CHARLES TOWN UTILITY BOARD
AGENDA

WEDNESDAY, JANUARY 26, 2022

Regular Meeting | **661 South George Street, Charles Town, WV 25414** | **4:00 PM**

CALL TO ORDER

1. **APPROVAL OF MINUTES**
   a. Approval of January 12, 2022 Regular Meeting Minutes
   UB Minutes 2022.01.12.pdf

2. **PUBLIC COMMENT**
   This portion of the agenda is designed for members of the general public to share thoughts on items of interest in the community. By law, Board members may ask clarifying questions or discuss procedural matters but are not permitted to discuss the policy merits of any issue unless it is scheduled for discussion.

   The public is invited to attend this meeting in person or via webcast (www.ctubwv.com- Board Meetings - Meeting Agendas and Minutes 2022) or by accessing the following zoom link:

   https://us06web.zoom.us/j/87296959728?pwd=UkwyOHZVVkc5ZVVzMC9OckdzMUhKUT09

   Meeting ID: 872 9695 9728
   Passcode: 338373
   +1 301 715 8592 US

3. **ELECTION OF OFFICERS**

4. **UNFINISHED BUSINESS**
   a. Dewberry Water and Wastewater Capacity Improvement Fee Analysis, Task Amendment No. 1
   Dewberry Task Amendment and Cost Analysis.pdf
   b. Liquid Engineering Water Tank Maintenance Contract
   Liquid Engineering Contract and Cost Analysis.pdf

5. **NEW BUSINESS**
   a. Chemtrac Streaming Current Analyzer
   ChemTrac Streaming Current Analyzer.pdf
   b. 120 Water Lead and Copper Compliance
   120 Water Renewal.pdf

c. 6th Avenue Tank - T-Mobile 5th Lease Amendment
6th Ave T-Mobile 5th Amendment.pdf
d. Sewer Vac Truck Purchase - Possible Executive Session Under: WV State Code Section §6-9A-4(b)(9) - To consider matters involving or affecting the purchase, sale or lease of property, advance construction planning, the investment of public funds or other matters involving commercial competition, which if made public, might adversely affect the financial or other interest of the state or any political subdivision and involving contract matters.
Vac Truck Summary.pdf

6. **MANAGER REPORTS**
   a. Utility Manager Report
   Utility Manager Report 2022.01.26.pdf
   b. Chairman Report

7. **APPROVAL OF BILLS**
   a. January 26, 2022
   Board Report 2022.01.26.pdf

8. **ADJOURNMENT**

9. **INFORMATION ONLY**
   Next Meeting - February 9, 2022 at 4:00 PM

January 12, 2022

The Charles Town Utility Board held a regular meeting on January 12, 2022 at 4:00 P.M. Members of the Board present were Daryl Hennessy, Duke Pierson, Tommy Stocks, Jacquelyn Milliron and newly appointed board member, Jeff Whitten. Also present were Kristen Stolipher, April Shultz, Hoy Shingleton, and County Commission Liaison, Caleb Hudson. The Chairman called for changes or corrections to the December 15, 2021 special meeting minutes. Jacquelyn suggested changes and with no objections, the Board approved the minutes as amended. Next, the Chairman swore in new Board member, Jefferson Whitten. The Board received a public comment from Councilwoman Elizabeth Ricketts.

The Chairman next opened the floor for discussion on the Dewberry Water and Wastewater Capacity Improvement Fee Analysis, Amendment No. 1. Kristen provided that Dewberry has spent a tremendous amount of time working on the sewer CIF analysis and the timeframe has extended well beyond what was originally anticipated. The original contract was executed in April 2019, but was put on hold until various items were completed. Dewberry has submitted an Amendment No. 1 to amend the scope of services to recognize additional services performed and/or still required by Dewberry. The Amendment would increase the lump sum fee by $12,000 and services would be extended through April 2022 to allow added time for completion of the Water CIF and City Council approvals. Motion by Duke, second by Tommy, with discussion from the Board, to approve the Dewberry Water and Wastewater Capacity Improvement Fee Analysis, Amendment No. 1. After much discussion, motion by Duke, second by Jacquelyn to table the item until next meeting so staff can provide a comparison of the existing contract and services rendered.

Next on the agenda was the Sewer Capacity Improvement Fee Implementation Process. Kristen provided that since the Sewer CIF study is now complete, the Board may want to move forward on the implementation process rather than wait for the Water CIF study to be completed. This would standardize the sewer CIF's to $2,930.00. If no objections, staff would move forward with the process of adjusting the tariff by presenting to City Council at the January 18th meeting. If approved, City Council would then refer to the Ordinance Committee. The Board had no objections.

Next, the Board discussed the Liquid Engineering Water Tank Maintenance Contract. Kristen mentioned that Liquid Engineering was hired to clean all the storage tanks, but ran into unexpected issues while performing the cleaning. They did successfully clean two tanks, but exceeded the original contract to complete the other tanks. To address the issue, Liquid Engineering provided a maintenance contract to cover the cleaning of the other tanks over a three-year period which would minimize costs to CTUB. The Board held discussions on the agreement. Motion by Duke, second by Jeff, the Board tabled the Liquid Engineering Water Tank Maintenance Contract so staff can provide the Board with an upper end cost should Liquid Engineering encounter the same issues as recently experienced with tank cleaning.

The Chairman next opened the floor for discussion on the Snyder Environmental Services – Water Plant 12" Valve Removal and Installation. In a previous meeting, the Board approved the purchase of four 12" valves for installation at the water plant using the surety bond money. Kristen provided the installation was not something CTUB staff could complete, therefore the scope was sent to several contractors. One bid was received from Snyder Environmental. Motion by Tommy, second by Duke, with discussion from the Board, to approve the contract with Snyder Environmental Services for the 12" valve removal and installation. With no objections, the Board amended the original motion to add "not to exceed" the $19,590.00 contract amount. The Board approved the amended motion.

The Utility Manager Report was next addressed. Kristen provided that Dewberry and GDF are continuing to work on the water strategic plan update and informed the Board of the grant approval for security upgrades at the water plant. Kristen also mentioned her attendance at the City Council meeting on January 3rd for the second reading and public hearing on the 2022 Collection Project and the Renewal and Replacement Project which was tabled to February 7th due to customer notice issues. Kristen also stated that City Council had questions on the funding for the projects which needs to be addressed by the Board at a future meeting. Lastly, Kristen discussed the 2022 bond refunding of the 2015 A and B bonds which is moving forward. The Board provided discussion on the report.

The Chairman had no updates for the Chairman report. The Board next discussed the Approval of Bills. Motion by Duke, second by Tommy, with discussion from the Board, the Board approved the payment of bills.

Next, motion by Tommy, second by Duke, the Board approved convening into Executive Session to discuss Distressed Utility Updates for Shenandoah Junction Public Sewer and Cave Road Utilities, LLC - Possible Executive Session Under: WV State Code Section §6-9A-4(b)(9) - To consider matters involving or affecting the purchase, sale or lease of property, advance construction planning, the investment of public funds or other matters involving commercial competition, which if made public, might adversely affect the financial or other interest of the state or any political subdivision and involving contract matters.

With no objections, the Board adjourned the meeting at 5:46 P.M. The January 26th regular meeting will be held beginning at 4:00 p.m.

_____ _____

Chairman Secretary

Dewberry

Dewberry Engineers Inc.
8401 Arlington Boulevard
Fairfax, VA 22031

703.849.0100
703.849.0118 fax
www.dewberry.com

December 29, 2021

Ms. Kristen Stolipher
Assistant Utility Manager
Charles Town Utility Board
661 South George Street
Charles Town, WV 25414

RE: Water and Wastewater Capacity Improvement Fee (CIF) Analyses and Benchmarking Studies, Amendment No. 1

Dear Ms. Stolipher:

This letter shall serve as Amendment No. 1 to our Agreement executed on April 5, 2019.

Amended Scope of Services:

The scope of services is amended to recognize additional services performed and/or required by Dewberry as described below:

- The CIF Agreement was approved in April 2019. Work was originally anticipated to be completed in 2019 or early 2020 and will now extend into early 2022.
  Added Cost for Two-Year Labor Escalation: $2,500

- The original scope anticipated 2, 2-hour web-ex (Teams) workshops with CTUB to review interim work-products and assumptions. In 2021, at least 8 such conference calls have been conducted and the Water CIF effort is ongoing. By the time the overall effort is completed, an estimated 10 or more conference calls will have been conducted. Several additional conference calls were also conducted in 2019 and 2020.
  Added Cost: $4,000

- Several what-if scenarios: Dewberry evaluated options for a 2.0 MGD CT WWTP expansion, 1.0 MGD expansion, 0.6 MGD expansion and no expansion to determine how different size expansions impacted the CIF.
  Added Cost: $1,000

- Dewberry anticipated completing the water and sewer CIFs concurrently, but due to the manner in which capital improvement plans (CIPs) were developed, they now need to be done sequentially.
  Added Cost for executing CIFs sequentially: $2,000

- The original scope included 2, one-hour, in-person, presentations in Jefferson County. One in-person and two Teams meeting have been conducted to date. At least 2 more in-person meetings including preparation time are anticipated to coordinate with City Council and/or CTUB legal counsel as well as present the Water CIF.
  Added Cost for additional presentations: $2,500

In consideration of the above scope revisions, the Agreement is amended to increase the lump sum fee by $12,000 and services are hereby extended through April 2022 to allow added time for completion of the Water CIF and to support CTUB with needed City Council Approvals. The revised lump sum Agreement amount is now $59,000 allocated as follows: $29,500 for the Water CIF and $29,500 for the Sewer CIF.

All other terms and conditions of the Agreement shall remain the same and in full force and effect.

Acceptance:

Sincerely,



Martin A. Kazmierczak, P.E., PMP
Principal Engineer

The terms and conditions of the above Agreement Amendment are accepted and Dewberry is hereby authorized to proceed with the work as amended.

_____ _____
Signature Date

_____
Printed Name

_____
Title

Dewberry CIF Contract Evaluation			
	Original Contract		**Actual**
Anticipated timeframe	**12-18 months**		May 2019 through September 2022 = **36-40 months**
Workshops with staff	**2 - 2 hour meetings**		**Over 14 hours of effort and planning (see attached) Dewberry is only billling CTUB for 10 additional hours including future effort**
Board Presentations	**2 - 1 hour meetings**		**3 meetings totaling over 2.5 hours**
Various iterations of differing scenarios	**None**		**4-6 different scenarios**
Concurrent completion of water and sewer	**Yes**		**No - additional effort for Dewberry staff**
Total Contract	$47,000		$59,000 (with additional $12,000 additional effort)
Current amount billed and paid	$35,250		

Dewberry

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March 15, 2019

Ms. Kristen Stolipher
Assistant Utility Manager
Charles Town Utility Board
661 South George Street
Charles Town, WV 25414

RE: Water and Wastewater Capacity Improvement Fee Analyses and Benchmarking Studies

Dear Ms. Stolipher:

This letter is in response to your request for a proposal from Dewberry Engineers Inc., ("Dewberry") to perform Water and Wastewater Capacity Improvement Fee ("CIF") Analyses and Benchmarking Studies for the Charles Town Utility Board ("CTUB").

Project Understanding:

CTUB operates the following wastewater plants that have excess capacity, which may be subject to a CIF (data below provided by CTUB):

Wastewater Treatment Facility	Design Flow (MGD)	Current Average Daily Flow (MGD)
Charles Town	1.75	1.2 – 1.3
Tuscawilla	0.5	0.2 – 0.3

Similarly, CTUB operates the following water plants that have excess capacity, which may be subject to a CIF (data below provided by CTUB):

Water Treatment Facility	Design Flow (MGD)	Current Average Daily Demand (MGD)
Charles Town	2.8	1.6

Moreover, CTUB is currently refining a Capital Improvement Plan (CIP) which includes several capital projects for wastewater and water to be implemented over the next 10-15 years. Many of these projects are anticipated to be included in the CIF analysis.

Proposed Scope of Services:

1) CTUB shall furnish Dewberry with the following information in support of the CIF analyses (for water and wastewater):
   a) Treatment plant design capacity and average daily flow or average daily demand
   b) A 10-15 year capital improvements plan showing each project, its cost, and year of implementation
   c) Cost and bond data on prior projects
   d) Depreciation period for each project or type of asset
   e) Percentages of each project that are growth-related
   f) Water and wastewater flow per equivalent dwelling unit (EDU)
   g) Connection rate per year (EDUs per year)
   h) State-specific legal requirements governing the CIF, if any
   i) Other data listed in Attachment C, and other data as requested
2) Dewberry shall analyze the Capacity Improvement Fees assuming the following:
   a) Use of the combined (aka hybrid) CIF methodology as generally defined in the textbook *Water and Wastewater Finance and Pricing, the Changing Landscape, Fourth Edition, c. 2015 CRC Press.*
   b) A 10-year study horizon beginning in 2020 unless otherwise directed in writing
   c) Use of Engineering News Record (ENR) historical cost indices to determine Replacement Cost New Less Depreciation (RCNLD) for existing treatment assets with excess capacity
   d) Assumed timing of future projects in consultation with CTUB considering its CIP

e) Assumed timing of future bond issuances, rates and terms in consultation with CTUB
f) Incorporation of a debt principal credit calculation

3) The CIF analyses (one each for water and wastewater) shall include the following output:
   a) Replacement Cost New Less Depreciation (RCNLD) for each historical asset comprising the CIF
   b) Forecasted capital expenses by year
   c) Forecasted growth-related capital expenses by year
   d) CIF without debt principal credit
   e) Debt principal credit calculation
   f) CIF with debt principal credit
4) Dewberry shall collect information for similar CIFs in the region (i.e., 50 mile radius from Jefferson County, WV) for approximately 15-20 other utilities and summarize this information in a benchmarking study including the following:
   a) Tabular data on various water and sewer providers in the region and their CIFs ($/EDU)
   b) Graphical data showing how the proposed CTUB CIFs compare with those of others in the region
   c) Tabular data on various water and sewer providers in the region and their normalized CIFs ($/GPD)
   d) Graphical data showing how the proposed CTUB normalized CIFs compare with those of others in the region
5) Items 3 and 4 above will be presented in a Technical Memorandum. The proposed technical memorandum will be similar in content and layout to that previously produced for the Berkeley County Public Service Water and Sewer Districts by Dewberry.
6) The CIFs are intended to be uniform for the entire water or sewer service area. Developing separate CIFs for sub-sheds or other boundaries is not included.
7) Dewberry shall conduct up to two, two-hour, Web-Ex conference call workshops with CTUB to review interim work products and discuss CIF assumptions.
8) Dewberry will review the newly developed CTUB water model to assist in the identification of future capital projects including a workshop in Charles Town to review projects. During this workshop, CTUB will also clarify future wastewater projects in light of recent consolidation efforts.
9) Dewberry shall make up to two, in-person, one-hour presentations in Jefferson County, WV to CTUB and/or the City Council to explain the CIF analyses and benchmarking study results and respond to questions.

Project Fee: The lump sum fee to perform items 1-9 above is $47,000. Of this amount, $40,000 shall be payable to Dewberry upon furnishing the Draft Water and Wastewater CIF Technical Memoranda ($20,000 each), and $7,000 upon furnishing the Final Technical Memoranda ($3,500 each). Additional services beyond those described above, when authorized in writing by CTUB, shall be payable at the hourly rates and other direct costs as set forth in Attachment A.

Project Time: The draft technical memoranda will be produced within 12 weeks of your notice to proceed. The final technical memoranda will be produced within 3 weeks of receipt of comments, if any, from CTUB. The aforementioned schedule is dependent upon timely provision of all requested information from CTUB.

The terms of this proposal are effective for a period of six months after which time they are renegotiable. Dewberry is an equal opportunity employer and complies with Section 202 of Executive Order 11246 as amended.

Assumptions:

The scope, fee and schedule set forth above is conditioned upon the following:

- Dewberry does not provide legal services nor does it warranty that the resulting CIF will be declared legal in West Virginia. Issues requiring legal review shall be performed by CTUB or its legal counsel.
- Timely provision of requested information by CTUB (generally within 5 business days).
- Dewberry may rely upon the accuracy of data provided by CTUB.
- The Water and Wastewater CIF efforts will proceed concurrently.

- Drafting of CIF Ordinances is not included but Dewberry's general opinion on approaches to such ordinances (meter size, unit flow projections using 64CSR47, etc.) will be provided upon request.
- For its deliverables, CTUB will be furnished the Technical Memoranda in PDF format and hard-copy only. The electronic CIF spreadsheet models shall remain the exclusive property of Dewberry. Dewberry shall review the model with CTUB via planned Web-Ex conference calls, however, so that CTUB staff understand, in general, how the model works. Likewise, the electronic CIF spreadsheet files and its internal tables, which contain proprietary information, shall not be made available to CTUB or any other party for any reason.
- Due to the unique nature of CIF work, this project is not being performed under the Agreement dated September 26, 2018 between CTUB and Dewberry Engineers Inc. This Proposal / Contract is a separate Agreement subject to different terms and conditions as set forth in Attachment B.
- A check-list of items required from CTUB for the CIF Analyses are provided as Attachment C.

Standard Terms and Conditions:

Work shall be governed by the attached Standard Terms and Conditions provided as Attachment B.

Acceptance:

In the event you wish to accept this contract/proposal, please return a signed copy to my attention at the Dewberry Engineers Inc., Fairfax, VA Office. If you have any questions regarding this proposal, please call me (Marty Kazmierczak, Sr. Project Manager) at (703) 560-6366. Thank you for the opportunity to be of service to the Charles Town Utility Board.

Sincerely,

Martin A. Kazmierczak, P.E., PMP
Senior Program Manager

Kevin C. Wood, P.E.
Vice President

The terms of the above Contract/Proposal are accepted and Dewberry is hereby authorized to proceed with the work.

Signature

4-5-19
Date

DARYL HENNESSY
Printed Name

CTUB CHAIR
Title

Attachments:

A. Standard Hourly Rates
B. Standard Terms and Conditions
C. CIF Check-List

Dewberry

ATTACHMENT A
2018-2019 Charles Town Utility Board Billing Rates (Confidential)

Code Description	Bill Code	Standard Dewberry Rate
Admin Assistant I	AA1	65.00
Admin Assistant II	AA2	85.00
Admin Professional III	AP3	100.00
Admin Professional IV	AP4	125.00
Architect I	AR1	85.00
Architect II	AR2	100.00
Architect III	AR3	115.00
Architect IV	AR4	130.00
Architect V	AR5	145.00
Architect VI	AR6	165.00
Architect VII	AR7	185.00
Architect VIII	AR8	200.00
Architect IX	AR9	220.00
Cadd Technician I	CD1	70.00
Cadd Technician II	CD2	85.00
Cadd Technician III	CD3	95.00
Cadd Technician IV	CD4	120.00
Construction Professional I	CP1	120.00
Construction Professional II	CP2	135.00
Construction Professional III	CP3	160.00
Construction Professional IV	CP4	180.00
Construction Professional V	CP5	200.00
Construction Professional VI	CP6	225.00
Designer I	DS1	100.00
Designer II	DS2	115.00
Designer III	DS3	135.00

Code Description	Bill Code	Standard Dewberry Rate
Designer IV	DS4	150.00
Designer V	DS5	175.00
Designer VI	DS6	200.00
Emergency Management I	EM1	160.00
Emergency Management II	EM2	190.00
Emergency Management III	EM3	220.00
Emergency Management IV	EM4	240.00
Emergency Management V	EM5	260.00
Emergency Management VI	EM6	300.00
Engineer I	EN1	100.00
Engineer II	EN2	110.00
Engineer III	EN3	125.00
Engineer IV	EN4	140.00
Engineer V	EN5	160.00
Engineer VI	EN6	180.00
Engineer VII	EN7	200.00
Engineer VIII	EN8	215.00
Engineer IX	EN9	235.00
Geographer/GIS I	GIS1	85.00
Geographer/GIS II	GIS2	95.00
Geographer/GIS III	GIS3	110.00
Geographer/GIS IV	GIS4	120.00
Geographer/GIS V	GIS5	135.00
Geographer/GIS VI	GIS6	150.00
Geographer/GIS VII	GIS7	180.00
Geographer/GIS VIII	GIS8	200.00
Geographer/GIS IX	GIS9	225.00
Interior Designer I	ID1	85.00

Code Description	Bill Code	Standard Dewberry Rate
Interior Designer II	ID2	95.00
Interior Designer III	ID3	110.00
Interior Designer Principal IV	ID4	150.00
Inspector I	IN1	80.00
Inspector II	IN2	100.00
Inspector III	IN3	115.00
Inspector IV	IN4	135.00
Inspector V	IN5	145.00
Inspector VI	IN6	160.00
Professional I	OP1	95.00
Professional II	OP2	110.00
Professional III	OP3	125.00
Professional IV	OP4	140.00
Professional V	OP5	155.00
Professional VI	OP6	170.00
Professional VII	OP7	190.00
Professional VIII	OP8	215.00
Professional IX	OP9	235.00
Technical I	OT1	70.00
Technical II	OT2	85.00
Technical III	OT3	105.00
Technical IV	OT4	115.00
Technical V	OT5	130.00
Technical VI	OT6	150.00
Surveyor I	SU1	60.00
Surveyor II	SU2	70.00
Surveyor III	SU3	80.00
Surveyor IV	SU4	100.00
Surveyor V	SU5	105.00

Code Description	Bill Code	Standard Dewberry Rate
Surveyor VI	SU6	120.00
Surveyor VII	SU7	140.00
Surveyor VIII	SU8	165.00
Surveyor IX	SU9	185.00
Principal	PR	280.00
1 Person Crew		120.00
2 Person Crew		150.00
3 Person Crew		180.00
4 Person Crew		210.00
1 Person with Laser Scanner		170.00
2 Person with Laser Scanner		200.00

Dewberry

ATTACHMENT B
STANDARD TERMS AND CONDITIONS

These Standard Terms and Conditions ("STCs") are incorporated by reference into the foregoing agreement or proposal, along with any future modifications or amendments thereto made in accordance with Paragraph 23 below (the "Agreement") between Dewberry ("we" or "us" or "our") and its client ("you" or "your") for the performance of services as defined in our proposal ("Services"). These STCs are fully binding upon you just as if they were fully set forth in the body of the Agreement, and shall supersede any term or provision elsewhere in the Agreement in conflict with these STCs.

1. **Period of Offer**. Unless we decide, in writing, to extend the period for acceptance by you of our proposal, you have 90 days from our proposal date to accept our proposal. We have the right to withdraw the proposal at any time before you accept. Delivery of a signed proposal—whether original or copy—to us constitutes your acceptance of the proposal, including attachments expressly incorporated into the proposal by reference. The proposal and incorporated attachments shall constitute the entire Agreement between you and us. If you request us to render Services before you deliver a signed proposal to us, and we render Services in accordance with the proposal, you agree that the proposal and these STCs constitute the Agreement between you and us even if you fail to return a signed proposal to us.
2. **Scope of Services**. For the fee set forth in the Agreement, you agree that we shall only be obligated to render the Services expressly described in the Agreement. Unless the Agreement expressly requires, in no event do we have any obligation or responsibility for:
   a. The correctness and completeness of any document which was prepared by another entity.
   b. The correctness and completeness of any drawing prepared by us, unless it was properly signed and sealed by a registered professional on our behalf.
   c. Favorable or timely comment or action by any governmental entity on the submission of any construction documents, land use or feasibility studies, appeals, petitions for exceptions or waivers, or other requests or documents of any nature whatsoever.
   d. Taking into account off-site circumstances other than those clearly visible and actually known to us from on-site work.
   e. The actual location (or characteristics) of any portion of a utility which is not entirely visible from the surface.
   f. Site safety or construction quality, means, methods, or sequences.
   g. The correctness of any geotechnical services performed by others, whether or not performed as our subcontractor.
   h. The accuracy of earth work estimates and quantity take-offs, or the balance of earthwork cut and fill.
   i. The accuracy of any opinions of construction cost, financial analyses, economic feasibility projections or schedules for the Project.

   Should shop drawing review be incorporated into the Services, we shall pass on the shop drawings with reasonable promptness. Our review of shop drawings will be general, for conformance with the design concept of the Project to which this Agreement relates ("Project") and compliance with the information given in the construction documents, and will not include quantities, detailed dimensions, nor adjustments of dimensions to actual field conditions. Our review shall not be construed as permitting any departure from contract requirements nor as relieving your contractor of the sole and final responsibility for any error in details, dimensions or otherwise that may exist.

   Our Services shall not be construed as providing legal, accounting, or insurance services.
3. **Your Oral Decisions**. You, or any of your directors, officers, partners, members, managers, employees or agents having apparent authority from you, may orally: (a) make decisions relating to Services or the Agreement; (b) request a change in the scope of Services under the Agreement; or (c) request us to render additional Services under the Agreement, subject to our right to require you to submit the request in writing before your decision or request shall be considered to have been effectively made. You may, at any time, limit the authority of any or all persons to act orally on your behalf under this Paragraph 3, by giving us seven 7 days advance written notice.
4. **Proprietary Rights**. The drawings, specifications and other documents prepared by us under this Agreement are instruments of our service for use solely for the Project and, unless otherwise provided, we shall be deemed the author of these documents and shall retain all common law, statutory, and other reserved rights, including the copyright and rights to any Dewberry trademarks. You shall be permitted to retain copies, including reproducible copies of our instruments of service for information and reference for the Project. Our drawings, specifications, or other documents shall not be used by you or others on other projects for any reason or for completion of this Project by other professionals, unless you enter into a written agreement with us allowing for such use. Submission or distribution of documents to meet official regulatory requirements or for similar purposes in connection with the Project is not to be construed as publication inconsistent with our reserved rights.
5. **Fees and Compensation**. If you request us to render services not specifically described in the Agreement, or, if we or anyone in our employ, is called upon to be deposed or to testify in a matter in which we are not a named party, that relates to the Project, you agree to compensate us for such services in accordance with the hourly rates as set forth on Attachment A of this Agreement or in any subsequently effective schedule, unless otherwise agreed in writing. If no compensation rate is set forth on Attachment A, or through written agreement between you and us, we shall be compensated for such services at our then current hourly rates. We may unilaterally increase our lump sum or unit billing rates on each anniversary of your acceptance of this Agreement by as much as five percent or the percentage increase in the CPI-W (U.S. Department of Labor Consumer Price Index-Washington), whichever is greater. Hourly rates are subject to periodic revision at our discretion.
6. **Period of Service**. The provisions of this Agreement and the compensation provided for under the Agreement have been established in anticipation of the orderly and continuous progress of the Project. Our obligation to render the Services will extend only for that period which may reasonably be required to complete the Services in an orderly and continuous manner and we may then, at our sole option, terminate the Agreement.
7. **Reimbursable Expenses**. Unless the Agreement otherwise provides, you shall reimburse us, or our affiliates, for all expenses we incur to render the Services for you under this Agreement, plus fifteen percent. We may submit invoices for reimbursable expenses separately from invoices for Services.
8. **Payment Terms**. We may submit invoices at any time to you for Services and for reimbursable expenses incurred. Invoices are payable within 30 days of the invoice date, and you agree to pay a finance charge of 1 ½% per month on any unpaid balance not received by us within 30 days of the invoice date. If you require payment via credit card, Dewberry will assess a 3% processing fee on the total amount invoiced. Invoices may be based either upon our estimate of the proportion of the total Services actually completed at the time of billing for lump sum or fixed fee services, or in the case of hourly services, upon rendering of the Services. If any invoice is not paid within 30 days of the invoice date, we shall have the right either to suspend the performance of our Services until all invoices more than 30 days past due are fully paid or to terminate the agreement and to initiate proceedings to recover amounts owed by you. Additionally, we shall have the right to withhold from you the possession or use of any drawings or documents prepared by us for you under this or any other agreement with you until all delinquent invoices are paid in full. You shall not offset payments of our invoices by any amounts due, or claimed to be due for any reason.

   If you do not give us written notice disputing an invoice within 20 days of the invoice date, the invoice shall conclusively be deemed correct. All payments made by you should specify the invoice numbers being paid. If we receive payments that do not specify the invoices being paid, you agree that we may apply payments in our sole discretion. Time is of the essence of your payment obligations; and your failure make full and timely payment shall be deemed a material breach.
9. **Information from You and Public Sources**. You shall furnish us all plans, drawings, surveys, deeds and other documents in your possession, or that come into your possession, which may be related to the Services, and shall inform us in writing about all special criteria or requirements related to the Services (together, "Information"). We may obtain deeds, plats, maps and any other information filed with or published by any governmental or quasi-governmental entity (together, "Public Information"). Unless we are engaged in writing as an additional service to independently verify such, we may rely upon Information and Public Information in rendering Services. We shall not be responsible for errors or omissions or additional costs arising out of our reliance on Information or Public Information. You agree to give prompt notice to us of any development or occurrence that affects the scope or timing of Services, or any defect in the final work submitted by us, or errors or omissions of others as they are discovered. We shall not be responsible for any adverse consequence arising in whole or in part from your failure to provide accurate or timely information, approvals and decisions, as required for the orderly progress of the Services.
10. **Plan Processing**. We may submit plans and related, or other, documents to public agencies for approval. However, it may be necessary, in order to serve your interests and needs, for us to perform special processing, such as attending meetings and conferences with different agencies, hand carrying plans or other documents from agency to agency, and other special services. These special services are not included in the basic fee and shall be performed as additional services on an hourly fee basis in accordance with our applicable hourly rate schedule.

11. **Meetings and Conferences**. To the extent the Agreement provides, we will attend meetings and conferences that you, or your representatives, reasonably require. Furthermore, we will meet on an as-needed basis with public agencies that might be involved in the Project. Because we cannot forecast the scope and nature of these meetings and conferences, we will perform meeting and conference services on an hourly fee basis in accordance with our applicable hourly rate schedule.
12. **Your Claims**. You release us from, and waive, all claims of any nature for any and all errors or omissions by us related to our performance under this Agreement, or in the performance of any supplementary services related to this Agreement, unless you have strictly complied with all of the following procedures for asserting a claim, as to which procedures time is of the essence:
    a. You shall give us written notice within 10 days of the date that you discover, or should, in the exercise of ordinary care, have discovered that you have, or may have, a claim against us. If you fail to give us written notice within such 10 days, then such claim shall forever be barred and extinguished.
    b. If we accept the claim, we shall have a reasonable time to cure any error or omission and any damage. This shall be your sole remedy, and you must not have caused the error or omission, or any damage resulting from the error or omission, to be cured, if we are ready, willing and able to do so.
    c. If we reject the claim, we shall give you written notice of such rejection within 30 days of our receipt of the notice of claim from you. You shall then have 60 days within which to furnish us with an opinion from a recognized expert in the appropriate discipline, corroborating your claim that we committed an error or omission, and establishing that the error or omission arose from our failure to use the degree of care ordinarily used by professionals in that discipline in the jurisdiction local to the Project. If you fail to furnish us such an opinion from a recognized expert within 60 days from the date we send you notice of our rejection of the claim, then such claim shall forever be barred and extinguished.
    d. We shall have 60 days from receipt of the written opinion of your expert within which to reevaluate any claim asserted by you. If we again reject such claim, or if the 60 day period from receipt of the written opinion of your expert elapses without action by us, then you may have recourse to such other remedies as may be provided under this Agreement.
13. **Hazardous or Toxic Wastes or Substances, Pollution or Contamination**. You acknowledge that Services rendered under this Agreement may, or will, involve or be affected by hazardous or toxic wastes or substances, or pollution or contamination due to the presence of hazardous or toxic wastes or substances. To induce us to enter into this Agreement, you agree to indemnify and hold us harmless from liability, loss and damages of any nature, including actual attorney's fees and related costs and expenses, arising out of claims made against us that relate, in any way, to both (a) hazardous or toxic wastes or substances, or pollution or contamination due to the presence of hazardous or toxic wastes or substances, and (b) the performance by us of our obligations under the Agreement, whether or not such performance by us is claimed to have been, or was, or may have been, negligent. Unless otherwise expressly set forth in this Agreement, we shall have no responsibility for searching for, or identifying, any hazardous or toxic wastes or substances, or pollution or contamination due to the presence of hazardous or toxic wastes or substances; but if we discover or suspect the presence of any such wastes, substances, pollution or contamination due to the presence of hazardous or toxic wastes or substances, then we, in our sole discretion, and at any time, may stop work under, or terminate, this Agreement, in which event we will have no further liability to you for performance under this Agreement, and you shall make the payments to us required by Paragraph 14 of the STCs.
14. **Termination**. Either party may terminate the Agreement if the other party materially breaches the Agreement. You shall immediately pay us for our Services rendered and expenses incurred through the termination date, including fees and expenses that we incur as a result of the termination.
15. **Payment of Other Professionals**. If this Agreement includes continuation of services begun by other architects, engineers, planners, surveyors, or other professionals, we may suspend our Services until you make arrangements satisfactory to such other professionals for payment. If satisfactory arrangements have not been made within a time determined by us to be reasonable, then we may in our sole discretion terminate this Agreement.
16. **Assignment and Third-Party Beneficiaries**. Neither party shall assign or transfer any rights, interests or claims arising under this Agreement without the written consent of the other, except that we are permitted to transfer the Agreement to an affiliate of ours, in our sole discretion, with written notice to you (an affiliate for purposes of this Paragraph 16 is defined as any other business entity that directly or indirectly, through one or more intermediaries, controls, is controlled by, or is under common control with, us). This Agreement shall not confer any benefit or right upon any person or entity other than you, us and our partners, members, managers, directors, officers, employees, agents and subcontractors. Our partners, members, managers, directors, officers, employees, agents and subcontractors shall have and shall be entitled to the protection afforded us under Paragraphs 9, 12, 13, 16, 20 and 22 of this Agreement. Despite anything in this Paragraph 16 to the contrary, we may employ independent consultants, associates, and subcontractors as we may deem necessary to render the Services and we may assign our right to receive compensation under this Agreement.
17. **Applicable Law and Forum Selection**. The Commonwealth of Virginia's laws shall govern this Agreement in all respects, including matters of construction, validity, and performance. Except as provided in Paragraph 18, the parties agree that the courts of Fairfax County, Virginia, and the Federal District Court, Eastern District of Virginia, Alexandria Division, (together, "Courts") shall have exclusive jurisdiction over any controversy, including matters of construction, validity, and performance, arising out of this Agreement. The parties consent to the jurisdiction of the Courts and waive any objection either party might otherwise be entitled to assert regarding jurisdiction. The parties irrevocably waive all right to trial by jury in any action, proceeding, or counterclaim arising out of or related to this Agreement.
18. **Arbitration of Our Claims for Compensation**. Instead of proceeding in court, we, in our sole and absolute discretion, may submit any claim for compensation due us under this Agreement to arbitration in Fairfax County, Virginia in accordance with the Construction Industry Arbitration Rules of the American Arbitration Association, and judgment upon the arbitration award may be entered in any court having jurisdiction. You agree not to assert any counterclaim or any defense by way of set-off in such arbitration, and that the arbitrator or panel shall have no authority to consider, or to render, an award based upon any such counterclaim or defense by way of set-off. We shall have the right to withdraw our demand for arbitration at any time before the arbitration hearing starts by giving written notice to the arbitrator or panel and you; and upon the giving of such notice by us, the arbitration shall terminate, no award shall be rendered, and we may then pursue our remedies in accordance with Paragraph 17 above.
19. **Severability**. If any part, term, or provision of this Agreement is held to be illegal or unenforceable, the validity and enforceability of the remaining parts, terms, and provisions of this Agreement shall not be affected, and each party's rights shall be construed and enforced as if the Agreement did not contain the illegal or unenforceable part, term, or provision.
20. **Limitations on Liability**. Our liability for any loss, property damage or bodily injury of or to you caused in whole or in part by us in the performance of this Agreement, or in the performance of any supplementary services in any way related to this Agreement, shall be limited in the aggregate to the amount of fees that you have paid to us for the Services. The parties intend that the foregoing limitation on liability shall apply to all claims, whether sounding in tort, in contract, in warranty, or otherwise. You release, waive, and shall not seek contribution from, or indemnification by, us for any claims of any nature made against you by any other person who may suffer any loss, property damage or bodily injury in any manner associated with our services, or our partners, members, managers, directors, officers, employees, agents and subcontractors under this Agreement,, or any supplementary services in any way related to this Agreement. Notwithstanding anything to the contrary elsewhere in the Agreement, we shall not be liable to you, in any event or for any amount, for delays; or for consequential, special or incidental damages; or for punitive or exemplary damages. Should you find the terms of this Paragraph 20 unacceptable, we are prepared to negotiate a modification in consideration of an equitable surcharge to pay our additional insurance premiums and risk.
21. **Payment of Attorney's Fees**. The losing party shall pay the winning party's reasonable attorney's fees and expenses for the prosecution or defense of any cause of action, claim or demand arising under this Agreement in any court or in arbitration.
22. **Indemnification**. You agree to indemnify and hold us harmless from and against any and all liability, loss, damages, claims and demands for loss, damages, property damages or bodily injury, arising out of work undertaken on the Project by you, or your contractor, subcontractor or other independent company or consultant employed by you to work on the Project, or their respective partners, members, managers, directors, officers, employees, agents or assigns; or arising out of any other operation, no matter by whom performed, for and on behalf of you, or such contractor, subcontractor or other independent company or consultant, whether or not due in part to errors or omissions by us in the performance of this Agreement, or in the performance of any supplementary service in any way related to this Agreement, provided that you are not required to indemnify and hold us harmless under this Paragraph 22 in the event of our sole negligence.
23. **Integration Clause**. The Agreement represents the entire agreement of the parties. No prior representations, statements, or inducements made by either us, you, or the respective agents of either, that is not contained in the Agreement shall enlarge, modify, alter, or otherwise vary the written terms of the Agreement unless they are made in writing and made a part of the Agreement by attachment, incorporated by reference in the Agreement or signed or initialed on behalf of both parties.

Attachment C

Checklist of Information Needed from CTUB for Water and Wastewater Capacity Improvement Fee Studies

3/14/2019

Item	Description	Water CIF	WW CIF	Date Provided	Notes
1	A Listing of Prior Capacity-Related Projects, their Year Completed, their total Cost. Generally look back about 15 years.	◆	◆		
2	A Listing of New Capacity Related Projects for the next 10 years and the planned year of implementation for each.	◆	◆		We can discuss timing of projects to balance out your CIP and bond issuances.
3	The Current Flow per Equivalent (Residential) Dwelling Unit (EDUs) for each water and sewer (usually 150-350 gpd)	◆	◆		May be determine using sum of annual usage for all residential customers divided by number of residential customers. Other methods can also be used such as what WVDEP or WVDHHR BPH uses for water and sewer.
4	The Rated Capacity and Current Average Daily Flow Rate for each Wastewater Plant		◆		
5	The Rated Capacity and Current Average Daily Demand for each Water Plant.	◆			
6	Original Principal Amount for Bond Issuances, Repayment Period, Interest Rate, Start-Date (should correspond with list under Item 1). If any portion of bonds were paid off faster for some reason, also provide the current balance.	◆	◆		
7	Projected new EDUs for each water and sewer to be connected to the system each year.	◆	◆		Needed for debt principal credit calculation.
8	Current Number of EDUs connected for each water and sewer.	◆	◆		May be determined using total usage for all customers divided by the flow per EDU determined under Item 3.
9	The projected interest rate for the account that the CIF payments will be depositd into.	◆	◆		Typically 1-1.5%.
10	The projected interest rate for future bonds and the repayment period.	◆	◆		
11	Information on Prior CIF Studies.	◆	◆		
12	Basis for CIF Charges: Meter-Size, Fixture Units (not recommended) or Flow-Projections by Development Type (WVDEP approach).	◆	◆		We can discuss pros and cons of each method and decide later.
13	Agreement on Growth Related Percentages for each Project Listed under Items 1 and 2.	◆	◆		We usually work this out together based on capacity or other metrics.
14	Agreement on Useful Life for each type of project (e.g., 30 years for plants, 50 years for pipelines, 20 years for pump stations).	◆	◆		Needed for deprication of historical projects.
15	Year you want the CIF to be effective (2019 or 2020).	◆	◆		
16	Water loss percentage for Water	◆			Analyzed by comparing Water Production with Water Billing Records.
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					

LIQUID ENGINEERING CORPORATION

Fax – (406) 651-0120

Proposal Number
56945
Please reference the Proposal Number above on all Purchase Orders issued.

Scope of Work – Potable Water Reservoir Maintenance Contract

This Potable Water System Proposal is made this date, by and between **Charles Town Water Department** of the state of **West Virginia**, (hereinafter "Client") and **Liquid Engineering Corporation, of Billings, MT**, (hereinafter "LEC"). LEC will provide all labor, specialty equipment and insurance to evaluate your facilities.

In-Service Inspection

Interior and exterior inspections will review structural, sanitary, safety, security and any installed coating conditions. Reporting will be provided based on water tank inspection criteria, referencing applicable OSHA, EPA, AWWA, TCEQ and NFPA requirements. Minimum items examined will include ladders, shell, roof, vent, manways, welds, seams, foundation, anchors, safety systems, hatches, external overflow and plumbing.

Underwater interior video documentation will be completed with real-time closed circuit high-resolution color underwater video equipment. All pertinent findings will be recorded on DVD format (including dive maintenance technician's findings and narrative summary).

Services will include detailed interior video documentation of the potable water tank(s) / clearwell(s) as described on page two (2).

Underwater Operations – All Dive Maintenance Technicians and associated in-tank equipment are fully disinfected in accordance with AWWA Standard C652-02. All system entries will be conducted in accordance with applicable OSHA regulations pertaining to Diving and Confined Space; including 1910.401 thru 1910.441. Specialty equipment may include but is not limited to; appropriate OSHA climbing and personal fall protection, AWWA and ADCI approved commercial diving equipment dedicated to in-service potable water operations.

In-Service Cleaning (Locust Hill will not be cleaned)

In-service removal of accumulated bottom sediment is accomplished using LEC's proprietary HydroDyne™ cleaning equipment. Normal cleaning prices provided include removal of sediment accumulations up to the first three inches (3") in depth or cubic yards given on reservoir information breakout.[1] Material that cannot be vacuumed with LEC's HydroDyne™ (e.g., concrete, gravel, misc. materials or compact sediment requiring the use of a hand nozzle), is considered debris.[2]

For normal cleaning operations client shall make available an approved discharge location (sewer, cofferdam, etc.) within 300' of the reservoir access hatch. (Site-specific discharge recommendations can be provided by LEC upon request).

Deliverable – Prioritization Schedule

The deliverable provided on site will consist of LEC's checklists, summary recommendations and Immediate Needs Assessment™, which documents discrepancies that require urgent action, and is supplemented by the interior DVD documentation.

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LIQUID ENGINEERING CORPORATION

Proposal Number
56945
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Assumptions - Based upon information obtained via the systems interview conducted for your facility, the following assumptions were made. Should conditions vary from those stated, additional charges could apply.

- Prior to arrival, and during underwater operations, water level in tanks/clearwells to remain full.[3]
- Client's Point-of-Contact will be available for access, as well as authorization of any additional requested work.
- Facilities are accessible with LEC's standard truck/trailer combo (overall length – Crew Cab = 23' / Trailer = 22').[4]
- Access into tanks/clearwells are sufficient for man entry (i.e. 24" dia), with no obstructions in the hatchway.
- Exterior inspections will be performed from the ground, installed ladders, and exterior roof while utilizing installed ANSI & OSHA-certified personal fall protection equipment, without additional scaffolding or rigging.
- There are no special discharge requirements (i.e. long distances / permits).

Miscellaneous

All services provided by LEC will be completed in a professional workmanlike manner according to the Terms and Conditions of this Proposal. Any alteration or deviation from the Terms and Conditions of this Proposal, or additional services, involving additional costs, will be completed only upon written authorization by Client or Client's Authorized Representative.

This Proposal is contingent upon weather, delays or other matters beyond LEC's control. Client will carry fire, tornado, and other necessary insurance. LEC will provide all other required insurance coverage, including, but not limited to, General Liability, Employer Liability and Workmen's Compensation Insurance during all operations (certificate of insurance available upon request).

Term of Contract

LEC agrees to provide the scheduled potable water tank or clearwell maintenance services described above on a revolving basis as stated below, starting in 2022 until the expiration of this Contract, in 2024.

This Contract will provide for three (3) scheduled maintenance dispatches to be completed in calendar years 2022, 2023 and 2024. [Scheduling will be coordinated each maintenance year to provide a mutually acceptable timeframe.]

Tank Group 1 Information 2022

Tank	Capacity	Dimensions	Type	Cubic Yards Included
Keyes Ferry	500,000	147' to the top	Steel welded - elevated	33 (3 inches)
Locus Hill **Inspect Only**	500,000	140' high x 25' dia	Steel welded – o/g	N/A
Route 9	500,000	90' to the top	Steel welded - elevated	33 (3 inches)

Tank Group 2 Information 2023

Tank	Capacity	Dimensions	Type	Cubic Yards Included
6th Avenue Elevated	350,000	Less than 200' to the top	Steel welded - elevated	21 (3 inches)
6th Avenue Standpipe	350,000	100' high x 25' dia	Steel welded – o/g	4.5 (3 inches)

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LIQUID ENGINEERING CORPORATION

Proposal Number
56945
Please reference the Proposal Number above on all Purchase Orders issued.

Tank Group 3 Information 2024

Tank	Capacity	Dimensions	Type	Cubic Yards Included
Huntfield	263,000	170' to the top	Steel welded - elevated	15 (3 inches)
NHZ	1,000,000	110' high x 25' dia	Steel welded – o/g	4.5 (3 inches)

Maintenance Dispatch Year	Tank / Group	Unit Cost
2022	1	$ 5,610.00 / Year
2023	2	$ 4,590.00 / Year
2024	3	$ 4,520.00 / Year
	Total Cost – Maintenance Contract	**$ 14,720.00**

It is the client's responsibility to ensure all transmitting antenna that create unsafe working conditions for LEC employees are deenergized prior to the start of LEC operations in accordance with OSHA Non-Ionizing Radiation protection guidelines as found in 29 CFR 1910.97.

(Prior written approval will be obtained from Client's Authorized Representative for any additional charges outside the Scope described herein).

1. Bottom sediment in excess of three inches or cubic yards stated above will be removed at $3,185.00 per day.
2. Debris removal will be charged at a rate of $3,185.00 per day.
3. Unscheduled delays, which are a direct result of the utility's obligations (i.e. access and water level), may incur standby charges.
4. Access requiring portable set-up (i.e. truck only), will incur an additional setup/tear-down charge.

Pricing above does not include Local, State or Franchise Taxes - if any.

This Proposal, when executed by both parties, shall constitute a binding agreement between the parties. The persons signing on behalf of Client and LEC hereby represent and certify that they are fully empowered to bind the respective parties to this Contract. Client acknowledges that payment is due and payable **Net 30 upon completion of on site work.** Progress billing will be applied on any contract whose duration is longer than ten (10) days. A finance charge on past-due accounts is computed at a periodic rate of 1.5% per month, which is an annual percentage rate of 18%.

In the event Liquid Engineering Corporation is required to bring suit to enforce its rights under this Agreement, to collect any and all payments due and owing under this Agreement, or to otherwise determine, protect or enforce its rights and remedies under the Agreement or at law or equity, Liquid Engineering Corporation will be entitled to recover from the client its reasonable attorney's fees, expert fees, costs and expenses incurred in connection therewith.

Charles Town Water Department
661 S. George Street
Charles Town, WV 25414

Accepted & Agreed per Costing Breakdown
Attached Hereto and by Reference Included Here Under

By: _____

Title: _____

Date: _____

LIQUID ENGINEERING CORPORATION
P.O. Box 80230
Billings, MT 59108

(800) 438-2187 Voice / **(406) 651-0120 Fax**

By: Fred Muller **- Fred Muller**

Title: **President**

Date: **November 12, 2021**

Note: This proposal may be withdrawn if not accepted within 90 days from the above LEC signature date.

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LIQUID ENGINEERING CORPORATION

Proposal Number
56945
Please reference the Proposal Number above on all Purchase Orders issued.

Billing / Invoice Requirements

Please return Accounting / Billing information to Fax – (406) 651-0120 or web@liquidengineering.com

Customer Name: **Charles Town Water Department, WV**

_____

Contact for Accounting/Billing

Name:_____ Title: _____

Phone: _____

Preferred Delivery Method: ____Fax, ____Email, ____Postal Mail ____Other _____

Is a Purchase Order required? ____ Yes, ____ No (Please forward PO when issued)

Fax: _____

Email: _____

Address _____

City _____ State _____ Zip Code _____

Additional Notes/Instructions:

_____

_____

_____

_____

_____

_____

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Tank Maintenance Schedule anticipated costs

	Removal Included (inches)
Tank Group 1	
Keyes Ferry	3
Locust Hill	Inspect only
Route 9	3
Total	$5,610

Based on previous tank removal experience the crews needed 3 additional days to remove 15-18 inches total.

Estimated cost:	$3,185 daily rate * 3 days =	$9,555 * 2 tanks =	$19,110 + $5,610 =	$24,720	**High end estimate based on previous removal $25,000 for Tank Group 1**

	Removal Included (inches)
Tank Group 2	
6th Avenue Elevated	3
6th Avenue Standpipe	3
Total	$4,590

Based on previous tank removal experience the crews needed 3 additional days to remove 15-18 inches total.

Estimated cost:	$3,185 daily rate * 3 days =	$9,555 * 2 tanks =	$19,110 + $4,590 =	$23,700	**High end estimate based on previous removal $24,000 for Tank Group 2**

	Removal Included (inches)
Tank Group 3	
Huntfield	3
Northern High Zone	3
Total	$4,520

Based on previous tank removal experience the crews needed 3 additional days to remove 15-18 inches total.

Estimated cost:	$3,185 daily rate * 3 days =	$9,555 * 2 tanks =	$19,110 + $4,520 =	$23,630	**High end estimate based on previous removal $24,000 for Tank Group 2**

CONTROL EQUIPMENT COMPANY
Supplier to Water & Wastewater Facilities

180 Brand Ave. Salem, Virginia 24153
800-572-3220 Fax: 540-444-0459
www.cec-online.com info@cec-online.com

1/3/2022

Mr. Chris Hutzler
Charles Town Utility Board
Water Filter Plant
15527 Charles Town Road
Charles Town, WV 25414

We are pleased to offer the following proposal on behalf of CHEMTRAC INC.

One - CHEMTRAC Streaming Current Analyzer with a HydroACT HA2 and DuraTrac 4 sensor. Includes gray scale display, 2 analog outputs, 2 relays, and 25 feet cable (additional interconnect cable up to 1000 ft at $2.00/ ft.), 2-year warranty. Product Code HA2-DT4

Price: $10700.00

Terms:	Net 30
Delivery:	14-30 Days ARO
FOB:	Norcross, GA
Sales Tax:	Above pricing is exclusive of any applicable taxes.

Pricing is valid for 45 days from above date.

Quote #: 17mo.day.first two letters 220103CH

Please make purchase order to:
CHEMTRAC
1555 Oakbrook Drive
Suite 100
Norcross, GA 30093

Respectfully Submitted,

John H. Adams
Control Equipment Company
P.O. Box 862
Salem, VA 24153
800-572-3220 ext 6
jadams@cec-online.com

Chemtrac Streaming Current Monitor

BACKGROUND

Since the previous upgrade of the water treatment plant, we have struggled to maintain the required finished water turbidity of less than 0.3 NTU. This is due to the undersized sludge thickening/holding tank which was installed during the upgrade that allows the sediment that is removed from the water by the sedimentation tanks to be reintroduced back into the raw water stream via the plant water recycling process. When this occurs, the settled turbidity (prior to filtration) rises to levels well above the desired number of 0.3 NTU to 1.0 NTU, in some cases the settled turbidity has risen to nearly 5.0NTU. This can be a potential cause of a contamination event as the filters struggle to remove the excess particles as the water flows through them when overloaded.

We are removing the same sludge that we previously removed repeatedly as it is reintroduced to the raw water stream via the plants water recycling system. This causes extreme loads to be placed upon the filters due to the rapid changes in the positive and negatively charged particles in the raw water stream breaking through the sedimentation process. Previously we employed Taylors Hauling to remove approximately three thousand gallons of sludge from the thickening tank 2 to 3 days per week in an attempt to keep the process under control and maintain finished water quality.

CHANGES

As of 11 December 2021, we are employing Taylors Hauling to remove approximately three thousand gallons per day of sludge from our thickening tanks, which they dispose of at the wastewater treatment plant. This prevents much of the water and sludge from being sent back through our treatment process to be re-treated. As a result, the wastewater plant must then treat this sludge, which contains aluminum (a component of the coagulant used in our treatment process), a substance that their permit requires them to monitor for and remove.

To further optimize the dosing of our chemical coagulant, I requested a "demonstration unit" of a Chemtrac online streaming current analyzer from Control Equipment Company, a company who we have used for laboratory equipment in the past. Chemtrac provided and I temporarily installed their Duratrac/HydroACT model 4 unit on 21 December 2021. This unit continuously monitors the positive and negative charges in the water and displays this to the operations staff. With this information, operators can respond more quickly to changing conditions in the source water quality and use less coagulant doing so. This has a desired side effect of reducing the amount of aluminum which the wastewater treatment plant must contend with in our sludge.

RESULTS

By changing to daily removal of the sludge from the thickening tank we were able to reduce the settled turbidity from an average of 2.216 NTU to 1.039 NTU, a 46% reduction. This still, is above the desired range of 0.3 NTU-1.0 NTU by a small amount. By adding the streaming current analyzer to the treatment process, we were able to further reduce the average an additional 31% to approximately 0.32 NTU. The streaming current analyzer allows the operators to instantly see the results of a change in the coagulant feed or raw water quality at the treatment plant and adjust the chemical dosing as appropriate, with less guess work. By doing this, we can feed less of the coagulant (PAC) and obtain a much lower settled turbidity. This results in less usage of a costly chemical, and less aluminum being sent to the wastewater treatment plant in our sludge removal process.

COSTS

Also attached to this document is a quote from the only distributor for this unit that serves our area of $10,700. We are, due to regional sales policies of the company, only able to receive one "bid" for this unit, as it is unavailable elsewhere.

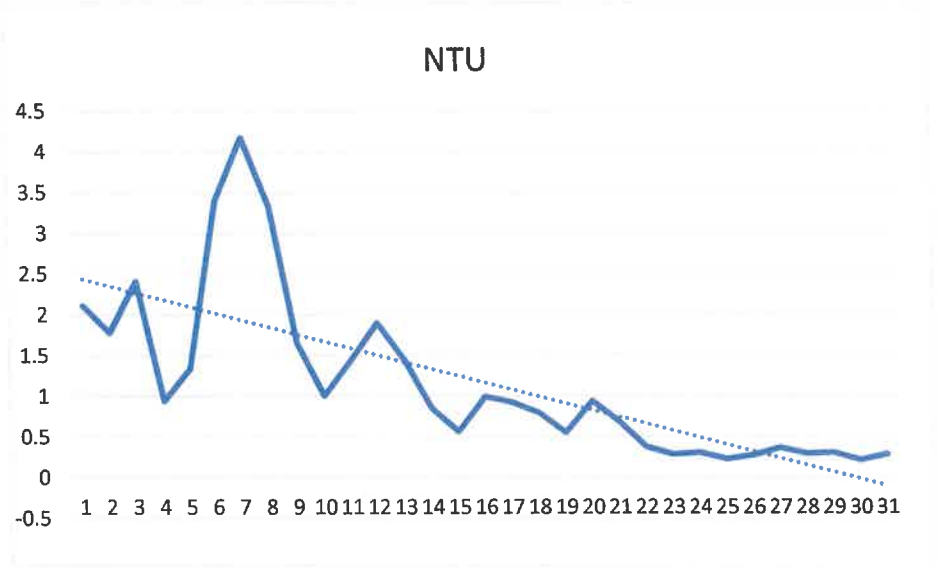
CONCLUSIONS

By combining the sludge removal and the online streaming current analyzer we were able to significantly reduce the turbidity in process and reduce the daily loads on our filters. This significantly reduces the potential for bacterial, viral, and other potential contamination and provides much better finished water quality to our customers. It also lessens the amount of aluminum that the wastewater treatment plant must contend with.

While the initial cost of the Chemtrac unit is significant, it will over time, pay for itself in reduced chemical costs as well as the cost in both dollars and customer confidence if a contamination event which we could have prevented by utilizing information that this unit provides.

Settled Turbidity For Month of Dec 2021

Day	NTU	
1	2.11	
2	1.78	
3	2.41	
4	0.94	
5	1.34	
6	3.41	
7	4.18	
8	3.34	
9	1.65	
10	1	
11	1.44	Began Hauling Daily Sludge
12	1.9	
13	1.45	
14	0.85	
15	0.56	
16	0.99	
17	0.92	
18	0.79	
19	0.55	
20	0.94	
21	0.68	Brought Streaming Current Analyzer online
22	0.37	
23	0.28	
24	0.3	
25	0.22	
26	0.27	
27	0.36	
28	0.29	
29	0.3	
30	0.21	
31	0.28	



120Water
PO Box 604
Zionsville, IN 46077
www.120water.com

Quote: 01-19-2022

RENEWAL ORDER FORM

Customer Information

Customer Name: Charles Town Utility Board
Contract Term: 24 months
Contract Start Date: Signature Date

Billing Information

Billing Contact:
Street Address:
City: **State:**
Zip Code:
Email Address:

LCR Compliance Program

Products & Services	Qnty	Unit Price	Subtotal
120Water Software Package: Pro Edition	1	$8,800	$8,800
LCR Sample Kits & Analysis - 10 ct.	12	$808	$9,696
1 bottle, 1 L Sample Kits & Analysis - 10 ct.	3	$808	$2,424
Subtotal			$20,920
Discount - WVRWA			-$1,926
Total - Annual Recurring			$18,994

LCRR Programs (LSLI, schools/ daycares)

Products & Services	Qnty	Unit Price	Subtotal
120Water Software	1	$8,200	$8,200

120Water

Package: Expert Edition			
LCRR Service Blocks (LSLI, schools/ daycares)	9	$2,500	$22,500
Subtotal			$30,700
Discount - WVRWA			-$4,605
Total - Annual Recurring			$26,095

Billing and Payment Terms:
Fees are billed annually on the anniversary of the start date, due net 30 days from the invoice date.

Additional Notes: WVRWA Member Benefits: WVRWA members will benefit from special member-only pricing negotiated by WVRWA on their members' behalf. 120Water will offer a 15% discount on 120Water software products and professional services, and a 5% discount on 120Water kits and lab services to all WVRWA members.

This Order Form, together with the Master Services Agreement available at https://120water.com/master-services-agreement/ (the "**MSA**"), shall become a legally binding contract upon the earlier of (a) the date both parties execute the Order Form or (b) the date Customer initially began using the Services. Any capitalized word not otherwise defined in this Order Form shall have the same meaning as set forth in the MSA.

120Water may reject this Order Form if: (1) the signatory below does not have the authority to bind Customer to this Order Form, (2) changes have been made to this Order Form (other than completion of the purchase order information and signature block), or (3) the requested purchase order information or signature is incomplete or does not match our records or the rest of this Order Form. Subscriptions are non-cancelable before their end of the Term.

IN WITNESS WHEREOF, the parties have caused this Order Form to be executed by their duly authorized representatives.

Customer:			120Water	
Signature			Signature	
Name:			Name:	
Title:			Title:	
Date:			Date:	

120Water

Technology Services Partnership



Implementation, Support, & Program Consulting Services

Charles Town Utility Board (Charles Town) will be supported by a dedicated cross-functional client team that will guide, lead, and support Charles Town in both the technical and programmatic elements of shaping and executing it's drinking water programs.

120Water's program consulting services team members are all highly skilled and deeply experienced in drinking water programs for utilities, facilities, and state agencies, and have a strong track record of delivering program design, leadership and execution success for 120Water clients.

Charles Town will have access to its 120Water client team members that are responsible for day to day alignment, communication, project progress, kit fulfillment, lab coordination, technical support, and general inquiries. Below outlines the client team roles:

- Account Manager - Marcus Hagberg
- Senior Program Consultant - Jill Terhune

120Water's approach to serving Charles Town will focus on two (2) phases -- **Implementation** and ongoing **Program Assistance** -- with Assistance spanning the entire life of Charles Town's two-year renewal contract and evolving over time as Charles Town progresses initially from lead service line inventorying efforts into lead service line replacement and then into all aspects of LCRR compliance.

LSLI Implementation phase

- Implementation is a highly collaborative process focused on ensuring leveraging current data to inform the foundation of Charles Town's inventory.

Ongoing LSLI Program Assistance phase

- Program Assistance is focused on ongoing collaboration between 120Water's program consultant(s) and Charles Town and will encompass program strategy, design and leadership as well program execution support for LSLI program.

Ongoing LCRR Program Assistance phase

- Program Assistance is focused on ongoing collaboration between 120Water's program consultant(s) and Charles Town and will encompass program strategy, design, and limited management of other LCRR programs, such as LSLR and schools/ daycare sampling.

Approach

The following matrix outlines 120Water's approach organized by phases and key steps within each phase as well the overarching multi-year timeline through which 120Water's client team will deliver success for Charles Town.

Phase / Steps	Step Description / Deliverable(s) / Milestones	Primary Resource	Secondary Resource
LSLI Implementation Phase (months ~4-6)			
Prepare	Define the overall team - a major program like a service line inventory and replacement effort requires a cross functional team. Examples are communications, infrastructure, construction, compliance, etc., But also, clearly define the program leader(s) and final decision maker(s)	Charles Town	120W
Coordinate	Establish the general program(s) approach, cadence of program progress reviews, and success metrics	120W	Charles Town
Prepare	Document the existing data source(s)	Charles Town	120W
Configure	Configure 120Water platform and user access	120W	Charles Town
Train	Train users	120W	Charles Town
LSLI	Pull reports/ lists compare connection data to known line material with goal of understanding what's known vs unknown	120W	Charles Town
LSLI	Collect additional information for all service lines	Charles Town	120W County Assessor
LSLI	Determine if procurement of additional data is required to inform the preliminary inventory	120W	Charles Town
LSLI	Prepare the data - take the data reports from above and prepare them for import into the preliminary inventory	120W	Charles Town
LSLI	Import the data into the 120Water platform	120W	
LSLI	**Milestone: Receive and Review Preliminary Inventory**	Charles Town	120W

Ongoing LSLI Program Assistance Phase (LSLI focus -- 2022-2023)			
Prepare	Establish the LSLI Team - Determine the key decision maker who will own the prioritization and schedule changes	Charles Town	120W
Plan	Prioritization Workshop - work through scores, neighborhood information, and other details to define the prioritization of sites for each month	120W	Charles Town
Plan	Plan validation checks and site prioritization schedule (note – depending on validation methods, some direct resident communication should be considered)	Charles Town	120W
Execute	Execute Validation Plan	Charles Town	120W
Execute	Gather data to further inform inventory	Charles Town	120W
Ongoing LCRR Program Assistance Phase (LSLR Plan and Complete LCRR Compliance focus -- 2023)			
Design	Craft strategy and design the LSLR plan inclusive of prioritization, sampling cadence and workflow	120W	Charles Town
Design	Identify and assess other aspects of LCRR compliance (e.g., schools/ daycares sampling) that need to be addressed and craft plan that allows Charles Town to further and fully prepare to be LCRR compliant	120W	Charles Town
Coordinate	Finalize the team - who will be at the table for the proposed cadence of project meetings - responsible for reporting the progress of their team to the collection cross functional team	120W	Charles Town
Plan	Confirm Laboratory for Analysis	120W	Charles Town
Preparation	Communication Planning Workshop Pre Work - pull together the current communication tools and what they are used for, understand where resident data is most current/accurate, define resident communication preferences, establish other stakeholders and advocates to keep informed	120W	Charles Town
Plan	Communication Planning Workshop - Communication Strategy, define materials and cadences of community outreach	120W	Charles Town
Implement	Begin work on communications templates and assets	Charles Town	120W

Execute	Begin communications with General Awareness Campaign	Charles Town	120W
Execute	Active program execution and replacement - Should include weekly meetings with team members reporting progress, identifying and managing risk, and managing issues	Charles Town	120W
Execute	Updating your data truth source - establish your inventory approach with the data truth source to keep inventory & resident information up to date and accurate	Charles Town	120W
Execute	Reporting and Communication to general public on progress	Charles Town	120W

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FIFTH AMENDMENT TO TOWER SITE LEASE AGREEMENT

THIS FIFTH AMENDMENT TO TOWER SITE LEASE AGREEMENT is made between the **CITY OF CHARLES TOWN, WEST VIRGINIA,** with an address of P.O. Box 14, Charles Town, West Virginia, 25414, herein referred to as "Lessor", and **T-MOBILE NORTHEAST LLC,** as successor in interest to Omnipoint Communications Cap Operations, LLC, as successor in interest to Shenandoah Personal Communications Company, with an address of 12920 SE 38th Street, Bellevue, WA 98006, herein referred to as "Lessee".

RECITALS

WHEREAS, Lessor is the owner of an elevated water tank ("Water Tank") situated on a parcel of real estate located on Sixth Avenue, between Preston and Reyman Streets, in the City of Ranson, Jefferson County, West Virginia, and more particularly described in the Deeds recorded among the Land Records of Jefferson County, West Virginia, in Deed Book 229, at Pages 220 and 221 ("Property"); and

WHEREAS, the parties entered into a Tower Site Lease Agreement dated October 23, 2000 ("Lease"); and

WHEREAS, the parties entered into a First Amendment to Tower Site Lease Agreement dated May 27, 2015 ("1st Amendment"); and

WHEREAS, the parties entered into a Second Amendment to Tower Site Lease Agreement dated December 12, 2016 ("Second Amendment"); and

WHEREAS, the parties entered into a Third Amendment to Tower Site Lease Agreement dated August 28, 2019 ("Third Amendment"); and

WHEREAS, the parties entered into a Fourth Amendment to Tower Site Lease Agreement dated June 9, 2021 ("Third Amendment"); and

WHEREAS, Lessee has requested the right to modify the terms of the Lease to allow replacement and/or additional equipment/round space, all to be installed and located within the Leased Premises; and

WHEREAS, Lessor has determined that such modifications to the Lease will not interfere with the needs of Lessor or its operations on the Property, and will benefit the public and the Lessor by bringing advanced communication services to enhance the economic development atmosphere of the area while minimizing the number of towers which are erected in and around Jefferson County, and therefore, Lessor is willing to permit Lessee to modify the Lease and use the Leased Premises for the purpose and in accordance with the terms and conditions set forth in the Lease.

NOW, THEREFORE, and in consideration of the mutual covenants and provisions herein contained, the parties agree as follows:

1. The Exhibit B4 contained in the Fourth Amendment shall be deleted in its entirety and replaced with a new Exhibit B5 containing the Lessee's approved co-location application and approved construction drawings, attached hereto and incorporated herein. Lessee shall have the right to add equipment as shown on the attached Exhibit B5. The addition of this new equipment shall be granted to the Lessee and the new equipment configuration shall be used solely for the use in Lessee's business and Lessee shall not use the Leased Premises, nor any space leased by this FIFTH Amendment, for any other purpose without the written consent of the Lessor.

2. Term and Rent:

Section 2(b) shall be deleted in its entirety and replaced with the following:

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(b) In consideration of Lessor's consent to the equipment additions referenced in Exhibit B5 of this FIFTH Amendment, the new monthly rent shall for the current term expiring November 30, 2025, shall be Three Thousand Forty-Five Dollars and Twenty-One Cents ($3,045.21). Such new monthly rent shall be effective upon commencement of construction of the modifications referenced in Exhibit B5 and shall be pro-rated for any partial month, but in no event will be later than February 1, 2022. Rent for any subsequent terms shall be determined by formula set forth in Section 2(c) of the Lease.

Section 2(c) shall be deleted in its entirety and replaced with the following:

(c) During the current term and any Renewal Terms, the monthly rent shall be adjusted, effective on each anniversary of the Commencement Date of December 1, to an amount equal to one hundred two percent (102%) of the monthly rent in effect immediately prior to such adjustment date. Each rent payment shall bear the site designation of WV-004 - 6th Avenue (Elevated Tank). In the event this Lease continues beyond the expiration of the renewal terms provided herein and continues on a month-to-month basis as provided for in Paragraph 2(a) hereof, the monthly rent payment shall be increased by 2% at the beginning of the month-to-month term, and increase by 2% per annum on each twelve month anniversary of the commencement of the month-to-month tenancy. Lessee or Lessor shall have the right to terminate this Agreement at any time with six (6) months prior written notice upon the commencement of the month-to-month tenancy.

3. Affirmation of Existing Agreements

Except as modified by the terms and conditions set forth herein, the parties ratify and affirm all of the terms and conditions contained in the Lease and all Amendments to the Lease. To the extent any provision contained in this FIFTH Amendment conflicts with the terms of the Lease or the Fourth Amendment, the terms and provisions of this FIFTH Amendment shall prevail. All capitalized terms shall have the meaning ascribed to them in the Lease unless otherwise defined in the First, Second or Third Amendment.

In witness whereof, the parties have hereunto set their hands and seals this _____ day of _____, 2022.

LESSOR:	LESSEE:
CITY OF CHARLES TOWN, WEST VIRGINIA	T-MOBILE NORTHEAST LLC
By: _____	By: DocuSigned by: JAMES SIMON 2F1DB67290EF4DD...
_____ Name	JAMES SIMON _____ Name
_____ Title	Director _____ Title

Approved

TMO Signatory Level: L06

APPROVED
By Marino Digaletos at 4:22 pm, Dec 22, 2021

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Exhibit B5

Lessees Approved Co-Location Application and Approved Construction Drawings

[AS ATTACHED]

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☐ NEW LEASE	☑ AMENDMENT TO EXISTING LEASE	☐ ANCHOR TENANT	☐ RECONTRACT

INTERNAL USE ONLY	
APP VERSION #	2
LEASE #	12
AMENDMENT #	5

PLEASE RETURN THIS APPLICATION VIA EMAIL TO:

Wireless Networks Group, Inc.
1011 Holden Road
Frederick, Maryland 21701-3437
Attn: Michael Hofe

E-Mail: mhofe@wirelessnetworksgroup.com

Phone: 301-667-0001

Charles Town Site Number:	**WV-004 (Elevated Tank)**
Charles Town Site Name:	**6th Avenue**
Application Date:	10/6/21
Revision Dates:	12/13/2021
OPS Approval:	12/13/2021

APPLICANT / CARRIER INFORMATION

Carrier Name:	**T-Mobile**	**Contact Name:**	**Jonathan Redding**
Carrier Site Number:	**7HCH193A**	**Contact Number:**	**410-309-4949**
Carrier Site Name:		**Contact Fax:**	
Carrier Legal Entity Name:	T-Mobile Northeast, LLC	**Contact Address:**	3620 Commerce Dr #707, Baltimore, MD 21227
State of registration:	Delaware		
Type of entity (LP, LLC, Corp) d/b/a (If applicable)	LLC		
Notice Address for Lease:	12920 SE 38th St, Bellevue, WA 98006	**Contact E-mail:**	jredding@sitelinkwireless.com
With copies to:		**Additional E-mail:**	
Carrier Invoice Address:	12050 Baltimore Ave, Beltsville, MD 20705	**Desired Install Date:**	
Carrier Invoice Contact - Name, Title, Phone No.	Shaya Samuel, Project Manager	**Carrier NOC#**	

ADDITIONAL CONTACT INFORMATION

Leasing Contact Name/Number:	Jonathan Redding, Site Link Wireless, 410-309-4949
RF Contact Name/Number:	
Construction Contact Name/Number:	
Emergency Contact Name/Number:	

SITE INFORMATION

Latitude:	**39.298428**	**N**	**Existing Structure Type:**	**Water Tank (Elevated)**
Longitude:	**-77.857892**	**W**	**Existing Structure Height:**	**94'**
Site Address:	**215 East 6th Avenue, Ranson, WV 25438**			

FREQUENCY/TECHNOLOGY INFORMATION

Type of Technology for all equipment (i.e., 3G, LTE, CMDA, MW, WiFi, TV, etc.)		L21, L19, U19, 2.5 GHZ NR+LTE, L/N600, L600
TX Frequency (MHz)	Licensed	668-734, 2135-2690, 1930-1975
RX Frequency (MHz)	Licensed	622-704, 2496-2690, 1735-1895
Tenants using an unlicensed band must provide exact Frequency Channels and Call Sign(s) to be utilized. (Providing the band range only will not be accepted.)		

PLEASE PROVIDE A BRIEF DESCRIPTION OF GENERAL SCOPE OF WORK

T-Mobile will be modifying its equipment for a final design of 9 antennas, 6 RRUs and 6 hybrid cables. T-Mobile will be removing 3 Shentel cabinets and adding 2 new T-Mobile cabinets, for a total of 3 cabinets and modifying antenna mounts.

EXISTING EQUIPMENT Applicant's Existing Equipment Configuration and Specifications										
Equipment Type (ex: panel, TMA, RRU)	**RAD (feet)**	**Mount Height (feet)**	**Mount Type**	**Equip Qty**	**Equipment Manufacturer**	**Equipment Model #**	**Equip Dim (HxWxD) (ft or in)**	**Equip Weight (lbs)**	**Az**	**Remain**
Panel	75	75	Pipe Mount	3	Ericsson	Air 21 KRC118023-1_B2P_B4A			15, 140, 270	No
Panel	77	77	Pipe Mount	3	RFS	APXVAARR24-43-U-NA20			15, 140, 27	Yes
TMA	75	75	Pipe Mount	3	Ericsson	KRY 112 489/2				No
RRU	77	77	Pipe Mount	3	Ericsson	RRUS 4449 B71/B85				Yes

EXISTING LINES Applicant's Existing Lines and Specifications					
Line Type	**Line Size (Inches)**	**Total # of Lines**	**Coax interior or exterior (for monopoles)**	**Remain**	**Comments:**
Coax	1 5/8	6		No	
Hybrid	6x12 HCS	3		No	

PROPOSED EQUIPMENT Applicant's Proposed Equipment Configuration and Specifications									
Equipment Type (ex: panel, TMA, RRU, ice shields)	**RAD (feet)**	**Mount Height (feet)**	**Mount Type**	**Equip Qty**	**Equipment Manufacturer**	**Equipment Model #**	**Equip Dim (HxWxD) (ft or in)**	**Equip Weight (lbs)**	**Azimuth**
Panel	77	77	Pipe Mount	3	Commscope	VV-65A-R1 (Quad)	54.7x12x4.6	43	15, 140, 270
Panel	77	77	Pipe Mount	3	RFS	APXVAARR24_43-U-N-NA20 (Octo)	95.9x24x8.5	143.3	15, 140, 270
Panel	77	77	Pipe Mount	3	Ericsson	AIR6449 B41	33.1x20.6x8.6	104	15, 140, 270
RRU	77	77	Pipe Mount	3	Ericsson	Radio 4460 B25	19.6x15.7x12.1	109	
RRU	77	77	Pipe Mount	3	Ericsson	Radio 4449 B71+B85	13.19x14.95x9.25	74	

PROPOSED LINES Applicant's Proposed Lines and Specifications				
Line Type	**Line Size (Inches)**	**Total # of Lines**	**Coax interior or exterior (for monopoles)**	**Comments:**
Coax				
RET Home Run Cable				
Fiber	1 5/8	6		6x24 4 AWG
DC Power				

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PROPOSED FINAL CONFIGURATION TOTALS	
EQUIPMENT TYPE	**TOTAL**
Panel Antennas	9
Omni/Whip Antennas	
RRU	6
TMA	
Diplexer / Triplexer	
Bias T	
Surge Suppressor	
MW Dish	
Ice Shield	
ODU	
Filter	
Combiner	
Junction Box	
RET	
Equipment Cabinets	
Other (Please specify)	
Other (Please specify)	
Other (Please specify)	
Other (Please specify)	
Other (Please specify)	

PROPOSED FINAL CONFIGURATION TOTALS	
LINE TYPE	**TOTAL**
Coax	
Hybrid	6
CAT5	
DC/Power	
RET	
Fiber	

ADDITIONAL EQUIPMENT INFORMATION

- **RRUs, TMAs and ODUs are required to be installed directly behind the antennas / MW dish. Otherwise there will be an additional charge.**
- **All equipment lines are required to be installed inside the tower when space is available. Carriers will be charged an additional $25.00 per line per month if equipment lines are installed on the outside of the tower even though there is available space inside the tower. Charles Town must approve any installation of lines on the outside of the tower.**
- **All tenant equipment must be installed within one continuous 10 ft vertical envelope. Exceeding this vertical space will be subject to additional rent.**

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GROUND / INTERIOR SPACE REQUIREMENTS						
Total Ground / Interior Area Dimensions: **L' x W' = Total Square Feet Required**	3'6 X 9'6	(Including all Equipment (i.e., Shelter, Equipment Platform or Pad, Generator Pad, Generator Fuel Tank Pad, Antenna Sleds, etc. – provide details below)				
Cabinet Area Dimensions (Pad/Platform)	X	Cabinet Installation Type				
Shelter Pad Dimensions	X	Shelter Manufacturer	Current ground space 58 sq ft, relocating3'6 x 9'6			
Rooftop Antenna Total Area Required	X	Antenna Sled Dimensions (per sector)	X	Antenna Wall Mount Dimensions (per sector)	X	

EQUIPMENT CABINET REQUIREMENTS (Required for rooftops or Charles Town interior space)					
Number of Cabinets Required		Cabinet Dimensions (L' x W' x H')		Manufacturer:	
Number of Cabinets Required		Cabinet Dimensions (L' x W' x H')		Manufacturer:	
Number of Cabinets Required		Cabinet Dimensions (L' x W' x H')		Manufacturer:	
Equipment Cabinet Comments					

GENERATOR REQUIREMENTS					
Generator Required?:		Generator Fuel Type		Generator Size	
Generator Pad Dimensions		Generator Manufacturer			
Generator Fuel Tank Pad Dimensions		Fuel Tank Manufacturer			

AC POWER REQUIREMENTS			
Meter Type		Estimated Monthly Utility Usage Amount	
Voltage		Total Amperage	

FIBER / BACKHAUL					
Fiber Installation Status	Existing (No Change)	Fiber Provider			
Cable Type		Number of Points of Entry		Conduit/Riser Size (in inches)	

STRUCTURAL ANALYSIS DETAILS			
Structural Hardcopies Required?	No	If wet seals required, please provide address:	

ADDITIONAL COMMENTS
T-Mobile will now utilize the existing leased ground space of Shentel, in addition to T-Mobile's adjacent leased ground space.

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APPROVAL BLOCK

LANDLORD: 12/13/2021

T–MOBILE: _____

JURISDICTION: _____

T-Mobile™

PROJECT: ANCHOR UPGRADE
SITE NAME: CHARLES TOWN, WV
SITE NUMBER: 7HCH193A
SITE ADDRESS: 215 EAST 6TH AVE RANSON, WV 25438
SITE TYPE: 94' WATER TANK

SITE INFORMATION

PROPERTY OWNER:
CITY OF CHARLES TOWN
PO BOX 14
CHARLES TOWN, WV 25414
CONTACT: MICHAEL HOFE, (301) 667–0001

APPLICANT:
T–MOBILE NORTHEAST LLC
12050 BALTIMORE AVENUE
BELTSVILLE, MD 20705
PHONE: (240) 264–8600

LATITUDE (NAD83):
39.298333°

LONGITUDE (NAD83):
–77.858055°

JURISDICTION:
CITY OF RANSON

COUNTY:
JEFFERSON COUNTY

PARCEL NUMBERS:
08 5003100000000,
08 5003200000000,
& 08 5003300010000

ZONING DISTRICT:
PUBLIC/QUASI PUBLIC LAND

POWER COMPANY:
VERIZON
PHONE: (800) 837–4966

TELCO PROVIDER:
FIRST ENERGY
PHONE: (800) 736–3407

ENGINEER:
FORESITE GROUP, LLC
200 MASSACHUSETTS AVE NW
7TH FLOOR
WASHINGTON, DC 20001

CONTACT: JAMES MAROONEY, PE
PHONE: (202) 697–4808
FAX: (770) 368–1944

AREA MAP



LOCATION MAP



PROJECT DESCRIPTION

- REMOVE (3) EXISTING TMAS
- REMOVE (6) EXISTING COAX CABLES
- REMOVE (3) EXISTING ANTENNAS
- INSTALL (3) ANTENNA MOUNTS
- INSTALL (6) ANTENNAS
- INSTALL (3) RRUs
- INSTALL (3) HYBRID CABLES
- INSTALL (1) 6160 CABINET
- INSTALL (1) B160 CABINET

APPLICABLE CODES

ALL WORK AND MATERIALS SHALL BE PERFORMED AND INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL GOVERNING AUTHORITIES. NOTHING IN THESE PLANS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THE LATEST EDITIONS OF THE FOLLOWING:

- 2015 INTERNATIONAL BUILDING CODE
- 2015 INTERNATIONAL RESIDENTIAL CODE
- 2015 INTERNATIONAL FUEL GAS CODE
- 2015 INTERNATIONAL MECHANICAL CODE
- 2015 INTERNATIONAL PLUMBING CODE
- 2009 INTERNATIONAL ENERGY CONSERVATION CODE
- 2014 NATIONAL ELECTRIC CODE
- 2015 NFPA 101 LIFE SAFETY CODE
- ANSI/TIA/EIA–222–H

SHEET INDEX

SHEET	DESCRIPTION	REV.
T–1	TITLE SHEET & PROJECT DATA	1
T–2	GENERAL NOTES	1
C–1	OVERALL SITE PLAN	1
C–2	PROPOSED EQUIPMENT PLAN	1
C–3	TOWER ELEVATION	1
C–4	ANTENNA ORIENTATION & EQUIPMENT SCHEDULE	1
C–5	EQUIPMENT & MOUNTING DETAILS	1
C–6	EQUIPMENT & MOUNTING DETAILS	1
C–7	ANTENNA PLUMBING DIAGRAM	1
E–1	ELECTRICAL NOTES	1
E–2	ELECTRICAL RISER DIAGRAM & PANEL SCHEDULE	1
E–3	ANTENNA GROUNDING DETAILS	1
S–1	HANDRAIL MOUNT IMPROVEMENT	1
S–2	HANDRAIL MOUNT IMPROVEMENT DETAILS	1
S–3	HANDRAIL MOUNT IMPROVEMENT DETAILS	1

1. DRAWING SCALES ARE FOR 11"X17" SHEETS UNLESS OTHERWISE NOTED.
2. EXACT ROUTING OF CABLES TO BE DETERMINED BY STRUCTURAL ANALYSIS (BY OTHERS IF REQUIRED).
3. NO WORK SHALL COMMENCE WITHOUT THE APPROVED STRUCTURAL TOWER/MOUNT ANALYSIS REPORT (SIGNED AND SEALED) PREPARED BY OTHERS AND PROVIDED BY T–MOBILE UNDER SEPARATE COVER. PRIOR TO CONSTRUCTION, CONTRACTOR SHALL REVIEW THE APPROVED STRUCTURAL ANALYSIS SUPPLIED BY T–MOBILE AND MODIFY, IF REQUIRED, ALL APPLICABLE MEMBERS AS INDICATED IN CERTIFIED STRUCTURAL REPORT PRIOR TO INSTALLATION OF ANTENNAS, CABLES, AND ALL TOWER MOUNTED EQUIPMENT.
4. THE EXISTING ABOVE GROUND CONDITIONS REFLECTED ON THESE DRAWINGS ARE BASED ON GOOGLE AERIAL IMAGERY & DOCUMENTS PROVIDED BY CLIENT AND PREPARED BY TRYLON, DATED 03/26/2021.

811 Know what's **below** **Call** before you dig

PLANS PREPARED FOR:
T-Mobile™
15 COMMERCE WAY, SUITE B
NORTON, MA 02766

PROJECT MANAGER:
SITE LINK

PLANS PREPARED BY:
FORESITE group

DRAWING NOTICE:
THESE DOCUMENTS ARE CONFIDENTIAL AND ARE THE SOLE PROPERTY OF T–MOBILE AND MAY NOT BE REPRODUCED, DISSEMINATED OR REDISTRIBUTED WITHOUT THE EXPRESS WRITTEN CONSENT OF T–MOBILE.

ENGINEERING LICENSE:

JAMES C. MAROONEY REGISTERED 24065 STATE OF WEST VIRGINIA PROFESSIONAL ENGINEER
12/13/21

PROJECT:
CHARLES TOWN, WV

7HCH193A

LOCATED AT:
215 EAST 6TH AVE
RANSON, WV 25438

REVISIONS	DATE

ISSUED FOR:	PERMIT/CONSTRUCTION
PROJECT MANAGER:	JCM
DRAWING BY:	JPD
DATE:	12/13/2021
TITLE:	

TITLE SHEET & PROJECT DATA

SHEET NUMBER:	T–1
JOB/FILE NUMBER:	1485.002

Drawing name: C:\Users\JMAR00~1\AppData\Local\Temp\AcPublish_7260\7HCH193_Anchor Upgrade_CDs.dwg T–1 Dec 13, 2021 12:49pm by: jmarooney

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GENERAL NOTES:

1. FOR THE PURPOSE OF THE CONSTRUCTION DRAWINGS, THE FOLLOWING DEFINITIONS SHALL APPLY:
   CONTRACTOR – GENERAL CONTRACTOR (CONSTRUCTION)
   TOWER OWNER – CITY OF CHARLES TOWN
2. PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING CONTRACTOR SHALL VISIT THE CELL SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS AND TO CONFIRM THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER.
3. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS AND ORDINANCES. CONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS, AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK.
4. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.
5. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES, AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
6. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
7. IF THE SPECIFIED EQUIPMENT CANNOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION FOR APPROVAL BY THE ENGINEER.
8. CONTRACTOR SHALL DETERMINE ACTUAL ROUTING OF CONDUIT, POWER, FIBER, AND GROUNDING CABLES AS SHOWN ON THE POWER & GROUNDING DRAWINGS.
9. THE CONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE TO THE SATISFACTION OF THE OWNER.
10. CONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY.
11. CONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION.
12. CONTRACTOR SHALL HAVE A PRECONSTRUCTION MEETING WITH OWNER TO DISCUSS ALL ASPECTS OF THE CONSTRUCTION SCOPE OF THIS DRAWING TO ENSURE HE IS FAMILIAR AND UNDERSTANDS ALL REQUIREMENTS AND INTENT OF EACH ACTIVITY.
13. THE GENERAL CONTRACTOR MUST VERIFY ALL DIMENSIONS, CONDITIONS AND ELEVATIONS BEFORE STARTING WORK. ALL DISCREPANCIES SHALL BE CALLED TO THE ATTENTION OF THE ENGINEER AND SHALL BE RESOLVED BEFORE PROCEEDING WITH THE WORK. ALL WORK SHALL BE PERFORMED IN A WORKMANLIKE MANNER IN ACCORDANCE WITH ACCEPTED CONSTRUCTION PRACTICES.
14. IT IS THE INTENTION OF THESE DRAWINGS TO SHOW THE COMPLETE INSTALLATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TEMPORARY BRACING, SHORING, TIES, FORMWORK, ETC. IN ACCORDANCE WITH ALL NATIONAL, STATE AND LOCAL ORDINANCES, TO SAFELY EXECUTE ALL WORK AND SHALL BE RESPONSIBLE FOR SAME. ALL WORK SHALL BE IN ACCORDANCE WITH LOCAL CODES.
15. THE CONTRACTOR SHALL USE ADEQUATE NUMBERS OF SKILLED WORKMEN WHO ARE THOROUGHLY TRAINED AND EXPERIENCED IN THE NECESSARY CRAFTS, AND WHO ARE COMPLETELY FAMILIAR WITH THE SPECIFIED REQUIREMENTS AND METHODS NEEDED FOR PROPER PERFORMANCE OF THE WORK.
16. CONSTRUCTION CONTRACTOR AGREES THAT IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, CONSTRUCTION CONTRACTOR WILL BE REQUIRED TO ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THE PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY, THAT THIS REQUIREMENT SHALL BE MADE TO APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS, AND CONSTRUCTION CONTRACTOR FURTHER AGREES TO INDEMNIFY AND HOLD DESIGN ENGINEER HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH PERFORMANCE OF WORK ON THIS PROJECT. ALL WORK SHALL COMPLY WITH OSHA AND STATE SAFETY REQUIREMENTS. PROCEDURES FOR THE PROTECTION OF EXCAVATIONS, EXISTING CONSTRUCTION AND UTILITIES SHALL BE ESTABLISHED PRIOR TO FOUNDATION INSTALLATION.

STRUCTURAL STEEL NOTES:

1. ALL WELDING SHALL BE PERFORMED USING E70XX ELECTRODES AND WELDING SHALL CONFORM TO AISC. WHERE FILLET WELD SIZES ARE NOT SHOWN, PROVIDE THE MINIMUM SIZE PER TABLE J2.4 IN THE AISC "MANUAL OF STEEL CONSTRUCTION". PAINTED SURFACES SHALL BE TOUCHED UP.
2. BOLTED CONNECTIONS SHALL BE ASTM A325 BEARING TYPE CONNECTIONS AND SHALL HAVE MINIMUM OF TWO BOLTS UNLESS NOTED OTHERWISE.

SITE WORK GENERAL NOTES:

1. THE CONTRACTOR SHALL CONTACT UTILITY LOCATING SERVICES PRIOR TO THE START OF CONSTRUCTION.
2. ALL EXISTING ACTIVE SEWER, WATER, GAS, ELECTRIC, AND OTHER UTILITIES WHERE ENCOUNTERED IN THE WORK, SHALL BE PROTECTED AT ALL TIMES, AND WHERE REQUIRED FOR THE PROPER EXECUTION OF THE WORK, SHALL BE RELOCATED AS DIRECTED BY ENGINEER. EXTREME CAUTION SHOULD BE USED BY THE CONTRACTOR WHEN EXCAVATION OR DRILLING PIERS AROUND OR NEAR UTILITIES. CONTRACTOR SHALL PROVIDE SAFETY TRAINING FOR THE WORKING CREW. THIS WILL INCLUDE BUT NOT BE LIMITED TO A) FALL PROTECTION B) CONFINED SPACE C) ELECTRICAL SAFETY D) TRENCHING & EXCAVATION.
3. ALL SITE WORK SHALL BE AS INDICATED ON THE DRAWINGS AND PROJECT SPECIFICATIONS.
4. IF NECESSARY, RUBBISH, STUMPS, DEBRIS, STICKS, STONES AND OTHER REFUSE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF LEGALLY.
5. ALL EXISTING INACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES, WHICH INTERFERE WITH THE EXECUTION OF THE WORK, SHALL BE REMOVED AND/OR CAPPED, PLUGGED OR OTHERWISE DISCONTINUED AT POINTS WHICH WILL NOT INTERFERE WITH THE EXECUTION OF THE WORK, SUBJECT TO THE APPROVAL OF OWNER AND/OR LOCAL UTILITIES.
6. THE CONTRACTOR SHALL PROVIDE SITE SIGNAGE IN ACCORDANCE WITH THE TECHNICAL SPECIFICATION FOR SITE SIGNAGE.
7. THE SITE SHALL BE GRADED TO CAUSE SURFACE WATER TO FLOW AWAY FROM THE BTS EQUIPMENT AND TOWER AREAS.
8. NOFILL OR EMBANKMENT MATERIAL SHALL BE PLACED ON FROZEN GROUND. FROZEN MATERIALS, SNOW OR ICE SHALL NOT BE PLACED IN ANY FILL OR EMBANKMENT.
9. THE SUB GRADE UNDER THE PROPOSED EQUIPMENT PAD SHALL BE COMPACTED TO 95% PROCTOR AND BROUGHT TO A SMOOTH UNIFORM GRADE PRIOR TO FINISHED SURFACE APPLICATION.
10. THE AREAS OF THE OWNERS PROPERTY DISTURBED BY THE WORK AND NOT COVERED BY THE TOWER, EQUIPMENT OR DRIVEWAY, SHALL BE GRADED TO A UNIFORM SLOPE, AND STABILIZED TO PREVENT EROSION AS SPECIFIED IN THE PROJECT SPECIFICATIONS.
11. CONTRACTOR SHALL MINIMIZE DISTURBANCE TO EXISTING SITE DURING CONSTRUCTION. EROSION CONTROL MEASURES, IF REQUIRED DURING CONSTRUCTION, SHALL BE IN CONFORMANCE WITH THE LOCAL GUIDELINES FOR EROSION AND SEDIMENT CONTROL.

CONCRETE AND REINFORCING STEEL NOTES:

1. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE ACI 301, ACI 318, ACI 336, ASTM A184 AND THE DESIGN AND CONSTRUCTION SPECIFICATION FOR CAST-IN-PLACE CONCRETE.
2. ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI AT 28 DAYS, UNLESS NOTED OTHERWISE, SLUMP: 2" MIN./4" MAX. AIR ENTRAINMENT: 45 TO 6% BY VOLUME. MAXIMUM COARSE AGGREGATE SIZE SHALL BE 1".
3. REINFORCING STEEL SHALL CONFORM TO ASTM A 615, GRADE 60, DEFORMED UNLESS NOTED OTHERWISE. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A 185 WELDED STEEL. WIRE FABRIC UNLESS NOTED OTHERWISE. SPLICES SHALL BE CLASS "B" AND ALL HOOKS SHALL BE STANDARD, UNLESS NOTED OTHERWISE.
4. THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCING STEEL UNLESS SHOWN OTHERWISE ON DRAWINGS:

   CONCRETE CAST AGAINST EARTH.....3"
   CONCRETE EXPOSED TO EARTH OR WEATHER:
   #6 AND LARGER.....3"
   #5 AND SMALLER & WWF.....3"
   CONCRETE NOT EXPOSED TO EARTH OR WEATHER OR NOT CAST AGAINST THE GROUND:
   SLAB AND WALL.....1½"
   BEAMS AND COLUMNS.....1½"

5. A CHAMFER OF 3/4" SHALL BE PROVIDED AT ALL EXPOSED EDGES OF CONCRETE, UNLESS NOTED OTHERWISE. IN ACCORDANCE WITH ACI 3010 SECTION 4.2.4.
6. INSTALLATION OF CONCRETE EXPANSION/WEDGE ANCHOR, SHALL BE PER MANUFACTURER'S WRITTEN RECOMMENDED PROCEDURE. THE ANCHOR BOLT, DOWEL OR ROD SHALL CONFORM TO MANUFACTURER'S RECOMMENDATION FOR EMBEDMENT DEPTH OR AS SHOWN ON THE DRAWINGS. NO REBAR SHALL BE DAMAGED WITHOUT PRIOR CONTRACTOR APPROVAL WHEN DRILLING HOLES IN CONCRETE.
7. WELDING IS PROHIBITED ON REINFORCING STEEL AND EMBEDMENTS.
8. ALL CONCRETE SHALL BE READY-MIXED IN ACCORDANCE WITH ASTM C94. MAINTAIN TEMPERATURE OF CAST IN PLACE CONCRETE AT BETWEEN 50 DEGREES AND 90 DEGREES.
9. DO NOT USE RETEMPERED CONCRETE, OR ADD WATER TO READY-MIX CONCRETE AT THE JOBSITE.
10. FOUNDATION INSTALLER SHALL INSURE THAT ALL PROTRUDING THREADS ARE LEFT CLEAN AND FREE OF CONCRETE.
11. FOUNDATION DESIGN IS BASED ON SOIL WITH 2000 PSF BEARING CAPACITY. IF EXISTING SOIL DOES NOT HAVE A MINIMUM 2000 PSF BEARING CAPACITY CONTRACTOR SHALL EXTEND PERIMETER BEAM TO REACH SOIL WITH MINIMUM 2000 PSF BEARING CAPACITY.

LANDLORD REQUIRED EXTERIOR AND INTERIOR COATING SYSTEMS:

PRIOR TO CONSTRUCTION, CONTRACTOR TO REFERENCE NTP PACKAGE FOR THE "WV-004-6TH AVENUE – EXTERIOR COATING SYSTEM FOR TANK TANK TOUCH-UP" DOCUMENT.

NO INTERIOR PAINTING IS AUTHORIZED WITHOUT THE PRIOR CONSENT OF THE CHARLES TOWN UTILITY BOARD – CONTACT MICHAEL HOFE AT 301-667-0001

UNLESS OTHERWISE AUTHORIZED BY ENGINEER. MATERIALS SHALL CONFORM TO THE FOLLOWING:

INTERIOR COATING SYSTEM – WET (ICS-W) (INSIDE WET AND UNDERSIDE OF ROOF SURFACES) NSF CERTIFIED

ICS-W-1	THREE COAT EPOXY SYSTEM. TOTAL MINIMUM DRY FILM THICKNESS 15 MILS
FIRST COAT	SHERWIN WILLIAMS "MACROPOXY 646 PW" TNEMEC "POTA-POX PLUS" OR PPG "AMERLOCK 2": 5 MILS DRY FILM THICKNESS
SECOND COAT	SHERWIN WILLIAMS "MACROPOXY 646 PW". TNEMEC "POTA-POX PLUS" OR PPG "AMERLOCK 2": 5 MILS DRY FILM THICKNESS
FINISH COAT	SHERWIN WILLIAMS "MACROPOXY 646 PW" TNEMEC "POTA-POX PLUS" OR PPG "AMERLOCK 2": 5 MILS DRY FILM THICKNESS

EXTERIOR COATING SYSTEM (ECS) – ECS-1 IS FOR THE AREAS THAT REQUIRE TOUCH-UP: ECS-2 IS FOR THE ENTIRE EXTERIOR TANK SHELL

ECS – 1	THREE COAT EPOXY. EPOXY/ALIPHATIC ACRYLIC POLYURETHANE SYSTEM. TOTAL MINIMUM DRY FILM THICKNESS 8-12 MILS
FIRST COAT	SHERWIN WILLIAMS "MACROPOXY 646", TNEMEC "N69 HI-BUILD EPOXOLINE II", OR PPG "AMERCOAT 370 EPOXY": 6-10 MILS DRY FILM THICKNESS
FINISH COAT	SHERWIN WILLIAMS "HI-SOLIDS POLYURETHANE", TNEMEC "HYDROFLON SERIES 700", OR PPG "AMERCOAT 450 H". 2 MILS DRY FILM THICKNESS
ECS – 2	SINGLE COAT POLYURETHANE SYSTEM. TOTAL MINIMUM DRY FILM THICKNESS 2 MILS
FINISH COAT	SHERWIN WILLIAMS "HI-SOLIDS POLYURETHANE", TNEMEC "HYDROFLON SERIES 700", OR PPG "AMERCOAT 450 H". 2 MILS DRY FILM THICKNESS.

PLANS PREPARED FOR:
T-Mobile
15 COMMERCE WAY, SUITE B
NORTON, MA 02766

PROJECT MANAGER:
SITE LINK

PLANS PREPARED BY:
FORESITE group

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ENGINEERING LICENSE:
JAMES C. MAROONEY
REGISTERED
24065
STATE OF
WEST VIRGINIA
PROFESSIONAL ENGINEER
12/13/21

PROJECT:
CHARLES TOWN, WV
7HCH193A
LOCATED AT:
215 EAST 6TH AVE
RANSON, WV 25438

REVISIONS	DATE

ISSUED FOR:	PERMIT/CONSTRUCTION
PROJECT MANAGER:	JCM
DRAWING BY:	JPD
DATE:	12/13/2021
TITLE:	

GENERAL NOTES

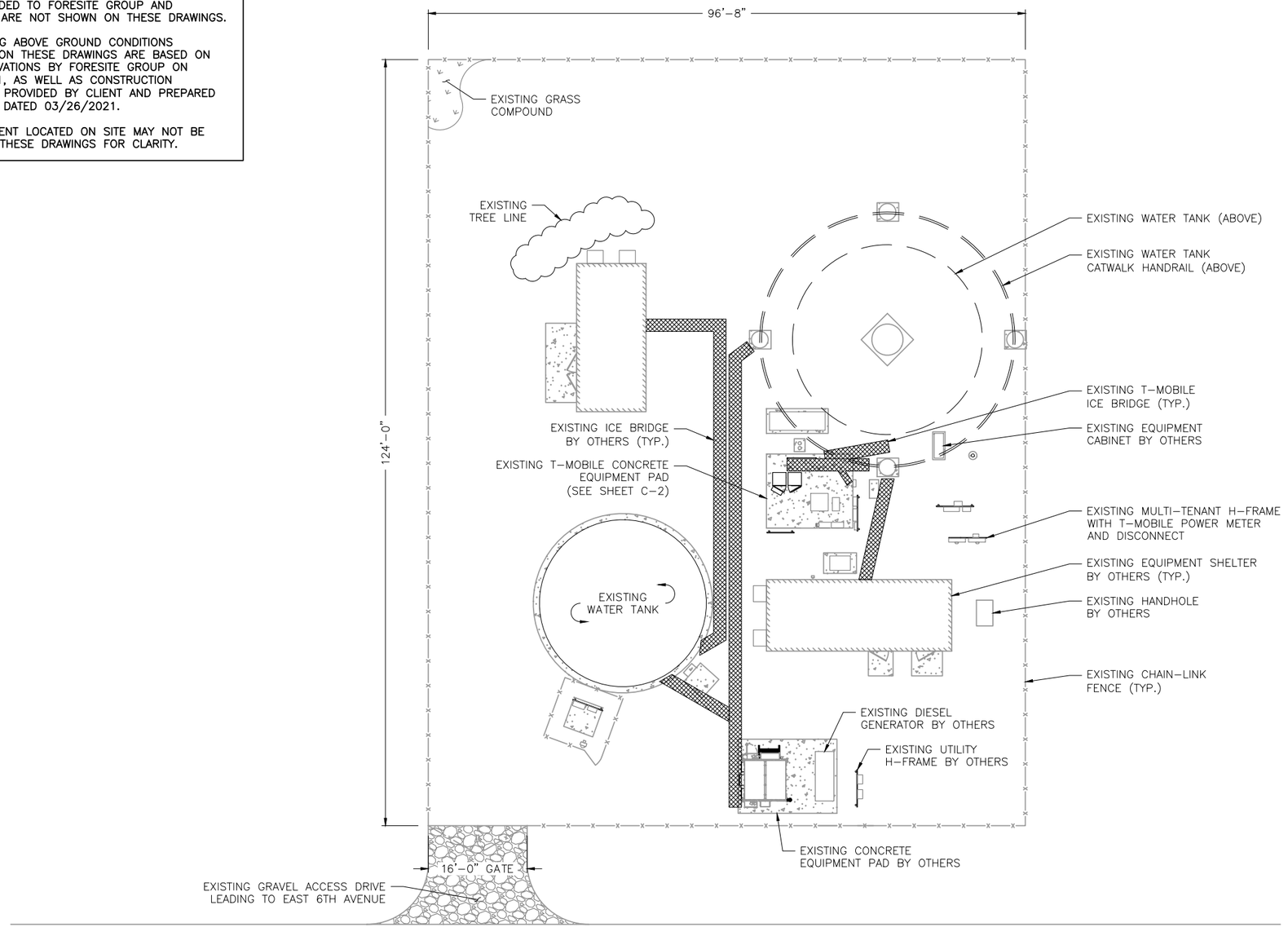
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JOB/FILE NUMBER:	1485.002

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NOTES:

1. ANY PROPERTY INFORMATION OUTSIDE THE EXISTING SITE AREA IS BASED ON AERIAL PHOTOGRAPHY AND NOT FROM A SURVEY OR FIELD MEASUREMENTS AND IS SHOWN FOR REFERENCE ONLY. THE DOCUMENTATION OR LOCATION OF ANY INGRESS/EGRESS OR UTILITY EASEMENTS HAVE NOT BEEN PROVIDED TO FORESITE GROUP AND THEREFORE ARE NOT SHOWN ON THESE DRAWINGS.
2. THE EXISTING ABOVE GROUND CONDITIONS REFLECTED ON THESE DRAWINGS ARE BASED ON SITE OBSERVATIONS BY FORESITE GROUP ON 08/11/2021, AS WELL AS CONSTRUCTION DOCUMENTS PROVIDED BY CLIENT AND PREPARED BY TRYLON, DATED 03/26/2021.
3. ALL EQUIPMENT LOCATED ON SITE MAY NOT BE SHOWN ON THESE DRAWINGS FOR CLARITY.



OVERALL SITE PLAN

GRAPHIC SCALE
0' 10' 20'
(SCALE IN FEET)
11x17 SCALE: 1"=20'
24x36 SCALE: 1"=10'

PLANS PREPARED FOR:
T-Mobile
15 COMMERCE WAY, SUITE B
NORTON, MA 02766

PROJECT MANAGER:
SITE LINK

PLANS PREPARED BY:
FORESITE group

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ENGINEERING LICENSE:
JAMES C. MAROONEY REGISTERED 24065 STATE OF WEST VIRGINIA PROFESSIONAL ENGINEER
12/13/21

PROJECT:
CHARLES TOWN, WV
7HCH193A
LOCATED AT:
215 EAST 6TH AVE
RANSON, WV 25438

REVISIONS	DATE

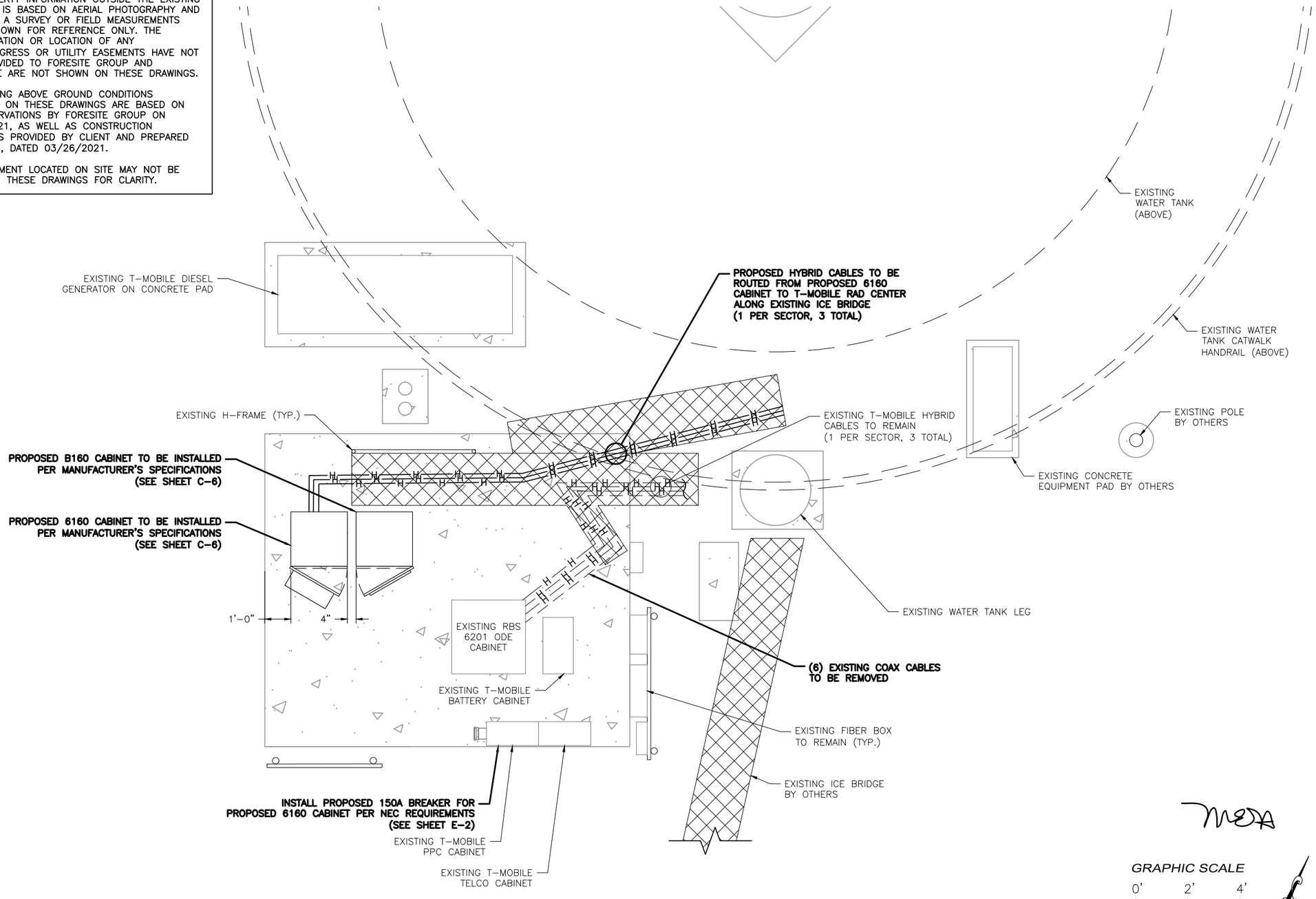
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TITLE:	

OVERALL SITE PLAN
SHEET NUMBER: C-1
JOB/FILE NUMBER: 1485.002

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NOTES:

1. ANY PROPERTY INFORMATION OUTSIDE THE EXISTING SITE AREA IS BASED ON AERIAL PHOTOGRAPHY AND NOT FROM A SURVEY OR FIELD MEASUREMENTS AND IS SHOWN FOR REFERENCE ONLY. THE DOCUMENTATION OR LOCATION OF ANY INGRESS/EGRESS OR UTILITY EASEMENTS HAVE NOT BEEN PROVIDED TO FORESITE GROUP AND THEREFORE ARE NOT SHOWN ON THESE DRAWINGS.
2. THE EXISTING ABOVE GROUND CONDITIONS REFLECTED ON THESE DRAWINGS ARE BASED ON SITE OBSERVATIONS BY FORESITE GROUP ON 08/11/2021, AS WELL AS CONSTRUCTION DOCUMENTS PROVIDED BY CLIENT AND PREPARED BY TRYLON, DATED 03/26/2021.
3. ALL EQUIPMENT LOCATED ON SITE MAY NOT BE SHOWN ON THESE DRAWINGS FOR CLARITY.



PROPOSED EQUIPMENT PLAN

GRAPHIC SCALE

0' 2' 4'

(SCALE IN FEET)
11x17 SCALE: 1"=4'
24x36 SCALE: 1"=2'

PLANS PREPARED FOR:
T-Mobile
15 COMMERCE WAY, SUITE B
NORTON, MA 02766

PROJECT MANAGER:
SITE LINK

PLANS PREPARED BY:
FORESITE group

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JAMES C. MAROONEY REGISTERED 24065 STATE OF WEST VIRGINIA PROFESSIONAL ENGINEER
12/13/21

PROJECT:
CHARLES TOWN, WV

7HCH193A

LOCATED AT:
215 EAST 6TH AVE
RANSON, WV 25438

REVISIONS	DATE

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PROJECT MANAGER:	JCM
DRAWING BY:	JPD
DATE:	12/13/2021
TITLE:	

PROPOSED EQUIPMENT PLAN

SHEET NUMBER: C-2

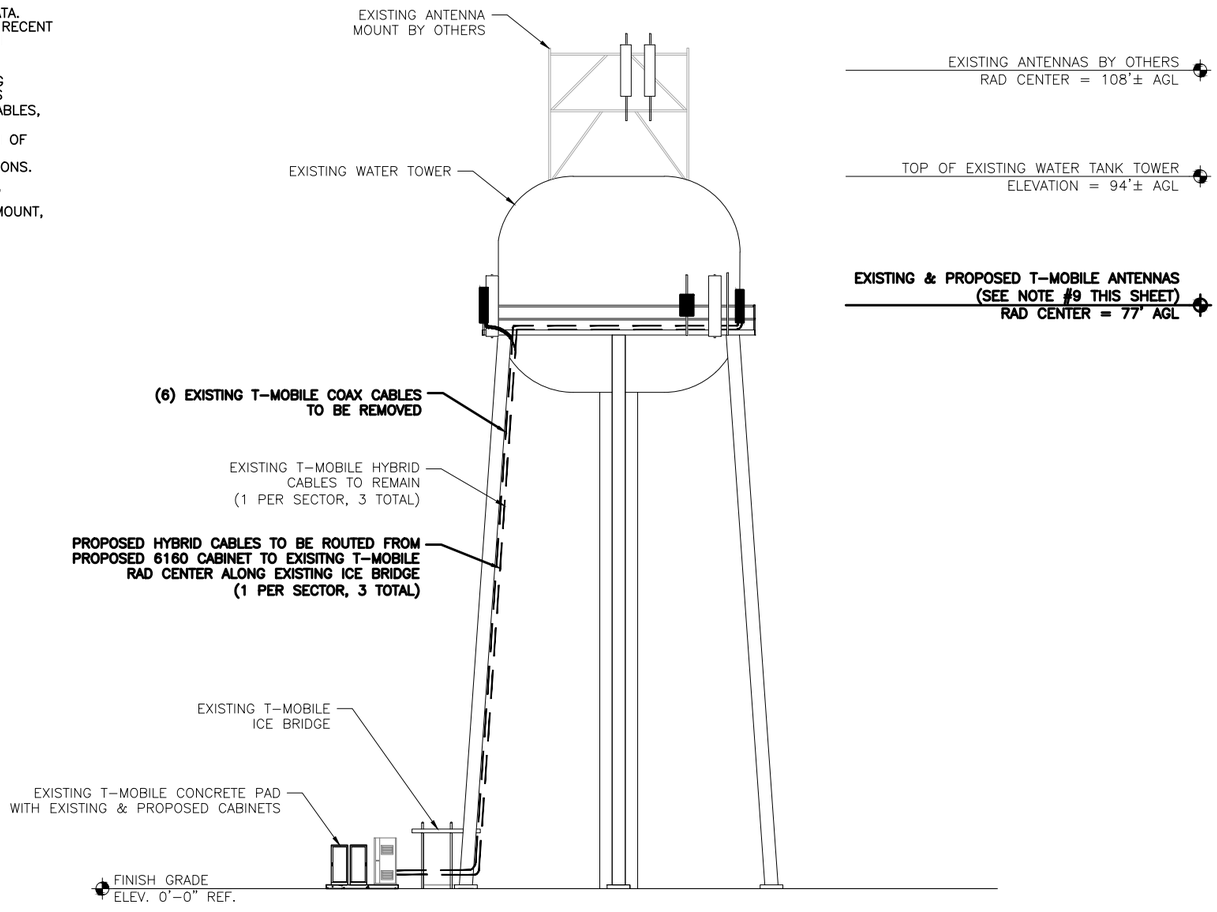
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TOWER NOTES:

1. THE EXISTING TOWER, FOUNDATION, ANTENNA MOUNTS, AND ANTENNAS WERE DESIGNED BY OTHERS.
2. THE TOWER ELEVATION SHOWN IS FOR REFERENCE ONLY.
3. ADDITIONAL EXISTING ANTENNAS AND MOUNTS NOT SHOWN FOR CLARITY.
4. TOWER STRUCTURAL ANALYSIS SHALL BE COMPLETED BY OTHERS BEFORE ANY INSTALLATION OF EQUIPMENT OR ANY OTHER MODIFICATIONS TO THE TOWER ARE COMPLETED. FORESITE GROUP ACCEPTS NO RESPONSIBILITY FOR THE STRUCTURAL CAPACITY OF THE TOWER AND FOUNDATIONS. CONTRACTOR SHALL COORDINATE WITH AND COMPLY WITH THE PROVISIONS OF THE STRUCTURAL ANALYSIS PRIOR TO INSTALLATION OF EQUIPMENT ON TOWER.
5. CONTRACTOR TO REFER TO AND COMPLY WITH MOUNT STRUCTURAL ANALYSIS COMPLETED BY FORESITE GROUP, DATED 10/20/2021 PRIOR TO INSTALLATION OF EQUIPMENT ON TOWER.
6. CONTRACTOR TO FIELD VERIFY ANTENNA MOUNT CONFIGURATION AND PROVIDE MOUNTS OR ADDITIONAL HARDWARE IF REQUIRED TO SUPPORT PROPOSED ANTENNAS. ALL ANTENNAS AND MOUNTING HARDWARE SHALL CONFORM TO DESIGN REQUIREMENTS PER BUILDING CODE AND STRUCTURAL STANDARDS FOR STEEL ANTENNA TOWERS AND ANTENNA SUPPORTING STRUCTURES.
7. AZIMUTHS TAKEN FROM T-MOBILE RF SITE DESIGN DATA. TOWER HEIGHTS AND ANTENNA HEIGHTS TAKEN FROM RECENT TOWER SURVEY DATA. TURFING VENDOR WILL CONFIRM HEIGHT WITH T-MOBILE REGULATORY COMPLIANCE.
8. CONTRACTOR IS RESPONSIBLE FOR VERIFYING EXISTING CONDITIONS AND IDENTIFYING ANY EXISTING CONFLICTS (INCLUDING BUT NOT LIMITED TO EXISTING COAXIAL CABLES, SAFETY CLIMBS, ETC) AND DETERMINING TEMPORARY BRACING OR RELOCATION REQUIRED FOR INSTALLATION OF THE PROPOSED EQUIPMENT. THE CONTRACTOR SHALL RESTORE ALL RELOCATED ITEMS TO PREVIOUS CONDITIONS.
9. CENTERLINE OF THE ANTENNAS TO BE WITHIN THE 6" (VERTICALLY) OF THE CENTERLINE OF EACH SECTOR MOUNT, UNLESS SPECIFIED BY ENGINEER.



TOWER ELEVATION

NOT TO SCALE

PLANS PREPARED FOR:

T-Mobile

15 COMMERCE WAY, SUITE B
NORTON, MA 02766

PROJECT MANAGER:

SITE LINK

PLANS PREPARED BY:

FORESITE group

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ENGINEERING LICENSE:

JAMES C. MAROONEY REGISTERED 24065 STATE OF WEST VIRGINIA PROFESSIONAL ENGINEER

12/13/21

PROJECT:

CHARLES TOWN, WV

7HCH193A

LOCATED AT:
215 EAST 6TH AVE
RANSON, WV 25438

REVISIONS	DATE

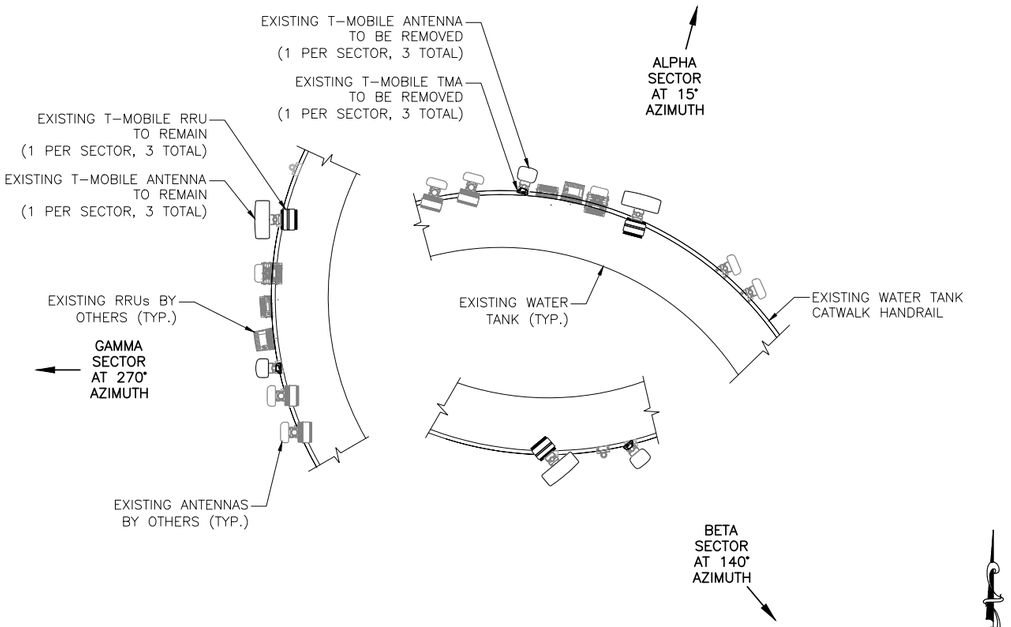
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TITLE:	

TOWER ELEVATION

SHEET NUMBER:	C-3
JOB/FILE NUMBER:	1485.002

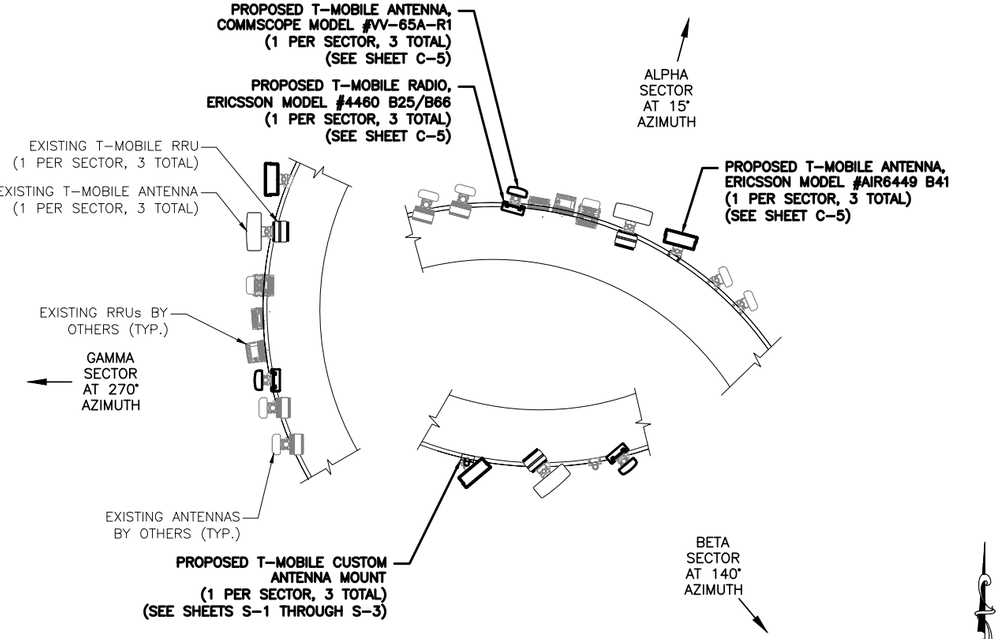
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EXISTING ANTENNA ORIENTATION

NOT TO SCALE



PROPOSED ANTENNA ORIENTATION

NOT TO SCALE

SECTOR	POSITION	ANTENNA AZIMUTH	RAD CENTER	ANTENNA MAKE/MODEL	ANTENNA QUANTITY	ELEC. TILT	MECH. TILT	TMA/RRU MAKE/MODEL	RRU QUANTITY	COAX/CABLE	COAX/CABLE QUANTITY
ALPHA	A1	15°	75'	ERICSSON AIR21 KRC118023-1_B2P_B4A	1	2°	0°	ERICSSON KRY 112 489/2	1	1-5/8" COAX	2
	A2		77'	RFS APXVAARR24_43-U-NA20	1	2°	0°	ERICSSON RRUS 4449 B71/B85	1	6X12 HCS	1
BETA	B1	140°	75'	ERICSSON AIR21 KRC118023-1_B2P_B4A	1	2°	0°	ERICSSON KRY 112 489/2	1	1-5/8" COAX	2
	B2		77'	RFS APXVAARR24_43-U-NA20	1	2°	0°	ERICSSON RRUS 4449 B71/B85	1	6X12 HCS	1
GAMMA	G1	270°	75'	ERICSSON AIR21 KRC118023-1_B2P_B4A	1	2°	0°	ERICSSON KRY 112 489/2	1	1-5/8" COAX	2
	G2		77'	RFS APXVAARR24_43-U-NA20	1	2°	0°	ERICSSON RRUS 4449 B71/B85	1	6X12 HCS	1
				TOTAL	6				6		9

SECTOR	POSITION	ANTENNA AZIMUTH	RAD CENTER	ANTENNA MAKE/MODEL	ANTENNA QUANTITY	ELEC. TILT	MECH. TILT	TMA/RRU MAKE/MODEL	RRU QUANTITY	COAX/CABLE	COAX/CABLE QUANTITY
ALPHA	A1	15°	77'	COMMSCOPE VV-65A-R1	1	2°	--	ERICSSON RRUS 4460 B25/B66	1	6X12 HCS (200 FT)	1
	A2		77'	RFS APXVAARR24_43-U-NA20	1	2°	--	ERICSSON RRUS 4449 B71/B85	1	6X12 HCS (200 FT)	(SHARED)
	A3		77'	ERICSSON AIR6449 B41	1	2°	--	--	--	6X24 HCS (200 FT)	1
BETA	B1	140°	77'	COMMSCOPE VV-65A-R1	1	2°	--	ERICSSON RRUS 4460 B25/B66	1	6X12 HCS (120 FT)	1
	B2		77'	RFS APXVAARR24_43-U-NA20	1	2°	--	ERICSSON RRUS 4449 B71/B85	1	6X12 HCS (120 FT)	(SHARED)
	B3		77'	ERICSSON AIR6449 B41	1	2°	--	--	--	6X24 HCS (120 FT)	1
GAMMA	G1	270°	77'	COMMSCOPE VV-65A-R1	1	2°	--	ERICSSON RRUS 4460 B25/B66	1	6X12 HCS (200 FT)	1
	G2		77'	RFS APXVAARR24_43-U-NA20	1	2°	--	ERICSSON RRUS 4449 B71/B85	1	6X12 HCS (200 FT)	(SHARED)
	G3		77'	ERICSSON AIR6449 B41	1	2°	--	--	--	6X24 HCS (200 FT)	1
				TOTAL	9				6		6

EQUIPMENT SCHEDULES ARE BASED ON RFDS: 7HCH193A_ANCHOR_6_2021-08-18
DATED: 08/18/2021

*PRIOR TO CONSTRUCTION, CONTRACTOR TO VERIFY THE CURRENT T-MOBILE RFDS MATCHES THE RFDS REFERENCED IN THESE PLANS. IF NECESSARY, CONTRACTOR TO REFERENCE THE MOST CURRENT T-MOBILE RFDS FOR EQUIPMENT SPECS, CABLE QUANTITY/SIZE, ETC., AND NOTIFY ENGINEER OF ANY DEVIATIONS.

EQUIPMENT SCHEDULE

NOT TO SCALE

PLANS PREPARED FOR:

T-Mobile

15 COMMERCE WAY, SUITE B
NORTON, MA 02766

PROJECT MANAGER:

SITE LINK

PLANS PREPARED BY:

FORESITE group

DRAWING NOTICE:

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ENGINEERING LICENSE:

JAMES C. MAROONEY REGISTERED 24065 STATE OF WEST VIRGINIA PROFESSIONAL ENGINEER

12/13/21

PROJECT:

CHARLES TOWN, WV

7HCH193A

LOCATED AT:
215 EAST 6TH AVE
RANSON, WV 25438

REVISIONS	DATE

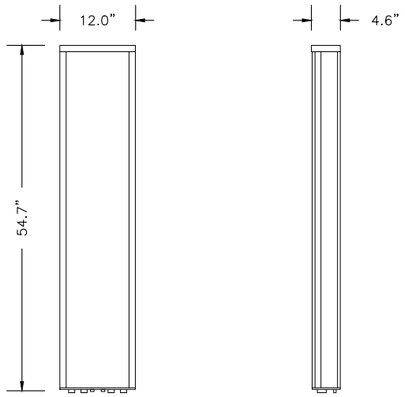
ISSUED FOR:	PERMIT/CONSTRUCTION
PROJECT MANAGER:	JCM
DRAWING BY:	JPD
DATE:	12/13/2021
TITLE:	

ANTENNA ORIENTATION & EQUIPMENT SCHEDULE

SHEET NUMBER:	C-4
JOB/FILE NUMBER:	1485.002

Drawing name: C:\Users\JMAROO~1\AppData\Local\Temp\AcPublish_7260\7HCH193_Anchor Upgrade_CDs.dwg C-4 Dec 13, 2021 12:49pm by: jmarooney

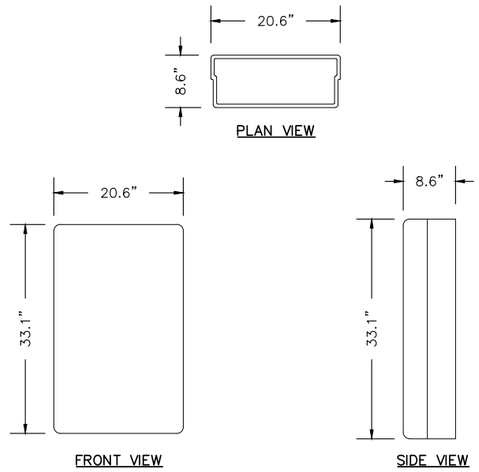
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FRONT VIEW SIDE VIEW

MANUFACTURER:	COMMSCOPE
MODEL#:	VV-65A-R1
DIMENSIONS (WxDxH):	12"x4.6"x54.7"
WEIGHT:	24.7 LBS

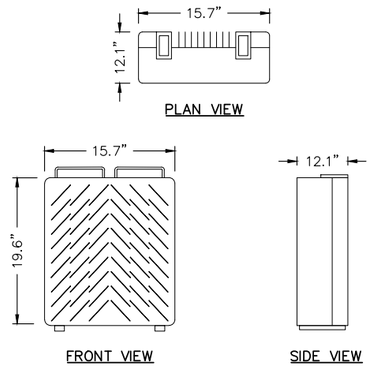
ANTENNA DETAIL
NOT TO SCALE



PLAN VIEW FRONT VIEW SIDE VIEW

MANUFACTURER:	ERICSSON
MODEL#:	AIR 6449 B41
DIMENSIONS (WxDxH):	20.6"x8.6"x33.1"
WEIGHT (KG):	104 LBS

ANTENNA DETAIL
NOT TO SCALE

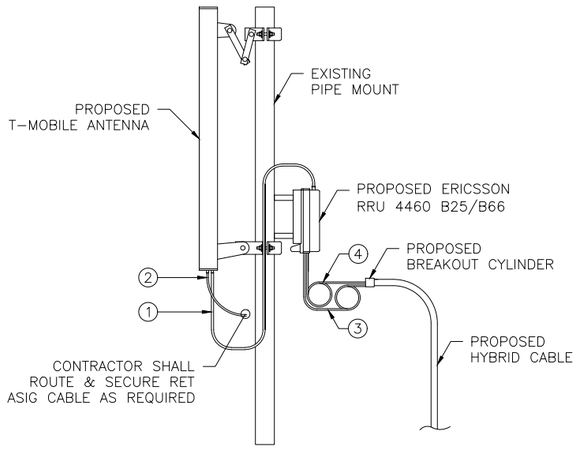


PLAN VIEW FRONT VIEW SIDE VIEW

MANUFACTURER:	ERICSSON
MODEL#:	4460 B25/B66
DIMENSIONS (WxDxH):	15.7"x12.1"x19.6"
WEIGHT:	109 LBS

RRU DETAIL
NOT TO SCALE

LEGEND:
1. 1/2" RF JUMPERS
2. RET
3. ETHERNET/FIBER CABLE
4. DC POWER CABLE



ANTENNA MOUNTING DETAIL
NOT TO SCALE

DETAIL NOT USED

DETAIL NOT USED

PLANS PREPARED FOR:
T-Mobile
15 COMMERCE WAY, SUITE B
NORTON, MA 02766

PROJECT MANAGER:
SITE LINK

PLANS PREPARED BY:
FORESITE group

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ENGINEERING LICENSE:
JAMES C. MAROONEY REGISTERED 24065 STATE OF WEST VIRGINIA PROFESSIONAL ENGINEER
12/13/21

PROJECT:
CHARLES TOWN, WV

7HCH193A

LOCATED AT:
215 EAST 6TH AVE
RANSON, WV 25438

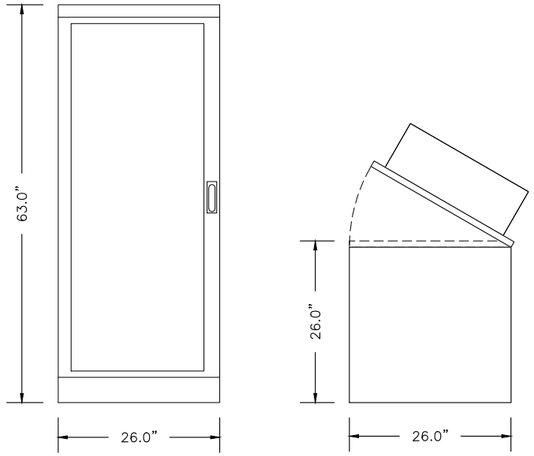
REVISIONS	DATE

ISSUED FOR:	PERMIT/CONSTRUCTION
PROJECT MANAGER:	JCM
DRAWING BY:	JPD
DATE:	12/13/2021
TITLE:	

EQUIPMENT & MOUNTING DETAILS

SHEET NUMBER:	C-5
JOB/FILE NUMBER:	1485.002

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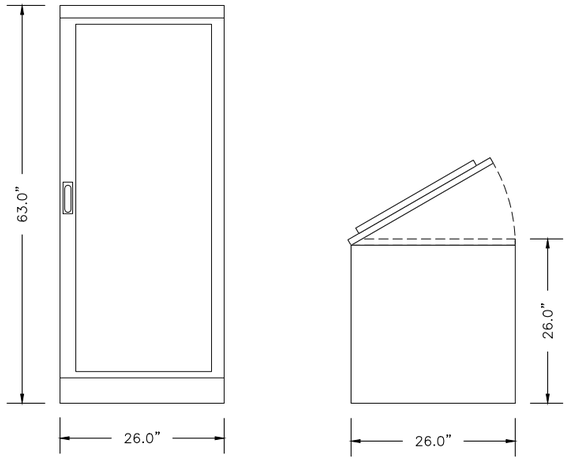


FRONT VIEW PLAN VIEW

MANUFACTURER:	ERICSSON
MODEL#:	6160
DIMENSIONS (HxWxD):	63.0"x26.0"x26.0"
WEIGHT:	1500 lbs (MAX)

6160 CABINET DETAIL

NOT TO SCALE



FRONT VIEW PLAN VIEW

MANUFACTURER:	ERICSSON
MODEL#:	B160
DIMENSIONS (WxDxH):	26.0"x26.0"x63.0"
WEIGHT:	2000 lbs (MAX)

B160 CABINET DETAIL

NOT TO SCALE

PLANS PREPARED FOR:

T-Mobile

15 COMMERCE WAY, SUITE B
NORTON, MA 02766

PROJECT MANAGER:

SITE LINK

PLANS PREPARED BY:

FORESITE group

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ENGINEERING LICENSE:

JAMES C. MAROONEY REGISTERED 24065 STATE OF WEST VIRGINIA PROFESSIONAL ENGINEER

12/13/21

PROJECT:

CHARLES TOWN, WV

7HCH193A

LOCATED AT:
215 EAST 6TH AVE
RANSON, WV 25438

REVISIONS	DATE

ISSUED FOR:	PERMIT/CONSTRUCTION
PROJECT MANAGER:	JCM
DRAWING BY:	JPD
DATE:	12/13/2021
TITLE:	

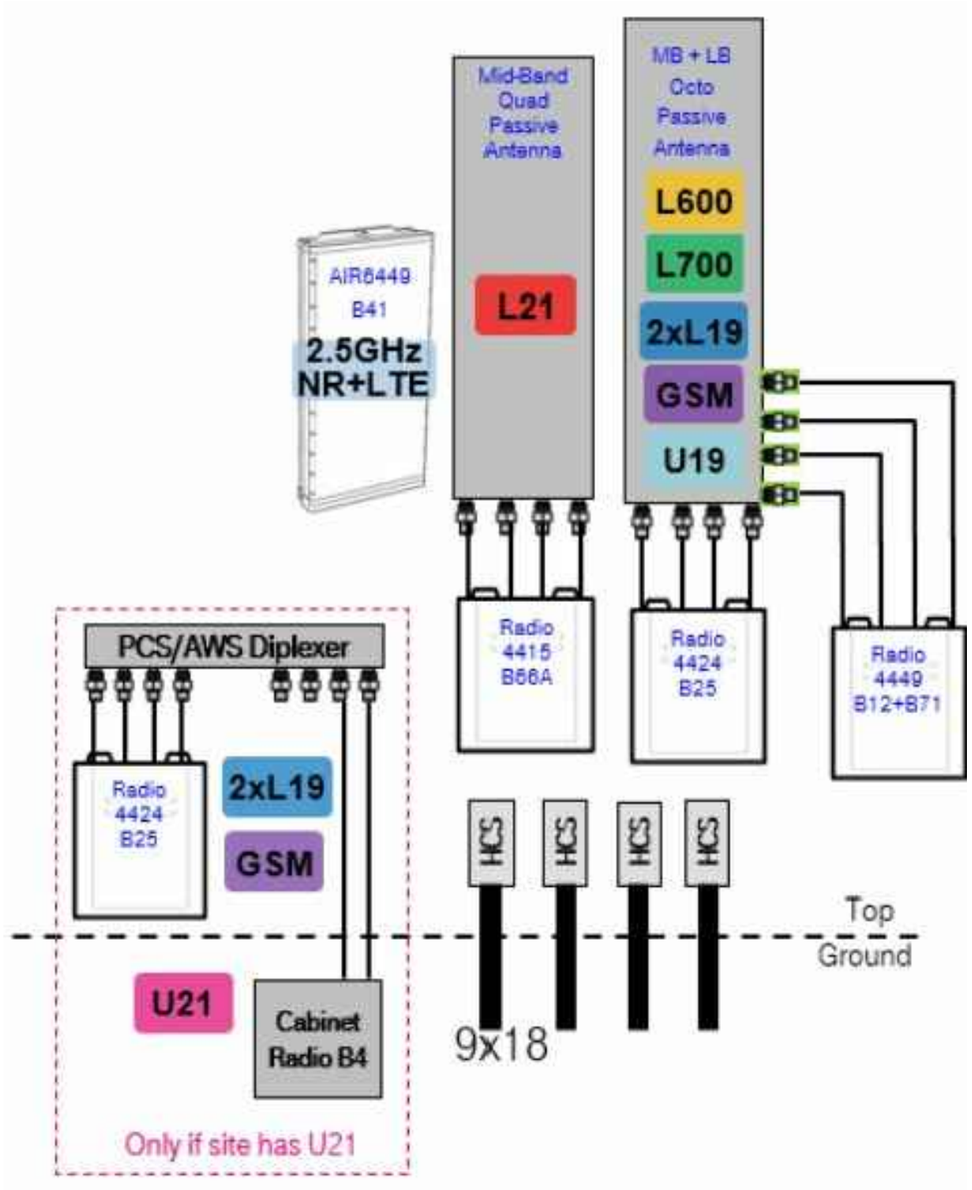
EQUIPMENT & MOUNTING DETAILS

SHEET NUMBER:	C-6
JOB/FILE NUMBER:	1485.002

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ANTENNA DIAGRAMS ARE BASED ON RFDS: 7HCH193A_ANCHOR_6_2021-08-18
DATED: 08/18/2021
* DIAGRAM TYPICAL FOR ALL SECTORS



ANTENNA PLUMBING DIAGRAM
NOT TO SCALE

PLANS PREPARED FOR:
T-Mobile
15 COMMERCE WAY, SUITE B
NORTON, MA 02766

PROJECT MANAGER:
SITE LINK

PLANS PREPARED BY:
FORESITE group

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ENGINEERING LICENSE:
JAMES C. MAROONEY
REGISTERED
24065
STATE OF
WEST VIRGINIA
PROFESSIONAL ENGINEER
12/13/21

PROJECT:
CHARLES TOWN, WV

7HCH193A

LOCATED AT:
215 EAST 6TH AVE
RANSON, WV 25438

REVISIONS	DATE

ISSUED FOR:	PERMIT/CONSTRUCTION
PROJECT MANAGER:	JCM
DRAWING BY:	JPD
DATE:	12/13/2021
TITLE:	

ANTENNA PLUMBING DIAGRAM

SHEET NUMBER:	C-7
JOB/FILE NUMBER:	1485.002

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ELECTRICAL INSTALLATION NOTES

1. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS, NEC AND ALL APPLICABLE LOCAL CODES.
2. ALL ELECTRICAL EQUIPMENT AND ACCESSORIES SHALL BE U.L. APPROVED OR LISTED.
3. CONDUIT ROUTINGS ARE SCHEMATIC. CONTRACTOR SHALL INSTALL CONDUITS SO THAT ACCESS TO EQUIPMENT IS NOT BLOCKED.
4. WIRING, RACEWAY AND SUPPORT METHODS AND MATERIALS SHALL COMPLY WITH THE REQUIREMENTS OF THE NEC.
5. ALL CIRCUITS SHALL BE SEGREGATED AND MAINTAIN MINIMUM CABLE SEPARATION AS REQUIRED BY THE NEC.
6. CABLES SHALL NOT BE ROUTED THROUGH LADDER-STYLE CABLE TRAY RUNGS.
7. EACH END OF EVERY POWER, POWER PHASE CONDUCTOR (I.E., HOTS), GROUNDING, AND T1 CONDUCTOR AND CABLE SHALL BE LABELED WITH COLOR-CODED INSULATION OR ELECTRICAL TAPE (3M BRAND, ½ INCH PLASTIC ELECTRICAL TAPE WITH UV PROTECTION, OR EQUAL). THE IDENTIFICATION METHOD SHALL CONFORM WITH NE & OSHA.
8. ALL ELECTRICAL COMPONENTS SHALL BE CLEARLY LABELED WITH ENGRAVED LAMACOID PLASTIC LABELS. ALL EQUIPMENT SHALL BE LABELED WITH THEIR VOLTAGE RATING, PHASE CONFIGURATION, WIRE CONFIGURATION, POWER OR AMPACITY RATING, AND BRANCH CIRCUIT ID NUMBERS (IE., PANELBOARD AND CIRCUIT ID'S).
9. PANELBOARDS (ID NUMBERS) AND INTERNAL CIRCUIT BREAKERS (CIRCUIT ID NUMBERS) SHALL BE CLEARLY LABELED WITH ENGRAVED LAMACOID PLASTIC LABELS.
10. POWER, CONTROL, AND EQUIPMENT GROUND WIRING IN TUBING OR CONDUIT SHALL BE SINGLE CONDUCTOR (#14 AWG OR LARGER), 600 V, OIL RESISTANT THHN OR THWN-2 OR XHHW-2, STRANDED COPPER CABLE RATED FOR 90°C (WET AND DRY) OPERATION; LISTED OR LABELED FOR THE LOCATION AND RACEWAY SYSTEM USED, UNLESS OTHERWISE SPECIFIED.
11. POWER AND CONTROL WIRING, NOT IN TUBING OR CONDUIT, SHALL BE MULTI-CONDUCTOR, TYPE USE-2 CABLE (314 AWG OR LARGER), 600 V, OIL RESISTANT RHW-2 OR XHHW-2, STRANDED COPPER CABLE RATED FOR 90°C (WET AND DRY) OPERATION; WITH OUTER JACKET; LISTED OR LABELED FOR THE LOCATION USED, UNLESS OTHERWISE SPECIFIED.
12. ALL POWER AND GROUNDING CONNECTIONS SHALL BE CRIMP-STYLE, COMPRESSION WIRE LUGS AND WIRE NUTS BY THOMAS AND BETTS (OR EQUAL). LUGS AND WIRE NUTS SHALL BE RATED FOR OPERATION AT NO LESS THAN 90°C.
13. RACEWAY AND CABLE TRAY SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE, AND NEC.
14. ELECTRICAL METALLIC TUBING (EMT) OR RIGID METALLIC CONDUIT (RMC) SHALL BE USED FOR EXPOSED INDOOR LOCATIONS.
15. ELECTRICAL METALLIC TUBING (EMT) OR RIGID METALLIC CONDUIT (RMC) SHALL BE USED FOR CONCEALED INDOOR LOCATIONS.
16. RIGID NON-METALLIC CONDUIT (I.E., RIGID PVC SCHEDULE 80) SHALL BE USED UNDERGROUND; DIRECT BURIED, IN AREAS OF OCCASIONAL LIGHT VEHICLE TRAFFIC OR IN ARES OF HEAVY VEHICLE TRAFFIC, GALVANIZED RIGID CONDUIT SHALL BE USED.
17. ALL OUTDOOR EXPOSED CONDUIT SHALL BE RMC AND SHALL BE SUPPORTED ADEQUATELY.
18. LIQUID-TIGHT FLEXIBLE METALLIC CONDUIT LTMC) SHALL BE USED INDOORS AND OUTDOORS, WHERE VIBRATION OCCURS OR FLEXIBILITY IS NEEDED. LFMC SHALL CONFORM TO NEC ARTICLE 350.
19. CONDUIT AND TUBING FITTINGS SHALL BE THREADED OR COMPRESSION-TYPE AND APPROVED FOR THE LOCATION USED. SET SCREW FITTINGS ARE NOT ACCEPTABLE.
20. CABINETS, BOXES, AND WIREWAYS SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE, AND NEC.
21. WIREWAYS SHALL BE EPOXY-COATED (GRAY) AND INCLUDE A HINGED COVER, DESIGNED TO SWING OPEN DOWNWARD; SHALL BE PANDUIT TYPE E (OR EQUAL); AND RATED NEMA 1 (OR BETTER) INDOORS, OR NEMA 3R (OR BETTER) OUTDOORS.
22. EQUIPMENT CABINETS, TERMINAL BOXES, JUNCTION BOXES, AND PULL BOXES SHALL BE GALVANIZED OR EPOXY-COATED SHEET STEEL, SHALL MEET OR EXCEED UL 50, AND RATED NEMA 1 (OR BETTER) INDOORS, OR WEATHER PROTECTED (WP OR BETTER) OUTDOORS.
23. METAL RECEPTACLE, SWITCH, AND DEVICE BOXES SHALL BE GALVANIZED, EPOXY-COATED, OR NON-CORRODING; SHALL MEET OR EXCEED UL 514A AND NEMA OS 1 (OR BETTER) INDOORS, OR WEATHER PROTECTED (WP OR BETTER) OUTDOORS.
24. NON-METALLIC RECEPTACLE, SWITCH, AND DEVICE BOXES SHALL MEET OR EXCEED NEMA OS 2; AND RATED NEMA 1 (OR BETTER) INDOORS, OR WEATHER PROTECTED (WP OR BETTER) OUTDOORS.
25. CONTRACTOR SHALL APPLY FOR ELECTRICAL SERVICE AS SOON AS POSSIBLE AND COORDINATE REQUIREMENTS, SERVICE ROUTING, AND METER SOCKET TYPE WITH LOCAL POWER COMPANY.

ELECTRICAL INSTALLATION NOTES (CONT.)

26. CONTRACTOR SHALL APPLY FOR TELEPHONE SERVICE AS SOON AS POSSIBLE AND COORDINATE REQUIREMENTS AND SERVICE ROUTING WITH TELEPHONE COMPANY.
27. CONTRACTOR SHALL OBTAIN ALL PERMITS, PAY PERMIT FEES, AND SCHEDULE INSPECTIONS.
28. ALL SAFETY SWITCHES SHALL BE NEMA 1 FOR INDOOR, NEMA 3R FOR OUTDOOR, UL LISTED 200K SCCR RATED, REJECTION TYPE, WITH RK1 FUSES. FUSES SHALL HAVE AN AIR OF 200K AND SHALL HAVE A LIMITING RATING AS SHOWN IN THESE DRAWINGS. EQUIPMENT AND ACCESSORIES SHALL BE RATED FOR 75 DEGREES CELSIUS OR HIGHER.
29. ALL LOAD CENTERS SHALL BE 42 SPACE UNLESS NOTED OTHERWISE, NEMA 1 FOR INDOOR, NEMA 3R FOR OUTDOOR, MCB WITH CONVERTIBLE MAINS, UL LISTED 22K IA OR HIGHER SCCR, WITH 22K AIR BREAKERS, BREAKERS AND LOAD CENTER SHALL BE RATED FOR 75 DEGREES CELSIUS OR HIGHER. BREAKERS SHALL HAVE A LIMITING RATING AS SPECIFIED ON THESE DRAWINGS.
30. CONTRACTOR SHALL LABEL ELECTRICAL EQUIPMENT IN ACCORDANCE WITH NEC 110.16 AND 110.24.
31. CONTRACTOR SHALL VERIFY THAT THE MAIN BONDING JUMPER AND GROUNDING ELECTRODE CONDUCTOR IS INSTALLED PROPERLY AT SERVICE ENTRANCE.
32. CONTRACTOR SHALL SEAL AROUND ALL CONDUIT PENETRATIONS TO PREVENT MOISTURE PENETRATION OR VERMIN INFESTATIONS.
33. DURING TRENCH BACK-FILLING FOR EACH UNDERGROUND ELECTRICAL, TELEPHONE, SIGNAL AND COMMUNICATIONS LINE, PROVIDE A CONTINUOUS UNDERGROUND WARNING TAPE TWELVE INCHES BELOW FINISHED GRADE.

GROUNDING NOTES

1. ALL GROUNDING CONNECTIONS SHALL BE MADE USING EXOTHERMIC WELDING PROCESS (CAD WELD OR EQUAL) EXCEPT FOR EQUIPMENT THAT MAY BE MECHANICALLY FASTENED. ALL LUGS SHALL BE TWO HOLE, LONG BARREL TYPE, FOR COPPER, UNLESS OTHERWISE NOTED.
2. ALL GROUND PLATES SHALL BE INSTALLED AT 30" BELOW GRADE PER MANUFACTURER'S SPECIFICATIONS. UNDERGROUND GROUNDING CONDUCTORS SHALL BE 30" BELOW GRADE.
3. ALL GROUND CONDUCTORS SHALL BE MIN. #2 AWG SOLID TINNED COPPER WIRE BARE. EQUIPMENT GROUND CONDUCTORS SHALL BE MIN. #6 GREEN INSULATED, UNLESS OTHERWISE NOTED.
4. GROUND PLATES FOR GROUND RING SHALL BE LOCATED 5'-0" APART.
5. ANY METAL OBJECT WITHIN 6 FEET OF THE TOWER OR EQUIPMENT GROUND RING SHALL BE BONDED DIRECTLY TO THE RING.
6. THE MINIMUM BENDING RADIUS FOR ALL GROUNDING CONDUCTORS #6 AWG OR LARGER SHALL BE 24".
7. ALL ABOVE GRADE GROUND CONDUCTORS SHALL BE ROUTED DOWNWARD TOWARD EARTH AND HORIZONTAL ONLY WHERE NECESSARY.
8. ALL CONDUCTORS SHALL BE ROUTED SUCH THAT THERE ARE NO INCLUSIVE ANGLES OF LESS THAN 90 DEGREES.
9. THE CONTRACTOR SHALL PERFORM IEEE FALL-OF-POTENTIAL RESISTANCE TO EARTH TESTING (PER IEEE 1100 AND 81) FOR GROUND ELECTRODE SYSTEMS. THE SUBCONTRACTOR SHALL FURNISH AND INSTALL SUPPLEMENTAL GROUND ELECTRODES AS NEEDED TO ACHIEVE A RECOMMENDED TEST RESULT OF 5 OHMS OR LESS.
10. ALL GROUNDING SHALL COMPLY WITH THE N.E.C. AND NFPA 780, "LIGHTING PROTECTION CODE".
11. ALL GROUNDING COMPONENTS SHALL BE FURNISHED AND INSTALLED BY CONTRACTOR.
12. ANY METAL CONDUIT MOUNTED ON THE TOWER SHALL BE BONDED TO THE TOWER AT EACH END.
13. ALL EXPOSED GROUNDING SHALL BE IN NON-METALLIC FLEX CONDUIT AND SECURED AS NECESSARY.
14. WHEN BONDING TO EQUIPMENT, REMOVE PAINT TO BARE STEEL AND PROTECT WITH A COATING OF NO-OX.
15. APPROVED ANTIOXIDANT COATINGS SHALL BE USED ON ALL COMPRESSION AND BOLTED GROUND CONNECTIONS.
16. BOND ICE BRIDGE SECTIONS TOGETHER EXOTHERMICALLY OR WITH 2 HOLE LUGS. BOND ICE BRIDGE TO SUPPORT POSTS.

PLANS PREPARED FOR:

T-Mobile

15 COMMERCE WAY, SUITE B
NORTON, MA 02766

PROJECT MANAGER:

SITE LINK

PLANS PREPARED BY:

FORESITE group

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ENGINEERING LICENSE:

JAMES C. MAROONEY
REGISTERED
24065
STATE OF
WEST VIRGINIA
PROFESSIONAL ENGINEER
12/13/21

PROJECT:

CHARLES TOWN, WV

7HCH193A

LOCATED AT:
215 EAST 6TH AVE
RANSON, WV 25438

REVISIONS	DATE

ISSUED FOR:	PERMIT/CONSTRUCTION
PROJECT MANAGER:	JCM
DRAWING BY:	JPD
DATE:	12/13/2021
TITLE:	

ELECTRICAL NOTES

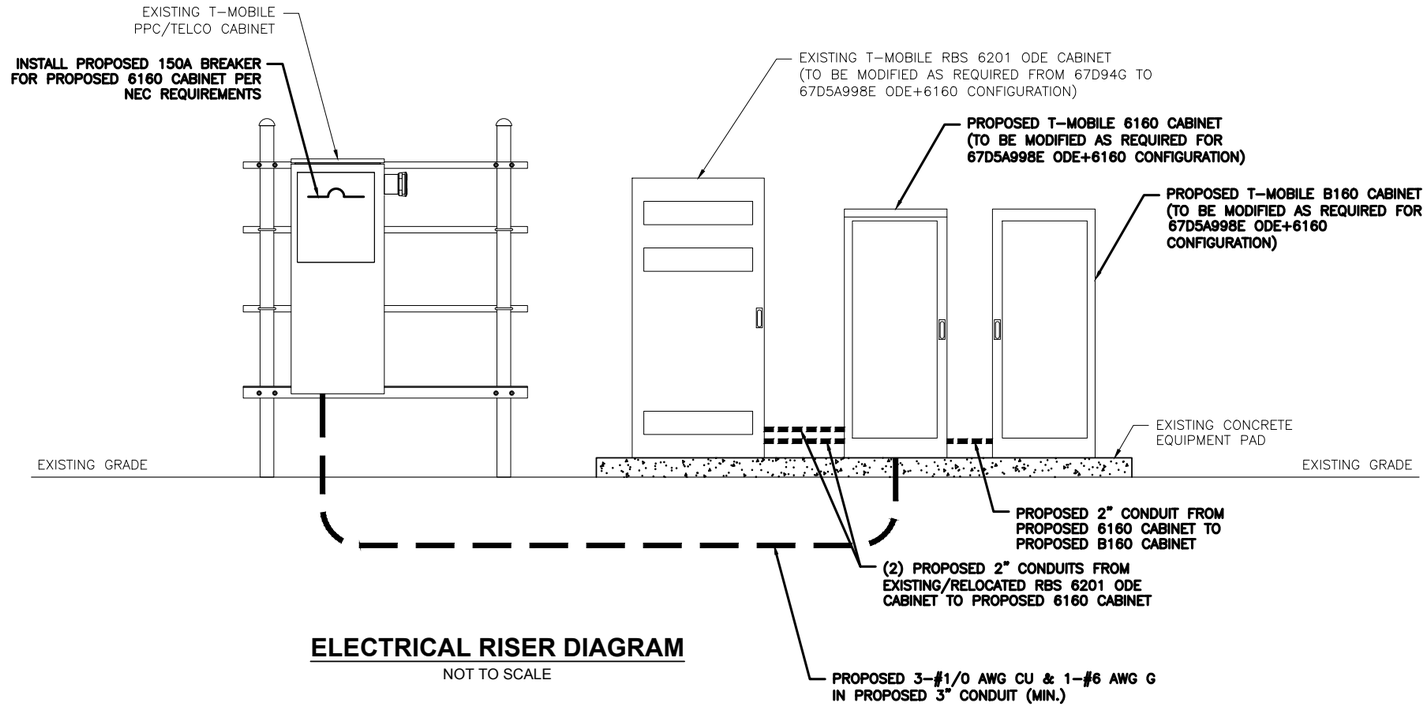
SHEET NUMBER:	E-1
JOB/FILE NUMBER:	1485.002

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ELECTRICAL NOTES:

1. THIS DIAGRAM REPRESENTS THE BEST PRESENT KNOWLEDGE AVAILABLE AT THE TIME OF THIS DESIGN. THE CONTRACTOR SHALL VISIT THE SITE PRIOR TO CONSTRUCTION AND VERIFY ALL EXISTING CONDITIONS RELATED TO THE SCOPE OF WORK FOR THIS PROJECT.
2. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE WITH THE T–MOBILE REPRESENTATIVE AND LOCAL UTILITY COMPANY FOR THE INSTALLATION OF CONDUITS, CONDUCTORS, BREAKERS, DISCONNECTS, OR ANY OTHER EQUIPMENT REQUIRED FOR ELECTRICAL SERVICE.
3. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH LATEST EDITION OF THE STATE AND NATIONAL CODES, ORDINANCES AND REGULATIONS APPLICABLE TO THIS PROJECT.



ELECTRICAL RISER DIAGRAM

NOT TO SCALE

T-MOBILE PANEL

VOLTAGE: 120/240 1 PHASE 3 WIRE 200 AMP M.C.B

LOAD DESCRIPTION	A (kVA)	B (kVA)	BKR	CKT	CKT	BKR	A (kVA)	B (kVA)	LOAD DESCRIPTION
6160 CABINET	3.5		150A	1	2	60A	0		SURGE ARREST
		3.5		3	4			0	
	3.5			5	6	20A	1.92		BATTERY HEATER
		3.5		7	8	20A		0	UNLABLED (OFF)
ODE/RBS6201	9.6		100A	9	10	15A	0.36		RECEPT.
		9.6		11	12			0	SPARE
TOTAL	16.6	16.6					2.28	0	TOTAL

PANEL CAPACITY: 48kVA;
EXISTING LOAD: 21.48 kVA x 1.25 = 26.85 kVA;
NEW LOAD: 14.0 kVA x 1.00 = 14.0kVA;
TOTAL LOAD: 40.85 kVA ≤ 48 kVA;
PANEL HAS CAPACITY FOR BREAKER UPGRADE

PANEL SCHEDULE

NOT TO SCALE

PLANS PREPARED FOR:
T-Mobile
15 COMMERCE WAY, SUITE B
NORTON, MA 02766

PROJECT MANAGER:
SITE LINK

PLANS PREPARED BY:
FORESITE group

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ENGINEERING LICENSE:
JAMES C. MAROONEY REGISTERED 24065 STATE OF WEST VIRGINIA PROFESSIONAL ENGINEER
12/13/21

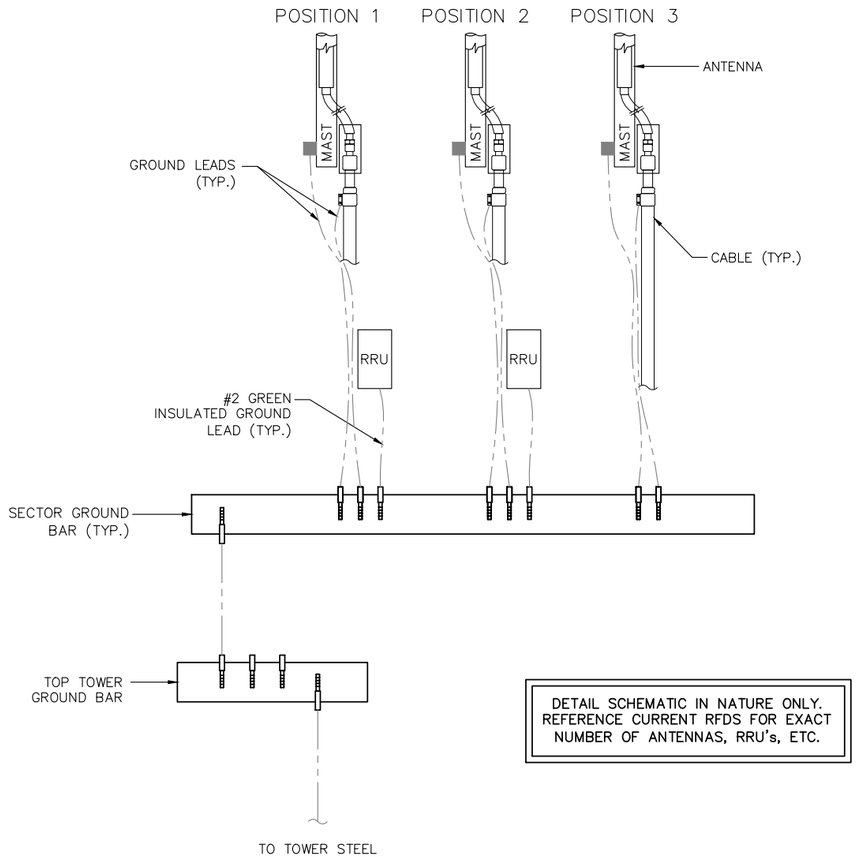
PROJECT:
CHARLES TOWN, WV
7HCH193A
LOCATED AT:
215 EAST 6TH AVE
RANSON, WV 25438

REVISIONS	DATE

ISSUED FOR:	PERMIT/CONSTRUCTION
PROJECT MANAGER:	JCM
DRAWING BY:	JPD
DATE:	12/13/2021
TITLE:	ELECTRICAL RISER DIAGRAM & PANEL SCHEDULE
SHEET NUMBER:	E–2
JOB/FILE NUMBER:	1485.002

Drawing name: C:\Users\JMAROO~1\AppData\Local\Temp\AcPublish_7260\7HCH193_Anchor Upgrade_CDs.dwg E–2 Dec 13, 2021 12:49pm by: jmarooney

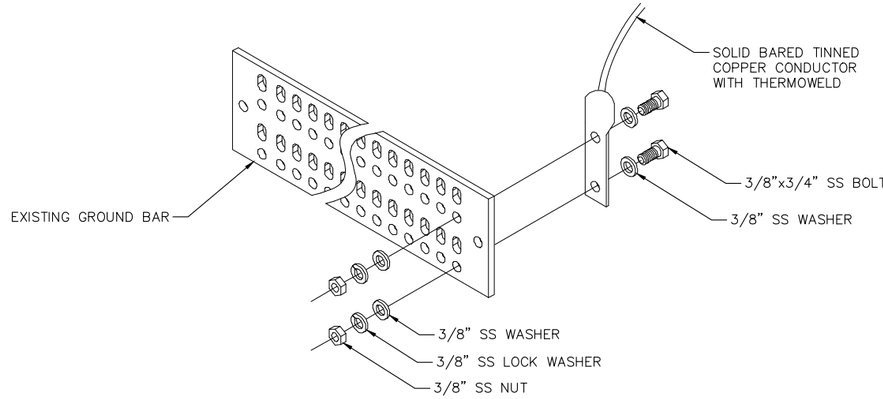
DocuSign Envelope ID: 6932FE3E-0999-4979-A541-9B43EECE9A5A



DETAIL SCHEMATIC IN NATURE ONLY. REFERENCE CURRENT RFDS FOR EXACT NUMBER OF ANTENNAS, RRU's, ETC.

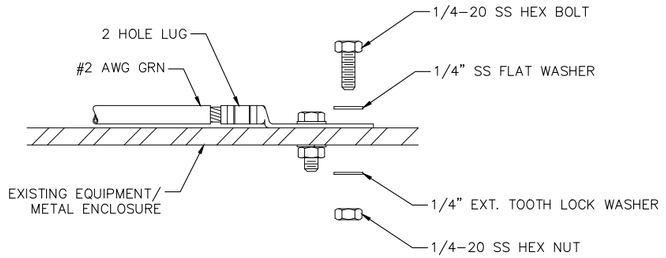
ANTENNA GROUNDING DETAIL

NOT TO SCALE



TYP. GROUND BAR CONNECTION DETAIL

NOT TO SCALE



INSTALLATION NOTES:

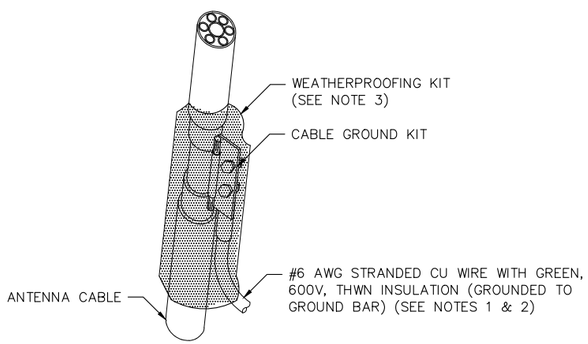
1. SELECT BOLT LENGTH TO PROVIDE A MINUM OF TWO EXPOSED THREADS.
2. BURNISH MOUNTING SURFACE TO REMOVE PAINT IN THE AREA OF LUG CONTACT.
3. APPLY ANTI-OXIDANT COMPOUND TO MATING SURFACE OF LUG AND WIPE CLEAN EXCESS COMPOUND.
4. USE SOLID COPPER WIRE AND MECHANICAL 2-HOLE LUG FOR ALL EXTERIOR GROUNDING.

GROUND CONNECTION DETAIL

NOT TO SCALE

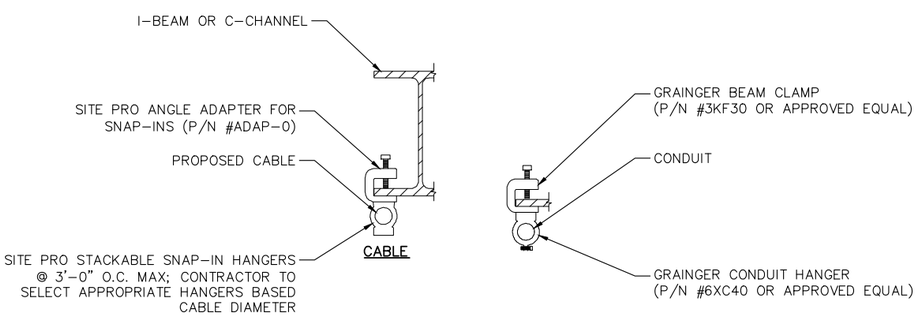
NOTES:

1. DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO GROUND BAR.
2. GROUNDING KIT SHALL BE TYPE AND PART NUMBER AS SUPPLIED OR RECOMMENDED BY CABLE MANUFACTURER.
3. WEATHERPROOFING SHALL BE TYPE AND PART NUMBER AS SUPPLIED OR RECOMMENDED BY CABLE MANUFACTURER.



CONNECTION OF GROUND KIT TO ANTENNA CABLE

NOT TO SCALE



TYP. CONDUIT SUPPORT DETAILS

NOT TO SCALE

PLANS PREPARED FOR:

T-Mobile
15 COMMERCE WAY, SUITE B
NORTON, MA 02766

PROJECT MANAGER:

SITE LINK

PLANS PREPARED BY:

FORESITE group

DRAWING NOTICE:

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ENGINEERING LICENSE:

JAMES C. MAROONEY REGISTERED 24065 STATE OF WEST VIRGINIA PROFESSIONAL ENGINEER
12/13/21

PROJECT:

CHARLES TOWN, WV

7HCH193A

LOCATED AT:
215 EAST 6TH AVE
RANSON, WV 25438

REVISIONS	DATE

ISSUED FOR:	PERMIT/CONSTRUCTION
PROJECT MANAGER:	JCM
DRAWING BY:	JPD
DATE:	12/13/2021
TITLE:	

ANTENNA GROUNDING DETAILS

SHEET NUMBER:	E-3
JOB/FILE NUMBER:	1485.002

Drawing name: C:\Users\JMAROO~1\AppData\Local\Temp\AcPublish_7260\7HCH193_Anchor Upgrade_CDs.dwg E-3 Dec 13, 2021 12:49pm by: jmarooney

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MODIFICATION INSPECTION NOTES

GENERAL:

1. THE POST CONSTRUCTION INSPECTION (MI) IS A VISUAL INSPECTION OF MOUNT MODIFICATIONS AND A REVIEW OF CONSTRUCTION INSPECTIONS AND OTHER REPORTS TO ENSURE THE INSTALLATION WAS CONSTRUCTED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS, NAMELY THE MODIFICATION DRAWINGS, AS DESIGNED BY THE ENGINEER OF RECORD (EOR).
2. THE MI IS TO CONFIRM INSTALLATION CONFIGURATION AND WORKMANSHIP ONLY AND IS NOT A REVIEW OF THE MODIFICATION DESIGN ITSELF, NOR DOES THE MI INSPECTOR TAKE OWNERSHIP OF THE MODIFICATION DESIGN. OWNERSHIP OF THE STRUCTURAL MODIFICATION DESIGN EFFECTIVENESS AND INTEGRITY RESIDES WITH THE EOR AT ALL TIMES.
3. ALL MI'S SHALL BE CONDUCTED BY A MI INSPECTOR THAT IS APPROVED TO PERFORM ELEVATED WORK FOR FORESITE GROUP.
4. TO ENSURE THAT THE REQUIREMENTS OF THE MI ARE MET, IT IS VITAL THAT THE GENERAL CONTRACTOR (GC) AND THE MI INSPECTOR BEGIN COMMUNICATING AND COORDINATING AS SOON AS A PO IS RECEIVED. IT IS EXPECTED THAT EACH PARTY WILL BE PROACTIVE IN REACHING OUT TO THE OTHER PARTY. IF CONTACT INFORMATION IS NOT KNOWN, CONTACT YOUR FORESITE GROUP POINT OF CONTACT (POC).
5. REFER TO CCR-01: CONTRACTOR CLOSEOUT REQUIREMENTS FOR FURTHER DETAILS AND REQUIREMENTS.

MI INSPECTOR:

1. THE MI INSPECTOR IS REQUIRED TO CONTACT THE GC AS SOON AS RECEIVING A PO FOR THE MI TO, AT A MINIMUM:
   - REVIEW THE REQUIREMENTS OF THE MI CHECKLIST
   - WORK WITH THE GC TO DEVELOP A SCHEDULE TO CONDUCT ON-SITE INSPECTIONS, INCLUDING FOUNDATION INSPECTIONS
2. THE PCI INSPECTOR IS RESPONSIBLE FOR COLLECTING ALL GENERAL CONTRACTOR (GC) INSPECTION AND TEST REPORTS, REVIEWING THE DOCUMENTS AND ADHERENCE TO THE CONTRACT DOCUMENTS, CONDUCTING THE IN-FIELD INSPECTIONS, AND SUBMITTING THE MI REPORT TO FORESITE GROUP.

CORRECTIONS OF FAILING MI's:

1. IF THE MODIFICATION INSTALLATION WOULD FAIL THE MI ("FAILED MI"), THE GC SHALL WORK WITH FORESITE GROUP TO COORDINATE A REMEDIATION PLAN IN ONE OF TWO WAYS:
   - CORRECT FAILING ISSUES TO COMPLY WITH THE SPECIFICATIONS CONTAINED IN THE ORIGINAL CONTRACT DOCUMENTS AND COORDINATE A SUPPLEMENTAL MI.
   - OR, WITH FORESITE GROUP'S APPROVAL, THE GC MAY WORK WITH THE EOR TO RE-ANALYZE THE MODIFICATION/REINFORCEMENT USING THE AS-BUILT CONDITION.

REQUIRED PHOTOS:

1. BETWEEN THE GC AND THE MI INSPECTOR THE FOLLOWING PHOTOGRAPHS, AT A MINIMUM, ARE TO BE TAKEN AND INCLUDED IN THE MI REPORT:
   - PRECONSTRUCTION GENERAL SITE CONDITION
   - PHOTOGRAPHS DURING THE REINFORCEMENT MODIFICATION CONSTRUCTION/ERECTION AND INSPECTION
     - RAW MATERIALS
     - PHOTOS OF ALL CRITICAL DETAILS
     - WELD PREPARATION (IF REQUIRED)
     - BOLT INSTALLATION AND TORQUE
     - FINAL INSTALLED CONDITION
     - SURFACE COATING REPAIR
   - POST CONSTRUCTION PHOTOGRAPHS
     - FINAL INFIELD CONDITION
2. PHOTOS OF ELEVATED MODIFICATIONS TAKEN FROM THE GROUND SHALL BE CONSIDERED INADEQUATE.

MODIFICATION INSPECTION NOTES

1. ALL REPAIRS SHALL BE PERFORMED BY A TOWER CONTRACTOR WITH A MINIMUM 5 YEARS EXPERIENCE IN TOWER ERECTION AND RETROFIT AND WITH WORKING KNOWLEDGE OF THE ANSI/TIA-222-G "STRUCTURAL STANDARD FOR ANTENNA SUPPORTING STRUCTURES AND ANTENNAS".
2. CONTRACTOR IS RESPONSIBLE FOR ALL CONSTRUCTION MEANS AND METHODS. SHOULD THE CONTRACTOR REQUIRE DIRECT CONSULTATION, FORESITE GROUP IS WILLING TO OFFER SERVICES BASED UPON AN AGREED UPON FEE FOR THE WORK REQUIRED.
3. ALL SUBMITTAL INFORMATION MUST BE SENT TO FORESITE GROUP, 3740 DAVINCI COURT, SUITE 100, PEACHTREE CORNERS, GA 30092, TEL. (770) 368-1399, EMAIL GREYNOLDS@FG-INC.NET. ANY VARIATION OF THESE SPECIFICATIONS OR DRAWINGS WITHOUT CONSENT FROM FORESITE GROUP WILL VOID ANY RESPONSIBILITY OR LIABILITY FOR DAMAGE (MATERIAL OR PHYSICAL) TOWARDS FORESITE GROUP
4. ALL CONSTRUCTION TO BE IN ACCORDANCE WITH THE TIA-1019-A STANDARD.

JOB SITE SAFETY & NOTES:

1. NEITHER THE PROFESSIONAL ACTIVITIES OF FORESITE GROUP NOR THE PRESENCE OF FORESITE GROUP OR EMPLOYEES AND SUB-CONSULTANTS AT THE CONSTRUCTION SITE, SHALL RELIEVE THE GENERAL CONTRACTOR AND OR SUBCONTRACTORS AND ANY OTHER ENTITY OF THEIR OBLIGATIONS, DUTIES AND RESPONSIBILITIES INCLUDING, BUT NOT LIMITED TO, CONSTRUCTION MEANS, METHODS, SEQUENCE, TECHNIQUES OR PROCEDURES NECESSARY FOR PERFORMING, SUPERINTENDING OR COORDINATING ALL PORTIONS OF THE WORK OF CONSTRUCTION IN ACCORDANCE WITH THE CONTRACT DOCUMENTS AND ANY HEALTH OR SAFETY PRECAUTIONS REQUIRED BY ANY REGULATORY AGENCIES. THE GENERAL CONTRACTOR AND OR SUBCONTRACTOR IS SOLELY RESPONSIBLE FOR JOB SAFETY, AND WARRANTS THAT THIS INTENT IS EVIDENT BY ACCEPTING THIS WORK.

GENERAL NOTES

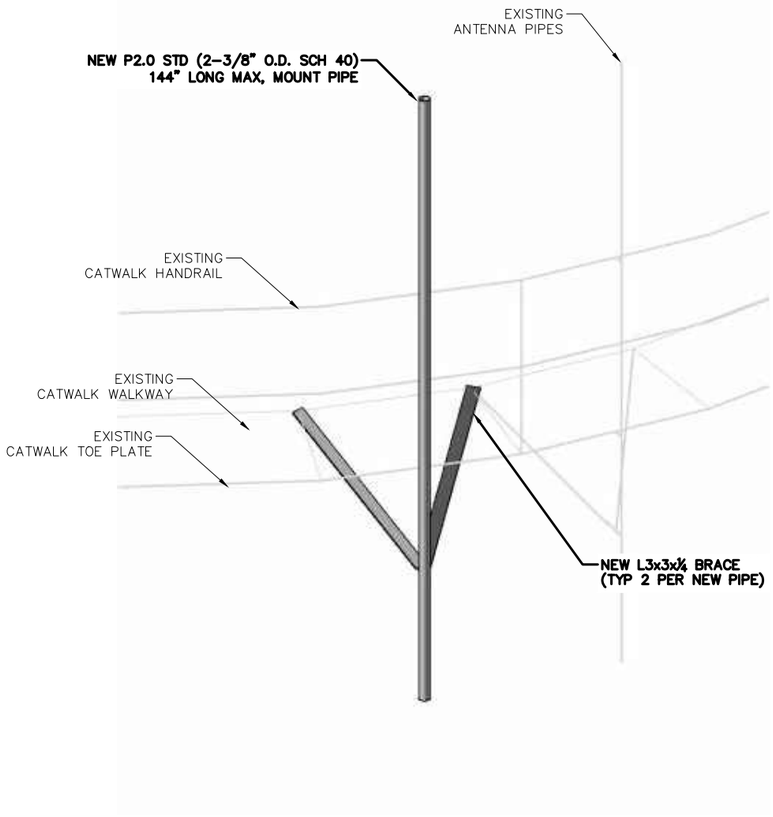
1. ALL DIMENSIONS TO, OF, AND ON EXISTING STRUCTURES, SHALL BE VERIFIED IN FIELD BY CONTRACTOR WITH ALL DISCREPANCIES REPORTED TO THE ENGINEER.
2. DO NOT CHANGE SIZE NOR SPACING OF STRUCTURAL ELEMENTS.
3. DETAILS SHOWN ARE TYPICAL AND SIMILAR DETAILS APPLY TO SIMILAR CONDITIONS UNLESS OTHERWISE NOTED.
4. THESE DRAWINGS DO NOT INCLUDE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY.
5. BRACE STRUCTURES UNTIL ALL STRUCTURAL ELEMENTS NEEDED FOR TEMPORARY BRACING ARE INSTALLED.
6. DETERMINE EXACT LOCATION OF EXISTING UTILITIES, VENTS, ETC. BEFORE COMMENCING WORK.
7. INCORRECTLY FABRICATED, DAMAGED, OR OTHERWISE MISFITTING OR NONCONFORMING MATERIALS OR CONDITIONS SHALL BE REPORTED TO THE OWNER PRIOR TO REMEDIAL OR CORRECTIVE ACTION. ANY SUCH ACTION SHALL REQUIRE APPROVAL.
8. EACH CONTRACTOR SHALL COOPERATE WITH THE OWNER'S REPRESENTATIVE, AND COORDINATE HIS WORK WITH THE WORK OF OTHERS.

DESIGN DATA

1. TIA-222, REVISION H
- 3-SECOND GUST WIND SPEED WITH NO ICE OF 111 MPH (JEFFERSON COUNTY, WEST VIRGINIA)
- 3-SECOND GUST WIND SPEED OF 30 MPH WITH 1.0" RADIAL ICE

STRUCTURAL STEEL NOTES

1. STRUCTURAL STEEL SHALL CONFORM TO THE LATEST EDITION OF THE AISC "SPECIFICATION FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS".
2. STRUCTURAL STEEL ANGLES AND PLATES SHALL CONFORM TO ASTM A36 WITH MIN. YIELD STRENGTH OF 36 KSI.
3. STRUCTURAL STEEL PIPES SHALL CONFORM TO ASTM A53 GR.B WITH MIN. YIELD STRENGTH OF 35 KSI.
4. ALL EXTERIOR STEEL WORK SHALL BE GALVANIZED IN ACCORDANCE WITH SPECIFICATIONS AFTER SHOP FABRICATION TO THE GREATEST EXTENT POSSIBLE. ALL DINGS, SCRAPES, MARS, AND WELDS IN THE GALVANIZED AREAS SHALL BE REPAIRED BY FIELD TOUCH-UP PRIOR TO COMPLETION OF THE WORK.
5. DO NOT PLACE HOLES THROUGH STRUCTURAL STEEL MEMBERS EXCEPT AS SHOWN AND DETAILED ON STRUCTURAL DRAWINGS.
6. CONNECTIONS:
   A. ALL WELDING SHALL BE DONE USING E70XX ELECTRODES AND WELDING SHALL CONFORM TO AISC AND AWS D1.1. WHERE FILLET WELD SIZES ARE NOT SHOWN, PROVIDE THE MINIMUM SIZE PER TABLE J2.4 IN THE AISC "MANUAL OF STEEL CONSTRUCTION ", 9TH EDITION. AT THE COMPLETION OF WELDING, ALL DAMAGE TO GALVANIZED COATING SHALL BE REPAIRED.
   B. BOLTED CONNECTIONS SHALL USE BEARING TYPE GALVANIZED ASTM A325 BOLTS.
   C. CONNECTION DESIGN BY FABRICATOR WILL BE SUBJECT TO REVIEW AND APPROVAL BY ENGINEER.
7. PAINT ALL CUTS, WELDS AND DRILLED HOLES, WITH (2) COATS OF ZINC RICH PAINT.



1 HANDRAIL MOUNT IMPROVEMENT
NOT TO SCALE — ISOMETRIC VIEW

PLANS PREPARED FOR:
T-Mobile
15 COMMERCE WAY, SUITE B
NORTON, MA 02766

PROJECT MANAGER:
SITE LINK

PLANS PREPARED BY:
FORESITE group

DRAWING NOTICE:
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ENGINEERING LICENSE:
JAMES C. MAROONEY
REGISTERED
24065
STATE OF
WEST VIRGINIA
PROFESSIONAL ENGINEER
10/21/21

PROJECT:
CHARLES TOWN, WV
7HCH193A
LOCATED AT:
215 EAST 6TH AVE
RANSON, WV 25438

REVISIONS	DATE

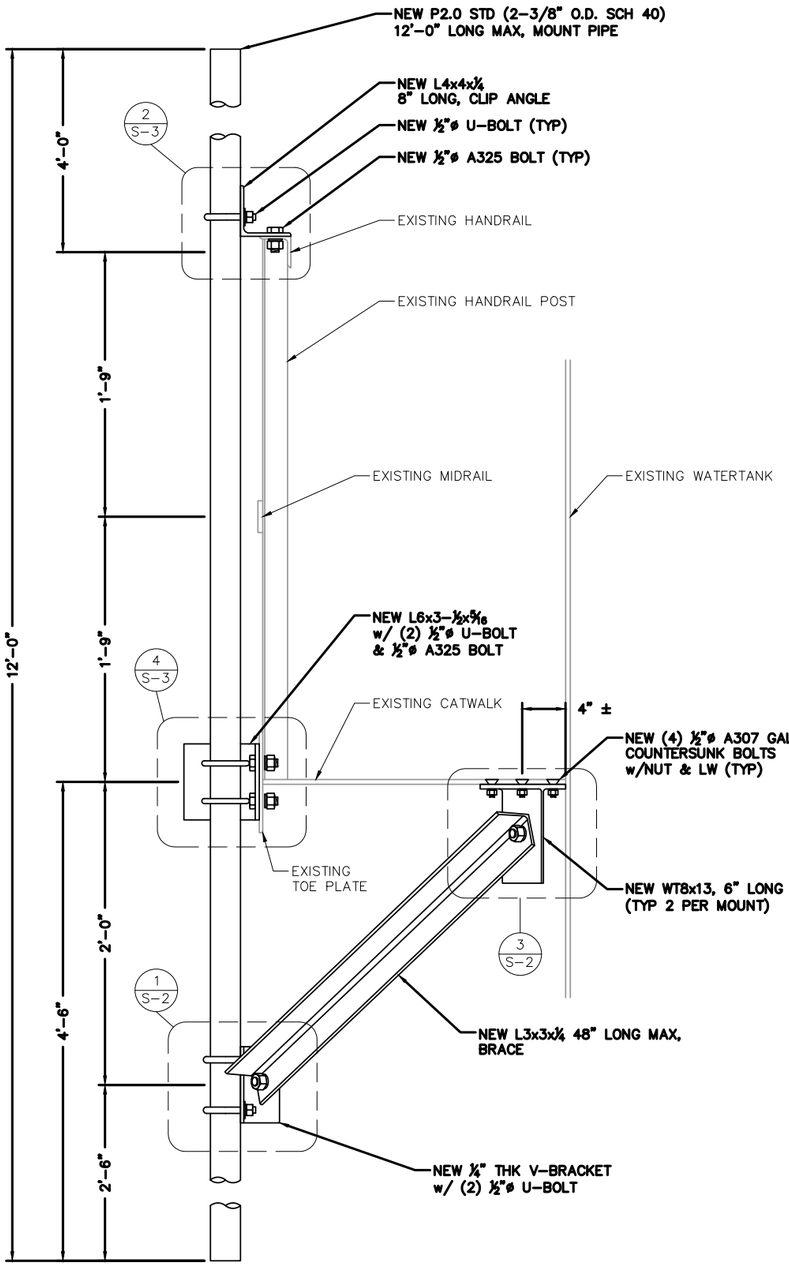
ISSUED FOR:	CONTRUCTION
PROJECT MANAGER:	JCM
DRAWING BY:	FDC
DATE:	10/20/2021
TITLE:	

HANDRAIL MOUNT IMPROVEMENT

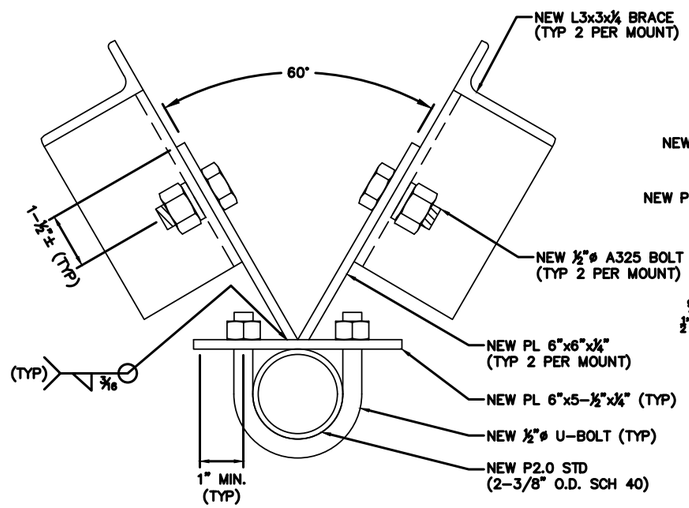
SHEET NUMBER:	S-1
JOB/FILE NUMBER:	1485.002

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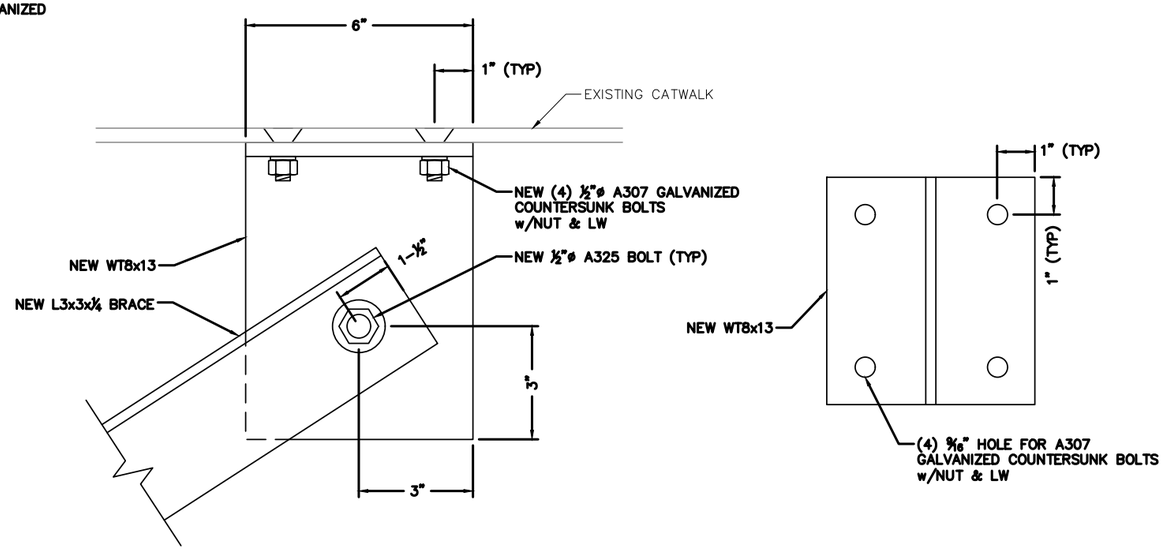
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1 HANDRAIL MOUNT (SECTION VIEW)
NOT TO SCALE



2 LOWER BRACE CONNECTION DETAILS
NOT TO SCALE



3 UPPER BRACE CONNECTION DETAILS
NOT TO SCALE

PLANS PREPARED FOR:
T-Mobile
15 COMMERCE WAY, SUITE B
NORTON, MA 02766

PROJECT MANAGER:
SITE LINK

PLANS PREPARED BY:
FORESITE group

DRAWING NOTICE:
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ENGINEERING LICENSE:
JAMES C. MAROONEY
REGISTERED
24065
STATE OF
WEST VIRGINIA
PROFESSIONAL ENGINEER
10/21/21

PROJECT:
CHARLES TOWN, WV
7HCH193A
LOCATED AT:
215 EAST 6TH AVE
RANSON, WV 25438

REVISIONS	DATE

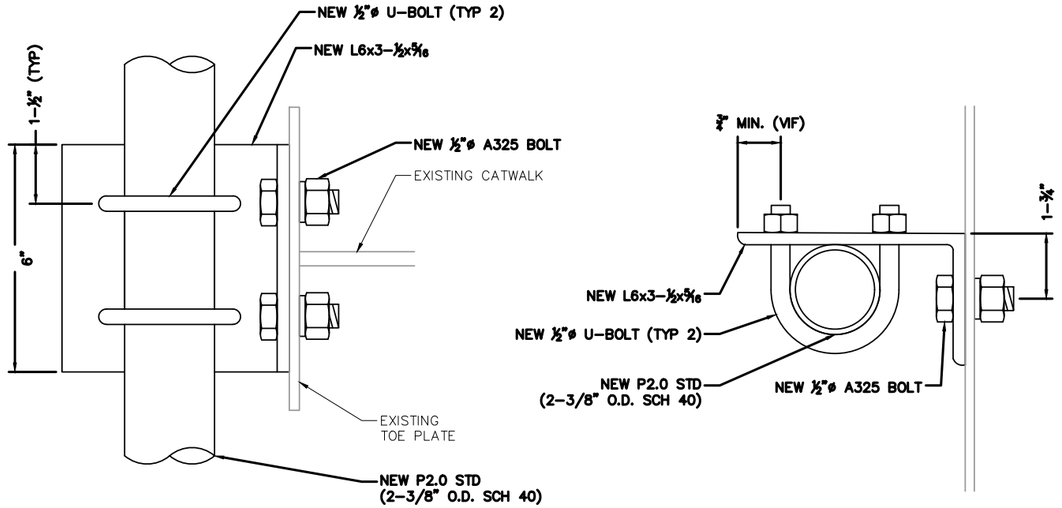
ISSUED FOR:	CONTRUCTION
PROJECT MANAGER:	JCM
DRAWING BY:	FDC
DATE:	10/20/2021
TITLE:	

HANDRAIL MOUNT IMPROVEMENT DETAILS

SHEET NUMBER:	S-2
JOB/FILE NUMBER:	1485.002

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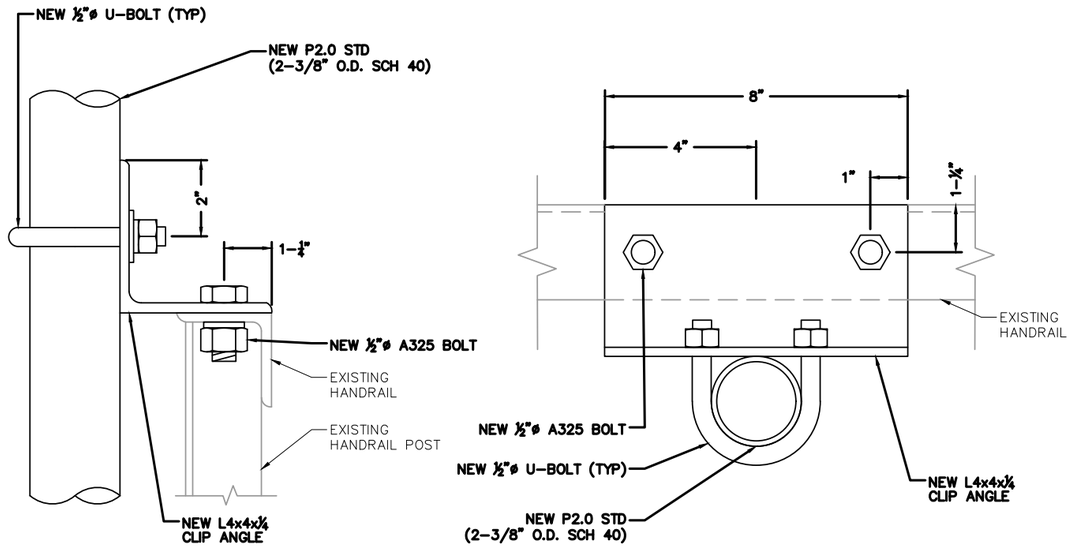


ELEVATION VIEW PLAN VIEW

1 LOWER PIPE CONNECTION DETAILS
NOT TO SCALE

BILL OF MATERIALS			
QUANTITY	PART	PART SIZE	ESTIMATED PART LENGTH*
6	ANGLE BRACE	L3x3x¼	48"±
3	ANTENNA PIPE	P2.0 STD (2-3/8" O.D. SCH 40)	144"±
3	CLIP ANGLE	L6x3-½x5⁄16	6"±
3	CLIP ANGLE	L4x4x¼	8"±
3	V-BRACKET	(2) PL6x6x¼ & (1) PL6x5-½x¼**	N/A
6	UPPER BRACKET CONNECTION	WT8x13	6"±
15	½"ø U-BOLT	N/A	N/A
24	½"ø A325 BOLT	N/A	N/A
24	½"ø A307 GALVANIZED COUNTERSUNK BOLTS	N/A	N/A

*NOTE: CONTRACTOR TO FIELD VERIFY LENGTH NEEDED
**NOTE: SEE DETAIL 2/S-2



ELEVATION VIEW PLAN VIEW

2 UPPER PIPE CONNECTION DETAILS
NOT TO SCALE

PLANS PREPARED FOR:
T-Mobile
15 COMMERCE WAY, SUITE B
NORTON, MA 02766

PROJECT MANAGER:
SITE LINK

PLANS PREPARED BY:
FORESITE group

DRAWING NOTICE:
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ENGINEERING LICENSE:
JAMES C. MAROONEY
REGISTERED
24065
STATE OF
WEST VIRGINIA
PROFESSIONAL ENGINEER
10/21/21

PROJECT:
CHARLES TOWN, WV
7HCH193A
LOCATED AT:
215 EAST 6TH AVE
RANSON, WV 25438

REVISIONS	DATE

ISSUED FOR:	CONTRUCTION
PROJECT MANAGER:	JCM
DRAWING BY:	FDC
DATE:	10/20/2021
TITLE:	

HANDRAIL MOUNT IMPROVEMENT DETAILS

SHEET NUMBER:	S-3
JOB/FILE NUMBER:	1485.002

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Vac Truck Purchase Analysis				
		CTUB Vac Truck - Vactor 2013		**Possible Purchase - Vactor 2010**
Year		2005		2002
Mileage		23,504		59,192
Purchase price		$143,000		
Engine		190 HP		300 HP
Hose Reel		500 feet		600 feet
Hose Reel Controls		One side		Dual side
Vacuum System		2,100 cfm's		5,000 cfm's
Debris body		3.5 yard		10 yard

**Existing Sludge Truck at water plant should be auctioned or salvaged based on condition. 1994 with 275,789 miles.

Other considerations:

Taylor's hauling
(Not including price increases and increased hauling from water plant in 2022)

2020	$70,998.43
2021	$71,230.21

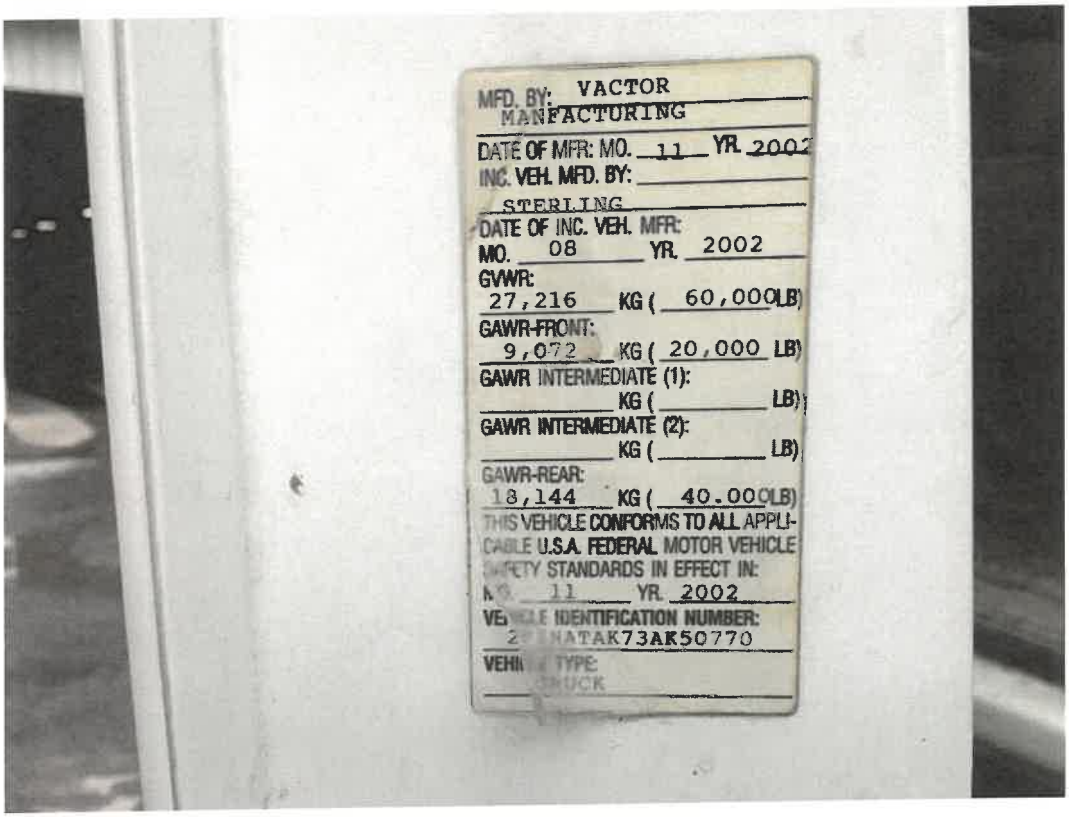
CDL drivers

A new truck purchase of size proposed above will require CTUB to have licensed CDL drivers. Several employees have already expressed interest in this.








MFD. BY: VACTOR MANFACTURING
DATE OF MFR: MO. 11 YR. 2002
INC. VEH. MFD. BY: STERLING
DATE OF INC. VEH. MFR: MO. 08 YR. 2002
GVWR: 27,216 KG (60,000 LB)
GAWR-FRONT: 9,072 KG (20,000 LB)
GAWR INTERMEDIATE (1): KG (LB)
GAWR INTERMEDIATE (2): KG (LB)
GAWR-REAR: 18,144 KG (40,000 LB)
THIS VEHICLE CONFORMS TO ALL APPLICABLE U.S.A. FEDERAL MOTOR VEHICLE SAFETY STANDARDS IN EFFECT IN: MO. 11 YR. 2002
VEHICLE IDENTIFICATION NUMBER:
2 NATAK73AK50770
VEHICLE TYPE: TRUCK


STOP
NOTICE

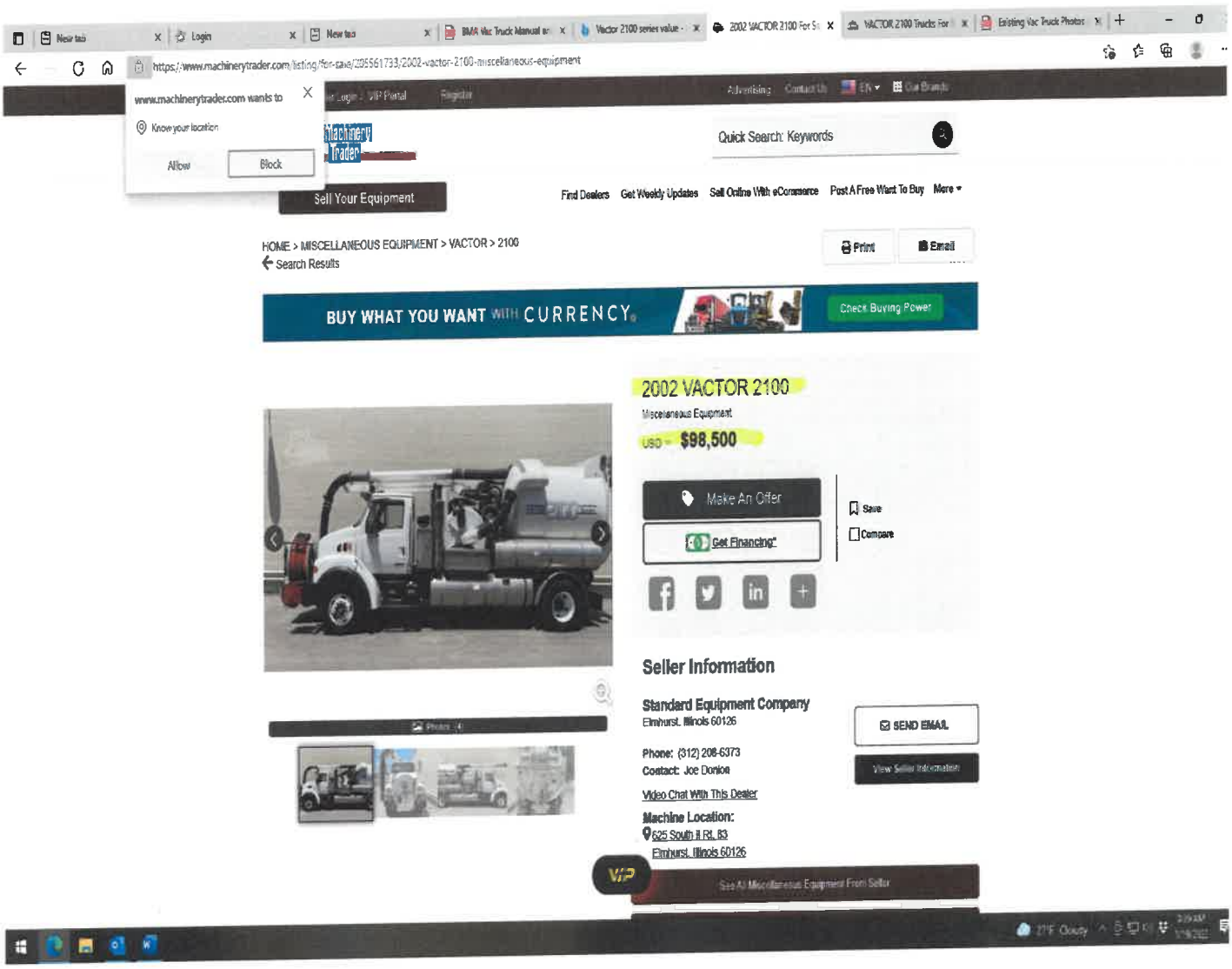

59 192.0
MI
3.9 VOLTS
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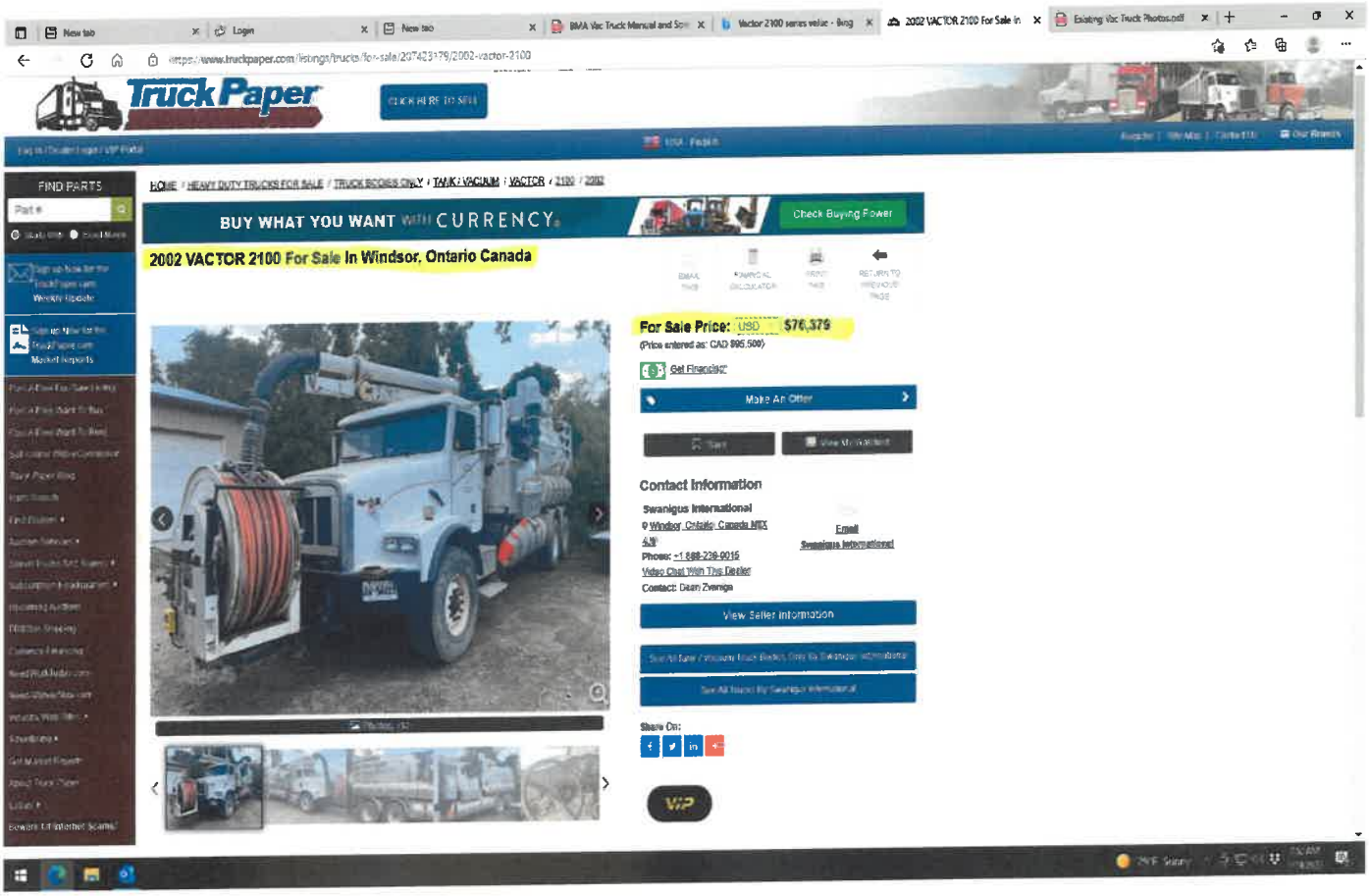


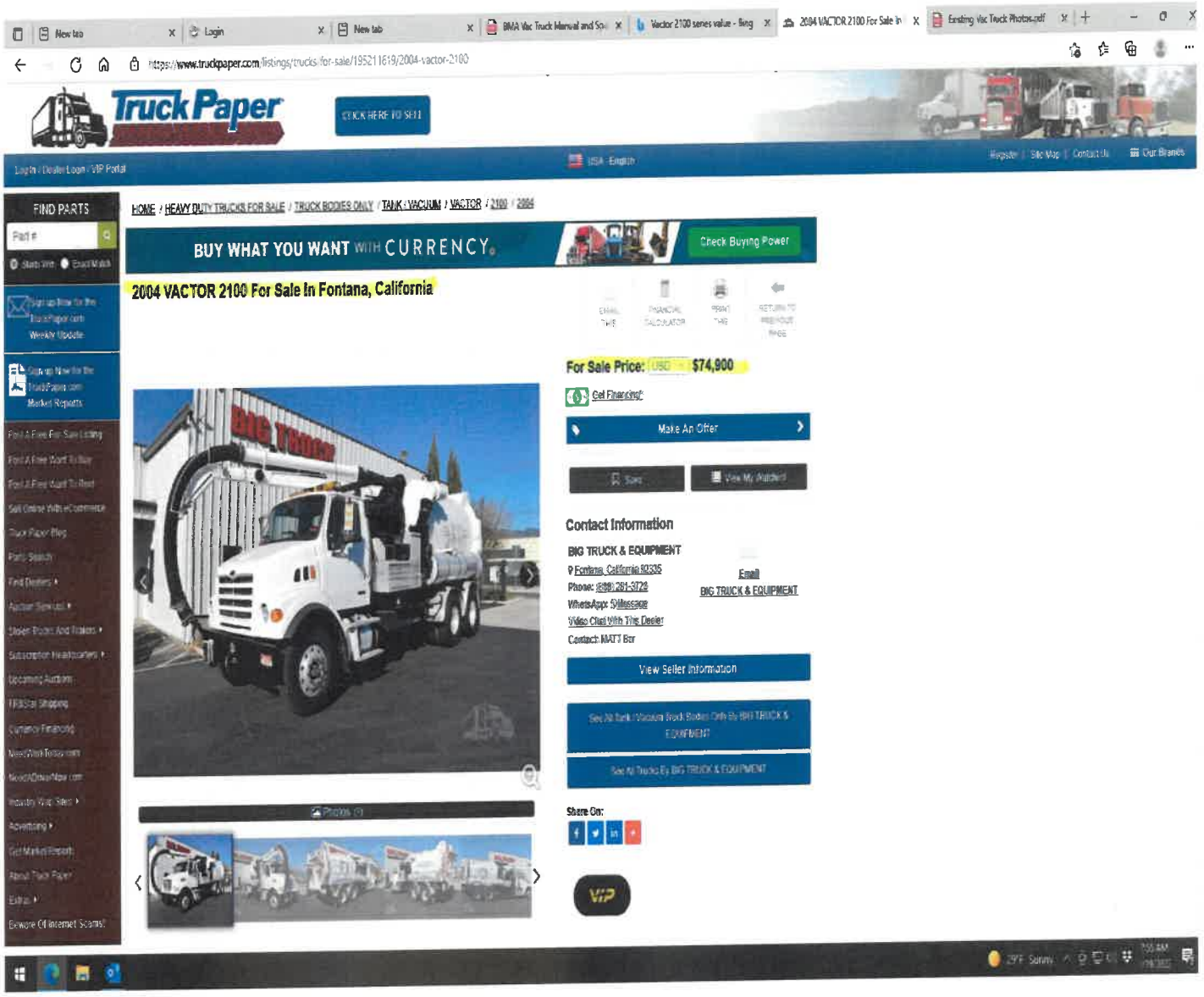
VACTOR®

Vactor 2100 Centrifugal Compressor/Positive Displacement

1124
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Find Dealers
Get Weekly Updates
Sell Online With eCommerce
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Check Buying Power
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Miscellaneous Equipment
USD - $98,500
Make An Offer
Get Financing*
Save
Compare
Seller Information
Standard Equipment Company
Elmhurst, Illinois 60126
Phone: (312) 208-6373
Contact: Joe Donion
Video Chat With This Dealer
Machine Location:
625 South Il Rt. 83
Elmhurst, Illinois 60126
SEND EMAIL
View Seller Information
See All Miscellaneous Equipment From Seller


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FIND PARTS
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BUY WHAT YOU WANT WITH CURRENCY.
Check Buying Power
2002 VACTOR 2100 For Sale In Windsor, Ontario Canada
For Sale Price: USD $76,379
(Price entered as: CAD 995,500)
Get Financing*
Make An Offer
Contact Information
Swanigus International
9 Windsor, Ontario, Canada N8S 4J9
Phone: +1 888-239-9015
Video Chat With This Dealer
Contact: Dean Zwanga
Email
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For Sale Price: $74,900
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Make An Offer
Save
View My Watchlist
Contact Information
BIG TRUCK & EQUIPMENT
Fontana, California 92335
Phone: (909) 281-3726
WhatsApp: Message
Video Chat With This Dealer
Contact: MATT Bir
Email
BIG TRUCK & EQUIPMENT
View Seller Information
See All Tank / Vacuum Truck Bodies Only By BIG TRUCK & EQUIPMENT
See All Trucks By BIG TRUCK & EQUIPMENT
Share On:
VIP

Charles Town
Utility Board
661 S. George Street, Suite 101 Charles Town, WV 25414
Phone: (304) 725-2316 ♦ Fax: (304) 725-7150 ♦ Web: www.ctubwv.com

MEMORANDUM TO THE BOARD OF DIRECTORS

FROM: Kristen Stolipher, Utility General Manager
SUBJECT: Utility General Manager's Report
DATE: January 26, 2022

ADMINISTRATIVE

- Utility Billing Clerk interviews
- Audit update

WATER

- Source Water Protection Grant award - $11,080.43

SEWER

- 2022 Collection System Project/Renewal and Replacement Project updates
  - City Council meeting February 7, 2022 – Second Reading and Public Hearing
  - Customer Notice re-sent for delivery week of January 24th through 28th.

- Sewer Capacity Improvement Fees
  - City Council forwarded CTUB recommend CIF value of $2,930 to the Ordinance Committee for review and approval at Council meeting on January 18, 2022.

- Distressed Utility Updates
  - Case No. 21-0260-S-P – Shenandoah Junction Public Sewer
  - Case No. 21-0818-S-P - Cave Road Utilities, LLC.

VENDOR SORT KEY	DESCRIPTION	FUND	DEPARTMENT	AMOUNT

========== FUND TOTALS ==========	
50 WATER FUND	33,214.55
60 SEWER FUND	56,085.36
GRAND TOTAL:	89,299.91

TOTAL PAGES: 3

APPROVED BY: _____

APPROVED BY: _____

This Packet: $ 89,299.91

D.Frye (reimb hldyinn), check dated 1/14/2022: 259.88

Total: $ 89,559.79

Note:

Highlighted invoice for the R&R Project;

Highlighted invoice for the Collection System Project

VENDOR SORT KEY	DESCRIPTION	FUND	DEPARTMENT	AMOUNT
PACE ANALYTICAL SERVICES, LLC	TESTING: CT MNTHLY	SEWER FUND	SEWER	230.00
	TESTING: CT WKLY	SEWER FUND	SEWER	186.00
	TESTING: CT INDSTRL	SEWER FUND	SEWER	45.26
			TOTAL:	461.26
RK & K ENGINEERS	TO5 SEWER MODEL	SEWER FUND	NON-DEPARTMENTAL	2,484.75
	TO12FOREST AVE/FAIRFAX CRS	SEWER FUND	NON-DEPARTMENTAL	2,621.47
	TO18 WNDY'S PS UPGRADE	SEWER FUND	NON-DEPARTMENTAL	2,256.43
	TO19 2021 CLLCTNSYSTM PRJC	SEWER FUND	NON-DEPARTMENTAL	10,114.14
			TOTAL:	17,476.79
ROSS H BARE	SVCCLL WWTP: ACTUATOR TNK3	SEWER FUND	SEWER	1,060.00
			TOTAL:	1,060.00
PHONETICS, INC	GH/CAVALAND ETHERNET RNWL	WATER FUND	WATER	142.80
			TOTAL:	142.80
GERALD TAYLOR CO., INC.	VAC / TRANSPORT	WATER FUND	WATER	548.34
	VAC / TRANSPORT	WATER FUND	WATER	230.88
	VAC / TRANSPORT	WATER FUND	WATER	230.88
	PUMP / TRANSPORT	WATER FUND	WATER	721.50
	PUMP / TRANSPORT	SEWER FUND	SEWER	514.80
	SLUDGE PUMP / TRANSPORT	SEWER FUND	SEWER	514.80
			TOTAL:	2,761.20
THE CI THORNBURG CO, INC.	CRO 5/8" SRIITRPL 100G CNV	WATER FUND	WATER	2,436.18
	SMART POINTS	WATER FUND	WATER	9,790.59
	CHLORINE	WATER FUND	WATER	1,378.00
			TOTAL:	13,604.77
UNITED BANK	ANNUAL FEE 1/01/21 - 12/31	WATER FUND	WATER	50.00
			TOTAL:	50.00
USA BLUEBOOK	BUFFERS	SEWER FUND	SEWER	174.27
			TOTAL:	174.27
WINCHESTER METALS, INC	GATE@ WILLOWSPRINGS PS	SEWER FUND	SEWER	1,908.99
			TOTAL:	1,908.99
WV RURAL WATER ASSOCIATION	VOTING DUES	WATER FUND	WATER	2,500.00
	VOTING DUES	SEWER FUND	SEWER	2,500.00
			TOTAL:	5,000.00
WV WATER DEVELOPMENT AUTHORITY	#2017-175 INFRSTRCTR FNDPR	SEWER FUND	NON-DEPARTMENTAL	400.75
			TOTAL:	400.75

VENDOR SORT KEY	DESCRIPTION	FUND	DEPARTMENT	AMOUNT
AUTOZONE	WATER TRUCK MOTOR OIL	WATER FUND	WATER	6.36
			TOTAL:	6.36
CHARLES TOWN SEWER	DECEMBER FUNDING	SEWER FUND	NON-DEPARTMENTAL	13,471.24
			TOTAL:	13,471.24
CHARLES TOWN WATER	DECEMBER FUNDING	WATER FUND	NON-DEPARTMENTAL	8,661.49
			TOTAL:	8,661.49
CITY ELECTRIC SUPPLY CO	FOR NEW AIRCOMPRESSOR@ PLA	SEWER FUND	SEWER	482.25
			TOTAL:	482.25
CORE & MAIN	RT51 BRK 6" LNE	WATER FUND	WATER	920.28
	C86-33NL 3/4" NO LEAD CPLG	WATER FUND	WATER	60.14
	RT51 BRK 6" LNE	WATER FUND	WATER	249.98
			TOTAL:	1,230.40
DEWBERRY ENGINEERS INC	TO3 CAPITAL IMPVMNT PLANNI	SEWER FUND	SEWER	10,755.00
			TOTAL:	10,755.00
WV DEPT OF HEALTH & HUMAN SERVICES	BACTERIOLOGICAL TEST	WATER FUND	WATER	120.00
			TOTAL:	120.00
EAST MOUNTAIN HEALTH PHYSICIANS, INC	B.C. SCREENING 12/27/21	SEWER FUND	SEWER	20.00
			TOTAL:	20.00
EXCEL COMMUNICATIONS	VRFY 2022 HOLIDAY SCHEDULE	WATER FUND	WATER	37.50
	VRFY 2022 HOLIDAY SCHEDULE	SEWER FUND	SEWER	37.50
			TOTAL:	75.00
JOSEPH FREEZE JR	REIMB WVRWA CLASS	SEWER FUND	SEWER	390.00
			TOTAL:	390.00
GUTTMAN ENERGY	W/E 1/09/22	WATER FUND	WATER	442.02
	W/E 1/16/22	WATER FUND	WATER	775.66
	W/E 1/09/22	SEWER FUND	SEWER	677.76
	W/E 1/16/22	SEWER FUND	SEWER	1,486.00
			TOTAL:	3,381.44
HACH COMPANY	WTP CHEMICALS	WATER FUND	WATER	1,973.07
	PHOSVER	SEWER FUND	SEWER	128.95
			TOTAL:	2,102.02
INWOOD QUARRY, INC.	C2 PICKUPS: 1/13/22	WATER FUND	WATER	639.68
			TOTAL:	639.68
J.C. KUNKLE & ASSOCIATES, A.C.	PROFF SVCS 12/01 - 12/31/2	WATER FUND	WATER	1,050.00
	PROFF SVCS 12/01 - 12/31/2	SEWER FUND	NON-DEPARTMENTAL	850.00
	PROFF SVCS 12/01 - 12/31/2	SEWER FUND	NON-DEPARTMENTAL	862.50
	PROFF SVCS 12/01 - 12/31/2	SEWER FUND	NON-DEPARTMENTAL	862.50
	PROFF SVCS 12/01 - 12/31/2	SEWER FUND	SEWER	1,050.00
			TOTAL:	4,675.00
MISS UTILITY OF WV, INC.	MESSAGE FEES: DEC	WATER FUND	WATER	249.20
			TOTAL:	249.20