



ADDENDUM NO. 2

METROPOLITAN SEWERAGE DISTRICT MSD ITT PUMP STATION REPLACEMENT

MSD PROJECT NO.: 2020061
MCKIM & CREED PROJECT NO.: 09596-0001

BIDS DUE: TUESDAY, JULY 21, 2026, AT 2:00 PM (EST)

ADDENDUM ISSUE DATE: JULY 16, 2026

TO: ALL PLAN HOLDERS OF RECORD

PLEASE NOTE THE FOLLOWING CLARIFICATIONS, CHANGES, AND/OR ADDITIONS TO THE ABOVE REFERENCED PROJECT:

1. SCOPE

Addendum No. 2 is issued to revise the specifications and construction drawings and to answer the questions listed below.

2. SPECIFICATIONS

1. TABLE OF CONTENTS

Per the recently signed (July 7, 2026) North Carolina's 2026 Appropriations Act (Session Law 2026-41), North Carolina local governments no longer have the authority to instate minority business participation in construction contracts. For this reason, Section VII MINORITY BUSINESS ENTERPRISES is no longer applicable to this project and has been removed entirely from the bidding documents. Replace TABLE OF CONTENTS with the revised TABLE OF CONTENTS attached to this Addendum No. 2.

2. SECTION I – ADVERTISEMENT FOR BIDS

Section VII MINORITY BUSINESS ENTERPRISES is no longer applicable to this project. For this reason, references to minority businesses have been removed from Section I ADVERTISEMENT FOR BIDS. Additionally, due to horizontal directional drill redesign, force main lengths have been revised. Replace Section I ADVERTISEMENT FOR BIDS with the revised Section I ADVERTISEMENT FOR BIDS attached to this Addendum No. 2.

3. SECTION III – INSTRUCTIONS TO BIDDERS

Section VII MINORITY BUSINESS ENTERPRISES is no longer applicable to this project. For this reason, MBE forms are no longer required. Replace Section III INSTRUCTIONS TO BIDDERS with the revised Section III INSTRUCTIONS TO BIDDERS attached to this Addendum No. 2.

4. SECTION V – SPECIAL CONDITIONS

Section VII MINORITY BUSINESS ENTERPRISES is no longer applicable to this project. For this reason, references to minority businesses have been removed from Section V SPECIAL CONDITIONS. Additionally, due to horizontal directional drill redesign, force main lengths have been revised. Replace Section V SPECIAL CONDITIONS with the revised Section V SPECIAL CONDITIONS attached to this Addendum No. 2.

5. SECTION 01010 – SUMMARY

Section VII MINORITY BUSINESS ENTERPRISES is no longer applicable to this project. For this reason, references to minority businesses have been removed from Section 01010 SUMMARY. Additionally, due to horizontal directional drill redesign, force main lengths have been revised. Replace Section 01010 SUMMARY with the revised Section 01010 SUMMARY attached to this Addendum No. 2.

6. SECTION 01026 – MEASUREMENT AND PAYMENT

Replace Section 01026 MEASUREMENT AND PAYMENT with the revised Section 01026 MEASUREMENT AND PAYMENT attached to this Addendum No. 2.

7. SECTION 02221 – EXCAVATION, BEDDING AND BACKFILL FOR PIPE AND STRUCTURES

Replace Section 02221 EXCAVATION, BEDDING AND BACKFILL FOR PIPE AND STRUCTURES with the revised Section 02221 EXCAVATION, BEDDING AND BACKFILL FOR PIPE AND STRUCTURES attached to this Addendum No. 2.

8. SECTION IX – BID SCHEDULE

Replace Section IX BID SCHEDULE with the revised Section IX BID SCHEDULE attached to this Addendum No. 2.

9. SECTION XIII – AGREEMENT FORM

Section VII MINORITY BUSINESS ENTERPRISES is no longer applicable to this project. For this reason, references to minority businesses have been removed from Section XIII AGREEMENT FORM. Replace Section XIII AGREEMENT FORM with the revised Section XIII AGREEMENT FORM attached to this Addendum No. 2.

3. CONSTRUCTION DRAWINGS

1. Replace drawing CU04.1 with the revised drawing CU04.1 attached to this Addendum No. 2.
2. Replace drawing CU04.2 with the revised drawing CU04.2 attached to this Addendum No. 2.
3. Replace drawing CU04.3 with the revised drawing CU04.3 attached to this Addendum No. 2.
4. Replace drawing CU05.1 with the revised drawing CU05.1 attached to this Addendum No. 2.
5. Replace drawing CS01.1 with the revised drawing CS01.1 attached to this Addendum No. 2.
6. Replace drawing M01.1 with the revised drawing M01.1 attached to this Addendum No. 2.
7. Replace drawing M01.2 with the revised drawing M01.2 attached to this Addendum No. 2.
8. Replace drawing MD01.3 with the revised drawing MD01.3 attached to this Addendum No. 2.

4. QUESTIONS

1. **QUESTION: Sheet C03.1 "Grading Plan 1 of 3" - There appears to be a conflict with the 18" RCP connecting the existing MH at Station 106+35.6 and proposed SDMH-10. The conflict occurs with the base on the retaining wall. Per the plans, the base of the wall is 2093.33' AMSL. However, the invert of the RCP at SDMH-10 is proposed at 2091.74' AMSL. Assuming a nominal OD of 22", this places the top of**

pipe at SDMH-10 at approximately 2093.57' AMSL. Working uphill from here at the depicted 18.28% grade back to the location where the pipe crosses the wall in plan view ultimately puts the top of the pipe at approximately 2094.37' AMSL. In other words, roughly 2/3 of the pipe is exposed above ground as it penetrates the retaining wall. Please advise.

RESPONSE: Per sheet C03.1, the invert out of SDMH-10 is 2085.00'. The 18" RCP does not conflict with the base of the retaining wall.

2. QUESTION: For the portion of the force main specified as "Open Trench", can the bidder elect to install all or parts of this item via trenchless HDD methods?

RESPONSE: No. The force main segments identified in the Contract Documents for installation by open trench methods shall be installed by open trench methods. Bidders shall prepare their bids based on the installation methods specified in the Contract Documents. Alternate bids or substitutions for trenchless installation methods will not be considered during the bidding period.

Following contract award, the Contractor may submit a request to substitute an alternate installation method for the Owner's review and approval. Any proposed substitution shall demonstrate that it will not adversely affect easements, permitting, geotechnical conditions, adjacent utilities, maintenance access, constructability, project schedule, or the long-term operation and maintenance of the facilities. Any such request must be accompanied by a detailed cost breakdown demonstrating a net cost savings (credit) to the Owner, which shall be executed via a deductive Change Order if approved. The Contractor shall bear all costs associated with re-engineering, design reviews, and permit modifications required by the substitution, an approval of the substitution shall not entitle the Contractor to any increase in the Contract Price or any extension of Contract Time. Approval of any substitution request shall be at the sole discretion of the Owner.

3. QUESTION: Can you provide additional clarity on what activities, labor & materials should be included in Bid Item No. 2 "10' Diameter Pre-Cast Submersible Lift Station, et.al." versus which activities, labor & materials should be included under Bid Item No. 7 "Site Development"?

RESPONSE: Bid Item No. 2 (10' Diameter Pre-Cast Submersible Lift Station w/ Grinder) shall include all labor, materials, equipment, and incidentals required to furnish and construct, test, and place the lift station and appurtenant facilities into service, including, but not limited to, the wet well, valve vault, flow meter vault, grinder manhole, yard piping within the pump station limits, mechanical equipment, excavation, dewatering, shoring, stabilization, rock excavation, structure and trench backfill, and restoration associated with construction of the lift station facilities.

Bid Item No. 7 (Site Development) shall include general site development work not specifically identified under another Bid Item, including clearing, grubbing, mass grading, fill placement, site preparation, disposal of excess material, and miscellaneous site work required to complete the project as shown in the Contract Documents.

Work specifically covered by other Bid Items, including the Lift Station (Item No. 2), Gravity Sewer (Item No. 5), Force Main (Item No. 6), Access Road (Item No. 8), Retaining Wall (Item No. 9), Storm Water Installation (Item No. 10), Electrical Improvements (Item No. 11), and Erosion Control (Item No. 12), shall be included in those respective Bid Items and shall not be included in Item No. 7.

4. **QUESTION: Sheet CU04.1 - Note 6 states that underground electrical lines are shown on the drawing, but such markings are not present.**

RESPONSE: CU04.1 shows the underground electrical lines. These electrical lines are also present on sheets CDE05.1, CU05.1, and CS01.1.

These electrical facilities are currently planned for relocation by Duke Energy. Relocation of the electrical lines is not part of the Contractor's scope of work. Bidders shall prepare their bids based on the utility coordination information provided in the Contract Documents; however, the Owner does not warrant or guarantee the schedule or performance of third-party utility relocations.

If the utility relocation is not completed prior to the Notice to Proceed and delays the Contractor's critical path activities, the Contractor shall promptly notify the Owner and document the impacts in accordance with the Contract Documents. Verified delays attributable solely to the utility relocation will be evaluated by the Owner for appropriate extension of Contract Time, if warranted under the Contract Documents. The Contractor shall coordinate its work with the Owner and Duke Energy and make reasonable efforts to mitigate any schedule impacts.

5. **QUESTION: Temporary Bypass Pumping for Existing Pump Station - Section 11500 of the Specs covers Temporary Bypass Pumping. Parts 1.2.B.2(a) thru (c). Part (a) states that the capacity required for the 24" main from the south is 515 gpm while the capacity for MH 49-55979 is listed as 65 gpm. MH 49-55979 drains into the 24" gravity main from the south. Can you clarify if the 515 gpm for the 24" gravity main includes or excludes the 65 gpm entering the gravity main from MH 49-55979? Additionally, can you provide pertinent elevation and distance/location data for the next closest upstream manhole to MH 49-481330?**

RESPONSE: The estimated 515 gpm for the 24" gravity main excludes the estimated 65 gpm entering the gravity main from MH 49-55979. Based on the construction sequence shown on Sheet G01.0 and described in Specification Section 01100, these flows are not intended to require simultaneous bypass pumping. The Contractor shall, however, be responsible for planning and executing the work in accordance with the selected construction sequence and shall provide bypass pumping capacity sufficient to safely manage all flows encountered during construction. The flow values provided in the Contract Documents are estimates and shall not relieve the Contractor of this responsibility.

The closest upstream manhole to MH 49-481330 is MH 49-481331, which is 385 ft further up the access road toward Broadpointe Drive. According to MSD as-built record drawings, the invert elevation of MH 49-481331 is 2039.20, and the rim elevation is 2048.10. This location and elevation data can be viewed in the MSD GIS database (<https://geo.msdbc.org/msdgisviewer/>).

6. **QUESTION: Temporary Bypass Pumping for MH 49-479269 - 2 sewer lines, 6" (South) and 24" (East) are shown discharging into this manhole. Can you provide pertinent elevation and distance/location data for the next closest upstream manholes for these pipes as well as estimated flow for each branch?**

RESPONSE: The 24" sewer flows from MH 49-479270, which is 340 ft ESE of MH 49-479269. According to MSD as-built record drawings, the invert elevation of MH 49-479270 is 2036.84 and the rim elevation is 2051.50. The estimated flow in this 24" sewer is approximately 515 gpm. This location and elevation data can be viewed in the MSD GIS database (<https://geo.msdbc.org/msdgisviewer/>).

The 6" sewer is a service line to the Quality Point property, allocated for 1,800 gpd. No as-built record drawings are available for this service line.

- 7. QUESTION: Temporary Bypass Pumping for 16"/24" Force Main Tie-In at MH 49-23725 - No flow data has been provided for the 30" DIP gravity sewer entering this manhole. Can you provide this data in addition to the pertinent elevation and distance/location data for the next closest upstream manhole?**

RESPONSE: The 30" sewer flows from MH 49-23724, which is 400 ft SE of MH 49-23725. According to the MSD GIS database (<https://geo.msdbc.org/msdgisviewer/>), the invert elevation of MH 49-23724 is 2046.00, and the rim elevation is 2053.50. The estimated average flow through this line is 1.5 MGD. The Contractor shall be responsible for developing and implementing a bypass pumping plan sufficient to safely manage all flows encountered during construction.

- 8. QUESTION: Sheet M01.4, Note 2 - Note 2 on this sheet states that the entire base section may be replaced at the discretion of MSD. Can you confirm that if replacement is required, this will be a change order and the bidder should not include a new base in the proposal, but rather only the modification as depicted in the plans?**

RESPONSE: If replacement is required, this will be a change order. The bidder should not include a new base in the proposal, but rather only the modification as depicted in the plans.

- 9. QUESTION: Can you provide clarification regarding the frequency of compaction testing across the project? While numerous citations of required compaction standards are listed in the specs, no frequency, such as "1 test per "X" inch lift per "Y" linear feet of trench" or (1 test per "XXX" cubic yards of structural fill, can be located in the documents.**

RESPONSE: The Contract Documents do not establish a prescribed compaction testing frequency. Compaction testing will be performed by an independent testing laboratory retained and paid for by the Contractor and approved by the Engineer. The testing laboratory shall develop and implement an appropriate testing program, subject to the Engineer's review, based on the type of construction, soil conditions, material placement methods, and applicable industry standards. The Engineer reserves the right to require additional testing where field observations, failed tests, or site conditions indicate that additional verification is warranted.

The Contractor shall be responsible for constructing the Work in accordance with the specified compaction requirements regardless of the number or frequency of tests performed. Acceptance of compaction test results or successful completion of compaction testing shall not relieve the Contractor of responsibility for meeting the requirements of the Contract Documents.

- 10. QUESTION: Sheets MD01.1 and MD01.3 - Sheet MD01.1 has a detail in the top left corner named "Trench Detail for High-Density Polyethylene (HDPE) Pipe. Note 6 for this detail states that HDPE embedment material is to be "Fine Aggregate". However, Sheet MD01.3 has a detail named "Force Main Tracer Tape and Wire Installation" which also depicts trench detail. For this detail, embedment material is noted as "Select Backfill". Can you confirm the correct material that should be used for HDPE force main embedment for open trenching?**

RESPONSE: The "Trench Detail for High-Density Polyethylene (HDPE) Pipe" detail is the governing detail for HDPE force main installation and embedment requirements. HDPE force main embedment shall consist of

Fine Aggregate as specified in that detail. The "Force Main Tracer Tape and Wire Installation" detail is intended to illustrate the tracer wire and warning tape installation and is not intended to modify the specified pipe embedment requirements. The reference to Select Backfill in that detail applies to trench backfill above the embedment zone. Therefore, for open-trench HDPE force main installation, use Fine Aggregate for pipe embedment and Select Backfill/trench backfill above the embedment zone as required by the Contract Documents.

11. QUESTION: Can either a cut/fill balance be provided for the earthwork (access road, pump station site, road off backside down easement) or, alternatively, can a CAD file depicting existing and proposed contours be provided?

RESPONSE: CAD files will not be distributed during the bidding period, per Addendum No. 1. A comparison of the proposed and existing surfaces shows 11,644.11 CY of cut and 4,956.33 CY of fill, for a net 6,687.78 CY of cut. This does not include any below ground structures, pipes, etc.

12. QUESTION: Sheet CDE05.1 has a note stating, "Modify Existing MH 49-481327 Per Sheet CU05.1." On Sheet CU05.1, the only "modifications" that can be inferred from the text is that the 24" inlet and outlets for the manhole are to be plugged. However, Shet CU05.1 states that the GC shall "plug per detail" these openings but no detail has been provided. Can you confirm that the only modifications required to this manhole are the installation of the plugs and provide the referenced but missing detail?

RESPONSE: The only modifications required to existing MH 49-481327 are the abandonment of the existing 24-inch influent and effluent connections by installation of masonry plugs at the locations shown on Sheet CU05.1. The existing 8-inch influent and effluent connections and the manhole structure shall remain in service. The masonry plugs shall be constructed in accordance with Underground Structure Abandonment Detail on MD01.2.

13. QUESTION: After review of the plans with a number of HDD service providers, several have expressed constructability concerns with the proposed 750' radius. Per those providers, given the known rock conditions and the equipment required to ream a 30" to 36" hole, a 750' radius is not feasible. Rather, a radius between 1,500' and 2,500' is recommended by these providers for such a large diameter boring. Furthermore, the dogleg in the easement between Stations 11+75 and 12+75 (Sheet CU04.2) prevents simply adjusting the launch point upstream along the pipe route without the HDD leaving the currently acquired easement. Can you provide additional clarification and/or a revision to the plans that address these constructability concerns? Alternatively, if the design is not changed and an unsuccessful attempt at the current design is performed, will the MSD treat this as a change order and compensate the bidder appropriately?

RESPONSE: The HDD design has been revised. Please see revised sheet CU04.2 attached to this Addendum No. 2. Note, Bidders shall prepare their bids based on the revised HDD alignment and profile shown in the Contract Documents. An unsuccessful HDD installation attempt will not be considered a basis for a Change Order or additional compensation, or an extension of Contract Time.

14. QUESTION: Will there be a Buy American (BABA) or American Iron and Steel (AIS) material procurement requirement for this project?

RESPONSE: No.

- 15. QUESTION: On plan sheet MD01.3 Gravel Site and Access details the required subgrade compaction effort is ASTM D1557 98% "modified" proctor. This level of compaction is typically reserved for airport runways requiring a higher level stability. Because this is an access road can this requirement be reduced to ASTM D698 98% "standard" proctor?**

RESPONSE: The compaction requirement for the gravel access road and gravel site areas has been revised from **98% ASTM D1557 (Modified Proctor)** to **95% ASTM D1557 (Modified Proctor)**. The requirement is not revised to **98% ASTM D698 (Standard Proctor)**. Section 02221 and Detail MD01.3 shall govern.

- 16. QUESTION: What is the compaction requirement for the final backfill for the 16" HDPE FM?**

RESPONSE: Per Section 02221 – Excavation, Bedding and Backfill for Pipe and Structures, general trench backfill shall be compacted to a minimum of **95% of the maximum dry density as determined by ASTM D698 (Standard Proctor)**. The final backfill for the 16-inch HDPE force main shall comply with these requirements unless located within a roadway, access road, gravel site area, or other structural fill area where more stringent compaction requirements apply.

- 17. QUESTION: Is the backfill area for the gravity sewer installation and demo considered structural? Same for the areas of access road from the existing PS?**

RESPONSE: Since the proposed gravity sewer is located beneath the lower access road, the trench backfill in this area shall be considered a structural/roadway area and shall comply with the roadway and structural fill compaction requirements of Section 02221 rather than the general trench backfill requirements. Backfill shall be compacted to a minimum of 95% of the maximum dry density as determined by ASTM D1157 (Modified Proctor). The upper 6 inches beneath the roadway surface shall be compacted to 100% of the maximum dry density as determined by ASTM D1557 (Modified Proctor). The access road areas disturbed during construction, including those associated with the existing pump station access, shall be restored to these same roadway compaction requirements where the roadway section is reconstructed.

- 18. QUESTION: Can we assume the only structural backfill areas for the mass grading and pump stations are the road and site areas covered with gravel or stone and required fill behind retaining walls?**

RESPONSE: For purposes of compaction requirements, structural fill areas include the gravel access road, gravel pump station site, backfill supporting structures (including wet wells, valve vaults, manholes, and similar appurtenances), and backfill behind retaining walls. These areas shall comply with the structural fill and compaction requirements of Section 02221. All other utility trench backfill not supporting these improvements shall be considered trench backfill and compacted in accordance with the trench backfill requirements of Section 02221.

- 19. QUESTION: Can we get the CAD files for the grading and storm areas as soon as practical? The grading is a significant portion of this scope and affects all aspects of our proposal.**

RESPONSE: Please see response to question 11.

- 20. QUESTION: Per the plan views, there are electrical lines running through the PS site. What is the intent to mitigate the conflict with the PS and line work installation? What size is this line and what does it feed? Is it in conduit and/or encased in a duct bank?**

RESPONSE: The following note, included on Sheets CDE05.1, CU04.1, CU05.1, CS01.1, was intended to address the electrical lines running through the PS site: *Although shown as existing on these plans, the underground electrical lines are expected to be relocated by Duke Energy in advance of or concurrent with construction activities.*

Please see response to question 4 regarding utility relocation. Information regarding the size, configuration, conduit/duct bank, and service of the existing electrical lines is not available.

21. QUESTION: Which line items are used to calculate the 3% mob?

RESPONSE: For the purposes of calculation Item No. 1 – Mobilization (3%), include all bid items except Item No. 1 Mobilization, Item No. 15 Instrumentation and Control Integration Allowance, and Item No. 16 Henderson County Electrical Trade Permit Fee Allowance. Mobilization shall be calculated based on the value of all remaining construction bid items.

22. QUESTION: Restoration Note 3 calls for sod. Clarify if hydroseed is acceptable or confirm where sod is required.

RESPONSE: Hydroseeding is considered an acceptable method of restoration for disturbed areas and may be used in accordance with Section 02930. Restoration Note 3 shall be interpreted accordingly. Sod is only required where specifically shown in the drawings or where existing sod is required to be salvaged and replaced.

23. QUESTION: Will there be space available on site to dry/treat the excavated material that is not suitable to use as backfill?

RESPONSE: No specific area has been designated within the Contract Documents for drying, processing, or stockpiling unsuitable excavated material. The Contractor shall be responsible for managing excavated materials within the available construction limits and easements. Material that is otherwise suitable for backfill may be dried, conditioned and reused provided it meets requirements of Section 02221. Material determined to be unsuitable shall be removed and replaced in accordance with Section 02221.

24. QUESTION: Confirm no spiders/spacers are required for the HDD.

RESPONSE: No spiders/spacers are required for the HDD.

25. QUESTION: Confirm the PS Bypass Detail is the same as the FM Bypass callout on the plans.

RESPONSE: Yes, the PS Bypass Detail on Sheet M01.3 is the same as the FM Bypass callout on CU04.1.

26. QUESTION: Confirm all pipe is DIP through the 16" MJ 45 after ARV 1.

RESPONSE: The force main pipe shall be HDPE DIPS DR-11. Revised sheets CU04.1 – CU04.3 are attached to this Addendum No. 2.

27. QUESTION: What do the dotted lines depict on the profile on Sheet CU05.1 from STA 4+00 to 8+00?

RESPONSE: The dotted lines depict the existing 24" gravity sewer, which will be abandoned in place. It is removed from CU05.1 attached to this Addendum No. 2.

28. QUESTION: What is the flow into MH 49-479269?

RESPONSE: Approximately 515 gpm, per response to question 5.

29. QUESTION: What is the flow into MH 49-55979?

RESPONSE: Approximately 65 gpm, per Section 11500 and response to question 5.

30. QUESTION: What is the flow into MH 49-481330?

RESPONSE: Approximately 135 gpm, per Section 11500.

31. QUESTION: What is the flow into MH 49-23725?

RESPONSE: Approximately 1.5 MGD, per response to question 7.

32. QUESTION: The plans call for the removal of the 6" FM from the bridge but Bid Item 6a lists this as Abandon Existing on Bridge. Please clarify the scope for this item.

RESPONSE: Per sheet CDE04.1, the existing force main suspended from the bridge shall be abandoned in place. See details on CDE04.1.

33. QUESTION: Is there a detail for the concrete spillway at the lower PS access?

RESPONSE: A detail for the concrete spillway at the lower PS access has been added to revised sheet MD01.3 attached to this Addendum No. 2.

34. QUESTION: For the trench detail ... PVC & Ductile Iron Pipe ... What is the intent for the initial backfill material to consist of? Is this to be select backfill material or in-situ materials ...

RESPONSE: The intent of the trench detail for PVC and Ductile Iron Pipe is that the initial backfill consists of suitable embedment material meeting the requirements of Section 02221. Materials used for bedding, haunching, and initial backfill shall comply with the embedment material requirements of Section 02221. Native excavated material may be used only as backfill above the embedment zone, provided it meets the requirements of the Contract Documents and is free of rocks, debris, and other unsuitable materials.

35. QUESTION: There are a total of seven (7) manholes ... however there are only six (6) manholes on the bid item list. Can you add a bid item for the 5' diameter grinder manhole ?

RESPONSE: The 5-foot diameter grinder manhole is included in Bid Item No. 2 - **10' Diameter Pre-Cast Submersible Lift Station w/ Grinder** and is not a separate pay item. All labor, materials, equipment, excavation, backfill, appurtenances, and incidentals required for construction of the grinder manhole shall be included in Bid Item No. 2.

36. QUESTION: CS01.1 Proposed site plan indicates 2-inch PVC line, please confirm approved PVC materials for 2-inch line.

RESPONSE: Provide 2-inch PVC pressure pipe, AWWA C900, DR 18, with gasketed push-on joints meeting ASTM F477 for the 2-inch water line shown on sheet CS01.1.

37. QUESTION: Yard Hydrant Detail shows 1-inch SCH 40 Copper, the meter and BFP detail show 3/4-inch meter with 3/4-inch Type K Copper. Please confirm pipe material and size for line from the meter to yard hydrant. Also, please confirm if the owner will provide the meter.

RESPONSE: Provide the 70 LF service line as 2-inch PVC pressure pipe conforming AWWA C900, DR 18, as shown on the plans. Provide a 1-inch frost-proof yard hydrant (Woodford Model Y-2 or approved equal) connected to the 2-inch line with appropriate reducers and fittings. The 3/4" meter and backflow preventer shall remain as detailed. The existing water meter shall be relocated from the existing pump station and reused; no new meter is required.

- 38. QUESTION: Nationwide Permit 58, referenced in Appendix A, expired on March 15, 2026. Please confirm whether the Owner will be responsible for renewing the permit and for payment of any associated renewal fees.**

RESPONSE: No permit renewal is required at this time. The project remains authorized under Nationwide Permit 58 through March 14, 2027, based on coordination with the Wilmington District U.S. Army Corps of Engineers. If permit renewals are required during construction, they will be handled by the Engineer on behalf of the Owner.

- 39. QUESTION: The Non-Residential Zoning Permit for Town of Mills River, NC is scheduled to expire on 11/16/26. Please confirm whether the Owner will be responsible for renewing the permit and for payment of any associated renewal fees.**

RESPONSE: The Town of Mills River Non-Residential Zoning Permit is renewed on a six-month basis. The Engineer will coordinate all required permit renewals with the Town of Mills River and any associated fees. The Contractor will not be responsible for renewing the permit or paying any associated renewal fees. If permit renewals are required during construction, they will be handled by the Engineer on behalf of the Owner.

- 40. QUESTION: Can you provide the influent flow rates currently on the existing Pump Station and or the PSI on the outgoing Force Main.**

RESPONSE: The influent flow rate of the existing pump station is approximately 165,000 gpd.

- 41. QUESTION: Is contractor required to provide temporary generator during the transfer of the existing generator to new location?**

RESPONSE: The Contractor shall be responsible for maintaining continuous electrical service during the removal, relocation, and reinstallation of the existing generator. The existing pump station shall remain in service until the new gravity sewer connections are completed and wastewater flow is successfully diverted to the new pump station. Following commissioning of the new pump station and prior to completion of the permanent generator installation, the Contractor shall provide all means and methods necessary to maintain uninterrupted pump station operation, including furnishing and operating a temporary power generator, if required, until the permanent generator installation is fully operational. Costs associated with temporary power, temporary generation, power transfer, and related activities shall be the Contractor's responsibility and shall be included in the Contract Price. The Contractor shall coordinate all power transfer activities with the Owner.

- 42. QUESTION: Spec Section 02723 1.2B states that the contractor shall employ a testing laboratory and pay for the services in accordance with the testing allowance. Please confirm if compaction testing has an allowance.**

RESPONSE: There is no separate testing allowance for compaction testing. The Contractor shall retain the services of an approved laboratory to perform the required compaction testing in accordance with the Contract Documents. All costs associated with the required compacting testing shall be included in the Contract Price. The Contractor shall be responsible for the cost of any required retesting resulting from failed compaction tests.

- 43. QUESTION: Item 6e / HDD: Could alignment be adjusted to decrease bend radius? We've received concerns from drilling contractors that the current angle is too steep. Were Geos shot within the bore**

path? If so, this would increase probability of a frac out. If frac out occurs, would the contractor be responsible for containment within the river?

RESPONSE: See response to question 13 regarding the revised HDD alignment. No geotechnical bores were performed directly within the HDD bore path. The geotechnical boring locations are indicated on the plans. The Contractor shall be responsible for preventing, monitoring, containing, and remediating any frac-out associated with the HDD installation, including any frac-out occurring within the river, in accordance with the Contract Documents and all applicable permit requirements.

44. QUESTION: Can references be provided for existing elevations on the grade plan sheets?

RESPONSE: The project control is based on the following temporary benchmarks (TBMs), which may be used as references for the elevations shown on the plan and profile sheets:

TBM 500: Northing = 628,153.0390, Easting = 942,910.4900, Elevation = 2046.85 feet

TBM 501: Northing = 629,817.1900, Easting = 943,881.5860, Elevation = 2056.37 feet

Refer to the project survey control information and Contract Documents for additional survey and layout requirements. The Contractor shall verify existing conditions and elevations prior to construction.

45. QUESTION: Would additional item for unsuitable materials be considered?

RESPONSE: No. Reference Addendum No. 1.

5. ACKNOWLEDGEMENT OF BIDDER

Please acknowledge receipt of this addendum by inserting the appropriate addendum number and date in Section X – Proposal (see page X-2).

The Metropolitan Sewerage District of Buncombe County appreciates your input in this project. Hopefully, these revisions and clarifications will improve this project. We look forward to receiving your bid on July 21, 2026.

The foregoing changes are hereby incorporated into the Contract, Documents, and Drawings for the Metropolitan Sewerage District of Buncombe County ITT Pump Station Replacement project.

Regards,
McKim & Creed, Inc.

Manjiang Chen, Ph.D., PE
Senior Project Manager

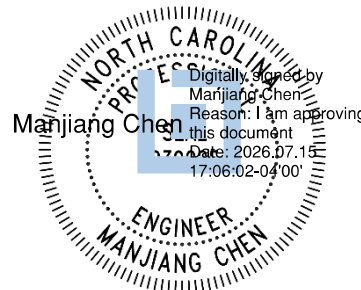


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- A Special Conditions Attachments
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ADVERTISEMENT FOR BIDS

Sealed bids will be received by the Metropolitan Sewerage District (DISTRICT) of Buncombe County, North Carolina at the second floor conference room of the MSD W. H. Mull Building, 2028 Riverside Drive in Asheville, North Carolina, until **2:00 PM** (local time), **Tuesday, July 21, 2026**, and shall be immediately opened publicly and read aloud for the project described as follows:

ITT Pump Station Replacement Project No. 2020061

generally consisting of procurement and installation of a new 10-ft diameter duplex submersible sanitary sewer lift station (expandable to a triplex lift station), wastewater grinder inside a dedicated 5-ft diameter manhole, approximately 20 LF of 24-inch and 2,750 LF of 16-inch HDPE DR 11 force main (approximately 640 LF of which will be encased in a 24-inch HDPE DR 11 to be installed by horizontal directional drill across the French Broad River), approximately 550 LF of 12-inch and 410 LF of 24-inch PVC C900 gravity sewer, and 30 LF of 30-inch DIP gravity sewer, including manholes and all related appurtenances. The project also includes construction of approximately 800 LF of upper access road and an extension of the lower access road from the existing access road.

Complete plans, specifications and contract documents may be **examined** at the following locations:

The DISTRICT website: www.msdbc.org/projects/adsforbids.php

Copies of the complete plans, specifications and contract documents may be **obtained** from:

Attention: Amanda Cutshaw (*must be included when making request by mail*)
Metropolitan Sewerage District of Buncombe County
2028 Riverside Drive
Asheville, N.C. 28804
(828) 225-8352
E-mail address: acutshaw@msdbc.org

The plans, specifications, and contract documents on the DISTRICT'S website are provided as a courtesy to interested parties. **Contractors planning to submit a bid for District projects must purchase an official set of plans and specifications as detailed below**, in order to be a registered plan holder.

A **non-refundable** deposit of **seventy-five dollars (\$75.00)** is required. Orders for plans and specifications which are to be delivered by parcel post or other carriers will not be accepted for a period of five (5) days prior to bid date.

All bidders must have current North Carolina licenses for all work for the project.

Each bid shall be accompanied by a deposit with the Metropolitan Sewerage District of Buncombe County of cash, or a cashier's check, or a certified check on some bank or trust company insured by the Federal Deposit Insurance Corporation in an amount equal to not less than five percent (5%)

of the bid amount. In lieu of making the cash deposit as above described, a satisfactory Bid Bond in the amount of 5% of the total bid, executed by a corporate surety licensed under the laws of North Carolina to execute such bonds, shall be submitted with each bid, conditioned that the surety will upon demand forthwith make payment to the obligee upon said bond if the bidder fails to execute the contract in accordance with the bid bond. This deposit shall be retained if the successful bidder fails to execute the contract within ten (10) days after the award of bid or fails to give satisfactory surety as required in North Carolina General Statute Section 143-129.

Each Bidder must be appropriately licensed as a Contractor as provided in Chapter 87 of the North Carolina General Statute.

The successful bidder will be required to furnish a Performance Bond and a Payment Bond in the amount of one hundred percent (100%) of the contract amount. Those bonds shall meet the requirements of North Carolina General Statute Section 143-129 and of Article 3 of Chapter 44A of the North Carolina General Statute.

No bid may be withdrawn after bids have been opened, except as provided in North Carolina General Statute Section 143-129.1.

The contract shall be awarded to the lowest responsive, responsible bidder, taking into consideration quality, performance and time of delivery. The DISTRICT reserves the right to reject any and all bids, including, without limitation, the right to reject any or all non-conforming, non-responsive, unbalanced or conditional bids, and to reject the bid of any bidder if the DISTRICT believes that it would not be in the best interest of the DISTRICT to make an award to that bidder. The DISTRICT also reserves the right to waive informalities.

**METROPOLITAN SEWERAGE DISTRICT OF
BUNCOMBE COUNTY, NORTH CAROLINA**

**BY: Thomas E. Hartye, P.E.
GENERAL MANAGER**

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Section III - Instructions To Bidders

ARTICLE I PREPARATION OF BIDS:

All Bids shall be prepared in accordance with the following requirements:

1. The Bid form furnished by the DISTRICT shall be used and shall not be altered.
2. Entries shall be typed or written in ink; signatures shall be written in ink.
3. The Bidder shall submit a unit or lump sum price for every item in the Bid form unless specific directions in the Invitation for Bids allow for partial Bids. The unit or lump sum bid prices for the various Contract Items shall be typed or written figures in ink, and shall be clearly legible.
4. A Total Bid shall be entered in the Bid form for every item on which a unit price has been submitted. The Total Bid for each item other than lump sum items shall be determined by multiplying each unit price bid by the quantity for that item, and shall be written in figures in the "Total Bid" column in the Bid form. In case of a discrepancy between the unit price bid for a Contract Item and the Total Bid for that item, the unit price bid shall govern. In the case of lump sum items, the price shall be written in figures in the "Total Bid" column in the Bid form.
5. The Total Contract Bid Price shall be written in figures in the proper place in the Bid form. The Total Contract Bid Price shall be determined by adding the Total Bid for each item.
6. Changes in any entry shall be made by marking through the entry in ink and making the correct entry adjacent thereto in ink. The individual signing the Bid shall initial the change in ink.
7. The Bid shall be properly executed. In order to constitute proper execution, the Bid shall be executed in strict compliance with the following. No other forms of execution will be accepted.
 - a. If a Bid is by an individual, it shall show the name and address of the individual and shall be signed by the individual.
 - b. If the Bid is by a Corporation, it shall be executed in the name of the Corporation by the President or Vice-president. It shall be attested by the Secretary or Assistant Secretary. The seal of the Corporation shall be affixed. The Bid shall show the address of the principal office of the Corporation.
 - c. If the Bid is made by a Partnership, it shall be executed in the name of the Partnership by one of the general partners. The address of the Partnership shall also be shown.
 - d. If the Bid is a joint venture, it shall be executed by each of the joint venturers with an address for each joint venturer and the address for the joint venture itself.
8. The Bid shall not contain any unauthorized additions, deletions or conditional bids.
9. The Bidder shall not add any provisions reserving the right to accept or reject an award, or to enter into a Contract pursuant to an award.
10. The Bid shall not contain irregularities of any kind which, in the opinion of the DISTRICT, make the Bid incomplete, indefinite, or ambiguous as to its meaning.
11. Alternative Bids will not be considered unless specifically called for. Where numbered

Section III - Instructions To Bidders

Alternate Bid Items are provided under any Contract, each Bidder must submit a bid price for each numbered Alternate Item.

12. All attachments, certifications or acknowledgements attached to the Bid shall be executed in the same manner as the Bid.

ARTICLE II FILING OF PROPOSALS:

Each Bid shall be made on the forms incorporated in these documents. Clear and legible duplicate copies of the blank bid document forms provided may be used for entry. One (1) copy of each of these bid document forms are to be used to prepare the Contractor's bid proposal. It is not necessary to submit the entire specifications documents on the bid date, only the forms specified below. The Contractor (bidder) is cautioned that all spaces on the Proposal must be fully completed, including all identified or voluntary alternates, if any, and that the Proposal must be properly signed with the name of the company, its authorized representatives, and shall be fully executed in all respects. If this is a Formal Contract, the Bid Security documents shall be fully executed and signed/sealed by the Bidder and the Security Company and shall be witnessed and notarized as required by NC Statutes. This includes the Power of Attorney, attached and properly executed by the Security Company. All documents submitted with the bid shall be original documents and clearly show the original signatures and seals.

Formal Bid Contracts (Bid Bond required):

Bids shall be submitted in a two (2) envelope system. The outer envelope shall bear the project name and project number, and shall be sealed and addressed to the Metropolitan Sewerage District of Buncombe County, North Carolina, 2028 Riverside Drive, Asheville, North Carolina 28804. The **name, address, and license number of the bidder**, as well as the type of contract, if applicable, shall also be shown on the outside (Single-Prime-General, or Separate-Prime-General, Plumbing, HVAC or Electrical). The outer envelope shall contain the following documents, fully executed and signed/sealed as required in these Instructions to Bidders:

1. Proposal Guaranty (Bid Security) and Power of Attorney
2. Certification of receipt of Addenda written on Contractor's letterhead
3. Non-Collusion Affidavit
4. A sealed smaller envelope containing the proposal and Schedule of Estimated Quantities and Bid Prices and marked on the outside "PROPOSAL". This envelope should also contain the project name and the name, address, and license number of the bidder.

ARTICLE III OPENING OF PROPOSALS:

Bids received prior to the advertised hour of opening will be securely kept, sealed. The officer whose duty it is to open them will decide when the specified time has arrived, and no Bid received thereafter will be considered; except that when a Bid arrives by mail after the time fixed for opening, but before the reading of all other Bids is completed, and it is shown to the satisfaction of the DISTRICT that the non-arrival on time was due solely to delay in the mail for which the bidder was not responsible, such Bid will be received and considered. Mailed Bids will be treated in every respect as though filed in person and will be subject to the same requirements. Bids received subsequent to the advertised hour of opening will be returned to the Bidder unopened.

Section III - Instructions To Bidders

The Bid opening will be open to all interested parties.

Bid tabulation forms will be prepared by the ENGINEER and will be provided to all interested parties attending the bid opening. Forms will contain the names of prospective bidders and blank spaces for recording the bidder's license number, bid security, base bid and alternates, if any. Spaces for unit prices will not be provided.

Approximately five (5) minutes prior to the designated time for receiving bids the ENGINEER or his representative will announce the "official time" that will be used in declaring the bidding closed.

At the time fixed for the opening of Bids, the ENGINEER will declare the bidding closed. After which, the ENGINEER will determine if at least three (3) bids (sealed envelopes) have been received for the contract. Should there not be at least three, the bids will not be opened. The bids will be returned to the bidders and they will be requested to submit a bid proposal with a re-advertisement.

Since this is a public bid opening, all bids will then be opened and read aloud to the assembled group, beginning with the General Contract bids. The following order will be observed for Formal Bid Contracts:

1. The outer envelopes of all bidders will be opened prior to reading any "Proposals". Prior to opening an outer envelope, the name of the bidder and license number as it appears on the envelope will be announced to the assembled group.
2. With the opening of the bidder's outer envelope, a preliminary determination will be made that bid security and other required certifications are enclosed with the bid.
3. If all of the required material is not with at least three (3) of the bids for a particular contract, the sealed envelopes marked "Proposal" will not be opened.
4. If it is determined that at least three (3) of the outer envelopes appear to be in order, the sealed envelopes containing the bid proposals shall be opened and the bids read aloud. After such determination, all remaining bids may be opened and read aloud without first making a preliminary determination as to the adequacy of bid security.

If this is an informal bid contract, the envelope will be opened and a determination will be made that all the required documents are enclosed and properly executed.

ARTICLE IV WITHDRAWAL OR REVISION OF BIDS:

A Bidder may, without prejudice to himself, withdraw a Bid after it has been delivered to the DISTRICT provided such withdrawal is made in accordance with N.C. General Statute Section 143-129.1.

Only those persons authorized to sign Bids shall be recognized as being qualified to withdraw a Bid.

ARTICLE V ADDENDA AND INTERPRETATIONS:

No interpretations of the meaning of the Plans, Specifications or other portions of the Contract Documents will be made orally.

Section III - Instructions To Bidders

Every request for interpretation of Plans, Specifications or any portion of the Contract Documents shall be in writing and must be addressed to the office of the DISTRICT, and to be given consideration must be received by the DISTRICT at least five (5) days prior to the date fixed for the opening of Bids. DISTRICT shall determine, in its sole discretion, whether or not a request for clarification or interpretation requires a formal Addendum. Written Addenda, if issued, will be sent by certified or registered mail with return receipt requested, or facsimile with confirmation, or by e-mailed PDF with confirmation, to all holders of Contract Documents at the respective addresses, facsimile numbers, or e-mail addresses furnished for such purposes not later than three (3) days prior to the day fixed for the opening of bids.

Failure of any Bidder to receive any such Addenda shall not relieve said Bidder from any obligation under his Bid as submitted. All Addenda so issued shall become part of the Contract Documents.

Prospective Bidders are cautioned concerning the use of a Post Office Box address as telegraphic Addenda cannot be sent to Post Office Boxes.

ARTICLE VI DISCREPANCY IN BIDS:

In the event there is a discrepancy in any Bid between the unit prices and the extended totals, the unit prices shall govern. Bids which do not contain a price for every numbered item contained in the applicable Bid form will not be accepted, unless otherwise specified.

ARTICLE VII QUALIFICATIONS OF BIDDERS:

The DISTRICT may make such investigation as he deems necessary to determine the qualifications of the Bidder to perform the work and the Bidder shall furnish to the DISTRICT all such information and data for this purpose as the DISTRICT may request. The DISTRICT reserves the right to reject any and all Bids if the evidence submitted by, or investigation of, such Bidder fails to satisfy the DISTRICT that such Bidder is properly qualified to carry out the obligations of the Contract, and to complete the work contemplated therein. Conditional bids will not be accepted.

The Bidder shall submit, with his Bid, a list of Subcontractors, Suppliers, etc., indicating projects recently completed of a similar nature along with names, addresses and phone numbers of their clients for reference of qualifications.

Bidders shall comply with all applicable laws regulating the practice of General Contracting as contained in Chapter 87 of the General Statutes of North Carolina.

All Bidders must be Utility or Unclassified Contractors licensed in the State of North Carolina to perform work of a nature as required by the Contract Documents.

A mandatory pre-bid conference will be held on July 7, 2026 at 9:00 AM at MSD of Buncombe County's office at 2028 Riverside Drive, Woodfin, NC to discuss the requirements of the Contract Documents. An optional site visit to the pump station site will be provided immediately following the pre-bid meeting.

ARTICLE VIII BID SECURITY:

For Formal Bid Contracts, each bid must be accompanied by a Bid Bond, cash, cashiers check or a certified check of the Bidder made payable to the DISTRICT in an amount not less than five percent (5%)

Section III - Instructions To Bidders

of the amount of the Bid. Bid Bonds shall be issued by a corporate surety licensed under the laws of North Carolina to execute such bonds.

When the Bidder elects to submit a certified check or cashiers check as his Bid Bond, the check shall be drawn on a bank or trust company insured by the Federal Deposit Insurance Corporation.

Where alternate items are included in the Bid, the amount of bid security shall be not less than five percent (5%) of the base bid and all alternates combined.

Please note that while not required, it is helpful to use the Bid Bond form already provided in these contract documents. All language contained within this bond form is acceptable to the District. Non-MSD forms may contain unacceptable language and cause your bid to be rejected. Please also note that the use of "AIA" type bid bonds is not acceptable and will cause your bid to be rejected.

The security of the Bidders will be released upon the earlier to occur of (a) the expiration of five days after the Contract has been signed by the accepted Bidder and the DISTRICT; or (b) the expiration of sixty (60) days after the day the bids are opened, upon demand of any such bidders whose bid has not been accepted prior to such demand.

In the event that all Bids are rejected, the security of all Bidders whose security has not been previously returned will be returned at the time of such rejection.

ARTICLE IX RESPONSIBILITIES OF BIDDERS:

Each bidder shall, by careful examination, satisfy himself as to the nature and location of the work, the conformation of the ground, the character, quality and quantity of the facilities needed preliminary to and during the prosecution of the work, the general and local conditions, and all other matters which can in any way affect the work or the cost thereof under the Contract.

The Bidder shall make his own determination as to the nature and extent of the utility facilities, including proposed adjustments, new facilities, or temporary work to be performed by the utility owner or his representative; and as to whether or not any utility work is planned by the DISTRICT in conjunction with the project construction. The Bidder shall consider in his Bid all the permanent and temporary utility facilities in their present or relocation positions, whether or not specifically shown on the Plans or covered in the project Special Conditions. It will be the Bidder's responsibility to anticipate any additional costs to him resulting from such utility work and to reflect these costs in his Bid for the various items in the Contract.

The failure or omission of any Bidder to thoroughly examine and familiarize himself with the Contract Documents or to receive or examine any form, instrument or document or visit the site and acquaint himself with the conditions there existing shall in no way relieve any Bidder from any obligation in respect to his bid.

No verbal agreement or conversation with any officer, agent or employee of the DISTRICT, either before or after the execution of the Contract, shall affect or modify any of the terms or obligations therein.

ARTICLE X COLLUSIVE AGREEMENTS:

Each Bidder submitting a Bid to the DISTRICT for any portion of the work contemplated by the documents on which bidding is based, shall execute and attach thereto an affidavit substantially in the

Section III - Instructions To Bidders

form herein provided, to the effect that he has not entered into a collusive agreement with any person, firm or corporation in regard to any Bid submitted.

Before executing any Sub-contract, the successful Bidder shall submit the name of any proposed Sub-contractor for prior approval and an affidavit substantially as above.

ARTICLE XI TAXES

The Bidder shall include in his Bid the cost of all sales and use taxes and furnish to the DISTRICT at the end of each month and upon completion of his Contract, a statement setting forth all such taxes paid. This statement shall indicate the amount paid to each firm and be adequate for audit by the State Department of Revenue and must be accompanied by copies of invoices.

ARTICLE XII COMPARISON OF BIDS:

Bids will be compared on the basis of the totals of the approximated quantities comprising all items, at the unit and lump sum prices bid for these items. The resulting total Contract Bid Price will be compared which will include and cover the furnishing of all materials, and the performance of all labor necessary, and completing of all the work called for under the accompanying Contract, and in the manner set forth and described in the Contract Documents.

The lowest Bidder under each Contract will be that Bidder whose Bid totals the lowest number of dollars as determined above.

When numbered Alternate bid items are required, the lowest Bidder is the Bidder whose Base Bid and Bid for the Alternate or combination of Alternates selected by the DISTRICT results in the lowest total amount. The DISTRICT reserves the right to select any Alternate or combinations of Alternates.

Where estimated quantities are included in certain items of the Bid, they are for the purpose of comparing bids. While they are believed to be close approximations, they are not guaranteed, and settlement will be made from such items upon the basis of work as actually executed at the unit prices in the Bid as accepted.

ARTICLE XIII AWARD OF CONTRACT:

The contract shall be awarded to the lowest responsive, responsible bidder, taking into consideration quality, performance and time of delivery. The DISTRICT reserves the right to reject any and all bids, including, without limitation, the right to reject any or all non-conforming, non-responsive, unbalanced or conditional bids, and to reject the bid of any bidder if the DISTRICT believes that it would not be in the best interest of the DISTRICT to make an award to that bidder. The DISTRICT also reserves the right to waive informalities.

When Alternate Bid items are required in the Bid, the Contract will be awarded to that responsible Bidder whose Base Bid and Bid for the Alternate or combination of Alternates selected by the DISTRICT results in the lowest total amount.

These Bids are asked for in good faith, and awards will be made as soon as practicable, provided satisfactory Bids are received.

Section III - Instructions To Bidders

The DISTRICT may reject any bid not prepared and submitted in accordance with the provisions of the bid documents.

The right is reserved to waive informalities in bidding, to reject any or all Bids, or to accept a Bid other than the lowest submitted if such action is deemed to be in the best interest of the DISTRICT.

ARTICLE XIV COMMENCEMENT OF WORK:

Upon execution and delivery of the Contract and the delivery of the required performance and payment bonds and insurance certificates and policies, the CONTRACTOR will be notified to proceed with the Work of the Contract. The work of the Contract shall be commenced within ten (10) days following such notification or as otherwise specified in the Notice to Proceed.

The CONTRACTOR shall notify the DISTRICT in writing, of his intention to enter upon the site of the work at least five (5) days in advance of such entrance.

ARTICLE XV DAMAGES FOR FAILURE TO EXECUTE CONTRACT:

If an accepted Bidder shall fail or refuse to sign and deliver this Contract and the required surety bonds and insurance documentation within ten (10) days after he has received Notice of Award of his Bid, the DISTRICT shall retain, as partial damages for such failure or refusal, the Bid security of such defaulting Bidder. In addition to such damages, the DISTRICT reserves the right to pursue any other remedies it may have against such defaulting Bidder.

ARTICLE XVI EQUAL EMPLOYMENT OPPORTUNITY

Attention of Bidders is particularly called to the requirements for insuring that employees and applicants for employment are not discriminated against because of their race, color, religion, sex, or national origin.

ARTICLE XVII WAGES AND SALARIES

The Bidder and his Subcontractors shall be required to pay all employees the minimum prevailing wage and salary rates for the full length of the contract.

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ARTICLE 1 - PROJECT DESCRIPTION

Scope of Work

- 1.1 The work to be performed shall consist of the construction of the ITT Pump Station Replacement project for the Metropolitan Sewerage District of Buncombe County, North Carolina. The project shall generally consist of the furnishing of all services, supplies, materials, and equipment, and performing of all labor for the construction of a new generally consisting of the furnishing of all services, supplies, materials, and equipment, and performing of all labor for the construction of a new 10-ft diameter duplex submersible sanitary sewer lift station (expandable to a triplex lift station), wastewater grinder inside a dedicated 5-ft diameter manhole, approximately 20 LF of 24-inch and 2,750 LF of 16-inch HDPE DR 11 force main (approximately 640 LF of which will be encased in a 24-inch HDPE DR 11 to be installed by horizontal directional drill across the French Broad River), approximately 550 LF of 12-inch and 410 LF of 24-inch PVC C900 gravity sewer, and 30 LF of 30-inch DIP gravity sewer, including manholes and all related appurtenances. The project also includes construction of approximately 800 LF of upper access road and an extension of the lower access road from the existing access road.
- 1.2 The work shall be performed under a single contract based on a lump-sum/unit-price bid schedule that includes specified allowances, and shall consist of furnishing all materials, supplies, and equipment; performing all labor and services incidental to or necessary for the complete construction of the project in accordance with the Plans and Specifications; and maintenance of each completed portion of the work until final acceptance of the entire project by the DISTRICT, unless otherwise approved by the ENGINEER.

ARTICLE 2 - PHYSICAL CONDITIONS/CONTRACT PLANS

- 2.1 **Physical Conditions.** SM&E conducted a geotechnical exploration of the project area. The associated geotechnical report (attached) was utilized in the preparation of these contract documents.
- 2.2 **Contract Plans.** The work shall be performed in accordance with these specifications and contract plans, which are incorporated herein as part of the contract and which are identified by the following numbers and titles:

<u>Sheet No.</u>	<u>Description</u>
G00.0	COVER
G01.0	LEGEND AND NOTES
CDE01.1	EXISTING SITE DEMOLITION
CDE04.1	EXISTING FORCE MAIN DEMOLITION
CDE05.1	GRAVITY SEWER DEMOLITION
CU04.1	FORCE MAIN PLAN AND PROFILE STA. 0+00.00 – STA.

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	10+00.00
CU04.2	FORCE MAIN PLAN AND PROFILE STA. 10+00.00 – STA. 20+00.00
CU04.3	FORCE MAIN PLAN AND PROFILE STA. 20+00.00 – STA. 26+48
CU05.1	GRAVITY SEWER PLAN AND PROFILE STA. 0+00.00 – STA. 9+31
CS01.1	PROPOSED SITE PLAN
CS02.1	PROPOSED UPPER ACCESS ROAD PLAN
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CE01.2	EROSION CONTROL LOWER ACCESS ROAD PLAN 1 OF 2
CE01.3	EROSION CONTROL LOWER ACCESS ROAD PLAN 2 OF 2
CE01.4	EROSION CONTROL FORCE MAIN CROSSING PLAN
CE02.1	EROSION AND SEDIMENTATION CONTROL DETAILS
CE02.2	NCG01 DETAILS
CE02.3	STREAM CROSSING DETAILS
M01.1	PUMP STATION PLAN
M01.2	PUMP STATION SECTION
M01.3	BYPASS CONNECTION DETAIL
M01.4	RECEIVING MANHOLE DETAIL
MD01.1	STANDARD DETAILS 1
MD01.2	STANDARD DETAILS 2
MD01.3	STANDARD DETAILS 3
S00.0	GENERAL NOTES & DESIGN CRITERIA
S01.0	PUMP STATION PUMP CRANE PLAN & SECTION
E00.0	GENERAL NOTES LEGENDS AND ABBREVIATIONS
E00.1	TYPICAL POWER AND CONTROL SYMBOLS
E01.0	PUMP STATION POWER AND CONTROL DIAGRAM
E02.0	PANELBOARD SCHEDULE AND LOAD TABLE
E03.0	TYPICAL INSTALLATION DETAILS
E03.1	EQUIPMENT RACK INSTALLATION DETAIL
E10.0	PUMP STATION POWER AND GROUNDING PLAN
E10.1	CLASSIFICATION PLAN & ELEVATION
I00.0	GENERAL NOTES 1 OF 2
I00.1	GENERAL NOTES 2 OF 2
I01.0	PROCESS AND INSTRUMENTATION DIAGRAM
I03.1	INSTRUMENT MOUNTING DETAIL I

ARTICLE 3 - PROJECT COORDINATION

3.1 **Intent of Plans and Specifications**

The intent of the Plans and Specifications is to prescribe a complete work that the CONTRACTOR undertakes to do in full compliance with the Contract. The CONTRACTOR shall do all work as provided in the Plans, Special Conditions Detail Sheets, Specifications and other parts of the Contract and shall do such additional, extra, and incidental work as may be considered necessary to complete the work in a satisfactory and acceptable manner. Any work or material not shown on the Plans or described in the Specifications, but which may be fairly implied as included in any item of the Contract, shall be performed and/or furnished by the CONTRACTOR without additional charge therefore. The CONTRACTOR shall furnish all labor, materials, tools, equipment and incidentals necessary to the prosecution of the work.

3.2 **Interpretation of Estimate**

The quantities of the work and materials shown on the Proposal form or on the Plans are believed to approximately represent the work to be performed and materials to be furnished and are to be used for comparison of bids. Payment to the CONTRACTOR will be made only for the actual quantities of work performed or materials furnished in accordance with the Plans and Specifications and it is understood that the quantities may be increased or decreased as hereinafter provided without in any way invalidating the bid prices.

3.3 **Time of Completion**

The CONTRACTOR shall commence work to be performed on the project under this agreement on a date to be specified in a written Notice to Proceed from the DISTRICT and shall duly complete all work under this agreement within **600** **consecutive calendar days (20 months)** from said date. For each day in excess of the completion time limits specified above, the CONTRACTOR shall pay the DISTRICT the sum of Three Hundred Dollars (\$300.00) as liquidated damages reasonably estimated in advance to cover the losses incurred by the DISTRICT by reason of failure of said CONTRACTOR to complete the work within the time specified, such time being in the essence of this Contract and a material consideration thereof.

3.4 **Pre-Construction Conference**

Prior to starting any construction work on this project, a conference will be held in the Construction Office of the DISTRICT for the purpose of verifying general construction procedures, expediting the handling of shop drawings and schedules, and to establish a working understanding between the parties concerned on the project. Present at the conference shall be a responsible representative of the CONTRACTOR and the CONTRACTOR's job superintendent. The time of the conference shall be as agreed upon by the CONTRACTOR and DISTRICT.

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Per the Duke Energy Letter of No Objection (listed and attached below), CONTRACTOR shall inform Craig E. Garrett, Duke Energy Senior Asset Protection Program Manager, of pre-construction conference.

3.5 **Progress Meetings**

The CONTRACTOR and any subcontractors, material suppliers or vendors whose presence is necessary or requested shall attend meetings, referred to as Progress Meetings, when requested by the DISTRICT for the purpose of discussing the execution of the work. Each meeting will be held at the time and place designated by the DISTRICT. A schedule for monthly meetings will be agreed upon at the pre-construction conference. The ENGINEER will call for and schedule additional meetings if necessary. All decisions, instructions and interpretations made at these meetings shall be binding and conclusive on the CONTRACTOR and such decisions, instructions and interpretations shall be confirmed in writing by the DISTRICT.

The proceedings of these meetings will be recorded and the CONTRACTOR will be furnished with a reasonable number of copies for his use and for his distribution to the subcontractors' material suppliers and vendors involved.

3.6 **Utility Owners**

Utility owners within the vicinity of the Project may include, but are not limited to, those listed below. The CONTRACTOR shall contact N.C. OneCall Center for utility locations within public rights of way and easements before digging, as required by NC State Statutes.

Call NC OneCall Center, Inc. (locators for Buncombe County) at “811”.

<u>Utility / Agency</u>	<u>Phone</u>
Asheville Dispatch City Road Closures	828-252-1122
Asheville Public Works Department Streets Division	828-232-4567 828-259-5852
Chad Bandy	828-782-0546
Jerry Yates	828-778-8938
Rick Gath	828-777-4053
Storm Water	828-259-5973
Tony Chapman	828-777-5665
Amy Deyton	828-782-0755

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Water Department		828-259-5975
	Travis Mortier	828-778-0191
	Jeremy Godfrey	828-778-0953
	Michele Smith	828-777-3539
Asheville Transit Bus Lines		828-253-5691
AT&T Telephone Co.		877-737-2478
	Chip Lance	828-258-7058
	Jenny Stamey	828-251-8949
Black Mountain		828-669-8610
Public Works Director	Jamie Matthews	828-778-5525
Water Department		828-419-9300 x 1
Buncombe County Board of Education		
Transportation Department		828-232-4240
Buncombe Co. Emergency Services		828-250-6650
Fire, Police - NON EMERGENCIES ONLY		
County Road Closures		
Buncombe County Planning Director		828-250-4830
Charter Spectrum	Don Pullen	828-367-8763
	Karen Allison	864-598-0816
Dominion Gas		877-776-2427
	Richard Walsh	828-273-8446
Duke Energy	Guard House	828-687-5206
	Power Outages	800-827-5118
	Seth McFee	828-271-6271
ERC Fiber	Lewis Lance	828-350-2415
		866-372-7110
M.S.D. of Buncombe County		
Construction Director		828-225-8262
Sewer Maintenance Division		828-255-0061
Norfolk Southern RR		
	James Peck	828-808-0366

Section V: Special Conditions

NCDOT Highway Division	Nick Dorato	828-298-2741
Weaverville Town Hall		828-645-7116
Public Works		828-645-0606 x 400
Woodfin		
Street Department		828-253-4887
Water District		828-253-5551 x 8

ARTICLE 4- USE OF EASEMENTS AND RIGHT OF WAY

4.1 Right of Way Special Provision Detail Sheets and Easements

Easement widths are shown on the Plans and Easement Plats. The Plats (not to scale) are included at the end of the Specifications. If requested, scaled copies of the same will be provided to the CONTRACTOR. Exceptions to the typical details are shown as applicable on the Plans.

The CONTRACTOR shall comply with all provisions of the Special Provision Detail Sheet (SPDS) and easement agreement that may be applicable to his construction process or the general construction of this project.

Unless otherwise specified, all items in these SPDS shall be considered incidental to the construction of the Project. Any compensation to the CONTRACTOR for these items shall be included in the unit and/or lump sum prices bid, unless otherwise specified herein or listed in the Bid Schedule.

Five easements and one Special Provisions Detail Sheets (SPDS) for the following properties have been acquired and are attached at the end of this section.

- Henderson County (Parcel 9642-47-1366)
- UPM Raflatac, Inc. (Parcel 9642-27-5609)
- Wild River Corp (Parcel 9642-29-9794) (SPDS)
- State of North Carolina (French Broad River Subaqueous Crossing)
- Quality Point LLC (Portion of Parcel 9642-36-1779)

Two Right of Entries and two Special Provisions Detail Sheets (SPDS) for the following properties have been acquired and are attached at the end of this section.

- State of North Carolina (Parcel 9642-28-4413) (SPDS)
- Board of Trustees of The Endowment Fund of North Carolina State University at Raleigh (Parcel 9642-38-3057 & Parcel 9642-38-0737) (SPDS) (DRAFT)

4.2 Outstanding Easements

The temporary and permanent easement for a portion of the property owned by Quality Point LLC (Parcel 9642-36-1779) is still in the acquisition process. The DISTRICT anticipates obtaining full access by October 2026. The CONTRACTOR shall refrain from entering this property (and constructing the proposed upper access road) until a final easement is acquired and supplied by the DISTRICT.

ARTICLE 5 - SPECIAL REQUIREMENTS

5.1 Street Cut Permits and Project Access

NCDOT Roads

Per discussion with Troy S. Wilson, NCDOT District Engineer, no encroachment is needed to perform the work under and around Old Fanning Bridge. CONTRACTOR shall notify the office of Troy S. Wilson 72 hours in advance of crews starting work.

Troy S. Wilson, PLS
District Engineer
North Carolina Department of Transportation
District 14: District I – Henderson, Polk & Transylvania Counties
828-891-7911 (office)
D14-D1_Staff@ncdot.gov

City of Asheville Roads

Work performed within City of Asheville streets will require a street-cut permit. It shall be the CONTRACTOR's responsibility to obtain such permits prior to beginning work within said public right of way.

Other Municipalities

Work performed in other municipally-owned public roadways may require a street-cut permit. It shall be the CONTRACTOR's responsibility to obtain such permits prior to beginning work within said public right of way.

All costs associated with NCDOT Encroachments, street-cut permits, and their conditions/requirements shall be included within the various bid items, and no extra or separate payment will be made by the DISTRICT to the CONTRACTOR.

This also includes parking-meter closure fees, where there is an additional charge for existing parking meters on a closed public street.

Where the project work area is not within a Public Street or roadway, the CONTRACTOR shall use existing drives and parking lots as may be reasonable and necessary; however, he shall keep such usage to the minimum required and in

Section V: Special Conditions

accordance to the terms and conditions of the DISTRICT's Right of Way Policy and the recorded Easement Agreement between the DISTRICT and the Property Owner(s).

The CONTRACTOR shall maintain reasonable access to all properties and drives during construction. Any trench excavations within drive or parking lot that is used for direct access to such property shall be backfilled and provided with an all-weather surface at the end of each day's work. Where the Property Owner SPDS specifies conditions different from the above, the SPDS shall take precedent.

5.2 Maintenance of Traffic

Access to homes and businesses shall be maintained at all times to the properties along and abutting streets disturbed by construction, unless otherwise approved by the ENGINEER. On streets disturbed by construction, a minimum of one lane (with flagmen) shall be maintained at all times and further provided that adequate signing and control is provided as required by the AASHTO MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS and NCDOT Guidelines.

All lane closures and traffic measures shall be coordinated with and meet the minimum requirements of each municipality. Flagmen shall be provided on each end of the closed section or at intermediate points where the closed section is in excess of 250' or where the line of sight is impaired.

5.3 Miscellaneous Permits

5.3.1 NCDEQ Fast Track Permit

A copy of approval and permit dated February 12, 2025, is attached. The CONTRACTOR shall review the permit thoroughly and comply with all conditions therein.

5.3.2 US Army Corps of Engineers Nationwide Permit

A copy of approval and permit dated April 3, 2025, is attached. The CONTRACTOR shall review the permit thoroughly and comply with all conditions therein.

5.3.3 Town of Mills River, NC Non-Residential Zoning Permit

A copy of approval and permit dated May 16, 2025, is attached. The CONTRACTOR shall review the permit thoroughly and comply with all conditions therein.

5.3.4 NCDEQ Erosion and Sedimentation Control Permit

Section V: Special Conditions

A copy of approval dated June 3, 2026; Certificate of Approval; and accompanying email correspondence is attached. The CONTRACTOR shall review the approval and accompanying documentation thoroughly and comply with all conditions therein.

5.4 **Pending Permit**

5.4.1 Henderson County Electrical Trade Permit

5.5 **Duke Energy**

A copy of Letter of No-Objection (LONO) dated April 22, 2026, is attached. The CONTRACTOR shall review the approval thoroughly and comply with all provisions therein.

SECTION 01010 - SUMMARY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Special Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes:
 - 1. Project information.
 - 2. Work covered by Contract Documents.
 - 3. Access to site.
 - 4. Coordination with occupants.
 - 5. Work restrictions.
 - 6. Specification and drawing conventions.

1.3 PROJECT INFORMATION

- A. Project Identification:
 - 1. Project Name: ITT Pump Station Replacement, MSD Project Number 2020061.
 - 2. Project Location: 470 Broadpointe Drive, Fletcher, NC 28732
 - 3. Owner: Metropolitan Sewerage District of Buncombe County
 - 4. Engineer: McKim & Creed, 35 N Market Street, Asheville, NC 28801

1.4 WORK COVERED BY CONTRACT DOCUMENTS

- A. The Work of the Project is defined by the Contract Documents and consists of the following:
 - 1. The project includes but is not limited to procurement and installation of a new 10-ft diameter duplex submersible sanitary sewer lift station (expandable to a triplex lift station), wastewater grinder inside a dedicated 5-ft diameter manhole, approximately 20 LF of 24-inch and 2,750 LF of 16-inch HDPE DR 11 force main (approximately 640 LF of which will be encased in a 24-inch HDPE DR 11 to be installed by horizontal directional drill across the French Broad River), approximately 550 LF of 12-inch and 410 LF of 24-inch PVC C900 gravity sewer, and 30 LF of 30-inch DIP gravity sewer, including manholes and all related appurtenances. The

project also includes construction of approximately 800 LF of upper access road and an extension of the lower access road from the existing access road.

2. Bypass pumping will be required to ensure that there will be no interruption in the flow of wastewater throughout the duration of work related to piping tie-ins, facility connections, and new pumping station installation.
3. Contractor shall coordinate with Owner to ensure safe and reliable operation of the existing ITT pump station is maintained at all times during construction.
4. Project will be constructed under a single prime contract.

1.5 ACCESS TO SITE

- A. Contractor shall have full use of Project site for construction operations during construction period. Contractor's use of Project site is limited only by Owner's right to perform work.
- B. Driveways, Walkways and Entrances: Keep driveways and entrances serving premises clear and available to Owner, Owner's employees, and emergency vehicles at all times. Do not use these areas for parking or storage of materials.

1.6 COORDINATION WITH OCCUPANTS

- A. Owner Limited Occupancy of Completed Areas of Construction: Owner reserves the right to occupy and to place and install equipment in completed portions of the Work, prior to Substantial Completion of the Work, provided such occupancy does not interfere with completion of the Work. Such placement of equipment and limited occupancy shall not constitute acceptance of the total Work.
 1. Engineer will prepare a Certificate of Substantial Completion for each specific portion of the Work to be occupied prior to Owner acceptance of the completed Work.
 2. Obtain a Certificate of Occupancy from authorities having jurisdiction before limited Owner occupancy.
 3. Before limited Owner occupancy, mechanical and electrical systems shall be fully operational, and required tests and inspections shall be successfully completed. On occupancy, Owner will operate and maintain mechanical and electrical systems serving occupied portions of Work.
 4. Upon occupancy, Owner will assume responsibility for maintenance and custodial service for occupied portions of Work.

1.7 WORK RESTRICTIONS

- A. On-Site Work Hours: Limit work to normal business working hours Monday through Friday as specified in General Conditions Article 2.10.

- B. Existing Utility Interruptions, Noise, Vibration, and Odors: Do not interrupt utilities serving facilities occupied by Owner or without coordination with Owner. Coordinate operations that may result in high levels of noise and vibration, odors, or other disruption with Owner. Notify Owner not less than two days in advance and obtain Owner's written permission before proceeding with utility interruptions or disruptive operations.
- C. Controlled Substances: Smoking is prohibited on site.

1.8 SPECIFICATION AND DRAWING CONVENTIONS

- A. Division 00 Contracting Requirements: General provisions of the Contract, including General and Supplementary Conditions, apply to all Sections of the Specifications.
- B. Division 01 General Requirements: Requirements of Sections in Division 01 apply to the Work of all Sections in the Specifications.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.1 Precedence

- A. In resolving inconsistencies precedence shall be given in the following order: Agreement, Special Conditions, General Conditions, Specifications – Division 01, Specifications – Divisions 02-17, and the construction drawings.

END OF SECTION 01010

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SECTION 01026 – MEASUREMENT AND PAYMENT

PART 1 – GENERAL

1.1 SCOPE OF WORK

- A. This section covers methods of measurement and payment for items of Work under this Contract.
- B. The total Bid amount shall cover all Work required by the Contract Documents. All costs in connection with the proper and successful completion of the Work, including furnishing all materials, equipment, supplies, and appurtenances; providing all construction equipment and tools; and performing all necessary labor and supervision to fully complete the Work, shall be included in the lump sum prices bid. All Work not specifically set forth as a pay item in the Bidding Schedule shall be considered a subsidiary obligation of Contractor, and all costs in connection therewith shall be included in the prices bid.

1.2 DEFINITIONS

- A. Unit price is an amount proposed by Bidders, stated on the Bidding Schedule, as a price per unit of measurement for materials and/or services added to or deducted from the Contract Sum by appropriate modification, if the estimated quantities of Work required by the Contract Documents are increased or decreased.
- B. Lump sum is an amount proposed by bidders, stated on the Bidding Schedule, as a price to include all materials, labor, etc. for work furnished and installed, complete and operational.

1.3 PERMITS AND TAXES

- A. Refer to General Conditions paragraph 7.09 - Permits for payment of construction and license permits. The Contractor shall include costs of all construction permits and licenses in the bid.
- B. Refer to General Conditions paragraph 7.10 - Taxes for payment of taxes. The Contractor shall include costs of state and local sales taxes in the Bid.

1.4 RETAINAGE

- A. Refer to the Agreement.

1.5 EXCAVATION AND TRENCHING

- A. Except where otherwise specified, the lump sum price bid for each item of Work which involves excavation or trenching shall include all costs for such Work. No direct payment shall be made for excavation or trenching. There shall be no separate payment for excavation and stabilization below grade, or special backfill for such excavation, unless specifically stated in the Measurement and Payment sections.

- B. Except as specifically provided under Bid Item 13, Trench Rock Excavation, and Bid Item 6g, Rock Bore for Horizontal Directional Drill, there shall be no separate payment for rock excavation. Rock excavation associated with structures, including the lift station, valve vaults, flow meter vaults, retaining walls, and site improvements, shall be considered subsidiary to the applicable pay item.
- C. All excavation work required for structures, not otherwise paid for as trenching, shall be considered to be a subsidiary obligation of Contractor; and the cost of such excavation shall be included in the prices bid for the structures.

1.6 MEASUREMENT AND PAYMENT

- A. Bid Item 1: Mobilization
 - 1. All work covered by this section will be paid for at the contract lump sum price for "Mobilization." The lump sum bid price shall not exceed 3% of the total project bid.
 - 2. Partial Payments for the item of "Mobilization" will be made with the first and second partial pay estimates paid on the contract and will be made at the rate of 50% of the lump sum price for "Mobilization" on each of these partial pay estimates.
- B. Bid Item 2: 10' Diameter Pre-Cast Submersible Lift Station w/ Grinder (Expandable to Triplex Lift Station)
 - 1. Payment of the lump sum price for the Lift Station shall include, but not be limited to, full compensation for all labor, materials, tools, equipment and incidentals necessary for construction of the lift station complete, as shown inside the proposed pump station boundaries and as specified in the contract documents.
 - 2. Payment for the Lift Station shall include all excavation, dewatering, shoring, stabilization, partially weathered rock (PWR), rock excavation, auger-refusal materials, boulders, and other subsurface conditions encountered within the lift station excavation limits. No separate payment shall be made for rock excavation associated with the lift station excavation.
 - 3. The Contractor shall be paid based on percentage completion in accordance with the approved schedule of values, based on the percentage of labor and materials incorporated into the work for each payment item and upon and Owner and Engineer's verification.
- C. Bid Item 3: Demolition and Abandonment of Existing Pump Station
 - 1. Payment of the lump sum price for abandonment of the existing pump station shall include, but not be limited to, full compensation for all labor, materials, tools, equipment and incidentals necessary for limited demolition and abandonment of the existing pump station inside the pump station boundary as established by the existing fence including removal of tops of

existing structures and filling of structures more than 3-ft below grade with stone, removal of generators, control panels, and pumps and conveyance to the Owner, and abandonment in place of associated gravity and force mains, as shown on the Drawings and as specified.

2. The Contractor shall be paid based on percentage completion in accordance with the approved schedule of values, based on the percentage of labor and materials incorporated into the work for each payment item and upon and Owner and Engineer's verification.

D. Bid Item 4: Manholes

1. Bid Item 4a: Demolish and Remove Existing 4' Diameter Gravity Sewer Manhole
 - a) Payment of the unit price for demolition and removal of 4' diameter precast concrete manholes not containing valves or other mechanical equipment shall include all work necessary to completely remove the precast concrete manhole as well as to cut and cap the existing downstream 12" gravity sewer main including but not be limited to excavation, compaction, backfill, shoring, dewatering, and disposal as required, in accordance with the contract documents.
 - b) Payment shall be per manhole demolished.
2. Bid Item 4b: Demolish and Remove Existing 5' Diameter Gravity Sewer Manhole
 - a) Payment of the unit price for demolition and removal of 5' diameter precast concrete manholes not containing valves or other mechanical equipment shall include all work necessary to completely remove the precast concrete manhole as well as to cut and cap the existing downstream 24" gravity sewer main including but not be limited to excavation, compaction, backfill, shoring, dewatering, and disposal as required, in accordance with the contract documents.
 - b) Payment shall be per manhole removed.
3. Bid Item 4c: Abandon Existing 5' Diameter Gravity Sewer Manhole
 - a) Payment of the unit price for abandonment of 5' diameter precast concrete manholes not containing valves or other mechanical equipment shall include all work necessary to completely remove the top 3' of the existing precast concrete manhole and fill the remaining volume with non-compressible material as well as to cut and cap the existing downstream 24" gravity sewer main including but not be limited to excavation, compaction, backfill, shoring, dewatering, and disposal as required, in accordance with the contract documents.

- b) Payment shall be per manhole abandoned.
- 4. Bid Item 4d: Abandon Existing 4' Diameter Air Release Valve Manhole
 - a) Payment of the unit price for demolition and removal of 4' diameter precast concrete manholes containing air release valves shall include all work necessary to completely remove the top 3' of the precast concrete manhole and fill the remaining volume with non-compressible material as well as to cut and cap the existing 6" PVC force main entering and exiting the manhole, including but not be limited to excavation, compaction, backfill, shoring, dewatering, and disposal as required, in accordance with the contract documents.
 - b) Payment shall be per manhole abandoned.
- 5. Bid Item 4e: Modify Existing Sewer Manhole
 - a) Payment of the unit price for modification of existing sewer manhole (MSD MH 49-481327) shall include, but not be limited to, plugging of existing 24" pipes, installation of new 8" pipe, grout filling and finishing of pipe, and all other necessary materials, work, and equipment required to complete modification to the existing sewer manhole.
 - b) Payment shall be per manhole modified.
- 6. Bid Item 4f: Modify Receiving MH 49-23725
 - a) Payment of the unit price for modification of receiving MH 49-23725 shall include, but not be limited to, core drilling for force main, installation of 24" HDPE force main and flexible manhole sleeve or entrance joint, low shrink hydraulic grout filling, finishing of pipe, installation of proposed bench, installation of concrete backstop, coating of manhole interior, and all other necessary materials, work, and equipment required to complete modification to the existing sewer manhole.
 - b) Payment shall be per manhole modified.
- 7. Bid Item 4g: Install 4' Diameter Gravity Sewer Manhole
 - a) Payment of the unit price for 4' diameter precast concrete manholes not containing valves or other mechanical equipment shall include excavation, compaction, backfill, shoring, dewatering, surface repairs, testing, and inspection as required, in accordance with the contract documents.
 - b) Payment shall be per manhole installed.
- 8. Bid Item 4h: Install 4' Diameter Gravity Sewer Manhole with Vent Stack

- a) Payment of the unit price for 4' diameter precast concrete manholes with vent stack not containing valves or other mechanical equipment shall include excavation, compaction, backfill, shoring, dewatering, surface repairs, testing, and inspection as required, in accordance with the contract documents.
 - b) Payment shall be per manhole installed.
9. Bid Item 4i: Install 5' Diameter Gravity Sewer Manhole
- a) Payment of the unit price for 5' diameter precast concrete manholes not containing valves or other mechanical equipment shall include excavation, compaction, backfill, shoring, dewatering, surface repairs, testing, and inspection as required, in accordance with the contract documents.
 - b) Payment shall be per manhole installed.
10. Bid Item 4j: Install 5' Diameter Manhole with Air Release Valve on 16" HDPE Force Main
- a) Payment shall be made for installation of two (2) 2" combination air release valves on 16" HDPE force main complete with valve, 5' diameter vented manhole, corporation stop and tapping saddle, and all excavation, compaction, backfill, shoring, dewatering, and testing and inspection as required, in accordance with the contract documents.
 - b) Payment shall be per air release valve installed.

E. Bid Item 5: Gravity Sewer Mains

1. Bid Item 5a: Demolish and Remove Existing 24" DIP Gravity Sewer
- a) Payment of the unit price for demolition and removal of 24" DIP gravity sewer main shall include all work necessary to completely remove the existing gravity sewer piping including but not be limited to excavation, compaction, backfill, shoring, dewatering, and disposal as required, in accordance with the contract documents.
 - b) Payment shall be per linear foot of gravity sewer pipe removed. Pipe length shall be measured by actual linear feet in place measured along the pipe centerline
2. Bid Item 5b: Abandon Existing 24" PVC Gravity Sewer in Place
- a) Payment of the lump sum price for abandonment of existing 24" PVC gravity sewer in place shall include, but not be limited to all labor and materials necessary for the abandonment of the existing 24" PVC gravity sewer outside its discharge manhole including excavation, backfill, cutting, capping, and abandonment of existing

24" PVC gravity sewer in place, as shown on the Drawings and as specified in the contract documents.

- b) The Contractor shall be paid based on percentage completion in accordance with the approved schedule of values, based on the percentage of labor and materials incorporated into the work for each payment item and upon and Owner and Engineer's verification.

3. Bid Item 5c: Abandon Existing 12" PVC Gravity Sewer in Place

- a) Payment of the lump sum price for abandonment of existing 12" PVC gravity sewer in place shall include, but not be limited to all labor and materials necessary for the abandonment of the existing 12" PVC gravity sewer outside its discharge manhole including excavation, backfill, cutting, capping, and abandonment of existing 12" PVC gravity sewer in place, as shown on the Drawings and as specified in the contract documents.
- b) The Contractor shall be paid based on percentage completion in accordance with the approved schedule of values, based on the percentage of labor and materials incorporated into the work for each payment item and upon and Owner and Engineer's verification.

4. Bid Item 5d: Install 8" PVC Gravity Sewer

- a) Payment of the unit price for 8" PVC gravity sewer installation shall include, but not be limited to, excavation, compaction, backfill, shoring, dewatering, surface repairs, testing, and inspection as required, in accordance with the contract documents.
- b) Measurement shall be per linear foot of sewer installed. Pipe length shall be measured by actual linear feet in place measured along the

5. Bid Item 5e: Install 12" PVC Gravity Sewer

- a) Payment of the unit price for 12" PVC gravity sewer installation shall include, but not be limited to, excavation, compaction, backfill, shoring, dewatering, surface repairs, testing, and inspection as required, in accordance with the contract documents.
- b) Measurement shall be per linear foot of sewer installed. Pipe length shall be measured by actual linear feet in place measured along the pipe centerline.

6. Bid Item 5f: Install 24" PVC C900 Gravity Sewer

- a) Payment of the unit price for 24" PVC C900 Gravity Sewer shall include, but not be limited to, excavation, compaction, backfill,

shoring, dewatering, surface repairs, testing, and inspection as required, in accordance with the contract documents.

- b) Measurement shall be per linear foot of sewer installed. Pipe length shall be measured by actual linear feet in place measured along the pipe centerline.

7. Bid Item 5g: Install 30" DIP Gravity Sewer with Ceramic Epoxy Liner

- a) Payment of the unit price for 30" DIP Gravity Sewer with Ceramic Epoxy Liner shall include, but not be limited to, excavation, compaction, backfill, shoring, dewatering, surface repairs, testing, and inspection as required, in accordance with the contract documents.
- b) Measurement shall be per linear foot of sewer installed. Pipe length shall be measured by actual linear feet in place measured along the pipe centerline.

F. Bid Item 6: Force Mains

1. Bid Item 6a: Abandon Existing 6" DIP Force Main on Bridge

- a) Payment of the lump sum price for abandonment of existing 6" DIP force main shall include, but not be limited to all labor and materials necessary for the abandonment of the 360 LF of existing 6" DIP force main suspended from the bridge on Old Fanning Bridge Road including cutting, capping, and abandonment of existing 6" PVC force main on both ends of the bridge, as shown on the Drawings and as specified in the contract documents.
- b) The Contractor shall be paid based on percentage completion in accordance with the approved schedule of values, based on the percentage of labor and materials incorporated into the work for each payment item and upon and Owner and Engineer's verification.

2. Bid Item 6b: Abandon Existing 6" PVC Force Main at ARV Manholes and Existing Receiving Manhole

- a) Payment of the lump sum price for abandonment of existing 6" PVC Force Main at ARV Manholes and Existing Receiving Manhole shall include, but not be limited to all labor and materials necessary for the abandonment of the existing 6" PVC force main outside of the ARV manholes and the existing force main receiving manhole including excavation, backfill, cutting, capping, and abandonment of existing 6" PVC force main, as shown on the Drawings and as specified in the contract documents.
- b) The Contractor shall be paid based on percentage completion in accordance with the approved schedule of values, based on the

percentage of labor and materials incorporated into the work for each payment item and upon and Owner and Engineer's verification.

3. Bid Item 6c: Install 16" HDPE Force Main by Open Cut
 - a) Payment shall be made for installation of 16" DR11 HDPE force main with fittings and appurtenances including end connections, stream crossing, excavation, compaction, backfill, pipe bedding, shoring, dewatering, and testing and inspection as required, in accordance with the contract documents.
 - b) Payment shall be per linear foot of force main installed by open cut. Pipe length shall be measured by actual linear feet in place measured along the pipe centerline.
4. Bid Item 6d: Install 24" HDPE Force Main by Open Cut
 - a) Payment shall be made for installation of 24" DR11 HDPE force main with fittings and appurtenances including reducer, end connection, excavation, compaction, backfill, pipe bedding, shoring, dewatering, and testing and inspection as required, in accordance with the contract documents.
 - b) Payment shall be per linear foot of force main installed by open cut. Pipe length shall be measured by actual linear feet in place measured along the pipe centerline.
5. Bid Item 6e: Install 24" HDPE Casing w/ 16" HDPE Carrier Pipe Force Main by Horizontal Directional Drill
 - a) Payment shall be made for installation of 24" DR11 HDPE casing installed by horizontal directional drill complete with 16" DR11 HDPE carrier pipe. Payment shall include, but not be limited to, excavation, compaction, backfill, shoring, dewatering, insertion of carrier pipe, and testing and inspection as required, in accordance with the contract documents.
 - b) Payment shall be per linear foot of force main installed by horizontal directional drill. Pipe length shall be measured by actual linear feet in place measured along the pipe centerline.
6. Bid Item 6f: Install Force Main Bypass Connection
 - a) Payment of the lump sum price for the force main bypass connection shall include all site clearing, grubbing, grading, removal of excess excavated materials from the site and disposal at approved locations, excavation, compaction, and all other necessary materials, work, and equipment required to complete installation in accordance with the contract documents.

- b) The Contractor shall be paid based on percentage completion in accordance with the approved schedule of values, based on the percentage of labor and materials incorporated into the work for each payment item and upon and Owner and Engineer's verification.

7. Bid Item 6g: Rock Bore for Horizontal Directional Drill

- a) Rock Bore shall include competent rock, partially weathered rock (PWR), and auger-refusal materials encountered during HDD operations that require specialized rock boring methods.
- b) Payment shall be made at the contract unit price per linear foot of Rock Bore. Payment shall include all labor, equipment, tooling, drilling fluids, reaming, steering, casing installation, carrier pipe installation, disposal, and incidentals necessary to complete the work.

G. Bid Item 7: Site Development

- 1. Payment of the lump sum price for pump station site development shall include all site clearing, grubbing, grading, removal of excess excavated materials from the site and disposal at approved locations, excavation, compaction, and all other necessary materials, work, and equipment required to complete sitework and other general construction items accordance with the contract documents.
- 2. The Contractor shall be paid based on percentage completion in accordance with the approved schedule of values, based on the percentage of labor and materials incorporated into the work for each payment item and upon and Owner and Engineer's verification.

H. Bid Item 8: Access Road

- 1. Payment of the lump sum price for access road construction shall include all site clearing, grubbing, grading, excavation, compaction, and all other necessary materials, work, and equipment required to complete construction of the access road.
- 2. The Contractor shall be paid based on percentage completion in accordance with the approved schedule of values, based on the percentage of labor and materials incorporated into the work for each payment item and upon and Owner and Engineer's verification.

I. Bid Item 9: Retaining Wall

- 1. Payment of the unit price for retaining wall shall include all clearing, grubbing, grading, excavation, compaction, tiebacks, rear wall drainage and all other necessary materials, work, and equipment required to complete construction of the retaining wall.

2. Payment shall be per linear foot of retaining wall installed at the locations shown on the contract drawings. Wall length shall be measured by actual linear feet in place measured along the top of wall.
- J. Bid Item 10: Storm Water Installation
1. Bid Item 10a: 18" Concrete Headwall
 - a) Payment of the unit price for concrete headwall shall include, but not be limited to, wingwalls, apron, rebar, excavation, compaction, testing and all other necessary materials, work, and equipment required to complete installation of the headwall.
 - b) Payment shall be per headwall installed.
 2. Bid Item 10b: 24" Concrete Headwall
 - a) Payment of the unit price for concrete headwall shall include, but not be limited to, wingwalls, apron, rebar, excavation, compaction, testing and all other necessary materials, work, and equipment required to complete installation of the headwall.
 - b) Payment shall be per headwall installed.
 3. Bid Item 10c: 18" RC Pipe
 - a) Payment of the unit price for 18" reinforced concrete pipe installation shall include, but not be limited to, excavation, compaction, backfill, shoring, dewatering, surface repairs, testing, and inspection as required, in accordance with the contract documents.
 - b) Measurement shall be per linear foot of reinforced concrete pipe installed. Pipe length shall be measured by actual linear feet in place measured along the pipe centerline.
 4. Bid Item 10d: 24" RC Pipe
 - a) Payment of the unit price for 24" reinforced concrete pipe installation shall include, but not be limited to, excavation, compaction, backfill, shoring, dewatering, surface repairs, testing, and inspection as required, in accordance with the contract documents.
 - b) Measurement shall be per linear foot of reinforced concrete pipe installed. Pipe length shall be measured by actual linear feet in place measured along the pipe centerline.
 5. Bid Item 10e: Concrete Spillway

- a) Payment of the unit price for concrete spillway construction shall include all concrete, rebar, joints, finishing and all other necessary materials, work, and equipment required to complete installation of the spillway.
- b) Payment shall be per concrete spillway installed.

6. Bid Item 10f: 4' Diameter Storm Water Manhole

- a) Payment of the unit price for 4' diameter precast concrete storm water manholes shall include excavation, compaction, backfill, shoring, dewatering, surface repairs, testing, and inspection as required, in accordance with the contract documents.
- b) Payment shall be per manhole installed.

7. Bid Item 10g: Modify Existing Storm Water Manhole

- a) Payment of the unit price for modification of existing storm water manhole shall include, but not be limited to, removal of existing pipe, installation of new pipe, grout filling and finishing of pipe, raising ring and cover to proposed elevation and all other necessary materials, work, and equipment required to complete modification to the existing manhole.
- b) Payment shall be per manhole modified.

K. Bid Item 11: Electrical Improvements

- 1. Payment of the lump sum price for electrical improvements shall include all labor, materials, and equipment as necessary to construct the electrical work, as specified by the contract documents. The price shall include, but not be limited to:
 - a) Location, removal, and relocation of existing wiring, conduits, poles, and equipment as specified and shown on the drawings.
 - b) Furnishing and installing temporary power and control wiring, conduits, poles, and equipment as required to maintain operation of any and all existing facilities whose power supply may be affected by construction activities.
 - c) Electrical distribution panels, control panel installations, transformers, wires, conduits, poles, junction boxes, handholes, raceways, duct banks, disconnects, and lighting.
 - d) Installation and testing of grounding system.
 - e) Installation and testing of lightning protection system.
 - f) Testing and acceptance.

- g) All other necessary materials, work, and equipment required to complete electrical installation in accordance with the contract documents, but not included as part of another bid item.

L. Bid Item 12: Erosion Control

- 1. Payment of the lump sum price for erosion control shall include all materials, work, and equipment necessary to furnish, install, and maintain erosion control measures required for the lawful completion of the construction, including but not be limited to silt fencing, stone outlets, inlet protection, rip rap aprons, establishing ground cover, and removal of erosion control measures at the completion of construction, as specified and shown on the drawings.

M. Bid Item 13: Trench Rock Excavation

- 1. Payment shall be made for rock excavation encountered during installation of force mains, gravity sewers, storm drainage facilities, manholes, air release valve manholes, and appurtenant utility structures.
- 2. Rock excavation shall include competent rock, partially weathered rock (PWR), auger-refusal material, and boulders requiring ripping, hoe-ramming, drilling, blasting, or other specialized removal methods.
- 3. Measurement shall be made in cubic yards of rock excavation within the authorized excavation in place within the authorized excavation limits. Quantities shall be determined by cross-sections, average-end-area calculations, or other methods approved by the Engineer.
- 4. No payment shall be made for over-excavation beyond the authorized limits.
- 5. Payment shall include excavation, drilling, blasting (where permitted), hoe-ramming, removal, hauling, disposal, and all labor, equipment, tools, and incidentals required to complete the work.
- 6. No separate payment shall be made for over-excavation, dewatering, shoring, stabilization, bedding, backfill, or restoration.

N. Bid Item 14: Undercut and Replace Unsuitable Material with Select Backfill

- 1. Measurement shall be made in cubic yards of unsuitable material excavated and removed below the planned excavation bottom as directed and approved by the Engineer.
- 2. Unsuitable material shall include excessively wet, soft, unstable, pumping, organic, or otherwise unsuitable soils which cannot adequately support the proposed construction.

3. Payment shall be made for unsuitable material excavated and removed below the planned bottom of excavation when directed or approved by the Engineer.
4. Payment shall include excavation, removal, disposal, furnishing approved replacement material, placement, compaction, and all incidentals required to complete the work.
5. No separate payment shall be made for replacement of unsuitable material resulting from inadequate dewatering, over-excavation, or Contractor means and methods.

O. Bid Item 15: Instrumentation & Control Integration Allowance

1. Allowance for Instrumentation & Control Integration by CITI, Inc. for all labor, materials, and equipment as necessary for instrumentation & control integration, as specified by the contract documents. Contractor is responsible for the payment of this item. Any unspent portion of the allowance at the completion of the project will be credited back to the Owner. If the actual instrumentation & control integration cost exceeds the allowance, the Contractor shall provide documentation to support the additional cost, and the Owner will compensate the Contractor for the difference.

P. Bid Item 16: Henderson County Electrical Trade Permit Fee Allowance

1. Allowance for Henderson County Electrical Trade permit fee required for the execution of the ITT Pump Station Replacement project, as specified in the contract documents. Allowance shall cover all costs associated with obtaining necessary electrical trade permit to perform the work outlined in the Contract. Contractor is responsible for the payment of this fee and for ensuring that required permit is obtained prior to the commencement of relevant work activities. Actual cost of the permit fee will be based on the actual fee assessed by the permitting authority. Any unspent portion of the allowance at the completion of the project will be credited back to the Owner. If the actual permit fee exceeds the allowance, the Contractor shall provide documentation to support the additional cost, and the Owner will compensate the Contractor for the difference.

1.7 ITEMS NOT PAID FOR:

- A. **No payment will be made for any item not specifically listed in the Bidding Schedule.** All ancillary items required for a complete, functioning, treatment system installation will be the responsibility of the Contractor to include in the cost of line items listed on the Bidding Schedule. Specific items which will NOT be paid for include, but are not limited to the following:
1. **Except for Bid Item 13, Trench Rock Excavation, and Bid Time 6g, Rock Bore for Horizontal Direction Drill, all excavation shall be considered unclassified.** Neither the Owner nor the Engineer assumes responsibility for subsurface conditions, including unyielding material, ground water, and existing utilities not indicated or show on the Drawings.

2. All Clearing, Grubbing, Grading, and Excavation shall be included in the cost of line items listed on the Bidding Schedule and no separate payment shall be made. This shall include storing of topsoil and disposal of debris. No additional payment will be made for any clearing or excavation outside areas indicated on plan sheets which may be required for installation of piping, structures, or equipment.
3. No additional payment for backfill or trench stabilization stone shall be made except where specifically noted above. Contractor shall be required to furnish acceptable bedding, fill, and stabilization materials as part of the total cost of work and no separate payment for these items will be made.
4. Repairing damaged utilities will be at the Contractor's expense and no compensation therefore will be allowed.
5. Repairing of damaged facility roads will be at the Contractor's expense and no compensation therefore will be allowed.
6. Shoring, bracing, sheeting, etc., installed where required for trench stabilization and protection of adjacent roads, utilities, and structures shall be included in the Base Bid and no separate payment will be made thereof.
7. No payment will be made for restocking fees incurred by the Contractor due to excess materials. Contractor is advised to include anticipated restocking fees for excess materials, including those due to unforeseen site conditions, in the total cost of work.

END OF SECTION 01026

SECTION 02221 – EXCAVATION, BEDDING AND BACKFILL FOR PIPE AND STRUCTURES

PART 1 – GENERAL

1.1 SCOPE

- A. The work specified in this Section includes requirements for excavation for trenching and support of sending and receiving pits, and temporary excavations. The Contractor shall design, furnish, install, and maintain a system of supports, including all bracing and associated items, to retain excavations in a safe manner and to control ground movements. Upon completion of the required construction the system of supports shall be completely removed unless written approval is received from the Engineer, and the excavation and staging area sites restored as discussed herein.
- B. The Contractor shall furnish all labor, materials, equipment and incidentals to perform all excavation work to include: necessary clearing; grubbing; preparation of the site; site grading; fencing and signing; construction staging areas; design and construction of excavation support systems; sheeting, shoring, and protection work; design and construction of thrust blocks; disposal of debris and excavated material, excavation dewatering; surface water control, and ground water control; backfilling; preparation of sub-grades; and site restoration.
- C. Earth excavation shall be included in the Base Bid unless otherwise identified. Rock excavation shall be measured and paid for in accordance with Section 02213 – Rock and Boulder Excavation.
- D. Clearing and grubbing not directly associated with excavation work are specified in Section 02110. Demolition of existing structures and equipment is specified in Section 02065
- E. All excavations and support systems shall conform to applicable OSHA excavation, trenching, and shoring standards which are contained in the U.S. Code of Federal Regulations 29 (C.F.R.) 1926.650-1926.653. In the event of a conflict, comply with the more restrictive applicable requirements.
- F. Excavation support at trenchless crossings shall not impede the flow of traffic along the road or railroad being crossed.
- G. The Contractor shall be responsible for sizing the excavations and shafts. The size of the shafts shall, however, be adequate for construction of any structures indicated on the Drawings and to provide adequate space to meet the Contractor's work requirements for his/her selected methods of construction. Shaft excavations larger than those shown on the Drawings will be subject to the approval of the Engineer and the Owner, and any modifications to the approved traffic control measures shall be obtained and carried out at no additional cost to the Owner.
- H. The Contractor shall examine the site and review available subsurface borings and undertake his own subsurface investigations prior to submitting his bid,

taking into consideration all conditions that may affect his work. The Owner and Engineer make no representation as to the subsurface characteristics at locations other than at boring locations shown and at the time the subsurface investigation was made. This provision shall not eliminate or modify the Contractor's rights under the Differing Site Conditions provisions of the Contract Documents.

- I. Prior to construction, the Contractor shall be responsible for taking sufficient measurements, horizontal and vertical, to ensure that all existing facilities, which includes but is not limited to pavement, curbs gutters and drainage facilities are restored to their original lines and grades.
- J. Wherever a compaction percent is referred to herein it shall mean at least that percent of maximum density determined in accordance with the test method specified herein (ASTM D698 or AASHTO T-180, as applicable).
- K. All of the work herein, except where supplemental unit prices are specifically provided under Bid Item 13, Trench Rock Excavation, and Bid Item 14, Undercut and Replace Unsuitable Material with Select Backfill, shall be included in the unit and lump sum pricing of the work.

1.2 SUBMITTALS

- A. Shop drawings and submittals for this section shall be for informational review.
- B. Shop Drawings for support of temporary excavations and trenches: Submit shop drawings detailing pipe, gaskets, fittings, bedding material, restoration material, equipment, and construction methods to be used for excavation support operations as specified herein and as shown on the Contract Drawings.
- C. Shop Drawings for sending and receiving pits: The excavation support systems for sending and receiving pits shown on the contract drawings are the minimum design considered acceptable for this project. The Contractor shall construct the systems as shown on the contract drawings or design and construct an alternate system in accordance with the requirements herein.
 - 1. Submit shop drawings detailing material types, equipment, and construction methods to be used for construction of the excavation support systems as shown on the contract drawings. Shop drawings shall also detail all member connections and tunnel portal openings.
 - 2. Submit design calculations and shop drawings detailing material types, equipment, and construction methods to be used for construction of an alternate excavation support system. Shop drawings shall also detail all member connections and tunnel portal openings.
 - 3. Submit thrust block design calculations and shop drawings for all sending pits.

1.3 DEFINITION

- A. Unsuitable materials include soils that are soft, unstable, organic, or otherwise incapable of supporting the Work as determined by the Engineer.
- B. Class IV and Class V materials shall not be used for bedding, haunching, or initial backfill under any circumstances.

1.4 EXCAVATION STABILIZATION

A. General

1. All excavations shall be stabilized to protect the safety of workers in the excavations from earth slides and cave-ins, and to protect the integrity of the pipe or structure being constructed.
2. Groundwater control is necessary for creating stable foundations for pipes and structures, and for stabilizing excavation slopes.
3. The contract work may include deep gravity sewer main, force main, and structure excavations, high groundwater tables, and excavation adjacent to and below streams.
4. The type of excavation stabilization systems to be used shall be selected by the Contractor, based upon geotechnical characteristics, excavation depth, groundwater elevation, proximity of existing structures, area available for excavation storage, use of excavation area, etc.
5. All backfill shall be placed and compacted as specified herein.
6. Excavated material shall not be stored outside the designated permanent and temporary rights-of-way or on private properties.
7. Dewatering: Maintain groundwater a minimum of 3 feet below the bottom of excavation or as required by the geotechnical report, whichever is more restrictive.

B. Excavation, Sheet piling, and Bracing

1. Furnish, install, maintain, and remove such sheet piling and bracing systems as may be required to support the sides of excavations, to prevent any movement which could in any way diminish the width of the excavation below that necessary for proper construction; and to protect adjacent structures from undermining, settling, or other damage.
2. For trench sheet piling for pipes, no sheet piling closer than one pipe diameter or two feet (whichever is greater) from the outside edge of the pipe shall be withdrawn if driven below mid-diameter of any pipe; and no sheet piling shall be cut off at a level lower than the top of any pipe unless otherwise approved by the Engineer. Any sheet piling beyond these limits which is withdrawn shall be done in a manner in which the sheet piling slides smoothly out of position without any disturbance of adjacent bedding. The remaining hole shall immediately be filled by hand with sand. If,

during the progress of the work, the Engineer decides that selected sheeting should be left in place, he may direct the Contractor in writing and compensation shall be as provided in the Contract Documents. Engineer decisions regarding sheeting and bracing shall be based on project safety and protection requirements.

3. All sheeting and bracing not left in place shall be carefully removed in such a manner as not to endanger workers, the construction, other structures, utilities, piping, or property. For structures, all sheeting and bracing shall be removed after completion of the substructure. All voids left or caused by withdrawal of sheeting shall be immediately backfilled with sand and compacted.
4. The right of the Engineer to order sheeting and bracing to be left in place shall not be construed as creating any obligation on his part to issue such orders; and his failure to exercise his right to do so shall not relieve the Contractor from liability for damages to persons or property occurring from or on the work occasioned by negligence or otherwise, growing out of a failure on the part of the Contractor to leave in place sufficient sheeting and bracing to prevent any caving or moving of the ground.
5. The Contractor shall construct the cofferdams and sheeting outside the neat lines of the foundation unless indicated otherwise to the extent he deems it desirable for his method of operation. Sheeting shall be plumb and securely braced in position. Sheeting, bracing, and cofferdams shall be adequate to withstand all pressures to which they will be subjected. Pumping, bracing, and other work within the cofferdam shall be done in a manner to avoid disturbing any construction of the new work. Any movement or bulging which may occur shall be corrected by the Contractor so as to provide the necessary clearances and dimensions for the new work.
6. Drawings of the cofferdams, sheeting and bracing, and design computations shall be submitted to the Engineer for information; and construction shall not be started until such drawings are received. The drawings and computations shall be prepared and sealed by a Professional Engineer registered in North Carolina; and shall be in sufficient detail to disclose the method of operation for each of the various stages of construction, if required, for the completion of the new work substructures.
7. Sheeting and bracing requirements are further defined in OSHA Standards, Subpart P, Part 1926 of the Code of Federal Regulations.

C. Moveable Earth Retaining Devices

1. The Contractor may, at his option, use moveable earth retaining devices (trench boxes) to stabilize excavations for pipes where these devices can be effectively used. Moveable earth retaining devices shall not be considered as a substitute for sheeting systems specifically called out on the drawings.

2. Trench box interior widths shall be at least four feet wider than the outside diameter of the gravity sewer main pipe and force main to permit space for exterior jointing and compaction of pipe bedding. The lower edges of trench boxes shall not be deeper than the mid-diameter of the pipe.
3. Trench boxes that are not commercial product provided by a firm regularly engaged in the production of such equipment shall be designed by a Professional Engineer Registered in North Carolina. Design drawings and computations for non-commercial trench boxes shall be submitted to the Engineer for information prior to construction.

1.5 EXCAVATION DEWATERING

- A. Structures, casings, and pipes may be constructed below the natural groundwater table and adjacent streams. The Contractor shall construct and place all pipes, concrete structures, structural fill, and crushed stone bedding in-the-dry. The Contractor shall maintain the subsurface water level a minimum of three (3) feet below subgrade at all times unless otherwise specified in the geotechnical report. For purposes of this Contract, "in-the-dry" is defined as no free water inside the excavation. Dewatering operations shall comply with applicable permits and erosion and sedimentation control requirements.
- B. The Contractor shall, at all times during construction, provide and maintain proper equipment and facilities to lower the groundwater table below the excavation, to remove promptly and dispose of properly all ground and rain water entering excavations, and to keep such excavations dry so as to obtain a satisfactory undisturbed sub-grade foundation condition until the fill, structure, or pipes to be built thereon have been completed to such extent that they will not be floated or otherwise damaged by allowing water levels to return to natural elevations. All excavations shall be diked and ditched so as not to permit the entry of any surface drainage water.
- C. Pipes, casings, and structures shall not be installed in water or submerged within 24 hours after being placed. Water shall not flow over new concrete within four (4) days after placement. Pipes not meeting this requirement shall not be paid for, and shall be removed and reinstalled when the excavation is dry and stabilized as directed by the Engineer.
- D. In no event shall water rise to cause unbalanced pressure on structures until the concrete or mortar has set at least 24 hours. The Contractor shall prevent flotation of pipes by promptly placing and compacting backfill to project specifications.
- E. Dewatering shall at all times be conducted in such a manner as to preserve the natural undisturbed bearing capacity of the sub-grade soils at the proposed bottom of the excavation.
- F. The Contractor shall furnish all materials and equipment and perform all work required to install and maintain the drainage systems he proposes for handling groundwater and surface water encountered during construction of structures, pipes, and compacted fills.

- G. The Contractor shall provide for the disposal of the water removed from the excavation in such a manner as shall not cause erosion, siltation, or turbidity increases in any water course; injury to public health; degradation or damage to private or public property or to any portion of the work completed or in progress, or to roads and streets; or cause any impediment to the reasonable use of the site by others.
- H. The Contractor shall be responsible for correcting any disturbance to natural bearing soils or damage to structures caused by an inadequate dewatering system or by interruption of the continuous operation of the system as specified.

1.6 RELATED SECTIONS

- A. Section V – Special Conditions – Special Provision Detail Sheets for property owner fill requirements (reproduced below for reference).
 - 1. Per Wild River Corp (Parcel 9642-29-9794) Special Provisions Detail Sheet:
 - a) “MSD Contractor must inform OTCO if any fill dirt will be used so that they can review the source and approve its use. MSD Contractor to go through Adam.wallace@sierranevada.com.”

PART 2 – PRODUCTS

2.1 MATERIALS

- A. General:
 - 1. Compaction Standards:
 - a. Structural areas and roadways: 95% of the maximum dry density as determined by ASTM D1557 (Modified Proctor).
 - b. General trench backfill: 95% of the maximum dry density as determined by ASTM D698 (Standard Proctor)
 - c. Top 6 inches under pavement or gravel driving surfaces: 100% of the maximum dry density as determined by ASTM D1557 (Modified Proctor).
 - d. Structural fill areas include, but are not limited to, access roads, gravel site areas, retaining wall backfill, equipment pads, and area support structures.

In case of conflict, the more stringent compaction requirement shall govern.

- 2. Materials for use as imported fill and backfill shall be as described below. For each material, the Contractor shall notify the Engineer of the source of the material and, if requested, shall submit laboratory analyses or other certification of the material.

3. All timber, structural steel, and steel sheet piling used for the supporting systems, whether new or used, shall be sound and free from defects that may impair their strength.
 4. Concrete shall conform to ASTM C33 and ASTM C150 unless otherwise approved.
 5. Structural steel shall conform to ASTM A36 or ASTM A252 unless approved otherwise. If steel is used, no members with permanent deformations are to be provided.
 6. All timber shall be structural grade with a minimum allowable flexural strength of 1100 psi.
 7. Steel sheet piling shall conform to ASTM A328 or ASTM A572 unless approved otherwise.
 8. Use soils free of organic matter, refuse, rocks and lumps greater than six inches in diameter, and other deleterious matter.
- B. Embedment Materials: For the purpose of this specification, soils to be used as embedment materials are grouped into five classes according to soil properties and characteristics. Where a conflict exists between ASTM D698 and AASHTO T-180, the more restrictive requirement shall govern unless otherwise directed by the Engineer.
1. Class I – Crushed stone bedding shall consist of well graded angular stone material meeting the requirements of ASTM D448 size No. 67.
 2. Class II – Coarse sands and gravels with maximum practical size of 44 mm (1-1/2 inch), including variously graded sands and gravels containing small percentages of fines, generally granular and non-cohesive, either wet or dry. Soil Types GW, GP, SW, and SP are included in this class.
 3. Class III – Fine sand and clayey gravels, including fine sands, sand-clay mixtures, and gravel-clay mixtures. Soil Types GM, GC, SM, and SC are included in this class.
 4. Class IV – Silt, silty clays, and clays, including inorganic clays and silts of medium to high plasticity and liquid limits. Soil Types MH, ML, CH, and CL are included in this class. These materials are not recommended for bedding, haunching, or initial backfill.
 5. Class V – This class includes the organic soils, OL, OH, and PT, as well as soils containing frozen earth, debris, rocks larger than 40 mm (1-1/2 inches) in diameter, and other foreign materials. These materials are not recommended for bedding, haunching, or initial backfill.
- C. Topsoil: Natural, friable soil free of subsoil, stumps, rocks larger than 2 inches in diameter, weeds, and other material detrimental to plant growth.

- D. Fill Beneath Pavement: Fill material used beneath pavement and for road shoulders shall be Class II or III.
- E. General Fill: General fill material not otherwise specified shall be Class II or III.
- F. Select Backfill: Select Backfill shall consist of Class I, Class II, or approved Class III material meeting the requirements of this Section and approved by the Engineer for replacement of unsuitable soils. Select Backfill furnished under Bid Item 14 shall be used only where directed by the Engineer.

2.2 STONE AND BRICK

- A. Granular Bedding Material:
 - 1. All bedding material shall be angular, clean washed crushed stone graded in accordance with Size #67 in ASTM D-448 for "Standard Sizes of Coarse Aggregate" (NCDOT Standard Size #67).
 - 2. Bedding material will be used only as instructed in the Specifications and/or as specifically directed by the Engineer.
- B. Stone Stabilization Material:
 - 1. All stone stabilization material shall be angular, clean washed crushed stone graded in accordance with standard sizes #467 in ASTM D-448 (NCDOT Standard Size #467M).
 - 2. Stabilization material will be used only as instructed in the specifications and/or as specifically directed by the Engineer.
- C. Silt Check Dam Material:
 - 1. Shall be coarse angular, clean washed crushed stone, gravel, or rock, well graded, and ranging in sized from 2-inch through 6-inch, (NCDOT stone for erosion control Class A).
- D. Rip Rap:
 - 1. All rip rap shall consist of clean field stone or rough unhewn quarry stone, resistant to the action of air and water, varying in weight from 25 to 250 pounds with 60% weighing a minimum of 100 pounds each and no more than 5% weighing less than 50 pounds each, (see details for specific rip rap to be placed). Rip Rap will be placed from a minimum of 4.0 feet below the toe of the bank to top of the bank in areas determined by field conditions. Rip rap thickness shall be 1 ½ times the diameter of the largest stones used, or 2.0 feet, whichever is greater.
- E. Brick:
 - 1. Brick shall be clay or shale brick meeting the requirements of ASTM C-62 for Grade SW, except as otherwise provided below.

2. Brick shall be of uniform standard commercial size, with straight and parallel edges and square corners. They shall be burned hard and entirely true, free from injurious cracks and flaws, tough, strong, and shall have a clear ring when struck together. The sides, ends and faces of all brick shall be plane surfaces at right angles and parallel one to the other.
3. Concrete brick may be used in lieu of clay or shale brick for adjustment of water meter vaults and/or water valve vaults. Concrete brick shall meet the requirements of ASTM C-55 for Grade S-II except that the absorption of brick used in minor drainage structures shall not exceed 10 lbs./ft.

PART 3 – EXECUTION

3.1 GENERAL REQUIREMENTS

- A. Commence excavations only after shop drawings have been reviewed and accepted by the Engineer.
- B. Methods of construction for excavations shall be such as to ensure the safety of the Work, Contractor's employees, Engineer and Owner's employees and inspectors, the public, and adjacent property and improvements, whether public or private.
- C. Before beginning construction at any location of this project, adequately protect existing structures, utilities, trees, shrubs, and other existing facilities. Design excavation support systems to limit deformations that could damage facilities including utilities and structures. The repair of or compensation for damage to existing facilities shall be at no additional cost to the Owner.
- D. As a minimum, place fencing, gates, lights, and signs as necessary around the excavations and staging areas to provide for public safety.
- E. Excavations shall provide adequate working space and clearance for the work to be performed therein, and for installation and removal of concrete forms, trench boxes, sheeting, bracing, or shoring. In no case shall excavation faces be undercut for extended footings.
- F. Subgrade surfaces shall be clean and free of loose material of any kind when concrete is placed thereon.
- G. Except where exterior surfaces are specified to be damp-proofed, monolithic concrete manholes and other concrete structures, or parts thereof, which do not have footings and extend beyond the outside face of exterior walls, may be placed directly against excavation faced without the use of outer forms, provided that such faces are stable, and also provided that a layer of 10-Mil polyethylene film is placed between the earth and the concrete.
- H. Backfilling and construction of fills and embankments during freezing weather shall not be done except by permission of the Engineer. No backfill, fill, or embankment materials shall be installed on frozen surfaces, nor shall frozen materials, snow, or ice be placed in any backfill, fill, or embankment.

- I. Conduct all shaft and tunnel construction work, including excavation, shoring, temporary facilities, materials storage, and construction traffic within construction easements established for the project. All work shall be in accordance with the applicable permits.
- J. If unstable material is encountered during excavation, all necessary measures shall be taken immediately to contain it in place and prevent ground displacement.
- K. A concrete working mat shall be constructed in sending pits as needed.
- L. Excavations shall be kept free of water at all times and a stable subgrade shall be maintained. Excavations shall be dewatered in accordance with the project specifications. Where pit dewatering is required, a drainage layer shall be provided under the concrete mat.
- M. All welding shall conform to the applicable provisions of ANSI/AWS D1.1.
- N. Excavated materials suitable for reuse shall be utilized in the Work where practical, subject to approval by the Engineer.
- O. Maximum trench width at pipe springline shall not exceed the limits assumed in pipe design or manufacturer recommendations without approval of the Engineer.

3.2 EXCAVATION AND TRENCHING WORK IN WETLANDS

- A. The construction corridor shall be limited to widths shown on the Drawings within or immediately adjacent to any areas identified as wetlands
- B. Wetlands shall incur no change in preconstruction contours.
- C. The top 6" to 12" of trench shall be backfilled with topsoil.
- D. All excess material is removed to upland areas or off-site.

3.3 SITE PREPARATION

- A. All sites to be occupied by permanent construction or embankments shall be cleared of all logs, trees, roots, brush, tree trimmings, and other objectionable materials and debris. All stumps shall be grubbed. Subgrades for fills and embankments shall be cleaned and stripped of all surface vegetation, sod, and organic topsoil. All waste materials shall be removed from the site and disposed of by and at the expense of the Contractor.
- B. All pipeline rights-of-way shall be cleared of all logs, trees, roots, tree trimmings, and stumps. All such materials shall either be hauled away and disposed of in an approved manner, or ground or chipped onsite; and placed in areas approved by the ENGINEER.
- C. Remove sod and grass before stripping topsoil.

- D. Strip topsoil to depth of 6 inches in a manner to prevent intermingling with underlying subsoil or other waste materials.
- E. Stockpile topsoil away from edge of excavations without intermixing with subsoil. Grade and shape stockpiles to drain surface water. Cover to prevent windblown dust and erosion by water.

3.4 UNAUTHORIZED EXCAVATION

- A. Except where otherwise authorized, indicated, or specified, all materials excavated below the bottom of concrete walls, footings, slabs on grade, and foundations shall be replaced, by and at the expense of the Contractor, with concrete placed at the same time and monolithic with the concrete above.
- B. Where trenches for pipelines are excavated below the depths shown or required, all such areas shall be backfilled to subgrade using Class I granular materials as specified in Part 2 of this specification.
- C. Over-excavation resulting from Contractor means and methods shall be at Contractor's expense. Over-excavation required due to unsuitable subsurface conditions may be eligible for an equitable adjustment.

3.5 DEWATERING

- A. The Contractor shall provide and maintain adequate dewatering equipment to remove and dispose of all surface and ground water entering excavations, trenches, or other parts of the work. Each excavation shall be kept dry during subgrade preparation and continually thereafter until the structure to be built, or the pipe to be installed therein, is completed to the extent that no damage from hydrostatic pressure, flotation, or other cause will result.
- B. Dewatering for trench excavation shall utilize well-points, sumps and dewatering pumping, or other means selected by Contractor to maintain water in trenches below the subgrade elevations shown on the drawings. Failure to employ effective dewatering methods which result in unstable trench conditions shall not entitle Contractor to any additional compensation to correct this situation and to remove and replace unstable materials with Class I granular materials, or for proper disposal of such unstable materials.
- C. All excavations for concrete structures or trenches which extend down to or below groundwater shall be dewatered by lowering and Maintain groundwater a minimum of 3 feet below the bottom of excavation or as required by the geotechnical report, whichever is more restrictive.
- D. Surface water shall be diverted or otherwise prevented from entering excavated areas or trenches to the greatest extent practicable without causing damage to adjacent property. The Contractor shall be responsible for the condition of any pipe or conduit which he may use for drainage purposes, and all such pipes or conduits shall be left clean and free of sediment.

- E. Direct discharge of groundwater from trenches into surface water courses shall comply with all requirements of the North Carolina Department of Health & Environmental Control and the approved Sediment and Erosion Control Permit.
- F. Contractor is responsible for dewatering system performance; however, differing site conditions related to groundwater may be addressed per General Conditions.

3.6 SHEETING AND SHORING

- A. Except where banks are cut back on a stable slope, excavation for structures and trenches shall be sheeted, braced, and shored as necessary to prevent caving or sliding.
- B. Install steel sheet piling with the minimum embedment depths as shown on the shop drawings.
- C. Drive in plumb position with each sheet pile interlocked with adjoining piles for its entire length so as to form a continuous diaphragm throughout the length of each run of wall, bearing tightly against original ground. Exercise care in driving so that interlocking members can be extracted without damaging adjacent structures or utilities. The methods of driving, cutting, and splicing shall conform to the shop drawings.
- D. Use templates or other temporary alignment facilities to maintain piling line.

3.7 INTERNAL BRACING SUPPORT SYSTEM

- A. The internal bracing support system shall include wales and struts.
- B. Provide wales and struts as needed to enable them to carry maximum design load without distortion or buckling.
- C. Include web stiffeners, plates, or angles as needed to prevent rotation, crippling, or buckling of connections and points of bearing between structural steel members. Allow for eccentricities caused by field fabrication and assembly.
- D. Install and maintain all bracing support members in tight contact with each other and with the surface being supported.
- E. Coordinate excavation work with installation of bracing. Excavation shall extend no more than 2 feet below any brace level prior to installation of the bracing.
- F. Use procedures that produce uniform loading of bracing member without eccentricities or overstressing and distortion of members of system.

3.8 STABILIZATION

- A. Sub-grades for concrete structures and trench bottoms shall be firm, dense, and thoroughly compacted and consolidated; free from mud and muck; and sufficiently stable to remain firm and intact under the feet of the workmen.

- B. Subgrades for concrete structures or trench bottoms, which are otherwise solid but which become mucky on top due to construction operations, shall be reinforced with one or more layers of crushed rock or gravel. The stabilizing material shall be spread and compacted to a depth of not more than four inches. If the required depth exceeds four inches, the material shall be furnished and installed as specified for granular fills. Not more than ½ inch depth of mud or muck shall be allowed to remain on stabilized trench bottoms when the pipe bedding material is placed thereon.
- C. The finished elevation of stabilized subgrades for concrete structures shall not be above subgrade elevations indicated on the drawings.

3.9 ALIGNMENT, GRADE, AND MINIMUM COVER

- A. The alignment and grade or elevation of each pipeline shall be fixed and determined from offset stakes. Vertical and horizontal alignment of pipes, and the maximum joint deflection used in connection therewith, shall be in conformity with requirements of the section covering installation of pipe.
- B. Where pipe grades or elevations are not definitely fixed by the contract drawings and specifications, trenches shall be excavated to a depth sufficient to provide a minimum depth of backfill cover over the top of the pipe of 48 inches in other locations. Greater pipe cover depths may be necessary on vertical curves, or to provide necessary clearance beneath existing pipes, conduits, drains, drainage structures, or other obstructions encountered at normal pipe grades. Measurement of pipe cover depth shall be made vertically from the outside top of pipe to finished ground or pavement surface elevation, except where future surface elevations are indicated on the drawings.

3.10 TRENCH EXCAVATION

- A. No more trench shall be opened in advance of pipe laying than is necessary to expedite the work. Unless otherwise shown, one block or 400 feet (whichever is the shorter) shall be the maximum length of open trench on any line under construction.
- B. Except where tunneling is indicated on the drawings, is specified, or is permitted by the Engineer, all trench excavation shall be open cut from the surface.
- C. Maximum open trench length shall not exceed 400 feet unless otherwise approved by the Engineer.
- D. When practical, the banks of the trenches shall be cut in vertical, parallel planes equidistant from the pipe center line. When vertical banks for trench excavation are not practical to construct or create dangerous conditions to workmen, the banks may be sloped, provided that such excavation does not endanger or damage adjacent structures or properties. When trench banks are sloped, the portion of the trench that is below the level of 12 inches above the top of the pipeline shall be cut to vertical planes as specified above. The sides of the remaining portion of the trench shall be graded to a slope which is sufficient to

produce a stable embankment or stabilized with mechanical reinforcement. Over-depth excavation shall be backfilled with #67 clean stone.

- E. Trench to the lines and grades shown on the drawings. Where elevations are not shown, trench to a depth sufficient to provide at least 48 inches of cover above the top of pipe, unless otherwise specified. Grade trenches to provide a constant slope free of sags and high spots.
- F. Trenches shall be excavated to a width which will provide adequate working space and sidewall clearances for proper pipe installation, jointing, and embedment. The horizontal distance between such planes, or the overall width of trench, shall not be less than 12 inches on either side of the nominal diameter of the pipe but in no case less than 3 feet, unless shown otherwise on the Plans.
- G. Cutting trench banks on slopes to reduce earth load to prevent sliding and caving shall be done only in areas where the increased trench width will not interfere with surface features or encroach on right-of-way limits.
- H. Properly brace, sheet, and support trench walls in strict conformance with all pertinent laws and regulations. Provide adequate bracing and shoring to protect adjacent improvements.
- I. Where trench boxes are employed by the Contractor, the width of the trench shall be increased as necessary to provide minimum clearances listed in Section 02221 Paragraph 1.3.C.
- J. Pipe barrel OD shall be measured at the midpoint between the ends. Where "profile" pipe is installed, the OD shall be the larger outside dimension.

3.11 STRUCTURAL EXCAVATION

- A. Excavation for structures shall be sufficiently large for the proper placing of forms and concrete and for dewatering purposes, but shall not be excessively large in horizontal area. Banks may be sloped at a safe angle provided that such excavation does not endanger or damage existing or proposed structures, pipelines, etc. The bottom of the excavation shall be true to the required shape and elevations shown on the plans. No earth backfilling will be permitted under structures unless specifically shown on the plans. Should the Contractor excavate below the elevations shown or specified, he shall fill the void made with thoroughly compacted Class I pipe embedment materials or with Class B concrete at his own expense.
- B. When muck, quicksand, soft clay, organic matter, soils with excessive moisture content or other material unsuitable for foundations are encountered within the limits of the excavation or which extend beyond the limits of the excavation, such materials shall be removed as directed by the Engineer and replaced with Select Backfill, crushed stone or Class B concrete as directed by the Engineer.

Undercut and replacement of unsuitable material below the planned bottom of structure excavation, when directed or approved by the Engineer, shall be

measured and paid for under Bid Item 14, Undercut and Replace Unsuitable Material with Select Backfill.

Only unsuitable material excavated and removed below the planned bottom of excavation and the corresponding replacement volume shall be eligible for payment.

No separate payment shall be made for replacement of excavated material determined to be unsuitable for reuse as ordinary backfill, imported backfill required by the Contract Documents, or undercut resulting from inadequate dewatering, over-excavation, or Contractor means and methods.

- C. In all cases where materials are deposited along open excavation, they shall be placed so that in the event of rain, no damage will result to the work or adjacent property.

3.12 MECHANICAL EXCAVATION

- A. The use of mechanical equipment will not be permitted in locations where its operation would cause damage to trees, building, culverts, or other existing property, utilities, or structures above or below ground. In all such locations, hand excavating methods shall be used.
- B. Mechanical equipment used for trench excavation shall be of a type, design, and construction, and shall be so operated and that trench alignment is such that pipe when accurately laid to specified alignment will be centered in the trench with adequate clearance between the pipe and sidewalls of the trench. Undercutting the trench sidewall to obtain clearance will not be permitted.

3.13 CUTTING CONCRETE SURFACES AND PAVEMENT

- A. Cuts in concrete and asphalt pavements shall be no larger than necessary to provide adequate working space for proper installation of pipe and appurtenances. Cutting shall be started with a concrete saw in a manner which will provide a clean groove at least 1-1/2 inches deep along each side of the trench, and along the perimeter of cuts for structures.
- B. Pavement over trenches excavated for pipelines shall be removed so that a shoulder not less than 12 inches in width at any point is left between the cut edge of the pavement and the top edge of the trench. Trench width at the bottom shall not be greater than at the top, and no undercutting will be permitted. Pavement cuts shall be made to and between straight or accurately marked curved lines which, unless otherwise required, shall be parallel to the centerline of the trench.
- C. Pavement removed for connections to existing lines or structures shall not be of greater extent than necessary for the installation.
- D. Where the trench parallels the length of concrete walks and the trench location is all or partially under the walk, the entire walk shall be removed and replaced.

Where the trench crosses drives, walks, curbs, or other surface construction, the surface construction shall be removed and replaced between existing joints or between saw cuts as specified for pavement.

3.14 REMOVAL AND RESTORATION OF PAVEMENT AND ROAD SURFACES

- A. All removal and restoration of pavement and road surfaces will be in accordance with the specifications approved by MSD or the North Carolina Department of Transportation, Division of Highways, whichever applies.
- B. All restored bituminous and concrete pavements shall be constructed in accordance with the pavement replacement detail in the plans. Restored pavement will in all instances be flush and level with existing pavement at the sawed edges, and at existing gutter lines where applicable unless otherwise approved by the Engineer. When pavement repairs do not meet the above criteria or are not performed in a workmanship manner as determined by the Engineer, MSD, or North Carolina Department of Transportation, whichever applies, the contractor will remove and re-perform the restoration as specified.
- C. When cuts are to be made in street rights-of-way, the Contractor shall contact the appropriate owner of the right-of-way or his designated representative before each separate pavement cut is made and secure a permit if not covered under permits obtained by MSD.
- D. Pavement will be replaced as follows. In all pavement cuts either the permanent pavement or a temporary pavement consisting of 1"-1 1/2" of black asphaltic concrete (later to be replaced permanently) will be placed immediately upon completion of the subgrade unless otherwise approved by the Engineer.
 - 1. Specifications for Cutting Pavement:
 - a. Unless otherwise approved or required, concrete pavement shall be removed to the nearest expansion or contraction joint. The Contractor will contact MSD and/or D.O.T.'s District Engineer for a determination of the limits of concrete replacement and location of joints. Where sawed joints are allowed, the depth of the sawed cut shall be at least one (1) inch and shall extend at least 1/5 of the depth of the concrete. More depth may be required if necessary to prevent damage to surrounding pavement.
 - b. Bituminous pavement shall be cut in a smooth and straight line. Sawing is required on asphaltic concrete. The width of pavement left between the edge of the ditch and the existing edge of the pavement or the front line of the gutter, shall be at least 2 feet. Residual strips of pavement less than 2 feet in width must be removed and replaced. Existing pavement shall be removed on each side of the trench for at least 12 inches beyond top of trench
 - c. The Contractor shall remove and replace pavement which, in the opinion of the Engineer, has been cracked or displaced by the operation of the Contractor.

2. Specification For Restoring Concrete Pavement: The concrete used to restore pavement shall have a minimum 28 day compressive strength of 3600 P.S.I. The concrete as placed shall conform to the shape, grade, and finish of the existing pavement and will be one (1) inch deeper than the original pavement including base, but in no instance less than six (6) inches.
3. Specification For Restoring Asphalt Pavement:
 - a. All material above the sub-base level shall be hot-mix bituminous concrete conforming to North Carolina Department of Transportation Standard Specifications for Roads and Structures for both mix design and placement, as shown on the plans.
 - b. The asphalt pavement as placed shall be in accordance with the pavement replacement detail shown on the plans. The asphalt shall be placed in lifts not greater than 2 inches and shall be hot mix bituminous concrete binder as shown on the plans. Asphalt pavement resurfacing will be placed with paving machines and/or rollers of a size and type currently approved by the North Carolina Department of Transportation for use on resurfacing contracts.
 - c. If a bituminous surfacing overlays a concrete base, the Contractor, at the option of the Engineer, shall replace the concrete to its original thickness, or to a level 2 inches below the finished surface. The Engineer may direct the Contractor to omit all concrete and to replace the pavement with bituminous materials.
 - d. Tack coats shall be employed with each lift. Tack coats shall be placed on both horizontal and vertical surfaces (pavement cuts or face of concrete gutters).
 - e. Under normal conditions, asphalt binder will be placed in pavement cuts at the end of each work day. The surface course shall be replaced weekly or within five days following completion of pipeline construction along a continuous section of pavement. During inclement weather, the Engineer may permit the use of temporary asphalt (cold mix) to seal the trench until permanent asphalt can be placed.
 - f. Thermoplastic marking shall conform to the NCDOT Standard Specifications for Roads and Structures and the work will be performed in accordance with Div 12 of the standard specifications.

3.14 EXCAVATION BELOW PIPE SUBGRADE

- A. Except where otherwise required, pipe trenches shall be excavated per the detail in the plans.

- B. Where rock is encountered, it shall be removed to a depth of six (6) inches or more below the outside of the pipe.
- C. Where rock is excavated below the minimum depths required, voids shall be backfilled with bedding stone at no additional cost.

3.15 ARTIFICIAL FOUNDATIONS IN TRENCHES

- A. Whenever unsuitable or unstable soil conditions are encountered, trenches shall be excavated in pipeline trenches, trenches shall be excavated below grade, and the trench bottom shall be brought to embedment grade with Select Backfill, Class I material, or other material approved by the Engineer.

Undercut and replacement of unsuitable material below the planned trench bottom, when directed or approved by the Engineer, shall be measured and paid for under Bid Item 14, Undercut and Replace Unsuitable Material with Select Backfill.

Except where compensated under Bid Item 14, Undercut and Replace Unsuitable Material with Select Backfill, trench stabilization, bedding, haunching, embedment, and backfill shall be incidental to the applicable pipeline installation item.

- B. Pipe foundation material shall be quarry run crushed limestone or granite ranging in size from fines to a maximum size of 3 inches. The material shall be power tamped in 6-inch layers.
- C. Unstable conditions resulting from inadequate dewatering practices shall be corrected by the Contractor; and no additional payment, including payment for additional beddings store will be provided.

3.16 BELL HOLES

- A. Bell holes shall provide adequate clearance for tools and methods used in installing pipe. No part of any bell or coupling shall be in contact with the trench bottom, trench walls, or granular embedment when the pipe is jointed.
- B. Bell holes shall be excavated in rock as described above.

3.17 BEDDING, HAUNCHING, AND BACKFILL

- A. Tamp subgrade to provide firm, even bedding. Excavate trenches as detailed in the Drawings. Place bedding and haunching material so as to provide full bearing around the bottom of the pipe. Place bedding, haunching, and backfill as specified below.
- B. All backfill shall be of a non-plastic nature free from roots, vegetative matter, waste, construction material, or other objectionable material. Rock material up to 6-inches in largest dimension shall be acceptable as trench backfill. Excavated rock material greater than 6-inch, shall be disposed of offsite by the Contractor. Rock shall not exceed 10% of the fill material, and shall not be placed within 2-

feet of the pipeline or within 2-feet of finish grade. Backfill material shall be capable of being tamped by mechanical tamps using relatively low velocity and heavy blows. The material shall have no tendency to flow or behave in a plastic manner under the tamping blows. Material deemed by the Engineer as unsuitable for backfill shall be removed from the job site before backfilling operations begin.

- C. Replacement of Wet or Unsuitable Material: When the Engineer determines that the material excavated from the trench is unsuitable for backfill because of the material type or because it contains excessive debris, rock, or organics, it shall be removed from the project and replaced with a backfill material approved by the Engineer. When the moisture content of an otherwise suitable material is too high to achieve specified compaction, as determined by moisture content and density test, the Contractor shall replace the material as necessary to fulfill backfill requirements. The wet material may be dried to optimum moisture content and used for backfill in subsequent phases of the project. Should an otherwise suitable material be found too dry to achieve compaction requirements, water may be added to the material to raise the moisture content to optimum. Borrow material placed at the direction of the Engineer shall be clean earth at optimum moisture content, Concord (pit) gravel or ABC stone.

When unsuitable material is removed below the planned excavation bottom at the direction of the Engineer, the excavation and replacement volume shall be measured and paid for under Bid Item 14, Undercut and Replace Unsuitable Material with Select Backfill.

Replacement of excavated material determined unsuitable for use as ordinary backfill without additional undercut below the planned excavation bottom shall remain subsidiary to the applicable contract items.

- D. Backfilling of Trenches: Trenches shall be backfilled immediately after the pipe is laid. Backfill around pipe and to an elevation of one (1) foot above the pipe bell shall be done only by hand and in layers not exceeding six (6) inches with every layer thoroughly tamped. Successive layers of backfill shall be compacted in place as specified below.

Should water rise in an unbackfilled ditch after the pipe has been placed, the Engineer may require the Contractor to remove the pipe, muck the trench and relay the pipe using Type II or Type III granular bedding.

1. Backfill of trenches within gravity sewer main and force main rights-of-way: Trenches excavated outside existing roadway and railway right-of-way may be backfilled, above the initial one (1) foot, by mechanical means in layers up to twelve (12) inches thick, unless otherwise approved by the Engineer.
2. Backfill of trenches within road and railway rights-of-way: Trenches excavated within existing road and railway rights-of-way shall be backfilled in layers not to exceed (6) inches and layer must be thoroughly tamped.

- E. Compaction for pipeline and structure excavations shall be attained by the use of mechanical tamps. Each layer of backfill shall be placed loose and thoroughly compacted in place. Heavy rollers, vehicles, or other equipment shall not be used for compacting backfill nor allowed to cross over completed work except at points adjudged capable of adequately protecting the pipeline. Pneumatic tamps, ram type tamps, or vibrating tamps with sheepsfoot rollers will be required to meet the specifications of "Mechanical Tamp."
1. Where excavation has been made within the limits of easements across private property, the top 1 foot of backfill material shall consist of fine loose earth free from large clods, vegetative matter, debris, stones, and/or other objectionable materials. Backfill material shall be carefully placed and compacted not less than 85% Standard Proctor.
- Compaction within road, access road, gravel site, and railway areas: All trench backfill within roadway, access road, gravel site, and other structural fill areas shall comply within the compaction requirements specified under Part 2- Materials, Compaction Standards.
- F. Backfill the remainder of the trench with soils free of organic matter, refuse, rocks and lumps greater than four inches in diameter, and other deleterious matter compacted to a minimum 95% ASTM D698 density. Rock material no larger than 4-inches will be acceptable as trench backfill on pipelines. Rock shall not exceed 10% of the fill material and shall not be placed within 2' of the pipeline or within 2' of finish grade. Excavated rock materials greater than four inches within street rights-of-way shall be disposed of offsite by the Contractor.

3.18 PROTECTION OF UTILITIES

- A. The Contractor shall locate and protect all utilities which could be affected by the work, including but not limited to overhead cables, poles, buried cables, wastewater pipes, gas pipes, water pipes, and drainage pipes and appurtenances. Before working in any area, the Contractor shall contact the local utility locating service to mark the locations of underground utilities. Any underground utilities which could interfere with the work shall be staked and flagged.
- B. Underground pipes and cables which cross the excavations shall be carefully exposed and temporarily supported from overhead beams furnished by the Contractor to the satisfaction of the utility owner. The utility shall be carefully incorporated in the backfill with full support and protection. Should any utilities need to be relocated, the Contractor shall discuss the situation in a meeting with the Engineer and utility owner.
- C. Before operating any equipment near a buried Duke Energy Company or other local provider overhead electric cable, the Contractor shall contact Duke Energy Company to arrange for protection of the cable and the Contractor's personnel and equipment. Compliance with Duke Energy Company's or other local provider conditions shall be considered a subsidiary obligation under the contract. The Engineer shall be invited to attend all meetings with Duke Energy Company or other local provider for information only.

- D. At least 48 hours prior to operating any equipment near a buried gas pipeline, the Contractor shall contact Enbridge. Compliance with Enbridge's conditions shall be considered a subsidiary obligation under the Contract. The Engineer shall be invited to attend all meetings with Enbridge for information only.
- E. Contractor shall comply with local utility locating requirements (e.g., 811 call system).

3.19 TESTS

- A. All tests to ensure that embedment, fill, and backfill materials and their placement comply with specified requirements, shall be made by an independent testing laboratory approved by the Owner, as required by the Engineer.
- B. Contractor to correct areas that do not meet requirements at no cost to Owner and pay for costs to retest.

3.20 DRAINAGE MAINTENANCE

- A. Trenches across roadways, driveways, walks, or other trafficways adjacent to drainage ditches or water shall be constructed on the upstream side of the trafficway to prevent impounding water after the pipe has been laid. Bridges and other temporary structures required to maintain traffic across such unfilled trenches shall be constructed and maintained by the Contractor. Backfilling shall be done so that water will not accumulate in unfilled or partially filled trenches. All material deposited in roadway ditches or other water courses crossed by the line of trench shall be removed immediately after backfilling is completed, and the original section, grades, and contours of ditches or water courses shall be restored. Surface drainage shall not be obstructed longer than necessary.

3.21 PROTECTION OF TRENCH BACKFILL IN DRAINAGE COURSES

- A. All surfaces and structures (both public and private) within and adjacent to the construction operations shall be restored to a condition comparable to that existing prior to construction or as specified in the special provisions.
- B. All surplus materials shall be disposed of in a manner acceptable to the Engineer, and the construction area shall be left in a neat condition, with special attention called to proper drainage, smoothness of surface, and general clean up. No machinery or equipment shall be left or stored on the job site after the project is completed.
- C. Where trenches are constructed in ditches or other water courses, backfill shall be protected from surface erosion using erosion control matting and/or sediment logs. Where the grade of the ditch exceeds 1%, sediment logs shall be installed. Do not use concrete ditch checks.
- D. Unless otherwise specified, complete restoration to include fertilizing, seeding, and mulching of any and all areas disturbed during construction shall be completed within 7 days following pipe installation or thirty (30) working days

following the initial ground disturbing activity, whichever comes first. Pay application may be held until Contractor complies with this requirement.

1. Water meters, valve boxes, drain pipes, and other structures encountered shall be reset or relaid to match or clear surface grade and/or gravity sewer main and force main pipe grade as applicable.
2. All shoulder areas shall be restored, stabilized, and maintained to their original condition. Concrete, asphalt, gravel, and dirt walks, drives and roadways are to be replaced to their original shape and serviceability.

The Contractor should note that all existing side streets and drives which are either dirt or gravel will be restored as specified for graveled areas.

3. Refuse Burial: The Contractor shall not bury rock, broken concrete/asphalt, construction material, timber, etc. within the street or gravity sewer main and force main right-of-way.
4. Rip-Rap:
 - a. The Contractor shall place stone rip-rap as specified in those areas subject to severe water action where directed by the Engineer.
 - b. Placement of rip-rap as shown on the Construction Plans shall be considered a guide only, with final determination made at the time of construction by the Engineer. Either the addition or deletion of quantities may be required.
 - c. Stone rip-rap will be placed as indicated on the Standard Details immediately following pipe installation and will be installed no steeper than a 2:1 slope except when specifically approved by the Engineer. Grading will be required as necessary to insure continuous even flow.
 - d. The rip-rap installation shall include all earthwork necessary to stabilize the creek bank and/or culvert outlets and to provide cover for the water line.
5. Erosion Control Matting: The Contractor shall install jute netting or Erosion Control Matting in areas subject to high runoff velocities, areas subject to concentrated runoff and on steep slopes as shown on the plans and/or as directed by the Engineer.

3.22 DISPOSAL OF EXCESS EXCAVATED MATERIALS

- A. Except as otherwise permitted, all excess excavated materials shall be disposed of away from the site of the work at a suitable and properly permitted disposal site. Broken concrete and other debris resulting from pavement or sidewalk

removal, excavated rock, debris encountered in excavation work, and other similar waste materials shall be disposed of away from the site of the work.

- B. All excess excavated materials resulting from construction of bedding, haunching, and initial backfill and pipe installation, from construction of manholes or other structures, or from correction of unstable or unsuitable trench conditions, shall be hauled from the site and disposed of by the Contractor at a properly permitted disposal site.
- C. Material wasted on sites designated on the plans shall be carefully finished with a drag, blade machine, or other suitable tool to a smooth, uniform surface, without obstructing drainage at any point.
- D. All excess material from wetland areas will be removed to upland areas or off-site by the Contractor. No change in preconstruction contours will be accepted. All wetland work shall comply with approved environmental permits.

3.23 REMOVAL OF SUPPORT SYSTEM

- A. All shoring and temporary construction elements, including soldier piles, sheet piles, wales, struts, lagging, thrust blocks, and concrete working slabs shall be removed from the excavation prior to restoration. Remove the support system in a manner that will not disturb or harm adjacent construction or facilities. Support members that cannot be removed shall be cut off at least 5 feet below finished grade with the approval of the Engineer. No wood shall remain part of the abandoned portion of the work.
- B. All voids created by the removal of the support system shall be immediately filled. The support system removed from the excavation shall remain the property of the Contractor and shall be removed from the site.

3.25 RESTORATION

- A. Furnish, place and compact backfill in all excavations. Restore the work area disturbed by construction activities, and repair any damage caused to existing utilities, to its original, or better condition. Paved areas shall be restored to match existing conditions as approved.
- B. Remove and dispose of all temporary utilities, drainage facilities, temporary fencing, waste materials and surplus materials, and other site development facilities provided by the Contractor following backfilling of the excavation.
- C. Contractor shall remove all gravel, stones and rocks ½ inch and larger from grassed lawns, rights-of-way, and easement areas.

3.26 TOPSOIL

- A. During construction, the top 12 inches of the trench will be backfilled with topsoil excavated from the trench.

- B. For landscaped areas, Topsoil shall be placed to a minimum depth of 4" and shall be ASTM D 5268 topsoil, with pH range of 5.5 to 7, a minimum of 2 percent organic material content, free of stones 2 inches or larger in any dimension and other extraneous material harmful to plant growth.
 - 1. Topsoil source: Reuse surface soil stockpiled on-site. Verify suitability of stockpiled surface soil to produce topsoil. Clean surface soil of roots, plants, sod, stones, clay lumps, and other extraneous material harmful to plant growth.
 - a. Supplement with imported or manufactured topsoil from off-site sources when quantities are insufficient. Obtain topsoil displaced from naturally well-drained construction or mining sites where topsoil occurs at least 4 inches in depth. Do not obtain from agricultural land, bogs, or marshes.

3.27 MAINTENANCE

- A. The Contractor shall be responsible for all settlement of backfill, fills, and embankments which may occur within the correction period stipulated in the General Conditions.
- B. Settlement tolerance: Contractor shall correct any settlement exceeding 0.10 feet within warranty period.
- C. The Contractor shall make, or cause to be made, all repairs or replacements made necessary by settlement within ten days after notice from the Engineer or Owner.
- D. Contractor shall maintain all project areas during the specified warranty period. Maintenance shall include the following:
 - 1. Immediately filling and reseeding any eroded areas.
 - 2. Reseeding any areas where a full stand of grass does not develop.
 - 3. Removal and replacement of any trees which die or show distress.
 - 4. Refilling and reseeding any backfilled areas which settle and develop depressions.

END OF SECTION 02221

BID SCHEDULE**Schedule of Estimated Quantities and Bid Prices**

Item No.	Description	Qty.	Units	Bid	Total
1	Mobilization (3%)	3%	LS		
2	10' Diameter Pre-Cast Submersible Lift Station w/ Grinder (Expandable to Triplex Lift Station)	1	LS		
3	Demolition and Abandonment of Existing Pump Station	1	LS		
4	Manholes				
4a	Demolish and Remove Existing 4' Diameter Gravity Sewer Manhole	1	EA		
4b	Demolish and Remove Existing 5' Diameter Gravity Sewer Manhole	1	EA		
4c	Abandon Existing 5' Diameter Gravity Sewer Manhole	1	EA		
4d	Abandon Existing 4' Diameter Air Release Valve Manhole	6	EA		
4e	Modify Existing Sewer Manhole	1	EA		
4f	Modify Receiving MH 49-23725	1	EA		
4g	Install 4' Diameter Gravity Sewer Manhole	3	EA		
4h	Install 4' Diameter Gravity Sewer Manhole w/ Vent Stack	1	EA		
4i	Install 5' Diameter Gravity Sewer Manhole	2	EA		
4j	Install 5' Diameter Manhole w/ Air Release Valve on 16" HDPE Force Main	2	EA		
5	Gravity Sewer Mains				
5a	Demolish and Remove Existing 24" DIP Gravity Sewer	620	LF		
5b	Abandon Existing 24" PVC Gravity Sewer In Place	230	LF		
5c	Abandon Existing 12" PVC Gravity Sewer In Place	90	LF		
5d	Install 8" PVC Gravity Sewer	30	LF		
5e	Install 12" PVC Gravity Sewer	550	LF		
5f	Install 24" PVC C900 Gravity Sewer	410	LF		
5g	Install 30" DIP Gravity Sewer with Ceramic Epoxy Liner	30	LF		
6	Force Mains				
6a	Abandon Existing 6" DIP Force Main on Bridge	1	LS		
6b	Abandon Existing 6" PVC Force Main at ARV Manholes and Existing Receiving Manhole	1	LS		
6c	Install 16" HDPE Force Main by Open Cut	2,110	LF		
6d	Install 24" HDPE Force Main by Open Cut	20	LF		
6e	Install 24" HDPE Casing w/ 16" HDPE Carrier Pipe Force Main by Horizontal Directional Drill	640	LF		
6f	Install Force Main Bypass Connection	1	LS		
6g	Rock Bore for Horizontal Directional Drill	300	LF		
7	Site Development	1	LS		
8	Access Road	1	LS		

Item No.	Description	Qty.	Units	Bid	Total
9	Retaining Wall	420	LF		
10	Storm Water Installation				
10a	18" Concrete Headwall	1	EA		
10b	24" Concrete Headwall	2	EA		
10c	18" RC Pipe	125	LF		
10d	24" RC Pipe	55	LF		
10e	Concrete Spillway	1	EA		
10f	4' Diameter Storm Water Manhole	1	EA		
10g	Modify Existing Storm Water Manhole	1	EA		
11	Electrical Improvements	1	LS		
12	Erosion Control	1	LS		
13	Trench Rock Excavation	100	CY		
14	Undercut and Replace Unsuitable Material with Select Backfill	250	CY		
15	Instrumentation & Control Integration Allowance	1	AL		\$272,815.00
16	Henderson County Electrical Trade Permit Fee Allowance	1	AL		\$3,500.00
Total Bid Amount (Items 1 – 16)					

Total Written Base Bid Price (Items 1 – 16):

_____ and _____/100 Dollars

ALTERNATE BIDS

Alternate Bid No. 1 – Stainless Steel Wet Well Riser Piping

Provide 316L stainless steel wet well riser piping in lieu of the ductile piping specified within the wet well. Include all materials, fabricated, supports, welding, testing, coatings/passivation, and incidental work required for a complete installation.

Add to Base Bid: \$_____

Total Bid Price (Written Base Bid with Alternate):

_____ and _____/100 Dollars

END OF BID SCHEDULE

LIST OF SUBCONTRACTORS:

The Bidder shall list below the name and the location of the place of business of each subcontractor who will perform work or labor or render service to the prime contractor in or about the construction of the work or improvement, or a subcontractor licensed by the State who, under subcontract to the prime contractor, specially fabricates and installs a portion of the work or improvement according to detailed drawings contained in the Contract Documents, in an amount in excess of one-half of 1 percent of the prime contractor's total bid. The Bidder shall also list below the portion of the work, which will be done by each subcontractor under this Contract. The prime contractor shall list only one subcontractor for each portion as is defined by the prime contractor in its bid.

<u>Work to be Performed</u>	<u>Subcontractor License Number</u>	<u>Percent of Total Contract</u>	<u>Subcontractor's Name & Address</u>
<u>1.</u>			
<u>2.</u>			
<u>3.</u>			
<u>4.</u>			
<u>5.</u>			
<u>6.</u>			

Note: Attach additional sheets if required.

NAMED EQUIPMENT/MATERIAL SUPPLIER LIST:

The Contract Documents are based upon the equipment or products available from the suppliers listed below. Provisions are made in the Contract Documents for alternate suppliers in certain instances whose equipment or products may be deemed equivalent in quality. However, the Bidder must indicate in its Bid which named supplier the Bidder intends to use (in the event an alternate is not accepted) for each item of equipment / material item listed on this form by circling one of the listed Suppliers below for each type of equipment / material noted. Should a Bidder fail to circle a named supplier in any category it hereby agrees to furnish the first supplier listed (denoted by the letter A). Should a Bidder circle more than one named supplier in any category it hereby agrees to furnish the first supplier circled.

Where "or equal" is specified in the technical specifications, the Bidder may write in the proposed "or equal" Supplier name in the "OR EQUAL" SUPPLIER/MATERIAL SUPPLIER LIST (page Bid Schedule -5), but it must nevertheless also circle one of the listed Suppliers below.

If the proposed "or equal" Supplier is not accepted by the Engineer, the Bidder must furnish the circled Supplier as noted above.

<u>Equipment/Material Item</u>	<u>Supplier</u>
HDPE Pipe	
Ductile Iron Pipe	
PVC Pipe	
Manholes	
Pumps	
Grinder	
Sewage Combination Air & Vacuum Valves	
Davit Crane	
Generator	

"OR EQUAL" SUPPLIER/MATERIAL SUPPLIER LIST

The Bidder proposes the following "or equal" Suppliers for the equipment or material categories so identified:

Equipment or Material Item	Alternate Supplier (list one only per item)
1.	
2.	
3.	
4.	
5.	

The acceptance of equipment or materials by the proposed "or equal" Suppliers shall be at the sole discretion of the Owner based on the SUBSTITUTES OR "OR EQUAL" ITEMS requirements of the General Conditions. Note that only one "or equal" Supplier may be proposed per Equipment or Material Item. In the event that the single proposed "or equal" item is not ultimately accepted by the Owner, the Contractor shall furnish the named equipment / material item per the NAMED EQUIPMENT/MATERIAL SUPPLIER LIST.

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Section XIII - Agreement Form

THIS AGREEMENT, made and entered into this the _____ day of _____, 20____, by and between **THE METROPOLITAN SEWERAGE DISTRICT OF BUNCOMBE COUNTY, NORTH CAROLINA**, hereinafter referred to as the DISTRICT and _____ hereinafter referred to as the CONTRACTOR.

WITNESSETH:

That the parties hereto do mutually agree as follows:

1. The CONTRACTOR will furnish all materials, equipment, supplies, tools, power, fuel and services and perform all labor necessary for construction of the pump station replacement, and will construct same in strict conformity with the terms and conditions set forth in the following named documents which are hereto attached and made a part of this contract:

ITT Pump Station Replacement

Notice to Contractors, Instructions to Bidders, Non-Collusive Affidavit, Bid Proposal, Bid Bond, General Conditions, Special Conditions, Performance Bond, Labor and Materials Bond, Technical Specifications, Details and Contract Plans as enumerated and identified in the specifications.

2. The DISTRICT will pay to the CONTRACTOR, on faithful performance of his undertakings hereunder, in lawful money of the United States, the respective unit and/or lump sum prices set forth in the aforementioned bid proposal for each unit of work performed or installed by the CONTRACTOR, the estimated sum total of all payments hereunder being:

_____ (PUT AMOUNT HERE)

3. The DISTRICT will make payments to the CONTRACTOR as specified in Paragraph 14.2 of the General Conditions. In accordance with NCGS 143-134.1 retainage shall be Five Percent (5%) until the project has been satisfactorily Fifty Percent (50%) completed and deemed to be on schedule for completion by the agreed completion date. The DISTRICT will then retain this constant amount, while retaining no further retainage, until the project is one-hundred percent (100%) complete.

Nothing in this section shall be deemed to preclude the DISTRICT from withholding full or partial payment for defective Work or Work that has not been fully completed in accordance with the Project Specifications and the Contract Documents, to the satisfaction of the ENGINEER. The DISTRICT may withhold up to two and one-half (2.5) times the value of any incomplete Work, in accordance with NCGS 143-134.1.

4. Within a period of 30 days after completion of the work and acceptance by the DISTRICT, the DISTRICT will make a final and complete payment in full to the CONTRACTOR on account of this contract; provided that, during said 30 day period, the CONTRACTOR has submitted to the DISTRICT satisfactory written evidence that all payrolls and other costs incurred by the CONTRACTOR in connection with the work have been paid in full and executed "Certificate of Completion" with all submittals; otherwise final payment will be made only after such evidence has been submitted.

5. The CONTRACTOR will commence the work on or as of the date set in a notice from the DISTRICT to proceed with the work, will prosecute same diligently and continuously until completed, and will complete same in conformity with the stated requirements within 600 consecutive calendar days (20 months). Should the work or any separate part thereof be not completed by such time or date, then the CONTRACTOR will pay to the DISTRICT as fixed, agreed and liquidated damages the sum stipulated in the Proposal.

Section XIII - Agreement Form

6. The CONTRACTOR shall be solely and completely responsible for safety at the job site in accordance with Paragraph 6.20 of the General Conditions.

7. As a condition of this contract, CONTRACTOR agrees and warrants and represents that it will comply with the requirements of Article 2 of Chapter 64 of the North Carolina General Statutes. If CONTRACTOR utilizes a subcontractor to perform any part of the work included in the Contract, CONTRACTOR shall require the subcontractor to comply with the requirements of Article 2 of Chapter 64 of the North Carolina General Statutes.

IN WITNESS WHEREOF, the parties have executed this contract on the day and date first above written in three (3) original counterparts.

WITNESS:

M.S.D. OF BUNCOMBE COUNTY, N.C.

(SEAL)

By _____

**Thomas E. Hartye, P.E.
GENERAL MANAGER**

WITNESS:

CONTRACTOR'S NAME HERE

(Proprietorship or Partnership)

By _____

Title _____

CERTIFICATE OF SECRETARY
OF CORPORATION:

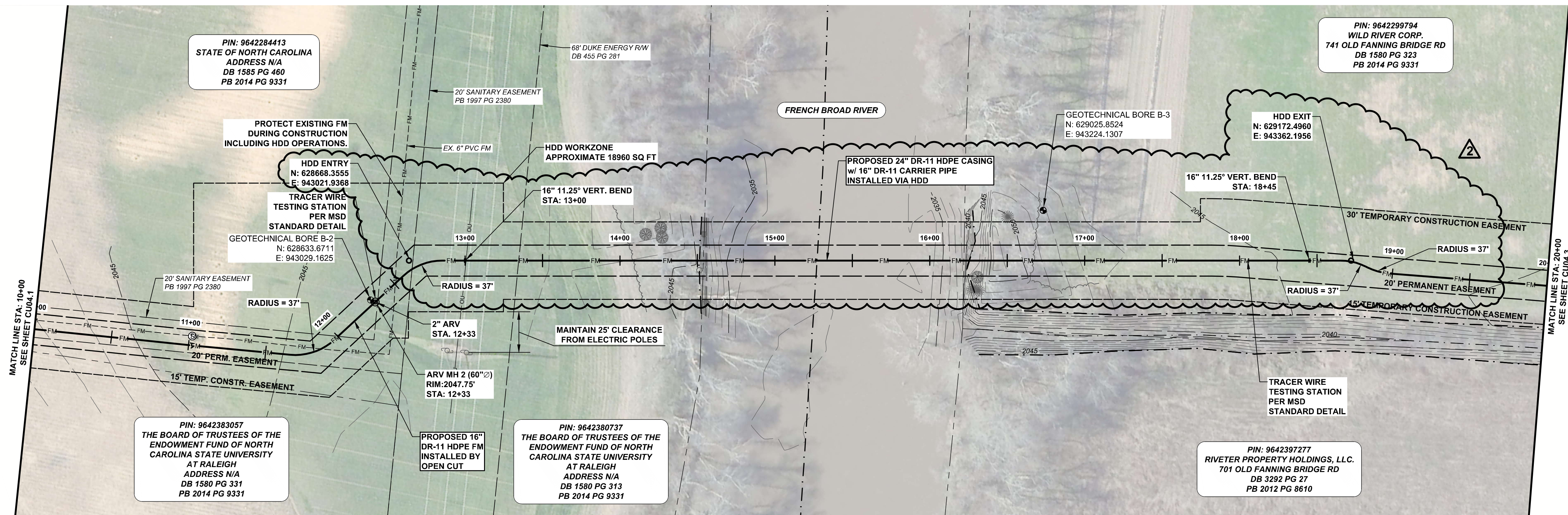
I, _____ certify that I am the Secretary of the Corporation named as Contractor herein; that _____, who signed this contract on behalf of the Contractor, was then _____ of said Corporation; that said contract was duly signed for and on behalf of said Corporation by authority of its governing body and is within the scope of its corporate powers.

SECRETARY

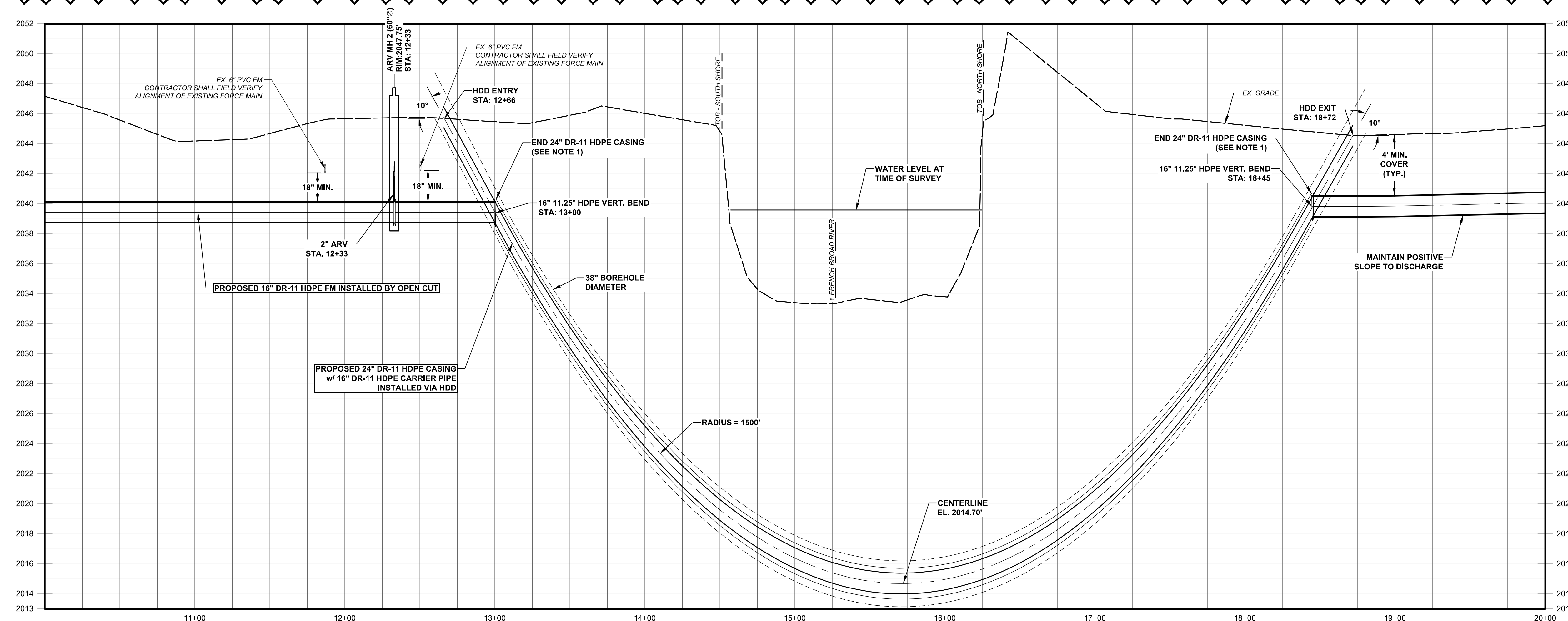
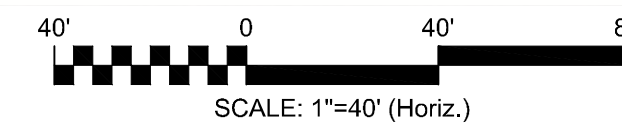
(Corporate Seal)

W. Scott Powell, MSD Director of Finance

*"This instrument has been pre-audited in
the manner required by the Local
Government Budget and Fiscal Control Act"*



PLAN VIEW
HORIZ. SCALE: 1"=40'

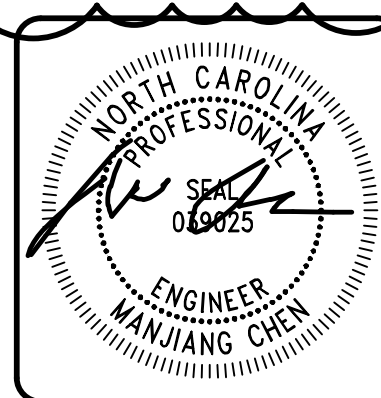


FORCE MAIN PROFILE VIEW
HORIZ. SCALE: 1"=40'
VERT. SCALE: 1"=4'

NOTES:

1. USE END SEALS TO PROVIDE A BARRIER TO BACKFILL DEBRIS AND SEEPAGE. END SEALS SHALL BE NEOPRENE WITH T-304 SS BANDS AND MANUFACTURED BY CASCADE WATERWORKS MFG. OR APPROVED EQUAL.
2. CONTRACTOR SHALL CONFINE ALL WORK TO RECORDED EASEMENTS AND TEMPORARY CONSTRUCTION EASEMENTS. THE CONTRACTOR SHALL HAVE ALL RESPONSIBILITY FOR REPAIRS OF ANY DAMAGES RESULTING FROM CONTRACTOR'S CONSTRUCTION ACTIVITIES. REPLACE IN KIND, RELOCATE OR REPAIR AS NECESSARY ALL ROADS, STRUCTURES, LANDSCAPING, FENCES OR ANY MANMADE PRIVATE PROPERTY. RESTORATION SHALL BE TO EQUAL OR BETTER CONDITION THAN EXISTING CONDITION PRIOR TO CONSTRUCTION.
3. CONTRACTOR TO VERIFY ELEVATION OF EXISTING 6" FORCE MAIN. PROPOSED FORCE MAIN MUST MAINTAIN 18 INCHES OF VERTICAL SEPARATION FROM THE EXISTING FORCE MAIN. USE SPECIAL CARE WITH EXCAVATING NEAR EXISTING FORCE MAIN.
4. FORCE MAIN PIPE AND FITTINGS SHALL BE HDPE, DIPS, DR11.
5. IF BEND RADIUS REQUIREMENTS CANNOT BE MET IN THE FIELD, BUTT FUSED LONG RADIUS FITTINGS ARE ALLOWED. HDPE FITTINGS SHALL CONFORM TO THE SAME MANUFACTURER AND MATERIAL REQUIREMENTS AS LISTED FOR THE HDPE PIPE.
6. NO INTERMEDIATE HIGH POINTS ARE PERMITTED.
7. CONTRACTOR MAY REMOVE FUSING BEADS ON HDPE CASING AND/OR CARRIER PIPE IF DEEMED NECESSARY TO FACILITATE INSERTION OF CARRIER PIPE.

REV. NO.	DESCRIPTION	DATE
1	ISSUED FOR BID - NOT RELEASED FOR CONSTRUCTION	JUNE 2025
2	ADDENDUM NO. 2	JULY 2025
3	ISSUED FOR BID - NOT RELEASED FOR CONSTRUCTION	JUNE 2025
REVISIONS		



Digitally signed by
Manjiang Chen
Reason: I am approving this document
Date: 2025.07.15 16:15:14 -04'00'

MCKIM & CREED
35 N Market Street
Asheville, North Carolina 28801
Phone: (828) 252-8181, Fax: (828) 252-8857
NC License# F-1222
www.mckimcreed.com

**METROPOLITAN
SEWERAGE DISTRICT OF
BUNCOMBE COUNTY**

ITT PUMP STATION REPLACEMENT

CIVIL

**FORCE MAIN PLAN AND PROFILE
STA. 10+00 - STA. 20+00**

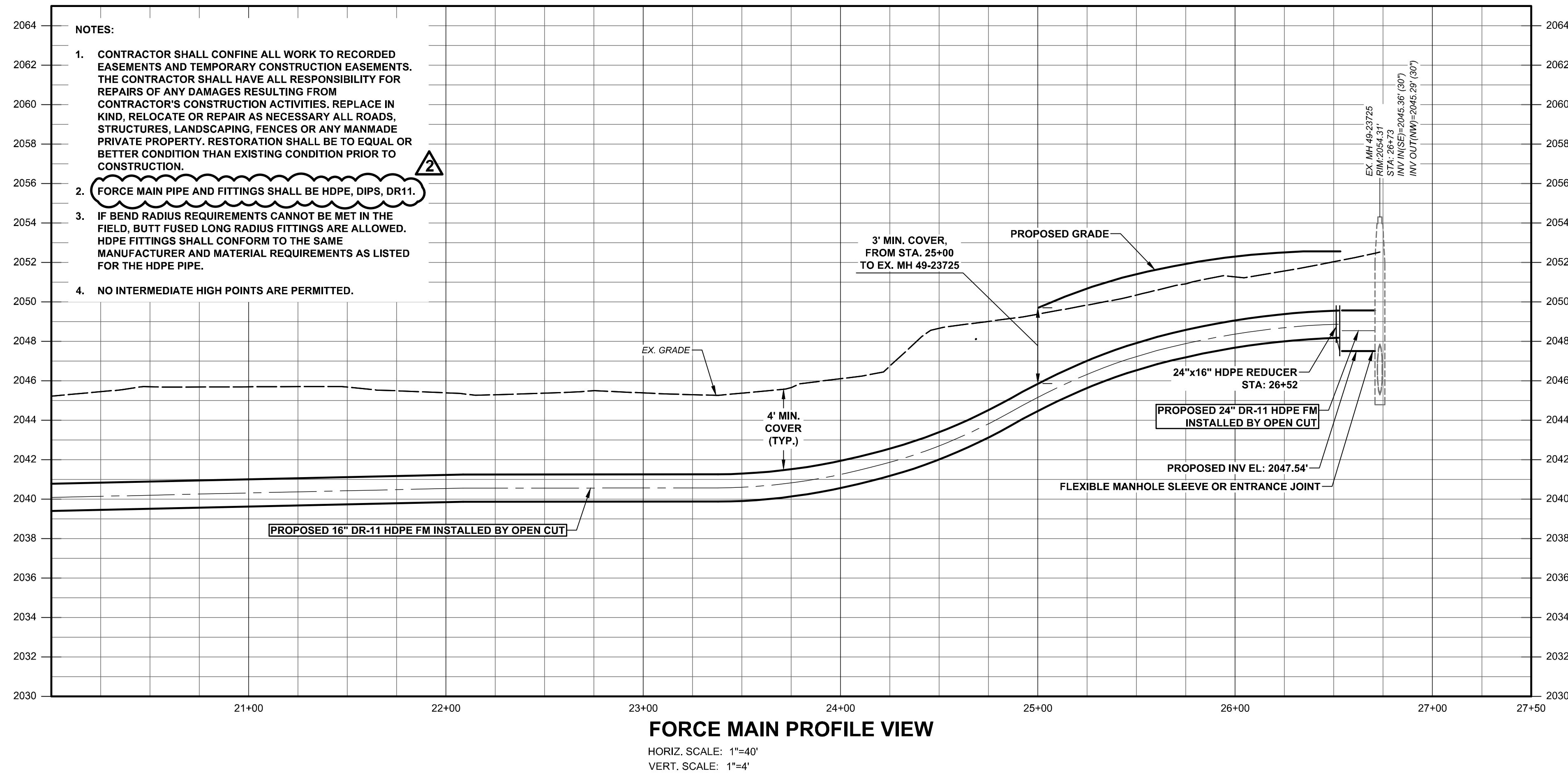
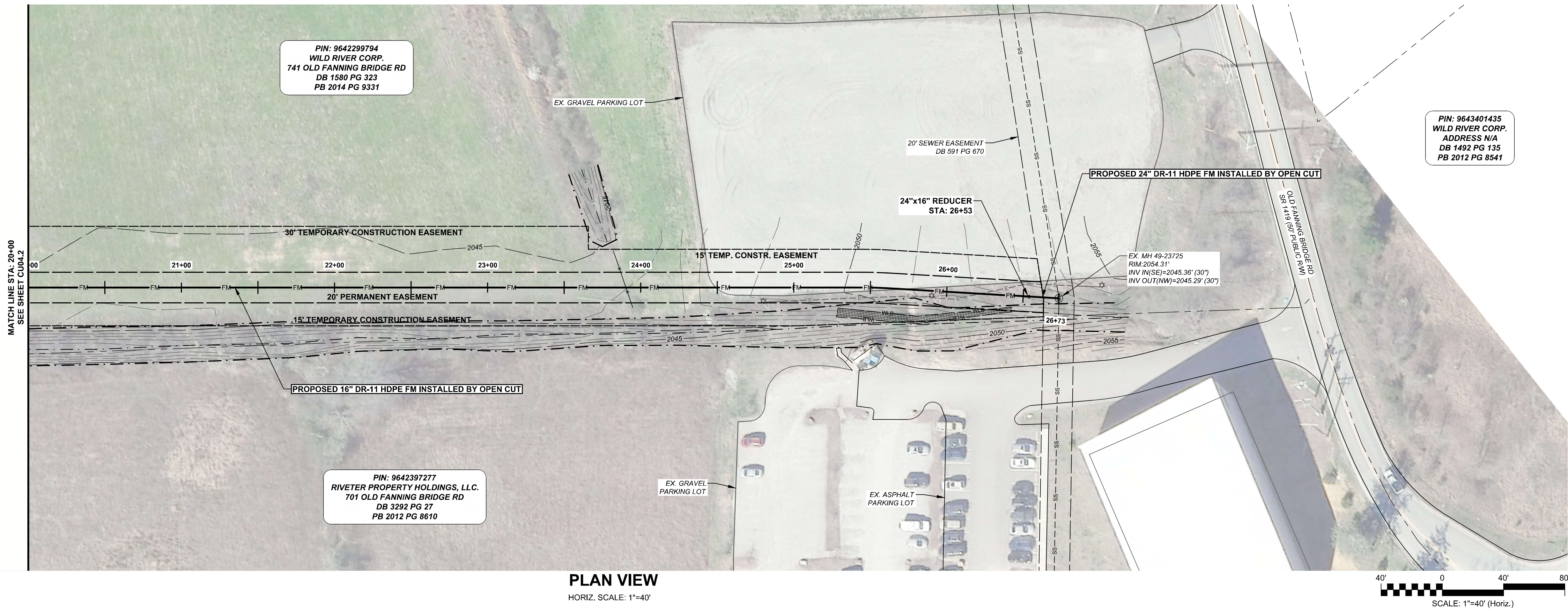
PROJ. START DATE: 2024 MAR
DESIGN PROJ. # 00000001
DRAWN: AWB
DESIGNED: MC
CHECKED: MC
PROJ. MGR: MC

STATUS: ISSUED FOR BID
NOT RELEASED FOR CONSTRUCTION

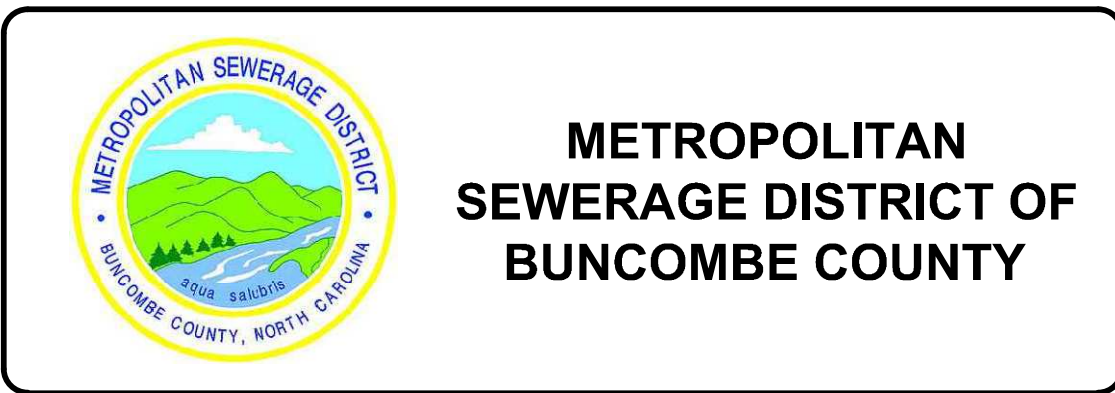
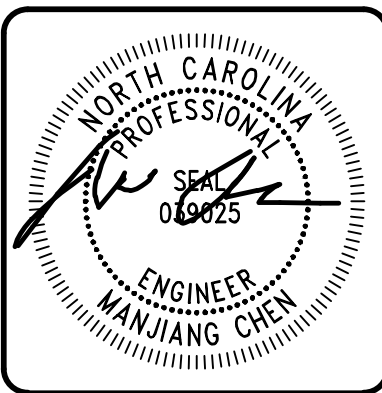
SCALE

HORIZONTAL: 1"=40'
VERTICAL: 1"=4'

CU04.2
DRAWING NUMBER
2
REVISION



REV. NO.	DESCRIPTION	DATE
2	ADDENDUM NO. 2	JULY 2026
0	ISSUED FOR BID - NOT RELEASED FOR CONSTRUCTION	JUNE 2026
REVISIONS		



ITT PUMP STATION REPLACEMENT

CIVIL

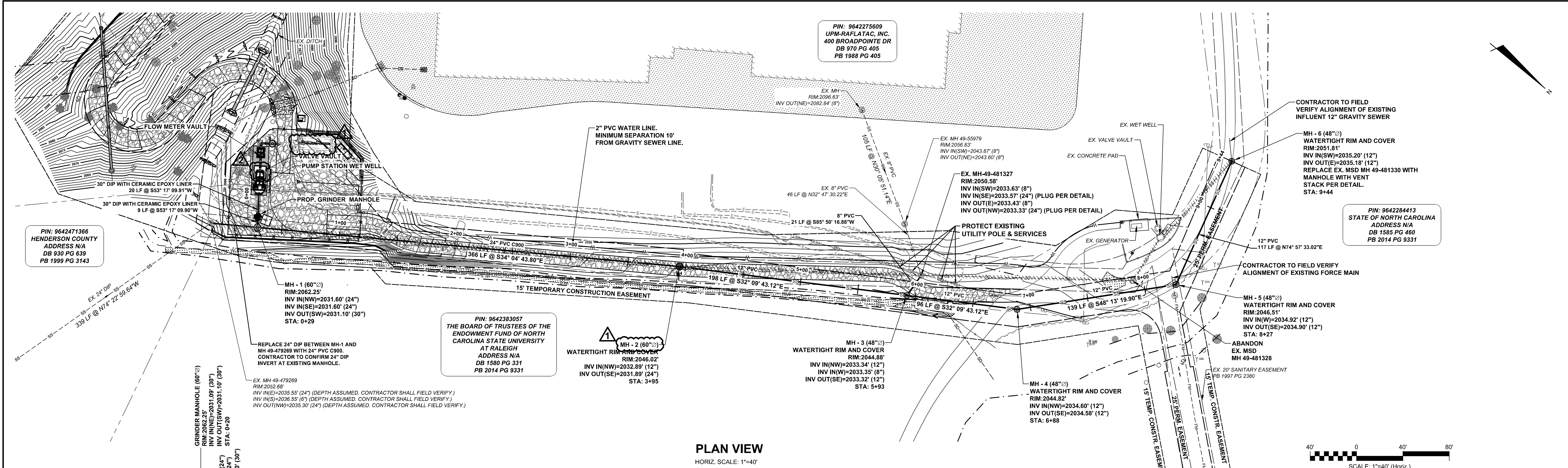
FORCE MAIN PLAN AND PROFILE
STA. 20+00 - STA. 26+48

Project details: START DATE 2024 MAR, DESIGNED BY AWB, CHECKED BY MC, PROJ. MGR. MC.

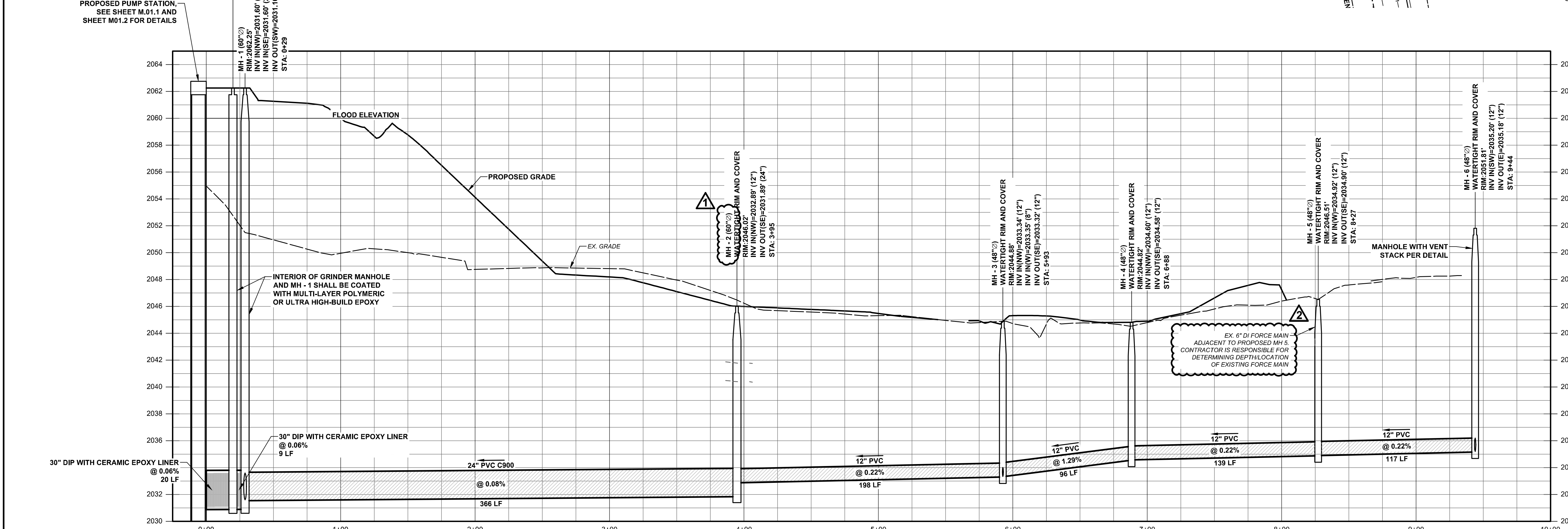
Scale: 1"=40' Horizontal, 1"=4' Vertical.

Drawing Number: CU04.3, Revision: 2.

Status: NOT RELEASED FOR CONSTRUCTION



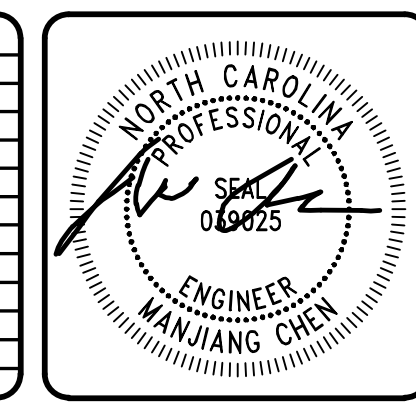
PLAN VIEW
HORIZ. SCALE: 1"=40'



GRAVITY SEWER PROFILE VIEW
HORIZ. SCALE: 1"=40'
VERT. SCALE: 1"=4'

- NOTE:
- EXISTING 24" DIP SEWER LINE SHALL BE DEMOLISHED PRIOR TO THE INSTALLATION OF THE PROPOSED SEWER LINE. BYPASS PUMPING SHALL BE PROVIDED WITHOUT THE INTERRUPTION OF EXISTING SEWER SERVICE.
 - ORIENTATION OF THE 6" SERVICE LINE ENTERING EXISTING MH 49-479269 FROM THE SOUTH MAY NOT BE COMPLETELY ACCURATE SINCE THE UPSTREAM END OF THE EXISTING GRAVITY SEWER MAIN WAS OUTSIDE THE BOUNDS OF THE SURVEY. ORIENTATION OF THIS SERVICE LINE BASED ON AVAILABLE MSD GIS DATA.
 - ALTHOUGH SHOWN AS EXISTING ON THESE PLANS, THE UNDERGROUND ELECTRICAL LINES ARE EXPECTED TO BE RELOCATED BY DUKE ENERGY IN ADVANCE OF OR CONCURRENT WITH CONSTRUCTION ACTIVITIES.

REV. NO.	DESCRIPTION	DATE
1	ISSUED FOR BID - NOT RELEASED FOR CONSTRUCTION	JUNE 2026
2	ADDENDUM NO. 2	JULY 2026
3	ADDENDUM NO. 1	JULY 2026
4	ISSUED FOR BID - NOT RELEASED FOR CONSTRUCTION	JUNE 2026



Digitally signed by
Manjiang Chen
Reason: I am
approving this
document
Date: 2026.07.15
16:16:06-0400'

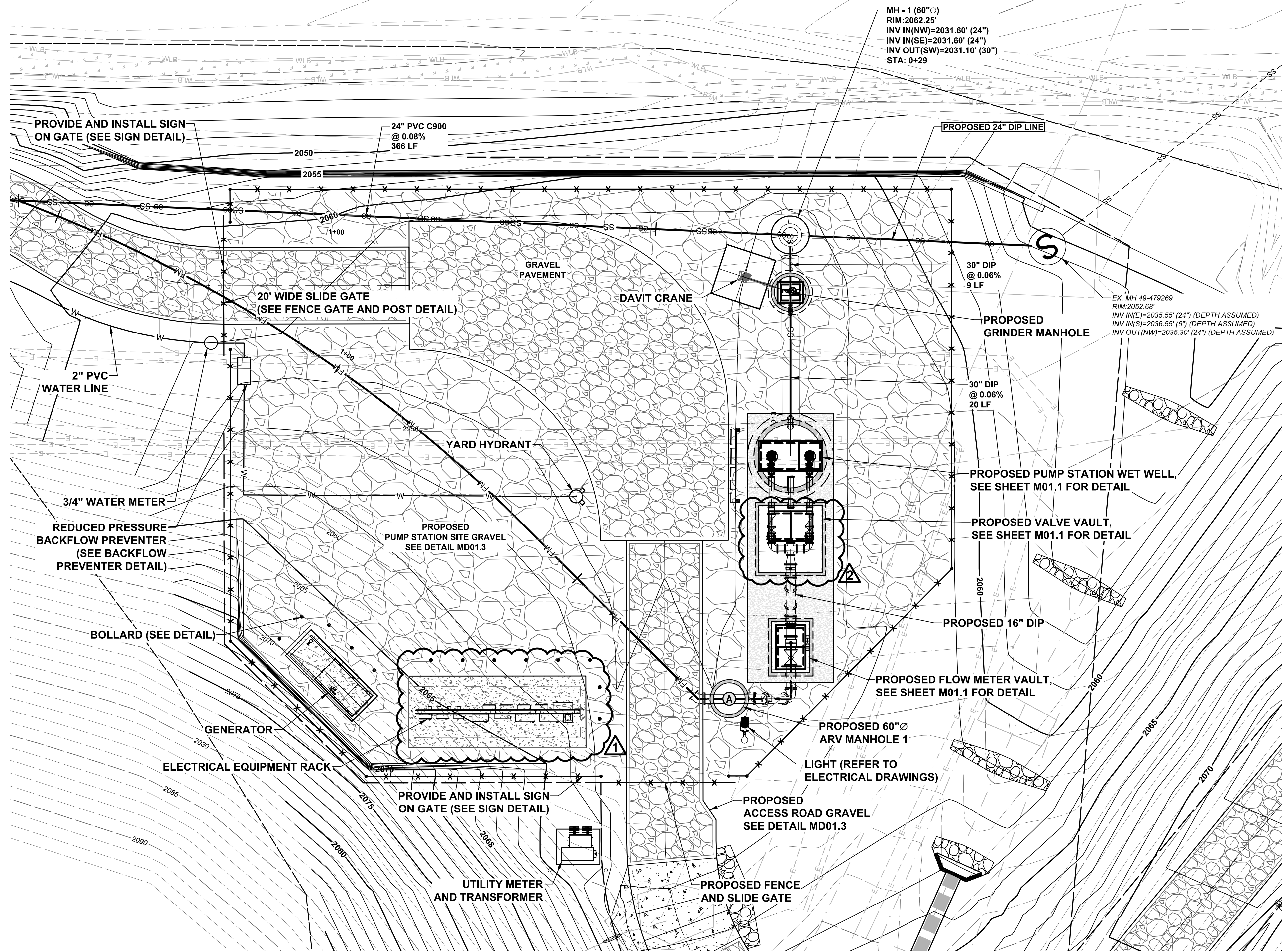
MCKIM & CREED
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METROPOLITAN SEWERAGE DISTRICT OF BUNCOMBE COUNTY

ITT PUMP STATION REPLACEMENT
CIVIL
GRAVITY SEWER PLAN AND PROFILE
STA. 0+00 - STA. 9+31

PROJ. START DATE: 2024 MAR
DESIGNED: MC
CHECKED: MC
PROJ. MGR: MC
STATUS: ISSUED FOR BID
NOT RELEASED FOR CONSTRUCTION

SCALE: 1"=4' (Vert.)
HORIZONTAL: 1"=40'
VERTICAL: 1"=4'
CU05.1
2
REVISION

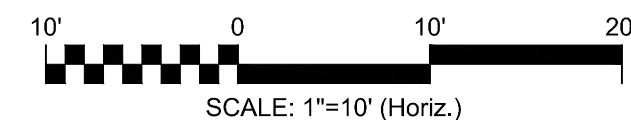


SITE PLAN

HORIZ. SCALE: 1"=10'

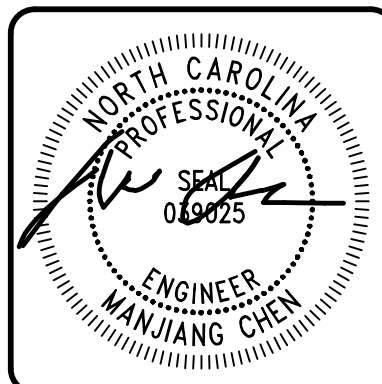
NOTE:

1. ORIENTATION OF THE 6" SERVICE LINE ENTERING EXISTING MH 49-479269 FROM THE SOUTH MAY NOT BE COMPLETELY ACCURATE SINCE THE UPSTREAM END OF THE EXISTING GRAVITY SEWER MAIN WAS OUTSIDE THE BOUNDS OF THE SURVEY. ORIENTATION OF THIS SERVICE LINE BASED ON AVAILABLE MSD GIS DATA.
2. ALTHOUGH SHOWN AS EXISTING ON THESE PLANS, THE UNDERGROUND ELECTRICAL LINES ARE EXPECTED TO BE RELOCATED BY DUKE ENERGY IN ADVANCE OF OR CONCURRENT WITH CONSTRUCTION ACTIVITIES.



REV. NO.	DESCRIPTION	DATE
2	ADDENDUM NO. 2	JULY 2026
1	ADDENDUM NO. 1	JULY 2026
0	ISSUED FOR BID - NOT RELEASED FOR CONSTRUCTION	JUNE 2026

REVISIONS



Digitally signed by
Manjiang Chen
Reason: I am
approving this
document
Date: 2026.07.15
16:16:27-04'00'

MCKIM & CREED
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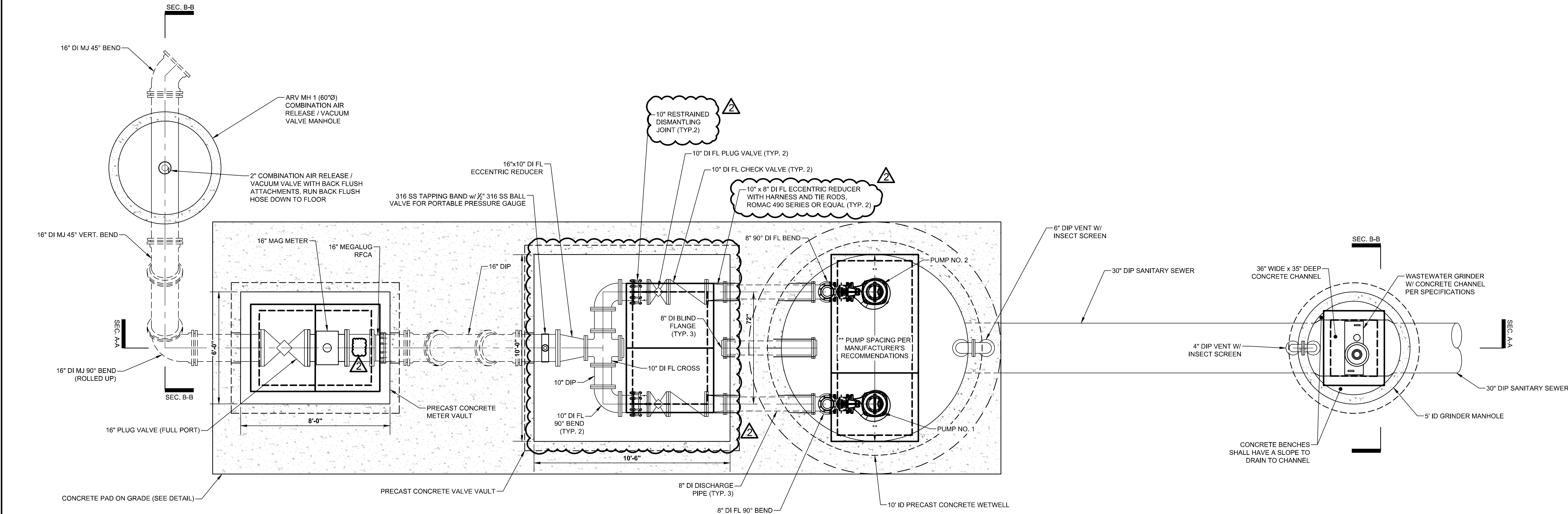


**METROPOLITAN
SEWERAGE DISTRICT OF
BUNCOMBE COUNTY**

ITT PUMP STATION REPLACEMENT

CIVIL
PROPOSED SITE PLAN

PROJ. START DATE: 2024 MAR	SCALE	CS01.1 DRAWING NUMBER 2 REVISION
MSD PROJ. # 00000001	HORIZONTAL: 1"=5'	
DRAWN: AWB	VERTICAL: N/A	
DESIGNED: MC		
CHECKED: MC		
PROJ. MGR: MC		
STATUS: NOT RELEASED FOR CONSTRUCTION		ISSUED FOR BID



PUMP STATION PLAN

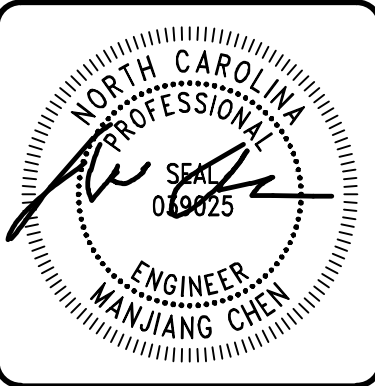
HORIZ. SCALE: 3/8" = 1'-0"

PUMP STATION NOTES

- ALL PRECAST WET WELLS AND VALVE VAULTS SHALL MEET THE REQUIREMENTS OF ASTM SPECIFICATION G-478, AND C-990.
- CAST-IN-PLACE CONCRETE SHALL BE CLASS "A", 4000 P.S.L.
- THE ENGINEER SHALL SUBMIT SEALED AND SIGNED CALCULATIONS VERIFYING THAT UNDERGROUND STRUCTURES ARE DESIGNED TO RESIST BOUYANT FORCES WITH A FACTOR OF SAFETY OF 1.5
- ALL MOUNTING HARDWARE, WEDGE ANCHORS, FLANGE BOLTS AND LIFT CHAINS OR CABLES SHALL BE 316 STAINLESS STEEL.
- ALUMINUM ACCESS DOORS SHALL BE DIAMOND PLATE WITH A TROUGH TYPE FRAME THAT DRAINS BACK TO THE WET WELL. ALL HINGES, HARDWARE, AND BOLTS SHALL BE STAINLESS STEEL. ACCESS DOORS AND FRAMES SHALL HAVE FALL PROTECTION AS MANUFACTURED BY U.S.F. FABRICATION, OR APPROVED EQUAL.
- VALVE VAULT HATCHES SHALL BE SIZED AND POSITIONED TO PROVIDE CLEAR VERTICAL ACCESS TO ALL VALVES AND FITTINGS.
- CONTRACTOR SHALL RESTRAIN ALL PIPING BETWEEN THE VALVE VAULT AND WET WELL.
- NO FLANGE JOINTS SHALL BE BURIED.
- DUCTILE IRON PIPE SHALL BE CERAMIC EPOXY LINED.
- ALL BOLTS, MACHINE SCREWS, LOCKWASHERS, AND OTHER HARDWARE (EXCEPT NUTS) USED IN THE ASSEMBLY OF DISCHARGE ELBOWS, GUIDE RAILS, PUMP GUIDES, HOIST CHAINS, FLOAT CABLE CONNECTORS, AND ACCESS FRAMES AND COVERS SHALL BE OF STAINLESS STEEL. NUTS SHALL BE BRASS, INSTALLED WITH ANTI-SEIZE COMPOUND.
- CONTRACTOR SHALL, IF NEEDED, OVERSIZE THE PUMP STATION LID TO ACCOMMODATE HATCH SIZE.

REV. NO.	DESCRIPTION	DATE
2	ADDENDUM NO. 2	JULY 2026
6	ISSUED FOR BID - NOT RELEASED FOR CONSTRUCTION	JUNE 2026

REVISIONS



Manjiang Chen
Digitally signed by Manjiang Chen
Reason I am signing this document
Date: 2026.07.15 16:47:18-0400'

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METROPOLITAN SEWERAGE DISTRICT OF BUNCOMBE COUNTY

ITT PUMP STATION REPLACEMENT

MECHANICAL PUMP STATION PLAN

PROJ. START DATE: 2024 MAR

DESIGN PROJ. # 160900001

DRAWN: AWB

DESIGNED: MC

CHECKED: MC

PROJ. MGR: MC

SCALE: AS NOTED

HORIZONTAL: AS NOTED

VERTICAL: N/A

M01.1

DRAWING NUMBER

2

REVISION

STATUS: ISSUED FOR BID

NOT RELEASED FOR CONSTRUCTION

