THRASHER

ENGINEERING
ARCHITECTURE
FIELD SERVICES

CITY OF NEW CUMBERLAND
HANCOCK COUNTY, WEST VIRGINIA

CONTRACT #2 – CUMBERLAND HEIGHTS WATER STORAGE TANK REPLACEMENT & REHABILITATION AND SUNSET LANE WATER STORAGE

ADDENDUM # 1

January 15, 2021
THRASHER PROJECT NO. 101-010-1041

TO WHOM IT MAY CONCERN:

A non-mandatory Pre-Bid Conference was held at 10:00 AM on Tuesday, January 5, 2021 for the above-referenced project. A copy of the notes from that meeting and the sign-in sheet are enclosed with this Addendum.

The following are clarifications and responses to questions provided prior to the conference, at the conference, and after the conference until the close of questions on Wednesday, January 13, 2021.

Description(s) of equipment, materials, and/or products approved "as equal" to date prior to bid opening are also provided in this Addendum. Please note that these approvals/disapprovals are made by the Engineer for this specific project based on the best available information and shall not be construed as precedent for approval/disapproval on other future projects of The Thrasher Group, Inc. **The Contractor shall be responsible for any and all changes necessary to accommodate any approved "as equal" equipment, materials, and/or products at no additional cost to the Owner.**

Attention is directed to the fact that while information provided in this Addendum may reference specific locations in the Plans and Specifications, the information provided shall be applied to all applicable locations in the Plans and Specifications.

Please acknowledge receipt of all Addenda in the Bid Opening Requirements and in the Bid Form.

A. GENERAL

1. **THE BID FORM HAS BEEN REVISED. YOU MUST USE THE REVISED BID FORM WHEN PREPARING YOUR BID PACKAGE FOR THIS PROJECT.**

B. SPECIFICATIONS

1. Revised Specification Section 434113, Welded Steel Tanks, has been revised and is included with this Addendum.

2. Revised Specification Section 012000, Price and Payment Procedures, has been revised and is included in this Addendum

3. Revised Specification Section 099050, Repainting of Steel Water Storage Facility, has been revised and is included in this Addendum.

C. DRAWINGS

1. Revised Plan Sheets 4, 5, 6, 6A and 6B have been revised and included in this Addendum as discussed in the Clarifications Section of this Addendum.

2. Revised Plan Sheet i has been revised and included in this Addendum as a result of changing the plan sheets mentioned in previous note.

D. QUESTIONS AND RESPONSES:

QUESTION

1. Can the Contract Time be extended to 240 Days?

RESPONSE

Contract #2 will have the time to have the project substantially complete extended to 240 Days and ready for final payment in 270 Days.

QUESTION

2. Is the foundation abandoned in place for the 105,000 gallon water storage tank that is being removed?

RESPONSE

The foundation for the existing 105,000 gallon water storage tank can be abandoned in place once any rebar, piping, anchors, etc. have been plugged and cut flush with the concrete. The foundation shall be backfilled as per the typical shown on Plan Sheet 8 that shows placing fill from the top of the retaining wall to the top of the existing slope to provide positive drainage. The existing lines shall be cut and plugged as indicated on the drawings.

QUESTION

3. Is there a planned waste site for the excess material from the Sunset Lane Tank Site?

RESPONSE

The Contractor shall find an approvable waste site off site. The Engineer will modify the DEP Stormwater Construction Permit to encompass the new waste site. The Contractor shall also provide the Engineer a signed Waste Site Agreement between the Landowner and the Contractor and provide a Hold Harmless Waiver naming The Thrasher Group Inc. and the City of New Cumberland.

QUESTION

4. Does the stone on this project need to be WVDOH approved materials?

RESPONSE

Aggregate material used on this project shall meet the requirements of WVDOH Section 704.6 (technical reference only). The material supplier does not need to be on the WVDOH approved materials list.

QUESTION

5. What size material is to be used for the "base stone" on the access roads?

RESPONSE

AASHTO #3 stone size shall be used as the road base stone.

QUESTION

6. Will the access road stone and tank pads at both sites be paid for under items 5 & 6?

RESPONSE

Bid Item #5, Road Base Stone, and Bid Item #6, Crusher Run Stone will be used to compensate the contractor for the 6" of road base stone on the new access roads and for the 4" of crusher run around the tank sites and the 2" of crusher run placed on the existing access road at the Cumberland Heights Tanks and over the road base stone. The quantities of stone for these bid items have been adjusted. **THE BID FORM HAS BEEN REVISED. YOU MUST USE THE REVISED BID FORM WHEN PREPARING YOUR BID PACKAGE FOR THIS PROJECT.**

QUESTION

7. What is the requirement to clean the exterior of the 500,000 gallon tank prior to painting?

RESPONSE

The exterior of the 500,000 gallon tank shall have a 3,000 – 4,000 high pressure wash, 3.0 GPM minimum, with Great lakes Laboratories Extra Muscle Pre-paint Cleaner or Engineer's Approved Equal and cleaned following SSPC-SP2 and SSPC-SP3 standards. Revised Specification Section 099050 is included with this Addendum #1.

QUESTION

8. Specification Section 434113 references painting Specification Section 0099714 that is not provided in the Contract Documents? Will that Specification be provided?

RESPONSE

Specification Section 434113 has been updated to include the painting requirements of the Welded Steel Tank. Revised Specification Section 434113 is included with this Addendum #1.

QUESTION

9. Is there an estimate of the amount of sludge to be removed from the bottom of the tanks?

RESPONSE

Assume the average depth of sludge is 6" for each of the tanks. That cost should be included in the demolition or painting cost of each tank. If additional sludge is encountered the contractor shall be compensated at a pro-rated amount.

QUESTION

10. What is the disposal method required for the sludge removal from all vessels being either refurbished or abandoned and dismantled?

RESPONSE

Sludge shall be disposed of at a landfill approved for this type of material. All costs associated with removal and disposal of the sludge shall be paid for by the Contractor and included in the lump sum bid item associated with this work.

QUESTION

11. Does the city have internal photos or video inspection footage of the 500,000 gallon storage tank?

RESPONSE

The City does not have any videos or photos of the interior of the tank.

QUESTION

12. Can temporary power be dropped to a temporary transformer for site use at the Cumberland Heights site?

RESPONSE

There is power currently available at the Cumberland Heights tank site. The Contractor may modify the existing power at their cost if it does not interfere with the current operation of the tank monitoring system. The City will not charge for the power consumption costs. The Engineer and Owner make no guarantee that the existing power is suitable for Contractor's use.

QUESTION

13. The Owner stated the existing 500,000 Gallon Tank was damaged by a bullet hole and an epoxy patch was used to repair the damage. Can the size of the epoxy patch on the 500,000 Gallon Tank be identified for repair and are we to assume that a welded in steel patch is the preferred repair?

RESPONSE

Documentation of this repair was not provided to the Engineer. The Contractor should not include a repair for this item in their Bid. The Contractor should anticipate providing a quote to repair this item, if necessary, upon inspection of the tank interior.

QUESTION
14. What is the thickness of the existing 500,000 gallon storage tank?

RESPONSE
The thickness of the steel sheeting on existing 500,000 Gallon tank is unknown but is assumed to be 1/4" thick at the base.

QUESTION
15. Will the chime require replacement on the 500,000 gallon storage tank?

RESPONSE
The Contractor should not include the replacement for this item in his Bid. The Contractor should anticipate providing a quote to repair this item, if necessary, upon inspection of the tank after cleaning and surface preparation has been performed.

QUESTION
16. Will water be available at the site for the pressure washing of the 500,000 gallon tank?

RESPONSE
The Contractor may arrange with the City to make a tap, if necessary, to provide water at the site. The City will not charge for use of the water but may meter for recording purposes.

QUESTION
17. What are the requirements from the city to gain access to the roof of the existing 500,000 gallon tank for visual inspection?

RESPONSE
Access to the site can be obtained by contacting the Owner at 304.564.3383.

QUESTION
18. Will the City require scrap reimbursement for the tank steel materials?

RESPONSE
Reimbursement for the scrap steel is NOT required for this project. The Contractor may consider this anticipated revenue while preparing his bid. All steel scrapped becomes the property of the Contractor.

QUESTION
19. Is Cobalt Blue an acceptable color for a glass lined tank?

RESPONSE
Cobalt Blue would be an approved color of a glass lined tank. The 500,000 gallon tank that is to be painted would have to match the glass lined tank. All new and painted tanks must be of the same exterior color.

QUESTION

20. Can the Contractor Bid different style tanks for the 109,000 gallon tank and 294,000 gallon tank?

RESPONSE

The Contractor's Bid should provide the most competitive bid listing a single type of tank. The contractor shall bid Glass Lined Bolted Steel, Welded Steel or Epoxy Coated Bolted Steel and not a combination of tanks. The two tanks not bid shall have the unit price of the Bid Item written in as "NO BID" in the Bid Form. The Bid Item Numbers for the 109,000 Gallon Tanks and 294,000 Gallon Tank have been revised in the Bid Form. Revised Specification Section 012000, Price and Payment Procedures, has been revised to reflect these changes and are included in this Addendum. **THE BID FORM HAS BEEN REVISED. YOU MUST USE THE REVISED BID FORM WHEN PREPARING YOUR BID PACKAGE FOR THIS PROJECT.**

QUESTION

21. Can the Contractor choose between a concrete slab or oil sand base for the different tank types?

RESPONSE

No. A Concrete floor is required for Bolted Steel Tanks, both Epoxy Coated and Glass Lined, while the Welded Steel Tank requires a concrete ringwall and oil and sand base.

QUESTION

22. Is Superior Tank Company, Inc. an "approved equal" to supply Epoxy-Coated Bolted Steel Tanks?

RESPONSE

Yes. Superior Tank Company, Inc. is considered an "approved equal" contingent that they provide a water storage tank that meets all Contract Documents and Specifications, including this Addendum #1.

QUESTION

23. What is the required warranty for all water storage tanks, regardless of the type of tank?

RESPONSE

All tank manufacturers must provide the same warranty. The tank manufacturer shall include a warranty on tank materials and workmanship for a specified period. As a minimum, the warranty shall provide assurance against defects in material, coatings, workmanship, tank interior and exterior lining, foundation, and appurtenances for a period of five (5) years from the date of Substantial Completion. A five (5) year warranty bond must be provided concurrent with the manufacturer's warranty. The warranty bond must be for the full amount listed in the bid section. Tank inspections, including interior, shall be performed at the end of year one, year three and just prior to the end of the 5 year warranty period at no additional cost to the Owner.

QUESTION

24. What is the required coating system for the epoxy coated bolted steel tank?

RESPONSE

The epoxy coating system shall be "3M Skotchkote Fusion-Bonded Epoxy Coating 134" or Engineer's approved premium coating.

QUESTION

25. Some have raised concern with a spray application of the 500,000 gallon tank, right next to the farm. One company (Tnemec) has offered an alternative roll on coating (Tnemec 1029).

RESPONSE

A revised technical specification Section 099050 has been included with this Addendum #1. Per Section 099050 2.3B the Contractor is responsible for providing Protection of the Grounds. Tnemec Series 1029 shall be considered "as equal" to Tnemec Series 30 provided the Contractor secure and provide to the Engineer a written statement from the painting manufacturer attesting to the compatibility of the proposed paint system with the existing paint and the proposed painting system will provide a comparable coating system to the pre-approved coating system.

QUESTION

26. Will the Engineer approve a painting contractor who does not meet the Section 099050 requirements of having painted five (5) potable water tanks within 12 months of the bid date?

RESPONSE

No. The Contractor must meet, at a minimum meet the requirements of Section 099050.

QUESTION

27. Will other tank manufacturers be considered?

RESPONSE

All tank manufacturer's wishing to pre-qualify "as equal" must have submitted the required documentation per Contract Documents and Detailed Specifications. The approved tank manufacturers are those as per the Contract Documents and Specifications and as per this Addendum #1. **All tank manufacturers and erectors must meet the requirements of the Contract Documents and Detailed Specifications.**

QUESTION
28. Is lead suspected in the coatings of the existing tanks?

RESPONSE
A single exterior paint sample was collected from all three existing tanks and the results are included at the end of Specification Section 099050, Repainting of Steel Water Storage Facility, for information only. No additional compensation will be made to the Contractor if lead paint is determined to be present. The Contractor shall comply with West Virginia State Code CFR16-35 cited as the West Virginia "Lead Abatement Act.".

QUESTION
29. Can fill sand be used as bedding for the waterline instead of #10's?

RESPONSE
Sand or limestone sand may be used for waterline bedding.

QUESTION
30. Who is paying for the compaction testing required on the project.

RESPONSE
The Contractor is responsible for cost of the compaction testing.

E. CLARIFICATIONS

1. Quantities for Bid Items #5 and #6 have been revised in the Bid Form. **YOU MUST USE THE REVISED BID FORM WHEN PREPARING YOUR BID PACKAGE FOR THIS PROJECT.**

2. B&O Taxes are required on portions of the project as detailed in the Pre-Bid Conference Notes attached to this Addendum.

3. Federal Davis-Bacon Wage Rates are NOT required for this project. You must follow all Local and State Wage Rate Requirements.

4. Plan Sheets 4, 5, 6 6A and 6B have been revised showing modifications to the existing sewer line at the beginning of the access road to the New Tank Site. The cost of the sewer line modifications including any necessary bypass pumping shall be included in Bid Item 24, New Sunset Lane Water Storage Tank Access Road and Site Grading and Preparation.

As a reminder, bids will be received until 2:00 P.M., LPT, on Thursday, January 21, 2021 at 104 N. Court Street, New Cumberland, Hancock County, WV. Good luck to everyone and thank you for your interest in the project.

Sincerely,

THE THRASHER GROUP, INC.

1/15/2021

STEVEN V. BUCHANAN, PE, PS

Enclosures: C-410 Bid Form
Pre Bid Conference Notes
Pre Bid Sign In Sheet
Spec 099050 – Repainting of Steel Water Storage Facility
Spec 434113 – Welded Steel Tanks
Spec 012000 – Price and Payment Procedures
Drawings – Plan Sheets i, 4, 5, 6, 6A and 6B

CITY OF NEW CUMBERLAND

HANCOCK COUNTY, WEST VIRGINIA

PROPOSED

CONTRACT #2 – CUMBERLAND HEIGHTS WATER STORAGE TANK REPLACEMENT & REHABILITATION AND SUNSET LANE WATER STOARGE TANKS

THRASHER PROJECT #101-010-1041

BID FORM

ARTICLE 1 – BID RECIPIENT

1.01 This Bid is submitted to:

City of New Cumberland
104 N. Court Street
New Cumberland, WV 26047

1.02 The undersigned Bidder proposes and agrees, if this Bid is accepted, to enter into an Agreement with Owner in the form included in the Bidding Documents to perform all Work as specified or indicated in the Bidding Documents for the prices and within the times indicated in this Bid and in accordance with the other terms and conditions of the Bidding Documents.

ARTICLE 2 – BIDDER'S ACKNOWLEDGEMENTS

2.01 Bidder accepts all of the terms and conditions of the Instructions to Bidders, including without limitation those dealing with the disposition of Bid security. This Bid will remain subject to acceptance for 90 days after the Bid opening, or for such longer period of time that Bidder may agree to in writing upon request of Owner.

ARTICLE 3 – BIDDER'S REPRESENTATIONS

3.01 In submitting this Bid, Bidder represents that:

A. Bidder has examined and carefully studied the Bidding Documents, and any data and reference items identified in the Bidding Documents, and hereby acknowledges receipt of the following Addenda:

Addendum No.	Addendum Date
_____	_____
_____	_____
_____	_____

B. Bidder has visited the Site, conducted a thorough, alert visual examination of the Site and adjacent areas, and become familiar with and satisfied itself as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work.

C. Bidder is familiar with and has satisfied itself as to all Laws and Regulations that may affect cost, progress, and performance of the Work and including all AIS requirements.

D. Bidder has carefully studied all: (1) reports of explorations and tests of subsurface conditions at or adjacent to the Site and all drawings of physical conditions relating to existing surface or subsurface structures at the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings, and (2) reports and drawings relating to Hazardous Environmental Conditions, if any, at or adjacent to the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings.

E. Bidder has considered the information known to Bidder itself; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Bidding Documents; and any Site-related reports and drawings identified in the Bidding Documents, with respect to the effect of such information, observations, and documents on (1) the cost, progress, and performance of the Work; (2) the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder; and (3) Bidder's safety precautions and programs.

F. Bidder agrees, based on the information and observations referred to in the preceding paragraph, that no further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of this Bid for performance of the Work at the price bid and within the times required, and in accordance with the other terms and conditions of the Bidding Documents.

G. Bidder is aware of the general nature of work to be performed by Owner and others at the Site that relates to the Work as indicated in the Bidding Documents.

H. Bidder has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder has discovered in the Bidding Documents, and confirms that the written resolution thereof by Engineer is acceptable to Bidder.

I. The Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance and furnishing of the Work.

J. The submission of this Bid constitutes an incontrovertible representation by Bidder that Bidder has complied with every requirement of this Article, and that without exception the Bid and all prices in the Bid are premised upon performing and furnishing the Work required by the Bidding Documents.

ARTICLE 4 – BIDDER'S CERTIFICATION

4.01 Bidder certifies that:

A. This Bid is genuine and not made in the interest of or on behalf of any undisclosed individual or entity and is not submitted in conformity with any collusive agreement or rules of any group, association, organization, or corporation;

B. Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid;

C. Bidder has not solicited or induced any individual or entity to refrain from bidding; and

D. Bidder has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for the Contract. For the purposes of this Paragraph 4.01.D:

1. "corrupt practice" means the offering, giving, receiving, or soliciting of any thing of value likely to influence the action of a public official in the bidding process;

2. "fraudulent practice" means an intentional misrepresentation of facts made (a) to influence the bidding process to the detriment of Owner, (b) to establish bid prices at artificial non-competitive levels, or (c) to deprive Owner of the benefits of free and open competition;

3. "collusive practice" means a scheme or arrangement between two or more Bidders, with or without the knowledge of Owner, a purpose of which is to establish bid prices at artificial, non-competitive levels; and

4. "coercive practice" means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the e execution of the Contract.

ARTICLE 5 – BASIS OF BID

GENERAL

The Bidder shall take notice of and shall be responsible for any local or state taxes levied and applicable, and the cost for the same shall be included as part of the submitted Bid.

The total Bid cost stated includes a complete operating installation including furnishing and installation of any and all changes or additions in plans, piping, mechanical work, additional electrical work, accessories, controls, etc. necessary to accommodate alternative equipment systems or materials used in construction.

BID PROPOSAL

The Bidder agrees to perform all required Work described in the detailed Specifications and as shown on the Plans for the complete construction and placing in satisfactory operation the Contract #1 – Potable Water System Improvements. The Project "Sequence of Construction" has been detailed in the Drawings and Specification Division 1, Project Summary, Section 1010, Part-2 Execution. The Bidder agrees to perform all the Work proposed for the total of the following Bid prices.

5.01 Bidder will complete the Work in accordance with the Contract Documents for the following price(s):

PROPOSED
CONTRACT #2 – CUMBERLAND HEIGHTS WATER STORAGE TANK REPLACEMENT & REHABILITATION AND SUNSET LANE WATER STOARGE TANKS
FOR THE

CITY OF NEW CUMBERLAND
HANCOCK COUNTY, WEST VIRGINIA

BID SCHEDULE

NOTE: Bid Unit PRICE amounts are to be shown in both words and figures. In case of discrepancy, the amount shown in words will govern. Bids shall include sales tax and all other applicable taxes and fees.

Item	Quantity	Description with Unit Price Written		Unit Price	Total Price
1	1 LS	Mobilization/Demobilization			
		_____	Dollars		
		_____	Cents	_____	_____
		(Words)		(Figures)	(Figures)

	Quantity	Description with Unit Price Written	Unit Price	Total Price
2	1 LS	Erosion and Sediment Control _____ Dollars _____ Cents (Words)	_____ (Figures)	_____ (Figures)
3	1 LS	Abandonment and Demolition of Existing 300,000 Gallon Water Storage Tank and Foundation _____ Dollars Cents (Words)	(Figures)	(Figures)
4	1 LS	Abandonment and Demolition of Existing 105,000 Gallon Water Storage Tank and Foundation _____ Dollars _____ Cents (Words)	_____ (Figures)	_____ (Figures)
5	400 TN	Road Base Stone _____ Dollars _____ Cents (Words)	_____ (Figures)	_____ (Figures)
6	800 TN	Crusher Run Stone _____ Dollars _____ Cents (Words)	_____ (Figures)	_____ (Figures)
7	600 LF	Rock Lined Ditch _____ Dollars _____ Cents (Words)	_____ (Figures)	_____ (Figures)
8	150 LF	Dump Rock Gutter _____ Dollars _____ Cents (Words)	_____ (Figures)	_____ (Figures)
9	100 LF	15" HDPE Culvert _____ Dollars _____ Cents (Words)	_____ (Figures)	_____ (Figures)
10	1 LS	4-Unit Satellite Telemetry System _____ Dollars _____ Cents (Words)	_____ (Figures)	_____ (Figures)

Item	Quantity	Description with Unit Price Written	Unit Price	Total Price
11	800 LF	6' High Chain-Link Fence with Barbed Wire and 6' Wide Double Swing Gates _____ Dollars _____ Cents (Words)	_____ (Figures)	_____ (Figures)
		Cumberland Heights Water Storage Tank Rehabilitation		
12	1 LS	Interior Surface Preparation of 500,000 Gallon Water Storage Tank (Including Sand Blasting and Weld Repairs) _____ Dollars _____ Cents (Words)	_____ (Figures)	_____ (Figures)
13	1 LS	Interior Priming and Painting of 500,000 Gallon Water Storage Tank _____ Dollars _____ Cents (Words)	_____ (Figures)	_____ (Figures)
14	1 LS	Exterior Surface Preparation of 500,000 Gallon Water Storage Tank _____ Dollars _____ Cents (Words)	_____ (Figures)	_____ (Figures)
15	1 LS	Exterior Priming and Painting of 500,000 Gallon Tank _____ Dollars _____ Cents (Words)	_____ (Figures)	_____ (Figures)
16	1 LS	Sealing Between Tank and Foundation of Existing 500,000 Gallon WST _____ Dollars _____ Cents (Words)	_____ (Figures)	_____ (Figures)
17	1 LS	New Rubber Gaskets and Bolts for Manholes on Existing 500,000 Gallon WST _____ Dollars _____ Cents (Words)	_____ (Figures)	_____ (Figures)
18	50 EA	1" Diameter Weld Pit Fillings _____ Dollars _____ Cents (Words)	_____ (Figures)	_____ (Figures)
19	1 LS	Cumberland Heights Tank Site Tie-ins (including yard piping, valves fittings, etc.) _____ Dollars _____ Cents (Words)	_____ (Figures)	_____ (Figures)

Item	Quantity	Description with Unit Price Written	Unit Price	Total Price
		Existing Cumberland Heights Tank Site and Access Road Improvements		
20	1 LS	Existing Cumberland Heights Water Storage Tank Site Improvements (Including Removal of Existing 6' High Chain Link Fence and Gates, Site Grading, Filter Fabric, access road relocation and paving) _____ Dollars _____ Cents (Words)	(Figures)	(Figures)
		Sunset Lane Water Storage Tanks		
21 A	2 LS	New 109,000 Gallon Water Storage Tank with HMS (glass-lined bolted steel) _____ Dollars Cents (Words)	(Figures)	(Figures)
21 B	2 LS	New 109,000 Gallon Water Storage Tank with HMS (welded Steel) _____ Dollars _____ Cents (Words)	(Figures)	(Figures)
21 C	2 LS	New 109,000 Gallon Water Storage Tank with HMS (epoxy coated bolted steel) _____ Dollars _____ Cents (Words)	(Figures)	(Figures)
22	2 LS	New 109,000 Gallon Water Storage Tank Foundation _____ Dollars _____ Cents (Words)	(Figures)	(Figures)
23	1 LS	New 109,000 Gallon Water Storage Tank Valve Vault (Including Piping, Valves, Drains, Tie-Ins, and Yard Piping) _____ Dollars _____ Cents (Words)	(Figures)	(Figures)
24	1 LS	New Sunset Lane Water Storage Tank Access Road and Site Grading and Preparation (Including Filter Fabric) _____ Dollars _____ Cents (Words)	(Figures)	(Figures)
25 A	1 LS	New 294,000 Gallon Water Storage Tank with Hyrodynamic Mixing System (glass-lined bolted steel) _____ Dollars _____ Cents (Words)	(Figures)	(Figures)

Item	Quantity	Description with Unit Price Written	Unit Price	Total Price
25 B	1 LS	New 294,000 Gallon Water Storage Tank with Hyrodynamic Mixing System (welded steel) _____ Dollars _____ Cents (Words)	_____ (Figures)	_____ (Figures)
25 C	1 LS	New 294,000 Gallon Water Storage Tank with Hyrodynamic Mixing System (epoxy coated bolted steel) _____ Dollars _____ Cents (Words)	_____ (Figures)	_____ (Figures)
26	1 LS	New 294,000 Gallon Water Storage Tank Foundation _____ Dollars _____ Cents (Words)	_____ (Figures)	_____ (Figures)
27	1 LS	New 294,000 Gallon Water Storage Tank Valve Vault with Altitude Valve and Telemetry (including piping valves, Drains, Tie-ins, and yard piping.) _____ Dollars _____ Cents (Words)	_____ (Figures)	_____ (Figures)
28	1 LS	Relocate Telemetry During Construction (including telemetering unit, antenna, conduit, wiring and appurtenances) _____ Dollars _____ Cents (Words)	_____ (Figures)	_____ (Figures)
29	1 LS	New Electric Service Entrance Pole _____ Dollars _____ Cents (Words)	_____ (Figures)	_____ (Figures)
30	1 LS	New 1½ Conduit _____ Dollars _____ Cents (Words)	_____ (Figures)	_____ (Figures)

TOTAL BID:

_____
(Words)

_____ **($** _____ **)**
(Words) (Figures)

(Amounts are to be shown in both words and figures. In case of discrepancy, the amount shown in words will govern.)

NOTE: THE CONTRACTOR'S UNIT PRICES SHALL INCLUDE PURCHASE AND INSTALLATION, COMPLETE IN PLACE, PER BID ITEM IN ACCORDANCE WITH THE DETAILED SPECIFICATIONS.

Bidder acknowledges that (1) each Bid Unit Price includes an amount considered by Bidder to be adequate to cover Contractor's overhead and profit for each separately identified item, and (2) estimated quantities are not guaranteed, and are solely for the purpose of comparison of Bids, and final payment for all unit price Bid items will be based on actual quantities, determined as provided in the Contract Documents.

METHOD OF AWARD

If at the time this contract is to be awarded, the lowest total bid submitted by a qualified, responsible Bidder does not exceed the amount of funds then estimated by the Owner, as available to finance the contract, the construction contract will be awarded. If such bids exceed such amount, the Owner may reject all bids.

The owner may award the contract on the Total Bid submitted by a qualified responsible Bidder less the amount(s) of the Deductive Alternate(s) (if any) subtracted in numerical order, as listed in the contract to produce the lowest bid within the funds available for financing.

A. Unit prices have been computed in accordance with paragraph 13.03.A of the General Conditions.

B. Bidder acknowledges that estimated quantities are not guaranteed and are solely for the purpose of comparison of Bids, and final payment for all Unit Price Bid items will be based on actual quantities, determined as provided in the Contract Documents.

C. The Contractor, in calculating his TOTAL BID shall only use one Bid Item 21A, 21B or 21C for the 109,000 Gallon Water Storage Tank. The Contractor, in calculating his TOTAL BID shall only use one Bid Item 25A, 25B or 25C for the 294,000 Gallon Water Storage Tank. The new tanks shall either be glass-lined bolted steel, welded steel or epoxy coated bolted steel. Contractor shall write in NO BID on the other two tank types not being utilized.

ARTICLE 6 – TIME OF COMPLETION

6.01 Bidder agrees that the Work will be substantially complete and will be completed and ready for final payment in accordance with Paragraph 15.06 of the General Conditions on or before the dates or within the number of calendar days indicated in the Agreement.

6.02 Bidder accepts the provisions of the Agreement as to liquidated damages.

ARTICLE 7 – ATTACHMENTS TO THIS BID

7.01 The following documents are submitted with and made a condition of this Bid:

A. Bid Opening Requirements

ARTICLE 8 – DEFINED TERMS

8.01 The terms used in this Bid with initial capital letters have the meanings stated in the Instructions to Bidders, the General Conditions, and the Supplementary Conditions.

ARTICLE 9 – BID SUBMITTAL

BIDDER: *[Indicate correct name of bidding entity]*

_____

By:
[Signature] _____

[Printed name] _____
(If Bidder is a corporation, a limited liability company, a partnership, or a joint venture, attach evidence of authority to sign.)

Attest:
[Signature] _____

[Printed name] _____

Title: _____

Submittal Date: _____

Address for giving notices:

_____

_____

_____

Telephone Number: _____

Fax Number: _____

Contact Name and e-mail address: _____

_____

Bidder's License No.: _____
(where applicable)

NOTE TO USER: Use in those states or other jurisdictions where applicable or required.

CITY OF NEW CUMBERLAND

104 N. Court Street
New Cumberland, WV 26047
Phone: (304) 564-3383

CONTRACT #1 – POTABLE WATER SYSTEM IMPROVEMENTS
CONTRACT #2 – CUMBERLAND HEIGHTS WATER STORAGE TANK REPLACEMENT & REHABILITATION AND SUNSET LANE WATER STORAGE TANKS

THE THRASHER GROUP, INC.
PO Box 940
Bridgeport, WV 26330
Telephone # (304) 624-4108
Fax # (304) 624-7831

PRE-BID CONFERENCE NOTES

Tuesday, January 5, 2021

PROJECT LOCATION:	Hancock County, West Virginia
ENGINEER'S PROJECT #:	101-010-1041
DATE OF CONFERENCE:	Tuesday, January 5, 2021 at 10:00 A.M., LPT
CONFERENCE LOCATION:	City of New Cumberland 104 N. Court Street New Cumberland, WV 26047

PRE-BID NOTES

I. Introductions

1. The attached sign-in sheet documents all attendees.

II. General Project Description

1. The project includes two (2) contracts. Contract #1 includes water system improvements work. Contract #2 includes water storage tank rehabilitation, replacement and new construction.

2. Engineer's construction estimate:

    a. Contract #1 (line work, meters, WTP work): $1,325,000
    b. Contract #2 (tanks): $1,360,000

3. Contract Times:

    a. Substantial Completion:
        i. Contract #1: 210 days
        ii. Contract #2: 240 days (This was changed in Addendum #1)
    b. Final Completion:
        i. Contract #1: 240 days
        ii. Contract #2: 270 days (This was changed in Addendum #1)
    c. Liquidated Damages: $1,000 per day

III. General Bidding Information

a. General: **Bids are due to the City of New Cumberland located at 104 N. Court Street, New Cumberland, WV by 2:00 P.M., LPT, on Thursday, January 21, 2021. The bids will be publicly opened and read aloud at that time.**

b. Bid Opening Requirements (blue pages in the hard copies) – Described as per the Contract Documents and Detailed Specifications including the requirement of a Bid Bond equal to 5% of the Base Bid.

c. Bid Form (yellow pages in the hard copies) – Described as per the Contract Documents and Specifications. Bid Item Prices shall be written out in words and in figures. Words will govern if there is a discrepancy.

d. Method of Award - Contingent upon sufficient funding for the project, the Owner may elect to award the contract to the lowest qualified Bidder on the basis of the

total bid. If sufficient funding is not available to award the Contracts on the total bid, Deductive Alternates will be subtracted in numerical order in Contract #1 to produce the lowest bid within the funds available for financing. There are no Deductive Alternates in Contract #2 to be applied.

IV. Details of Project

a. Construction Sequence of Events – Described as per the Index Sheet in the Plans.
b. Material and Equipment – A general description was provided as per the Bid Forms.
c. Prevailing Wages – Federal Davis-Bacon Wage Rates are **NOT** required for this project.
d. American Iron and Steel – American Iron and Steel (AIS) requirements **ARE** required for this project.

V. Submittals – Required for all materials used for the Project as per the Specifications Sections 013300. Provide six (6) copies of all submittals. Three (3) will be returned to the Contractor, and one (1) copy each will be returned to the Owner, RPR and Engineer.

VI. Permits – All required permits have been applied for the Owner.

VII. B & O Taxes/Building Permits

a. A portion of the work is subject to a 2% Business & Occupation (B&O) tax that is required to paid to the City of New Cumberland. Monthly B&O tax payments shall be made to the City of New Cumberland, based on the previous month's pay estimate. Final Payment will not be released until all B&O taxes are paid in full.

Contract #1 – Plan Sheets #1-8 are outside of the City Limits and are excluded from B&O Tax. Plan Sheets 9-12 are in the City Limits and require payment of B&O Tax.

Contract #2 – All work inside the fence, including the new fence, at the Cumberland Heights Tanks qualifies for B&O Tax including the new tank and repainting the existing tank. Work inside of the proposed tank fence for the two new intermediate tanks on Plan Sheet 5 qualifies for B&O Tax along with all work inside the existing fencing of the intermediate tank and booster station site as shown on Plan Sheet 8. All line work and access road work outside of the proposed/existing fencing is excluded from B&O Tax.

b. The contractor is required to obtain a Business License at a cost of $15.00.

VIII. Office Trailer and Equipment, Storage Area, and Disposal Area

a. An office trailer is not required for the RPR on either contract. Thrasher will work out a suitable location with the Owner for an office location for the RPR.
b. The contractor is responsible for securing their own office trailer, storage and disposal areas. The contractor shall notify the engineer of all proposed disposal areas so they can be included in the modification to the storm water permit.

IX. Addressing Questions – All questions shall be written and provided to Steve Haynes via email at shaynes@thethrashergroup.com. The close of questions shall be 5:00 P.M., LPT on Wednesday, January 13, 2021. All answers shall be provided in writing via Addenda. **Questions will only be accepted via email to Steve Haynes at shaynes@thethrashergroup.com.**

X. Geotechnical Report and Waiver – A Geotechnical Engineering Report is available for the proposed Sunset Lane Tank Site and for the existing Cumberland Heights Tank Site. The Contractor must submit a waiver to Thrasher to receive the Geotechnical Engineering Report prepared by Terracon Consultants, Inc. Project No. N2205007.

XI. Addendum – At least one (1) Addendum will be written and supplied to all plan holders. Any and all addenda shall be acknowledged by the Contractor on Page BOR-21 as well as Article 3.01 on the Bid Form.

a. Revised Technical Specification 099050 – A revised Technical Specification Section 099050 Repainting of Steel Water Storage Facility will be included with Addendum 1 for Contract #2.

XII. Funding Agency – USDA-RD

XIII. Project Administrator – Brooke Hancock Jefferson Metropolitan Planning Commission Region 11 Planning & Development Council.

XIV. Owner

XV. Question and Answer Session

XVI. Site Visit

CITY OF NEW CUMBERLAND
MARSHALL COUNTY, WEST VIRGINIA
CONTRACT #1 – POTABLE WATER SYSTEM IMPROVEMENTS
CONTRACT #2 – CUMBERLAND HEIGHTS WATER STORAGE TANK REPLACEMENT & REHABILITATION AND SUNSET LANE WATER STORAGE TANKS

PRE-BID CONFERENCE
Tuesday, January 5, 2021

Thrasher Project #101-010-1041

Name	Representing	Phone #	Email Address
Randy Watson	Thrasher Group	304-626-0703	RWatson@thethrashergroup.com
DJ Eddy	Tri State	304-553-1504	djeddy@iupatdc53.org
Thomas Gianni	James White	304-748-8181	tgianni@jameswhiteconstruction.com
William Lockhart	LM&R Excavating	724-910-0810	lmrexcavating@outlook.com
Will Allison	Alex E Paris Cont	724 947 2235	wallison@alexparis.com
Mark Cowden	Alex E Paris	724-947-2235	mcowden@alexparis.com
Tony Closson	JT Allen Co.	304-460-7424	TClosson@JTAllenCo.com
ED BEZAK	GRAE CON CONST	740-282-6830	

Name	Representing	Phone #	Email Address
Kevin Kloska	Grae-Con	724-683-2820	KKloska@graecon.com
Cody Saltsman	Fort Steuben Maintenance	740-461-9357	cody@fortsteubenmaint.com
James Cooper	Fort Steuben	740-317-4535	coopfsm@yahoo.com
Roy Six	RMS/MKC	330-383-7296	rsix@refineryms.com
Tony Lester	MCK	412-303-9889	tony@mck-construction.com
Rob Hoover	AJ Burk	304 614-3160	rhoover@ajburk.com
Bill McGee	Stonegate Construction	304-210-0997	billmcgee@stonegatedigs.com
Mark Stolle	FOSTER	304.206 7808	mark@fostersupply.com
Frank Flora	James white Construction	304-748-8181	fflora@jameswhiteconstruction.com

SECTION 099050 - REPAINTING OF STEEL WATER STORAGE FACILITY

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions, Division 01, and all related Specification Sections, apply to this section.

1.2 DESCRIPTION

A. Scope:

1. This section of the specifications contains the detailed criteria for the selection of materials, surface preparation, and the furnishing of all paint, labor, equipment and appliances for field painting of steel water storage facilities specified herein: ANSI/AWWA D102 "AWWA Standard for Painting Steel Water Storage Tanks."

B. Definitions:

1. Specific coating terminology used in this section is in accordance with definitions contained in ASTM D16, ASTM D3960, and the following definitions:

   a. Dry Film Thickness (DFT): the thickness of one (1) fully cured continuous application of coating.
   b. Field Coat: the application or the completion of application of the coating system after installation of the surface at the site of the work.
   c. Shop Coat: One (1) or more coats applied in a shop or plant prior to shipment to the site of erection or fabrication, where the field or finishing coat is applied.
   d. Tie Coat: An intermediate coat used to bond different types of paint coats. Coatings used to improve the adhesion of a succeeding coat.
   e. Photochemically Reactive Organic Material: Any organic material that will react with oxygen, excited oxygen, ozone or other free radicals generated by the action of sunlight on components in the atmosphere giving rise to secondary contaminants and reaction intermediates in the atmosphere which can have detrimental effects.
   f. Volatile Organic Compound (VOC) Content: The portion of the coating that is a compound of carbon, is photochemically reactive, and evaporates during drying or curing, expressed in grams per liter or pounds per gallon.
   g. Touch-Up Painting: The application of paint on areas of painted surfaces to repair marks, scratches, and areas where the coating has deteriorated to restore the coating film to an unbroken condition.

1.3 PRE-JOB MEETING

A. A pre-job meeting shall be held to discuss the technical aspects of the specified coatings and their application characteristics. All contractors bidding are highly encouraged to attend this meeting.

1.4 CONTRACTOR PRE-QUALIFICATION

A. All contractors bidding shall provide documentation of having repainted five (5) potable water tanks within 12 months of the bid date.
B. Access to the site can be obtained by contacting the Owner.

1.5 QUALITY ASSURANCE

A. References:

1. This section contains references to the following documents. They are a part of this section as specified and modified. Where a referenced document contains references to other standards, those documents are included as references under this section as if referenced directly. In the event of conflict between the requirements of this section and those of the listed documents, the requirements of this section shall prevail.

2. Unless otherwise specified, references to documents shall mean the documents in effect at the time of Advertisement for Bids, Invitation to Bid, or on the effective date of the Agreement if there were no Bids. If referenced documents have been discontinued by the issuing organization, references to those documents shall mean the replacement documents issued or otherwise identified by that organization. Where document dates are given in the following listing, references to those documents shall mean the specific document version associated with that date, regardless of whether the document has been superseded by a version with a later date, discontinued or replaced.

Reference	Title
ASTM D16	Standard Terminology Relating to Paint, Varnish, Lacquer and Related Products
ASTM D2200 (SSPC-Vis1)	Pictorial Surface Preparation Standards for Painting Steel Surfaces
ASTM D3359A	Methods for Measuring Adhesion by Tape Test
ASTM D3960	Practice for Determining Volatile Organic Compound (VOC) Content of Paints and Related Coatings
ASTM D4417	Field Measurement of Surface Profile of Blast-Cleaned Steel
F 595 B	Federal Standard Colors
SSPC	SSPC Painting Manual – Systems and Specifications, Vol. 2

B. Standardization

1. Materials and supplies provided shall be the standard products of Manufacturers. Materials in each coating system shall be the products of a single Manufacturer.

2. The standard products of Manufacturers other than those specified will be accepted when it is demonstrated to the Engineer that they are equal in composition, durability, usefulness and convenience for the purpose intended. Requests for substitutions will be considered, provided the following minimum conditions are met:

a. The proposed coating system shall use an equal or greater number of separate coats to achieve the required dry film thickness.

b. The proposed coating system shall use coatings of the same generic type as that specified.
c. Requests for substitution shall have directions for application and descriptive literature which includes generic type, percent solids by volume, volatile organic content (grams per liter), and information confirming that the substitution is equal to the specified coating system.
d. The Contractor shall provide a list of references where paint of the same generic type has been applied. The reference list shall give the project name, city, state, owner, phone number of owner, coating system reference and number, and year paint was applied.

1.6 DELIVERY AND STORAGE

A. Materials shall be delivered to the job site in their original, unopened containers. Each container shall bear the following:

1. Manufacturer's name
2. Coating type
3. Batch number
4. Date of manufacture
5. Storage life
6. Special directions

B. Materials shall be stored in enclosed structures and shall be protected from weather and excessive heat or cold. Flammable materials shall be stored in accordance with state and local codes.

C. Materials exceeding storage life recommended by the Manufacturer shall be removed from the site.

1.7 RESPONSIBILITY

A. The Contractor shall provide all materials, scaffolding, and other equipment and services required to prepare all surfaces and coat all surfaces as set forth in the Contract Documents. The Contractor shall be responsible for the final finish on all surfaces.

1.8 SUBMITTALS

A. Before materials are delivered to the job site, the Contractor shall provide the following information in accordance with Section 013000 – Administrative Requirements.

1. For each primer and finish coating, the Contractor shall furnish a Safety Data Sheet (SDS).
2. For each primer and finish coating, the Contractor shall provide the Manufacturer's application instructions, which shall include the following:

a. Surface preparation recommendations.
b. Primer type, where required.

c. Maximum dry and wet mil thickness per coat.
d. Minimum and maximum curing time between coats, including atmospheric conditions for each.
e. Curing time before submergence in liquid.
f. Thinner to be used with each paint.
g. Ventilation requirements.
h. Minimum atmospheric conditions during which the paint shall be applied.
i. Allowable application methods.
j. Maximum allowable moisture content.
k. Maximum storage life.

3. List of materials proposed to be used under this section and Manufacturer's data for each material.
4. Color charts.

PART 2 – PRODUCTS

2.1 MANUFACTURER(S)

A. Tnemec Company, Inc.
B. The Sherwin Williams Company
C. Engineer's Approved Equal

2.2 MATERIALS SELECTION, COLORS, AND LABELING

A. The Contractor shall furnish information to the Engineer by way of shop drawing submittal for the proposed materials to be used in execution of the work. The information shall include the following:

1. Complete product specification sheets
2. Manufacturer's instructions
3. Color selection guides

B. If requested by the Engineer, the Contractor shall also secure a written statement from the painting manufacturer attesting to the compatibility of the proposed paint systems with the existing paint described hereinafter.

C. The Engineer will prepare a color schedule based on the Owner's selections (except where colors are already specified herein) and return the same to the Contractor along with the reviewed shop drawings.

D. All materials shall be delivered to the site in manufacturer's sealed containers. The manufacturer shall label each container. Labels shall give the following:

1. Manufacturer's name
2. Brand
3. Type of paint
4. Color of paint

5. Instructions for reducing

E. Thinning shall be done only in accordance with direction of the manufacturer and exclusively with the types of reducer recommended. Mixing or job tinting may be done when approved by the Engineer.

2.3 EXISTING PAINT SYSTEMS

A. The existing interior coatings on the storage tank are to be completely removed in accordance with Steel Structures Painting Council Specifications SSPC-SP10 "Near White Blast". The exterior finish will be cleaned by using 3,000-4,000 PSI, 3.0 GPM minimum, pressure wash with Great Lakes Laboratories Extra Muscle Pre-paint Cleaner or Engineer's approved equal and cleaned following SSPC-SP2 and SSPC-SP3 standards.

B. Protection of Grounds

1. Contractor shall provide scaffolding and containment during sand blasting, priming and painting for protection of people and property, including all landscaping, driveways, roads, walks, buildings, utilities, etc. Any damage to such items shall be corrected by the Contractor at the Contractor's expense to the Owner's satisfaction.

C. Abatement of Lead Based Paint

1. The exterior paint system has been tested for lead paint. The interior paint system has NOT been tested for lead paint. The Contractor shall provide containment of all loose paint removed from the interior and exterior tank where lead is present. The Contractor shall submit a lead paint abatement plan to the Engineer for approval prior to the start of any work performed on the tank.

2. The Contractor shall comply with West Virginia State Code CFR16-35 cited as the West Virginia "Lead Abatement Act."

3. The Contractor shall perform the following duties as part of the lead paint abatement plan:
   a. Ensure that each of his or her employees or agents who will come in contact with lead or who will be responsible for a lead abatement project is licensed. Employees will be required to take a blood test prior to beginning work on this project. The blood test results shall be submitted to the Owner. Should the test results be greater than 40 micrograms/dl, the employee will not be permitted to work on this project.

   b. Ensure that the project is supervised by a licensed lead abatement supervisor.

   c. Maintain sampling records for each contained work area of a lead abatement project until it meets the minimum clearance standards established by the West Virginia Department of Environmental Protection.

   d. Keep a record of the project and make the record available to the division and the divisions of commerce, labor, and environmental protection upon request. Records required by this subsection shall be kept for at least three years and shall include at a minimum:

1. The name, address and license number of the individual who supervised the lead abatement project and each employee or agent who worked on the project.
2. The location and design of the project, if applicable, and the amount of lead-containing material that was removed.
3. The starting and completion date of the project and a summary of the procedures that were used to comply with all federal and state standards.
4. The name and address of each disposal site where lead-contaminated waste was deposited and the disposal site receipts.

e. Contractor will be responsible for proper disposal of all discarded paint, rust debris, and sandblasting material for each tank. The tank(s) may or may not contain lead-based paint. If lead-based paint is encountered, the Contractor shall be responsible for legally removing, storing and disposing of the discarded lead-contaminated material. One (1) paint sample was taken from the 300k (gallon) tank, one (1) sample was taken from the 500k (gallon) tank and one (1) sample was taken from the Booster tank. The results are included at the end of this section for information only.

2.4 SCHEDULE OF NEW PRODUCTS

A. Products specified are as manufactured by Sherwin Williams or Tnemec Company, Inc.

1. Products for each specified function and system shall be of a single manufacturer.
2. All materials in contact with potable water must have been tested and approved by the ANSI/NSF Standard 61.

2.5 EXTERIOR REPAINT SYSTEM

A. The exterior surfaces shall be painted using the following system:

Coat - Color	Tnemec	Sherwin Williams
Prime - Gray	Tnemec Series 135 Chembuild @ 3.0 – 5.0 mils DFT. *	Macropoxy 646 Fast Cure Epoxy @ 3.0 – 5.0 mils DFT.*
Intermediate – Contrast Prime and Finish	Tnemec Series 135 Chembuild @3.0 – 5.0 mils DFT. *	Macropoxy 646 Fast Cure Epoxy @ 3.0 – 5.0 mils DFT.*
Finish – Selected by Owner	Tnemec Series 30 Spra-Saf EN @ 2.0 – 3.0 mils DFT. *	Acrolon 218 HS or Hi-Solids Polyurethane @ 2.0 – 3.0 mils DFT.*
Total DFT	8.0 – 12.0 mils	8.0 – 12.0 mils
*Notes:	Apply one (1) complete coat of each paint. Certain finish coat colors may require two (2) coats. Color shall be determined by Engineer/Owner.	Apply one (1) complete coat of each paint. Certain finish coat colors may require two (2) coats. Color shall be determined by Engineer/Owner.

B. The Contractor shall furnish to the Owner at least one (1) extra gallon to finish paint specified above for exterior paint for touch-up repairs.

C. All materials shall be applied in accordance with manufacturer's directions and any thinning required shall be done in a manner and exclusively with the type of reduce recommended.

D. Spray application may be used in conformance with applicable section of AWWA D102.

E. All materials shall be applied under adequate illumination.

2.6 INTERIOR REPAINT SYSTEM

A. The interior surfaces shall be painted using the following system:

Coat - Color	Tnemec	Sherwin Williams
Prime - Gray	Series 94-H20 Hydro Zinc Aromatic Zinc Rich Urethane @ 2.0 – 4.0 mils DFT.*	Corothane 1 Galvapac 1K Zinc Rich Primer @ 2.0 – 4.0 mils DFT.*
Stripe Coat – Contrast Prime and Intermediate Coat	Series N140-15BL @ 2.0 – 3.0 mils DFT.*	Macropoxy 5500 @ 2.0 – 3.0 mils DFT.*
Intermediate Coat – Contrast Weld Coat	Series N140-1255 Pota-Pox Plus Polyamidoamine Epoxy @ 4.0 – 6.0 mils DFT. *	Macropoxy 5500 @ 4.0 – 6.0 mils DFT.*
Finish – Selected by Owner	Series N140-15BL Pota-Pox Plus Polyamidoamine Epoxy @ 5.0 – 6.0 mils DFT. *	Macropoxy 5500 @ 5.0 – 6.0 mils DFT. *
Total DFT	11.0 –16.0 mils	11.0 – 16.0 mils
*Notes:	Apply one (1) complete coat of each paint. For the Weld Coat, apply by brush to all welds and sharp edges. Otherwise, apply by spray application.	Apply one (1) complete coat of each paint. For the Weld Coat, apply by brush to all welds and sharp edges. Otherwise, apply by spray application.

B. All coatings shall be a "system" and shall be thoroughly compatible each with the other. No coatings or primers of different manufacturers shall be applied upon each other. The contractor shall submit the coatings schedule to the Owner. Coatings must be approved for potable water use.

C. Paint shall not be applied when the temperature of the steel or paint is below 40 degrees F. Paint shall not be applied when the surface temperature is expected to drop 32 degrees F before the paint has dried. With chemically cured coatings, (catalyzed epoxies, etc.) particular care shall be exercised to follow manufacturer's special temperature requirements (usually 50 degrees F or above).

D. Paint shall not be applied in rain, snow fog, mist or when the steel temperature is below the dew point, resulting in condensation.

E. Each coat of paint shall be in proper state of cure or dryness before the application of the succeeding coat. A minimum of 24 hours shall be allowed between coats.

F. All weld seams shall receive one (1) brush coat of the specified primer after the sandblasting and cleaning has been completed. The brush prime coat is in addition to the specified prime coat.

G. All coats shall be smooth, free of brush marks, streaks, laps or pile up of paints, and skipped or missed area.

2.7 TOUCH-UP AND REPAIR

H. At completion, all painted surfaces and coatings shall be inspected. All damaged spots, whether due to defective materials or workmanship or defects of surfaces covered shall be touched up and the finish restored. Additional coats of paint and coatings required to cover all spots or discoloration of every sort shall be applied at no additional costs to the Owner.

I. The contractor shall furnish to the Owner at least one (1) extra gallon of finish paint specified above of exterior paint for touch-up repairs due to vandalism.

2.8 MISCELLANEOUS REPAIRS

A. The Contractor shall perform the following miscellaneous repairs to the existing 500,000 Gallon water storage tank:

1. Seal the bottom of the tank to the foundation using a polyurethane caulk approved by AWWA.

2. Replace the water level indicator and float system.

3. Pressure wash the exterior of the tank, hand tool clean, surface preparation according to SSPC-SP-2 and SSPC-SP-3, spot prime, and repair the exterior of the tank. Weld pit, 1-inch diameter, repair as needed.

4. Seal interior seams using Sikaflex 1a (or Engineer's approved equal) on all un-welded interior roof lap seams.

5. Seal circumference roof to rim angle connection using Sikaflex 1a. (or Engineer's approved equal)

6. Clean debris from the interior of the tank.

7. Sand blast interior to an SSPC #10, stripe coat all seams and welds and repair interior of the tank.

2.9 CATHODIC PROTECTION SYSTEM

A. Cathodic protection for the tanks shall be of the impressed current design. The impressed current cathodic protection shall conform to AWWA D104 latest edition.

PART 3 – EXECUTION

3.1 MANUFACTURER(S)

A. Surfaces shall be clean, dry, and adequately protected from dampness. Surfaces shall be free of any material, which will adversely affect adhesion or appearance of painting and coating.

B. Cleanliness shall be checked by wiping the prepared steel surface with a white cloth dampened with manufacturer's thinner for the particular paint system. If the surface is not clean, the contractor shall take steps to clean the surface more thoroughly before applying paint.

C. All surface preparation procedures should be done in conformance with local, state, and federal OSHA and EPA guidelines. Waste generation and removal should be in conformance with all OSHA and EPA guidelines.

3.2 INTERIOR SURFACES

A. Interior surfaces shall have all existing paint removed with surface preparation SSPC –SP10 (near white metal blast). All rust pits, which penetrate 50% or more of the thickness of the steel, shall be repaired by welding. All welding shall be done in conformity with "ANSI/AWWA D100-96 Welded Steel Tanks for Water Storage".

3.3 EXTERIOR SURFACES

A. Exterior surfaces shall have existing paint removed with surface preparation to include a 3,000-4,000, 3.0 GPM minimum, high pressure wash with Great Lakes Laboratories Extra Muscle Pre-paint Cleaner or Engineer's approved equal and cleaned following SSPC-SP2 and SSPC-SP3 standards.

3.4 WELDS

A. Existing weld spatter or weld spatter introduced during repair or renovation procedures shall be removed by power tool cleaning.

3.5 APPLICATION

A. All materials shall be applied in accordance with manufacturer's directions and any thinning required shall be done in a manner and exclusively with the type of reducer recommended.

B. All materials shall be applied under adequate illumination.

C. Materials shall be thoroughly mixed and kept at a uniform consistency during application.

Pot life limitations will be enforced.

D. Finished work shall be uniform and of the approved color. Make edges of paint adjoining other materials or colors sharp and clean without overlapping.

E. Total minimum dry film thickness of paint films specified herein will be measured with an Elcometer or similar instrument to determine acceptability. Special attention shall be given to weld seams.

F. No painting or finishing shall be done under conditions, which are unsuitable for the production of good results. The surfaces to be painted shall be at least 5 feet above the dew point. Apply all paint consistent with temperature limitations as noted by the manufacturer. Do not apply finishes in spaces where dust is being generated.

3.6 FIRST ANNIVERSARY INSPECTION

A. The Owner shall establish a time period for inspection of paint systems within the contract guarantee period in accordance with Section 9 of AWWA D102. The Contractor shall comply with said Section 9 at no additional cost to the Owner.

3.7 DISINFECTION AND STERILIZATION

A. Sufficient cure, per the manufacturer's recommendations, of the final coat on the interior wet surface shall be allowed before the elevated tank is sterilized and filled with water.

B. The tank shall be sterilized using Chlorination Method No. 2 or 3 per the requirements of AWWA C652.

C. The Owner, free of charge to the Contractor, shall furnish and dispose of sufficient water for testing and sterilization. The water shall be at proper pressure to fill the tank to the maximum working level. Any leaks in the tank that are disclosed by this test shall be repaired by gouging out defective areas and re-welding. No repair work shall be done on any joint unless the water in the tank is at least two (2) feet below the joint being repaired. Any paint damaged by repairs shall be properly restored.

D. Upon completion of the sterilization procedure, the Owner or his representative shall arrange and bear the cost of any bacteriological testing of water samples from the tank may be required. The tank shall not be placed in service until safe test results are obtained.

3.8 WORKMANSHIP AND CLEANUP

A. The contractor shall keep the premises clean at all times and shall remove all rubbish as often as directed by the Engineer. All debris is to be removed from the grounds.

3.9 BASIS OF PAYMENT

A. Measurement and payment for all work and materials described in these specifications shall

be included in the Contractor's lump sum bid prices as shown in the Bid Schedule.

END OF SECTION 099050

Reliance Laboratories, Inc.
2044 Meadowbrook Road | P.O. Box 4657
Bridgeport, WV 26330
Phone: 304.842.5285 | Fax: 304.842.5351

Martinsburg Laboratory
Ridgefield Business Center | 25 Crimson Circle
Martinsburg, WV 25403
Phone: 304.596.2084 | Fax: 304.596.2086

Certifications: WV Department of Health #: 00354, 00443 | WV Department of Environmental Protection #: 158, 181
MD Department of Environment #: 336, 337 | US Environmental Protection Agency #: WV00042, WV00901

LABORATORY REPORT SUMMARY

Client: C01433

THRASHER ENGINEERING
600 WHITE OAKS BOULEVARD
BRIDGEPORT WV 26330-

Monday, March 25, 2019

Total Number of Pages: 6
(Not Including C.O.C.)
Page 1 of 6

Lab ID	Sample ID	Sample ID 2	Sample Date
302475-2019-M	NICHOLSON TANK- SALEM	PROJ #1010100783	2/20/2019
302476-2019-M	FORD STATION TANK- SALEM	PROJ #1010100783	2/20/2019
302477-2019-M	300K TANK- NEW CUMBERLAND	PROJ #101-010-1041	12/20/2018
302478-2019-M	500K TANK- NEW CUMBERLAND	PROJ #101-010-1041	12/20/2018
302479-2019-M	BOOSTER TANK- NEW CUMBERLAND	PROJ #101-010-1041	12/20/2018

The enclosed results have been analyzed according to the referenced method and SOP. Any deviations to the method have been noted on the report. Unless otherwise noted, all results have been verified to meet quality control requirements of the method. All analysis performed by Reliance Laboratories, Bridgeport, WV or Reliance Laboratories, Martinsburg, WV, as noted on laboratory report. This report may not be reproduced, except in full, without written approval of Reliance Laboratories, Inc.

Report Reviewed By:

Reliance

Reliance Laboratories, Inc.
2044 Meadowbrook Road | P.O. Box 4657
Bridgeport, WV 26330
Phone: 304.842.5285 | Fax: 304.842.5351

Martinsburg Laboratory
Ridgefield Business Center | 25 Crimson Circle
Martinsburg, WV 25403
Phone: 304.596.2084 | Fax: 304.596.2086

Certifications: WV Department of Health #: 00354, 00443 | WV Department of Environmental Protection #: 158, 181
MD Department of Environment #: 336, 337 | US Environmental Protection Agency #: WV00042, WV00901

THRASHER ENGINEERING
600 WHITE OAKS BOULEVARD

BRIDGEPORT, WV 26330-

Lab Number: 302477-2019-M **Sample ID:** 300K TANK- NEW CUMBERLAND
PROJ #101-010-1041

Parameter	Value	Units	Method	Date/Time Analyzed	Analyst	MDL	MRL
Analyte Group: Inorganics							
Total Lead	42476	mg/kg	SW6010C	3/25/2019 11:41	TH	0.13	0.5

Remarks:

Analysis performed by Reliance Laboratories Bridgeport, WV

Date Sample Collected: 12/20/2018 14:00
Sample Submitted By: M. HAYES/S. HAYNES
Date Sample Received: 3/20/2019 10:35
Sample temp. upon receipt: 20.2 Deg C

MDL - Minimum Detectable Limit
MCL - Maximum Contaminant Level, USEPA Regulated
ND = Not Detected at the MDL or MRL
MRL - Minimum Reporting Limit
J = Reported value is an estimate because concentration is less than the MRL

***Method Code: STANDARD METHODS ONLINE ED; US EPA METHODS FOR THE CHEMICAL ANALYSIS OF WATER AND WASTES, Rev. 83; US EPA METHODS FOR THE DETERMINATION OF METALS IN ENVIRONMENTAL SAMPLES, May 1994; TEST METHODS FOR EVALUATING SOLID WASTE, SW-846, 3rd ED; USEPA Manual for Certification of Laboratories Analyzing Drinking Water, 5th ED. In accordance with EPA Regulations, all reports, including raw data and quality control data, are maintained by the laboratory for a minimum of 5 years.**

NOTE: **mg/kg as received

NOTE: Sample analyzed was improperly preserved or received in an improper container.

Reliance Laboratories, Inc.
2044 Meadowbrook Road | P.O. Box 4657
Bridgeport, WV 26330
Phone: 304.842.5285 | Fax: 304.842.5351

Martinsburg Laboratory
Ridgefield Business Center | 25 Crimson Circle
Martinsburg, WV 25403
Phone: 304.596.2084 | Fax: 304.596.2086

Certifications: WV Department of Health #: 00354, 00443 | WV Department of Environmental Protection #: 158, 181
MD Department of Environment #: 336, 337 | US Environmental Protection Agency #: WV00042, WV00901

THRASHER ENGINEERING
600 WHITE OAKS BOULEVARD

BRIDGEPORT, WV 26330-

Lab Number: 302478-2019-M **Sample ID:** 500K TANK- NEW CUMBERLAND
PROJ #101-010-1041

Parameter	Value	Units	Method	Date/Time Analyzed	Analyst	MDL	MRL
Analyte Group: Inorganics							
Total Lead	1441	mg/kg	SW6010C	3/25/2019 11:43	TH	0.13	0.5

Remarks:

Analysis performed by Reliance Laboratories Bridgeport, WV

Date Sample Collected: 12/20/2018 14:00
Sample Submitted By: M. HAYES/S. HAYNES
Date Sample Received: 3/20/2019 10:35
Sample temp. upon receipt: 20.2 Deg C

MDL - Minimum Detectable Limit
MCL - Maximum Contaminant Level, USEPA Regulated
ND = Not Detected at the MDL or MRL
MRL - Minimum Reporting Limit
J = Reported value is an estimate because concentration is less than the MRL

***Method Code: STANDARD METHODS ONLINE ED; US EPA METHODS FOR THE CHEMICAL ANALYSIS OF WATER AND WASTES, Rev. 83; US EPA METHODS FOR THE DETERMINATION OF METALS IN ENVIRONMENTAL SAMPLES, May 1994; TEST METHODS FOR EVALUATING SOLID WASTE, SW-846, 3rd ED; USEPA Manual for Certification of Laboratories Analyzing Drinking Water, 5th ED. In accordance with EPA Regulations, all reports, including raw data and quality control data, are maintained by the laboratory for a minimum of 5 years.**

NOTE: **mg/kg as received

NOTE: Sample analyzed was improperly preserved or received in an improper container.

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MD Department of Environment #: 336, 337 | US Environmental Protection Agency #: WV00042, WV00901

THRASHER ENGINEERING
600 WHITE OAKS BOULEVARD

BRIDGEPORT, WV 26330-

Lab Number: 302479-2019-M **Sample ID:** BOOSTER TANK- NEW CUMBERLAND
PROJ #101-010-1041

Parameter	Value	Units	Method	Date/Time Analyzed	Analyst	MDL	MRL
Analyte Group: Inorganics							
Total Lead	2341	mg/kg	SW6010C	3/25/2019 11:44	TH	0.13	0.5

Remarks:

Analysis performed by Reliance Laboratories Bridgeport, WV

Date Sample Collected: 12/20/2018 14:00
Sample Submitted By: M. HAYES/S. HAYNES
Date Sample Received: 3/20/2019 10:35
Sample temp. upon receipt: 20.2 Deg C

MDL - Minimum Detectable Limit
MCL - Maximum Contaminant Level, USEPA Regulated

ND = Not Detected at the MDL or MRL
MRL - Minimum Reporting Limit
J = Reported value is an estimate because concentration is less than the MRL

*Method Code: STANDARD METHODS ONLINE ED; US EPA METHODS FOR THE CHEMICAL ANALYSIS OF WATER AND WASTES, Rev. 83; US EPA METHODS FOR THE DETERMINATION OF METALS IN ENVIRONMENTAL SAMPLES, May 1994; TEST METHODS FOR EVALUATING SOLID WASTE, SW-846, 3rd ED; USEPA Manual for Certification of Laboratories Analyzing Drinking Water, 5th ED. In accordance with EPA Regulations, all reports, including raw data and quality control data, are maintained by the laboratory for a minimum of 5 years.

NOTE: **mg/kg as received

NOTE: Sample analyzed was improperly preserved or received in an improper container.

SECTION 434113 - WELDED STEEL WATER STORAGE TANK

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Ground-mounted flat-bottom welded steel water storage tank(s) of the size and dimensions indicated in the Water Storage Tank Schedule at the end of this Specification Section. The tank will store potable water.

B. Scope of Work

1. The work required under this Specification Section shall consist of all necessary materials, tools, equipment, and labor for the construction and successful operation of a ground-mounted flat-bottom welded steel water storage tank with tank foundation and all appurtenances shown in the Drawings. All tanks furnished and installed under this Section shall meet or exceed the minimum requirements of AWWA Standard D100, latest revision (AWWA D100), all requirements of this Specification Section, and any and all of the requirements of any and all federal, state, and local agencies having jurisdiction.

C. Related Requirements:

1. **Section 012000 – Price and Procedures**
2. **Section 033000 – Cast-In-Place Concrete**
3. **Section 323113 – Chain Link Fences and Gates**
4. **Section 331113 – Public Water Utility Distribution Piping**
5. **Section 331300 – Disinfecting of Water Utility Distribution**
6. **Section 331313 – Water Storage Tank Disinfection**
7. **Section 330517 – Precast Concrete Valve Vaults**

1.2 DEFINITIONS

A. Purchaser: As used in AWWA D100, refers to Owner.

1.3 REFERENCE STANDARDS

A. ASTM International:

1. ASTM A53/A53M - Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless.

B. American Water Works Association:

1. AWWA D100 - Welded Carbon Steel Tanks for Water Storage.
2. AWWA D106 – Sacrificial Anode Cathodic Protection Systems for the Interior Submerged Surfaces of Steel Water Storage Tanks.

C. American Welding Society:

1. AWS QC1 - Standard for AWS Certification of Welding Inspectors.

D. Occupational Safety and Health Administration (OSHA).

E. NSF/ANSI 61, Drinking Water System Components – Health Effects

1.4 COORDINATION

A. Section 013000 - Administrative Requirements: Requirements for coordination.

B. Coordinate Work with Owner and other Contractor(s) for other related Contract(s).

1.5 SCHEDULING

A. Provide and update schedule on a regular basis. Coordinate schedule with Owner and Contractor(s) for other Contract(s).

1.6 SUBMITTALS

A. Section 013300 - Submittal Procedures: Requirements for submittals.

B. Product Data:

1. Submit data for expansion joint fittings and other pipe specialty fittings.
2. Submit data for ladder and ladder safety devices.
3. Submit information concerning materials of construction, fabrication, and protective coatings.

C. Shop Drawings:

1. Signed and sealed by professional engineer.
2. Tank Shop Drawings shall include, but not be limited to, the following:

a. Complete plan, elevation, and sectional Drawings showing critical dimensions.
b. Tank foundation details.
c. Inlet and outlet piping,
d. Structural plate thickness.
e. Details of all weld types and sizes.
f. Inlet pipe with removable silt stop, outlet pipe with removable silt stop, and overflow piping details, including fittings, expansion joints, pipe support methods.
g. Ladder and ladder safety device details.
h. Handrail details.
i. Shell access hatch details.
j. Roof hatch details.
k. Pressure-vacuum vent details.
l. Water level indicator.
m. Valve pit details.
n. Tank manufacturer identification details.

o. Cathodic protection.

D. Manufacturer's Certificate:

1. Certify that products meet or exceed specified requirements.
2. Submit certified list of welded steel water tank installations storing potable water, in service for period of not less than five years. Provide Owner name and contact information for each. A minimum of five successful installations is required. Successful installations are those in service longer than five years with minimal maintenance issues as described by the Owners of those installations and/or as observed by the Engineer.

E. Details of Welded Joints: Submit according to AWWA D100.

F. Delegated Design Submittals: Submit signed and sealed design calculations and assumptions for structural calculations for tank, tank foundation, and cathodic protection

G. Test and Evaluation Reports:

1. Submit mill test reports.
2. Submit certified factory test results.
3. Written Report Certifying Work: Prepare and submit as indicated in AWWA D100.
4. Submit radiographic film and test segments, identified to shell plate diagrams, at completion of Work.
5. Submit Installation Certificate from equipment manufacturer's representative, as described in PART 3 of this Section.

H. Manufacturer's Instructions: Submit detailed instructions on installation requirements, including tank handling procedures, anchoring, and layout.

I. Source Quality-Control Submittals: Indicate results of shop and/or factory tests and inspections.

J. Field Quality-Control Submittals: Indicate results of Contractor-furnished tests and inspections.

K. Manufacturer Reports: Submit certification that tank has been installed according to manufacturer's instructions.

L. Qualifications Statements:

1. Submit qualifications for manufacturer, fabricator, erector, and licensed professional.
2. Submit manufacturer's approval of erector.
3. Submit names and qualifications of welders, welding operators, and tackers before performing welding.
4. Submit qualifications of certified welding inspector.

1.7 MAINTENANCE MATERIAL SUBMITTALS

A. Section 017000 - Execution and Closeout Requirements: Requirements for maintenance materials.

1.8 CLOSEOUT SUBMITTALS

A. Section 017000 - Execution and Closeout Requirements: Requirements for closeout procedures.

B. Project Record Documents: Record actual locations and final orientation of tank and accessories.

C. Operation and Maintenance Data: Submit maintenance instructions for tank and accessories.

1.9 QUALITY ASSURANCE

A. Perform Work according to AWWA D100.

1.10 QUALIFICATIONS

A. Manufacturer: Company specializing in manufacturing products specified in this Section with minimum five years' documented experience.

B. Fabricator: Company specializing in fabricating products specified in this Section with minimum five years' documented experience.

C. Erector: Company specializing in performing Work of this Section with minimum five years' documented experience and approved by manufacturer.

D. Licensed Professional: Professional engineer experienced in design of specified Work and actively licensed in the state where the tank is located. The licensed professional shall furnish a copy of the Certificate of Authorization (or equivalent) for his/her company to practice engineering in the state of licensure.

E. Welders, Welding Operators, and Tackers: ASME Section IX qualified within previous 12 months.

F. Certified Welding Inspector: Certified according to requirements of AWS QC1.

1.11 DELIVERY, STORAGE, AND HANDLING

A. Section 016000 - Product Requirements: Requirements for transporting, handling, storing, and protecting products.

B. Inspection: Accept tanks on-Site. Inspect tanks for damage.

C. Store products in areas protected from weather, moisture, or possible damage; do not store products directly on ground; handle products to prevent damage to interior or exterior surfaces.

1.12 WARRANTY

A. Section 017000 - Execution and Closeout Requirements: Requirements for warranties.

B. The tank manufacturer shall include a warranty on tank materials and workmanship for a specified period. As a minimum, the warranty shall provide assurance against defects in material, coatings, workmanship, tank interior and exterior lining, foundation, and appurtenances for a period of five (5) years from the date of Substantial Completion. A five (5) year warranty bond must be provided concurrent with the manufacturer's warranty. The warranty bond must be for the full amount listed in the bid section. Tank inspections, including interior, shall be performed at the end of year one, year three and just prior to the end of the 5 year warranty period at no additional cost to the Owner.

PART 2 - PRODUCTS

2.1 TANK

A. Steel: All steel shall be American Made.

B. Substitutions:

1. Substitutions: Substitute and "or-equal: products will be considered in accordance with Article 11 – Substitute and "Or-Equal" Items of the Instructions to Bidders. The minimal required information for consideration shall include the following:
   a. Typical structure and foundation drawings.
   b. List of tank materials and appurtenances
   c. Tank coating specifications.
   d. Certification from tank manufacturer that the proposed substitute meets all of the design standards of this Specification and AWWA C100.
   e. Acceptance as a substitute or "or-equal" does not constitute approval of submittals required in this and other Specification Sections.

C. Description:

1. Design, fabricate, and erect ground-level, flat-bottom, welded steel water storage tank and accessories.

D. Performance and Design Criteria:

1. Design in conformance with requirements listed in AWWA D100, unless supplemented or modified in this Section:

   a. Bottom capacity level (BCL) and top capacity level (TCL) above top of foundation: As indicated on Drawings as Base Elevation and Overflow Elevation or other terms describing the same.
   b. Specific Gravity: 1.00 for Water
   c. Roof: As indicated on Drawings. Tanks up to 75 feet diameter shall be a self-supporting all butt-welded umbrella dome roof or an elliptical steel dome roof. Column supported roofs or roofs requiring any type of rafter/bracing will not be accepted.
   d. Snow Loading: Minimum 30 psf or as required in the latest edition of the International Building Code, whichever is greater. No corrections for roof slopes or lowest one-day mean temperature shall be made.

e. Minimum Roof Design Live Load: 15 psf or as specified in AWWA D100, whichever is greater.
f. Wind Load Requirements: Basic wind speed of 100 mph or as required in AWWA D100, whichever is greater
g. Allowable Soil Bearing: Capacity: 3000 psf or as indicated in the Geotechnical Report, whichever is less.
h. Earthquake Design: As specified in AWWA D100. In the absence of 100 vertical foot geological profile, use Site Class D.
i. A minimum of 1/16" corrosion allowance shall be provided on the inside and on the outside of all tank shells, floors, and roofs.

2.2 TANK CONSTRUCTION

A. In conformance with requirements listed in AWWA D100, unless supplemented or modified below:

1. Pipe and Fittings for Fluid Conductors: Modify to indicate only welded joints for conductors are acceptable.
2. Roof Support: According to AWWA D100, self-supporting, only, and as indicated on Drawings.
3. Corrosion Allowance: A minimum of 1/16" corrosion allowance shall be provided on the inside and on the outside of all tank shells, floors, and roofs.
4. Balcony: As indicated on Drawings.
5. Pipe and Pipe Connections:

    a. Provide removable stainless-steel silt stop and mechanical joint gland.
    b. Provide other accessories as indicated on Drawings.

6. Overflow:

    a. Provide external welded joint steel overflow pipe as indicated on Drawings, suitably supported and extending to grade level.
    b. Diameter of overflow as indicated on Drawings.
    c. Terminate overflow pipe a maximum of 6 feet above finished grade to provide air break.
    d. Provide stainless steel mesh insect screen and screen holder over air break opening.

7. Roof Ladder: As indicated on Drawings.
8. Safety Devices: Provide safety rail, complying with OSHA Standards, along entire ladder length and extending 42 inches above tank roof.
9. Special Vent Required for Screening of Tank Vent: Provide total free open vent area of 452 sq. in. Provide aluminum, fiberglass, or bronze insect screen. Frost proof.
10. Welded-Shell Butt Joints: Required at joints in base metals of thicknesses greater than 3/8 inch; complete joint penetration.
11. Butt Joint Welds: Lap welds tack welded on one side are not permitted. Seal welding is required.
12. Seal Welding: Provide seal welds for lap joints in wet areas, including interior roof surfaces.

13. Pile-Supported Foundation: When required, according to fabricator's/manufacturer's design.
14. Concrete: ACI 318.
15. Vertical Distance from Finished Ground Level to Crown of Inlet and Outlet Pipes (Earth Cover) at Tank Foundation: As indicated on Drawings.
16. Specification Sheet for Seismic Data: According to AWWA D100.
17. Reinforcing Steel: Use only Grade 60.

2.3 INLET AND OUTLET PIPE

A. Inlet and Outlet Pipe: ANSI/AWWA C151/A21,5 Ductile Iron Pipe, Pressure Class 350 unless otherwise indicated on Drawings and ASTM A53, Grade B, Schedule 40, steel pipe, welded joints as indicated on Drawings.

2.4 OVERFLOW PIPE

A. Overflow Pipe: ASTM A53, Grade B, Schedule 40, steel pipe, welded joints.

2.5 MATERIALS

A. Furnish materials complying with this Section, as indicated on Drawings, and according to standards specified in AWWA D100.

2.6 FABRICATION

A. Materials, Design, and Fabrication: According to AWWA D100.

2.7 SOURCE QUALITY CONTROL

A. Section 014000 - Quality Requirements: Requirements for testing, inspection, and analysis.

B. Inspection and Testing of Welds:

1. Examine weld joints according to AWWA D100.
2. Comply with procedure requirements of AWWA D100 prior to proceeding with radiographic Work.
3. Immediately notify Architect/Engineer of weld locations failing to meet standards of AWWA D100.
4. Repair and re-inspect defective welds until acceptable.

C. Certificate of Compliance:

1. When fabricator is approved by authorities having jurisdiction, submit certificate of compliance indicating Work performed at fabricator's facility conforms to Contract Documents

2. Specified shop tests are not required for Work performed by approved fabricator.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Section 017000 - Execution and Closeout Requirements: Requirements for installation examination.

B. Verify layout and orientation of tank accessories and piping connections.

3.2 PREPARATION

A. Section 017000 - Execution and Closeout Requirements: Requirements for installation preparation.

B. Thoroughly clean chemical storage tank pad, removing loose concrete, dust, and other debris. Place building paper on pad according to tank manufacturer's recommendations prior to placing tank.

3.3 INSTALLATION

A. According to AWWA D100, as indicated on Drawings, and according to manufacturer's instructions.

B. Connect piping to tank.

C. Install tank accessories not factory mounted to complete installation.

D. Field Painting:

1. All steel surfaces shall be prepared by the fabricator as specified in Steel Structures Painting Council Specification SSPC-SP10 "Near-White Blast Cleaning" for interior surfaces; SSPC-SP6 for exterior surfaces. After blast cleaning, all surfaces shall be thoroughly and completely cleaned of any residue or dust before applying primer. Primer must be applied within 24 hours after blast cleaning.

2. After the structure is erected and welded, the welded seams and adjacent unprimed areas shall be cleaned by using SSPC-SP 10/NACE #2 for the interior and SSPC-SP 6/NACE #3 for the exterior. The shop primed surfaces shall be cleaned of all dirt and foreign matter. Dust that has settled on any part of the structure as a result of the blast cleaning must be removed before spot priming.

3. Exterior System:
Tnemec Company, Inc.:

a. (Spot where overcoating and full on the blast cleaned roof) Primer Coat – Tnemec Series 135-1243 Chembuild at 3.0 – 5.0 Mils DFT (Color – Gray 1N05)

b. (full) Primer Coat – Tnemec Series 27 Typoxy applied at 2.0 – 3.0 Mils DFT. Color of this coat of paint shall be slightly darker than the finish coat.

c. (full) Finish Coat – Tnemec Series 1075 Endura Shield II (semi-gloss) applied at 2.0 – 3.0 Mils DFT. (Color to be selected by owner).

Total DFT = 7.0 – 11.0 Mils

Sherwin Williams Corporation:

a. (Spot where overcoating and full on the blast cleaned roof) Primer Coat – Macropoxy 646, B58 Series, applied at 3.0-5.0 Mils DFT.

b. (full) Primer Coat – Macropoxy 646, B58 Series, applied at 2.0-3.0 Mils DFT. Color of this coat of paint shall be slightly darker than the finish coat.

c. (full) Finish Coat – Hi-Solids Polyurethane SG, B65 Series, applied at 2.0-3.0 Mils DFT. (Color to be selected by owner).

Total DFT = 7.0 – 11.0 Mils

The contractor shall furnish to the Owner at least one (1) extra gallon to finish paint specified above for exterior paint for touch-up repairs due to vandalism.

All materials shall be applied in accordance with manufacturer's directions and any thinning required shall be done in a manner and exclusively with the type of reducer recommended.
Spray application may be used in conformance with applicable section of AWWA D102.

All materials shall be applied under adequate illumination.

4. Interior System:

Three-coat high-build zinc-epoxy-epoxy system manufactured by Tnemec Company, Inc.

a. (full) Primer Coat – Tnemec Series 91-H20 or 94-h20 Hydro-Zinc applied at 2.5-3.5 Mils DFT.

b. Stripe Coat – All vertical/horizontal seams, ceiling overlappling plate edge, ceiling support beams, support columns, ceiling to shall joint, nuts, bolts, ladders, pits, and all other irregular surfaces shall receive one (1) coat of Tnemec Series N140-1255 (Beige) applied to a dry film thickness of 2.0 – 3.0 Mils DFT. Application shall be spray and back brush and/or rolled. Applied coating shall not be recoated until minimum recoating time has been satisfied as per manufacturer's recommendations.

c. (full) Intermediate Coat – Tnemec Series N140-1255 (Beige) Pota-Pox applied at 4.0 – 6.0 Mils DFT.

d. (full) Finish Coat – Tnemec Series N140-15BL (Selected by Owner) applied at 4.0 – 6.0 Mils DFT.

Total DFT = 10.5 – 15.5 Mils

Three-coat high-build zinc-epoxy-epoxy system manufactured by Sherwin Williams Corporation.

a. (full) Primer Coat – Corothane I Galvapac Two-Pack Zinc-rich Primer B65 Series applied at 2.5 – 3.5 Mils DFT.

b. Stripe Coat – All vertical/horizontal seams, ceiling overlapping plate edge, ceiling support beams, support columns, ceiling to shall joint, nuts, bolts, ladders, pits, and all other irregular surfaces shall receive one (1) coat of Macropoxy **5500LT** (Beige) applied to a dry film thickness of 2.0 – 3.0 Mils DFT. Application shall be spray and back brush and/or rolled. Applied coating shall not be recoated until minimum recoating time has been satisfied as per manufacturer's recommendations.

c. (full) Intermediate Coat –**Macropoxy 5500LT** (Beige) applied at of 4.0 – 6.0 Mils DFT.

d. (full) Finish Coat – **Macropoxy 5500LT** (Selected by Owner) applied to a dry film thickness of 4.0 – 6.0 Mils DFT.

Total DFT = 10.5 – 15.5 Mils

M. All coatings shall be a "system" and shall be thoroughly compatible each with the other. No coatings or primers of different manufacturers shall be applied one upon the other. The Contractor shall submit the coatings schedule to the Owner.

N. Paint shall not be applied when the temperature of the steel or paint is below 40 degrees F. Paint shall not be applied when the surface temperature is expected to drop to 32 degrees F before the paint has dried. With chemically cured coatings, (catalyzed epoxies, etc.) particular care shall be exercised to follow manufacturer's special temperature requirements (usually 50 degrees F or above).

O. Paint shall not be applied in rain, snow, fog, mist or when the steel temperature is below the dew point, resulting in condensation.

P. Each coat of paint shall be in proper state of cure or dryness before the application of the succeeding coat. A minimum of twenty-four hours shall be allowed between coats.

Q. All weld seams shall receive one brush coat of the specified primer after the sandblasting and cleaning has been completed. This brush prime coat is in addition to the specified prime coat.

R. All coats shall be smooth, free of brush marks, streaks, laps or pile up of paints, and skipped or missed areas.

3.4 FIELD QUALITY CONTROL

A. Section 014000 and/or Section 017000.

B. Inspection and Testing:

1. Hydrostatic Testing:

   a. Test completed and cleaned tank for liquid tightness by filling tank to its overflow elevation with water provided by Owner.
   b. Correct leaks disclosed by this test.
   c. Drain and legally dispose test water off-Site.

2. Field Welds: Tested and inspected according to AWWA D100.

C. Furnish a certified welding inspector responsible for all weld inspections, as indicated in AWWA D100.

D. Manufacturer Services:

1. Furnish field representative experienced in installation of tank to supervise installation.
2. Furnish Installation Certificate from equipment manufacturer's representative attesting equipment has been properly installed and is ready for startup and testing.

3.5 ATTACHMENTS

A. Water Storage Tank Schedule:

1. Sunset Lane – Tank 1:
   a. Minimum Storage Capacity: 109,000 Gallons
   b. Nominal Diameter: 28'-00"
   c. Base Elevation or Bottom Capacity Level: As per Drawings.
   d. Overflow Elevation or Top Capacity Level: As per Drawings.
   e. Minimum Free Board Above Overflow Elevation or Top Capacity Elevation: 6 Inches
   f. Exterior Color: Dark Blue.

2. Sunset Lane – Tank 2:
   a. Minimum Storage Capacity: 109,000 Gallons
   b. Nominal Diameter: 28'-00"
   c. Base Elevation or Bottom Capacity Level: As per Drawings.

d. Overflow Elevation or Top Capacity Level: As per Drawings.
e. Minimum Free Board Above Overflow Elevation or Top Capacity Elevation: 6 Inches
f. Exterior Color: Dark Blue.

3. Cumberland Heights – Tank 2:
   a. Minimum Storage Capacity: 294,000 Gallons
   b. Nominal Diameter: 42'-00"
   c. Base Elevation or Bottom Capacity Level: As per Drawings.
   d. Overflow Elevation or Top Capacity Level: As per Drawings.
   e. Minimum Free Board Above Overflow Elevation or Top Capacity Elevation: 6 Inches
   f. Exterior Color: Dark Blue.

END OF SECTION 434113

SECTION 012000 - PRICE AND PAYMENT PROCEDURES

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Cash allowances.

B. Schedule of Values.

C. Application for Payment.

D. Measurement and Payment.

1.2 CASH ALLOWANCES (If provided in the Bid Form)

A. Costs Included in Cash Allowances: Cost of product to Contractor or Subcontractor, less applicable trade discounts; delivery to Site and applicable taxes unless stated otherwise in Allowance Schedule.

B. Costs Not Included in Cash Allowances but Included in Contract Sum/Price: Product handling at Site including unloading, uncrating, and storage; protection of products from elements and from damage; and labor for installation and finishing unless stated otherwise in Allowance Schedule.

C. Engineer Responsibilities:

1. Consult with Contractor for consideration and selection of products suppliers and installers.
2. Select products in consultation with Owner and transmit decision to Contractor.
3. Prepare Change Order.

D. Contractor Responsibilities:

1. Assist Engineer in selection of products, suppliers, and installers.
2. Obtain proposals from suppliers and installers and offer recommendations.
3. Upon notification of selection by Engineer, execute purchase agreement with designated supplier and installer.
4. Arrange for and process Shop Drawings, Product Data, and Samples. Arrange for delivery.
5. Promptly inspect products upon delivery for completeness, damage, and defects. Submit claims for transportation damage.

E. Differences in costs will be adjusted by Change Order.

F. Allowance Schedule: If provided in and as per the Bid Form

G. Differences in cost between allowance(s) and actual cost(s) will be adjusted by Change Order.

1.3 SCHEDULE OF VALUES (As required for Lump Sum Project or Bid Item Breakdown on Unit Price Project)

A. Submit printed schedule on Progress Estimate schedule on EJCDC C-620.

B. Submit Schedule of Values within 20 days after date established in Notice to Proceed.

C. Format for Lump Sum Project: Use Table of Contents of this Project Manual. Identify each line item with number and title of major Specification Section.

D. Revise schedule to list approved Change Orders with each Application for Payment.

1.4 APPLICATION FOR PAYMENT

A. Submit six (6) executed copies of each Application for Payment on EJCDC C-620 - Contractor's Application for Payment.

B. Submit six (6) copies of executed copies of Abnormal Weather Conditions forms regardless if any days are claimed or not and Affidavit of Payment.

C. If required in the Contract Documents, submit six (6) American Iron and Steel Qualifying and De Minimus Materials List (if required by the Contract Documents).

D. Payment Period: Submit at intervals stipulated in the Agreement.

1.5 MEASUREMENT AND PAYMENT

A. Take measurements and compute quantities. Engineer will verify measurements and quantities.

B. Unit Quantities: Quantities and measurements indicated on Bid Form are for Contract purposes only. Actual quantities provided shall determine payment.

C. Payment Includes: Full compensation for required labor, products, tools, equipment, plant and facilities, transportation, services and incidentals; erection, application, or installation of item of the Work; overhead and profit.

D. Final payment for Work governed by unit prices will be made on basis of actual measurements and quantities accepted by Engineer multiplied by unit sum/price for Work incorporated in or made necessary by the Work.

E. Measurement of Quantities:

1. Weigh Scales: Inspected, tested, and certified by state in which work is being performed or state of origin of materials within past year.
2. Platform Scales: Of sufficient size and capacity to accommodate conveying vehicle.
3. Metering Devices: Inspected, tested, and certified by state in which work is being performed or state of origin of materials within past year.
4. Measurement by Weight: Concrete reinforcing steel, rolled or formed steel, or other metal shapes will be measured by handbook weights. Welded assemblies will be measured by handbook or scale weight.

5. Measurement by Volume: Measured by cubic dimension using mean length, width, and height or thickness.
6. Measurement by Area: Measured by square dimension using mean length and width or radius.
7. Linear Measurement: Measured by linear dimension, at item centerline or mean chord.
8. Stipulated Sum/Price Measurement: Items measured by weight, volume, area, or linear means or combination, as appropriate, as completed item or unit of the Work.

F. Payment

1. Bid Item 1 – Mobilization/Demobilization

A. The cost of this work shall be paid for at the contract lump sum bid price for all mobilization and demobilization activities required for the project.
B. Partial payment not exceeding three percent (3%) of the original total contract bid price shall be made as part of the first application for payment. The balance of this contract lump sum bid price shall be considered as demobilization and shall be paid for upon substantial completion.
C. No deduction shall be made, nor shall any increase be made, in the contract lump sum bid price for Mobilization/Demobilization regardless of any decreases or increases in the final total contract price or for any other cause.
D. No additional compensation shall be made.

2. Bid Item 2 – Erosion and Sediment Control – Section 312500

A. This work shall be paid for at the contract lump sum bid price.
B. This Bid Item shall include all costs associated with erosion and sediment controls including all materials and labor for installation, maintenance and removal.
C. The cost of this Work shall be paid for at the lump sum bid price for all erosion and sediment controls at all locations directly or indirectly disturbed by the Work.
D. No additional compensation shall be made.

3. Bid Item 3 – Abandonment and Demolition of Existing 300,000 Gallon Water Storage Tank and Foundation – Section 024116

A. This Bid Item shall include all required labor, materials, equipment and all other costs associated with the successful abandonment and demolition of the existing 300,000 Gallon Water Storage Tank. Payment shall include the removal and disposal of the demolition waste, reclamation of the Site, relocation of the existing telemetry unit and appurtenances, and traffic control if necessary.
B. No additional compensation shall be made.

4. Bid Item 4 – Abandonment and Demolition of Existing 105,000 Gallon Water Storage Tank and Foundation – Section 024116

A. This Bid Item shall include all required labor, materials, equipment and all other costs associated with the successful abandonment and demolition of the existing 105,000 Gallon Water Storage Tank. Payment shall include tank draining, cut and cap existing water line(s), gate valve demolition as shown on the plans and the

removal and disposal of the demolition waste, reclamation of the Site including proposed grading, and traffic control if necessary.

B. No additional compensation shall be made.

5. Bid Item 5 – Road Base Stone – Section 321206

A. This Bid Item shall be measured and paid for at the unit price Bid per ton of stone material, delivered and placed as shown on the Drawings. The contractor shall provide the engineer with one (1) copy of the certified weigh ticket daily for each load of stone for which payment is requested.

B. This Bid Item shall include all labor, materials, equipment and all other costs associated with Road Base Stone placement satisfactorily installed.

6. Bid Item 6 – Crusher Run Stone – Section 321206

A. This Bid Item shall be measured and paid for at the unit price Bid per ton of stone material, delivered and placed as shown on the Drawings. The Contractor shall provide the Engineer with one (1) copy daily of the certified weigh ticket for each load of stone for which payment is requested. No payment shall be made for unauthorized Crusher Run Stone.

B. This Bid Item shall include all labor, materials, equipment and all other costs associated with Crusher Run Stone satisfactorily installed.

7. Bid Item 7 – Rock Lined Ditch – Section 313716.13

A. This Bid item shall be measured and paid for at the unit price Bid per linear foot as specified on Drawings or as directed by the Engineer. Width of the rock lined ditch shall be as shown on Drawings.

B. No additional compensation shall be made for unauthorized rock lined ditch.

8. Bid Item 8 – Dump Rock Gutter – Section 313716.13

A. This Bid item shall be measured and paid for at the unit price Bid per linear foot as specified on Drawings or as directed by the Engineer. Width of the Dump Rock Gutter shall be as shown on Drawings.

B. No additional compensation shall be made for unauthorized Dump Rock Gutter.

9. Bid Item 9 – 15" HDPE Culvert – Section 334213.13

A. This Bid Item shall include all labor, equipment and materials necessary for, and incidental to, the installation of 15" HDPE Culvert Pipe.

B. Measurement and payment under this item shall be measured and paid for at the unit price bid per linear foot of the overall length of the culvert pipe satisfactorily installed, as indicated in the Plans.
C. Payment shall be for HDPE culvert pipe only. Rock lined ditch and dump rock gutter/outlet protection shall be paid for by a separate Bid Item.
D. Compensation for unauthorized culvert pipe footage beyond that which is called for in the Plans will not be made.

10. Bid Item 10 – 4-Unit Satellite Telemetry System, Complete – Section 274100

A. This Bid Item shall be paid for at the unit price Bid as lump sum. This lump sum bid item shall include all taxes, delivery, installation, start-up service and necessary appurtenances to provide a complete, working, SCADA and telemetry system. Telemetry sites include: The Existing Water Treatment Plant, New Sunset Lane Tank Site, Existing Intermediate Booster Pump Station Site, Existing Cumberland Heights Tank Site. Work at the existing Cumberland Heights tank and Sunset Lane tanks sites shall include installation of a transducer and remote telemetering unit with support structure and canopy.
B. All conduits, wiring, grounding, batteries, grounding and testing shall be included in the lump sum bid price.
C. All electrical work, inspection, fees and licenses shall be included in the lump sum bid price. Existing equipment shall be removed and delivered to the Owner, at a pre-determined location.
D. No additional compensation shall be made to provide a complete, working, satellite telemetry system.

11. Bid Item 11 – 6' High Chain Link Fence with Barbed Wire and 6' Wide Double Swing Gates – Section 323113

A. This Bid Item installed shall be measured and paid for at the unit price bid per linear foot of 6' high chain-link fence with barbed wire as shown in the Drawings. Payment for 6' wide double swing gates, as shown in the Drawings, shall be paid for by the unit price bid per linear foot satisfactorily installed.
B. This Bid Item shall include all required labor, materials, equipment and all other costs associated with 6' high chain-link fence installation and shown in the Drawings.

Cumberland Heights Water Storage Tank Rehabilitation

12. Bid Item 12 – Interior Surface Preparation of 500,000 Gallon Water Storage Tank (Including Sandblasting and Weld Repairs) – Section 099050

A. This Bid Item shall include all required labor, materials, equipment and all other costs associated with the successful completion of surface preparation of the interior of the existing 500,000 Gallon Water Storage Tank in accordance with SSPC #10 (including sandblasting and weld repairs). Payment shall be lump sum.
B. No additional compensation shall be made.

13. Bid Item 13 – Interior Priming and Painting of 500,000 Gallon Water Storage Tank - Section 099050

A. This Bid Item shall include all required labor, materials, equipment and all other costs associated with the successful completion of interior priming and painting of the existing 500,000 Gallon Water Storage Tank. Payment shall be lump sum.
B. No additional compensation shall be made.

14. Bid Item 14 – Exterior Surface Preparation of 500,000 Gallon Water Storage Tank - Section 099050

A. This Bid Item shall include all required labor, materials, equipment and all other costs associated with the successful completion of exterior surface preparation of the existing 500,000 Gallon water storage tank in accordance with SSPC #6. Payment shall be lump sum.
B. No additional compensation shall be made.

15. Bid Item 15 – Exterior Priming and Painting of 500,000 Gallon Water Storage Tank - Section 099050

A. This Bid Item shall include all required labor, materials, equipment and all other costs associated with the successful completion of exterior priming and painting of the existing 500,000 Gallon Water Storage Tank. Payment shall be lump sum.
B. No additional compensation shall be made.

16. Bid Item 16 – Sealing Between Tank and Foundation of Existing 500,000 Gallon Water Storage Tank - Section 099050

A. This Bid Item shall include all required labor, materials, equipment and all other costs associated with the successful completion of the sealing between the tank and foundation of the existing 500,000 Gallon Water Storage Tank. Payment shall be lump sum.
B. No additional compensation shall be made.

17. Bid Item 17 – New Rubber Gaskets and Bolts for Manholes on Existing 500,000 Gallon WST - Section 099050

A. This Bid Item shall include all required labor, materials, equipment and all other costs associated with the successful installation of new rubber gaskets and bolts for the manholes on the existing 500,000 Gallon Water Storage Tank. Payment shall be lump sum.
B. No additional compensation shall be made.

18. Bid Item 18 – 1" Diameter Weld Pit Fillings – Section 099050

A. This Bid Item shall include all required labor, materials, equipment and all other costs associated with 1" Diameter Weld Pit Filling repair for the existing 500,000 Gallon Water Storage Tank. Payment shall be paid by the unit Bid price for each.
B. No additional compensation shall be made.

19. Bid Term 19 – Cumberland Heights Tank Site Tie-Ins (Including Yard Piping, Valves, Fittings, and as shown on the Plans)

A. This Bid Item shall include all required labor, materials, equipment and all other costs associated with the Cumberland Heights Tank Site Tie-Ins. This work shall include the tie in from the existing 500,000 gallon water storage tank feed line to the existing 300,000 gallon water storage tank feed line. Payment shall be lump sum.
B. No additional compensation shall be made.

Existing Cumberland Heights Tank Site and Access Road Improvements

20. Bid Item 20 – Existing Cumberland Heights Water Storage Tank Access Road and Site Improvements

A. This Bid Item shall include all required labor, excavation, materials, equipment and all other costs associated with the Existing Cumberland Heights Water Storage Tank Access Road and Site Improvements as shown on the Plans. Stone surfacing shall be paid for by a separate Bid Item. Payment shall be lump sum.
B. No additional compensation shall be made.

Sunset Lane Water Storage Tanks

21. Bid Item 21A - New 109,000 Gallon Water Storage Tank with Hydrodynamic Mixing System (glass-line bolted steel) – Section 434111

A. This Bid Item shall include all required labor, excavation, materials, equipment and all other costs associated with the construction and successful operation of the

New 109,000 Gallon Water Storage Tank, including all other appurtenances as indicated in the Plans. Payment shall be lump sum.

B. No additional compensation shall be made.

22. Bid Item 21B – New 109,000 Gallon Water Storage Tank with Hydrodynamic Mixing System (welded steel) – Section 434113

    A. This Bid Item shall include all required labor, excavation, materials, equipment and all other costs associated with the construction and successful operation of the New 109,000 Gallon Water Storage Tank, including all other appurtenances as indicated in the Plans. Payment shall be lump sum.
    B. No additional compensation shall be made.

23. Bid Item 21C – New 109,000 Gallon Water Storage Tank with Hydrodynamic Mixing System (epoxy coated bolted steel) – Section 331613

    A. This Bid Item shall include all required labor, excavation, materials, equipment and all other costs associated with the construction and successful operation of the New 109,000 Gallon Water Storage Tank, including all other appurtenances as indicated in the Plans. Payment shall be lump sum.
    B. No additional compensation shall be made.

24. Bid Item 22 - New 109,000 Gallon Water Storage Tank Foundation – Section 033000

    A. This Bid Item shall include all required labor, excavation, materials, equipment and all other costs associated with the construction of the New 109,000 Gallon Water Storage Tank Foundation, and all other appurtenances as indicated in the Plans. Payment shall be lump sum.
    B. No additional compensation shall be made.

25. Bid Item 22 - New 109,000 Gallon Water Storage Tank Valve Vault and Telemetry Support Structure with Canopy (Including Piping, Valves, Drains, Conduit and Tie-Ins) – Section 330517

    A. This Bid Item shall include all required labor, excavation, materials, equipment and all other costs associated with the construction and successful operation of the New 109,000 Gallon Water Storage Tank Valve Vault (Including Piping, Valves, Drains and Tie-Ins, and all other appurtenances as indicated in the Drawings. Payment shall be lump sum.
    B. No additional compensation shall be made.

26. Bid Item 24 - New Sunset Lane Water Storage Tank Access Road and Site Grading and Preparation – Section 311100 and Section 312316

A. This Bid Item shall be paid as a lump sum. This Bid Item shall include all labor, materials, equipment and all other costs associated with Tank Access Road and Site Preparation and Sewer Line Relocation as shown on the Plans.
B. This Bid Item shall include all clearing, grubbing, excavation, fill, grading and reclamation. Stone surfacing and drainage culverts shall be paid for by a separate Bid Item. The Tank Access Road shall be constructed as shown in the Drawings.
C. Construction stake out shall be performed by the Engineer, one time. Additional stake out shall be performed at the Contractor's expense and at no additional cost to the Owner.

27. Bid Item 25A - New 294,000 Gallon Water Storage Tank (glass-lined bolted steel) – Section 434111

A. This Bid Item shall include all required labor, excavation, materials, equipment and all other costs associated with the construction and successful operation of the New 294,000 Gallon Water Storage Tank, including all appurtenances as indicated in the Plans. Payment shall be lump sum.
B. No additional compensation shall be made.

28. Bid Item 25B – New 294,000 Gallon Water Storage Tank (welded steel) – Section 434113

A. This Bid Item shall include all required labor, excavation, materials, equipment and all other costs associated with the construction and successful operation of the New 294,000 Gallon Water Storage Tank, including all appurtenances as indicated in the Plans. Payment shall be lump sum.
B. No additional compensation shall be made.

29. Bid Item 25C – New 294,000 Gallon Water Storage Tank (epoxy coated bolted steel) – Section 331613

A. This Bid Item shall include all required labor, excavation, materials, equipment and all other costs associated with the construction and successful operation of the New 294,000 Gallon Water Storage Tank, including all appurtenances as indicated in the Plans. Payment shall be lump sum.
B. No additional compensation shall be made.

30. Bid Item 26 - New 294,000 Gallon Water Storage Tank Foundation – Section 033000

A. This Bid Item shall include all required labor, excavation, materials, equipment and all other costs associated with the construction of the New 294,000 Gallon Water Storage Tank foundation, and all other appurtenances as indicated in the Plans. Payment shall be lump sum.
B. No additional compensation shall be made.

31. Bid Item 27 – New 294,000 Gallon Water Storage Tank Valve Vault with Altitude Valve and Telemetry Support Structure with Canopy (Including Piping, Valves, Drains, Conduit and Tie-Ins) – Sections 330517, 400565.23 and 400567

    A. This Bid Item shall include all required labor, excavation, materials, equipment and all other costs associated with the construction and successful operation of the New 294,000 Gallon Water Storage Tank and all other appurtenances as indicated in the Plans. Payment shall be lump sum.
    B. This Bid Item shall include all interior piping, valves, supports, grouting, drain lines, bedding and tie-ins necessary for successful installation and operation of the valve vault.
    C. No additional compensation shall be made.

32. Bid Item 28 – Relocate Existing Telemetry During Construction (Including Telemetering Unit, Antenna, Conduit, Wiring and Appurtenances)

    A. This Bid Item shall include all required labor, excavation, materials, equipment and all other costs associated with the relocation of the existing telemetry equipment from the existing 300,000 Gallon WST during construction. Contractor shall verify and maintain operability of the telemetry system during construction. Payment shall be lump sum.
    B. No additional compensation shall be made.

33. Bid Item 29 – New Electric Service Entrance Pole
    A. This Bid Item shall include all required labor, excavation, materials, equipment and all other costs associated with the installation of a New Electric Service Entrance Pole as shown in the Drawings. Payment shall be lump sum.
    B. This Bid Item shall include coordinating the transfer of electrical service from the existing structure to the New Electric Service Entrance Pole.
    C. No additional compensation shall be made.

34. Bid Item 30 – New 1 ½" Conduit
    A. This Bid Item shall include all required labor, excavation, materials, equipment and all other costs associated with the installation of a New 1 1/2" Conduit as shown in the Drawings. Payment shall be lump sum.
    B. No additional compensation shall be made.

35. Section 015000 – Field Office and Sheds, Only

A. When a lump sum bid item for Mobilization/Demobilization is provided, the cost of this work shall be included in the contract lump sum bid price for Mobilization/Demobilization.
B. Otherwise, the cost for Field Office and Sheds shall be included in the contract lump sum bid price(s) and/or unit bid price(s) for which the Field Office and Sheds are required. No additional compensation shall be made.

36. Section 033000 – Cast-in-place Concrete

A. The cost of this work shall be included in the contract lump sum bid price(s) and/or unit bid price(s) for which Cast-in-place Concrete is required.
B. No additional compensation shall be made.

37. Section 036000 – Grouting

A. The cost of this work shall be included in the contract lump sum bid price(s) and/or unit bid price(s) for which grouting is required.
B. No additional compensation shall be made.

38. Section 310513 – Soils for Earthwork

A. The cost of this work shall be included in the contract lump sum bid price(s) and/or unit bid price(s) for which soils for earthwork are required.
B. No additional compensation shall be made.

39. Section 310516 – Aggregates for Earthwork

A. The cost of this work shall be included in the contract lump sum bid price(s) and/or unit bid price(s) for which aggregates for earthwork are required.
B. No additional compensation shall be made.

40. Section 311100 – Clearing, Grubbing, and Restoration

A. The cost for clearing and grubbing shall be included in the contract lump sum bid price(s) and/or unit bid price(s) for which clearing and grubbing is required, except where contract lump sum bid price(s) and/or unit bid prices for clearing, grubbing, and removal/abandonment items are provided in the Bid Form.
B. Restoration shall be included in the contract lump sum bid price(s) and/or unit bid price(s) for which restoration is required, except where contract lump sum bid price(s) and/or unit bid prices for restoration items are provided in the Bid Form.

C. Trench, driveway, road, curb, and/or sidewalk repair and reclamation of disturbed area shall be paid for at the contract linear foot unit bid price(s) for the type of repair specified measured along the centerline of the utility pipe.

1. Width shall not be considered.
2. The cost for temporary stone to maintain disturbed areas until repairs are made shall be included in the contract unit bid price(s) for the repairs. No additional compensation shall be made.

D. Pavement, graveled areas, curb, and/or sidewalk and vegetated areas disturbed by the Contractor in areas where utility pipe is not installed shall be replaced by the Contractor at his expense at no additional cost to the Owner. No additional compensation will be made.

41. Section 312316 – Excavation

A. The cost of this work shall be included in the contract lump sum bid price(s) and/or unit bid price(s) for which excavation is required. No additional compensation shall be made.
B. Unless otherwise provided, all excavation shall be unclassified regardless of the material encountered. No additional compensation shall be made for rock or any soft or otherwise unsuitable material. No additional compensation shall be made for dewatering and/or sheet piling.

42. Section 312316.13 – Trenching

A. The cost of this work shall be included in the contract lump sum bid price(s) and/or unit bid price(s) for which trenching is required. No additional compensation shall be made.
B. Unless otherwise provided, all excavation shall be unclassified regardless of the material encountered. No additional compensation shall be made for rock or any soft or otherwise unsuitable material. No additional compensation shall be made for dewatering and/or sheet piling.

43. Section 312319 – Dewatering

A. The cost of this work shall be included in the contract lump sum bid price(s) and/or unit bid price(s) for which dewatering is required.
B. No additional compensation shall be made.

44. Section 312323 – Fill

A. The cost of this work shall be included in the contract lump sum bid price(s) and/or unit bid price(s) for which fill is required.
B. No additional compensation shall be made.

45. Section 331300 – Disinfecting of Water Utility Distribution

A. The cost of this work shall be included in the contract lump sum bid price(s) and/or unit bid price(s) for which disinfection is required.
B. No additional compensation shall be made.

46. Section 331313 – Water Storage Tank Disinfection

A. The cost of this work shall be included in the contract lump sum bid price(s) and/or unit bid price(s) for which disinfection is required.
B. No additional compensation shall be made.

47. Section 331113 – Water Distribution Piping

A. The cost for this work shall be paid for at the contract linear foot unit bid price(s) for the size, type, and classification of water line pipe specified.
B. The cost for all fitting(s) and concrete anchor(s) shown in the plans or as required shall be included in the linear foot unit bid price(s) of water line pipe specified. No additional compensation shall be made.
C. The cost for each tie-in to existing water line shall include one (1) valve of the size, type, and classification specified including valve boxes, lids, and other appurtenances shown in the detail(s) in the plans or specified.

48. Section 331216 – Water Utility Distribution Valves

A. The cost for this work shall be paid for at the contract unit bid price(s) for the size, type, and classification of valve specified.
B. The cost for each tie-in to existing water line shall include one (1) valve of the size, type, and classification specified including valve boxes, lids, and other appurtenances shown in the detail(s) in the plans or specified.
C. The cost for all valve boxes, lids, valve marker, and other appurtenances shown in the detail(s) in the plans or specified shall be included in the unit bid price(s) of valve(s) specified. No additional compensation shall be made.

PART 2 - PRODUCTS - Not Used

PART 3 - EXECUTION - Not Used

END OF SECTION 012000

WVDOH GENERAL NOTES

1. ALL METER SETTINGS ACROSS PAVED ROADS SHALL BE BORED OR MOLED. UNLESS OPEN CUT HAS BEEN APPROVED BY W.V.D.O.H. AND SPECIFICALLY INDICATED ON PLANS.
2. NOTIFICATION OF PROPOSED EXCAVATION, DEMOLITION OR ANY OTHER EARTH DISTURBING ACTIVITIES ARE REQUIRED TO BE PLACED TO MISS UTILITY OF WEST VIRGINIA (1-800-245-4848) NOT LESS THAN FORTY-EIGHT (48) BUSINESS HOURS BEFORE ANY SUCH WORK IS TO BEGIN.
3. BEDDING SHALL BE PLACED ON ASPHALT SURFACE TO PROTECT WHEN A TRENCHER OR TRACKED VEHICLE IS USED.
4. THE W.V.D.O.H. PUBLICATIONS "STANDARD SPECIFICATIONS ROADS AND BRIDGES" AND "ACCOMMODATIONS OF UTILITIES ON HIGHWAY RIGHT OF WAY" LATEST EDITIONS ARE A PART OF THE PROJECT SPECIFICATIONS AND WILL BE ADHERED TO BY THE CONTRACTOR.
5. ALL DAMAGE TO ROAD SURFACE SHALL BE REPAIRED ACCORDING TO W.V.D.O.H. STANDARD SPECIFICATIONS AND DETAILS, WITHIN (21) DAYS OF INSTALLATION OF UTILITY.
6. ALL EXISTING DUMP ROCK OR RIP RAP DITCHES DISTURBED BY THE UTILITY/CONTRACTOR SHALL BE RESTORED WITH THE SAME SIZE, GRADE, AND QUALITY OF THE ROCK AFTER THE UTILITY HAS BEEN INSTALLED. NEW DUMP ROCK IS TO BE PLACED IN ALL LOCATIONS WHERE THE DITCH LINE IS GREATER THAN 5% AND THERE IS NO EXISTING RIP RAP.
7. TRAFFIC CONTROL SHALL CONFORM TO THE W.V.D.O.H. PUBLICATION "TRAFFIC CONTROL FOR STREET AND HIGHWAY CONSTRUCTION AND MAINTENANCE OPERATION" LATEST EDITION . THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING AN APPROVED TRAFFIC CONTROL PLAN.
8. ALL BACKFILL MATERIAL AND COMPACTION REQUIREMENTS SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS IN THE "ACCOMMODATIONS OF UTILITIES ON HIGHWAY RIGHT OF WAY AND ADJUSTMENT AND RELOCATION OF UTILITY FACILITIES ON HIGHWAY PROJECTS" AND SUBJECT TO W.V.D.O.H. APPROVAL. EVIDENCE OF PROPER COMPACTION BY TESTING WILL BE THE RESPONSIBILITY OF THE APPLICANT. THE TESTING SHALL BE 1 (ONE) PER DAY OR EVERY 500 LINEAL FEET (LF), OR AS DETERMINED BY THE DISTRICT MANAGER (ENGINEER) OR HIS AUTHORIZED REPRESENTATIVE.
9. UTILITY LINES SHALL BE PLACED EITHER AROUND OR UNDER DRAINAGE CULVERTS.
10. AGGREGATE SHOULDER STONE IS TO BE PLACED ON THE SHOULDER AT A THICKNESS EQUAL TO 6 INCHES OR ITS ORIGINAL THICKNESS, WHICHEVER IS GREATER. PAVED SHOULDERS WILL BE PAVED.
11. MAGNETIC MARKING TAPE SHALL BE INSTALLED AT A DEPTH OF 12 TO 18 INCHES BELOW THE SURFACE AND DIRECTLY ABOVE ALL LINES OR PIPE.
12. REPAIR TO DRIVEWAYS ON W.V.D.O.H. RIGHT OF WAYS SHALL CONFORM TO THE APPROPRIATE W.V.D.O.H. TYPICAL REPAIR DETAIL.
13. CLEANUP WILL BE ACCOMPLISHED DAILY. ALL CULVERTS AND DRAINAGE DITCHES SHALL BE OPEN AND MAINTAINED DURING CONSTRUCTION. SHOULDERS WILL BE RESTORED AND STABILIZED DAILY WITH THE APPROPRIATE STONE AT THE DISCRETION OF THE W.V.D.O.H.
14. ALL DISTURBED AREAS SHALL BE SEEDED AND MULCHED WITHIN SEVEN (7) DAYS OF COMPLETION OF THE BACKFILL OPERATION.
15. NO EXCESS EXCAVATION MATERIAL SHALL BE WASTED ON W.V.D.O.H. RIGHT OF WAYS WITHOUT THE AGREEMENT OF THE W.V.D.O.H.
16. THE W.V.D.O.H. RESERVES THE RIGHT TO RELOCATE UTILITY LINES AND FACILITIES AS DEEMED NECESSARY.
17. THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING THE UTILITY COMPANIES PRIOR TO CONSTRUCTION TO OBTAIN UTILITY LOCATIONS AND PERFORMING EXPLORATORY WORK TO DETERMINE SUBSURFACE MATERIALS AND STRUCTURES THAT MAY AFFECT ITS WORK.
18. PRIOR TO THE START OF ANY WORK WITHIN STATE HIGHWAY RIGHT-OF-WAY, THE CONTRACTOR SHALL GIVE THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION 48 HOUR NOTICE.
19. THE CONTRACTOR IS RESPONSIBLE FOR ANY OFFSITE DISPOSAL REQUIRED. DISPOSAL SHALL BE TO AN ACCEPTABLE LEGAL SITE. CONTRACTOR IS RESPONSIBLE FOR EROSION CONTROL AT DISPOSAL SITES.
20. ALL ELEVATIONS GRADES AND DISTANCES SHALL BE CHECKED AND VERIFIED BY THE CONTRACTOR AT THE SITE PRIOR TO CONSTRUCTION.
21. ALL CONSTRUCTION SHALL MAINTAIN 5' FROM EDGE OF PAVEMENT OR BOTTOM OF DITCH UNLESS NO OTHER PRACTICAL MEANS OF CONSTRUCTION EXISTS.
22. PERFORM ACCEPTABLE REPAIR OF ANY AND ALL SUB-BASE FAILURES THAT ARE CAUSED BY THE CONTRACTOR OPERATION ON A DAILY BASIS.
23. PERFORM TOTAL REPAIR AND/OR REPLACEMENT OF ANY DAMAGED ASPHALT SURFACE AS DETERMINED BY THE W.V.D.O.T. REPRESENTATIVE.
24. PRIOR TO ANY CONSTRUCTION, THE CONTRACTOR SHALL MAKE A COMPLETE VIDEO SHOWING THE ROAD SURFACE OF THE ENTIRE PROJECT, OF ROADS TO BE UTILIZED IN THE CONSTRUCTION OF THE PROJECT AND PRESENT IT TO THE W.V.D.O.H. UTILITY DEPARTMENT SUPERVISOR.
25. REMOVE DITCH-LINE OBSTACLES AND/OR RECONSTRUCTION OF THE DITCH-LINE.
26. IN THE CASE OF MANHOLES OR VALVES, THEY SHALL BE PLACED OUTSIDE OF THE ROADWAY, SHOULDER, OR DITCH-LINE. IF PLACED IN THE SHOULDER, THERE IS TO BE A MINIMUM OF 6 INCHES OF COVER. IN THE DITCH-LINE THERE IS TO BE 12 INCHES OF COVER BETWEEN THE MANHOLE AND THE INVERT OF THE DITCH.
27. ANY MANHOLES OR VALVES OR VALVE BOXES PLACED IN THE ROADWAY WILL BE ON THE SAME PLANE AS THE ROADWAY AND SET FLUSH WITH ROADWAY.
28. ANY ROADS REQUIRING AN H.L.B.C. OVERLAY, FULL WIDTH OR PARTIAL, SHALL HAVE THE SHOULDER STONE FROM AN APPROVED SOURCE PLACED AS PER D.O.H. SPECIFICATION.
29. THE DEPARTMENT OF HIGHWAYS REQUIRES THERE BE NO WORK WITHIN THE DEPARTMENT'S RIGHT-OF-WAY DURING SNOW AND ICE REMOVAL (SRIC). THERE MAY BE EXCEPTIONS FOR EMERGENCY AND CASE BY CASE SITUATIONS WITH

WVDOH GENERAL NOTES (CONT.)

30. IT IS ANTICIPATED THAT OTHER CONTRACTORS WILL BE WORKING IN THIS AREA AND IT IS IMPERATIVE THAT STRICT COORDINATION BETWEEN CONTRACTORS IS AGREED UPON IN REFERENCE TO: LANE CLOSURES, WORKING PLANS AND STORAGE AREAS.

GENERAL NOTES

1. ALL UNDERGROUND UTILITIES DEPICTED IN THE PLANS ARE SHOWN AT APPROXIMATE LOCATIONS BASED ON THE BEST AVAILABLE INFORMATION. EXACT LOCATIONS, DEPTHS, MATERIALS, AND SIZES OF ALL EXISTING PUBLIC AND/OR PRIVATE UTILITIES IN THE PROJECT AREA SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR WITH A REPRESENTATIVE OF THE APPROPRIATE PUBLIC AND/OR PRIVATE UTILITY. CONTRACTOR SHALL NOTIFY MISS UTILITY AT 1-800-245-4848 OR 811 OR WV811.COM AND SHALL HAVE ALL UTILITIES MARKED IN THE PROJECT AREA PRIOR TO COMMENCING EXCAVATION.

   THERE SHALL BE NO ADDITIONAL COMPENSATION FOR THE INCONVENIENCE OR DELAY RESULTING FROM HAVING TO WORK AROUND EXISTING UTILITIES EITHER SHOWN IN THE PLANS OR NOT SHOWN IN THE PLANS AND DISCOVERED DURING CONSTRUCTION.
2. ALL CONSTRUCTION SHALL CONFORM TO THE APPLICABLE STANDARDS AND SPECIFICATIONS PROVIDED IN A SEPARATE BOUND VOLUME.
3. CONFIRM ALL DIMENSIONS AND ELEVATIONS PRIOR TO ORDERING MATERIALS AND/OR MAKING CONNECTIONS.
4. WHEN A DISCREPANCY IN THE PLANS AND/OR SPECIFICATIONS SEEMS APPARENT, THE MATTER SHALL BE REVIEWED WITH THE ENGINEER PRIOR TO PROCEEDING WITH CONSTRUCTION.
5. EXCEPT AS NOTED BELOW, THE OWNER HAS OBTAINED ALL APPLICABLE PERMITS FOR THE PROJECT. COPIES OF THE PERMITS SHALL BE PROVIDED TO THE CONTRACTOR. CONTRACTOR SHALL COMPLY WITH ALL REQUIREMENTS OF THE PERMITS.

   CONTRACTOR SHALL OBTAIN ALL BUILDING PERMITS AND PAY ALL FEES ASSOCIATED WITH LOCAL AND STATE CONTRACTOR'S LICENSES AS WELL AS BUSINESS AND OCCUPATION TAXES, AS APPLICABLE.
6. COORDINATE ALL STREAM CROSSINGS SO AS NOT TO DELAY CONSTRUCTION. PERFORM STREAM CROSSINGS IN ACCORDANCE WITH THE PERMITS DURING TIMES OF LOW FLOW AND NON-SPAWNING SEASON (APRIL THROUGH JUNE).
7. UNLESS OTHERWISE NOTED, THE CONTRACTOR SHALL PROVIDE ALL STAGING AND STORAGE AREAS.
8. THE LOCATION OF PROPERTY LINES DEPICTED IN THE PLANS ARE APPROXIMATE BASED ON COUNTY TAX MAPS. WVDOH RIGHTS-OF-WAY ARE APPROXIMATE BASED ON THE RIGHTS-OF-WAY DIMENSIONS PROVIDED BY WVDOH.
9. CONSTRUCT WATER MAINS AT LEAST TEN FEET (10') HORIZONTALLY FROM ANY EXISTING OR PROPOSED GRAVITY OR PRESSURE SANITARY SEWER. THE DISTANCE SHALL BE MEASURED FROM EDGE TO EDGE.
10. WHEN CROSSING A SANITARY SEWER, CONSTRUCT THE WATER MAIN WITH A MINIMUM VERTICAL CLEARANCE OF EIGHTEEN INCHES (18") BETWEEN THE TOP OF THE SANITARY SEWER AND THE BOTTOM OF THE WATER LINE. CONSTRUCT THE WATER LINE SO THAT THE JOINT OF PIPE IS CENTERED OVER THE SANITARY SEWER WITH WATER LINE PIPE JOINTS EQUAL DISTANT FOR THE CROSSING.
11. HORIZONTAL CONTROL DATUM IS NAD83 WEST VIRGINIA STATE PLANE NORTH. VERTICAL CONTROL DATUM IS NAVD88.
12. ALL TREES AND VEGETATION WITHIN TEMPORARY CONSTRUCTION EASEMENTS LIMITS SHALL BE CLEARED (AND GRUBBED IF SO SPECIFIED) UNLESS THE PROPERTY OWNER INDICATES IN WRITING THAT CERTAIN TREES ARE TO REMAIN AND THAT THE PROPERTY OWNER WILL ASSUME ALL RESPONSIBILITIES FOR REMOVAL OF THE TREES IN THE FUTURE. ANY SUCH LETTER SHALL BE SUBMITTED TO THE ENGINEER FOR THE RECORD.

ANTICIPATED CONSTRUCTION SEQUENCE OF EVENTS:

1. CONTACT MISS UTILITY AT 1-800-245-4848 OR 811 OR WV811.COM.
2. INSTALL EROSION AND SEDIMENT CONTROL MEASURES.
3. COORDINATE ALL CONSTRUCTION WITH SUPERINTENDENT OF UTILITIES. EXISTING 105,000 GALLON WATER STORAGE TANK MUST REMAIN IN SERVICE UNTIL NEW 109,000 GALLON WATER STORAGE TANK(S) ARE IN SERVICE.
4. COORDINATE TIE-INS AT NEW SUNSET LANE TANK SITE WITH CONTRACT #1.
5. ONE WATER STORAGE TANK MUST REMAIN IN SERVICE AT ALL TIMES AT THE CUMBERLAND HEIGHTS TANK SITE DURING THE TANK PAINTING AND CONSTRUCTION.
6. EXISTING TELEMETRY UNIT AND APPURTENANCES MOUNTED TO THE EXISTING 300,000 GALLON WATER STORAGE TANK MUST BE RELOCATED AND OPERATIONAL PRIOR TO REMOVAL OF THE EXISTING 300,000 GALLON WATER STORAGE TANK.
7. TIE-IN TO EXISTING 10" WATER LINE SUPPLYING THE EXISTING 500,000 GALLON WATER STORAGE TANK MUST BE MADE PRIOR TO DEMOLITION AND REMOVAL OF THE EXISTING 300,000 GALLON WATER STORAGE TANK. WATER MUST BE PROVIDED TO THE TOMLINSON PSD BOOSTER STATION FROM THE CUMBERLAND HEIGHTS WATER STORAGE TANK SITE AT ALL TIMES.
8. CONSTRUCT, TEST AND PLACE INTO OPERATION ALL NEW AND REHABILITATED FACILITIES.
9. DEMOLISH THE EXISTING 105,000 GALLON WATER STORAGE TANK.
10. REPAIR ALL DISTURBED SURFACES.
11. CLOSEOUT PROJECT.

DRAWING INDEX

MATERIAL NOTES

1. ALL FITTINGS SHALL BE MECHANICAL JOINT DUCTILE IRON AND SHALL INCLUDE THRUST BLOCKING.
2. ALL BURIED GATE VALVES SHALL BE MECHANICAL JOINT AND SHALL INCLUDE A VALVE BOX, LID, VALVE BOX ADAPTOR, VALVE BOX PLUG, AND ALL OTHER ITEMS IN DETAIL AND/OR SPECIFICATIONS.
3. ALL TIE-INS TO WATER LINE SHALL INCLUDE A GATE VALVE WITH VALVE BOX IN ADDITION TO THE REQUIRED FITTINGS.

LEGEND

EXISTING SIGN
EXISTING TELEPHONE/ELECTRIC POLE
EXISTING GUARDRAIL
EXISTING FIRE HYDRANT
EXISTING WATER VALVE
EXISTING GRAVITY SEWER
PROPOSED WATER LINE
EXISTING WATER LINE
EXISTING GAS LINE
EXISTING FENCE
PROPOSED FENCE
EDGE OF WATER
EXISTING STORM DRAIN
EXISTING TREE LINE
EXISTING CONTOUR
PROPOSED CONTOUR
EXISTING SPOT ELEVATION
PROPOSED SPOT ELEVATION
EXISTING GRAVITY MANHOLE
PROPOSED UNDERGROUND ELECTRICAL CONDUIT
PROPOSED OVERHEAD ELECTRIC
PROPOSED BORE PIT
EXISTING ROAD RIGHT OF WAY
PROPOSED SANITARY SEWER
PERMANENT RIGHT OF WAY
PROPOSED SANITARY SEWER TEMPORARY CONSTRUCTION EASEMENT / LOD
EXISTING PROPERTY LINE
PROPOSED PROPERTY LINE
PROPOSED BELTED SILT RETENTION FENCE
PROPOSED LIMITS OF DISTURBANCE
PROPOSED STONE CHECK DAM
PROPOSED EROSION CONTROL MATTING
PROPOSED TEST PIT
PROPOSED WATER BAR
15-05-C26F-0001 PARCEL NUMBER
HOUSE USER NUMBER
PUBLIC NOTICE SIGN

UTILITY AGENCIES SERVING PROJECT AREA

RESPONSE TEAMS

NATIONAL RESPONSE CENTER FOR REPORTING CHEMICAL OR OIL SPILLS
1-800-424-8802

STATE EMERGENCY SPILL NOTIFICATION
1-800-642-3074

AMBULANCE, FIRE, LAW ENFORCEMENT
911

WEST VIRGINIA DIVISION OF HIGHWAYS
DISTRICT SIX
1 DOT DRIVE
MOUNDSVILLE, WV 26041-1605
304-843-4000

TELEPHONE
FRONTIER COMMUNICATIONS
1-800-921-8101
REPAIR CONTACT
1-800-921-8104

WATER
CITY OF NEW CUMBERLAND
104 N. COURT ST.
NEW CUMBERLAND WV 26047
304-564-3383 OR 304-564-3384

SEWER
CITY OF NEW CUMBERLAND
104 N. COURT ST.
NEW CUMBERLAND WV 26047
304-564-3383 OR 304-564-3384

1 HANCOCK COUNTY PSD
1500 N. CHESTER ST.
NEW CUMBERLAND WV 26047
304-564-5318

CABLE
COMCAST
110 TERRACE ST.
MARTINSBURG, WV 25401

BURIED OXYGEN
LINDE LLC
GREG KEISTER
(O) 304-387-0889 X102
(C) 304-394-7540

GAS:
MOUNTAINEER GAS CO.
P.O.BOX 5201
CHARLESTON, WV 25361

ELECTRIC
FIRST ENERGY
1-888-554-4877

MISS UTILITY
1-800-245-4848
NORTH CHESTER STREET CONFIRMATION #1821495608
ROLLING ACRES ROAD CONFIRMATION #1821495708
PARK AVENUE CONFIRMATION #1821596115
STILL STREET CONFIRMATION #1821596119
CLEARVIEW AVENUE CONFIRMATION #1821596159
DELTA ROAD 6 CONFIRMATION #1821596179
HARDIN RUN ROAD CONFIRMATION #1821596189
SUNSET LANE CONFIRMATION #1821896915

STEVEN V. BUCHANAN REGISTERED 11060 STATE OF WEST VIRGINIA PROFESSIONAL ENGINEER

STEVEN V. BUCHANAN, PE #11060 — DATE 1/14/2021

NO.	BY	DATE	DESCRIPTION
1	AN	1/15/21	ADDED SHEET 6B, REVISED SHEETS, AND ADDED CONTACT INFO

SCALE: AS SHOWN
DRAWN: A. FRIEND/A. NEWLON DATE: 09/2020
CHECKED: M. HAYES DATE: 09/2020
APPROVED: S. BUCHANAN DATE: 09/2020
SURVEY DATE:
SURVEY BY:
FIELD BOOK No.:

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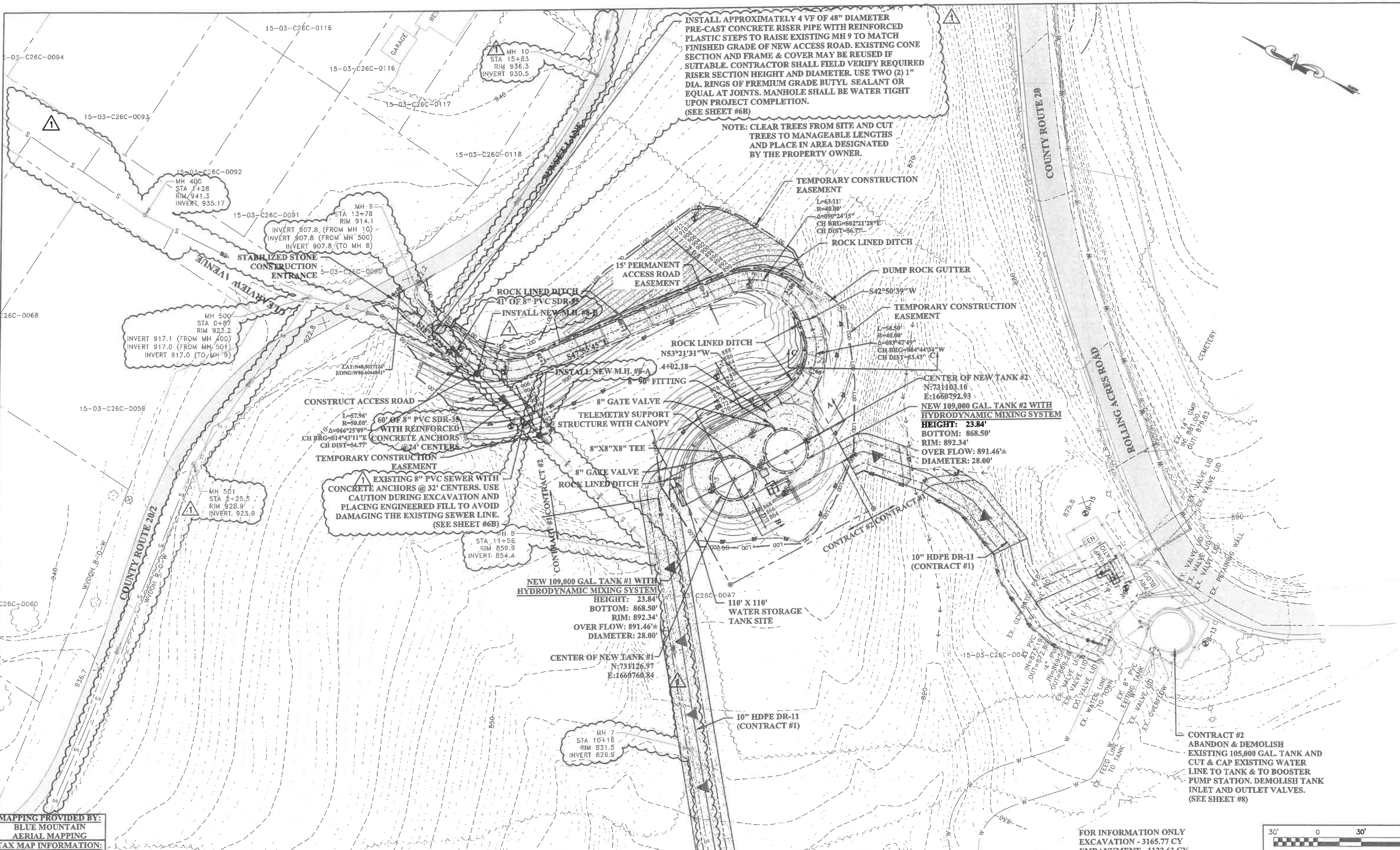
600 WHITE OAKS BLVD. P.O. BOX 940
BRIDGEPORT WV 26330
www.thethrashergroup.com
PHONE (304) 624-4108 FAX (304) 624-7831

PHASE No.
CONTRACT No. 2
PROJECT No. 101-010-1041

CITY OF NEW CUMBERLAND
CUMBERLAND HEIGHTS WATER STORAGE TANK REPLACEMENT & REHABILITATION AND SUNSET LANE WATER STORAGE TANKS
INDEX

SHEET No. i-1

CAD FILE: R:\010\010-1041-WATER SYSTEM IMPROVEMENTS-NEW CUMBERLAND-\Drawing\C2-02-INDEX.dwg LAYOUT: Index USER: adam newlon PLOT DATE/TIME: 1/15/2021 8:11 AM


INSTALL APPROXIMATELY 4 VF OF 48" DIAMETER PRE-CAST CONCRETE RISER PIPE WITH REINFORCED PLASTIC STEPS TO RAISE EXISTING MH 9 TO MATCH FINISHED GRADE OF NEW ACCESS ROAD. EXISTING CONE SECTION AND FRAME & COVER MAY BE REUSED IF SUITABLE. CONTRACTOR SHALL FIELD VERIFY REQUIRED RISER SECTION HEIGHT AND DIAMETER. USE TWO (2) 1" DIA. RINGS OF PREMIUM GRADE BUTYL SEALANT OR EQUAL AT JOINTS. MANHOLE SHALL BE WATER TIGHT UPON PROJECT COMPLETION. (SEE SHEET #6B)
NOTE: CLEAR TREES FROM SITE AND CUT TREES TO MANAGEABLE LENGTHS AND PLACE IN AREA DESIGNATED BY THE PROPERTY OWNER.
MH 10 STA 15+83 RIM 936.3 INVERT 930.5
MH 400 STA 1+28 RIM 941.3 INVERT 935.17
MH 9 STA 13+78 RIM 914.1 INVERT 907.8 (FROM MH 10) INVERT 907.8 (FROM MH 500) INVERT 907.8 (TO MH 8)
MH 500 STA 0+87 RIM 923.2 INVERT 917.1 (FROM MH 400) INVERT 917.0 (FROM MH 501) INVERT 917.0 (TO MH 9)
MH 501 STA 2+25.5 RIM 928.9 INVERT 923.9
MH 8 STA 11+56 RIM 859.9 INVERT 854.4
MH 7 STA 10+16 RIM 831.5 INVERT 826.9
15-03-C26C-0116
15-03-C26C-0094
15-03-C26C-0093
15-03-C26C-0117
15-03-C26C-0118
15-03-C26C-0092
15-03-C26C-0091
15-03-C26C-0090
C26C-0068
15-03-C26C-0059
C26C-0060
C26C-0047
15-03-C26C-0047
GARAGE
SUNSET LANE
CLEARVIEW AVENUE
COUNTY ROUTE 20
COUNTY ROUTE 20/2
ROLLING ACRES ROAD
WVDOH R-O-W
CEMETERY
STABILIZED STONE CONSTRUCTION ENTRANCE
ROCK LINED DITCH
41' OF 8" PVC SDR-35
INSTALL NEW M.H. #8-B
15' PERMANENT ACCESS ROAD EASEMENT
TEMPORARY CONSTRUCTION EASEMENT
L=63.11' R=40.00' Δ=090°24'15" CH BRG=S02°21'28"E CH DIST=56.77'
DUMP ROCK GUTTER
S42°50'39"W
S47°55'45"E
L=58.50' R=40.00' Δ=083°47'49" CH BRG=S84°44'34"W CH DIST=53.43'
N53°21'31"W
4+02.18
INSTALL NEW M.H. #8-A
8" 90° FITTING
8" GATE VALVE
TELEMETRY SUPPORT STRUCTURE WITH CANOPY
8"X8"X8" TEE
LAT:N40.5027126° LONG:W80.6064841°
CONSTRUCT ACCESS ROAD
L=57.96' R=50.00' Δ=066°25'09" CH BRG=S14°43'11"E CH DIST=54.77'
60' OF 8" PVC SDR-35 WITH REINFORCED CONCRETE ANCHORS @24' CENTERS
EXISTING 8" PVC SEWER WITH CONCRETE ANCHORS @ 32' CENTERS. USE CAUTION DURING EXCAVATION AND PLACING ENGINEERED FILL TO AVOID DAMAGING THE EXISTING SEWER LINE. (SEE SHEET #6B)
CENTER OF NEW TANK #2 N:731103.10 E:1660792.93
NEW 109,000 GAL. TANK #2 WITH HYDRODYNAMIC MIXING SYSTEM HEIGHT: 23.84' BOTTOM: 868.50' RIM: 892.34' OVER FLOW: 891.46'± DIAMETER: 28.00'
NEW 109,000 GAL. TANK #1 WITH HYDRODYNAMIC MIXING SYSTEM HEIGHT: 23.84' BOTTOM: 868.50' RIM: 892.34' OVER FLOW: 891.46'± DIAMETER: 28.00'
CENTER OF NEW TANK #1 N:731126.97 E:1660760.84
110' X 110' WATER STORAGE TANK SITE
CONTRACT #1
CONTRACT #2
10" HDPE DR-11 (CONTRACT #1)
EX. 14" CMP IN: 881.00 OUT: 879.83
EX. VALVE LID
EX. RETAINING WALL
GEN
PUMP STATION
PRV BLDG
B-15
B-13
875.8
EX. GEN. PAD
EX. 4" PVC IN=873.19 OUT=872.8
4" PVC IN=869.5 OUT=869.26
EX. WATER LINE TO TOWN
EX. 8" PVC EXITING TANK
EX. OVERFLOW
EX. FEED LINE TO TANK
CONTRACT #2 ABANDON & DEMOLISH EXISTING 105,000 GAL. TANK AND CUT & CAP EXISTING WATER LINE TO TANK & TO BOOSTER PUMP STATION. DEMOLISH TANK INLET AND OUTLET VALVES. (SEE SHEET #8)
FOR INFORMATION ONLY EXCAVATION - 3165.77 CY EMBANKMENT - 1122.63 CY
30' 0 30' 60'
MAPPING PROVIDED BY: BLUE MOUNTAIN AERIAL MAPPING
TAX MAP INFORMATION: CLAY DISTRICT TAX MAP C26C

CAD FILE: R:\010\010-1041-WATER SYSTEM IMPROVEMENTS-NEW CUMBERLAND-\Drawing\C2-04-SHEET-01.dwg PLOT DATE/TIME: 1/14/2021 4:56 PM LAYOUT: 4 USER: adam newlon

NO.	BY	DATE	DESCRIPTION
1	AN	1/12/21	REVISED EXISTING SEWER AND ADDED ELEVATIONS BASED ON RECORD DWGS, ADDED NOTES, AND NEW SEWER

SCALE: AS SHOWN	
DRAWN: A. FRIEND/A. NEWLON	DATE: 09/2020
CHECKED: M. HAYES	DATE: 09/2020
APPROVED: S. BUCHANAN	DATE: 09/2020
SURVEY DATE:	
SURVEY BY:	
FIELD BOOK No.:	

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BRIDGEPORT WV 26330
www.thethrashergroup.com
PHONE (304) 624-4108
FAX (304) 624-7831

PHASE No.:
CONTRACT No.: 2
PROJECT No.: 101-010-1041

CITY OF NEW CUMBERLAND
CUMBERLAND HEIGHTS WATER STORAGE TANK REPLACEMENT & REHABILITATION AND SUNSET LANE WATER STORAGE TANKS
SUNSET LANE TANK ACCESS ROAD PLAN

SHEET No. 4

ROCK LINED DITCH

S47°55'45"E

INSTALL NEW M.H. #8-A

N53°21'31"W

4+02.18

3/4" SET REBAR W/ CAP

ROCK LINED DITCH

CONSTRUCT ACCESS ROAD

L=58.50'
R=40.00'
Δ=083°47'49"
CH BRG=S84°44'34"W
CH DIST=53.43'

ACCESS LADDER & ROOF MAN-WAY

WATER LEVEL INDICATOR

(2) 6'-0" SWING GATES

NEW 109,000 GAL. TANK #2 WITH HYDRODYNAMIC MIXING SYSTEM
HEIGHT: 23.84'
BOTTOM: 868.50'
RIM: 892.34'
OVERFLOW: 891.46'±
DIAMETER: 28' NOM.

CENTER OF NEW TANK #2
N: 731103.10
E: 1660792. 93

254 LF OF 6'-0" TALL CHAIN LINK FENCE

8" 90° M.JT. FITTING WITH THRUST BLOCK

WATER LEVEL INDICATOR

8" GATE VALVE

ACCESS LADDER & ROOF MAN-WAY

8"X8"X8" M.JT. TEE WITH THRUST BLOCK

8" DI CL52 FEED LINE

3/4" SET REBAR W/ CAP

4" OF COMPACTED CRUSHER RUN OVER FABRIC FOR SEPARATION

TANK #2

TIE NEW 8" WATER LINE INTO NEW 8" WATER LINE INSTALLED PER CONTRACT #2

WATER BAR (TYP)

NEW 109,000 GAL. TANK #1 WITH HYDRODYNAMIC MIXING SYSTEM
HEIGHT: 23.84'
BOTTOM: 868.50'
RIM: 892.34'
OVERFLOW: 891.46'±
DIAMETER: 28.00'

8" GATE VALVE

TANK #1

TANK OVERFLOW 8" DI CL52

10" HDPE DR-11 (CONTRACT #1)

(2) 45° 8" M.JT. FITTINGS WITH THRUST BLOCKS

CONTRACT #2

CONTRACT #1

ROCK LINED DITCH

8" DI CL52 DISCHARGE LINE

8" DI CL52

8" 90° M.JT. FITTING WITH THRUST BLOCK

8" 90° M.JT. FITTING WITH THRUST BLOCK

TANK OVERFLOW

TELEMETRY SUPPORT STRUCTURE WITH CANOPY

CONTRACT #2

CONTRACT #1

INSTALL APPROXIMATELY 12 LF OF DUMP ROCK GUTTER

3/4" SET REBAR W/ CAP

TIE NEW 8" WATER LINE INTO NEW 8" WATER LINE INSTALLED PER CONTRACT #2

INSTALL APPROXIMATELY 6 LF OF DUMP ROCK GUTTER

2" SCH 80 PVC DRAIN LINE TO DAYLIGHT

CENTER OF NEW TANK #1
N: 731126.97
E: 1660760.84

4-20 mA #18 SHIELDED CABLE INSTALL IN CONDUIT AND CONNECT TO EARTH GROUND FROM TELEMETRY SUPPORT STRUCTURE WITH CANOPY TO VALVE PIT

VALVE VAULT WITH PRESSURE TRANSDUCER AND SAMPLE SPIGOT (SEE SHEET #D9)

MH 8
STA 11+56
RIM 859.9
INVERT 854.4

WATER BAR (TYP)

INSTALL APPROXIMATELY 12 LF OF DUMP ROCK GUTTER

10" HDPE DR-11 (CONTRACT #1)

5-0-C26C-0047

3/4" SET REBAR W/ CAP

10' 0 10' 20'

MAPPING PROVIDED BY:
BLUE MOUNTAIN AERIAL MAPPING

TAX MAP INFORMATION:
CLAY DISTRICT
TAX MAP C26C

NO.	BY	DATE	DESCRIPTION
1	AN	1/11/21	REVISED EXISTING SEWER AND ADDED ELEVATIONS
			BASED ON RECORD DWGS AND NEW RELOCATED SEWER

SCALE: AS SHOWN
DRAWN: A. FRIEND/A. NEWLON DATE: 09/2020
CHECKED: M. HAYES DATE: 09/2020
APPROVED: S. BUCHANAN DATE: 09/2020
SURVEY DATE:
SURVEY BY:
FIELD BOOK No.:

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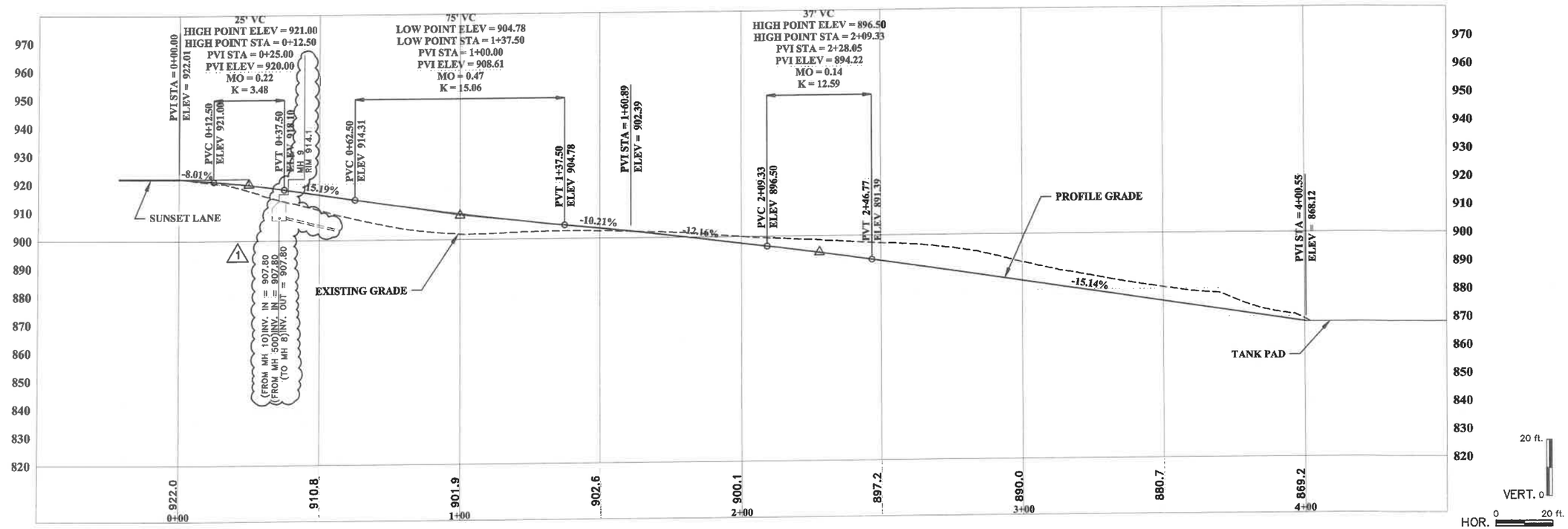
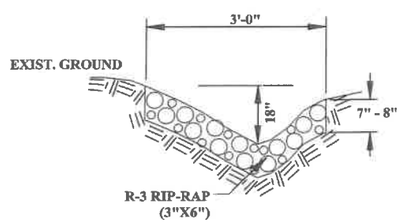
PHASE No.
CONTRACT No. 2
PROJECT No. 101-010-1041

CITY OF NEW CUMBERLAND
CUMBERLAND HEIGHTS WATER STORAGE TANK REPLACEMENT & REHABILITATION AND SUNSET LANE WATER STORAGE TANKS
SUNSET LANE TANK PAD PLAN

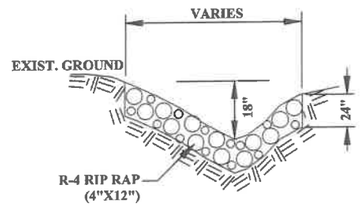
SHEET No. 5

CAD FILE: R:\010\010-1041-WATER SYSTEM IMPROVEMENTS-NEW CUMBERLAND-\Drawing\C2-04-SHEET-01.dwg
PLOT DATE/TIME: 1/14/2021 4:58 PM
LAYOUT: 5
USER: adam.newlon



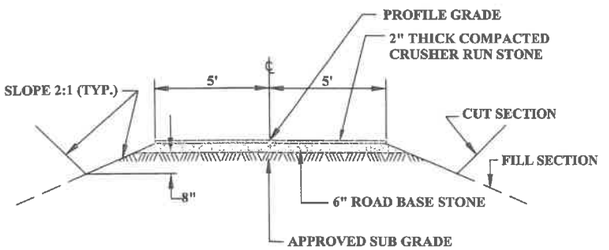


ROCK LINED DITCH DETAIL
NOT TO SCALE



DUMP ROCK GUTTER DETAIL
NOT TO SCALE

TYPICAL STONE AROUND TANK DETAIL
NOT TO SCALE



TYPICAL ACCESS ROAD DETAIL
SECTION VIEW
NOT TO SCALE

MAPPING PROVIDED BY:
BLUE MOUNTAIN
AERIAL MAPPING
TAX MAP INFORMATION:
CLAY DISTRICT
TAX MAP C26C

NO.	BY	DATE	DESCRIPTION
1	AN	1/11/21	ADDED EXISTING SEWER

SCALE: AS SHOWN
DRAWN: A. FRIEND/A. NEWLON DATE: 09/2020
CHECKED: M. HAYES DATE: 09/2020
APPROVED: S. BUCHANAN DATE: 09/2020
SURVEY DATE:
SURVEY BY:
FIELD BOOK No.:

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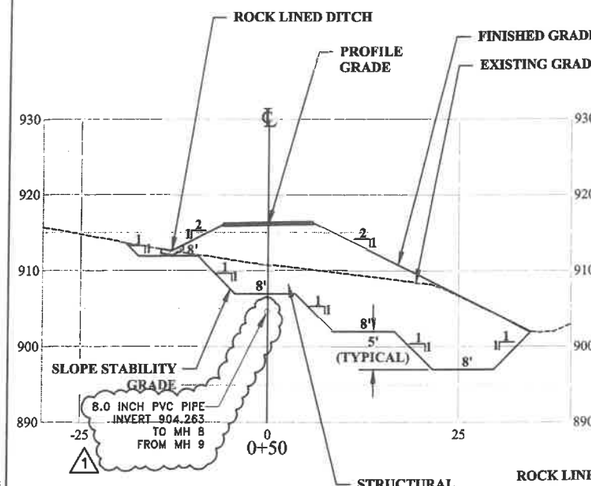
PHONE (304) 624-4108
FAX (304) 624-7831

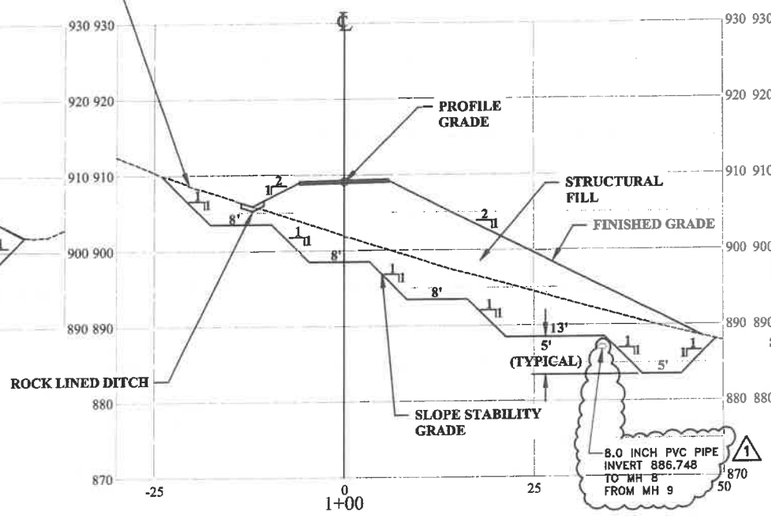
PHASE No.
CONTRACT No. 2
PROJECT No. 101-010-1041

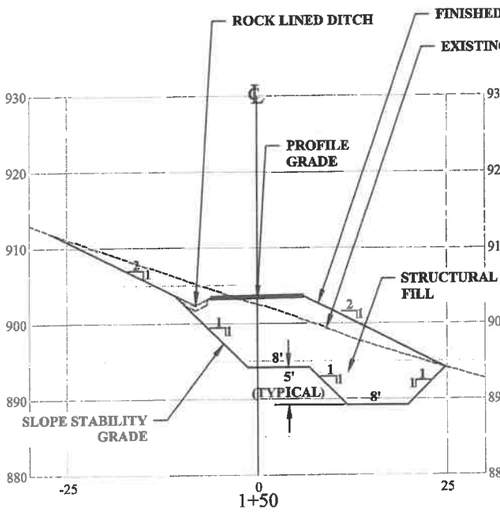
CITY OF NEW CUMBERLAND
CUMBERLAND HEIGHTS WATER STORAGE TANK
REPLACEMENT & REHABILITATION
AND SUNSET LANE WATER STORAGE TANKS
ACCESS ROAD PROFILE & DETAILS

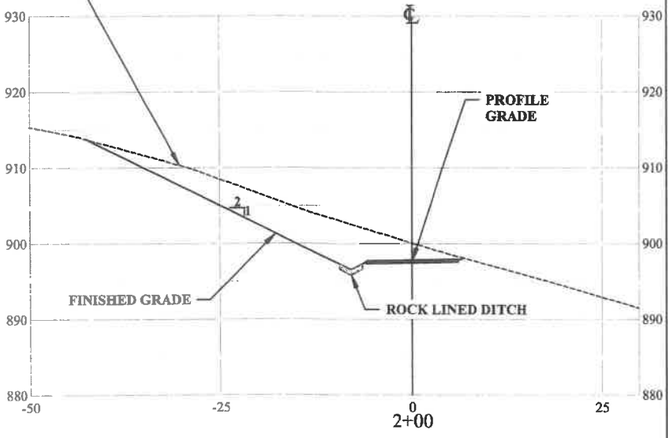
SHEET No. 6

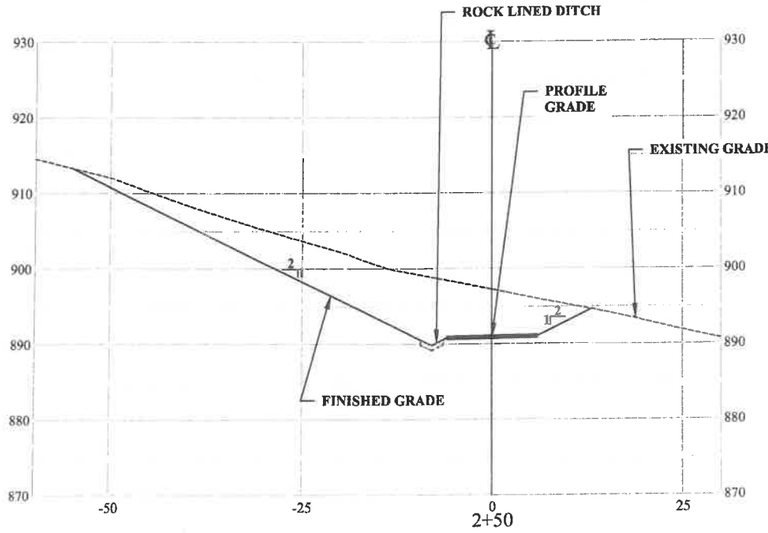
CAD FILE: R:\010\010-1041-WATER SYSTEM IMPROVEMENTS-NEW CUMBERLAND-\Drawing\C2-04-SHEET-01.dwg PLOT DATE/TIME: 1/11/2021 11:58 AM LAYOUT: 6 USER: adam newton

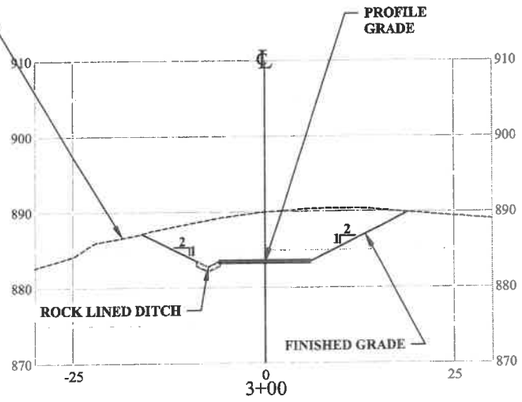


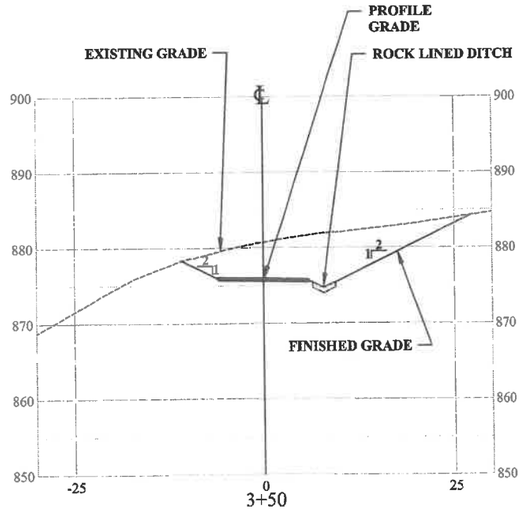












10 ft.
VERT. 0
HOR. 0 10 ft.

MAPPING PROVIDED BY:
BLUE MOUNTAIN AERIAL MAPPING

TAX MAP INFORMATION:
CLAY DISTRICT TAX MAP C26C

FOR INFORMATION ONLY
EXCAVATION - 1368.68 CY
EMBANKMENT - 1007.08 CY

NO.	BY	DATE	DESCRIPTION
1	AN	1/11/20	ADDED EXISTING SEWER

SCALE: AS SHOWN
DRAWN: A. FRIEND/A. NEWLON DATE: 09/2020
CHECKED: M. HAYES DATE: 09/2020
APPROVED: S. BUCHANAN DATE: 09/2020
SURVEY DATE:
SURVEY BY:
FIELD BOOK No.:

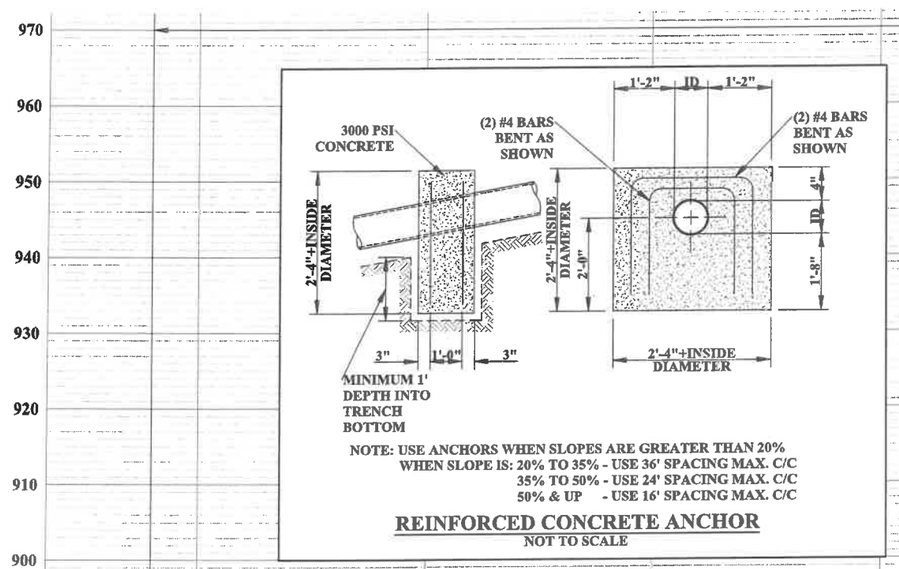
THRASHER
600 WHITE OAKS BLVD. P.O. BOX 940
BRIDGEPORT WV 26330
www.thethrashergroup.com
PHONE (304) 624-4108
FAX (304) 624-7831

PHASE No.
CONTRACT No. 2
PROJECT No. 101-010-1041

CITY OF NEW CUMBERLAND
CUMBERLAND HEIGHTS WATER STORAGE TANK REPLACEMENT & REHABILITATION
AND SUNSET LANE WATER STORAGE TANKS
ACCESS ROAD SECTIONS

SHEET No. 6A

CAD FILE: R:\010\010-1041-WATER SYSTEM IMPROVEMENTS-NEW CUMBERLAND-\Drawing\C26-04-SHEET-01.dwg LAYOUT: 6A PLOT DATE/TIME: 1/11/2021 1:08 PM USER: adam newlon



NOTE: USE ANCHORS WHEN SLOPES ARE GREATER THAN 20%
WHEN SLOPE IS: 20% TO 35% - USE 36' SPACING MAX. C/C
35% TO 50% - USE 24' SPACING MAX. C/C
50% & UP - USE 16' SPACING MAX. C/C

REINFORCED CONCRETE ANCHOR
NOT TO SCALE

222'
60.00'
41.00'
WVDOH TYPE "C" TRENCH REPAIR WITH GRAVEL OVERLAY

INSTALL APPROXIMATELY 4 VF OF 48" DIAMETER PRE-CAST CONCRETE RISER PIPE WITH REINFORCED PLASTIC STEPS TO RAISE EXISTING MH 9 TO MATCH FINISHED GRADE OF NEW ACCESS ROAD. EXISTING CONE SECTION AND FRAME & COVER MAY BE REUSED IF SUITABLE. CONTRACTOR SHALL FIELD VERIFY REQUIRED RISER SECTION HEIGHT AND DIAMETER. USE TWO (2) 1" DIA. RINGS OF PREMIUM GRADE BUTYL SEALANT OR EQUAL AT JOINTS. MANHOLE SHALL BE WATER TIGHT UPON PROJECT COMPLETION.

INSTALL NEW M.H. #8-B RIM EL. = 913.0
MH 9 RIM 917.41
NEW RIM 918.4
INV. OUT = 907.40
INV. IN = 907.50
8" PVC SDR-35 @ S = 0.73%
INV. OUT = 907.80 (FROM MH 10)
INV. IN = 907.90 (FROM MH 9)
INSTALL NEW M.H. #8-A RIM EL. = 889.0
8" PVC SDR-35 @ S = 39.81%
8" PVC @ S = 24.05%
MH 8 RIM EL. 859.9
INV. OUT = 882.00
INV. IN = 883.50
REINFORCED CONCRETE ANCHORS @ 24' CENTERS
CUT AND PLUG EXISTING 8" PVC SEWER
CUT AND PLUG EXISTING 8" PVC SEWER
6 CONCRETE ANCHORS ON 32' CENTERS
INV. OUT = 854.40
INV. IN = 854.40
USE CAUTION DURING EXCAVATION AND PLACING ENGINEERED FILL TO AVOID DAMAGING THE EXISTING SEWER LINE.

970 960 950 940 930 920 910 900 890 880 870 860 850 840 830 820 810 800

862.5 869.4 876.1 883.3 890.6 898.4 906.5 914.4

EXISTING SEWER

SEWER RELOCATION CONSTRUCTION AND MATERIAL NOTES:

1. ALL MANHOLES SHALL BE 48" DIA. PRECAST CONSTRUCTION, AND SHALL INCLUDE CAST IN PLACE FLEXIBLE PIPE TO MANHOLE CONNECTORS AT ALL PIPE PENETRATIONS, CAST IN PLACE REINFORCED PLASTIC STEPS.
2. ALL JOINTS SHALL BE SEALED WITH TWO 1" DIA. RINGS OF PREMIUM GRADE BUTYL BASED SEALANT OR EQUAL.
3. CASTING SHALL BE NEENAH MODEL R-1753-A OR APPROVED EQUAL WITH 27" MINIMUM CLEAR OPENING AND ANCHORED WITH STAINLESS STEEL BOLTS.
4. ALL SEALED JOINTS MUST BE WATERTIGHT.
5. MANHOLE SHALL BE PLACED ON A COMPACTED 8" THICK AASHTO #57 STONE BASE.
6. 6" WIDE MAGNETIC TRENCH TAPE LABELED "SEWER" IS REQUIRED.
7. TIE IN EXISTING SEWER TO NEW M.H. #8-A.
8. TIE IN NEW SEWER FROM FROM NEW M.H. #8-B TO EXISTING M.H. #8.
9. INSTALL REINFORCED CONCRETE ANCHORS AS REQUIRED AND PER DETAIL (THIS SHEET).

10 ft.
VERT. 0
HOR. 0 10 ft.

MAPPING PROVIDED BY:
BLUE MOUNTAIN AERIAL MAPPING

TAX MAP INFORMATION:
CLAY DISTRICT
TAX MAP C26C

NO.	BY	DATE	DESCRIPTION
1	AN	1/13/20	ADDED EXISTING SEWER PROFILE AND NEW RELOCATED SEWER

SCALE: AS SHOWN
DRAWN: A. FRIEND/A. NEWLON DATE: 09/2020
CHECKED: M. HAYES DATE: 09/2020
APPROVED: S. BUCHANAN DATE: 09/2020
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CUMBERLAND HEIGHTS WATER STORAGE TANK
REPLACEMENT & REHABILITATION
AND SUNSET LANE WATER STORAGE TANKS
EXISTING SEWER PROFILE

SHEET No. 6B

CAD FILE: R:\010\010-1041-WATER SYSTEM IMPROVEMENTS-NEW CUMBERLAND-\Drawing\C2-04-SHEET-01.dwg PLOT DATE/TIME: 1/14/2021 5:32 PM LAYOUT: 08 USER: adam.newlon