TO: PROSPECTIVE BIDDERS HOLDING PLANS AND SPECIFICATIONS FOR
TOWN OF LEWISVILLE, TIP NO. U-5617 WILLIAMS ROAD GATEWAY PROJECT

RE: U-5617: TOWN OF LEWISVILLE, WILLIAMS ROAD GATEWAY PROJECT
ADDENDUM NO. 1

The following changes and clarifications are applicable to the referenced project and are now a part of its contract documents. Where any article, division, or subparagraph of the original contract documents or other addenda is supplemented herein, the provisions of the original documents shall remain in effect. All the supplemental provisions shall be considered as added thereto. Where any such article, division, or subparagraphs are amended, voided, or superseded thereby, the provisions of such article, division, or subparagraph not so specifically amended, voided, or superseded shall remain in effect.

The attention of each contractor is called to the following clarifications, additions to, and changes in the plans sealed January 28, 2020, and specifications sealed July 18, 2022, on the above project. It will be the responsibility of each contractor to call such clarifications, additions, and changes in plans and specifications to the attention of subcontractors concerned. The Town in no way assumes any responsibility for notifying any subcontractor, material dealers, or others not having received the original contract documents.

Bidder must acknowledge receipt of Addendum No. 1 by signing appropriately on each of the revised Itemized Proposal and submitting them with other bid documents. Original Pages with strikethroughs will not be accepted.

Item 1: Attendance at Pre-Bid Conference

The following persons attended the above referenced Non-Mandatory In-Person and Virtual Pre-Bid Meeting on Tuesday, August 9, 2022 at 10:00 AM. Minutes of this conference are attached and shall be considered part of this Addendum.

NAME	REPRESENTING	EMAIL	PHONE
Stacey Tolbert	Town of Lewisville	planner@lewisvillenc.net	336-945-1023
Jeff Turner	NCDOT	wjturner@ncdot.gov	336-747-7800
David Burnette	NCDOT	rdburnette@ncdot.gov	336-424-7860
Jeff Moore	Kimley-Horn	jeff.moore@kimley-horn.com	919-677-2175
Caleb Lowman	Kimley-Horn	caleb.lowman@kimley-horn.com	919-677-2108
Brett Abernathy	Vaughn & Melton	jbabernathy@VaughnMelton.com	828-355-9933
Wes Kimbell	City of Winston Salem	wesleyki@cityofws.org	336-529-4414
Erick Smith	City of Winston Salem	jameses@cityofws.org	336-925-0563
Nick Snyder	Mountaineer Contractors	nicholas.snyder@mciwv.com	704-402-6536
Dale Swicegood	KisneerCampo & Associates	dswicegood@keaeng.com	336-462-2050
Ian Sadler	Town of Lewisville		

Item 2: Revised Bid Proposal

Replace Page UC-1 thru UC-14 with Addendum No.1 Page UC-1 thru UC-14.

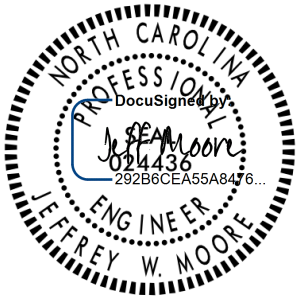
No additional questions received from prospective bidders

ATTACHMENTS:

- Pre-Bid Meeting Minutes
- Addendum #1 –Special Provisions

ALL OTHER CONDITIONS REMAIN THE SAME.

By: Jeffrey W. Moore, P.E.
Kimley-Horn and Associates, Inc.



8/22/2022

END OF ADDENDUM NO. 1

TOWN OF LEWISVILLE

U-5617 – WILLIAMS RD GATEWAY PROJECT
Non-Mandatory Virtual Pre-Bid Meeting

Date: Tuesday, August 9, 2022
Time: 10:00 AM
Location: In person at 6510 Shallowford Rd, Lewisville, NC and Virtual via Microsoft Teams

- Sign-In/Attendance (Name, Organization, Phone Number, Email) – one contact per organization will suffice
    - Utilize the meeting chat feature if you joined by computer
    - Come off mute and state verbally if you joined by phone

- Project Description
    - The Town of Lewisville proposes to widen SR 1173 (Williams Road) and implement a complete street design from the roundabout at Concord Church Road south of the bridge over US 421 to the roundabout at SR 1001 (Shallowford Road).

- Project Funding
    - Bidders shall be aware that this project is a federally funded project administered by the Town, oversight by NCDOT. The project will require a significant amount of paperwork, sub-contract agreements, buy America Provision, Wage Interviews, Davis Bacon reporting, material certifications, etc.
    - Bidders should review the standard provisions for federally funded projects.
    - Bidders must be pre-qualified with NCDOT.
    - Bid Bond is 5% and shall be submitted with bid.

- Project Highlights
    - Roundabout Work
        - Two roundabouts have proposed improvements
            - Roundabout at southern end of project at Concord Church Rd (SR 1171)
            - Roundabout north of that where US 421 off- and on-ramps intersect with Williams Rd (SR 1173)
        - Install curb and gutter and sidewalk to tie on both sides of the existing stamped concrete sidewalk on the west side of the Williams Rd bridge over US 421
        - Guardrail: Install new TL-2 end units, remove and reset existing guardrail sections, and retain/tie to the existing structure/bridge guardrail anchor on both sides of bridge
        - Contractor will need to provide survey/staking on project (including As-Builts)
        - Rehabilitate the existing roundabouts per Special Provision on pages 46-47 of bid documents - seal cracks and install a new decorative, stamped asphalt surfacing system to match the existing conditions

- Do not disturb the following per the plans:
  - Gas station brick sign and associated landscape area
  - Brick signs near driveway for property #5
  - Existing power pole north of the gas station driveway
- Gateway Monument Signs
  - Two Proposed Gateway Monument Signs - Pay Items 60 through 65
    1. Northwest side of US 421 roundabout (existing location)
    2. Northeast side of US 421 roundabout (new location south of the gas station)
  - Remove existing stone sign using light equipment only. Existing trees are to remain and surrounding rootzones are to be protected from impact.
  - Lighting Component - The Town of Lewisville will coordinate with Duke Energy Power to establish a power source and associated meter for the monument signs. The Contractor will be required to coordinate with the Town and Duke Energy Power as needed to work through the logistics of the power circuit tie-in. The Contractor shall install the monument sign lighting in a manner that promotes power tie in as designated by the Town and Duke Energy Power.
  - Special Provision on page 50-58 of bid documents for more information.
- Landscaping Maintenance
  - Pay Item #106 – "Generic Planting Item – Monthly Landscape Maintenance" - Maintenance and protection of the work is the responsibility of the Contractor for the entire 12-months maintenance period
  - Special Provision on page 77-78 of bid documents for more information.
- Traffic Management
  - Phases
    1. Left-Side: perform widening, construct curb and gutter, sidewalk, and monolithic island, rehabilitate existing roundabouts, and install associated drainage up to but not including the final asphalt surface course
    2. Right-Side: perform widening, construct curb and gutter, sidewalk, and monolithic island, rehabilitate existing roundabouts, and install associated drainage up to but not including the final asphalt surface course
    3. Middle: construct median and monolithic islands. Install final asphalt surface course, install final pavement markings and markers, remove all traffic control devices and open all lanes to traffic.
- Water/Sanitary Sewer
  - UC plans prepared by Winston-Salem/Forsyth County Utilities
  - Contractor to minimize impacts to force mains by only relocating portion necessary for utility conflict resolution and storm drain installation as shown on the UC plans
  - Separate construction inspector to coordinate with from Winston-Salem/Forsyth County Utilities

- Right-of-way Acquisitions
  - All Right-of-Way and Easements have been acquired

- Permit Status – Complete/Acquired

- Coordination with Adjacent Developments and Businesses
  - None at this time
  - Town would like to stress the importance of maintaining business and adjacent property access throughout construction as shown on the plans

- Utility Coordination
  - Lighting: Pay Item #71 "Generic Lighting Item – Street Lighting Conduit, Open Trench Install, 2" SCH 40 PVC (Gray)" - Roadway Contractor to install street lighting conduit for future installation of lighting by Duke Energy. The roadway contractor shall install street lighting conduit under proposed hard surfaces as indicated in the UBO Plans
    - Special Provision on pages 60-62 for more information.
  - Duke Energy, Windstream, AT&T, and Verizon are located along the project corridor.
  - Utility Contact Information:
    - Utility: Duke Energy Progress (Power)
      - Contact Person:
        - Patrick Sizemore
        - **Patrick.Sizemore@duke-energy.com**
        - 336-917-2522
    - Utility: Windstream Communications
      - Contact Person:
        - Jim Crumbley
        - **James.Crumbley@windstream.com**
        - 336-225-8133
    - Utility: AT&T
      - Contact Person:
        - Will Pace
        - **wp678r@att.com**
        - 336-391-4843
    - Utility: Verizon
      - Contact Person:
        - Pamela Bell (Engineering Associates, LLC)
        - **pamela.bell@engineeringassociates.com**
        - (Office) 678-231-7058
    - Utility: Winston-Salem/Forsyth County Utilities (Water/Sanitary Sewer)
      - Contact Person:
        - Todd Lewis
        - **toddl@cityofws.org**
        - 336-747-6842
  - There will be some level of utility coordination required during construction for the roadway contractor. A special provision is included in the bid documents on pages 60 thru 62 titled "Utilities by Others" with more details.

- Electronic files – Schedule of Prices
  - Schedule of Prices can be provided in excel format if requested via email request to caleb.lowman@kimley-horn.com. **Contractor shall submit hard copy of Schedule of Prices with their Bids and sign each addendum sheet at the bottom.**

- Bid Information
  - Bid Opening/Letting: Bids are due **2:00 PM on Thursday, August 25, 2022**
    - Package can be hand delivered if bidders coordinate with the Town in advance.
    - Package can be delivered by mail to the address listed below on or before the bid opening date/time.

      TOWN OF LEWISVILLE
      Attn: Stacy Tolbert
      P.O. Box 547
      6510 Shallowford Road
      Lewisville, NC 27023
      336-945-1023
  - Questions will only be received in written form by email to planner@lewisvillenc.net. Please copy Jeff Moore jeff.moore@kimley-horn.com and Caleb Lowman caleb.lowman@kimley-horn.com
  - The deadline to submit written questions is **Tuesday, August 16, 2022 at 5:00 PM**. Responses to questions will be posted in an Addendum and will be made available by **5:00 PM on Thursday, August 18, 2022**.
  - DBE Goal is 5%
    - The Town expects that the bidders provide a good faith effort to achieve the DBE participation goal. The DBE contractors must be certified with the NCDOT.
    - Need to have a Letter of Intent by 5 calendar days after the opening of bids from all subcontractors.
- Contract Duration
  - Date of Availability: Issued date of NTP (Anticipated this fall)
  - Completion Date: 300 days from NTP (Anticipated 2023)
  - Liquidated Damages:
    - Contract Time: $850 per calendar day
    - ICT's 1 and 2: $500 per 15-minutes or portion thereof
- Coordination with Town
  - Stacy Tolbert, Interim Town Manager, will serve as the Town contact for this project. Her phone number is 336-945-1023.
  - Town, via hired consultant, will provide full-time inspection for the project. Kimley-Horn has been selected as the Town's CEI consultant and will be in attendance for the Pre-Construction Meeting
  - Vaughn and Melton will provide inspection and materials testing for project.
- Questions
  - Open for Bidder questions – clarifications and Q/A from this Pre-Bid will be included in Addendum

Winston-Salem

Public Works Department
Engineering Division

City of Winston-Salem
P.O. Box 2511
Winston-Salem, NC 27102
CityLink 311 (336.727.8000)
Fax 336.727.2361
www.cityofws.org

NORTH CAROLINA PROFESSIONAL SEAL 027441 ENGINEER TODD M. LEWIS

12/4/2020

Revise the 2018 Standard Specifications as follows:

Page 3-2, Article 300-4 Preparation of Pipe Foundation:
Delete the last 2 sentences of the second paragraph.

Page 3-3, Article 300-7 Backfilling:
add the following to line 39:

Flowable fill, if approved, must not come in contact with the pipe.

Page 10-61, Sub-article 1034-4, Ductile Iron Pipe, third paragraph
Add the following sentences to paragraph 2:

Rubber gasket joints shall conform to ANSI A21.11 (AWWA C111). Pipe design laying condition will be Type 2, flat-bottom trench with backfill lightly consolidated to centerline of pipe. Pipe for sanitary sewer shall be minimum thickness Class 50. Pipe for water shall be pressure Class 350 for 3" – 16" and pressure Class 250 for 18" and above.

The interior of pipe for sanitary sewer will be lined with 40 mils of ceramic epoxy. All bells and spigots for sanitary sewer pipe must be lined with a minimum of 8 mils of joint compound. The exterior of all pipe shall be coated with a bituminous coating.

For fittings, all glands shall be ductile iron, not gray iron. Fittings shall have a minimum pressure
rating of 250 psi. Rubber gasket joints shall conform to ANSI A21.11 (AWWA C111). "DI" or "Ductile" shall be cast on each fitting.

The interior of fittings for sanitary sewer will be lined with 40 mils of ceramic epoxy. All bells and spigots for sanitary sewer fittings must be lined with a minimum of 8 mils of joint compound. The exterior of all fittings shall be coated with a bituminous coating. Fittings coated on the interior and exterior with 8 mils of fusion bonded epoxy in accordance with ANSI/AWWA C116 and ANSI/AWWA C550 are acceptable.

Restrained joint pipe and fittings with a gripping gasket as the only means of restraint will not be allowed.

Page 10-61, Section 1034 Sanitary Sewer Pipe and Fittings:
add the following:

1034-5 Cast Iron Soil Pipe

All cast iron soil pipe and fittings will conform to ASTM A74 and be classified as SV (service weight). Single or double hub is acceptable. No-hub pipe shall not be used. All pipe and fittings shall be uniformly coated with bituminous coating. Joints will be rubber gasket. Rubber gaskets shall conform to ASTM C564. 4" x 4" combination wye and eighth bends shall be short pattern - Fig. No. SV-32 by Charlotte Pipe and Foundry (or approved equal). 4" cleanouts shall consist of a 4" service weight cast iron ferrule (with 3" iron pipe size tap) and a 3" brass plug. The plug shall have a low raised square head (Southern Code). Cleanouts shall be Part Number 184 by Jumbo Manufacturing Company (or approved equal).

Page 10-62, Sub-article 1036-2, Copper Pipe second paragraph
Delete:

"Use flared or"

Page 10-62, Sub-article 1036-4, Steel Pipe
Delete (A) Water Pipe in its entirety. City does not allow new steel pipe in its water system.

Page 10-63, Sub-article 1036-6 Fire Hydrants
Delete the following:

"Outlets shall have national standard fire hose coupling threads. Use fire hydrants with a minimum bury length of 36".

Add the following:

All fire hydrants shall be dry-barrel fire hydrants which comply with ANSI/AWWA C502. All hydrants will have a dry top with O-ring seals which permanently seal off the stem operating threads from water and keep the lubricant in. All hydrants shall be opened

by turning the operating nut on top of the hydrant counterclockwise. The operating nut and cap nuts shall be pentagon-shaped, 1 ½" measured point to flat. The main valve shall be a compression type valve with a valve opening of 5 ¼". Each hydrant will have two hose nozzles and one steamer nozzle. The 2 ½" hose nozzles shall have national standard threads. The steamer nozzle shall have a 5" integral Storz connection. The nozzle shall be fastened into the hydrant barrel by mechanical means, but shall not be leaded into the barrel. Nozzle caps shall be chained to the barrel. All hydrants will be furnished with a breakable traffic feature that will break upon impact. The feature shall consist of a breakable safety flange on the barrel and a breakable safety coupling in the main valve stem. Hydrants must have a bronze main valve seat ring that threads into a bronze drain ring. Each hydrant shall have at least two bronze drain outlets. All hydrants will have 6" mechanical joint base connections or the Alpha connection by American Flow Control unless otherwise specified by the Engineer. Hydrants shall be designed for a minimum working pressure of 250 psi. Assembled hydrants shall be subjected to hydrostatic tests of twice the rated working pressure in accordance with ANSI/AWWA C502. All exterior iron surfaces below ground level shall be covered with two coats of asphaltic varnish or fusion bonded epoxy. All exterior iron surfaces above ground level shall be painted yellow to the satisfaction of the Engineer. Yellow paint shall be Rust-Oleum 7446, Rust-Oleum V2148, Kimball Midwest 80-942, or manufacturer's standard equivalent. All interior iron surfaces of the hydrant shoe which are in contact with water (including the lower valve plate and nut) shall be coated with a minimum of 8 mils of fusion bonded epoxy or liquid epoxy in accordance with ANSI/AWWA C550. All hydrants shall have a thrust or anti-friction washer in the operating area of the hydrant bonnet. A weather cap around the operating nut on top of the hydrant is required. Hydrants accepted by the City of Winston- Salem are as follows:

(1) Super Centurion 250, manufactured by Mueller Company
(2) B-84-B-5, manufactured by American Flow Control
(3) K-81D Guardian, manufactured by Kennedy Valve Company
(4) Medallion, manufactured by Clow Valve Company

Page 10-63, Sub-article 1036-7 (A) Gate Valves:
replace with the following:

All gate valves shall be resilient-seated gate valves which meet the specifications of ANSI/AWWA C509 or ANSI/AWWA C515. The valve body, bonnet and seal plate shall be coated on all exterior and interior surfaces with a minimum of 8-l0 mils of fusion bonded epoxy in accordance with ANSI/AWWA C550. The valve shall incorporate a guide system with guide lugs on the wedge or on the body. The wedge shall be gray or ductile iron, fully encapsulated with rubber (including guide lugs and stem nut holder). Non-rising stem valves shall have two O-ring seals above the stem thrust collar that can be replaced with the valve under pressure. Non-rising stem valves shall also have a thrust washer on the stem thrust collar. Valves used for buried service will have a non-rising stem, mechanical joint end connections, and a 2" square

operating nut. The word "OPEN" and an arrow to indicate the direction of opening the valve shall be cast on the flanged base of the operating nut. Above ground valves, unless otherwise specified, will have an outside screw and yoke rising stem or a non-rising stem, flanged end connections, and a handwheel to operate the valve. The word "OPEN" and an arrow to indicate the direction of opening the valve shall be cast on the rim of the handwheel. All valves will open by turning the nut or handwheel counterclockwise. Valves installed in manholes will normally be considered to be buried service valves and valves installed in vaults will normally be considered to be above ground valves.

Resilient-seated gate valves shall be designed for a minimum working pressure of 250 psi. Each valve shall be seat tested at the rated working pressure and shell tested at twice the rated working pressure in accordance with ANSI/AWWA C509 - Section 5 or ANSI/AWWA C515 - Section 5. All valves shall be warranted for l0 years from date of purchase against defective materials and workmanship. Gate valves furnished under these specifications must be manufactured by one of the following or approved equal:

(1) Clow Valve Company
(2) M & H Valve Company
(3) American Flow Control
(4) U.S. Pipe and Foundry Company
(5) Mueller Company
(6) Kennedy Valve Company

Page 10-63, Sub-article 1036-7 (B) Bronze Gate Valves:
replace with the following:

The use of bronze gate valves shall not be permitted.

Page 10-63, Sub-article 1036-7 (C) Tapping Valves:
replace with the following:

Use tapping valves conforming to the special provision above for gate valves. The valve shall have an inlet flange (with centering ring) for connection to the flanged sleeve outlet. Tapping sleeves shall be a split sleeves with mechanical joint end connections and a flanged outlet. Sleeves shall be designed for a minimum working pressure of 200 psi.

Tapping valves furnished under these specifications must be manufactured by one of the following or approved equal:

Tapping Sleeves:
(1) Mueller Company
(2) American Flow Control
(3) Tyler Pipe Company
(4) U.S. Pipe and Foundry Company
(5) Kennedy Valve Company

Tapping saddles:
(1) American Flow Control
(2) U.S. Pipe and Foundry Company

Tapping valves:
(1) Clow Valve Company
(2) M & H Valve Company
(3) American Flow Control
(4) U.S. Pipe and Foundry Company
(5) Mueller Company
(6) Kennedy Valve Company

Page 10-63, Sub-article 1036-8 Sleeves, Couplings and Miscellaneous (A)
Add the following:

Tapping sleeves and valves shall be used for "wet" taps into existing water mains as indicated on the Engineer's drawings. The Contractor shall verify the type of material, size, etc., of the existing main prior to ordering the sleeve. The sleeve shall be a split sleeve with mechanical joint end connections and a flanged outlet. The tapping valve shall meet all specifications for "gate valves" except that the valve shall have an inlet flange (with centering ring) for connection to the flanged sleeve outlet.

All tapping sleeves and valves shall be water tested before the tap is made. Test pressure shall be 200 psi. All tapping sleeves and valves shall be installed level. The Engineer must be present during the entire tapping and testing process.

Page 10-63, Article 1036-8 Sleeves, Couplings and Miscellaneous:
add the following:

(C) Valve Boxes

Cast iron valve boxes will conform to ASTM A48, Class 30B. All boxes will conform to the shape and dimensions shown on the City of Winston-Salem detail drawing for "Cast Iron Valve Box" and will be free from holes, cracks or any other defects. All castings will be thoroughly coated with an asphaltic varnish. The name of the manufacturer shall be permanently cast on each piece. Valve boxes that do not meet

specifications shall be rejected. Cast iron valve boxes furnished under these specifications shall be manufactured by one of the following or approved equal:

(1) Sigma Corp.
(2) SIP Industries
(3) DSI International
(4) Star Pipe Products

Page 10-64, Sub-article 1036-9, Service Line Valves and Fittings, Paragraph 1
Add the following:

All corporation cocks shall be made of brass. All brass fittings shall be manufactured in accordance with AWWA C800 and ASTM B-584. All brass components in contact with potable water must be made from CDA/UNS Brass Alloy C89833 with a maximum lead content of .25% by weight. Brass alloys not listed in ANSI/AWWA C800 Paragraph 4.1.2 are not approved. All fittings shall be UL classified to NSF/ANSI 61 and NSF/ANSI 372 standards and stamped or embossed with a mark or name indicating that the product is manufactured from the low-lead alloy as specified. All corporation cocks shall be of the ball valve type with AWWA inlet thread.

Page 10-119, Article 1074-8 Steps:
replace with the following:

All manhole steps shall conform to current OSHA standards and ASTM C478. The approved step shall conform to the City of Winston-Salem detail drawing for "Polypropylene Manhole Step". All other steps must be approved by the Engineer prior to being installed.

Page 15-1, Article 1500-2 Cooperation with the Utility Owner, paragraph 2:
add the following sentences:

The utility owner is the Winston-Salem/Forsyth County Utilities Commission. The contact person is Ryan Newcomb and he can be reached by phone at (336) 727-8063.

The materials and appurtenances installed by the contractor shall require approval by both NCDOT and the utility owner prior to installation.

Page 15-2, Sub-article 1500-7, Submittals and Records
Add the following after the third paragraph:

As a final measure required for acceptance, the Contractor shall clean and televise all sanitary sewer mains prior to requesting final inspection. The Contractor shall televise the entire sewermain and all service connections using standardized NASSCO (PACP, MACP, & LACP) practices, unless otherwise specified.

Two copies of the entire video inspection along with a properly formatted PACP standard exchange database shall be submitted to the Engineer on a data disc (DVD or flash drive).

Page 15-2, Sub-article 1500-9 Placing Pipelines into Service
Add the following sentences:

Obtain approval from City prior to placing a new water line into service. Use backflow prevention assemblies for temporary connections to isolate new water lines from existing water line. A representative from City will witness all tests performed on their water facilities.

Obtain approval from City prior to placing a new sewer line into service. A representative from City will witness all tests performed on their sewer facilities.

Page 15-3, Article 1505-2 Materials:
replace line 12 with the following:

Use Class VI select material for foundation conditioning and bedding.

Page 15-4, Sub-article 1505-3 (C), Bedding:
replace the first three (3) sentences with the following:

The limits for stone bedding will normally be shown on the profile of the Engineer's drawing. Stone bedding shall have a minimum thickness beneath the pipe of four inches (4") or one-eighth of the outside diameter of the pipe, whichever is greater. The required thickness shall be determined by the Engineer.

Page 15-4, Sub-article 1505-3 (E), Thrust Restraint:
replace the fourth paragraph with the following:

Concrete thrust blocks shall be constructed as directed by the Engineer at all bends, tees, tapping sleeves, tapping saddles, reducers, plugs, etc. to provide restraint against thrust resulting from internal pressure. Any exceptions to this such as restrained joints or mechanical joints with retainer glands will be noted on the Engineer's drawings or otherwise specified. Thrust blocks will not be required for restrained joint pipe (exception - blocking will be required when connecting restrained pipe to existing pipe).

All thrust blocks will be constructed of a minimum of Class A concrete. Thrust blocks for bends, fire hydrants, tees and stub-outs shall be constructed in accordance with the City of Winston-Salem thrust block detail drawings.

Polyethylene shall be placed over all fittings before the concrete is poured. All nuts and bolts shall be clear of concrete so that the joint will be accessible. Plywood shall be used as forms for blocking. Concrete is to be poured only against stable undisturbed soil and should be allowed to set prior to any backfilling. Thrust blocks should be allowed to cure two days prior to pressure testing the water main. Higher strength concrete may be required when it is necessary to pressure test prior to the end of the two day curing time.

Page 15-6, Sub-article 1510-3 (A) General
Replace the words "36" to 42" of cover" with "a minimum of 36" of cover".

Page 15-8, sub-article 1515-3(A) Valves
Add the following paragraph:

All existing valves larger than 12" that must be operated shall be operated by the City.

Page 15-8, Article 1515-3 Construction Methods:
add the following:

(H) Tapping Sleeves

Tapping sleeves and valves shall be used for "wet" taps into existing water mains as indicated on the Engineer's drawings. The Contractor shall verify the type of material, size, etc., of the existing main prior to ordering the sleeve. For taps on larger mains (24" and above), a saddle may be used in lieu of a sleeve, but only if the tap is less than or equal to half the size of the line to be tapped. All tapping sleeves and valves shall be water tested before the tap is made. Test pressure shall be 200 psi for 15 minutes without any drop in pressure. All tapping sleeves and valves shall be installed level. The Engineer must be present during the entire tapping and testing process.

Page 15-8, Sub-article 1515-3 (B), Meters:
add the following:

For relocated water meters the Contractor shall install a new meter box, angle valves, yoke, tee and ball valve as directed by the Engineer. The Contractor shall expose a portion of the water line from the dwelling or business to determine the material and have proper fittings for reconnection to the new meter box. At the approval of the Engineer, the Contractor shall remove the existing meter and install it in the new yoke. The Contractor shall reconnect the property side water line from the existing meter box to the new meter box. This reconnection shall be directed by the Engineer and performed in a timely manner so that the property is without water for a minimal amount of time. The Contractor shall remove and dispose of the existing meter box and yoke and backfill as shown on the plans or as directed by the Engineer.

Page 15-10, Sub-article 1520-3, Construction Method
Delete third paragraph in its entirety. No PVC pipe is allowed on this project.

Page 15-10, Sub-article 1520-3, Construction Methods
Add the following to the third sentence of the fifth paragraph:
"or within fenced areas"

Page 15-10, Sub-article 1520-3, Construction Methods
Delete the following:
"10%"
Replace with the following
"18%-22%"

Page 15-10, Sub-article 1520-3, Construction Methods
Delete the seventh paragraph in its entirety.

Replace with the following:
The standard fall through manhole is 1" (0.08') including 6" connections into a manhole.

Page 15-10, Article 1520-3 Construction Methods
add the following:

Sewer connections shall be installed as shown on the appropriate City of Winston-Salem detail drawing. Wyes or taps will not be allowed within 5 feet of a manhole. Only one bend will be allowed for connecting the sewer connection to the sewer main. If more than one bend is needed (Ex: bored sewer connection), the road shall be open cut and the connection installed properly. Sewer connections shall be a maximum of 75 feet from the sewer main to the cleanout. Cleanouts shall be installed between property corners of the lot for which the connection is intended. Connections into manholes will require a flexible sleeve at the manhole. If approved by the Engineer, four-inch (4") connections will be allowed to spill into deep manholes. For connections which spill, the 4" pipe shall protrude a minimum of 4" and a maximum of 6" beyond the inside wall of the manhole. Connections into manholes must be at least 6" from the nearest manhole step. Six-inch (6") connections must connect into a manhole.

When installing new sewer connections intended to replace existing ones, the new sewer connection shall be of like size to the existing. Reconnection of the old connection to the new shall be performed by a qualified utility contractor or by a licensed plumbing contractor. The Contractor shall be responsible for all permits and inspections required for the reconnection.

Page 15-11, Sub-article 1520-3, Construction Methods (A) Gravity Sanitary Sewer
Add the following to the first paragraph:

and City of Winston-Salem, North Carolina Department of Public Works Engineering Division.

Page 15-11, Sub-article 1520-3, Construction Methods
(A) Gravity Sanitary Sewer (2) Testing
Delete in its entirety and replace with the following

A low-pressure air test shall be performed by the Contractor after the pipeline is completely backfilled and before being placed into service. The Engineer must be present during the entire testing process. Any work done without their supervision will not be accepted.

(a) Low Pressure Air Testing Requirements:
The Contractor shall use an approved pressure gauge and perform the test in accordance with ASTM C-828. Each section of pipeline (including connections) between manholes will be tested by plugging the upstream manhole and the downstream manhole. By using mirrors, lights, etc., the Contractor must show the Engineer that the 2 plugs are at the proper location and that the line is clear between the plugs. Air is added to the line until the pressure is between 3.0 psi and 4.0 psi. If the pressure drops more than l.0 psi during the time shown on the chart below, the line is presumed to have failed the test. An obvious leak in any section will be corrected even if the section passes testing. The Contractor will be responsible for the complete removal of all plugs.
Air test time shall be as follows:

Minimum Air Test Time

Main Size	Time (minutes per l00 feet of pipe)
8"	1.5
10"	1.8
12"	2.1
15"	2.4
18"	2.7
21"	3.3
24"	3.9
27"	4.5
30"	5.1

(b) Video Inspection:
As a final measure required for acceptance, the Contractor shall clean and televise all sanitary sewer mains prior to requesting final inspection. The Contractor shall televise the entire sewer main and all service connections using standardized NASSCO (PACP, MACP, & LACP) practices, unless otherwise specified below. The process shall begin at the upstream manhole for each segment, and proceed to the downstream manhole for that

same segment. Connections shall be televised from the cleanout to the main. Video inspection may occur only after Record Drawings are accepted and approved by the City of Winston-Salem. Prior to beginning the process, a 24 hour notice must be given by the Contractor to the Engineer. Prior to video inspection in paved areas, structures must be raised to final grade and 2" of asphalt must be in place. The City will not accept video that is more than 180 days old unless approved by the Engineer.

The cameras used for inspection shall be ones specifically designed and constructed for sanitary sewer pipeline inspection. Lighting for the cameras shall be suitable to provide a clear color picture of the entire periphery of the pipe. The cameras used for mains must be able to pan, tilt and zoom in order to allow for 360 degree viewing. The television system shall be equipped to indicate the camera travel distance in feet by display on the video viewing screen. All television equipment (camera, monitor, etc.) must be capable of producing picture quality which is satisfactory to the Engineer.

Within 2 hours of the video inspection, the Contractor shall clean the sewer mains and service connections with a high velocity water jet. All debris shall be collected in the downstream manhole and removed by the Contractor. Debris shall not be released into the existing sewer system. During the entire video process, the distance counter must be set at zero at each upstream manhole for each segment (set the counter at zero at the ground for each service connection). The Contractor will be required to pan and tilt at each manhole and at each service connection. The interior of each manhole must be marked with the manhole station (or manhole number) with paint or some other legible identifier (6" - 12" high letters or numbers). Each cleanout stack must be marked with the house number or the lot number. For mains, the Contractor will also be required to pan, tilt and zoom at all couplings, at all dates for Protecto 401 lined ductile iron pipe, and when any potential problems or abnormalities are noticed or suspected. Travel speed for the camera will be 15 - 30 feet per minute. The following video screen data will be required:

· Project name and project number
· Date of inspection
· Travel distance and time
· Station of start and end manholes
· Depth of start and end manholes
· Size of main
· Type of pipe

All above data shall be shown at the start and end manholes of each segment. While the camera is moving through the main and service connections, distance shall be the only data shown on the screen (top left or top right of screen).

For mains, a stream of water approximately 1" in width must be flowing during the entire video process. For service connections, a minimum of 5 gallons of water must be

introduced into each cleanout stack just prior to the video process. In all cases, the flow must be shown on the bottom of the video screen.

Two copies of the entire video inspection along with a properly formatted PACP standard exchange database shall be submitted to the Engineer on a data disc (DVD or flash drive). A "properly formatted PACP standard exchange database" includes properly PACP coded defects (NASSCO version 6.x), proper media paths to associated video files, and all asset IDs used in the inspection must match what the submitted record drawings indicate for each asset. The video file shall be formatted to MPEG-4 (MP4) with software compatible and readable by the City of Winston-Salem. The City of Winston-Salem shall not be responsible for purchasing additional software necessary to view the video file. Each inspection (manhole to manhole or cleanout to main) shall be separated into its own chapter or file. In the event of a main inspection, the chapter or file shall be named to indicate the upstream manhole station or number and then the downstream manhole station or number (e.g. MH1-MH2). In the event of a service connection inspection, the chapter or file shall be named to indicate the house number or lot number associated with the inspection. All file naming should match the identification numbers (manhole station or number, house number, or lot number) shown on the Record Drawings. The submitted video must have the ability to be viewed using fast forward and rewind.

Any video that does not clearly show the pipe and service connections will be rejected. In the event that repairs are made, the segment receiving the repairs shall be flushed and televised again. The Engineer must oversee the entire cleaning and televising process. Final approval of the video inspection will only be after the Engineer has reviewed the video in the office (videos will not be field approved).

No direct payment will be made for cleaning and video inspection, as such work will be incidental to the installation of the pipe and/or service connections.

Page 15-14, Sub-article 1525-2, Materials
First paragraph, add the following after the second sentence:

All manhole joints shall be sealed on the outside of the manhole with butyl adhesive tape (minimum 6" wide). When unstable subgrade is encountered, manholes shall be bedded on stabilization stone.

Page 15-14, Sub-article 1525-2, Materials
First paragraph, delete third sentence in its entirety.

Replace with the following:
Flexible manhole connectors shall conform to ASTM C923.

Page 15-14, Article 1525-2, Materials, line 10:
add the following:

Connectors shall be manufactured by Press-Seal Gasket Corporation, Hamilton Kent, NPC Inc. or approved equal.

Page 15-14, Article 1525-2, Materials, lines 12-16:
replace with the following:

Type 1 manhole rings and covers will be made of cast iron and will conform to ASTM A48, Class 35B. In addition, all manhole rings and covers shall be designed to support an H-20 wheel load. All castings will conform to the shape and dimensions shown on the City of Winston-Salem detail drawing for "Manhole Ring and Cover (Type 1)" and will be free from holes, cracks or any other defects. Rings and covers will have machined seats so that the cover will not rattle. Rings will weigh a minimum of 190 pounds and covers a minimum of 120 pounds. The name of the manufacturer and the part number shall be cast permanently on the ring and the cover. Castings that do not meet specifications shall be rejected.

Page 15-14, Sub-article 1525-3, Construction Methods
Second paragraph, first sentence, delete the following:
"resilient"

Replace with the following:
"flexible"

Delete the second and third sentences in their entirety.

Page 15-14, Sub-article 1525-3, Construction Methods
Fifth paragraph, fourth sentence, delete the following:
"recommended but not required"

Replace with the following:
"required"

Page 15-15, Sub-Article 1525-3 (D), Testing:
replace with the following:

Each manhole constructed by the Contractor shall be vacuum tested by the Contractor after assembly of the manhole. Prior to testing, and as directed by the Engineer, the Contractor shall clean out each manhole without foreign material being discharged into the existing sanitary sewer system. The test shall be conducted in accordance with

ASTM C-1244. The test shall be performed after all grade rings and rings and covers have been installed. After the testing equipment is in place, a vacuum of l0 inches of mercury shall be drawn on the manhole. The time for the vacuum to drop to 9 inches of mercury must be greater than the minimum time listed below:

Minimum Vacuum Test Time (Seconds)

Manhole Depth	Diameter of Manhole		
	4'	5'	6'
0 - 10'	60 sec.	75 sec.	90 sec.
10 - 5'	75 sec.	90 sec.	105 sec.
15 - 25'	90 sec.	105 sec.	120 sec.
25 - 30'	105 sec.	120 sec.	135 sec.

The Engineer shall be present during the entire testing process. Any subsequent repairs to manholes which fail the vacuum test must be made on the inside and outside of each manhole. The Contractor will be responsible for the complete removal of all plugs.

No direct payment will be made for vacuum testing of manholes, as such work will be incidental to the installation of the manhole.

Page 15-17, Sub-article 1530-3 (D), Remove Fire Hydrant:
replace the first paragraph with the following:

The work performed to remove a hydrant from a main to be left in service shall include removing the hydrant, valve box and hydrant tee. A sleeve and any necessary piping shall be installed to reconnect the water main to be left in service.