing all components of a typical clean-out assembly, will be paid for at the unit price bid times the number of clean-out assemblies installed and accepted, including but not limited to: wye, tee, bend, riser pipe and clean out including box to be installed at the property line, and all other appropriate work required for a complete and satisfactory installation.

Item No. 34

For furnishing and delivering 8"x6" PVC Wye Branch connections for sewer, will be paid for at the unit price bid each times the number of wyes accepted by the Engineer, sold and delivered, which payment shall be full compensation for the sale and delivery of wyes, and all other appropriate items.

Item No. 35

For installing 8"x6" PVC Wye Branch connections for sewer, will be paid for at the unit price bid each times the number of wyes installed and accepted by the Engineer, which payment shall be full compensation for the complete installation of wyes, and all other appropriate work.

Item No. 36

For furnishing and delivering 10"x6" PVC Wye Branch connections for sewer, will be paid for at the unit price bid each times the number of wyes accepted by the Engineer, sold and delivered, which payment shall be full compensation for the sale and delivery of wyes, and all other appropriate items.

Item No. 37

For installing 10"x6" PVC Wye Branch connections for sewer, will be paid for at the unit price bid each times the number of wyes installed and accepted by the Engineer, which payment shall be full compensation for the complete installation of wyes, and all other appropriate work.

Item No. 38

For furnishing and delivering 8"x6" PVC Tee Branch connections for sewer, will be paid for at the unit price bid each times the number of tees accepted by the Engineer, sold and delivered, which payment shall be full compensation for the sale and delivery of tees, and all other appropriate items.

Item No. 39

For installing 8"x6" PVC Tee Branch connections for sewer, will be paid for at the unit price bid each times the number of tees installed and accepted by the Engineer, which payment shall be full compensation for the complete installation of tees, and all other appropriate work.

Item No. 40

For furnishing and delivering 10"x6" PVC Tee Branch connections for sewer, will be paid for at the unit price bid each times the number of tees accepted by the

Engineer, sold and delivered, which payment shall be full compensation for the sale and delivery of tees, and all other appropriate items.

Item No. 41

For installing 10"x6" PVC Tee Branch connections for sewer, will be paid for at the unit price bid each times the number of tees installed and accepted by the Engineer, which payment shall be full compensation for the complete installation of tees, and all other appropriate work.

Item No. 42

For performing connection to, and cutting and installing plugs on, existing 6" sewer laterals at the locations shown on the Plans or ordered by the Engineer, will be paid at the unit price bid times the number of connections performed, and plugs installed and accepted. The price shall be full compensation for all materials and installation for the complete, tested, and operational connections and plugs as specified in Plans and these specifications and all other appurtenant and miscellaneous items required for a complete, functional, and satisfactory installation.

Item No. 43

For cutting and installing plugs on existing/proposed 8" sewer pipes at the locations shown on the Plans or ordered by the Engineer, will be paid at the unit price bid times the number of plugs installed and accepted. The price shall be full compensation for all materials and installation for the complete, tested, and operational plugs as specified in Plans and these specifications and all other appurtenant and miscellaneous items required for a complete, functional, and satisfactory installation.

Item No. 44

For cutting and installing plugs on existing/proposed 10" sewer pipes at the locations shown on the Plans or ordered by the Engineer, will be paid at the unit price bid times the number of plugs installed and accepted. The price shall be full compensation for all materials and installation for the complete, tested, and operational plugs as specified in Plans and these specifications and all other appurtenant and miscellaneous items required for a complete, functional, and satisfactory installation.

Item No. 45

For cutting and installing plugs on existing/proposed 12" sewer pipes at the locations shown on the Plans or ordered by the Engineer, will be paid at the unit price bid times the number of plugs installed and accepted. The price shall be full compensation for all materials and installation for the complete, tested, and operational plugs as specified in Plans and these specifications and all other appurtenant and miscellaneous items required for a complete, functional, and satisfactory installation.

Item No. 46

For cutting and installing plugs on existing/proposed 15" sewer pipes at the locations shown on the Plans or ordered by the Engineer, will be paid at the unit price bid times the number of plugs installed and accepted. The price shall be full compensation for all materials and installation for the complete, tested, and

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operational plugs as specified in Plans and these specifications and all other appurtenant and miscellaneous items required for a complete, functional, and satisfactory installation.

Item No. 47 – Contingent Item

For furnishing all materials, labor, and equipment to perform the relocation of 27 LF of 36" C.M.P. Storm Drain at:

NW 62 St and NW 37 Ave

as shown on the plans will be paid from the aggregate sum established by the Contractor for this purpose which represents the amount the Contractor feels is necessary for the complete installation and which payment shall be full compensation for performing the relocation complete and shall include but not be limited to; manholes (including conflict manhole), pipe, pipe bedding; excavation and backfilling; furnishing and installing of manholes and pipes, furnishing and installing of new pipe bedding; placing and compaction of suitable trench backfill; furnishing, placing, and compacting additional suitable backfill, if required; removal and replacing miscellaneous structures; changing pipe grade; concrete pavements (crosswalk), traffic separators, sprinkler systems; saw cutting existing pavement; exploratory and construction excavation; sheeting and shoring to control trench width; de-watering the excavation; slab covered trench restoration and desilting; installing all joint materials including thrust-resistant materials; supporting and protecting existing utilities along the route of the lines themselves; installing gaskets or other joint restraints to restrain pipes at location specified in the plans or required by the Engineer; replacing utilities, catch basins, manholes, grass, shrubs, mail boxes, concrete crosswalk, fences, walls, sprinkler systems, and shoulder, and all other similar items, to original locations and to equal or better than original condition; transportation and handling costs; coordination with Department forces; other details within Plans and this specifications; project record document and all other appurtenant and miscellaneous items and work (not included in another bid item) for a complete, satisfactory, and functional installation.

Item No. 48 – Contingent Item

For removal, transport and legal disposal of unsuitable backfill materials, including tipping fees, as ordered by the Engineer, will be paid for at the unit price bid times the number of cubic yards removed and legally disposed of, as measured by the truckload to the satisfaction of the Engineer.

Item No. 49 – Contingent Item

For furnishing and installing additional suitable backfill material, will be paid for at the unit price bid times the number of cubic yards of additional trench backfill furnished and installed, as directed by the Engineer, in the field and includes removal of unsuitable material, loading, hauling, legal disposal off-site and tipping fees. The additional trench backfill shall be measured along the main within the limits of the trench as defined by the Department Standard Details appended hereto. The use of additional trench backfill shall be paid for only when and where approved by the Engineer prior to installation.

Item No. 50 – Contingent Item

For trench overcut in one-foot depth increments, will be paid for at the unit price bid per linear foot, for any size pipe to be installed in the trench times the number

of linear feet of overcut excavated, times the number of one-foot increments of depth as ordered by the Engineer. There shall be no more than six (6) one-foot increments of depth in any one location. The number of linear feet excavated shall be the length in feet of the horizontal projection of the centerline of the trench, measured to the nearest foot, between the limits established by the Engineer in the field. The price per linear foot for trench overcut shall be full compensation for the completed work and shall include, but not be limited to, excavating to the specified depth as directed by the Engineer, placing, leveling and compacting suitable select backfill material to the level specified. Suitable select backfill shall be obtained from material excavated from the site. If sufficient material is not available from the site, additional material shall be furnished by the Contractor at no additional cost to the Department.

Item No. 51 – Contingent Item

For sheeting and shoring ordered left in place by the Engineer, will be paid for at the unit price bid per square foot, measured from tip to cut-off times the horizontal length, regardless of thickness, times the number of linear feet of sheeting and shoring left in place as accepted by the Engineer. Payment shall be full compensation for cutting off and for all salvage and potential reuse value of the material. Sheeting and shoring left in place without the Engineer's approval will be at the Contractor's expense.

Item No. 52

For constructing limerock base for **Type "I"** permanent pavement repairs, will be paid for at the unit price bid times the number of square yards of such base required, installed and accepted as measured along the main within the limits defined by details on the Plans and/or the Department Standard Details appended hereto. Greater widths are at the Contractor's option and expense. The price bid shall be full compensation for furnishing all materials, labor and equipment required for a complete limerock base installation ready to receive the tack coat and surface course. Limerock base for permanent pavement repairs installed outside the main trench line limits as shown in the Department Standard Details under other bid items will be paid for under those items; it will not be separately measured and paid for under this item.

Limerock base for permanent paved driveway repairs, if necessary, will be paid for under Item No. 57.

Item No. 53

For constructing **Type "I"** asphaltic concrete surface course permanent pavement repairs, will be paid for at the unit price bid times the number of square yards of such surface course installed and accepted as measured along the main within the limits defined by details on the Plans and/or the Department Standard Details appended hereto. Greater widths are at the Contractor's option and expense. The price bid shall be full compensation for furnishing all materials, labor and equipment required for a complete machine-laid asphaltic concrete surface course installation. Asphaltic surface course for permanent pavement repairs installed outside the main trench line limits as shown in the Department Standard Details under other bid items will be paid for under those items; it will not be separately measured and paid for under this item.

Not inclusive of the costs incurred in the permanent pavement repairs of asphalt pavement driveways, to be paid for under Item No. 57.

Item No. 54

For constructing limerock base for **Type "II"** permanent pavement repairs, will be paid for at the unit price bid times the number of square yards of such base required, installed and accepted as measured along the main within the limits defined by details on the Plans and/or the Department Standard Details appended hereto. Greater widths are at the Contractor's option and expense. The price bid shall be full compensation for furnishing all materials, labor and equipment required for a complete limerock base installation ready to receive the tack coat and surface course. Limerock base for permanent pavement repairs installed outside the main trench line limits as shown in the Department Standard Details under other bid items will be paid for under those items; it will not be separately measured and paid for under this item.

Limerock base for permanent paved driveway repairs, if necessary, will be paid for under Item No. 57.

Item No. 55

For constructing **Type "II"** asphaltic concrete surface course permanent pavement repairs, will be paid for at the unit price bid times the number of square yards of such surface course installed and accepted as measured along the main within the limits defined by details on the Plans and/or the Department Standard Details appended hereto. Greater widths are at the Contractor's option and expense. The price bid shall be full compensation for furnishing all materials, labor and equipment required for a complete machine-laid asphaltic concrete surface course installation. Asphaltic surface course for permanent pavement repairs installed outside the main trench line limits as shown in the Department Standard Details under other bid items will be paid for under those items; it will not be separately measured and paid for under this item.

Not inclusive of the costs incurred in the permanent pavement repairs of asphalt pavement driveways, to be paid for under Item No. 57.

Item No. 56 - Contingent Item

For constructing asphalt driveway restoration to match existing, will be paid for at the unit price bid times the number of square yards of such driveway required, installed and accepted by the Engineer, and the price bid shall be full compensation for furnishing all labor, materials and equipment for a complete installation.

Item No. 57 - Contingent Item

For constructing concrete sidewalk restoration to match existing, will be paid for at the unit price bid times the number of square feet of such sidewalk required, installed and accepted by the Engineer, and the price bid shall be full compensation for furnishing all labor, materials and equipment for a complete installation.

Item No. 58 - Contingent Item

For constructing concrete curb and gutter restoration to match existing, will be paid

for at the unit price bid times the number of linear feet of such curb and gutter required and placed as measured along the curb, installed where directed by the Engineer, and the price bid shall be full compensation for furnishing all labor and equipment for a complete installation.

Item No. 59- Contingent Item

For restoring sodded areas, will be paid at the unit price bid times the number of square yards of sod placed, and the price bid shall be full compensation for furnishing all labor, materials, and equipment for a complete restoration.

Item No. 60

For furnishing traffic control, will be paid for from the aggregate sum amount established by the Contractor for this purpose. Such amount represents the amount the Contractor feels is necessary to provide sufficient flagmen, signs, barricades, and similar items and work for directing traffic and maintaining safety during all times of work and other times as directed by the Engineer, FDOT, the municipalities' Public Works Department and any other governing authority. Any portion of this fund remaining after all authorized payments have been made will remain with the Contractor. Conversely, no requests for additional payments will be approved.

Payment to the Contractor under this item will be by monthly percentage corresponding to the percentage of the Project's work items completed and paid for each month, as approved by the Engineer.

Item No. 61 - SUBTOTAL

Sum of Item Nos. 1 through 60.

Item No. 62 - Dedicated Allowance

This item establishes a fund for reimbursement of the cost of providing off-duty police officers as required for this project. Payment shall only reimburse the Contractor for the cost of the off-duty police officers for hours on duty at the work site; no overhead, travel time or other additional costs will be allowed. Any portion of this fund remaining after all authorized payments have been made will be withheld from contract payment and will remain with the County.

Item No. 63 – Dedicated Allowance

For furnishing all materials, labor, and equipment to perform the relocation of 20 LF of 4" Gas at:

NW 62 St and NW 37 Ave

as shown on the plans will be paid to Florida City Gas's Contractor as full compensation for the complete and satisfactory gas pipe relocation.

Item No. 64 - Dedicated Allowance

For additional supplemental unit cost to be added to the item unit cost for the installation of pipe in contaminated areas. Measurement shall be made as specified for the length of pipeline installed under normal circumstances. Said payment shall be in addition to the unit price bid and paid for under another bid item herein for that particular size pipe installed under normal circumstances. The additional amount shall be full compensation for but not be limited to; supplying all

fully qualified, trained and equipped labor; all special protective clothing; special equipment and material not paid for under another bid item; utilizing special construction procedures due to the nature of the work in the specialized construction area; lining and grading trench site to handle contaminated run-off and disposing of contaminants; separation and disposal of unsuitable or extra materials including all transport and tipping fees; conformance with all local, state and federal regulations governing the work and safety of personnel under these specialized conditions of construction; conforming with the requirements of the Site-Specific Health and Safety Plan; particular to the situation coordination with the Certified Industrial Hygienist (CIH) or Licensed Professional Engineer in the Environmental Discipline, Department and other agencies involved in construction under these circumstances; assisting the CIH/Engineer and his representatives as necessary for the performance of the work and as directed by the Engineer; setting up and maintaining temporary exclusion zones; conforming with all relevant permit conditions; decontamination activities; and all other appurtenant and miscellaneous items and work for a complete and satisfactory installation.

Item No. 65 - Dedicated Allowance

This item establishes a fund for reimbursement of the cost of all required construction permits and fees, if authorized by the Engineer. Payment shall reimburse the Contractor for only the cost of the construction permit and fee. Any question or whether a construction permit or fee is required shall be decided by the Engineer whose word shall be final. Any portion of this fund remaining after all authorized payments have been made will be withheld from Project payments and will remain with the County.

Item No. 66 - Contingency Allowance

For unforeseen conditions, minor construction changes and Quantity Adjustments, additional work not covered by other items, if ordered by the Engineer.

This account is for all labor, materials, equipment and services necessary for modification or extra work required to complete the Project due to unforeseen conditions, unforeseen conflicts between existing elements of work and the proposed work; for minor changes required to resolve any unforeseen conditions, Revised Regulations, Technological and Products Development, Operational Changes, Schedule Requirements, Program Interface, Emergencies and other Miscellaneous Costs; and for adjustments to estimated quantities shown on the unit prices of the Quotation to conform to actual quantities installed; and associated time related to this work only if ordered by the Engineer.

Payment to the Contractor under the Contingency Allowance will only be made for work ordered in writing by the Engineer, in accordance with Section 13 "Extra Work and Payment Therefore" of the "General Covenants and Conditions." Any portion of these accounts remaining after all authorized payments have been made will be withheld from Contract payments and will remain with the County.

A non-compensable time extension shall be included in the Contingency Allowance work when approved by the Engineer.

Item No. 67 - TOTAL BID

Sum of Item Nos. 61, 62, 63, 64, 65, and 66.

Note:

Since Item Nos. 48, 49, 50, 51, 56, 57, 58, and 59 are Contingent Items, and because of the nature of the Dedicated Allowance, Item Nos. 62, 63, 64, and 65 and the Contingency Allowance, Item No. 66, they may or may not be used at the option of the Department. Any overrun or under run provisions contained within the Project Documents shall not be applicable to these items.

**END OF
TECHNICAL SPECIFICATIONS**

SECTION 06100

CLOSED-BOTTOM FIBERGLASS-REINFORCED MANHOLES

PART 1 GENERAL

1.01 Section includes:

- A. Specification for Freestanding Monolithic or Modular Fiberglass-Reinforced Manholes

1.02 Reference standards:

- A. ASTM D695 – Test Method for Compressive Properties of Rigid Plastics
- B. ASTM D790 – Test Method for Flexural Properties of Non-Reinforced and Reinforced Plastics and Electrical Insulating Materials
- C. ASTM D2412 - Standard Test Method for Determination of External Loading Characteristics of Plastic Pipe by Parallel-Plate Loading
- D. ASTM D3753 – Standard Specification for Glass-Reinforced Polyester Manholes and Wetwells

E. AASHTO H-20 – Axial Loading

1.03 Manufacturer

- A. Manufacturer shall have 10-years of experience in the manufacture of fiberglass manholes for use in domestic or industrial sanitary sewer applications.

1.04 Submittals

- A. Contractor shall Submit manufacturer's product data, instructions, recommendations, shop drawings and certifications. All submittals shall be in accordance with Engineer's requirement and submittals shall be approved by the Engineer prior to delivery
- B. The contractor shall supply a complete set of shop drawings detailing dimensions of heights, diameter, elevations to invert, pipe sizes and any other necessary details.
- C. The contractor shall submit Anti-Flotation (Buoyancy) Calculations - A set of signed and sealed (by a Florida Registered Professional Engineer) anti-flotation calculations shall be provided which meet the following criteria:
 - Manhole weight and soil pressure on concrete base collar may be used to calculate down forces.
 - Assume groundwater is at grade.
 - A factor of safety of 1.5 minimum shall be used
- D. The contractor shall submit:

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- Submit proposed methods, equipment, materials and sequence of operations for sewer construction,
- Submit test reports.
- Design and fabrication details of fiberglass manhole components.
- Manufacturer's installation instructions for fiberglass manholes.
- Frames, rings, grade rings and covers to be used in the Project.
- Materials to be used in fabricating drop connections
- Materials to be used for pipe connections at manholes walls
- Materials to be used for stubs and stub plugs, if required
- Plugs to be used for sanitary hydrostatic testing
- Manufacturer's data for concrete, if used for channel inverts and benches.

PART 2 PRODUCTS

2.01 Materials and Workmanship

A. Resin Systems:

1. The resins used shall be a commercial grade unsaturated polyester resin or vinyl ester resin. Resins shall be suitable for the service environment intended (i.e. domestic sanitary wastewater).

B. Additives:

1. Additives, when used, shall produce a laminate that is inert to the service environment intended. All particulate additives used in filament wound components shall be pre-blended with resin using a high shear mixer to assure complete wetting of particulate surfaces. Pre-blending of particulate additives shall result in a homogeneous colloidal mixture (suspension) with additives evenly dispersed and suspended throughout the resin prior and during use. Manhole components manufactured using the filament winding process shall contain no sand. Additives, such as thixotropic agents, catalysts, promoters, etc., may be added to meet the requirements of the ASTM D-3753 standard.

C. Reinforcing Materials:

1. The reinforcing materials shall be commercial Grade "E" type glass in the form of continuous roving and chop roving, having a coupling agent that will provide a

suitable bond between the glass reinforcement and the resin.

D. Interior Surfacing Material:

1. The inner surface exposed to the chemical environment shall be a resin-rich layer of 0.010 to 0.020-inches thick. The inner surface layer exposed to the corrosive environment shall be followed with a minimum of two passes of chopped roving length of 0.5-inches (min) to 2.0-inches (max) and shall be applied uniformly to an equivalent weight of 3 oz/ft (min). Each pass of chopped roving shall be well rolled prior to the application of additional reinforcement. The combined thickness of the inner surface and interior layer shall be 0.10 inch (min).
2. The interior surface shall be resin rich with no exposed fibers. The surface shall be free of crazing, de-lamination, blisters larger than 0.5-inch in diameter, and wrinkles of 0.125-inch or greater in depth. Surface pits shall be permitted if they are less than 0.75-inch in diameter and less than 0.0625-inch deep. Voids that cannot be broken with finger pressure and are entirely below the resin surface shall be permitted if they are less than 0.5-inch in diameter and less than 0.0625-inch thick. Indentations or other shape imperfections that will not affect performance are allowed.

E. Exterior Surface:

1. Exterior surface shall be coated with 0.125-inches of gel coat as an additional water barrier. Gel coat shall be pigmented gray as an additional UV inhibitor. The exterior surface shall be relatively smooth with no sharp projections. Handwork finish is acceptable if enough resin is present to saturate all fibers and eliminate fiber show. The exterior surface shall be free of blisters larger than 0.5-inch in diameter, de-lamination or fiber show. Indentations or other shape imperfections that will not affect performance are allowed.

F. Defects not permitted

- Exposed fibers: glass fibers not wet out with resin.
- Resin runs: runs of resin and sand on the surface.
- Dry areas: areas with glass not wet out with resin.
- Delamination: separation in the laminate.
- Blisters: light colored areas larger than ½ inch in diameter.
- Crazing: cracks caused by sharp objects.
- Pits or Voids: air pockets.
- Wrinkles: smooth irregularities in the surface.
- Sharp Projection: fiber or resin projections necessitating gloves for handling.

G. Repairs:

1. All fiberglass laminate repairs are subject to meet the requirements of ASTM D3753.

2.02 Construction

A. All constructed FRP Manholes shall be a one-piece monolithic and watertight structures constructed of glass fiber reinforcement, supplier-certified unsaturated isophthalic polyester resin, and chemically enhanced silica to improve corrosion resistance strength and overall performance. FRP manholes shall be manufacture in strict accordance with ASTM D3753.

B. Provide prefabricated fiberglass manholes which conform in shape and size dimensions as shown on drawings and WASD Standard SS 6.0 sheet 1 of 3.

C. The manhole shall be manufactured un one class of load rating. This class shall be H-20 wheel load (minimum 16,00 pounds dynamic wheel load).

D. Manhole cylinders, manway reducers, and connectors shall be produced from fiberglass-reinforced polyester resin using a combination of chop and/or continuous filament winding process.

E. Wall Construction Procedure:

1. After the inner layer of glass and resin has been applied, the manhole wall shall be constructed using a chop and continuous strand filament wound manufacturing process to ensure continuous reinforcement and uniform strength and composition. Each layer of glass laminate shall be mechanically roller compacted to remove entrapped air and thoroughly saturate the glass laminate with resin prior to adding another layer of glass reinforcement. The cone section, if produced separately, shall be affixed to the barrel section at the factory with a resin-glass reinforced laminate joint resulting in a one-piece unit. Seams shall be fiberglass laminated on the inside and the outside using the same glass-resin jointing procedure. Field joints shall be performed by the Manufacturer, its agent or qualified third-party.
2. Wall construction may include a tongue-and-groove joint, joined by epoxy adhesive, where modular manhole construction may aid in the installation of the manhole.

F. Ribs:

1. When used, ribs may be manufactured as a solid construction or with fiberglass laminate applied over a structural or non-structural form. The resulting structure shall meet the requirements of ASTM D3753.

G. Pipe Connections:

1. Pipe connections shall be pipe stub-outs factory-installed as part of the fiberglass

manhole. Installation of PVC pipe stub-out shall be done by the manufacturer of the fiberglass manhole. Boot-type pipe connections shall be Kor-N-Seal, Inserta-Tee or approved equal. Where required, Manufacturer shall use a fiberglass-reinforced sleeve to accommodate boot connections.

H. Manhole Base Plate:

1. Fiberglass manholes shall have a fiberglass-reinforced base plate. Fiberglass stiffening C-channel shall be used, where required, to provide sufficient stiffness to base plate. All base plates shall have an external anti-flotation flange extending 2.5-inches (min) beyond manhole outside diameter. The manhole bottom shall be 0.5-inches thick (minimum).

I. Fiberglass enclosed bench and invert:

1. A fiberglass enclosed bench and invert shall be installed by the Manufacturer, Manufacturer's agent or approved equal. The invert will be formed using a corrosion resistant material and completely enclosed in 0.25-inches (min) of fiberglass laminate. Upon engineer's approval, a formed-in-place concrete bench and invert may be allowed in lieu of a fiberglass bench and invert.

J. Assembly segments:

1. Individual fiberglass components of manhole shall be joined by fiberglass-reinforced laminate overlay. The resulting structure shall meet the all loading and soundness requirements of ASTM D3753.

K. Height Adjustment:

1. Fiberglass manholes shall be height adjustable using an adjustment ring with an internal lap joint. Riser sections cut for height adjustment shall be rejoined by fiberglass-reinforced laminate, MacWrap, tongue & groove joint epoxy joint or approved equal. Fiberglass manholes shall maintain all loading and soundness characteristics required by ASTM D3753 after height adjustment has occurred.

L. Interior Access:

1. See Section 02536. Built-in ladders or climbing rungs will not be permitted in any sanitary sewer manhole and only in other structures where shown on the Plans and call for in the specifications. Where internal steps are required, FRP OSHA-approved ladders shall be installed. All manholes where steps are required, shall be designed so that a ladder can be supported by the manhole sidewall. Vertical spacing between steps shall be in accordance with OSHA standards (or per local requirements). Ladder bolts that penetrate manhole wall shall be sealed externally by a fiberglass-reinforced laminate.

M. Manway Reducer:

1. Manway reducers shall be concentric or eccentric with respect to the centerline of the manhole riser section, as designated by the Owner.
2. The manway reducer must provide a bearing surface on which a standard ring and

cover may be supported and adjusted to grade. The reducer shall be joined to the barrel section at the factory with resin and glass fiber reinforcement, thus providing required monolithic design to prevent infiltration and/or exfiltration through the manhole.

3. Manway reducer cone section shall be self-centering to permit vertical height adjustment (raising or lowering) of the manhole by Contractor utilizing manufacturer provided materials and detailed written instructions.

N. Grade Adjustment Ring Platform:

1. Top of the cone shall have a fiberglass-reinforced support platform upon which grade rings may be installed to accept a locally approved frame and cover casting. To properly transfer traffic loading to the sidewall, the outside diameter of grade adjustment rings shall exceed outside edge of grade ring platform by 1-inch (min) on all sides. Grade rings and frame & cover casting shall be placed over fiberglass neck and onto the grade ring platform in a manner that evenly distributes loading. No loading shall be placed onto fiberglass neck.
2. An FRP neck, extending 3-inches to 18-inches above the grade ring platform, may be used to aid in jobsite height adjustment and to eliminate inflow and corrosion in the manhole chimney area. The outside diameter of the FRP neck shall be sized to extend through grade ring(s) and into the frame & cover casting.
3. Manhole adjustment grade rings may be utilized. See Section 33 31 11 (UC-250) "Gravity Sewer Systems."
 - Rings shall be made of 100% recycled HDPE and available in cone opening diameters of 24, 27, 30 and 36-inches.
 - Slope adjustment shall be attained by rotation of "wedge" rings from 4.1% to 0% grade.
 - Rings shall have been tested to withstand HS25 loading through at least 1,100,000 cycles without cracking or other damage.
 - Rings shall not be damaged by hydrogen sulfide manhole conditions and shall be waterproof when assembled with approved butyl sealant.
 - Ring shall weigh six pounds or less and be equipped with UV inhibitor.
 - Rings shall have been in successful service in multiple locations within the US for at least ten years and shall be warranted for five years.
 - Rings shall be LadTech, Inc. HDPE Recycled Adjusting Rings or approved equal.
 - Exterior shrink membrane not required on the HDPE Grade Rings.

O. Marking and Identification:

1. Each manhole shall be marked on the inside and outside with the following information:

- Manufacturer's name or trademark
- Manufacturer's factory location
- Manufacturer's serial number
- Total manhole depth.

2.03 Dimensions

- A. Manhole inside diameter, 48 inches, shall meet the requirements of the project specifications and shall be measured in accordance with ASTM D3753 Section 8.3. Tolerance of inside diameter shall be +/- 1% of required manhole diameter.
- B. Manhole length shall be measured from lowest invert elevation to rim elevation and be sufficient to allow for 12-inches of grade rings, plus frame height.
- C. Wall thickness shall be sufficient to withstand all dead and live loads imposed on the manhole for the project conditions. Manholes subject to highway traffic loading, which is required for this project, shall meet the requirements of AASHTO H20 as described in ASTM D3753. Wall thickness shall be 5/16" (minimum).

2.04 Testing

- A. Manholes shall be manufactured and tested in accordance with ASTM D3753.
- B. Quality Control:
 1. Each completed manhole shall be examined by the manufacturer for dimensional requirements, hardness, and workmanship. All required ASTM D3753 testing shall be completed and records of all testing shall be kept and copies of test records shall be presented to customer upon formal written request within a reasonable time period.
 2. Controls on glass and resin content shall be maintained for all manufacturing processes and for each portion for manhole fabrication. Records shall be maintained for these control checks. Proper glass content may be shown by glass usage checks, by glass and resin application rate checks, in accordance with the material composition test in ASTM D3753 8.8.1.
 3. Certification When requested by the purchaser on his order, a certification shall be made the basis of acceptance. This shall consist of a copy of the manufacturer's test report or a statement by the supplier accompanied by a copy of the test results, that the manhole has been sampled, tested and inspected in accordance with the provisions of ASTM 3753 and this specification, and meets all requirements. Each certification so furnished shall be signed by an authorized agent of the supplier or manufacturer.
- C. Load Rating:
 1. The complete manhole shall have a minimum dynamic-load rating of 16,000-pounds when tested in accordance with ASTM D3753 8.4 (note 1). To establish

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this rating, the complete manhole shall not leak, crack, or suffer other damage when load tested to 40,000-pounds and shall not deflect vertically downward more than 0.25-inch at the point of load application when loaded to 24,000-pounds.

D. Pipe Stiffness:

1. For solid wall manholes, pipe stiffness (ASTM D2412) may be physically tested or calculated using the following formula: $PS = (EI) / (0.149r^3)$. For rib-reinforced manholes, Manufacturer shall provide structural design method.

Per ASTM D3753, manhole cylinder shall have the minimum pipe-stiffness values shown in the table below when tested in accordance with ASTM D3753.

<u>Depth (feet)</u>	<u>F/ΔY (psi)</u>
6 or less	0.72
6+ to 12	1.26
12+ to 20	2.01
20+ to 25	3.02
25+ to 35	5.24
35+	Note ¹

Note¹ – For depths greater than 35-feet, pipe stiffness shall be extrapolated from shallower values or Manufacturer shall provide structural design method.

E. Chemical Resistance:

1. Manhole and all related components shall meet the chemical resistance requirements of ASTM D3753 and be fabricated from corrosion resistant material suitable for domestic wastewater collection system environments.

F. Physical Properties:

1. Manhole riser sections shall have the following physical properties (minimum). All tests shall be performed as specified in ASTM D3753 (latest edition), section 8.

	<u>Hoop Direction</u>	<u>Axial Direction</u>
Tensile Strength (psi)	18,000	5,000
Tensile Modulus (psi)	0.6×10^6	0.7×10^6
Flexural Strength (psi)	26,000	4,500
Flexural Modulus (psi)	1.4×10^6	0.7×10^6
Compressive (psi)	18,000	10,000

2.05 Unloading, Storage and Handling

- A. Contractor shall inspect manholes upon arrival to jobsite, ensuring that manholes have arrived undamaged. Manufacturer shall be notified of any damage immediately upon discovery.

- B. The manholes shall not be dragged along the surface.

- C. Contractor shall avoid storing manhole on rocks, uneven ground or other surface that may cause point loading or damage to manhole. Manholes with a height-to-diameter ratio greater than 2:1 shall be stored in horizontal position, prior to use. Manholes shall not be stacked upon one another. When possible, Contractor shall orient pipe connections so that weight of manhole is not resting on pipe connections.
- D. Manholes shall not be dropped or impacted in a manner that may be detrimental to manhole. Manholes may be lifted using a forklift or nylon/textile sling wrapped around the main body of manhole or attached to lifting lugs, where provided. Manhole shall not be lifted by pipe stubs or connections. Use of chains or cables in contact with the manhole surface is prohibited. Manholes shall be unloaded from trucks one at a time.
- E. Prior to addition/attachment of external concrete base (anti-float ballast) and concrete bench and invert, manhole may be lifted by inserting a 4" x 4" timber of sufficient length to span the manhole opening and attaching cable to midpoint of timber or by attaching a nylon/textile sling around the center of manhole.
- F. After addition/attachment of concrete base (anti-float ballast) and/or concrete bench and invert, manhole shall be lifted by lifting lugs cast into concrete base. When concrete has been added to manhole, lifting lugs fabricated into fiberglass manhole shall not be used for lifting.

PART 3 INSTALLATION

3.01 Installation:

- A. Fiberglass manholes must be installed according to manufacturer's installation instructions. Correct manhole installation requires proper concrete foundation, good backfill and proper handling to prevent manhole damage and insure long-term corrosion resistant service. Due to this project being used as one of the first installation of FRP manholes on the Department's service area; Contractor shall coordinate with the Department to have the manufacturer, the Department's operations, inspections and engineering staff present for the installation of the first FRP manhole to describe the process of handling and installation.
- B. Excavation at manhole location should be at least wide enough to accommodate the slab specified and to provide working room around manhole. Ensure the depth of manhole is sufficient to allow between two and four rings for adjustment of ring and cover at top of final grade. Quarter marks have been provided on barrel to facilitate alignment.
- C. Contractor shall not alter the design or construction of manhole without notification of Manufacturer and Manufacturer's written consent. Only Manufacturer and its agents may alter design or construction of manhole.
- D. Any damage to manholes shall be reported to the Manufacturer. All repairs shall be performed by Manufacturer, its agent or qualified third-party (with Manufacturer's written consent).
- E. Manhole base shall be installed on a flat trench bottom with 4-inches (min) of granular bedding (i.e. sand, gravel or crushed aggregate). Unstable soil foundations shall be removed and replaced with select native soil or granular material and compacted to 95% Standard Proctor Density.

- F. Manhole installation shall include an external precast or cast-in-place reinforced concrete base sufficient to provide structural support and prevent buoyancy for groundwater at rim elevation. Attachment of concrete base to manholes shall be in accordance with Manufacturer's requirements.
- G. Concrete ballast slabs shall exceed the outside diameter of the manhole by 12-inches (min) on all sides. Typical ballast slabs are poured in a square-shape with a minimum thickness of 12-inches (min) underneath the manhole. Concrete pour shall extend up along the manhole's sidewall (over external base flange) for a thickness of 4 to 6-inches (min). Design of the concrete ballast slabs shall be the responsibility of the fiberglass-reinforced manhole manufacturer and/or Contractor. The cost of the material and installation of the concrete ballast slabs shall be included in the price of the installation of the fiberglass-reinforced manhole.
- H. Manhole shall be carefully lowered into trench in a controlled manner. Manhole shall not be dropped or impacted during installation. Manhole shall be plumb and level and adjusted appropriately for line and grade. Any structural changes required (including pipe connections) for line and grade shall be performed by Manufacturer or its agent.
- I. Manholes with internal stiffening ribs on bottom plate shall have concrete poured inside manhole to sufficiently cover top of ribs.
- J. Unless shown otherwise on drawings and approved by the engineer, crushed stone (less than 10% fines), pea gravel, sand or select native materials shall be used for backfill around the manhole for a minimum distance of one foot from the outside surface and extending from the bottom of the excavation to the top of the cone/reducer section. Backfill material shall be placed in 12-inch lifts (max) and compacted to 90% Standard Proctor Density. Compaction by flooding is not permitted. Backfill shall be distributed evenly around the manhole for each lift and compacted level and evenly prior to the following lift. Care shall be taken not to cause unbalanced pressure around the manhole. Select native material, may be used for the remainder of the backfill.
- K. Casting and Grade Rings - Top of cone/reducer, shall be clean and free of debris prior to placing concrete grade rings onto manhole. Grade rings shall be carefully lowered over fiberglass neck (chimney) and onto top of cone, in a controlled manner, so as not to cause damage to manhole. For H20 traffic rated manholes, 4-inch thick (min) concrete grade rings shall overhang grade ring platform by 1-inch. Butyl mastic sealing material shall be place between manhole, grade rings and frame & cover casting to prevent the infiltration of ground water. Frame and cover casting may be placed directly on top of cone for non-traffic manholes.

3.02 Field Testing

A. Infiltration/Exfiltration Test:

1. For how to perform Infiltration/Exfiltration Test, see Section 02520 "Cleaning and testing Gravity Sewers" Donation (UC-370).
2. Each manhole may be tested by plugging all connections and filling manhole with water to top of fiberglass neck (chimney). Allowable leakage shall be per project specification requirements.

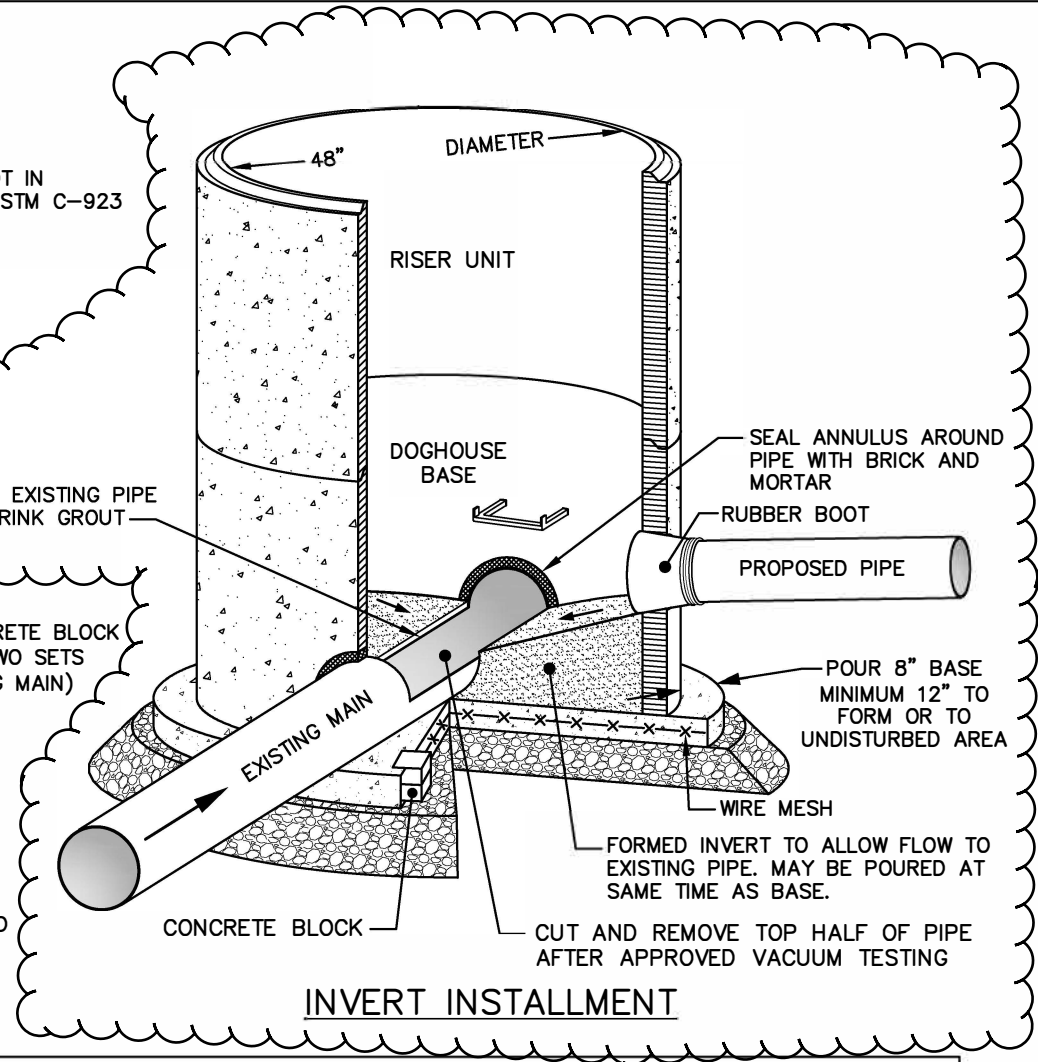
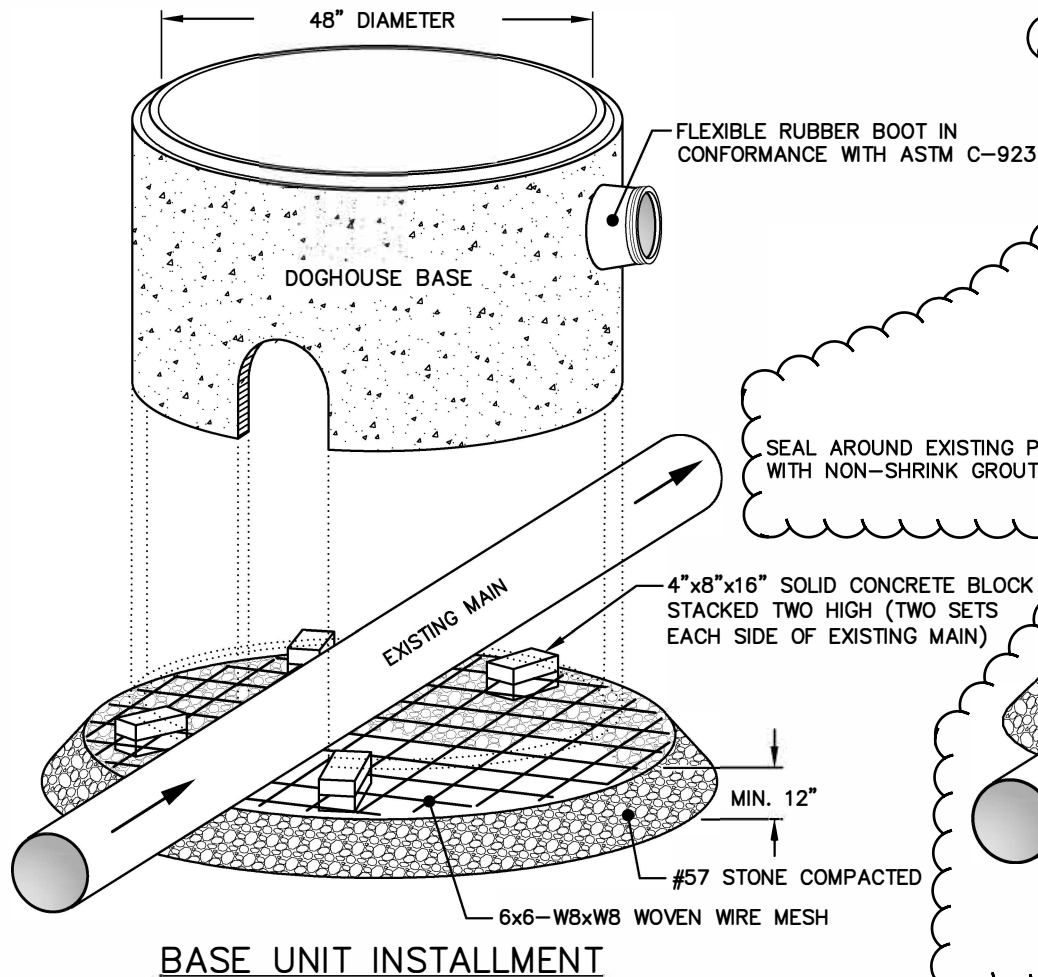
B. Low-Pressure Air Test:

1. Test using air whenever possible prior to backfilling to assist in locating leaks. Make joint repairs on both outside and inside of joint to ensure permanent seal. Test manholes with manhole frame set in place.
2. Each manhole may be tested by plugging all connections and applying air pressure (3-psi max) to the interior of the manhole. Allowable leakage shall be per project specification requirements.

C. Vacuum Testing:

- Each manhole may be tested by plugging all stub-outs, manhole boots and pipe plugs to prevent movement while vacuum is drawn. All lift holes and exterior joints shall be plugged with a non-shrink grout.
- Inflate compression band to affect seal between vacuum base and structure; connect vacuum pump to outlet port with valve open; draw vacuum to 10 inches of mercury inside the manhole to perform a valid test. A test head must be placed at the inside of the top of a cone section, and the seal must be inflated in accordance with the manufacturer's recommendation.
- Close valve/shut pump off; start test.
- Record vacuum drop during 2 minutes. When vacuum drop is greater than 1 inch of mercury during the 2-minute period, repair and retest manhole.
- A manhole passes a test if after 2 minutes and with all valves closed, the vacuum is at least 9.0 inches of mercury.

END OF SECTION



NOTES:

- 1 DOGHOUSE OPENINGS IN PRECAST UNITS SHALL HAVE A RADIUS OF 4 TO 8 INCHES LARGER THAN THE EXISTING PIPE DIAMETER.
- 2 CAST-IN-PLACE CONCRETE SHALL BE 3000 PSI.
- 3 ALL PRECAST MANHOLE COMPONENTS SHALL MEET ASTM C-478.
- 4 BENCH SHALL SLOPE UPWARD FROM THE SPRINGLINE TO THE PROJECTED LEVEL OF THE PIPE CROWN OR 8 INCHES ABOVE THE SPRINGLINE, WHICHEVER IS LESS.

Revised sheet No. 5 Summary of Quantities for Addendum No. 1.

SUMMARY OF QUANTITIES

PAY ITEM NO.	ITEM	UNIT	TOTAL QUANTITY
102-1A	MAINTENANCE OF TRAFFIC	LS./D.A.	1/730
102-3A	COMMERCIAL MATERIAL FOR DRIVEWAY MAINTENANCE	C.F.	40,500
102-60A	WORK ZONE SIGNS	E.A./DAY	32,250
102-61	BUSINESS SIGNS	EACH	150
102-74-1	BARRICADES (TEMPORARY I.I. VP & DRUM)	E.A./DAY	254,430
102-74-2	BARRICADES (TEMPORARY TYPE III, 6")	E.A./DAY	10,080
102-76A	ADVANCE WARNING ARROW PANEL	E.A./DAY	4,410
102-77	HIGH INTENSITY LIGHT, TEMPORARY, TYPE B	E.A./DAY	8,360
102-78	TEMPORARY RETROREFLECTIVE PAVEMENT MARKER	EACH	1,574
102-99	VARIABLE MESSAGE SIGN (TEMPORARY)	E.A./DAY	1,488
102-91A	PAVEMENT MARKING REMOVABLE (WHITE OR YELLOW) (SKIP)	L.F.	26,960
102-91-1A	PAVEMENT MARKING REMOVABLE (WHITE OR YELLOW) (SOLID)	L.F.	169,560
104-10-3	SEDIMENT BARRIER (SLT FENCE)	L.F.	28,700
104-18	INLET PROTECTION SYSTEM	EACH	124
110-1-1B	CLEARING AND GRUBBING	L.S.	1
120-1	REGULAR EXCAVATION	C.Y.	31,489
120-6	EMBANKMENT	C.Y.	776
160-4	TYPE "B" STABILIZATION (12" THICK) (MIN. C.B.R. OF 30)	S.Y.	92,342
200-1-1-10	LIMEROCK BASE (8") (PRIMED)	S.Y.	92,342
327-70-5	MILLING EXISTING ASPHALT PAVEMENT (2" AVG. DEPTH)	S.Y.	2,514
334-1-1-3	SUPERPAVE ASPHALTIC CONC. TRAFFIC C (1" THICK)	TN	138.3
334-2-13-2	HOT MIX ASPHALT, TRAFFIC C, SP-12.5 (2" THICK)	TN	9,272.9
337-7-21A	ASPHALTIC CONC. FRICTION COURSE, FC-9.5 (1" THICK)	TN	138.3
337-8-42	HOT MIX ASPHALT FRICTION COURSE, TRAFFIC C, FC-9.5	TN	4,636.5
339-1	MISCELLANEOUS ASPHALT	TN	250.0
425-1-201	INLETS, CURB, TYPE 9, <10'	EACH	3
425-1-203	INLETS, CURB, TYPE 9, J BOT, <10'	EACH	1
425-1-311	INLETS, CURB, TYPE P-1, <10'	EACH	6
425-1-311C	INLETS, CURB, TYPE P-1, <10', SPECIAL	EACH	1
425-1-312	INLETS, CURB, TYPE P-1, >10'	EACH	2
425-1-321	INLETS, CURB, TYPE P-2, <10'	EACH	3
425-1-322A	INLETS, CURB, TYPE P-2, >10'	EACH	1
425-1-331C	INLETS, CURB, TYPE P-3, <10'	EACH	5
425-1-351	INLETS, CURB, TYPE P-5, <10'	EACH	32
425-1-353	INLETS, CURB, TYPE P-5, >10'	EACH	3
425-1-361	INLETS, CURB, TYPE P-6, <10'	EACH	2
425-1-451B	INLETS, CURB, TYPE J-5, <10'	EACH	1
425-1-452	INLETS, CURB, TYPE J-5, >10'	EACH	1
425-1-462	INLETS, CURB, TYPE J-6, >10'	EACH	1
425-1-463	INLETS, CURB, TYPE J-6, <10'	EACH	2
425-1-721	INLETS, GUTTER, TYPE P-11, <10'	EACH	18
425-1-722	INLETS, GUTTER, TYPE P-11, >10'	EACH	1
425-1-901C	INLETS, DRIVEWAY, TYPE SPECIAL	EACH	9
425-1-909-1	INLETS, GUTTER, TYPE J-11, <10'	EACH	23
425-1-909-2	INLETS, GUTTER, TYPE J-11, >10'	EACH	9
425-2-41B	MANHOLES, P-7, <10'	EACH	15
425-2-42C	MANHOLES, P-7, >10'	EACH	3
425-2-71C	MANHOLES, J-7, <10'	EACH	8
425-2-71B	MANHOLES, J-7, >10'	EACH	10
425-5B	ADJUST MANHOLES	EACH	17
425-6	ADJUST VALVE BOXES	EACH	98
430-175-115	PIPE CULVERT, OPTIONAL MATERIAL, ROUND, 15"/CD	L.F.	3,251
430-175-118	PIPE CULVERT, OPTIONAL MATERIAL, ROUND, 18"/CD	L.F.	252
430-175-124	PIPE CULVERT, OPTIONAL MATERIAL, ROUND, 24"/CD	L.F.	975
430-175-136	PIPE CULVERT, OPTIONAL MATERIAL, ROUND, 36"/CD	L.F.	105
430-175-215	PIPE CULVERT, OPTIONAL MATERIAL, OTHER-ELUP/ARCH, 15"/CD	L.F.	233
443-70-4-3	FRENCH DRAIN, 24", TRENCH DEPTH 15"	L.F.	170
443-70-6-3	FRENCH DRAIN, 36", TRENCH DEPTH 15"	L.F.	9,128
520-1-1-10	CURB AND GUTTER TYPE F	L.F.	14,190
520-2-12	CONC. CURB TYPE D	L.F.	13,515
520-3A	CONC. VALLEY GUTTER	L.F.	13,601
522-1 (1)	CONCRETE SIDEWALK (4" THICK) (INCLUDING PEDESTRIAN RAMP)	S.Y.	16,976
522-2 (1)	CONCRETE SIDEWALK (6" THICK) (INCLUDES DRIVEWAYS)	S.Y.	6,472
527-2	DETECTABLE WARNINGS	S.F.	1,379
536-1-01	GUARDRAIL (ROADWAY) (INCLUDES THE COST OF SHOP BENT PANELS AND PIERAL)	L.F.	400
536-9	END ANCHORAGE ASSEMBLIES TYPE IV	EACH	4
549-0A	DEMOLITION AND REMOVAL OF CHAIN LINK FENCE	L.F.	1,449
550-2-6B	NEW CHAIN LINK FENCE TYPE 'B' (6' HIGH)	L.F.	1,215
550-60-232	FENCE GATE, TYPE B, SLIDING/CANTILEVER, 6.1-12' OPENING	EACH	7
550-60-235	FENCE GATE, TYPE B, SLIDING/CANTILEVER, 20.1-24' OPENING	EACH	4
575-1-1	SODDING (PENSACOLA BAHIA OR MATCH EXISTING) (INCLUDES WATERING, FERTILIZER, AND MAINTENANCE)	S.Y.	1,012
580-327-10	TREE REMOVAL (UNDER 12" TO 6") (AS DIRECTED BY THE ENGINEER)	EACH	90
580-327-23A	TREE REMOVAL (12" TO 24") (AS DIRECTED BY THE ENGINEER)	EACH	116
580-327-24	REMOVAL OF TREES (GREATER THAN 24" DIAMETER, UP TO 36" DIAMETER) (AS DIRECTED BY THE ENGINEER)	EACH	1

PAY ITEM NOTES

- 102-1A TO BE ACCOMPLISHED IN ACCORDANCE WITH THE FLORIDA DEPARTMENT OF TRANSPORTATION STANDARD PLAN INDEX 102-SERIES; THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS, U.S. DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION (ANSI D6 1-1978), PUBLIC WORKS MANUAL OF METROPOLITAN DADE COUNTY, AND THE LATEST REVISIONS OF THE AFORE MENTIONED MANUALS. INCLUDES THE COST OF FURNISHING, INSTALLING, MAINTAINING, AND REMOVING ALL ITEMS OF MAINTENANCE OF TRAFFIC NOT PAID FOR UNDER SEPARATE ITEMS INCLUDING BUT NOT LIMITED TO SIGNS, BARRICADES, FLASHING LIGHTS, TEMPORARY PAVEMENT, RAILROAD FLAGMEN, TEMPORARY PAVEMENT MARKINGS, TRAFFIC SIGNAL MODIFICATION FOR TRAFFIC CONTROL, ETC.
- 110-1-1B INCLUDES REMOVAL OF EXISTING PAVEMENT, CONCRETE SIDEWALK, DRIVEWAYS, CURB AND GUTTER, RAILROAD SYSTEMS, DRAINAGE STRUCTURES AND PIPES, SLAB COVER TRENCH, MISCELLANEOUS CONCRETE, VEGETATION, TREES AND DEBRIS TO BE DISPOSED OF IN LEGAL AREAS PROVIDED BY THE CONTRACTOR. INCLUDES THE COST OF CLEANING-OUT ALL EXISTING DRAINAGE STRUCTURES WHICH ARE TO REMAIN WITHIN THE LIMITS OF CONSTRUCTION. INCLUDES THE COST OF SAWCUTTING EXISTING PAVEMENT. IT ALSO INCLUDES REMOVAL OF SLAB COVERED TRENCH.
- 120-1 AND 120-6 THESE ARE ESTIMATED QUANTITIES AND MAY BE INCREASED OR DECREASED BY THE ENGINEER. EMBANKMENT WILL BE PAID FOR IN CUBIC YARDS, AS ACCEPTED BY ENGINEER, CALCULATED BY THE METHOD OF AVERAGE END AREAS, UNLESS ENGINEER DETERMINES THAT ANOTHER METHOD OF CALCULATION WILL PROVIDE A MORE ACCURATE RESULT. EMBANKMENT WILL BE MEASURED IN ITS FINAL POSITION BY FIELD SURVEY OR BY PHOTOGRAMMETRIC MEANS AS DESIGNATED BY THE ENGINEER.
- 200-1-10 INCLUDES DRIVEWAYS.
- 339-1 INCLUDES 250 TONS FOR ADJUSTMENTS TO EXISTING DRIVEWAYS, STREETS AND MISCELLANEOUS PAVEMENT AND CONNECTIONS AT CURB AND GUTTER AND INLETS, AS DIRECTED BY THE ENGINEER. (ESTIMATED AT 110 LB/S.Y./IN.)
- 425-1-ABC TO COST OF BAFFLE, MATERIALS, METAL PIPE ENCASEMENT, INLET AND MANHOLE PAVEMENT AND BASE, LABOR & CONSTRUCTION SHALL BE INCLUDED IN COST OF STRUCTURES. FOR PIPE ALTERNATIVES, SEE SPECIAL PROVISIONS AND BID DOCUMENTS.
- 425-5B & 425-6 THIS ITEM IS CONTINGENT UPON FIELD CONDITIONS AND MAY BE INCREASED, DECREASED OR ELIMINATED BY THE ENGINEER.
- 430- FOR PIPE ALTERNATIVES, SEE SPECIAL PROVISIONS AND BID DOCUMENTS.
- 443-70-ABC INCLUDES THE COST OF EXCAVATION TO PLAN ELEVATION, PERFORATED PIPE, PEACOCK BALLAST ROCK, PLASTIC FILTER FABRIC AND BACKFILLING WITH SELECT FILL (SEE DETAIL OF EXFILTRATION DRAIN TO DETERMINE NON-PERFORATED PIPE QUANTITY) AND ALL APPLICABLE ITEMS REQUIRED TO CONSTRUCT EXFILTRATION DRAIN.
- 520-1-10 INCLUDES DROP CURB AT DRIVEWAYS AND 3 FT OF CURB ENDING AS DIRECTED BY THE ENGINEER.
- 522-1(1) INCLUDES THE COST OF PEDESTRIAN RAMPS.
- 522-2(1) ESTIMATED QUANTITY FOR DRIVEWAYS TO BE CONSTRUCTED AT LOCATIONS SHOWN IN THE PLANS AND/OR AS DIRECTED BY THE ENGINEER.
- 527-2 FURNISH AND INSTALL SAFETY YELLOW COLORED DETECTABLE WARNING DEVICES CONSTRUCTED IN ACCORDANCE WITH THE FDOT DESIGN STANDARDS INDEX No. 304. USE DETECTABLE WARNINGS MANUFACTURED BY ADA SOLUTIONS, Inc. (CAST-IN PLACE COMPOSITE TACTILE) (QPL No. 5527-0003) OR APPROVAL EQUAL.
- 575-1-1 RESTORATION OF LAWNS SHALL INCLUDE NEW SOD, GRADING, WATERING, FERTILIZER AND MAINTENANCE. MAY BE INCREASED OR DECREASED AS DIRECTED BY THE ENGINEER. PENSACOLA OR TO MATCH EXISTING SOD.
- 580-327-ABC PRICE AND PAYMENT WILL BE FULL COMPENSATION FOR EXISTING TREE IMPACT REQUIREMENTS IN ACCORDANCE WITH THE PLANS.

SUMMARY OF EARTHWORK	
ITEM	QUANTITY
REGULAR EXCAVATION	31,489 C.Y.
EMBANKMENT	776 C.Y.

- SUMMARY OF EARTHWORK IS BASED ON THE CONSTRUCTION OF LIMEROCK BASE 8" THICK AS INDICATED ON THE CROSS SECTIONS.
- ANY EXCAVATED MATERIAL, IF UNSUITABLE, SHALL NOT BE USED IN THE CONSTRUCTION OF THE EMBANKMENT.
- EXCESS MATERIAL TO BE DISPOSED OF BY THE CONTRACTOR IN LEGAL AREAS PROVIDED BY HIM. NO SEPARATE PAYMENT WILL BE MADE FOR THIS ITEM.
- AN ESTIMATED 21,860 C.Y. OF UNCLASSIFIED MATERIAL IS TO BE DISPLACED BY THE DRAINAGE SYSTEM EXCAVATION AND IS NOT INCLUDED IN THE SUMMARY OF EARTHWORK QUANTITIES. THIS MATERIAL IS NOT TO BE USED IN THE CONSTRUCTION OF THE PROPOSED BASE. ANY EXCESS MATERIAL IS TO BE DISPOSED OF IN LEGAL AREAS AS PROVIDED BY THE CONTRACTOR

- FOR SIGNING & PAINT MARKING ITEMS SEE SIGNING & PAINT MARKING PLANS & BID FORMS
- FOR SIGNALIZATION ITEMS SEE SIGNALIZATION PLANS & BID FORMS
- FOR LIGHTING ITEMS SEE LIGHTING PLANS AND BID FORMS

MIAMI-DADE COUNTY PUBLIC WORKS DEPT.
HIGHWAY DIVISION
N.W. 37TH AVENUE
FROM N.W. 36TH STREET TO N.W. 79TH STREET
PROJECT NO. 200M0330 SHEET 5 OF 371

ENGINEER OF RECORD:
ASP ENGINEERS
ASP Consulting Transportation Engineers Corporation
4000 N.W. 20th Avenue, Suite 200
Fort Lauderdale, FL 33309-1044
(954) 582-7272 fax (954) 582-7273
4000 N.W. 20th Avenue, Suite 200

NAME	DATE	NAME	DATE
DESIGNED BY: IL	01-15-21	DRAWN BY: EG	01-18-21
CHECKED BY: DNS	04-29-21	CHECKED BY: DNS	01-22-21
SUPERVISED BY: DNS			

MIAMI-DADE COUNTY
PUBLIC WORKS DEPARTMENT
HIGHWAY DIVISION
CONTRACT # 200M0330
N.W. 36TH STREET
WWW.FDOT.ORG

SUMMARY OF QUANTITIES