



Lake Geneva Utility Commission

MUNICIPAL WATER AND WASTEWATER SERVICES

361 W Main Street
P.O. Box 187
Lake Geneva, WI 53147
262-248-2311
www.lgutilitycommission.com

Dennis Lyon – President
Josh Gajewski – Utility Director
Jeff Ecklund – Water Superintendent
Ken Bauman Wastewater Superintenden

LAKE GENEVA UTILITY COMMISSION MONDAY FEBRUARY 21, 2022 4:00 PM COUNCIL CHAMBERS - CITY HALL, 626 GENEVA STREET

CITY HALL WILL BE OPEN TO THE PUBLIC DURING ALL MEETINGS. MEETINGS WILL BE HELD VIRTUALLY AS WELL AS IN PERSON. IF YOU WISH TO LISTEN OR WATCH THE MEETING YOU MAY DO SO BY USING THE FOLLOWING:

1. Links to the Lake Geneva Utility Commission's live video stream can be found at www.cityoflakegeneva.com/video
2. Television: Watch live broadcast of the meeting on Spectrum Cable Channel 25
3. Listen to audio via phone: (602) 333-2017 (Long distance rates may apply) (888) 204-5987 (Toll Free) **Access Code: 9746153**

AGENDA

1. Call Meeting to Order
2. Roll Call
3. Comments from the public as allowed by Wis. Statutes §19.84 (2), limited to items on this agenda except for public hearing items. Comments will be limited to 5 minutes.
4. Approve Utility Commission Minutes from January 17, 2022 as prepared and distributed
5. Acknowledgement of Correspondence
6. Approval of January 2022 Financials
7. Approval of the January 2022 Bills
8. Directors Report
9. Discussion/Action on proposal by T-Mobile/Sprint for alterations to facilities located at the Host Dr. Tower
10. Discussion/Action on proposal by T-Mobile/Sprint for alterations to facilities located at the Dodge St. Tower
11. Discussion on scope of work for upcoming sanitary sewer main CCTV work
12. Discussion/Action on project scope and engineering for Cemetery Road water and sewer extensions
13. Motion to go into closed session pursuant to Wis. Stat. 19.85(1)(g) for conferring with legal counsel for the governmental body who is rendering oral or written advice concerning strategy to be adopted by the body with respect to litigation in which it is or is likely to become involved regarding **claim against IV Networks Inc.**
14. Motion to return to open session pursuant to Wisconsin Statutes 19.85(2) and take action on any items discussed in closed session.
15. Adjourn

**Lake Geneva Utility Commission Minutes
Lake Geneva Utility Commission Meeting
Monday January 17, 2022, 4:00pm
Council Chambers, City Hall – 626 Geneva St**

THIS MEETING WAS HELD BOTH VIRTUALLY AND IN PERSON

Call Meeting to Order – President Lyon called the meeting to order at 4pm

Roll Call – Lyon, Klein, Flower, Binn & Stanczak

Staff in Attendance – Gajewski & Busch

Comments from the public as allowed by Wis. Statutes §19.84 (2), limited to items on this agenda except for public hearing items. Comments will be limited to 5 minutes.
None

Approve Utility Commission minutes from December 20, 2021, and December 30, 2021, as prepared & distributed
Klein/Binn motion to approve. Passed 5-0

Acknowledgement of correspondence
None

Approval of the December 2021 Financials
Discussion was had on the actual revenue numbers for the water utility compared to the 2021 budgeted amount.
Klein/Binn motion to approve. Passed 5-0.

Approval of the December 2021 Bills
Discussion was had on the invoice from Lane Tank being included in the bills. Gajewski said there were no changes to the scope of work or the approved amount for the reservoir work, but the invoice did include an inspection of reservoir 1 so he listed it as an agenda item in case there were any questions on that.
Binn/Stanczak motion to approve the December 2021 bills. Passed 5-0.

Directors Report
Gajewski gave an overview of the submitted Director's report.
Flower/ Binn motion to approve the Directors Report. Passed 5-0.

Discussion/Action on payment to Lane Tank Co., for interior coating work completed on Reservoir #3 – Project 21-03
Since the bill list had been approved and the Lane Tank invoice was included on it, no further action was taken.

Discussion/Action on water & sanitary sewer service provided to the Oak Terrace area
Gajewski gave an overview of the history of the Oak Terrace utilities, which was also in his memo in the packet. The easements need to be defined and recorded and Gajewski is looking for input from the Commission to confirm that everything beyond the 2" main is private as was determined in the past. There are water services running through sewer manholes which is a health hazard and could mean the

homes would be deemed unsafe and uninhabitable. The different options available to fix the problems were discussed, including how much authority the Utility has to do the repairs and charge the cost back to the homeowners. It was felt that Gajewski should go forward with getting the easement that gives us access to our water main signed and recorded. He should continue conversation with the homeowners in Oak Terrace and talk with the City Attorney. This item will be brought back in February for more discussion.

No action taken.

Discussion/Action on application for sewer credit filed by Raymond & Colleen Egan – 1024 S Lakeshore Dr

Gajewski gave the background information behind the application for a sewer credit. The Utility policy is that a property can only be issued a sewer credit once every five years but as this is one event and has occurred due to a timing issue with meter reading for the fourth quarter bill, staff recommend approval. Flower/Binn motion to approve the sewer credit of \$323.90. Passed 5-0.

Discussion/Action on the purchase of replacement polymer feed system for dewatering process

Gajewski reported the operational issues being experienced with the current equipment which has reached the end of its useful life. If a direct replacement is done, we would not be required to undergo a facilities needs review by the DNR or an engineering design. There is only one local supplier for a direct replacement and this purchase was included in the 2022 budget.

Flower/Binn motion to approve the Energenecs proposal for the polymer feed system for \$62,162.16. Passed 5-0.

Discussion/Action on proposal by T-Mobile/Sprint for alterations to facilities located at the Host Dr Tower

Gajewski provided the history of this request and reported that Dixon Engineering has reviewed it and made recommendations. T-Mobile responded to the recommendations and Dixon reviewed the response as well. Now, T-Mobile are requesting that the Commission either approve their request or approve the recommendations of Dixon Engineering. They wish to upgrade their equipment but are using a previous structural analysis which does not take into account any changes made by other carriers since it was performed. Dixon are recommending a new full structural analysis be performed and staff would be in support of this, especially since there have already been three modifications to equipment on this tower since 2017. Discussion was had on requiring a full structural analysis every time a carrier wishes to modify their equipment. It was felt that this should be the standard procedure.

Binn/Flower motion to affirm the recommendations made by Dixon Engineering and table the approval of T-Mobile's project until all the items are resolved. Passed 5-0.

Discussion/Action on US Cellular preliminary proposal to relocate equipment to a monopole located at the Center St Tower

Gajewski reported that the Center St Tower is at its capacity for housing communication equipment. US Cellular have 3G/LTE equipment on the tower currently and need to upgrade for 5G. They are requesting the installation of a monopole which they would own and maintain but house on our property. They have a preferred location but are open to input from the Utility. Gajewski brought their plan review to the Development Review Committee and there was no objection to a monopole from them. This is really a first look to agree on a location. If the Commission agree to it, it may be possible to have the other carrier currently on the tower move their equipment to the monopole as well. This could be timely as the tower will need to be painted in the near future. Discussion was had on what a lease for the monopole would look like, how revenues would be affected and what other communities are doing. There was also concern regarding liabilities and whether there should be a height limit. The

Commission are not against the installation of a monopole but would like more information before making a decision.

No action taken.

Discussion/Action on Covenant Harbor PIP Amendment Application, razing of Triplets building and construction of Twins buildings

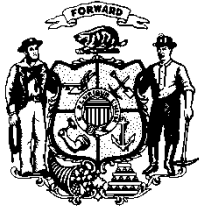
Gajewski said that this is still a fluid discussion and gave the history of the utilities in this location. Staff did a site visit last week when Covenant Harbor had a company out to try to locate their services and determine what size they are and which buildings they service. It was determined that they have a 1" service and this would not be sized adequately for future expansion. The need for a new water main is likely but we have to determine if it would become part of the public water system and be owned and maintained by the Utility or remain part of the private utilities in Covenant Harbor. The request from Covenant Harbor at this time is to use the section of 8" water main installed in 2015 and tie into that with a 3" service that would serve the twins and three other buildings to the east of there. There are a number of different things being discussed including that the carriage house was found to be unmetered since the last renovation. In the long run, there is the potential of using a mass meter to service them and their system would remain private with a defined area of ownership. As there is no formal submittal yet, no action was taken.

Adjourn

Flower/Klein motion to adjourn at 5:27pm. Passed 5-0.

/s/ Jo Busch, Office Manager

**THESE MINUTES ARE NOT OFFICIAL UNTIL APPROVED BY THE
LAKE GENEVA UTILITY COMMISSION**



Public Service Commission of Wisconsin

Rebecca Cameron Valcq, Chairperson
Ellen Nowak, Commissioner
Tyler Huebner, Commissioner

4822 Madison Yards Way
P.O. Box 7854
Madison, WI 53707-7854

January 20, 2022

Re: Threshold for Written Approval under Wis. Stat.
§ 196.52(3)(b)(1m)

5-AI-101

To All Wisconsin Electric, Natural Gas, Water, and Combined Water and Sewer Utilities:

Wisconsin Stat. § 196.52(3) requires the Commission's written approval of any contract or arrangement between a public utility and an affiliated interest if the amount of consideration involved exceeds \$250,000, or 5 percent of the equity of the public utility, whichever is smaller.

Wisconsin Stat. § 196.52(3)(b)1m. requires that the Commission adjust the \$250,000 threshold based on the most recent consumer price index (CPI) data every two years. Pursuant to this requirement, the Commission hereby updates the threshold to \$309,000. The threshold is calculated by multiplying \$250,000 by 1.235 (the ratio of the most recent CPI from the Bureau of Labor Statistics for December 31, 2021 to the index for the same category as of December 31, 2011) and rounding to the nearest thousand.

Please make a note of this change, as revised pages of the Wisconsin Administrative Code will not be printed or distributed each time the threshold is adjusted. Consistent with Wis. Stat. § 196.52(3)(b)1m., the adjusted threshold will be located via the Commission website at <https://psc.wi.gov/>. No other notification of this change will be made.

For questions regarding this matter, please contact Commission Public Utility Auditor Debra Probst at (608) 266-3708 or debra.probst@wisconsin.gov.

Sincerely,

Martin R. Day
Administrator
Division of Energy Regulation and Analysis

MRD:DAP:dsa;jlt:DL: 01849014

From: ucmr@epacdx.net
To: [Josh Gajewski](#)
Subject: RE: Medium PWS Registration for U.S. EPA's Fifth Unregulated Contaminant Monitoring Rule
Date: Sunday, January 23, 2022 9:55:41 AM

**CAUTION: This email originated from outside the organization.
Do not click links or open attachments unless you recognize the sender and know the content is safe.**

RE: Medium PWS Registration for U.S. EPA's Fifth Unregulated Contaminant Monitoring Rule

WI2650066 - LAKE GENEVA UTILITY COMMISSION

Your CRK is: **046038BF**

Dear Public Water System:

Our records indicate that your public water system (PWS) is subject to the requirements of the next [Unregulated Contaminants Monitoring Rule \(UCMR 5\)](#), published on December 27, 2021 (86 FR 73131). UCMR 5 requires certain PWSs to collect drinking water samples for 29 per- and polyfluoroalkyl substances (PFAS) and lithium analysis during a 12-month period between 2023 and 2025. This notification provides you with information to access the UCMR 5 internet-based reporting system, the Safe Drinking Water Accession and Review System (SDWARS 5), so that your account will be ready to support your pre-sampling and monitoring responsibilities.

The Safe Drinking Water Act (SDWA) requires the U.S. Environmental Protection Agency (EPA) to establish criteria for a program to monitor unregulated contaminants in drinking water and to identify contaminants to be monitored every five years. The UCMR dataset is one of the primary sources of information on occurrence and population exposure EPA uses to develop regulatory decisions for contaminants in the public drinking water supply.

SDWA was amended in 2018 and now specifies that, subject to the availability of appropriations, PWSs serving between 3,300 and 10,000 people as of February 1, 2021, including those that purchase all their water, are among the PWSs required to participate in UCMR. For any PWS serving 10,000 or fewer people, such as yours, EPA will pay for the cost of shipping the samples to an EPA-designated laboratory as well as the cost of analysis. Since EPA's ability to do so depends on future appropriation of funds, **EPA will confirm your UCMR 5 requirement to collect drinking water samples using a SDWARS 5 generated notification approximately 6-months prior to your scheduled year of sampling.**

EPA's contractor will supply participating PWSs with sampling kits and instructions. In some situations, State personnel will collect the UCMR 5 samples for PWSs. Unless they are advised that this is the case, PWSs are responsible for collecting the samples per EPA's instructions. The EPA-designated laboratory will post analytical results to SDWARS 5 so that PWSs are aware of the results and can meet their Public Notification and Consumer Confidence Report requirements.

Those reporting or reviewing UCMR 5 data will be using a secure portal, the Central Data Exchange (CDX), to access SDWARS 5. To register for your CDX/SDWARS 5 account, go to <http://cdx.epa.gov/preregistration/>, if prompted, enter the customer retrieval key (CRK) listed above, and follow the directions to complete registration. You will have the option of using an existing CDX account, by entering your CDX User ID and Password, or creating a new CDX account to access SDWARS 5. **If you are not the appropriate contact for your PWS's CDX/SDWARS 5 account, you may forward this letter to the correct PWS contact. To receive your confirmation of your requirement to collect UCMR 5 drinking water samples, you must establish a CDX/SDWARS 5 account.**

What actions must your PWS complete in SDWARS 5 before December 31, 2022?

After establishing a CDX/SDWARS 5 account, UCMR 5 requires you to take the following actions in SDWARS 5 during the open-inventory period to prepare for your tentatively scheduled sampling:

- Read and accept your UCMR 5 Notification Letter which contains additional details about UCMR 5 monitoring and reporting requirements.
- Ensure proper sample location inventory (i.e., identify/confirm all entry points to your distribution system).
 - Some PWSs will have entry-point locations pre-populated using information provided by their State/Primacy Agency to EPA in late 2021. If that is the case for your PWS, please review the locations. You are able to edit facility and sample point names only. After reviewing, select a response under the 'Correct?' field. If you select 'No, it is not' correct for a location(s), please contact the UCMR Message Center at UCMR5@glec.com or 1 800 949 1581 for assistance with completing your corrections and/or additions.
 - If your PWS does not have pre-populated locations, please contact the UCMR Message Center at UCMR5@glec.com or 1 800 949 1581 for assistance with adding your locations.
- Confirm or add your physical address for the shipment of the sampling kits to you (not a P.O. Box).
- Add the zip codes associated with all customers in your service area.
- Select appropriate responses for the following UCMR 5 Data Elements:
 - Disinfectant Type,
 - Treatment Information,
 - Historical Information for PFAS Detections and Treatment,
 - Historical Information for Lithium Detections and Treatment, and
 - Potential PFAS Sources
- You may nominate other individuals to serve as representatives for your PWS using the **Nominate User** function by selecting your account/person icon in the upper right-hand corner. A new CRK letter will be generated and emailed to the nominee for use in establishing their own account.

Questions?

- The first post-final UCMR 5 stakeholder meeting has been announced for March 16 & 17, 2022. Please register for one of the dates here: <https://www.epa.gov/dwucmr/unregulated-contaminant-monitoring-rule-ucmr-meetings-and-materials>
- For more information about the program, please review the [UCMR 5 Website](#).
- For CDX/SDWARS 5 registration issues, please contact the CDX Help Desk at

helpdesk@epacdx.net or call 1 888 890 1995.

- For general questions about requirements or navigating SDWARS, please contact the UCMR Message Center at UCMR5@glec.com or 1 800 949 1581

We look forward to working with you to carry out the UCMR 5 monitoring and will be assisting your PWS throughout the process. Thank you in advance for your cooperation.

From: [Peg Esposito](#)
To: [Josh Gajewski](#)
Subject: Bocce Ball park
Date: Monday, February 7, 2022 1:37:52 PM

CAUTION: This email originated from outside the organization.
Do not click links or open attachments unless you recognize the sender and know the content is safe.

Josh,
Hi!

The Utilities Commission generously provided the land that once housed a water tower for the Bocce Ball park. We at the Park Board looked at that location, across Main Street from Havenwood and East Street from St Francis church and school, and thought that location would be a great place to encourage multiple generations to gather and interact. The kids from the school have been using the court on nice days while school is ongoing, but I'm not sure the folks from Havenwood have noticed it.

The lack of seating, shade and bocce equipment is probably a part of the reason this little gem isn't well known.

So the Park Board is wondering if the Utilities Commission would have an objection if we look at developing this park a bit more. One of the ideas that came up when we mentioned this to St Francis school officers was a raised garden bed that could be maintained by the kids, and shared by the neighbors. Other thoughts include seating/benches, bird houses, a few trees for eventual shade.

I'm reaching out because spring is not far away, and now is the time to begin discussions if you are open to our thoughts of doing more with that land. My understanding is that it is city property under the Utility Commission's charge.

Could you let me know if you are the correct person to contact, and if you have any interest in discussing this with us?

Thanks for your consideration!

Peg Esposito
Member, City of Lake Geneva Park Board of Park Commissioners

Sent from my iPad

LAKE GENEVA UTILITY COMMISSION

BUDGET COMPARISON THRU:

1 / 2022

FUND 61 - WASTEWATER UTILITY

				Variance	YTD % of	YTD	YTD
REVENUES	Current Month	YTD	2022 Budgeted	(YTD vs Budget)	2022 Budget 8.3%	Look Back 2021	Look Back 5 Year Avg.
INTEREST EARNED	229	229	10,300	-10,071	2.22%	236	1,336
CUSTOMER SALES	26,099	26,099	2,102,450	-2,076,351	1.24%	21,996	19,101
OTHER REVENUE	1,299	1,299	10,725	-9,426	12.11%	1,450	1,043
CAPITAL CONTRIBUTIONS	7,460	7,460	186,500	-179,040	4.00%	14,547	8,803
TOTAL REVENUES	35,087	35,087	2,309,975	-2,274,888	1.52%	38,229	30,283
EXPENSES							
TOTAL OUTSIDE SERVICES	11,846	11,846	392,025	-380,179	3.02%	17,906	13,629
TOTAL OPERATING EXPENSES	1,127	1,127	43,350	-42,223	2.60%	1,279	1,446
TOTAL INSURANCE	0	0	29,900	-29,900	0.00%	0	-1,023
TOTAL SALARY & BENEFITS	52,955	52,955	603,797	-550,842	8.77%	40,376	38,541
TOTAL LAB SUPPLIES	11,823	11,823	22,600	-10,777	52.31%	2,795	1,884
TOTAL MISCELLANEOUS EXPENSE	6	6	1,000	-994	0.57%	0	-13
TOTAL MAINTENANCE	5,286	5,286	404,200	-398,914	1.31%	165	541
TOTAL OPERATION & MAINTENANCE EXPENSES	83,043	83,043	1,496,872	-1,413,829	5.55%	62,521	55,005
REVENUES OVER O&M EXPENSES	-47,956	-47,956	813,103	-861,059		-24,292	-24,721
TOTAL CAPITAL OUTLAY	0	0	1,395,500	-1,395,500	0.00%	4,365	22,362
REVENUES OVER TOTAL EXPENSES	-47,956	-47,956	-582,397	534,441		-28,657	-47,083
TOTAL CASH TRANSFERS	0	0	-587,150	587,150	0.00%	0	0
ANNUAL CASH BALANCE	-47,956	-47,956	4,753	-52,709		-28,657	-47,083
TOTAL DEPRECIATION	0	0	0	0	0.00%	0	0

FUND CASH AND INVESTMENT SUMMARY	<u>Opening Balance</u>	<u>Period Activity</u>	<u>Ending Balance</u>
Wastewater Utility Fund Cash	698,351	297,054	995,405
LGIP #10 - Capital Project Fund	1,820,153	105	1,820,258
LGIP #11 - Debt Service Fund	0	0	0
LGIP #12 - Impact Fee Fund	1,004,754	58	1,004,812
LGIP #13 - Equipment Replacement Fund	1,152,482	66	1,152,548
TOTAL WASTEWATER CASH AND INVESTMENT	4,675,741	297,283	4,973,023

LAKE GENEVA UTILITY COMMISSION

BUDGET COMPARISON THRU:

1 / 2022

FUND 62 - WATER UTILITY

REVENUES	Current Month	YTD	2022 Budgeted	Variance (YTD vs Budget)	YTD % of 2022 Budget 8.3%	YTD Look Back 2021	YTD Look Back 5 Year Avg.
INTEREST EARNED	126	126	3,275	-3,149	3.85%	89	745
CUSTOMER SALES	20,267	20,267	1,815,347	-1,795,080	1.12%	13,848	15,893
OTHER REVENUE	90,223	90,223	294,401	-204,178	30.65%	57,792	83,426
CAPITAL CONTRIBUTIONS	6,760	6,760	169,000	-162,240	4.00%	13,182	7,639
TOTAL REVENUES	117,376	117,376	2,282,023	-2,164,647	5.14%	84,910	107,703
EXPENSES							
TOTAL SOURCE OF SUPPLY - OPERATION	3,426	3,426	59,000	-55,574	5.81%	1,966	2,228
TOTAL SOURCE OF SUPPLY - MAINTENANCE	1,173	1,173	9,600	-8,427	12.22%	395	219
TOTAL PUMPING EXPENSE - OPERATION	716	716	74,350	-73,634	0.96%	739	1,323
TOTAL PUMPING EXPENSE - MAINTENANCE	301	301	25,700	-25,399	1.17%	522	284
TOTAL WATER TREATMENT - OPERATION	7,440	7,440	96,950	-89,510	7.67%	5,909	4,256
TOTAL WATER TREATMENT - MAINTENANCE	6,865	6,865	64,700	-57,835	10.61%	9,188	4,570
TOTAL TRANS. & DISTRIBUTION - OPERATION	2,601	2,601	47,800	-45,199	5.44%	3,111	1,558
TOTAL TRANS. & DISTRIBUTION - MAINTENANCE	25,485	25,485	254,350	-228,865	10.02%	4,571	2,183
TOTAL CUSTOMER ACCOUNTS	5,615	5,615	67,150	-61,535	8.36%	5,510	4,533
TOTAL ADMIN & GENERAL OPERATIONS	37,289	37,289	446,413	-409,124	8.35%	30,168	26,245
TOTAL OTHER EXPENSES	25,000	25,000	305,000	-280,000	8.20%	25,000	20,700
TOTAL OPERATION & MAINTENANCE EXPENSES	115,911	115,911	1,451,013	-1,335,102	7.99%	87,079	68,098
REVENUES OVER O&M EXPENSES	1,465	1,465	831,010	-829,545		-2,169	39,604
TOTAL CAPITAL OUTLAY	-2,885	-2,885	435,100	-437,985	-0.66%	1,727	4,714
REVENUES OVER TOTAL EXPENSES	4,350	4,350	395,910	-391,560		-3,896	34,891
TOTAL CASH TRANSFERS	-1,065,480	0	390,000	-390,000	0.00%	0	0
ANNUAL CASH BALANCE	1,069,830	4,350	5,910	-1,560		-3,896	34,891
TOTAL DEPRECIATION	0	0	0	0	0%	0	0
FUND CASH AND INVESTMENT SUMMARY							
	<u>Opening Balance</u>	<u>Period Activity</u>	<u>Ending Balance</u>				
Water Utility Fund Cash	625,929	107,559	733,488				
LGIP #1 - Capital Project Fund	1,267,034	73	1,267,107				
LGIP #2 - Impact Fee Fund	396,259	23	396,282				
LGIP #3 - Equipment Replacement Fund	530,445	30	530,476				
TOTAL WATER FUND CASH AND INVESTMENT	2,819,667	107,685	2,927,352				

Report Criteria:

Detail report.

Invoices with totals above \$5000.00 included.

Paid and unpaid invoices included.

Invoice Detail.GL account (2 Characters) = "61","62"

Invoice Number	Invoice Date	Description	GL Account and Title	Net Invoice Amount
61				
ALLIANT ENERGY				
280954000022	02/01/2022	HASKINS ST SEWER PLANT	61-00-00-52520 UTILITY-ELECTRICITY-PLANT	13,522.04
Total ALLIANT ENERGY:				13,522.04
AQUACHEM OF AMERICA INC				
6462AQ	01/13/2022	DRY POLYMER-SLUDGE DEWA	61-00-00-63100 POLYMER	9,372.00
Total AQUACHEM OF AMERICA INC:				9,372.00
GREAT LAKES TV SEAL INC				
21309	12/31/2021	2021 C.C.T.V.	61-00-00-93810 MAINT-MAINS	30,640.42
Total GREAT LAKES TV SEAL INC:				30,640.42
Total 61:				53,534.46
62				
MUNICIPAL WELL & PUMP INC				
18694	11/29/2021	WELL #2 PUMP-PULL & REHAB	62-00-00-32520 ELECTRIC PUMP TURBINE # 2	32,208.00
18694	11/29/2021	WELL #2 PUMP-PULL & REHAB	62-00-00-61400 WELLS MAINTENANCE	8,075.00
Total MUNICIPAL WELL & PUMP INC:				40,283.00
DOWN TO EARTH CONTRACTORS INC				
7709	11/08/2021	EDWARDS/BEST BUY-MAIN RE	62-00-00-67300 MAINT OF MAINS & VALVES	6,409.70
7767	01/12/2022	MAIN BREAK REPAIR-FORREST	62-00-00-67300 MAINT OF MAINS & VALVES	8,942.00
7784	01/27/2022	MAIN BREAK ELM ST	62-00-00-67300 MAINT OF MAINS & VALVES	5,455.89
Total DOWN TO EARTH CONTRACTORS INC:				20,807.59
Total 62:				61,090.59
Grand Totals:				114,625.05

Invoice Number	Invoice Date	Description	GL Account and Title	Net Invoice Amount
----------------	--------------	-------------	----------------------	-----------------------

Dated: _____

Mayor: _____

City Council: _____

City Recorder: _____

Report Criteria:

Detail report.

Invoices with totals above \$5000.00 included.

Paid and unpaid invoices included.

Invoice Detail.GL account (2 Characters) = "61","62"

Report Criteria:

Detail report.

Invoices with totals above \$0.00 included.

Paid and unpaid invoices included.

Invoice Detail.GL account (2 Characters) = "61","62"

Invoice Number	Invoice Date	Description	GL Account and Title	Net Invoice Amount
61				
STRAND ASSOCIATES INC				
0179021	01/12/2022	PROF SVCS THROUGH 12/1/202	61-00-00-10700 CONSTRUCTION WORK IN PROCESS	4,557.02
Total STRAND ASSOCIATES INC:				4,557.02
NORTHERN LAKE SERVICE INC				
412705	01/12/2022	WEEKLY NITROGEN TESTING	61-00-00-52100 LABORATORY SERVICES	244.94
413428	02/01/2022	WEEKLY NITROGEN TESTING	61-00-00-52100 LABORATORY SERVICES	244.94
413658	02/03/2022	WEEKLY NITROGEN TESTING	61-00-00-52100 LABORATORY SERVICES	264.37
413972	02/11/2022	WEEKLY NITROGEN TESTING	61-00-00-52100 LABORATORY SERVICES	244.94
Total NORTHERN LAKE SERVICE INC:				999.19
WE ENERGIES				
070526278300	01/11/2022	HASKINS ST DEWATERING BLD	61-00-00-52500 UTILITY-GAS-PLANT	552.84
070526278300	01/11/2022	HASKINS ST WEST BLDG-STOR	61-00-00-52500 UTILITY-GAS-PLANT	375.01
071152724500	01/11/2022	HASKINS ST WWTF-SEWER PL	61-00-00-52500 UTILITY-GAS-PLANT	1,178.79
4025369249	02/09/2022	HASKINS ST WEST BLDG-STOR	61-00-00-52500 UTILITY-GAS-PLANT	510.19
4026530893	02/09/2022	HASKINS ST DEWATERING BLD	61-00-00-52500 UTILITY-GAS-PLANT	835.88
4027025178	02/09/2022	HASKINS ST WWTF-SEWER PL	61-00-00-52500 UTILITY-GAS-PLANT	1,548.22
070251802500	01/13/2022	EDGEWOOD DR LIFT STN	61-00-00-52505 UTILITY-GAS-COLLECTION SYSTEM	14.86
071152724500	01/13/2022	LAGRANGE DR LIFT STN	61-00-00-52505 UTILITY-GAS-COLLECTION SYSTEM	19.55
071277607500	01/14/2022	BIG FOOT LIFT STATION	61-00-00-52505 UTILITY-GAS-COLLECTION SYSTEM	15.37
4026579029	02/09/2022	EDGEWOOD DR LIFT STN	61-00-00-52505 UTILITY-GAS-COLLECTION SYSTEM	10.58
4029209361	02/11/2022	LAGRANGE DR LIFT STN	61-00-00-52505 UTILITY-GAS-COLLECTION SYSTEM	20.64
Total WE ENERGIES:				5,081.93
ALLIANT ENERGY				
143875000022	02/01/2022	191 HASKINS ST DEWATER BLD	61-00-00-52520 UTILITY-ELECTRICITY-PLANT	311.35
280954000022	02/01/2022	HASKINS ST SEWER PLANT	61-00-00-52520 UTILITY-ELECTRICITY-PLANT	13,522.04
507753000022	02/01/2022	361 W MAIN ST SIGN	61-00-00-52520 UTILITY-ELECTRICITY-PLANT	35.09
974671000022	02/01/2022	361 MAIN ST HALLWAY	61-00-00-52520 UTILITY-ELECTRICITY-PLANT	149.30
055361000022	02/01/2022	361 MAIN ST CC LIFT	61-00-00-52525 UTILITY-ELECTRICITY-COLL SYS	60.68
141180000022	02/01/2022	LAGRANGE DR LIFT STN	61-00-00-52525 UTILITY-ELECTRICITY-COLL SYS	156.85
277971000022	02/01/2022	MARIANE TER LIFT STN	61-00-00-52525 UTILITY-ELECTRICITY-COLL SYS	35.13
307955000022	02/01/2022	MAXWELL ST LIFT STN	61-00-00-52525 UTILITY-ELECTRICITY-COLL SYS	27.72
327113000022	02/01/2022	BAYVIEW DR LIFT STN	61-00-00-52525 UTILITY-ELECTRICITY-COLL SYS	59.74
599411000022	02/01/2022	361 STATE ROAD 120 BIG FOOT	61-00-00-52525 UTILITY-ELECTRICITY-COLL SYS	254.94
962961000022	02/01/2022	EDGEWOOD DR LIFT STN	61-00-00-52525 UTILITY-ELECTRICITY-COLL SYS	270.30
Total ALLIANT ENERGY:				14,883.14
FIRST NATIONAL BANK OF OMAHA				
754182320121	01/12/2022	DOMAIN NAME/PRIVACY	61-00-00-53050 COMPUTER EXPENSE	28.99
Total FIRST NATIONAL BANK OF OMAHA:				28.99
SHI COMPUTERS				
B14380185	11/18/2021	VEEAM BACKUP RENEWAL-3/2	61-00-00-53050 COMPUTER EXPENSE	98.50

Invoice Number	Invoice Date	Description	GL Account and Title	Net Invoice Amount
Total SHI COMPUTERS:				98.50
CHARTER COMMUNICATIONS				
010682401212	01/21/2022	INTERNET SVC-JAN	61-00-00-53100 OFFICE SUPPLIES EXPENSE	57.49
Total CHARTER COMMUNICATIONS:				57.49
MARTIN GROUP				
1282605	01/20/2022	SERVICE CONTRACT/COPIES	61-00-00-53100 OFFICE SUPPLIES EXPENSE	110.71
Total MARTIN GROUP:				110.71
OFFICE DEPOT				
220119256001	01/14/2022	FILE STORAGE BOXES	61-00-00-53100 OFFICE SUPPLIES EXPENSE	53.31
Total OFFICE DEPOT:				53.31
AT&T				
262248865601	01/13/2022	JANUARY TELEPHONE	61-00-00-53110 TELEPHONE EXPENSE	114.35
Total AT&T:				114.35
AT&T LONG DISTANCE				
REDEC	01/04/2022	262-248-2394 DEC	61-00-00-53110 TELEPHONE EXPENSE	.12
Total AT&T LONG DISTANCE:				.12
FIRST NATIONAL BANK OF OMAHA				
554328620242	01/24/2022	VONAGE PHONE SVC 1/23/2022	61-00-00-53110 TELEPHONE EXPENSE	121.15
Total FIRST NATIONAL BANK OF OMAHA:				121.15
US CELLULAR				
0483286775	01/04/2022	WWTF MONTHLY PHONE BILL	61-00-00-53110 TELEPHONE EXPENSE	136.71
0489351273	02/04/2022	WWTF MONTHLY PHONE BILL	61-00-00-53110 TELEPHONE EXPENSE	118.43
Total US CELLULAR:				255.14
BAUMAN, KEN				
BAUMAN0207	02/07/2022	REIMB WRWA TRMT SOLNS FO	61-00-00-53320 CONFERENCES & SCHOOL	55.50
Total BAUMAN, KEN:				55.50
CINTAS CORP				
5095239692	02/11/2022	RESTOCK FIRST AID SUPPLIES	61-00-00-53900 FIRST AID & SAFETY SUPPLIES	56.45
Total CINTAS CORP:				56.45
JOHNSON, JEFFREY A				
JOHNSON021	02/15/2022	REIMBURSE CDL	61-00-00-53990 MISCELLANEOUS EXPENSE	224.61
Total JOHNSON, JEFFREY A:				224.61
AQUACHEM OF AMERICA INC				
6462AQ	01/13/2022	DRY POLYMER-SLUDGE DEWA	61-00-00-63100 POLYMER	9,372.00

Invoice Number	Invoice Date	Description	GL Account and Title	Net Invoice Amount
Total AQUACHEM OF AMERICA INC:				9,372.00
CULLIGAN OF BURLINGTON				
500X02725204	01/31/2022	LAB WATER	61-00-00-64000 LABORATORY SUPPLIES	80.80
Total CULLIGAN OF BURLINGTON:				80.80
NCL OF WISCONSIN				
464933	01/11/2022	GGA BOD STANDARD	61-00-00-64000 LABORATORY SUPPLIES	102.13
466004	02/02/2022	CHLORIDE TEST STRIPS	61-00-00-64000 LABORATORY SUPPLIES	766.79
Total NCL OF WISCONSIN:				868.92
USA BLUE BOOK				
838267	01/06/2022	FIBER FILTERS, BOD NUTRIEN	61-00-00-64000 LABORATORY SUPPLIES	1,252.90
844390	01/12/2022	CHLORIDE TEST STRIPS	61-00-00-64000 LABORATORY SUPPLIES	883.83
849456	01/18/2022	CHLORIDE TEST STRIPS	61-00-00-64000 LABORATORY SUPPLIES	135.96
Total USA BLUE BOOK:				2,272.69
DUNN LUMBER				
995726	01/25/2022	CLEANING PADS	61-00-00-65000 OTHER OPERATING SUPPLIES-KITCH	5.66
Total DUNN LUMBER:				5.66
KAPUR & ASSOCIATES INC				
111589	01/25/2022	GIS BACKUP	61-00-00-92300 OUTSIDE SERVICES EMPLOYED	212.50
Total KAPUR & ASSOCIATES INC:				212.50
FURGER, DEREK				
FURGER02152	02/15/2022	REIMB SAFETY BOOTS	61-00-00-92600 EMPLOYEE BENEFITS	100.00
Total FURGER, DEREK:				100.00
SECURIAN FINANCIAL GROUP				
UTL LIFE-03/2	02/07/2022	MAR LIFE INS 2022	61-00-00-92630 LIFE INSURANCE EXPENSE	7.14
Total SECURIAN FINANCIAL GROUP:				7.14
BAY LOCK SERVICE				
41174	01/25/2022	ENTRY DOOR MAINT	61-00-00-93500 MAINT-LAB BLDG	70.00
Total BAY LOCK SERVICE:				70.00
AIR FLOW INC				
210352TSA010	08/06/2021	THERMOSTAT-PROCESS	61-00-00-93503 MAINT-PROCESS BLDG	180.00
210352TSA020	01/12/2021	EXHAUST FANS-PROCESS BLD	61-00-00-93503 MAINT-PROCESS BLDG	2,970.00
Total AIR FLOW INC:				3,150.00
DUNN LUMBER				
988670	01/13/2022	DEWATERING BLDG MAINT-VN	61-00-00-93507 MAINT-DEWATERING-B/PRESS BLDG	35.04
Total DUNN LUMBER:				35.04

Invoice Number	Invoice Date	Description	GL Account and Title	Net Invoice Amount
HOME DEPOT CREDIT				
23157	01/27/2022	BALL VALVE-DEWATERING BLD	61-00-00-93507 MAINT-DEWATERING-B/PRESS BLDG	20.52
Total HOME DEPOT CREDIT:				20.52
USA BLUE BOOK				
867581	02/03/2022	REPLACEMENT CAP & PROBE-L	61-00-00-93600 MAINT-LAB EQUIPMENT	154.76
Total USA BLUE BOOK:				154.76
DUNN LUMBER				
989893	01/14/2022	PROCESS EQUIP MAINT-CONT	61-00-00-93603 MAINT-PROCESS EQUIP	55.55
Total DUNN LUMBER:				55.55
HOME DEPOT CREDIT				
21215	01/07/2022	PVC BUSHINGS-ORP SENSOR	61-00-00-93603 MAINT-PROCESS EQUIP	8.43
Total HOME DEPOT CREDIT:				8.43
USA BLUE BOOK				
844390	01/12/2022	STREAM/FOG NOZZLE	61-00-00-93607 MAINT-DEWATERING-B/PRESS EQUIP	28.51
Total USA BLUE BOOK:				28.51
DUNN LUMBER				
993591	01/20/2022	TAP CONNECTOR-#54 LIGHT IN	61-00-00-93700 MAINT-VEHICLES & EQUIP	3.13
Total DUNN LUMBER:				3.13
ITU ABSORB TECH INC				
7854590	02/04/2022	SHOP RAGS	61-00-00-93700 MAINT-VEHICLES & EQUIP	31.55
Total ITU ABSORB TECH INC:				31.55
RNOW INC				
2022-61910	02/09/2022	PNEUMATIC CYLINDER-#55 CA	61-00-00-93700 MAINT-VEHICLES & EQUIP	1,380.76
Total RNOW INC:				1,380.76
UEMSI/HTV INC				
2098572-IN	06/28/2021	PUSH CAMERA MAINT	61-00-00-93700 MAINT-VEHICLES & EQUIP	24.87
Total UEMSI/HTV INC:				24.87
UNITED LABORATORIES				
INV339217	01/20/2022	F.O.G. CONTROL, CONTACT CL	61-00-00-93700 MAINT-VEHICLES & EQUIP	581.28
INV339544	01/26/2022	F.O.G. CONTROL, SOLAR SOLV	61-00-00-93700 MAINT-VEHICLES & EQUIP	384.54
Total UNITED LABORATORIES:				965.82
WELDERS SUPPLY CO				
10262266	01/14/2022	YEARLY OXYGEN TANK RENTA	61-00-00-93700 MAINT-VEHICLES & EQUIP	165.00
10267895	02/09/2022	ACETYLENE & ARGON-SHOP S	61-00-00-93700 MAINT-VEHICLES & EQUIP	165.00
Total WELDERS SUPPLY CO:				330.00

Invoice Number	Invoice Date	Description	GL Account and Title	Net Invoice Amount
DOWN TO EARTH CONTRACTORS INC				
7782	01/26/2022	B.F.L.S. FORCEMAIN MAINT	61-00-00-93800 MAINT-LIFT STATIONS	3,020.00
Total DOWN TO EARTH CONTRACTORS INC:				3,020.00
DUNN LUMBER				
999369	01/13/2022	LIGHT BULBS-M.T.L.S. MAINT	61-00-00-93800 MAINT-LIFT STATIONS	11.75
Total DUNN LUMBER:				11.75
PATS SERVICES INC				
930108	01/24/2022	BF FORCEMAIN REPAIR	61-00-00-93800 MAINT-LIFT STATIONS	350.00
Total PATS SERVICES INC:				350.00
DIGGERS HOTLINE				
210 2 39101 P	01/24/2022	JAN 2022 PREPAYMENT 1,015	61-00-00-93810 MAINT-MAINS	541.33
Total DIGGERS HOTLINE:				541.33
DOWN TO EARTH CONTRACTORS INC				
7774	01/13/2022	TOMIKE ST-REPLACE MH CAST	61-00-00-93810 MAINT-MAINS	792.00
Total DOWN TO EARTH CONTRACTORS INC:				792.00
GREAT LAKES TV SEAL INC				
21309	12/31/2021	2021 C.C.T.V.	61-00-00-93810 MAINT-MAINS	30,640.42
Total GREAT LAKES TV SEAL INC:				30,640.42
PATS SERVICES INC				
930957	02/02/2022	MAINT ON SEWER MAINS-CIRC	61-00-00-93810 MAINT-MAINS	225.00
Total PATS SERVICES INC:				225.00
ALLIANT ENERGY				
252422000022	02/01/2022	E STATE ROAD 50 GATE	61-00-00-93820 MAINT-RECEIVING STATION	18.23
054885000022	02/01/2022	E STATE ROAD 50 SEEPAGE	61-00-00-93830 MAINT-SEEPAGE CELLS/POND	174.05
Total ALLIANT ENERGY:				192.28
Total 61:				81,649.03
62				
CORE & MAIN LP				
Q238211	01/21/2022	6" VALVE, MEGALUGS, HYMAX	62-00-00-15000 MATERIAL-SUPPLIES	1,519.00
Q241031	01/20/2022	1" CTS X 1" LEAD ADAPTERS	62-00-00-15000 MATERIAL-SUPPLIES	435.33
Q241032	01/20/2022	#2 METERHORNS, 1" LEAD ADA	62-00-00-15000 MATERIAL-SUPPLIES	1,622.44
Total CORE & MAIN LP:				3,576.77
MUNICIPAL WELL & PUMP INC				
18694	11/29/2021	WELL #2 PUMP-PULL & REHAB	62-00-00-32520 ELECTRIC PUMP TURBINE # 2	32,208.00
Total MUNICIPAL WELL & PUMP INC:				32,208.00

Invoice Number	Invoice Date	Description	GL Account and Title	Net Invoice Amount
JARANSON, TAI				
JARANSON01	01/26/2022	REFUND ON ACCOUNT - BILLIN	62-00-00-46110 METERED SALES-RESIDENTIAL	519.13
Total JARANSON, TAI:				519.13
KAYAJIMA, WATARU				
KAYAJIMA012	01/26/2022	REFUND ON ACCOUNT - BILLIN	62-00-00-46110 METERED SALES-RESIDENTIAL	110.33
Total KAYAJIMA, WATARU:				110.33
ALLIANT ENERGY				
145511000022	02/01/2022	361 MAIN ST WELL 2	62-00-00-60300 MISC EXPENSES & UTILITY	826.03
327391000022	02/01/2022	WAVERLY ST WELL 4	62-00-00-60300 MISC EXPENSES & UTILITY	516.93
348370000022	02/01/2022	WAVERLY ST WELL 3	62-00-00-60300 MISC EXPENSES & UTILITY	758.05
972745000022	02/01/2022	HASKINS ST WELL 5	62-00-00-60300 MISC EXPENSES & UTILITY	479.72
Total ALLIANT ENERGY:				2,580.73
USA BLUE BOOK				
806603	12/01/2021	CONNECTING NUTS-WELLS CH	62-00-00-60300 MISC EXPENSES & UTILITY	31.54
854162	01/21/2022	CORP/QUILL CHEMICAL FEED-	62-00-00-60300 MISC EXPENSES & UTILITY	1,540.01
Total USA BLUE BOOK:				1,571.55
WE ENERGIES				
070526278300	01/11/2022	WAVERLY ST WELLHOUSE #4	62-00-00-60300 MISC EXPENSES & UTILITY	65.28
070909779600	01/13/2022	HASKINS ST WELLHOUSE #5	62-00-00-60300 MISC EXPENSES & UTILITY	292.56
4025773367	02/09/2022	WAVERLY ST WELLHOUSE #4	62-00-00-60300 MISC EXPENSES & UTILITY	72.55
4026528528	02/09/2022	HASKINS ST WELLHOUSE #5	62-00-00-60300 MISC EXPENSES & UTILITY	159.21
Total WE ENERGIES:				589.60
MUNICIPAL WELL & PUMP INC				
18694	11/29/2021	WELL #2 PUMP-PULL & REHAB	62-00-00-61400 WELLS MAINTENANCE	8,075.00
Total MUNICIPAL WELL & PUMP INC:				8,075.00
USA BLUE BOOK				
843846	01/12/2022	WELLHOUSES CHEMICAL SUP	62-00-00-61400 WELLS MAINTENANCE	472.94
847489	01/14/2022	CHEMICAL FEED METER TUBE	62-00-00-61400 WELLS MAINTENANCE	106.29
Total USA BLUE BOOK:				579.23
ALLIANT ENERGY				
347962000022	02/01/2022	DODGE ST BOOSTER	62-00-00-62300 PUMPING POWER PURCHASED	152.45
576425000022	02/01/2022	MAIN ST ENGINE ROOM	62-00-00-62300 PUMPING POWER PURCHASED	4,446.38
717061000022	02/01/2022	1401 CENTER ST BOOSTER	62-00-00-62300 PUMPING POWER PURCHASED	175.11
Total ALLIANT ENERGY:				4,773.94
WE ENERGIES				
071119349700	01/11/2022	WATER DEPT MAIN BLDG	62-00-00-62300 PUMPING POWER PURCHASED	1,014.96
071441048300	01/11/2022	CENTER ST BOOSTER STN	62-00-00-62300 PUMPING POWER PURCHASED	81.26
4025726772	02/09/2022	CENTER ST BOOSTER STN	62-00-00-62300 PUMPING POWER PURCHASED	95.89
4026793825	02/09/2022	WATER DEPT MAIN BLDG	62-00-00-62300 PUMPING POWER PURCHASED	1,215.56

Invoice Number	Invoice Date	Description	GL Account and Title	Net Invoice Amount
Total WE ENERGIES:				2,407.67
ALLIANT ENERGY				
974671000022	02/01/2022	361 MAIN ST HALLWAY	62-00-00-64200 LABOR & EXPENSES (LAB)	149.30
Total ALLIANT ENERGY:				149.30
IDEXX DISTRIBUTION CORP				
3099697012	01/25/2022	COLISURE-BACTI MEDIA	62-00-00-64200 LABOR & EXPENSES (LAB)	919.01
Total IDEXX DISTRIBUTION CORP:				919.01
USA BLUE BOOK				
806603	12/01/2021	DISPOSABLE WIPES	62-00-00-64200 LABOR & EXPENSES (LAB)	12.76
847489	01/14/2022	LAB REAGENTS	62-00-00-64200 LABOR & EXPENSES (LAB)	34.63
Total USA BLUE BOOK:				47.39
WI STATE LABORATORY OF HYGIENE				
703776	01/31/2022	MONTHLY FLUORIDE SPLIT SA	62-00-00-64200 LABOR & EXPENSES (LAB)	26.00
Total WI STATE LABORATORY OF HYGIENE:				26.00
DUNN LUMBER				
992715	01/19/2022	NUTS/BOLTS	62-00-00-65100 PLANT MAINTENANCE	13.99
Total DUNN LUMBER:				13.99
HOME DEPOT CREDIT				
23193	01/27/2022	CEMENT-REPAIR WALL-ENGIN	62-00-00-65100 PLANT MAINTENANCE	52.28
7021476	01/10/2022	DRAIN REPAIR-PLANT A COOLI	62-00-00-65100 PLANT MAINTENANCE	26.92
Total HOME DEPOT CREDIT:				79.20
SMITH ECOLOGICAL SYSTMES COMPAYN				
23679	02/01/2022	REPLACEMENT CHLORINE PU	62-00-00-65200 MAINT WATER TREATMENT EQUIP	1,415.74
Total SMITH ECOLOGICAL SYSTMES COMPAYN:				1,415.74
ALLIANT ENERGY				
098433000022	02/01/2022	750 WILD RIDGE DR WATER TO	62-00-00-66100 MAINT OPS-STANDPIPES	137.39
520171000022	02/01/2022	1887 DODGE ST TOWER	62-00-00-66100 MAINT OPS-STANDPIPES	56.29
Total ALLIANT ENERGY:				193.68
HOME DEPOT CREDIT				
1023044	01/26/2022	PAINTING SCRAPER	62-00-00-66500 MISC EXPENSE LICENSE & TOOLS	11.47
Total HOME DEPOT CREDIT:				11.47
DIGGERS HOTLINE				
210 2 39101 P	01/24/2022	JAN 2022 PREPAYMENT 1,015	62-00-00-67300 MAINT OF MAINS & VALVES	270.67
Total DIGGERS HOTLINE:				270.67

Invoice Number	Invoice Date	Description	GL Account and Title	Net Invoice Amount
DOWN TO EARTH CONTRACTORS INC				
7685	10/04/2021	412 SHERIDAN SPRINGS RD-M	62-00-00-67300 MAINT OF MAINS & VALVES	3,453.00
7709	11/08/2021	EDWARDS/BEST BUY-MAIN RE	62-00-00-67300 MAINT OF MAINS & VALVES	6,409.70
7767	01/12/2022	MAIN BREAK REPAIR-FORREST	62-00-00-67300 MAINT OF MAINS & VALVES	8,942.00
7784	01/27/2022	MAIN BREAK ELM ST	62-00-00-67300 MAINT OF MAINS & VALVES	5,455.89
7785	01/27/2022	REPLACE VALVE & HYDRANT L	62-00-00-67300 MAINT OF MAINS & VALVES	1,544.00
7786	01/27/2022	MAIN BREAK 825 LAGRANGE D	62-00-00-67300 MAINT OF MAINS & VALVES	4,280.14
Total DOWN TO EARTH CONTRACTORS INC:				30,084.73
DIGGERS HOTLINE				
210 2 39101 P	01/24/2022	JAN 2022 PREPAYMENT 1,015	62-00-00-67500 MAINT SERVICES & CURB BOX	270.67
Total DIGGERS HOTLINE:				270.67
DOWN TO EARTH CONTRACTORS INC				
7785	01/27/2022	REPLACE VALVE & HYDRANT L	62-00-00-67700 MAINT OF HYDRANTS	1,544.00
Total DOWN TO EARTH CONTRACTORS INC:				1,544.00
DUNN LUMBER				
1004438	02/07/2022	REPLACEMENT BOLT SS HYDR	62-00-00-67800 MAINT FOUNTAINS & MISC PLANT	.69
Total DUNN LUMBER:				.69
S.J. ELECTRO SYSTEMS, LLC (SJE)				
108148	07/20/2021	COMM FAILURE-RADIO, POWE	62-00-00-67800 MAINT FOUNTAINS & MISC PLANT	4,531.83
Total S.J. ELECTRO SYSTEMS, LLC (SJE):				4,531.83
AMAZON CAPITAL SERVICES				
89C4-JAN	02/01/2022	HDMI CABLE, SCREEN PROTE	62-00-00-92100 OFFICE SUPPLIES & EXPENSE	59.97
Total AMAZON CAPITAL SERVICES:				59.97
AT&T				
262248865601	01/13/2022	JANUARY TELEPHONE	62-00-00-92100 OFFICE SUPPLIES & EXPENSE	114.35
Total AT&T:				114.35
AT&T LONG DISTANCE				
REDEC	01/04/2022	262-248-0589 DEC	62-00-00-92100 OFFICE SUPPLIES & EXPENSE	.22
Total AT&T LONG DISTANCE:				.22
CAPITAL ONE				
752007713102	01/07/2022	SOAP FOR KITCHEN/BATHROO	62-00-00-92100 OFFICE SUPPLIES & EXPENSE	20.98
Total CAPITAL ONE:				20.98
CHARTER COMMUNICATIONS				
010682401212	01/21/2022	INTERNET SVC-JAN	62-00-00-92100 OFFICE SUPPLIES & EXPENSE	57.49
Total CHARTER COMMUNICATIONS:				57.49
FIRST NATIONAL BANK OF OMAHA				
054101920062	01/06/2022	MONITOR & HDMI CABLE	62-00-00-92100 OFFICE SUPPLIES & EXPENSE	154.01

Invoice Number	Invoice Date	Description	GL Account and Title	Net Invoice Amount
054101920102	01/10/2022	MONITOR & HDMI CABLE-REFU	62-00-00-92100 OFFICE SUPPLIES & EXPENSE	8.03-
554328620242	01/24/2022	VONAGE PHONE SVC 1/23/2022	62-00-00-92100 OFFICE SUPPLIES & EXPENSE	121.16
754182320121	01/12/2022	DOMAIN NAME/PRIVACY	62-00-00-92100 OFFICE SUPPLIES & EXPENSE	28.99
Total FIRST NATIONAL BANK OF OMAHA:				296.13
HOME DEPOT CREDIT				
11356	01/07/2022	DOOR/DESK HARDWARE-FRON	62-00-00-92100 OFFICE SUPPLIES & EXPENSE	24.94
171101	01/07/2022	WINDOW SEAL FRONT OFFICE	62-00-00-92100 OFFICE SUPPLIES & EXPENSE	15.98
Total HOME DEPOT CREDIT:				40.92
MARTIN GROUP				
1282605	01/20/2022	SERVICE CONTRACT/COPIES	62-00-00-92100 OFFICE SUPPLIES & EXPENSE	110.72
Total MARTIN GROUP:				110.72
MUNICIPAL ENVIRONMENTAL GROUP				
GAJEWSKI202	01/21/2022	2022 MEG MEMBERHSIP	62-00-00-92100 OFFICE SUPPLIES & EXPENSE	782.10
Total MUNICIPAL ENVIRONMENTAL GROUP:				782.10
OFFICE DEPOT				
220119256001	01/14/2022	FILE STORAGE BOXES	62-00-00-92100 OFFICE SUPPLIES & EXPENSE	53.32
Total OFFICE DEPOT:				53.32
SHI COMPUTERS				
B14380185	11/18/2021	VEEAM BACKUP RENEWAL-3/2	62-00-00-92100 OFFICE SUPPLIES & EXPENSE	98.50
Total SHI COMPUTERS:				98.50
US CELLULAR				
0483286775	01/04/2022	WATER MONTHLY PHONE BILL	62-00-00-92100 OFFICE SUPPLIES & EXPENSE	253.88
0489351273	02/04/2022	WATER MONTHLY PHONE BILL	62-00-00-92100 OFFICE SUPPLIES & EXPENSE	480.17
Total US CELLULAR:				734.05
KAPUR & ASSOCIATES INC				
111502	01/25/2022	WARREN/WELLS PAY REVIEWS	62-00-00-92300 OUTSIDE SERVICES EMPLOYED	607.00
111587	01/25/2022	GIS UPDATES-SVCS 11/1/2021-1	62-00-00-92300 OUTSIDE SERVICES EMPLOYED	255.00
111589	01/25/2022	GIS BACKUP	62-00-00-92300 OUTSIDE SERVICES EMPLOYED	212.50
Total KAPUR & ASSOCIATES INC:				1,074.50
SECURIAN FINANCIAL GROUP				
UTL LIFE-03/2	02/07/2022	MAR LIFE INS 2022	62-00-00-92630 LIFE INSURANCE EXPENSE	12.51
Total SECURIAN FINANCIAL GROUP:				12.51
CINTAS CORP				
5095239682	02/11/2022	RESTOCK FIRST AID SUPPLIES	62-00-00-93000 MISCELLANEOUS GENERAL EXP	64.60
Total CINTAS CORP:				64.60
HOME DEPOT CREDIT				
4171431	01/13/2022	DISPOSABLE GLOVES	62-00-00-93000 MISCELLANEOUS GENERAL EXP	77.82

Invoice Number	Invoice Date	Description	GL Account and Title	Net Invoice Amount
Total HOME DEPOT CREDIT:				77.82
DUNN LUMBER				
1000792	02/01/2022	P-TRAP, SLIP JOINT NUT, PVC E	62-00-00-93200 MAINTENANCE OF GENERAL PLANT	13.99
987808	01/12/2022	SEWER REPAIR WTP BASEMEN	62-00-00-93200 MAINTENANCE OF GENERAL PLANT	35.05
988982	01/13/2022	SINK STRAINER	62-00-00-93200 MAINTENANCE OF GENERAL PLANT	2.35
993163	01/20/2022	GLOVES & CLEANING SOLN	62-00-00-93200 MAINTENANCE OF GENERAL PLANT	12.03
Total DUNN LUMBER:				63.42
HOME DEPOT CREDIT				
3011524	01/14/2022	LIGHT-MAIN ENTRANCE INTERI	62-00-00-93200 MAINTENANCE OF GENERAL PLANT	49.94
4023727	02/02/2022	QUIKRETE & PUTTY-TREATME	62-00-00-93200 MAINTENANCE OF GENERAL PLANT	18.94
5023671	02/01/2022	CEMENT/PUTTY KNIFE/FLEX S	62-00-00-93200 MAINTENANCE OF GENERAL PLANT	46.79
5311328	02/01/2022	FAUCET & SUPP LINE-MEN'S R	62-00-00-93200 MAINTENANCE OF GENERAL PLANT	34.66
6172273	01/31/2022	DRYLOK/THERMOSTAT WIRE-W	62-00-00-93200 MAINTENANCE OF GENERAL PLANT	279.79
Total HOME DEPOT CREDIT:				430.12
Total 62:				100,642.04
Grand Totals:				182,291.07

Customer Refundst 85.74
53.29
30.96
182,461.06

Dated: _____

Mayor: _____

City Council: _____

City Recorder: _____

Report Criteria:

Detail report.

Invoices with totals above \$0.00 included.

Paid and unpaid invoices included.

Invoice Detail.GL account (2 Characters) = "61","62"



Lake Geneva Utility Commission

MUNICIPAL WATER AND WASTEWATER SERVICES

361 W Main Street
P.O. Box 187
Lake Geneva, WI 53147
262-248-2311
www.lgutilitycommission.com

Dennis Lyon – President
Josh Gajewski – Utility Director
Jeff Ecklund – Water Superintendent
Ken Bauman – Wastewater Superintendent

TO: Lake Geneva Utility Commission
FROM: Josh Gajewski, Utility Director
SUBJECT: February 2022 Director's Report

OPERATIONS UPDATE

WATER OPERATIONS

Crews have responded to main breaks along the 800 block of LaGrange Dr., the 1100 block of Elm St., and the 400 block of Warren St. The LaGrange Dr. work included a secondary excavation to repair a main valve and hydrant assembly that were found to be deficient during the main break repairs. All final restoration work needed for these repairs will be completed in the spring.

Staff has found savings within the scope of hydrant painting project with the use of reflective indicators, rather than painting the hydrant caps with the associated flow identification. Staff will provide additional information on this scope change during the presentation of this report.

WASTEWATER OPERATIONS

Crews responded to reported sanitary sewer overflow (SSO) on the Bigfoot Lift Station forcemain. Repairs were completed the same day and all necessary reports filed with the DNR. We await the compliance response, which is anticipated to include a Notice of Noncompliance and potentially additional reporting requirements.

Progress continues on the Receiving Station project with work recently being completed on geotechnical surveys of the floor and foundation materials, along with a hazardous materials survey of the existing building construction. Staff anticipates having a 60% design meeting with engineering in the coming weeks.

OFFICE & ADMINISTRATION

Utility work at The Vistas of Lake Geneva development has temporarily stopped due to design revisions found necessary to allow the installation of new sanitary sewer. It is anticipated that work will resume as soon as DNR approval is granted for the design amendments.

Work on the utility improvements for Symphony Bay Phase 5 are underway and expected to continue into March. We received a additional information pertaining to the January submittal for the lift station proposed in Phase 5. Review of this information is ongoing, though it has delayed the expected turnaround for approval by the Commission. We are hopeful the project is ready for the March Commission meeting.

Staff is working through delinquent accounts from 4th quarter collections, prior to initiating disconnection on February 22nd. Staff has compiled a summary of transactions initiated through PSN over the last two years, a copy of which accompanies this report for Commissioner review.

Staff hosted representatives of WIPFLI the week of February 14th, to conduct field work needed in the 2021 financial audit. Staff will be providing the last system information needed for the PSC to WIPFLI in the next two weeks. The PSC has extended the submittal deadline by a month, now being due May 1st, though we will be looking to submit by the original April deadline.

Staff has worked with City Leadership Staff in the development of an RFQ for engineering services, which was recently approved for distribution by Council. As part of the review and selection process, a

joint meeting of the Public Works Committee and Utility Commission is scheduled to take place on May 4, 2022, where a common recommendation is hoped to be reached and passed along for Council consideration on May 9, 2022.

FEBRUARY 2022 UTILITY COMMISSION AGENDA: BACKGROUND & REQUESTED ACTION

9. T-Mobile Upgrade Project – Host Tower

Subsequent to Commission action in January, T-Mobile has submitted a revised Structural Analysis and corresponding set of Construction Drawings for review. Dixon Engineering has reviewed the documents and provided a summary letter, a copy of which is included in packets for Commissioner review.

Staff recommends conditional approval of the T-Mobile upgrade project at Host Dr. Tower and authorization of the Owner Letter of Approval, pending satisfactory revisions to the Construction Drawings being made, as identified in the 2/10/2022 Dixon Engineering letter.

10. T-Mobile Upgrade Project – Dodge Tower

Staff has been working with representatives of T-Mobile regarding a proposed equipment upgrade at the Dodge St. Tower. To date, T-Mobile has provided two submittals in an effort to gain favorable review by Dixon Engineering. The last review by Dixon indicates that the submittal requires additional revisions to clarify and/or meet expectations for construction and approval. A copy of that review letter is included for Commissioner review.

Staff recommends the Commission to affirm the recommendation outlined in Dixon Engineering's review letter dated February 16, 2022 and table the approval of the T-Mobile project until all noted items are resolved.

11. Sanitary Sewer Main CCTV Work

Staff is preparing to release an RFP for upcoming CCTV work to be completed in 2022 and would like to gain the Commission's consideration to allow a 3-year scope of services to be included. Given the small pool of vendors available to perform the work and the staff time necessary to produce an RFP annually, staff believes a 3-year window would reduce staff costs and potentially reduce the unit costs, or at least lock in a known rate for future year's work. This approach would require a commitment by the Utility to include a minimum of quantity of work each year, however that has been established as an operational goal that has been included in at least the last three annual budgets and is not seen as an issue for upcoming funding.

Staff recommends that a 3-year CCTV scope of work be included in the RFP for sanitary sewer main CCTV work.

12. Cemetery Road

The Cemetery Road Water and Sewer Extension project was included in the 2022 Capital Expense Budget, which would include the installation of 500 linear feet of new water main and 750 linear feet of new sanitary sewer main. Staff has worked with Engineering to revise the prior scope of the Cemetery Rd. along with updating costs to reflect anticipated bid amounts. Before proceeding further into the project, Staff requests additional input on the project scope and funding.

Staff requests confirmation of the scope and recommended funding source, prior to proceeding into the detailed design and bidding of the project.

13. Closed Session

Staff will be present to attend the Closed Session to provide additional information, if desired by the Commission.



NEW!

HYDRA-FLECTOR™

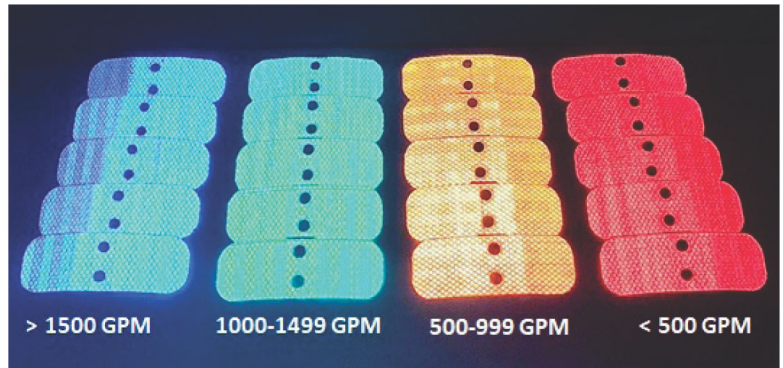
A durable, highly reflective marker designed to enhance night-time visibility and identify hydrant flow characteristics

Hydra-Flector™ is a tamper-resistant product assembled with the combination of durable 5052 grade aluminum sheeting and 304 stainless steel. With the use of High Intensity Prismatic Reflective Technology, the Hydra-Flector™ provides superior reflectivity, comparable to DOT traffic and/or safety signage.



SPECIFICATIONS

- 2" x 6" rounded corner face, .080" 5052 grade aluminum
- .125", 304 stainless steel bracket, elongated bolt hole for adjustments
- Bent face conforms to the outer circumference of most hydrant bonnets (avail. in flat)
- DOT Grade High Intensity Prismatic Reflective Technology
- Various colors available based on AWWA Hydrant Flow Rate Color Coding
- Blue: >1500 GPM / Green: 1000-1499 GPM / Orange: 500-999 GPM / Red: <500 GPM



► Available in: Packs of 20, Cases of 300



Gradelok.com

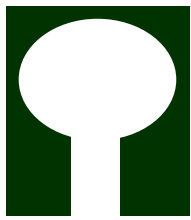
Assured Flow Sales, Inc. | P.O. Box 49633 | Sarasota, FL 34230-6633
(800) 388-0678 | sales@gradelok.com

Payment Service Network - Transaction History (\$)

	2019	2020	2021	2022
January	\$16,518	\$162,478	\$214,969	\$248,084
February	\$25,682	\$30,708	\$44,237	
March	\$7,158	\$8,364	\$13,529	
April	\$112,108	\$199,549	\$227,167	
May	\$40,330	\$32,481	\$38,928	
June	\$8,729	\$13,612	\$12,101	
July	\$127,337	\$222,244	\$252,906	
August	\$28,339	\$27,223	\$42,243	
September	\$9,947	\$14,443	\$11,910	
October	\$195,368	\$308,213	\$340,326	
November	\$23,712	\$29,857	\$41,295	
December	\$13,923	\$16,609	\$15,102	
	\$609,153	\$1,065,779	\$1,254,712	

No. of

Pymt Trans	5161	7965	9101	1910
------------	------	------	------	------



DIXON

**ENGINEERING & INSPECTION SERVICES
FOR THE COATING INDUSTRY**

4811 S. 76th Street
Suite 109
Greenfield, WI 53220
Telephone: (414) 529-1859
Fax: (414) 282-7830

February 10, 2022

RE: Lake Geneva Utility Commission
T-Mobile (ML70554A)
Host Composite Tank
Drawing Review #3

Mr. Josh Gajewski
Utility Director
Lake Geneva Utility Commission
361 Main Street
Lake Geneva, WI 53147

Dear Mr. Gajewski:

Dixon Engineering, Inc. (DIXON) has reviewed the revised design drawings and the revised structural calculations for the T-Mobile upgrade on the Host composite tank located in Lake Geneva, Wisconsin. The documents reviewed include:

- The revised design drawings for the project were completed by W-T Group and they are dated February 2, 2022 (Rev. 5).
- The revised structural calculations were completed by W-T Group and they are dated February 1, 2022.

This is the third review by DIXON for this project. The following is a comment regarding each of the items as they were addressed in the revised documents.

- A. The revised structural calculations for the tank have been reviewed and found to be in order.
 1. The structural calculations are stamped and signed by a Licensed Professional Engineer in the State of Wisconsin.
 2. This document with the date is referenced on Sheet A-1 in the design drawings. This date matches up with the final structural calculations for the project.
 3. The tower calculations were performed per AWWA D107 (composite tanks) which works in conjunction with ACI 371R. We had mistakenly said in the previous two reviews that the tower calculations needed to be performed per AWWA D100.
- B. I do not see an updated structural mount analysis for the tank. The approved version I am aware of is dated January 7, 2022. The reference to this document on Sheet A-1 in the design drawings was changed from 01/07/2022 to 02/01/2022. This needs to be changed back from 02/01/2022 to 01/07/2022.
- C. The email response said the only change to the updated design drawings was they went from (2) HCS 2.0 lines to (3) HCS 2.0 lines. DIXON does not see any issue with this change. The only location in the design drawings that I see this was not updated is on Sheet A-1. There is the note with the arrow just to the left of the concrete column that still says (2) new HCS 2.0 trunks that needs to be changed to (3).

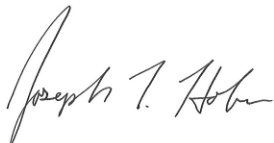
There are two minor revisions required in the design drawings and they are both on Sheet A-1. I do not need to see a response letter to show these two items are addressed, but I will check them and provide a final approval letter/email.

Lake Geneva Utility Commission
T-Mobile (ML70554A)
Host Composite Tank
Drawing Review #3
Page 2

After final approval of the design drawings, DIXON has to schedule and lead a preconstruction meeting at the site prior to the start of any work on the project. During the installation portion of the project, DIXON has two installation inspections contracted to be completed for this project.

If you have any questions you can call me at 920-470-0957.

FOR DIXON ENGINEERING, INC.,

A handwritten signature in black ink, appearing to read "Joseph T. Hoban". The signature is fluid and cursive, with the first name "Joseph" and last name "Hoban" clearly distinguishable.

Joseph T. Hoban, P.E.
Vice President

c: James Rowley, DIXON
Chris Kreiner, DIXON
Kayla Mulcahy, DIXON

GENERAL REQUIREMENTS:

1.1 INTENT

1. THESE SPECIFICATIONS AND CONSTRUCTION DRAWINGS ACCOMPANYING THEM DESCRIBE THE WORK TO BE DONE AND THE MATERIALS TO BE FURNISHED FOR CONSTRUCTION.
2. THE DRAWINGS AND SPECIFICATIONS ARE INTENDED TO BE FULLY EXPLANATORY AND SUPPLEMENTARY. HOWEVER, SHOULD ANYTHING BE SHOWN, INDICATED OR SPECIFIED ON ONE AND NOT THE OTHER, IT SHALL BE DONE THE SAME AS IF SHOWN, INDICATED OR SPECIFIED IN BOTH.
3. THE INTENTION OF THE DOCUMENTS IS TO INCLUDE ALL LABOR AND MATERIALS REASONABLY NECESSARY FOR THE PROPER EXECUTION AND COMPLETION OF THE WORK AS STIPULATED IN THE CONTRACT.
4. THE PURPOSE OF THE SPECIFICATIONS IS TO INTERPRET THE INTENT OF THE DRAWINGS AND TO DESIGNATE THE METHOD OF THE PROCEDURE, TYPE AND QUALITY OF MATERIALS REQUIRED TO COMPLETE THE WORK.
5. MINOR DEVIATIONS FROM THE DESIGN LAYOUT ARE ANTICIPATED AND SHALL BE CONSIDERED AS PART OF THE WORK. NO CHANGES THAT ALTER THE CHARACTER OF THE WORK WILL BE MADE OR PERMITTED BY THE OWNER WITHOUT ISSUING A CHANGE ORDER.

1.2 CONFLICTS

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATION OF ALL MEASUREMENTS AT THE SITE BEFORE ORDERING ANY MATERIALS OR DOING ANY WORK. NO EXTRA CHARGE OR COMPENSATION SHALL BE ALLOWED DUE TO DIFFERENCE BETWEEN ACTUAL DIMENSIONS AND DIMENSIONS INDICATED ON THE CONSTRUCTION DRAWINGS. ANY SUCH DISCREPANCY IN DIMENSION WHICH MAY BE FOUND SHALL BE SUBMITTED TO THE OWNER FOR CONSIDERATION BEFORE THE CONTRACTOR PROCEEDS WITH THE WORK IN THE AFFECTED AREAS.
2. THE BIDDER, IF AWARDED THE CONTRACT, WILL NOT BE ALLOWED ANY EXTRA COMPENSATION BY REASON OF ANY MATTER OR THING CONCERNING WHICH SUCH BIDDER MIGHT HAVE FULLY INFORMED THEMSELVES PRIOR TO THE BIDDING.
3. NO PLEA OF IGNORANCE OF CONDITIONS THAT EXIST, OR OF DIFFICULTIES OR CONDITIONS THAT MAY BE ENCOUNTERED OR OF ANY OTHER RELEVANT MATTER CONCERNING THE WORK TO BE PERFORMED IN THE EXECUTION OF THE WORK WILL BE ACCEPTED AS AN EXCUSE FOR ANY FAILURE OR OMISSION ON THE PART OF THE CONTRACTOR TO FULFILL EVERY DETAIL OF ALL THE REQUIREMENTS OF THE CONTRACT DOCUMENTS GOVERNING THE WORK.

1.3 CONTRACTS AND WARRANTIES

1. CONTRACTOR IS RESPONSIBLE FOR APPLICATION AND PAYMENT OF CONTRACTOR LICENSES AND BONDS.

1.4 STORAGE

1. ALL MATERIALS MUST BE STORED IN A LEVEL AND DRY FASHION AND IN A MANNER THAT DOES NOT NECESSARILY OBSTRUCT THE FLOW OF OTHER WORK. ANY STORAGE METHOD MUST MEET ALL RECOMMENDATIONS OF THE ASSOCIATED MANUFACTURER.
2. THE BTS MUST BE STORED INSIDE UNTIL THERE IS POWER ON SITE.

1.5 CLEAN UP

1. THE CONTRACTORS SHALL AT ALL TIMES KEEP THE SITE FREE FROM ACCUMULATION OF WASTE MATERIALS OR RUBBISH CAUSED BY THEIR EMPLOYEES AT WORK AND AT THE COMPLETION OF THE WORK, THEY SHALL REMOVE ALL RUBBISH FROM AND ABOUT THE BUILDING AREA, INCLUDING ALL THEIR TOOLS, SCAFFOLDING AND SURPLUS MATERIALS AND SHALL LEAVE THEIR WORK CLEAN AND READY FOR USE.
2. EXTERIOR: VISUALLY INSPECT EXTERIOR SURFACES AND REMOVE ALL TRACES OF SOIL, WASTE MATERIALS, SMUDGES AND OTHER FOREIGN MATTER.
- A. REMOVE ALL TRACES OF SPLASHED MATERIALS FROM ADJACENT SURFACES.
- B. IF NECESSARY TO ACHIEVE A UNIFORM DEGREE OF CLEANLINESS, HOSE DOWN THE EXTERIOR OF THE STRUCTURE.
3. INTERIOR: VISUALLY INSPECT INTERIOR SURFACE AND REMOVE ALL TRACES OF SOIL, WASTE MATERIALS, SMUDGES AND OTHER FOREIGN MATTER FROM WALLS/FLOOR/CEILING.
- A. REMOVE ALL TRACES OF SPLASHED MATERIAL FROM ADJACENT SURFACES.
- B. REMOVE PAINT DROPPINGS, SPOTS, STAINS AND DIRT FROM FINISHED SURFACES.

1.6 CHANGE ORDER PROCEDURE

1. CHANGE ORDERS MAY BE INITIATED BY THE OWNER AND/OR THE CONTRACTOR INVOLVED. THE CONTRACTOR, UPON VERBAL REQUEST FROM THE OWNER SHALL PREPARE A WRITTEN PROPOSAL DESCRIBING THE CHANGE IN WORK OR MATERIALS AND ANY CHANGES IN THE CONTRACT AMOUNT AND PRESENT TO THE OWNER WITHIN 72 HRS FOR APPROVAL. SUBMIT REQUESTS FOR SUBSTITUTIONS IN THE FORM AND IN ACCORDANCE WITH PROCEDURES REQUIRED FOR CHANGE ORDER PROPOSALS. ANY CHANGES IN SCOPE OF WORK OR MATERIALS WHICH ARE PERFORMED BY THE CONTRACTOR WITHOUT A WRITTEN CHANGE ORDER AS DESCRIBED AND APPROVED BY THE OWNER SHALL PLACE FULL RESPONSIBILITY OF THESE ACTIONS ON THE CONTRACTOR.

1.7 RELATED DOCUMENTS AND COORDINATION

1. GENERAL CARPENTRY, ELECTRICAL AND ANTENNA DRAWINGS ARE INTERRELATED. IN PERFORMANCE OF THE WORK, THE CONTRACTOR MUST REFER TO ALL DRAWINGS. ALL COORDINATION TO BE THE RESPONSIBILITY OF THE CONTRACTOR.

1.8 SHOP DRAWINGS

1. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS AS REQUIRED AND LISTED IN THESE SPECIFICATIONS TO THE OWNER FOR APPROVAL.
2. ALL SHOP DRAWINGS SHALL BE REVIEWED, CHECKED AND CORRECTED BY CONTRACTOR PRIOR TO SUBMITTAL TO THE OWNER.

1.9 PRODUCTS AND SUBSTITUTIONS

1. SUBMIT 3 COPIES OF EACH REQUEST FOR SUBSTITUTION. IN EACH REQUEST IDENTIFY THE PRODUCT OR FABRICATION OR INSTALLATION METHOD TO BE REPLACED BY THE SUBSTITUTION. INCLUDE RELATED SPECIFICATION SECTION AND DRAWING NUMBERS AND COMPLETE DOCUMENTATION SHOWING COMPLIANCE WITH THE REQUIREMENTS FOR SUBSTITUTIONS.
2. SUBMIT ALL NECESSARY PRODUCT DATA AND CUT SHEETS WHICH PROPERLY INDICATE AND DESCRIBE THE ITEMS, PRODUCTS AND MATERIALS BEING INSTALLED. THE CONTRACTOR SHALL, IF DEEMED NECESSARY BY THE OWNER SUBMIT ACTUAL SAMPLES TO THE OWNER FOR APPROVAL IN LIEU OF CUT SHEETS.

1.10 QUALITY ASSURANCE

1. ALL WORK SHALL BE IN ACCORDANCE WITH APPLICABLE LOCAL, STATE AND FEDERAL REGULATIONS.

1.11 ADMINISTRATION

1. BEFORE THE COMMENCEMENT OF ANY WORK, THE CONTRACTOR WILL ASSIGN A PROJECT MANAGER WHO WILL ACT AS A SINGLE POINT OF CONTACT FOR ALL PERSONNEL INVOLVED IN THIS PROJECT. THIS PROJECT MANAGER WILL DEVELOP A MASTER SCHEDULE FOR THE PROJECT WHICH WILL BE SUBMITTED TO THE OWNER PRIOR TO THE COMMENCEMENT OF ANY WORK.
2. SUBMIT A BAR TYPE PROGRESS CHART NOT MORE THAN 3 DAYS AFTER THE DATE ESTABLISHED FOR COMMENCEMENT OF THE WORK ON THE SCHEDULE, INDICATING A TIME BAR FOR EACH MAJOR CATEGORY OR UNIT OF WORK TO BE PERFORMED AT SITE, PROPERLY SEQUENCED AND COORDINATED WITH OTHER ELEMENTS OF WORK AND SHOWING COMPLETION OF THE WORK SUFFICIENTLY IN ADVANCE OF THE DATE ESTABLISHED FOR SUBSTANTIAL COMPLETION OF THE WORK.
3. PRIOR TO COMMENCING CONSTRUCTION, THE OWNER SHALL SCHEDULE AN ON-SITE MEETING WITH ALL MAJOR PARTIES. THIS WOULD INCLUDE (THOUGH NOT LIMITED TO) THE OWNER, PROJECT MANAGER, CONTRACTOR, LAND OWNER REPRESENTATIVE, LOCAL TELEPHONE COMPANY, TOWER ERECTION FOREMAN (IF SUBCONTRACTED).
4. CONTRACTOR SHALL BE EQUIPPED WITH SOME MEANS OF CONSTANT COMMUNICATIONS, SUCH AS A MOBILE PHONE OR A BEEPER. THIS EQUIPMENT WILL NOT BE SUPPLIED BY THE OWNER, NOR WILL WIRELESS SERVICE BE ARRANGED.
5. DURING CONSTRUCTION, CONTRACTOR MUST ENSURE THAT EMPLOYEES AND SUBCONTRACTORS WEAR HARD HATS AT ALL TIMES. CONTRACTOR WILL COMPLY WITH ALL SAFETY REQUIREMENTS IN THEIR AGREEMENT.
6. PROVIDE WRITTEN DAILY UPDATES ON SITE PROGRESS TO THE OWNER.
7. COMPLETE INVENTORY OF CONSTRUCTION MATERIALS AND EQUIPMENT IS REQUIRED PRIOR TO START OF CONSTRUCTION.
8. NOTIFY THE OWNER / PROJECT MANAGER IN WRITING NO LESS THAN 48 HOURS IN ADVANCE OF CONCRETE POURS, TOWER ERECTIONS, AND EQUIPMENT CABINET PLACEMENTS.

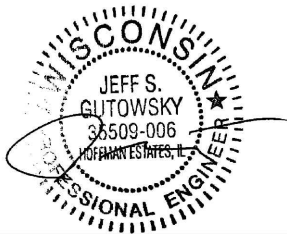
1.12 INSURANCE AND BONDS

1. CONTRACTOR SHALL AT THEIR OWN EXPENSE CARRY AND MAINTAIN FOR THE DURATION OF THE PROJECT ALL INSURANCE AS REQUIRED AND LISTED AND SHALL NOT COMMENCE WITH THEIR WORK UNTIL THEY HAVE PRESENTED AN ORIGINAL CERTIFICATE OF INSURANCE STATING ALL COVERAGES TO THE OWNER. REFER TO THE MASTER AGREEMENT FOR REQUIRED INSURANCE LIMITS.
2. THE OWNER SHALL BE NAMED AS AN ADDITIONAL INSURED ON ALL POLICIES.
3. CONTRACTOR MUST PROVIDE PROOF OF INSURANCE.

ANTENNA INSTALLATION:

1.1 REQUIREMENTS OF REGULATOR AGENCIES

1. FURNISH U.L. LISTED EQUIPMENT WHERE SUCH LABEL IS AVAILABLE, INSTALL IN CONFORMANCE WITH U.L. STANDARDS WHERE APPLICABLE.
2. INSTALL ANTENNA, ANTENNA CABLES, GROUNDING SYSTEM IN ACCORDANCE WITH DRAWINGS AND SPECIFICATION IN EFFECT AT PROJECT LOCATION AND RECOMMENDATIONS OF STATE AND LOCAL BUILDING CODES, SPECIAL CODES HAVING JURISDICTION OVER SPECIFIC PORTIONS OF WORK. THIS INCLUDES BUT IS NOT LIMITED TO THE FOLLOWING:
- A. TIA - TELECOMMUNICATIONS INDUSTRY ASSOCIATION TIA-222-G. STRUCTURAL STANDARDS FOR STEEL ANTENNA TOWERS AND ANTENNA SUPPORTING STRUCTURES.
- B. FAA - FEDERAL AVIATION ADMINISTRATION ADVISORY CIRCULAR AC 70/7460-IH, OBSTRUCTION MARKING AND LIGHTING.
- C. FCC - FEDERAL COMMUNICATIONS COMMISSION RULES AND REGULATIONS FORM 715, OBSTRUCTION MARKING AND LIGHTING SPECIFICATIONS FOR ANTENNA STRUCTURES AND FORM 715A, HIGH INTENSITY OBSTRUCTION LIGHTING SPECIFICATIONS FOR ANTENNA STRUCTURES.
- D. AISC - AMERICAN INSTITUTE OF STEEL CONSTRUCTION SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS.
- E. NEC - NATIONAL ELECTRICAL CODE - ON TOWER LIGHTING KITS.
- F. UL - UNDERWRITER'S LABORATORIES APPROVED ELECTRICAL PRODUCTS.
- G. IN ALL CASES, PART 77 OR THE FAA RULES AND PARTS 17 AND 22 OF THE FCC RULES ARE APPLICABLE AND IN THE EVENT OF CONFLICT, SUPERSEDE ANY OTHER STANDARDS OR SPECIFICATIONS.
- H. LIFE SAFETY CODE NFPA -101.



EXPIRES: 07/31/22 SIGNED: 02/02/22

REVISIONS

REV.	ISSUED FOR	DATE	BY
A	FOR CLIENT REVIEW	08/14/20	PS
0	FINAL	09/04/20	KLO
1	REVISION	09/08/20	KLO
2	REVISION	09/10/20	JTB
B	REVISION	06/29/21	SC
3	SA REVISION	07/21/21	KLO
4	REVISION	01/10/22	JTB
Δ	REVISION	02/02/22	JTB

AQUATIC \ DESIGN & PROGRAM MANAGEMENT
CIVIL \ TELECOMMUNICATION \ MECHANICAL
PLUMBING \ ELECTRICAL \ LAND SURVEYING
ACCESSIBILITY CONSULTING \ STRUCTURAL



ML70554A
HOST WT LAKE GENEVA
1003 HOST DRIVE,
LAKE GENEVA, WI 53147



WT GROUP
Engineering with Precision, Pace and Passion
2975 Prichard Avenue | Hoffman Estates, IL 60132
T: 224.293.6333 | F: 224.293.6444
wtengineering.com

© COPYRIGHT 2022 THE W-T GROUP, LLC

GENERAL ELECTRIC PROVISION:

1. SUBMITTAL OF BID INDICATES CONTRACTOR IS COGNIZANT OF ALL JOB SITE CONDITIONS AND WORK TO BE PERFORMED UNDER THIS CONTRACT.
2. CONTRACTOR SHALL PERFORM ALL VERIFICATION OBSERVATIONS TEST, AND EXAMINATION WORK PRIOR TO THE ORDERING OF THE ELECTRICAL EQUIPMENT AND THE ACTUAL CONSTRUCTION. CONTRACTOR SHALL ISSUE A WRITTEN NOTICE OF ALL FINDINGS TO THE ARCHITECT LISTING ALL MALFUNCTIONS, FAULTY EQUIPMENT AND DISCREPANCIES.
3. EACH CONDUCTOR OF EVERY SYSTEM SHALL BE PERMANENTLY TAGGED IN EACH PANEL BOARD, PULL BOX, J-BOX, SWITCH BOX, ETC., IN COMPLIANCE WITH OCCUPATIONAL SAFETY AND HEALTH ACT (O.S.H.A.).
4. CONTRACTOR SHALL PROVIDE ALL LABOR, MATERIALS, INSURANCE, EQUIPMENT, INSTALLATION, CONSTRUCTION TOOLS, TRANSPORTATION, ETC., FOR A COMPLETE AND PROPERLY OPERATIVE SYSTEM ENERGIZED THROUGHOUT AND AS INDICATED ON DRAWINGS, AS SPECIFIED HEREIN AND/OR AS OTHERWISE REQUIRED.
5. ALL MATERIALS AND EQUIPMENT SHALL BE NEW AND IN PERFECT CONDITION WHEN INSTALLED AND SHALL BE OF THE BEST GRADE AND OF THE SAME MANUFACTURER THROUGHOUT FOR EACH CLASS OR GROUP OF EQUIPMENT. MATERIALS SHALL BE LISTED "J" WHERE SUBJECT TO SUCH APPROVAL. MATERIALS SHALL MEET WITH APPROVAL OF THE DIVISION OF INDUSTRIAL SAFETY AND ALL GOVERNING BODIES HAVING JURISDICTION. MATERIALS SHALL BE MANUFACTURED IN ACCORDANCE WITH APPLICABLE STANDARDS ESTABLISHED BY ANSI, NEMA AND NBFU.
6. ALL CONDUIT INSTALLED SHALL BE SURFACE MOUNTED OR DIRECT BURIAL UNLESS OTHERWISE NOTED.
7. CONTRACTOR SHALL CARRY OUT THEIR WORK IN ACCORDANCE WITH ALL GOVERNING STATE, COUNTY AND LOCAL CODES AND O.S.H.A.
8. CONTRACTOR TO OBTAIN ALL PERMITS, PAY PERMIT FEES, AND BE RESPONSIBLE FOR SCHEDULING INSPECTIONS.
9. COMPLETE JOB SHALL BE GUARANTEED FOR A PERIOD OF ONE (1) YEAR AFTER THE DATE OF JOB ACCEPTANCE BY OWNER. ANY WORK, MATERIAL OR EQUIPMENT FOUND TO BE FAULTY DURING THAT PERIOD SHALL BE CORRECTED AT ONCE, UPON WRITTEN NOTIFICATION, AT THE EXPENSE OF THE CONTRACTOR.
10. ALL CONDUIT SHALL HAVE A PULL WIRE OR ROPE.
11. PROVIDE PROJECT MANAGER WITH ONE SET OF COMPLETE ELECTRICAL "AS INSTALLED" DRAWINGS AT THE COMPLETION OF THE JOB, SHOWING ACTUAL DIMENSIONS, ROUTINGS AND CIRCUITS.
12. ALL BROCHURES, OPERATING MANUALS, CATALOGS, SHOP DRAWINGS, ETC., SHALL BE TURNED OVER TO THE OWNER AT JOB COMPLETION.
13. USE T-TAP CONNECTIONS ON ALL MULTI-CIRCUITS WITH COMMON NEUTRAL CONDUCTOR FOR LIGHTING FIXTURES.
14. ALL CONDUCTORS SHALL BE COPPER.
15. ALL CIRCUIT BREAKERS, FUSES AND ELECTRICAL EQUIPMENT SHALL HAVE AN INTERRUPTING SHORT CIRCUIT CURRENT TO WHICH THEY MAY BE SUBJECTED, AND A MINIMUM OF 10,000 A.I.C.
16. THE ENTIRE ELECTRICAL INSTALLATION SHALL BE GROUNDED AS REQUIRED BY ALL APPLICABLE CODES.
17. PATCH, REPAIR AND PAINT ANY AREA THAT HAS BEEN DAMAGED IN THE COURSE OF THE ELECTRICAL WORK.
18. PENETRATIONS IN FIRE RATED WALLS SHALL BE FIRE STOPPED IN ACCORDANCE WITH APPLICABLE LOCAL BUILDING CODES.
19. WIRE AND CABLE CONDUCTORS SHALL BE COPPER #12 AWG MINIMUM UNLESS SPECIFICALLY NOTED OTHERWISE ON DRAWINGS.
20. GROUNDING CONDUCTORS SHALL BE SOLID TINNED COPPER UNLESS OTHERWISE NOTED.
21. ALL MATERIALS SHALL BE U.L. LISTED.

22. CONDUIT
- A. RIGID CONDUIT SHALL BE U.L. LABEL GALVANIZED ZINC COATED WITH ZINC INTERIOR AND SHALL BE USED WHEN INSTALLED IN OR UNDER CONCRETE SLABS IN CONTACT WITH THE EARTH, UNDER PUBLIC ROADWAYS, IN MASONRY WALLS OR EXPOSED ON BUILDING EXTERIOR. RIGID CONDUIT IN CONTACT WITH EARTH SHALL BE 1/2 LAPPED WRAPPED WITH HUNTS WRAP PROCESS NO. 3
- B. ELECTRICAL METALLIC TUBING SHALL HAVE U.L. LABEL, FITTING SHALL BE GLAND RING COMPRESSION TYPE. EMT SHALL BE USED ONLY FOR INTERIOR RUNS.
- C. FLEXIBLE METALLIC CONDUIT SHALL HAVE U.L. LISTED LABEL AND MAY BE USED WHERE PERMITTED BY CODE. FITTINGS SHALL BE "JAKE" OR "SQUEEZE" TYPE, SEAL TIGHT FLEXIBLE CONDUIT. ALL CONDUIT SHALL HAVE FULL SIZE EQUIPMENT GROUND WIRE.
- D. CONDUIT RUNS SHALL BE SURFACE MOUNTED UNLESS INDICATED OTHERWISE. CONDUIT INDICATED SHALL RUN PARALLEL OR AT RIGHT ANGLES TO CEILING, FLOOR OR BEAMS. VERIFY EXACT ROUTING OF ALL EXPOSED CONDUIT WITH THE OWNER PRIOR TO INSTALLING. NO HORIZONTAL CONDUITS SHALL BE BELOW 7'-6" A.F.F. NO BX OR ROMEX CABLE IS PERMITTED.
- E. PARALLEL UNDERGROUND CONDUIT SHALL BE PVC SCHEDULE 40 (UNLESS NOTED OTHERWISE) AT A MINIMUM DEPTH OF 30" BELOW GRADE - STACKED UNDERGROUND CONDUIT SHALL BE PVC SCHEDULE 40 (UNLESS NOTED OTHERWISE) AT A MINIMUM DEPTH OF 24" BELOW GRADE.
- F. ABOVE GROUND CONDUIT SHALL BE P.V.C. SCHEDULE 80 (UNLESS NOTED OTHERWISE).
23. ALL ELECTRICAL EQUIPMENT SHALL BE LABELED WITH PERMANENT ENGRAVED PLASTIC LABELS.
24. UPON COMPLETION OF WORK, CONDUCT CONTINUITY, SHORT CIRCUIT, AND FALL OF POTENTIAL GROUND TESTS FOR APPROVAL. SUBMIT TEST REPORTS TO PROJECT MANAGER. CLEAN PREMISES OF ALL DEBRIS RESULTING FROM WORK AND LEAVE WORK IN A COMPLETE AND UNDAMAGED CONDITION.

GENERAL PAINT NOTES:

SURFACE PREPARATION (EXTERIOR & DRY INTERIOR):

- ABRASIVE BLAST CLEAN ALL NEW STEEL COMPONENTS TO AN SSPC-SP6 "COMMERCIAL BLAST CLEANING" CONDITION PRIOR TO APPLICATION OF PRIMER COAT.
- AFTER WELDING OR CUTTING, CLEAN ALL DAMAGED SURFACES IN ACCORDANCE WITH SSPC-SP3 "POWER TOOL CLEANING" CONDITION PRIOR TO APPLICATION OF PRIME COAT.

COATING (EXTERIOR):

- THE EXTERIOR PAINT REPAIR SYSTEM WILL BE ONE PRIME COAT OF TNE MEC SERIES N140, ONE INTERMEDIATE COAT OF TNE MEC SERIES 1095, AND ONE TOPCOAT OF TNE MEC SERIES 1095. PAINT THE EXTERIOR TO MATCH THE EXISTING TOPCOAT COLOR.
- THE THREE-COAT SYSTEM WILL BE APPLIED AT 3.0 - 4.0 MILS PER COAT, TO A THICKNESS OF 9.0 - 12.0 MILS.

COATING (DRY INTERIOR):

- THE DRY INTERIOR PAINT REPAIR SYSTEM WILL BE THREE COATS OF TNE MEC SERIES N140. PAINT THE DRY INTERIOR TO MATCH THE EXISTING TOPCOAT COLOR.
- THE THREE-COAT SYSTEM WILL BE APPLIED AT 3.0 - 4.0 MILS PER COAT, TO A THICKNESS OF 9.0 - 12.0 MILS.

NOTES:

- FOLLOW ALL PAINT MANUFACTURERS' RECOMMENDATIONS WHEN USING THEIR PRODUCTS.



Know what's below.
Call before you dig.



EXPIRES: 07/31/22 SIGNED: 02/02/22

REVISIONS			
REV.	ISSUED FOR	DATE	BY
A	FOR CLIENT REVIEW	08/14/20	PS
0	FINAL	09/04/20	KLO
1	REVISION	09/08/20	KLO
2	REVISION	09/10/20	JTB
B	REVISION	06/29/21	SC
3	SA REVISION	07/21/21	KLO
4	REVISION	01/10/22	JTB
⚠	REVISION	02/02/22	JTB

AQUATIC \ DESIGN & PROGRAM MANAGEMENT
CIVIL \ TELECOMMUNICATION \ MECHANICAL
PLUMBING \ ELECTRICAL \ LAND SURVEYING
ACCESSIBILITY CONSULTING \ STRUCTURAL



CHECK: JKR

DRAWN: PS

JOB: 2001125T

T-3
GENERAL NOTES &
SPECIFICATIONS

NTPWIRELESS®
EVERY SITE, EVERY DAY

T-Mobile

ML70554A
HOST WT LAKE GENEVA
1003 HOST DRIVE,
LAKE GENEVA, WI 53147

WT Group
Engineering • Design • Consulting

WT GROUP
Engineering with Precision, Pace and Passion
2975 Pratum Avenue | Hoffman Estates, IL 60132
T: 224.293.6333 | F: 224.293.6444
wtengineering.com

© COPYRIGHT 2022 THE W-T GROUP, LLC

IMPORTANT SITE NOTES:

1. CONTRACTOR WILL NOT START CONSTRUCTION UNTIL AFTER THEY HAVE RECEIVED THE PRE-CON PACKAGE AND HAVE A PRE-CON WALK WITH THE PROJECT MANAGER.
2. CONTRACTOR TO HIRE PUBLIC (811) AND PRIVATE LOCATING SERVICE IN ORDER TO LOCATE AND PROTECT ALL SURFACE UTILITIES. DO NOT SCALE OFF THESE PLANS FOR ANY BELOW GRADE UTILITIES
3. CONTRACTOR SHALL VERIFY ALL EXISTING BURIED AND OVERHEAD UTILITIES PRIOR TO EXCAVATION. CONTRACTOR SHALL REPAIR ALL DAMAGED UTILITIES AT HIS OWN COST AND COORDINATE ANY REPAIRS WITH RESPECTIVE UTILITY COMPANY.
4. CONTRACTOR TO VERIFY ALL HEIGHTS AND AZIMUTHS IN FIELD PRIOR TO CONSTRUCTION. CONTRACTOR SHALL NOTIFY T-MOBILE AND ENGINEERING FIRM OF ANY DISCREPANCIES BEFORE PROCEEDING.
5. CONTRACTOR SHALL RESTORE AND REPAIR ANY DAMAGED AREAS CAUSED BY CONSTRUCTION.



MAP DATA © 2021 GOOGLE

OVERALL SITE PLAN

SCALE: 1" = 60'-0"

1

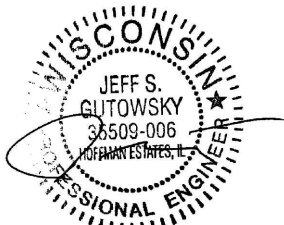
T-Mobile

NTPWIRELESS
EVERY SITE. EVERY DAY

WT GROUP
Engineering with Precision, Pace and Passion
2875 Prichard Avenue | Hoffman Estates, IL 60132
T: 224.293.8333 | F: 224.293.8444
wtengineering.com

WT Group
Engineering • Design • Consulting

ML70554A
HOST WT LAKE GENEVA
1003 HOST DRIVE,
LAKE GENEVA, WI 53147



EXPIRES: 07/31/22 SIGNED: 02/02/22

REVISIONS

REV.	ISSUED FOR	DATE	BY
A	FOR CLIENT REVIEW	08/14/20	PS
0	FINAL	09/04/20	KLO
1	REVISION	09/08/20	KLO
2	REVISION	09/10/20	JTB
B	REVISION	06/29/21	SC
3	SA REVISION	07/21/21	KLO
4	REVISION	01/10/22	JTB
Δ	REVISION	02/02/22	JTB

AQUATIC \ DESIGN & PROGRAM MANAGEMENT
CIVIL \ TELECOMMUNICATION \ MECHANICAL
PLUMBING \ ELECTRICAL \ LAND SURVEYING
ACCESSIBILITY CONSULTING \ STRUCTURAL



CHECK: JKR

DRAWN: PS

JOB: 2001125T

C-1

OVERALL SITE PLAN

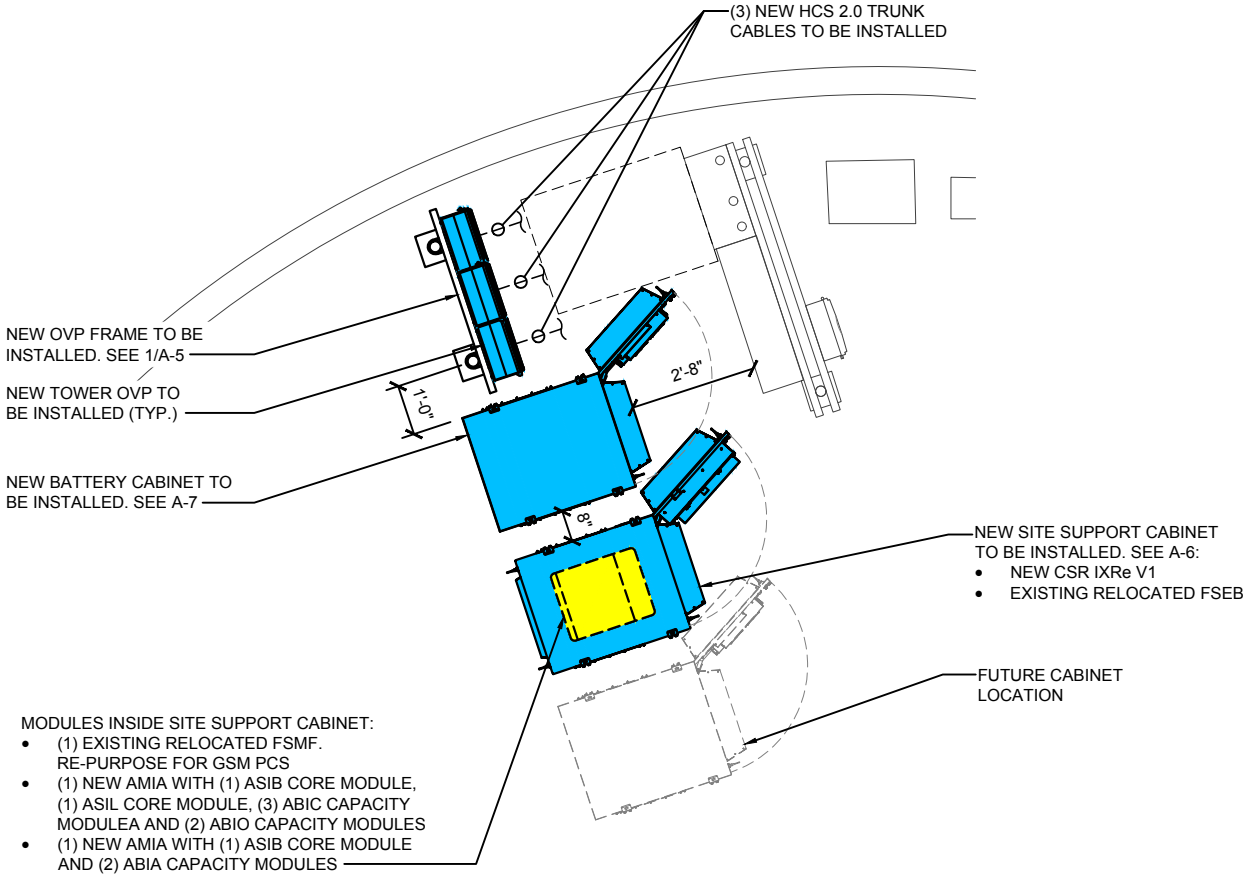
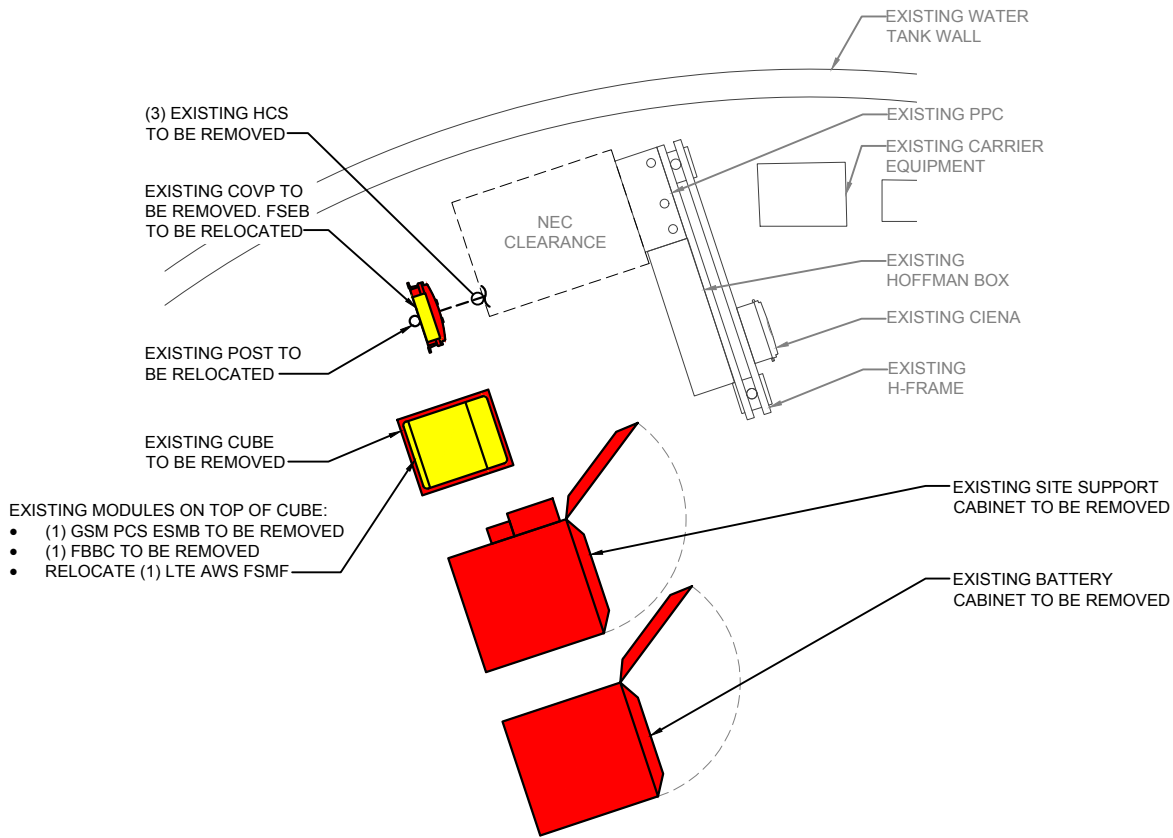
LEGEND

	EXISTING EQUIPMENT
	REMOVED EQUIPMENT
	RELOCATED EQUIPMENT
	NEW EQUIPMENT

NOTE:
RE-ROUTE GPS CABLE THROUGH WIRE TROUGH TO SSC.

NOTES:
1. (3) NEW TOWER OVP'S & (3) NEW HCS 2.0 TRUNKS TO FEED (3) NEW AHFIG'S & (3) NEW AEHC ANTENNAS.
SEE A-8 FOR RF PLUMBING DIAGRAM.

NOTE:
SSC USED BATTERIES WITH CONNECTION HARDWARE TO BE RELOCATED INSIDE NEW BBU.



EXISTING SITE PLAN

SCALE: 1/4" = 1'-0"

1



NEW SITE PLAN

SCALE: 1/4" = 1'-0"

2





WT GROUP
Engineering with Precision, Pace and Passion
2975 Pratum Avenue | Hoffman Estates, IL 60192
T: 224.293.6333 | F: 224.293.6444
wtengineering.com

WT Group
Engineering • Design • Consulting

ML70554A
HOST WT LAKE GENEVA
1003 HOST DRIVE,
LAKE GENEVA, WI 53147



JEFF S. GUTOWSKY
38509-006
WISCONSIN PROFESSIONAL ENGINEER

EXPIRES: 07/31/22 SIGNED: 02/02/22

REV.	ISSUED FOR	DATE	BY
A	FOR CLIENT REVIEW	08/14/20	PS
0	FINAL	09/04/20	KLO
1	REVISION	09/08/20	KLO
2	REVISION	09/10/20	JTB
3	REVISION	06/29/21	SC
3	SA REVISION	07/21/21	KLO
4	REVISION	01/10/22	JTB
Δ	REVISION	02/02/22	JTB

AQUATIC \ DESIGN & PROGRAM MANAGEMENT
CIVIL \ TELECOMMUNICATION \ MECHANICAL
PLUMBING \ ELECTRICAL \ LAND SURVEYING
ACCESSIBILITY CONSULTING \ STRUCTURAL



CHECK: JKR
DRAWN: PS
JOB: 2001125T

C-2
EXISTING & NEW SITE PLANS

IMPORTANT SITE NOTES:

1. CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING FINAL RF CONFIGURATION AND NOTIFY T-MOBILE AND ENGINEERING FIRM WITH ANY DISCREPANCIES.
2. CONTRACTOR SHALL VERIFY ALL FINAL CONNECTION LOCATIONS WITH T-MOBILE ENGINEER, RF ENGINEER, AND NET-OPS PRIOR TO INSTALLATION.
3. CONTRACTOR TO USE PROPER TORQUE WRENCH WHEN INSTALLING AND TIGHTENING CONNECTORS TO INSURE PROPER FIT.
4. CONTRACTOR TO ARRANGE NEW MODULES/EQUIPMENT TO AVOID INTERFERING WITH SAFETY CLIMB.

NOTE:
EXISTING CABLES RUNNING UP INTERIOR OF TOWER.

NOTE:
A STRUCTURAL ANALYSIS OF THE TOWER OR STRUCTURE HAS BEEN COMPLETED BY THE W-T GROUP, LLC ON 02/01/2022. THE LOCATION AND MOUNTING SHOWN IN THE STRUCTURAL ANALYSIS SHALL SUPERSEDE THESE DRAWINGS.

NOTE:
A STRUCTURAL ANALYSIS OF THE ANTENNA MOUNT HAS BEEN COMPLETED BY THE W-T GROUP, LLC ON 02/01/2022. THE LOCATION AND MOUNTING OF THE ANTENNAS SHOWN IN THE STRUCTURAL ANALYSIS SHALL SUPERSEDE THESE DRAWINGS.

LEGEND

- EXISTING EQUIPMENT
- REMOVED EQUIPMENT
- RELOCATED EQUIPMENT
- NEW EQUIPMENT

- EXISTING CARRIER ANTENNAS @ ±133'-9"
- EXISTING CARRIER ANTENNAS @ ±132'-3"
- EXISTING/NEW T-MOBILE ANTENNAS @ ±131'-4"
- TOP OF WATER TANK @ ±128'-0"
- EXISTING CARRIER ANTENNAS @ ±125'-0"
- EXISTING CARRIER ANTENNAS @ ±123'-0"

- EXISTING DISH ANTENNA @ ±134'-9"
- EXISTING DISH ANTENNA @ ±135'-7"
- EXISTING DISH ANTENNA @ ±132'-9"

- EXISTING DISH ANTENNA @ ±137'-0"
- EXISTING WHIP CARRIER ANTENNAS @ ±132'-9"
- EXISTING WHIP CARRIER ANTENNAS @ ±132'-3"
- EXISTING DISH ANTENNA @ ±131'-3"

T-MOBILE ANTENNAS, BREAKOUT BOXES & RRU'S. SEE A-2 (TYP.)

NOTE:
THE EXTERIOR ENDS OF THE T-MOBILE PENETRATION PIPES AT THE TOP OF THE ACCESS TUBE NEED TO BE PROPERLY SEALED. THE PENETRATION PIPES AT THE TOP OF THE ACCESS TUBE NEED TO BE SEALED WITH RUBBER BOOT ASSEMBLIES AND/OR WEATHER RESISTANT CAULK TO A DEPTH OF 2" ON THE EXTERIOR ENDS. SPRAY FOAM, BUYTL, AND TAP ARE NOT ACCEPTABLE ALTERNATIVES. UNUSED PENETRATION PIPES NEED TO BE SEALED WITH SOLID RUBBER BOOTS.

- NOTES:
1. NEW HCS 2.0 TRUNK TO BE PROPERLY ATTACHED ONTO EXISTING ROUTING COMPONENTS USED BY T-MOBILE OR PROPERLY STACKED ONTO EXISTING T-MOBILE CABLES.
 2. NEW HCS 2.0 TRUNK CANNOT BE ATTACHED TO OR BEHIND THE LADDER IN THE ACCESS TUBE.
 3. NEW ANGLE ADAPTERS OR PIPE CLAMPS THAT MIGHT BE ADDED NEED TO BE ATTACHED WITH RUBBER STRIPS TO PREVENT METAL ON METAL CONTACT.

- EXISTING WHIP ANTENNA @ ±50'-11"
- EXISTING WHIP ANTENNA @ ±50'-4"
- EXISTING YAGI ANTENNA @ ±44'-10"

(2) NEW HCS 2.0 TRUNKS TO FOLLOW EXISTING CABLE ROUTE

EXISTING WATER TANK



ELEVATION

SCALE: 1" = 20'-0"

1

T-Mobile

NTPWIRELESS
EVERY SITE. EVERY DAY

ML70554A

HOST WT LAKE GENEVA

1003 HOST DRIVE,

LAKE GENEVA, WI 53147



EXPIRES: 07/31/22 SIGNED: 02/02/22

REVISIONS

REV.	ISSUED FOR	DATE	BY
A	FOR CLIENT REVIEW	08/14/20	PS
0	FINAL	09/04/20	KLO
1	REVISION	09/08/20	KLO
2	REVISION	09/10/20	JTB
B	REVISION	06/29/21	SC
3	SA REVISION	07/21/21	KLO
4	REVISION	01/10/22	JTB
A	REVISION	02/02/22	JTB

AQUATIC \ DESIGN & PROGRAM MANAGEMENT
CIVIL \ TELECOMMUNICATION \ MECHANICAL
PLUMBING \ ELECTRICAL \ LAND SURVEYING
ACCESSIBILITY CONSULTING \ STRUCTURAL

CHECK: JKR

DRAWN: PS

JOB: 2001125T

A-1

ELEVATION

LEGEND

EXISTING EQUIPMENT

REMOVED EQUIPMENT

RELOCATED EQUIPMENT

NEW EQUIPMENT

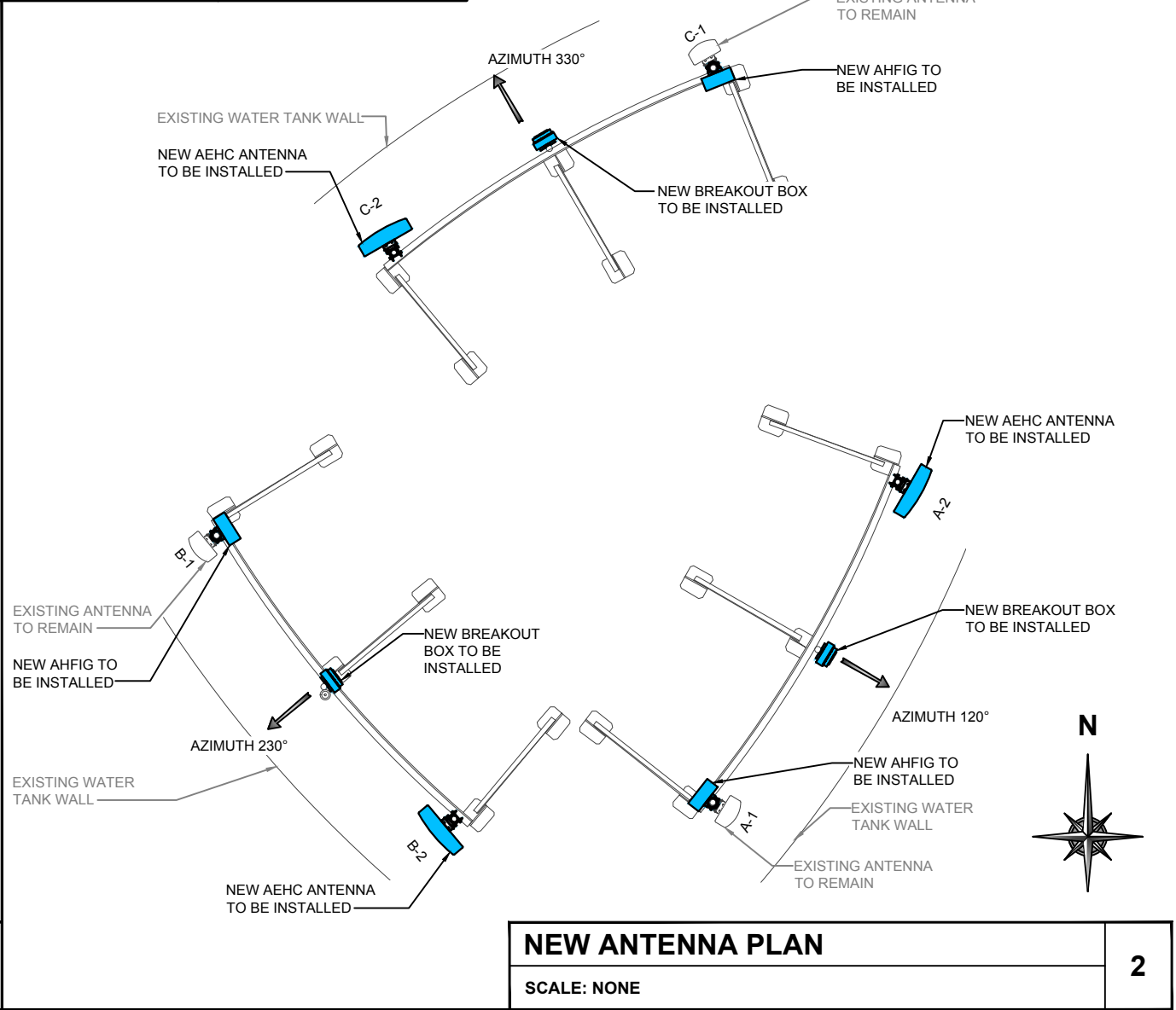
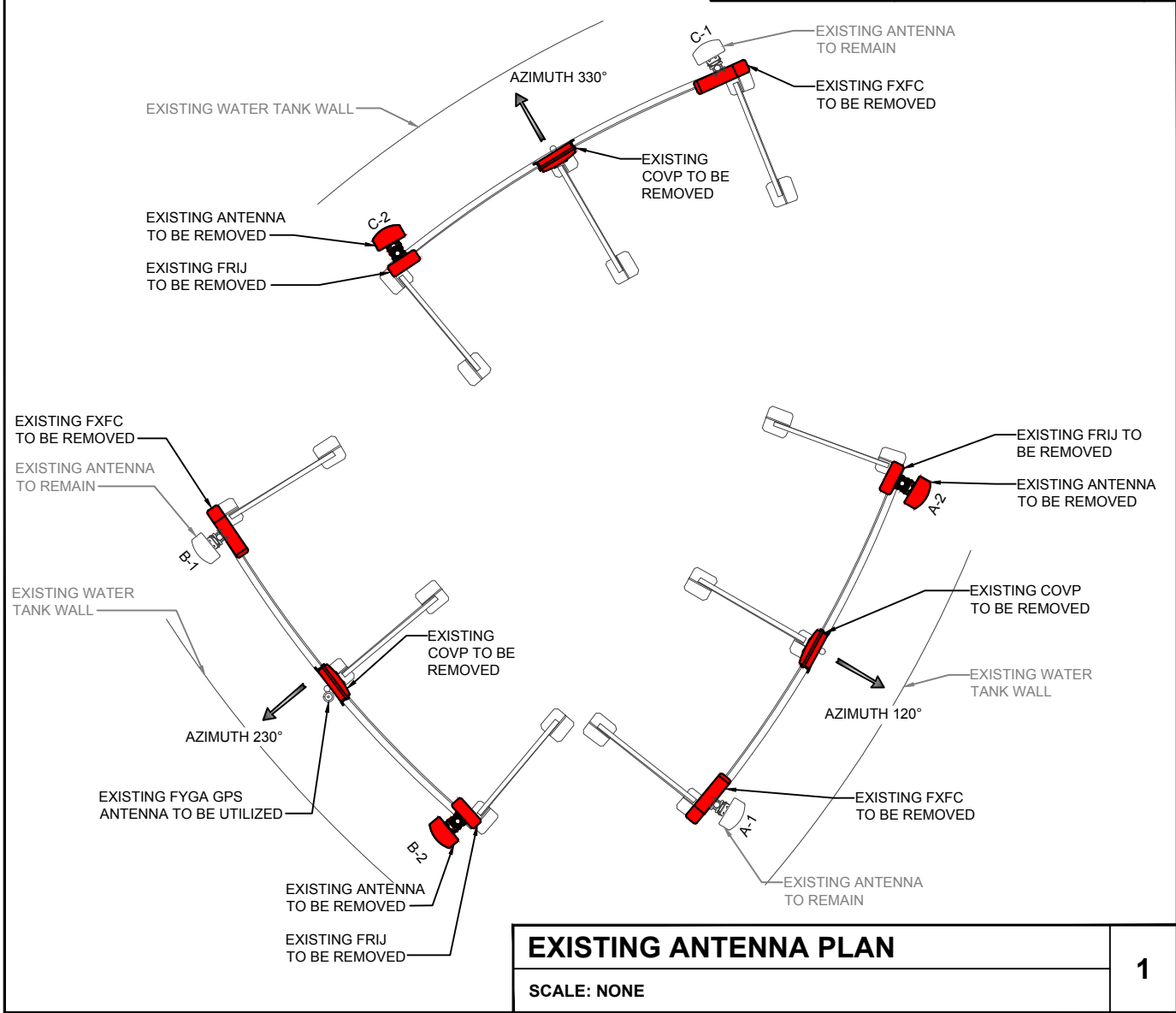
ANTENNA & CABLE SCHEDULE						
SECTOR	ALPHA		BETA		GAMMA	
LOCATION	A-2	A-1	B-2	B-1	C-2	C-1
TECHNOLOGY	LTE 5G B41	LTE-GSM PCS/ LTE AWS/ N1900/N2100	LTE 5G B41	LTE-GSM PCS/ LTE AWS/ N1900/N2100	LTE 5G B41	LTE-GSM PCS/ LTE AWS/ N1900/N2100
AZIMUTH	120°		230°		330°	
RAD CENTER	±131'-4"		±131'-4"		±131'-4"	
COLOR CODING	RED	RED (1-4)	GREEN	GREEN (1-4)	BLUE	BLUE (1-4)
MODEL #	AEHC (ACTIVE ANTENNA-MASSIVE MIMO)	ANDREW-TMBXX-6516-A2M	AEHC (ACTIVE ANTENNA-MASSIVE MIMO)	ANDREW-TMBXX-6516-A2M	AEHC (ACTIVE ANTENNA-MASSIVE MIMO)	ANDREW-TMBXX-6516-A2M
MECHANICAL DOWNTILT	0	0	0	0	0	0
ELECTRICAL DOWNTILT	-	2/2	-	2/2	-	2/2
RRU TYPE	AEHC (INTEGRATED)	AHFIG	AEHC (INTEGRATED)	AHFIG	AEHC (INTEGRATED)	AHFIG
HCS DIA. & TYPE	HCS 2.0 TRUNK	SHARED HCS 2.0 TRUNK	HCS 2.0 TRUNK	SHARED HCS 2.0 TRUNK	HCS 2.0 TRUNK	SHARED HCS 2.0 TRUNK
HCS ACTUAL LENGTH	±145'-0"	-	±145'-0"	-	±145'-0"	-
HCS FACTORY LENGTH	±150'-0"	-	±150'-0"	-	±150'-0"	-
JUMPER TYPE FROM BREAKOUT BOX TO RRU/ANTENNA	HCS 2.0 JUMPER	HCS 2.0 JUMPER	HCS 2.0 JUMPER	HCS 2.0 JUMPER	HCS 2.0 JUMPER	HCS 2.0 JUMPER
JUMPER LENGTH	±15'-0"	±90'-0"	±90'-0"	±90'-0"	±90'-0"	±15'-0"
JUMPER TYPE FROM RRU TO ANTENNA	-	RF JUMPER	-	RF JUMPER	-	RF JUMPER
JUMPER LENGTH	-	±6'-0"	-	±6'-0"	-	±6'-0"

NOTE:
A STRUCTURAL ANALYSIS OF THE TOWER OR STRUCTURE HAS BEEN COMPLETED BY THE W-T GROUP, LLC ON 02/01/2022. THE LOCATION AND MOUNTING SHOWN IN THE STRUCTURAL ANALYSIS SHALL SUPERSEDE THESE DRAWINGS.

NOTE:
A STRUCTURAL ANALYSIS OF THE ANTENNA MOUNT HAS BEEN COMPLETED BY THE W-T GROUP, LLC ON 02/01/2022. THE LOCATION AND MOUNTING OF THE ANTENNAS SHOWN IN THE STRUCTURAL ANALYSIS SHALL SUPERSEDE THESE DRAWINGS.

NOTE:
ANTENNA INFORMATION OBTAINED FROM T-MOBILE RF DATA CONFIGURATION SHEET DATED 01/24/2022. CONTRACTOR TO OBTAIN THE MOST CURRENT & FINAL RFDS FROM T-MOBILE FOR AZIMUTH SETTINGS PRIOR TO CONSTRUCTION

NOTE:
THE EXTERIOR ENDS OF THE T-MOBILE PENETRATION PIPES AT THE TOP OF THE ACCESS TUBE NEED TO BE PROPERLY SEALED. THE PENETRATION PIPES AT THE TOP OF THE ACCESS TUBE NEED TO BE SEALED WITH RUBBER BOOT ASSEMBLIES AND/OR WEATHER RESISTANT CAULK TO A DEPTH OF 2" ON THE EXTERIOR ENDS. SPRAY FOAM, BUYTL, AND TAP ARE NOT ACCEPTABLE ALTERNATIVES. UNUSED PENETRATION PIPES NEED TO BE SEALED WITH SOLID RUBBER BOOTS.



WT GROUP

Engineering with Precision, Pace and Passion

2975 Pratum Avenue | Hoffman Estates, IL 60132

T: 224.293.6333 | F: 224.293.6444

wengineering.com

WT Group

Engineering • Design • Consulting

T-Mobile

NTPWIRELESS

EVERY SITE. EVERY DAY

ML70554A

HOST WT LAKE GENEVA

1003 HOST DRIVE,

LAKE GENEVA, WI 53147

JEFF S. GUTOWSKY

36509-006

PROFESSIONAL ENGINEER

EXPIRES: 07/31/22

SIGNED: 02/02/22

REV.	ISSUED FOR	DATE	BY
A	FOR CLIENT REVIEW	08/14/20	PS
0	FINAL	09/04/20	KLO
1	REVISION	09/08/20	KLO
2	REVISION	09/10/20	JTB
3	REVISION	06/29/21	SC
4	SA REVISION	07/21/21	KLO
5	REVISION	01/10/22	JTB
6	REVISION	02/02/22	JTB

AQUATIC \ DESIGN & PROGRAM MANAGEMENT

CIVIL \ TELECOMMUNICATION \ MECHANICAL

PLUMBING \ ELECTRICAL \ LAND SURVEYING

ACCESSIBILITY CONSULTING \ STRUCTURAL

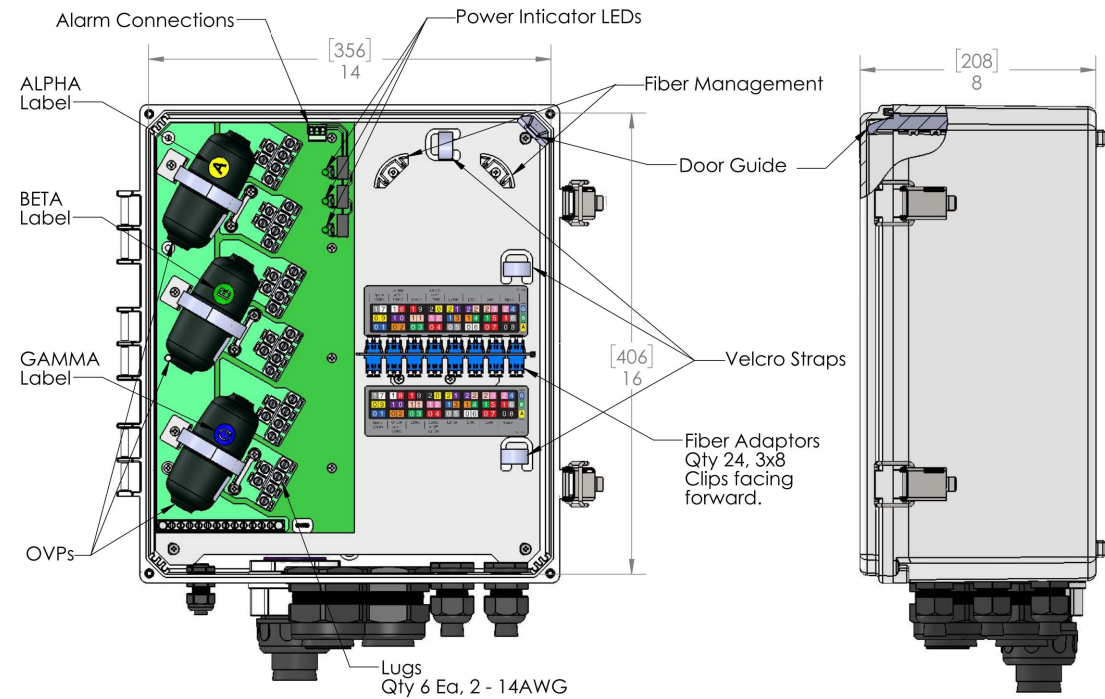
CHECK: JKR

DRAWN: PS

JOB: 2001125T

A-2

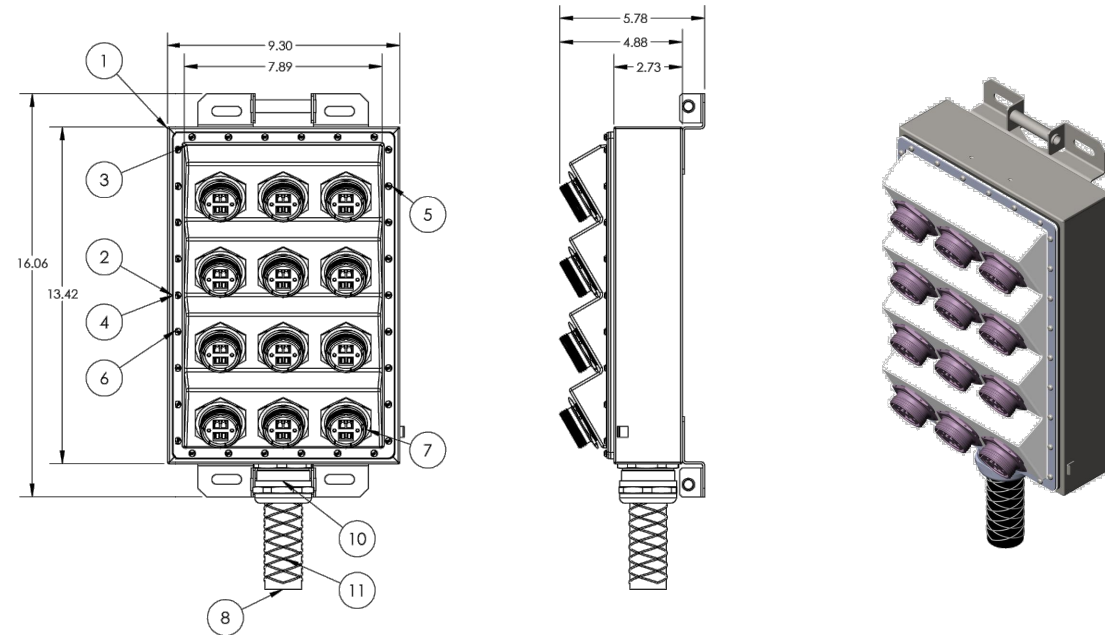
ANTENNA PLANS & SCHEDULE



TOWER OVP DETAIL

SCALE: NONE

1



ITEM NO.	PART NUMBER	DESCRIPTION	AC-DIST08-6IP-SHIR/QTY.
1	AC-DIST05-24IP-DC	IP SHEETMETAL BOX	1
2	AC-GKT05-FB-HICAP	GASKET EPDM	1
3	AC-FB-FRONT-4STEP-3CON	HYBRID MODULE INCLINE MOUNT THERMO SHELL	1
4	AC-STR05-HICAP	METAL O-RING	1
5	Regular LW 0.125	WASHER	30
6	3GMRB04058	TAMPERED PROOF #6-32 SCREW	30
7	CF-970850-101_106_W/LC	JAM NUT RECEPTACLE	12
8	ASU9325TYP02	HYBRID CABLE HI-CAP	1
9	6000428	LOCKNUT FOR CABLE GLAND	1
10	4220342	CABLE GLAND	1
11	HOIST GRIP	CABLE HOIST GRIP	1

HYBRID CABLE HI-CAP BREAKOUT BOX

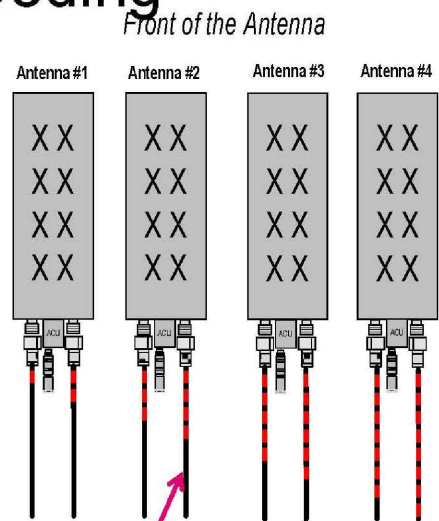
SCALE: NONE

2

Coax Color Coding

- Antennas will be labeled (back of antenna view) Right to left 1 - X ports
- Coax/Jumper lines will be identified by sector color and by number of bands around the coax/jumper

Sector A	Red
Sector B	Green
Sector C	Blue
Sector D	Yellow
Sector E	White
Sector F	Purple
LMU	Brown + Sector Color Bands (1,2)
Fiber ID	Gray
Unused Coax	Pink
Microwave	Orange
PWE T-1's + GPS	ID w/Label Maker
Downlink cable	

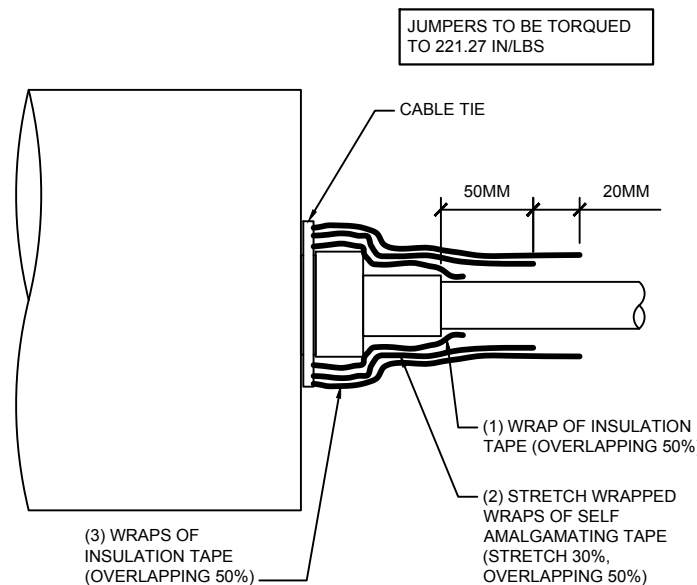


- Example – Coax with *four bands of RED* tape will represent *Alpha sector* and the *4th port of antenna*.

COAX COLOR CODING

SCALE: NONE

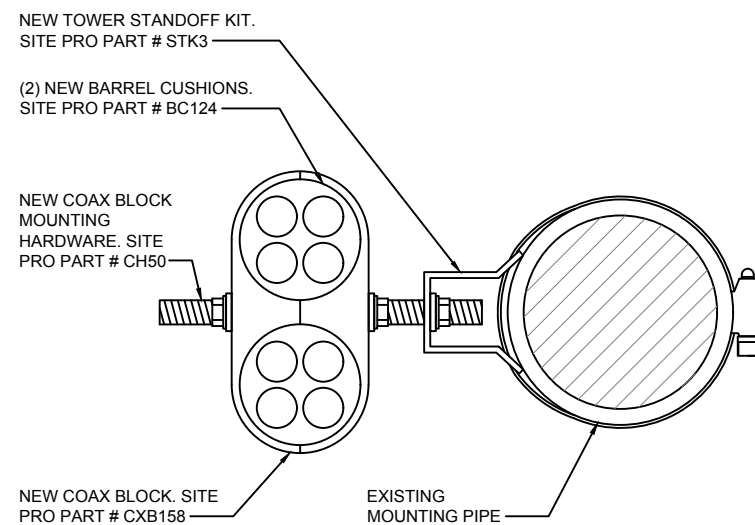
3



RF JUMPER CONNECTION DETAIL

SCALE: NONE

4

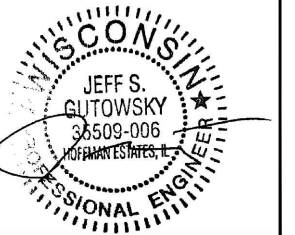


RF JUMPER MOUNTING DETAIL

SCALE: NONE

5

NTPWIRELESS
EVERY SITE. EVERY DAY



EXPIRES: 07/31/22 SIGNED: 02/02/22

REV.	ISSUED FOR	DATE	BY
A	FOR CLIENT REVIEW	08/14/20	PS
0	FINAL	09/04/20	KLO
1	REVISION	09/08/20	KLO
2	REVISION	09/10/20	JTB
3	REVISION	06/29/21	SC
4	SA REVISION	07/21/21	KLO
5	REVISION	01/10/22	JTB
6	REVISION	02/02/22	JTB

AQUATIC \ DESIGN & PROGRAM MANAGEMENT
CIVIL \ TELECOMMUNICATION \ MECHANICAL
PLUMBING \ ELECTRICAL \ LAND SURVEYING
ACCESSIBILITY CONSULTING \ STRUCTURAL

CHECK: JKR
DRAWN: PS
JOB: 2001125T

A-3
EQUIPMENT
SPECIFICATIONS

T-Mobile

WT GROUP
Engineering with Precision, Pace and Passion
2975 Pratum Avenue | Hoffman Estates, IL 60132
T: 224.293.6333 | F: 224.293.6444
wtengineering.com

WT Group
Engineering • Design • Consulting

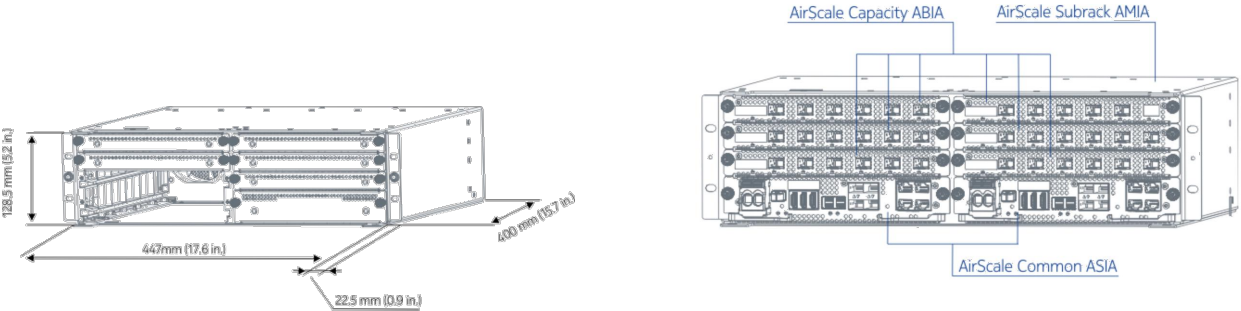
ML70554A
HOST WT LAKE GENEVA
1003 HOST DRIVE,
LAKE GENEVA, WI 53147

Nokia AirScale System Module Indoor consists of the following items:

- One Nokia AirScale Subrack (AMIA), including backplane for high bandwidth connectivity between processing plug-in units
- One or two Nokia AirScale Common (ASIA) plug-in units for transport interfacing and for centralized processing
- Up to six Nokia AirScale Capacity (ABIA) plug-in units for baseband processing and for optical interfaces with radio units

Weight	Empty: 5.1 kg (11.2 lb)
	With dummy panels: 6.8 kg (15 lb)
	With all units: 23.9 kg (52.7 lb)

The AirScale Subrack (AMIA) has a 3U height and fits into a standard 19 in. rack. Multiple subracks can be stacked on top of each other. The indoor subrack includes fans, a backplane for internal communication, and the DC-feed. The direction of the cooling air can be changed by rotating fans. The default direction is front-to-back.



AMIA DETAIL

SCALE: NONE

1

NOT USED

SCALE: NONE

2

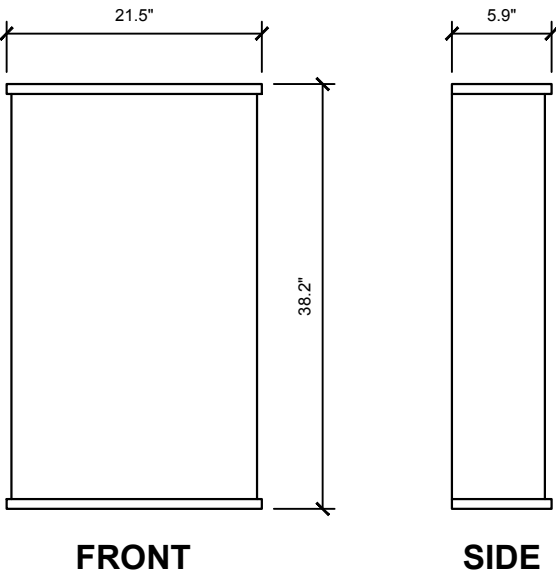
NB-IoT Support	Instantaneous BW (DL/UL)	65MHz on Band 25, 80MHz on Band 66
	Supported Modulation schemes	up to 64QAM (UL) and up to 256QAM (DL)
	Supported bandwidths	LTE 1.4,3,5,10,15,20 MHz
	No. of ports	4T4R
	Output Power	80 W for Band 25 and 40 W for Band 66 (Total Power is 480W)
	DC connector	Terminal block
	Optical Fiber connector	2 x 9.8Gbps CPRI, R2CT IP seal
	RF Connector	4,3-10+
	AISG	AISG on all ports, DC on ANT1 and ANT3
	Dimensions (H x W x D) in	27.3 x 12.1 x 5.2
	Weight lbs	70.5 without cover
	HW/SW Availability	Available now – SRAN19A
	5G NR Support	YES



AHFIG DETAIL

SCALE: NONE

3



NOKIA AEHC

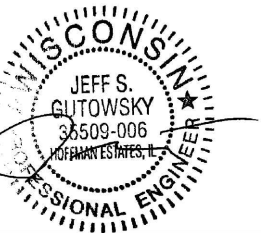
SIZE (L x W x D): 38.2" x 21.5" x 5.9"

WEIGHT (W/O MOUNTING KIT): 108.0 LBS

ANTENNA DETAIL

SCALE: NONE

4



EXPIRES: 07/31/22 SIGNED: 02/02/22

REVISIONS

REV.	ISSUED FOR	DATE	BY
A	FOR CLIENT REVIEW	08/14/20	PS
0	FINAL	09/04/20	KLO
1	REVISION	09/08/20	KLO
2	REVISION	09/10/20	JTB
8	REVISION	06/29/21	SC
3	SA REVISION	07/21/21	KLO
4	REVISION	01/10/22	JTB
Δ	REVISION	02/02/22	JTB

AQUATIC \ DESIGN & PROGRAM MANAGEMENT
CIVIL \ TELECOMMUNICATION \ MECHANICAL
PLUMBING \ ELECTRICAL \ LAND SURVEYING
ACCESSIBILITY CONSULTING \ STRUCTURAL



CHECK: JKR

DRAWN: PS

JOB: 2001125T

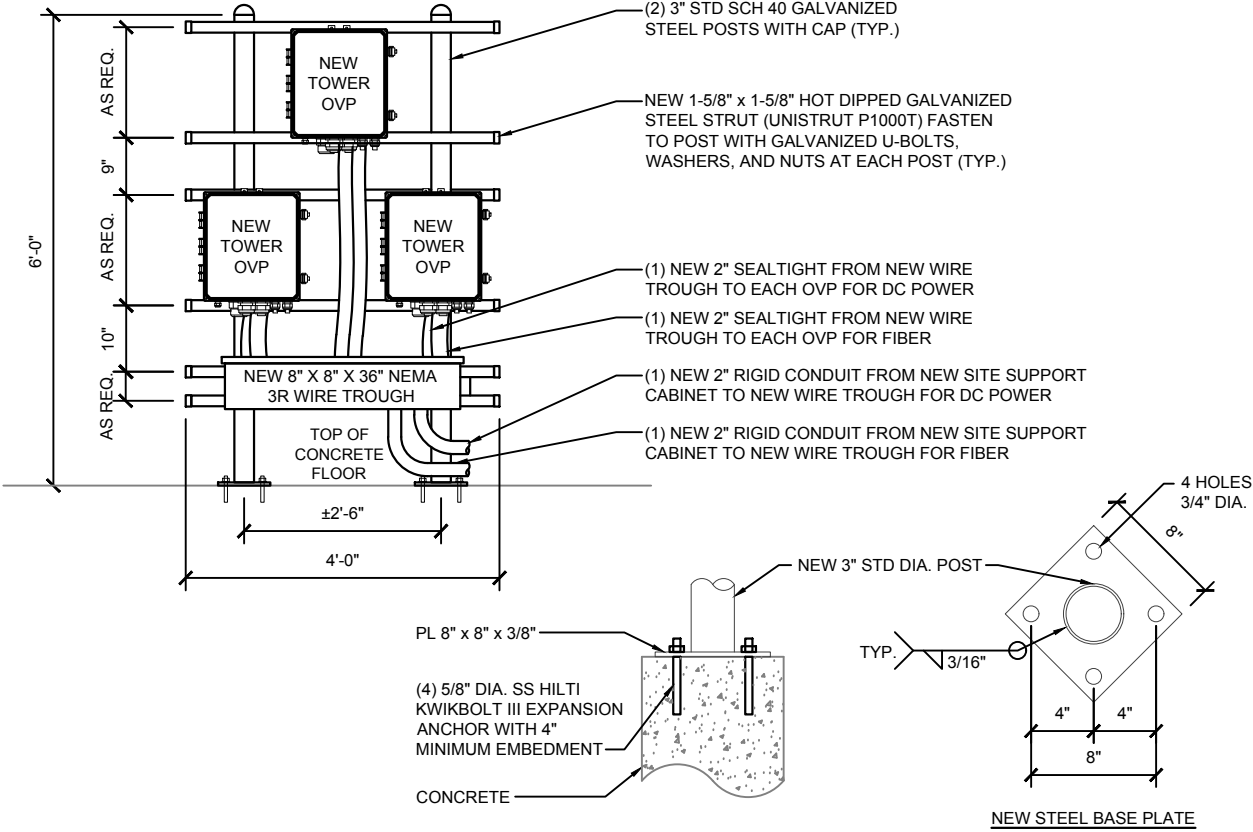
WT GROUP
Engineering with Precision, Pace and Passion
2875 Pratum Avenue | Hoffman Estates, IL 60132
T: 224.293.6333 | F: 224.293.6444
wtengineering.com
© COPYRIGHT 2022 THE W-T GROUP, LLC

WT Group
Engineering • Design • Consulting

ML70554A
HOST WT LAKE GENEVA
1003 HOST DRIVE,
LAKE GENEVA, WI 53147

NTPWIRELESS®
EVERY SITE, EVERY DAY

T-Mobile



OVP FRAME DETAIL	1
SCALE: NONE	

NOT USED	2
SCALE: NONE	

NOT USED	3
SCALE: NONE	

NOT USED	4
SCALE: NONE	

WT GROUP

Engineering with Precision, Pace and Passion
2975 Pratum Avenue | Hoffman Estates, IL 60192
T: 224.293.6333 | F: 224.293.6444
wtengineering.com

WT Group

Engineering • Design • Consulting

ML70554A

HOST WT LAKE GENEVA

1003 HOST DRIVE,
LAKE GENEVA, WI 53147

EXPIRES: 07/31/22 SIGNED: 02/02/22

REV.	ISSUED FOR	DATE	BY
A	FOR CLIENT REVIEW	08/14/20	PS
0	FINAL	09/04/20	KLO
1	REVISION	09/08/20	KLO
2	REVISION	09/10/20	JTB
B	REVISION	06/29/21	SC
3	SA REVISION	07/21/21	KLO
4	REVISION	01/10/22	JTB
A	REVISION	02/02/22	JTB

AQUATIC \ DESIGN & PROGRAM MANAGEMENT
CIVIL \ TELECOMMUNICATION \ MECHANICAL
PLUMBING \ ELECTRICAL \ LAND SURVEYING
ACCESSIBILITY CONSULTING \ STRUCTURAL

CHECK: JKR

DRAWN: PS

JOB: 2001125T

A-5

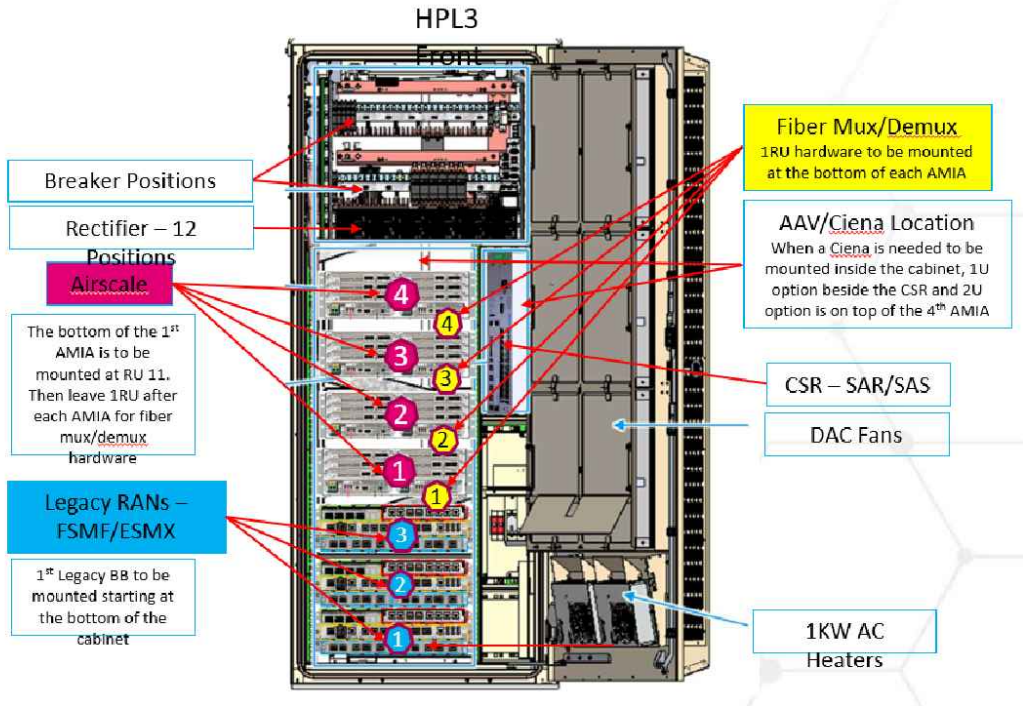
EQUIPMENT SPECIFICATIONS



Specifications

Model	HPL3 (HP-Large 3 Power Cabinet)	
1. General		
Construction	Aluminum enclosure	
Dimensions (W x H x D)	30 x 72 x 34.6 in. (762 x 1829x 879mm), Depth with Door/Hatch: 44.7 in. (1136mm)	
Weight	~595 lbs (~270kg) (without customer equipment or batteries) Total Equipment space 30RU:	
Internal rack dimension	Horizontal rack:	19" x 27RU
	Vertical rack:	19" x 3RU
	Power System space:	23" x 12RU
Mounting options	Pad-mount, plinth option	
Finish	Polyester Power Paint (Tan)	
Safety	UL Listed , IEC / EN 60950	
2. Environment		
Operating temperature	-40°C to +50°C (-40°F to +122°F) with solar load. IP 55	
Protection class	designed to GR-487	
Acoustics	65dBA @5000W heat load , 70dBA @ 6000W	
Humidity (relative)	95%, non-condensing (Max.)	
3. Thermal Management		
Cooling Equipment:	Direct Air Cooling, 6000W capacity, 5°C delta T	
Heating Equipment:	Forced air heating (2) 1000W AC heaters	
4. Equipment		
Cable entry	Knock-out plate on each upper side wall / Additional knockouts on sides (1) 3" conduit hole with hole plug	
Door latch	3 point latching, 5/16 nut driver tool, pad-locking capability	
Primary ground	10 double-hole ¼"-20 threaded holes on 5/8" center ground bar	
Lifting Ears	4 Lifting Tabs	
Plinth	Optional 6" plinth available	
Standard equipment	AC Load Center:	
	240V split phase, dual feed / (1) 200A + (1)100A	
	208V 3-phase, single feed / (1) 200A	
	AC Surge Protection for each breaker feed	
	GFCI Receptacle 120V	
	Temp Probes	
	(6 form-C) Alarm Termination block	
	605A/ 54V (336kW) redundant Power System with DIN rail distribution:	
	12 rectifier positions (3x55A DPR3000 rectifiers included)	
	48 poles for load (2x10A, 3x50A, and 6x100A load breakers included)	
Front Door:	16 poles for battery	
	(2) SB350 / (2) SB175 Battery connections	
	(3) SB350 Generator connections	
	(6) DC powered centrifugal fans with (3) MERV-13 filters, (GORE option)	
	Clogged Filter alarm pressure switch	
Rear Hatch:	Door intrusion alarm	
	(2) 1000W AC powered heaters	
	LED interior cabinet light	
5. Ordering information		
Cabinet	ESOA600-HCU01	HP-Large 3 600A Power / Equipment Cabinet
Rectifier	ESR-48/60A A-T	48V / 56A 3000W, 96.4%, CAN communication
Controller (Spare)	TPS1020028AU17	Orion TOUCH Controller
Plinth, 6"	37993318816900-S	Plinth for V1/V2, HPL2, HPL3, LB2 and LB3

*All specifications are subject to change without prior notice



SITE SUPPORT CABINET

SCALE: NONE

1

T-Mobile

NTPWIRELESS
EVERY SITE. EVERY DAY

WT GROUP
Engineering with Precision, Pace and Passion
2875 Pratum Avenue | Hoffman Estates, IL 60192
T: 224.293.6333 | F: 224.293.6444
wtengineering.com

WT Group
Engineering • Design • Consulting

ML70554A
HOST WT LAKE GENEVA
1003 HOST DRIVE,
LAKE GENEVA, WI 53147



EXPIRES: 07/31/22 SIGNED: 02/02/22

REV.	ISSUED FOR	DATE	BY
A	FOR CLIENT REVIEW	08/14/20	PS
0	FINAL	09/04/20	KLO
1	REVISION	09/08/20	KLO
2	REVISION	09/10/20	JTB
B	REVISION	06/29/21	SC
3	SA REVISION	07/21/21	KLO
4	REVISION	01/10/22	JTB
Δ	REVISION	02/02/22	JTB

AQUATIC \ DESIGN & PROGRAM MANAGEMENT
CIVIL \ TELECOMMUNICATION \ MECHANICAL
PLUMBING \ ELECTRICAL \ LAND SURVEYING
ACCESSIBILITY CONSULTING \ STRUCTURAL



CHECK: JKR

DRAWN: PS

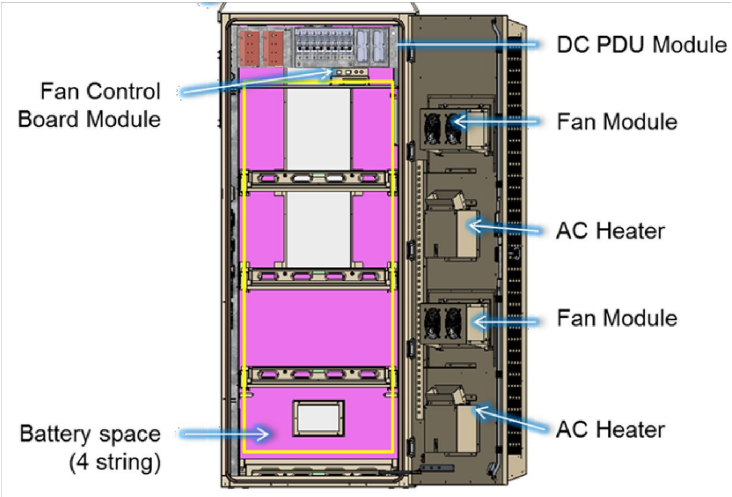
JOB: 2001125T



Specifications

Model		Large 3 Battery (LB3) Cabinet	
1. General			
Construction	Aluminum enclosure		
Dimensions (W x H x D)	30 x 72 x 35 in. (766 x 1829x 889mm), Depth with door: 41 in. (1045mm)		
Weight	~540lbs (245kg)	(without batteries)	
Internal rack dimension	4 battery trays to support up to 210Ah batteries		
Mounting options	Pad-mount, plinth option		
Finish	Polyester Powder Paint (Tan)		
Safety	UL Listed, IEC / EN 60950		
2. Environment			
Operating temperature	-40C to +50C (-40F to +122F) with solar load.		
Protection class	IP55 designed to GR-487		
Acoustics	65 dBA		
Humidity (relative)	95%, non-condensing (Max.)		
3. Thermal management			
Cooling	Direct Air Cooling: (4) Axial Fans. Filters: F6 front and rear		
Heating	Forced air heating (2) 1000W AC heaters		
4. Equipment			
Cable Entry	Knock-out plate on each upper side wall Additional knockouts each side		
Door latch	3 point latching, 5/16 Nut driver tool, pad-locking capability		
Lifting Ears	4 eye bolts		
Standard equipment	AC Load Center with AC Surge protection and GFCI outlet Left or Right side AC entry options (2) 1000W AC powered heater		
	DC Load Center 600A bulk feed bus bar (4) 20050A DIN rail battery breakers (4) 2-hole lug landings (2) Anderson SB350 input connectors to daisy chain 2nd battery cabinet 2AWG battery cables from breakers to trays		
	Configurable trays for (4) strings of up to 210Ah batteries Door intrusion switch LED interior cabinet light Fan Control Board, factory wired alarms via RJ45 output (fan & breaker alarms)		
	Cabinet Connection kit (2) 4/0 cables with SB350 disconnects to connect to power cabinet		
5. Ordering information			
Cabinet	ESOF015-ECV04	Large Battery 3 Cabinet	
Plinth, 6"	37993318816900-S	Plinth for V1/V2, HPL2, LB2 cabinets only	

*All specifications are subject to change without prior notice.



BATTERY CABINET

SCALE: NONE

1

WT GROUP
Engineering with Precision, Pace and Passion
2875 Pratum Avenue | Hoffman Estates, IL 60132
T: 224.293.6333 | F: 224.293.8444
wtengineering.com

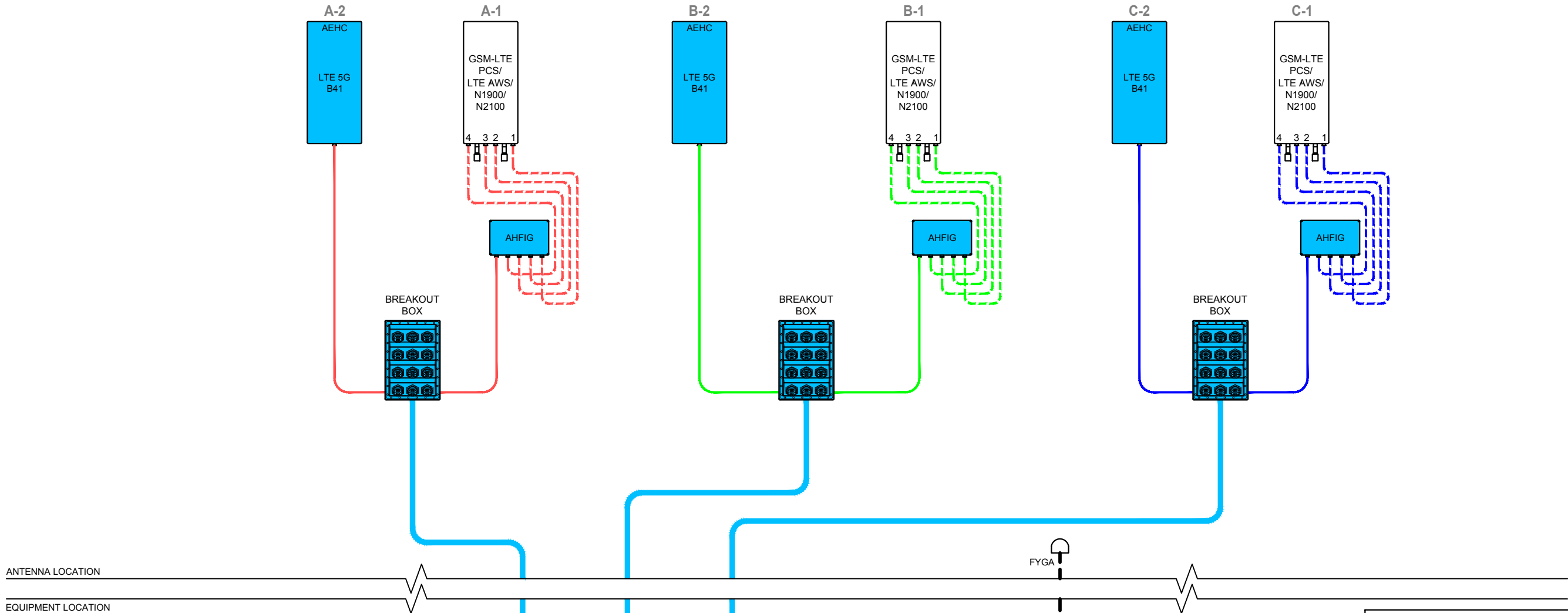
ML70554A
HOST WT LAKE GENEVA
1003 HOST DRIVE,
LAKE GENEVA, WI 53147

AQUATIC \ DESIGN & PROGRAM MANAGEMENT
CIVIL \ TELECOMMUNICATION \ MECHANICAL
PLUMBING \ ELECTRICAL \ LAND SURVEYING
ACCESSIBILITY CONSULTING \ STRUCTURAL

CHECK: JKR
DRAWN: PS
JOB: 2001125T

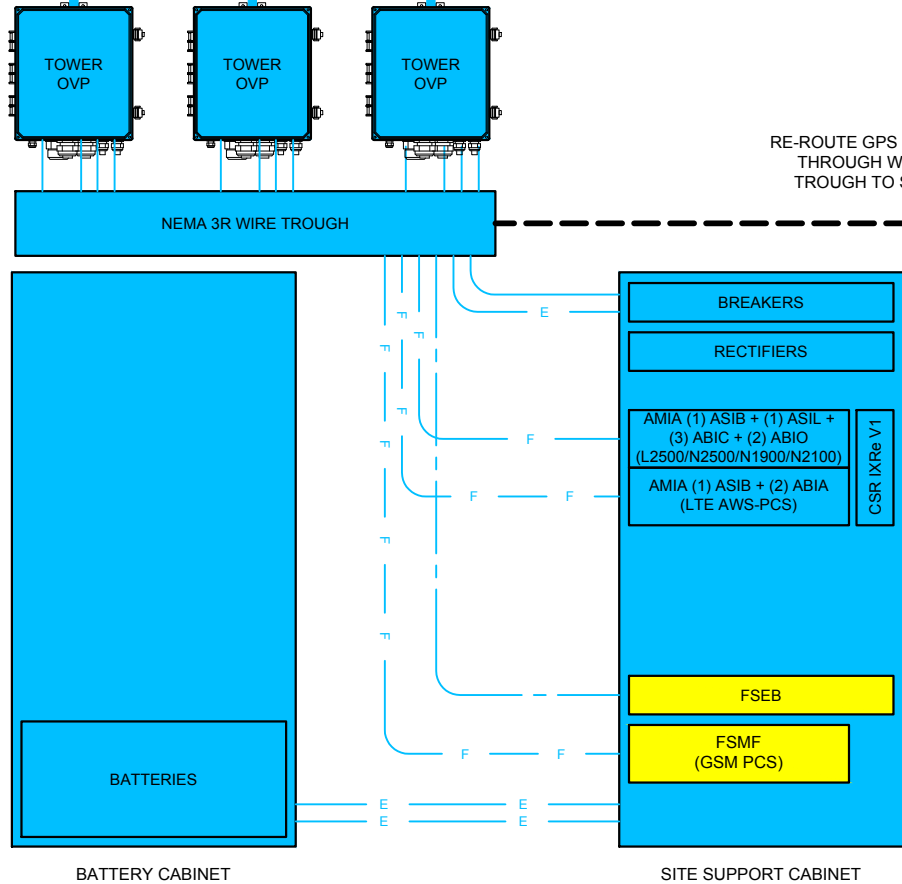
A-7
EQUIPMENT
SPECIFICATIONS

REV.	ISSUED FOR	DATE	BY
A	FOR CLIENT REVIEW	08/14/20	PS
0	FINAL	09/04/20	KLO
1	REVISION	09/08/20	KLO
2	REVISION	09/10/20	JTB
8	REVISION	06/29/21	SC
3	SA REVISION	07/21/21	KLO
4	REVISION	01/10/22	JTB
Δ	REVISION	02/02/22	JTB



COMPLETE SCOPE OF WORK

- (1) GSM ESMB TO BE REMOVED AND RETURNED TO WAREHOUSE
- RELOCATE (1) EXISTING FSMF TO SSC. RE-PURPOSE FOR GSM PCS
- (1) LTE FBBC TO BE REMOVED AND RETURNED TO WAREHOUSE
- EXISTING CUBE TO BE REMOVED AND RETURNED TO WAREHOUSE
- EXISTING SSC & EXISTING BATTERY CABINET TO BE REMOVED AND RETURNED TO WAREHOUSE
- (3) EXISTING FRIJ'S TO BE REMOVED AND RETURNED TO WAREHOUSE
- (3) EXISTING FXFC'S TO BE REMOVED AND RETURNED TO WAREHOUSE
- INSTALL (3) NEW AHFIG'S (1 PER SECTOR)
- REPLACE (3) EXISTING ANTENNAS WITH (3) NEW ANTENNAS (1 PER SECTOR)
- UTILIZE (3) EXISTING ANTENNAS (1 PER SECTOR)
- INSTALL NEW RF JUMPERS FOR NEW RRU'S
- (15) EXISTING COAX CABLES TO BE REMOVED
- REMOVE (3) EXISTING HCS CABLES
- REMOVE (1) EXISTING EQUIPMENT COVP
- REMOVE (3) EXISTING ANTENNA COVP'S
- INSTALL (3) NEW TOWER OVP'S AT EQUIPMENT
- INSTALL (3) NEW BREAKOUT BOXES AT ANTENNAS
- INSTALL (3) NEW HCS 2.0 TRUNK CABLES
- RELOCATE (1) EXISTING FSEB TO SSC
- INSTALL (1) NEW SSC AT EQUIPMENT
- INSTALL (1) NEW BBU AT EQUIPMENT
- INSTALL (1) NEW AMIA W/ (1) ASIB CORE MODULE, (1) ASIL CORE MODULE, (3) ABIC CAPACITY MODULES AND (2) ABIO CAPACITY MODULES IN SSC
- INSTALL (1) NEW AMIA W/ (1) ASIB CORE MODULE AND (2) ABIA CAPACITY MODULES IN SSC
- INSTALL NEW CSR IXRe V1
- SWEEP TEST EXISTING COAX LINES & ANTENNA USED FOR FINAL BUILD
- RESTORE EXISTING GROUNDS AS NEEDED FOR EXISTING COAX LINES & ANTENNAS USED FOR FINAL BUILD
- OBTAIN CURRENT RFDS WITHIN 48 HOURS PRIOR TO CONSTRUCTION
- FOLLOW PORT MATRIX PER RF CONFIGURATION
- FOLLOW CURRENT T-MOBILE STANDARD OPERATION PROCEDURE
- RETURN ALL UNUSED NEW & OLD EQUIPMENT MATERIALS/EQUIPMENT TO WAREHOUSE IN THE SAME CONDITION WHEN IT WAS REMOVED
- PROVIDE CLOSEOUT PACKAGE WITHIN 72 HOURS AFTER SITE COMPLETION
- CLOSE ANY OPEN PERMITS AFTER SITE COMPLETION



NOTE:
CONTRACTOR TO REFER TO THE RADIO
AND ANTENNA INSTALLATION MOPs FOR
THE CORRECT PLUMBING DIAGRAM

NOTE:
CONTRACTOR TO OBTAIN THE MOST
CURRENT RFDS FROM T-MOBILE PRIOR
TO CONSTRUCTION

LEGEND

	ALPHA CABLES
	BETA CABLES
	GAMMA CABLES
	RF JUMPER
	MAIN POWER & FIBER
	POWER & FIBER JUMPER
	ALARM CABLE
	AISG RET CABLE
	HYBRID CABLE
	COAX CABLE
	POWER
	RELOCATED EQUIPMENT
	NEW EQUIPMENT
	EXISTING EQUIPMENT

RF PLUMBING DIAGRAM

SCALE: NONE

1

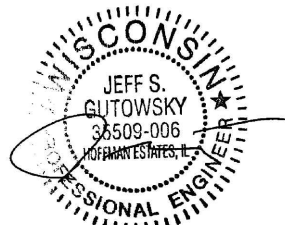
T-Mobile

NTPWIRELESS
EVERY SITE. EVERY DAY

WT GROUP
Engineering with Precision, Pace and Passion
2975 Pratum Avenue | Hoffman Estates, IL 60192
T: 224.293.6333 | F: 224.293.6444
wtengineering.com

WT Group
Engineering • Design • Consulting

ML70554A
HOST WT LAKE GENEVA
1003 HOST DRIVE,
LAKE GENEVA, WI 53147



EXPIRES: 07/31/22 SIGNED: 02/02/22

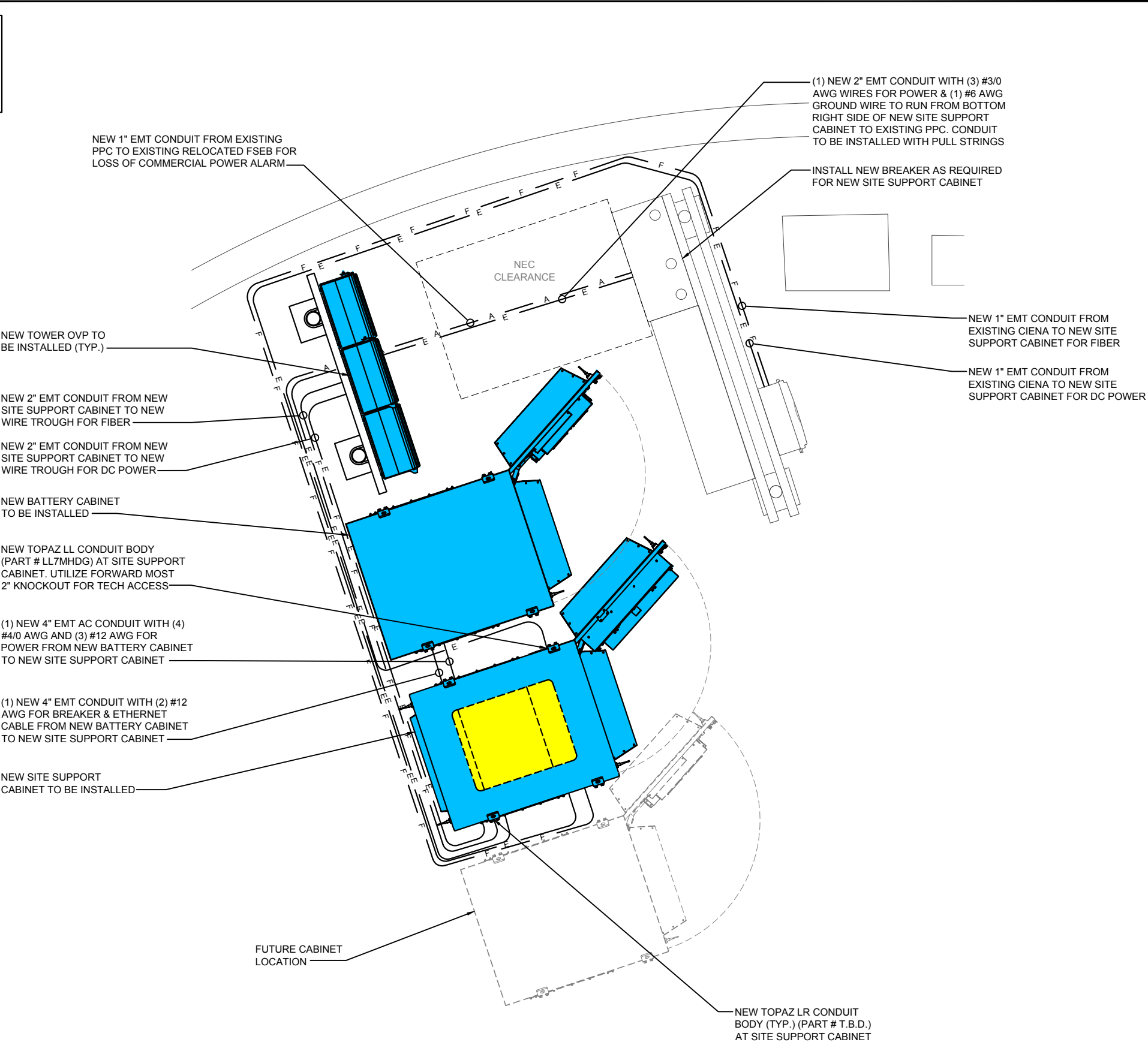
REV.	ISSUED FOR	DATE	BY
A	FOR CLIENT REVIEW	08/14/20	PS
0	FINAL	09/04/20	KLO
1	REVISION	09/08/20	KLO
2	REVISION	09/10/20	JTB
3	REVISION	06/29/21	SC
4	SA REVISION	07/21/21	KLO
5	REVISION	01/10/22	JTB
6	REVISION	02/02/22	JTB

AQUATIC \ DESIGN & PROGRAM MANAGEMENT
CIVIL \ TELECOMMUNICATION \ MECHANICAL
PLUMBING \ ELECTRICAL \ LAND SURVEYING
ACCESSIBILITY CONSULTING \ STRUCTURAL

CHECK: JKR
DRAWN: PS
JOB: 2001125T

A-8
RF PLUMBING DIAGRAM

- PPC NOTES:
- LOW VOLTAGE CONDUIT FROM PPC TO SSC
 - (2) RUNS OF BELDEN 27916A 18 AWG 2 CONDUCTOR TYPE TC CABLE, 600V WIRE
 - WIRE TO NORMALLY CLOSED RELAY FOR LOCP
 - WIRE TO NORMALLY OPEN RELAY FOR GENERATOR RUN



LEGEND

— F —	— FIBER LINE
— E —	— ELECTRIC LINE
— A —	— ALARM LINE

T-Mobile

NTPWIRELESS
EVERY SITE. EVERY DAY

WT GROUP
Engineering with Precision, Pace and Passion
2975 Pratum Avenue | Hoffman Estates, IL 60132
T: 224.293.6333 | F: 224.293.6444
wtengineering.com

WT Group
Engineering • Design • Consulting

ML70554A
HOST WT LAKE GENEVA
1003 HOST DRIVE,
LAKE GENEVA, WI 53147

WISCONSIN
JEFF S. GUTOWSKY
36509-006
PROFESSIONAL ENGINEER

EXPIRES: 07/31/22 SIGNED: 02/02/22

REV.	ISSUED FOR	DATE	BY
A	FOR CLIENT REVIEW	08/14/20	PS
0	FINAL	09/04/20	KLO
1	REVISION	09/08/20	KLO
2	REVISION	09/10/20	JTB
B	REVISION	06/29/21	SC
3	SA REVISION	07/21/21	KLO
4	REVISION	01/10/22	JTB
Δ	REVISION	02/02/22	JTB



AQUATIC \ DESIGN & PROGRAM MANAGEMENT
CIVIL \ TELECOMMUNICATION \ MECHANICAL
PLUMBING \ ELECTRICAL \ LAND SURVEYING
ACCESSIBILITY CONSULTING \ STRUCTURAL

CHECK: JKR
DRAWN: PS
JOB: 2001125T

E-1
UTILITY PLAN

GROUNDING STANDARDS:

1.0 DEFINITIONS

AGB: ANTENNA GROUND BAR

AWG: AMERICAN WIRE GAUGE

CADWELDING: AN EXOTHERMIC WELDING PROCESS WHICH CREATES POSITIVE CONTACT OF POSITIVE CONTACT OF GROUNDING CONDUCTORS

EMT: ELECTRICAL METAL TUBING (LIGHT GAUGE METALLIC CONDUIT)

MGB: MASTER GROUND BAR

PVC: POLYVINYL CHLORIDE CONDUIT

RFI: RADIO FREQUENCY INTERFERENCE

TGB: TOWER GROUND BAR

THWN: LETTER TYPE DESIGNATION FOR CONDUCTOR INSULATION THAT IS A MOISTURE AND HEAT RESISTANT THERMOPLASTIC WITH A MAXIMUM OPERATING TEMPERATURE OF 75 DEGREES CELSIUS OR 167 DEGREES FAHRENHEIT

TI: TENANT IMPROVEMENT

2.0 BACKGROUND

2.1 AREAS OF CONCERN: WHEN DESIGNING A GROUNDING SYSTEM FOR A MOBILE RADIO FACILITY THERE ARE FOUR INTERRELATED AREAS OF CONCERN. THE BASIC OBJECTIVE FOR EACH IS:

- LIGHTNING PROTECTION -TO MAINTAIN ALL EQUIPMENT AT THE SAME POTENTIAL DURING A LIGHTNING IMPULSE.
- RFI FOR NOISE INDUCTION CONTROL -TO ESTABLISH THE LOWEST POSSIBLE IMPEDANCE AMONG ALL EQUIPMENT.
- ELECTROSTATIC CONTROL -TO REDUCE ELECTROSTATIC DISCHARGE PROBLEMS.
- PERSONNEL SAFETY -TO MAINTAIN A MINIMUM VOLTAGE DIFFERENCE BETWEEN ANY TWO METALLIC OBJECTS WHICH PERSONNEL MIGHT CONTACT SIMULTANEOUSLY.

2.2 A/C GROUNDING: IN THIS GROUNDING SYSTEM THE A/C SERVICE GROUND SHALL BE KEPT ISOLATED FROM THE EQUIPMENT FRAME WORK AND LIGHTNING PROTECTION GROUND SYSTEMS EXCEPT FOR ONE SPECIFIC POINT. THIS POINT IS THE MAIN GROUNDING POINT OF THE SYSTEM. THIS WOULD TYPICALLY BE CONNECTING THE A/C SERVICE GROUND AT THE COMMERCIAL POWER RISER POLE DISCONNECT/METER BASE TO THE EXTERNAL GROUND RING. ALL GROUNDING CONNECTIONS INSIDE OF CABINETS SHALL BE SCRAPED TO BARE METAL AND COATED WITH NOALOX.

2.3 LIGHTNING CONSIDERATIONS: LIGHTNING DAMAGE OCCURS FROM EITHER INDUCTION OR FROM AN ACTUAL DIRECT STRIKE TO THE BUILDING. USUALLY TAKEN THROUGH THE TOWER AND/OR ANTENNAS. STRIKES TO OTHER NEARBY OBJECTS INDUCE HIGH ENERGY INTO POWER OR TELEPHONE CABLES ENTERING THE BUILDING. THIS TYPE OF EFFECT HISTORICALLY CAUSES MOST OF THE DAMAGE TO THE BUILDING AND ITS CONTENTS.

3.0 STATION GROUNDING SYSTEM

3.1 MATERIALS:

- #2 AWG, BARE SOLID TINNED COPPER WIRE. FOR ALL EXTERIOR CONDUCTORS AND TOWER GROUND BAR CONDUCTORS OR AS OTHERWISE SPECIFIED. GROUNDS TO THE RF MODULES SHALL BE NO. 6 STANDARD GREEN INSULATED JUMPERS. THE GROUND WIRE TO THE MGB SHALL BE GREEN JACKETED STRANDED #2 TINNED WIRE BURNDY CONNECTED TO THE BUSS BAR AND CONNECTED TO THE GROUND RING ON A GROUND ROD.
- #2 AWG, INSULATED STRANDED COPPER CABLE IS ACCEPTABLE FOR INTERIOR GROUND BAR CONDUCTORS ON TENANT IMPROVEMENT SITES.
- 5/8" X 10" GROUND RODS OF SOLID COPPER, STAINLESS STEEL OR COPPER CLAD HIGH STRENGTH STEEL.
- ABOVE GRADE CONNECTIONS SHALL BE BURNDY HYGROUND COMPRESSION. BELOW GRADE CONNECTIONS SHALL BE EXOTHERMIC WELD OR OTHER APPROVED EXOTHERMIC WELDING SYSTEM FOR BONDING AS SPECIFIED.
- XIT OR ADVANCED GROUNDING ELECTRODE (AGE). ALL CHEMICAL GROUND RODS SHALL BE UL APPROVED.
- SOLID COPPER PLATES OF MINIMUM 3'X3'X1/4" SIZE AS SPECIFIED.
- NOALOX OR APPROVED EQUAL CONDUCTIVE MEDIUM MATERIAL SHALL BE USED IN ALL MECHANICAL CONNECTIONS.
- #2 AWG STRANDED INSULATED (GREEN) FOR ALL INTERNAL EQUIPMENT GROUNDING.
- MECHANICAL FASTENERS (I.E., DOUBLE LUGS, SPLIT BOLTS PARALLEL CONNECTORS) SHALL BE BRONZE, BRASS, COPPER OR STAINLESS STEEL AND HAVE NOALOX BETWEEN CONDUCTOR AND CONNECTION.
- BOLTS, NUTS AND SCREWS USED TO FASTEN MECHANICAL CONNECTORS SHALL BE STAINLESS STEEL WITH STAR TYPE STAINLESS STEEL LOCK WASHERS.
- ALL LUG TUBE FASTENERS SHALL PROVIDE TWO HOLES TO ALLOW A DOUBLE BOLT CONNECTION.

3.2 MASTER GROUND BAR (MGB): THE PURPOSE OF THE MASTER GROUND BAR IS TO GROUND THE BTS AND ANY OTHER METALLIC OBJECTS AROUND THE BTS. IF AN MGB IS NOT PROVIDED WITH THE BTS, THE MGB SHALL BE AS FOLLOWS: THE MGB IS A COPPER BAR MEASURING 4"W X 24"L X 1/4" LOCATED AS CLOSE TO THE BTS AS POSSIBLE. THE MGB SHALL HAVE A MINIMUM NUMBER OF (28) 3/8" HOLES. GROUND BAR SHALL BE SUPPORTED BY MOUNTING BRACKETS WITH INSULATOR STANDOFFS. (2) #2 TINNED SHALL BE MECHANICALLY ATTACHED (2-HOLE COMPRESSION LUG 3/8" HOLES, 1" CENTER TO CENTER SPACING) TO THE MGB AND DOWN LEADS THEN TAKEN THROUGH CONDUIT TO THE GROUND RING. THIS CONDUCTOR SHALL BE KEPT SEPARATE AND ISOLATED UNTIL TERMINATING AT THE MAIN GROUNDING POINT, (I.E. EXTERIOR GROUND RING OR BUILDING STEEL).

3.3 ANTENNA GROUND BAR (AGB): THE PURPOSE OF THE ANTENNA GROUND BAR IS PRIMARILY FOR LIGHTNING PROTECTION. COAXIAL CABLE IS USUALLY THE ONLY ITEM GROUNDED TO THIS BAR. HOWEVER IT IS ACCEPTABLE TO BOND EXTERIOR; CABLE TRAY, WAVE GUIDE PORTS AND CANTILEVERED WAVE GUIDE BRIDGES TO THE AGB. THE AGB IS A COPPER BAR MEASURING 4"W X 24"L X 1/4". THERE SHALL BE TWO AGBS, ONE LOCATED AT THE TOP OF THE TOWER AT THE START OF THE VERTICAL RUN OF COAX, THE OTHER AT THE BOTTOM OF THE VERTICAL RUN OF COAX BEFORE IT MAKES ITS BEND. (IF THE TOWER IS OVER 200' THERE SHALL BE A THIRD AGB LOCATED AT HE MIDDLE OF THE TOWER).THE AGB SHALL HAVE A MINIMUM OF (28) 3/8" HOLES. GROUND BARS SHALL BE SUPPORTED BY MOUNTING BRACKETS WITH INSULATOR STANDOFFS. USE #2 AWG SOLID TINNED WIRE W/ 2-HOLE SHORT BARREL COMPRESSION LUGS 3/8" HOLES, 1" CENTER TO CENTER SPACING). THIS CONDUCTOR SHALL BE KEPT SEPARATE AND ISOLATED UNTIL TERMINATING AT THE MAIN GROUNDING POINT (I.E. EXTERIOR GROUND RING, OR BUILDING STEEL.)

3.4 SURGE ARRESTOR GROUND BAR: THE PURPOSE OF THE SURGE ARRESTOR GROUND BAR IS FOR LIGHTING PROTECTION. THE SURGE ARRESTOR GROUND BAR IS A BENT (3" X 3") X 1/4" X 24" COPPER BAR. IT IS LOCATED ON THE WAVEGUIDE BRIDGE SUPPORT CLOSEST TO THE EQUIPMENT. ONE FACE OF THE BAR SHALL HAVE A MINIMUM OF (28) 3/8" DIA. HOLES. HOLES SHALL BE IN PAIRS THAT ARE 1" CENTER TO CENTER. THE OTHER FACE SHALL HAVE 3/8" DIA. HOLES AS REQUIRED TO ATTACH AND GROUND COAXIAL SURGE ARRESTORS. THE GROUND BAR SHALL BE SUPPORTED BY MOUNTING BRACKETS WITH INSULATOR STANDOFFS.

3.5 ANTENNA GROUNDING: EACH ANTENNA COAXIAL CABLE SHALL TYPICALLY BE GROUNDED AT THREE POINTS USING A HARD-SHELL COAXIAL CABLE KIT FROM THE MANUFACTURER OF THE ANTENNA CABLE. A TYPICAL INSTALLATION SHALL BE AS FOLLOWS:

- THE FIRST GROUND CONNECTION SHALL OCCUR AS CLOSE TO THE ANTENNA AS POSSIBLE. BELOW THE FIRST POINT THE COAX CABLE BEGINS TO RUN VERTICAL DOWN THE TOWER. THIS GROUND SHALL TERMINATE DIRECT TO THE TOP AGB. ON A TI, GROUND TO THE AGB AT THE ANTENNA MOUNTS.
- THE SECOND GROUND SHALL BE MADE AT THE BOTTOM OF THE VERTICAL RUN OF THE COAXIAL CABLE AS IT TURNS OUT AWAY FROM THE TOWER TOWARDS THE BTS. THIS GROUND SHALL BE TERMINATED AT THE TGB. THE TGB SHALL HAVE TWO (2) LEADS OF #2 AWG BARE TINNED SOLID COPPER WIRE, AND SHALL TERMINATE AT THE TOWER GROUND RING. THESE SHALL BE ENCASED IN PVC PIPE.
- THE THIRD GROUND SHALL BE ON THE SURGE ARRESTOR. GROUND TO BE ATTACHED TO THE CABLE ON STRAIGHT RUNS (NOT WITHIN BENDS) AND BE WEATHERPROOFED PER THE MANUFACTURER'S SPECIFICATIONS. THE SURGE ARRESTORS SHALL BE GROUNDED TO THE GROUND BAR. THE SAGB SHALL HAVE TWO (2) LEADS OF #2 AWG BARE TINNED SOLID COPPER WIRE, AND SHALL TERMINATE AT THE TOWER GROUND RING. THESE SHALL BE ENCASED IN PVC PIPE.

3.6 EXOTHERMIC WELD & BURNDY CONNECTIONS

EXOTHERMIC WELDS AND BURNDY CONNECTIONS SHALL BOND ALL UNDERGROUND AND DAMP LOCATION CONNECTIONS, SHELTER SKID GROUNDS, TOWER OR MONOPOLE GROUNDS, FENCING CORNER AND GATE POSTS, ANTENNA GROUND BARS, (AGB) SURGE ARRESTER GROUND BAR, AND THE MASTER GROUND BAR (MGB). MECHANICAL CONNECTIONS SHALL BE TYPICALLY USED TO BOND ALL INTERIOR EQUIPMENT, COAX CABLE BRIDGES AND COAXIAL CABLE GROUND KITS. ALL LUG TYPE MECHANICAL CONNECTORS TO THE MGB OR AGB SHALL BE TWO HOLE TYPE CONNECTED WITH STAINLESS STEEL BOLTS AND NUTS WITH STAINLESS STEEL LOCK WASHERS AND NOALOX ON EITHER SIDE OF THE BUSS BAR.

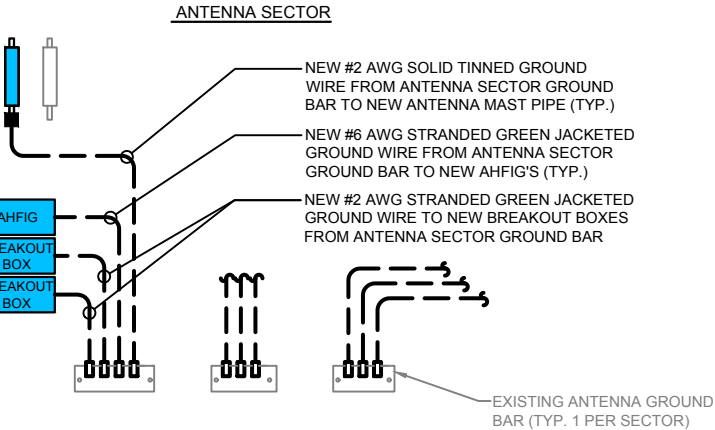
3.7 LIMITS OF BEND RADIUS: IT IS IMPORTANT THAT THE GROUNDING CONDUCTOR CONNECTING THE INSIDE AND OUTSIDE GROUND SYSTEMS BE AS STRAIGHT AS POSSIBLE, WITH NO TURN OR BEND SHORTER THAN ONE FOOT RADIUS WITH A THREE FOOT RADIUS PREFERRED. NO RIGHT ANGLE OR SHARP BENDS SHALL BE ALLOWED.

3.8 BONDING PREPARATION & FINISH: ALL SURFACES REQUIRE PREPARATION PRIOR TO BONDING OF EITHER EXOTHERMIC WELD OR BURNDY FASTENERS. GALVANIZED SURFACES SHALL BE GROUND OR SANDED TO THE POINT OF EXPOSING THE STEEL SURFACE BELOW. PRIOR TO BONDING THE GROUND CONDUCTOR. FOR OTHER SURFACES INCLUDING COPPER BUSS BARS ALL PAINT, RUST TARNISH AND GREASE SHALL BE REMOVED PRIOR TO BONDING THE GROUND CONDUCTOR. EXOTHERMIC WELD TYPE BONDS SHALL BE FINISHED WITH THE APPLICATION OF COLD GALVANIZATION AND WHEN APPLICABLE, FINISH PAINTED WITH AN APPROPRIATE COLOR AS REQUIRED. MECHANICAL TYPE BONDS ON BUSS BARS SHALL BE FINISHED WITH THE APPLICATION OF NOALOX OR OTHER APPROVED CONDUCTIVE MEDIUM MATERIAL BETWEEN CONNECTOR AND BUSS BAR. MECHANICAL TYPE BONDS ON ALL OTHER SURFACES SHALL BE FINISHED WITH THE APPLICATION OF COLD GALVANIZATION AND/OR THE APPROPRIATE PAINT TO MATCH AS REQUIRED.

3.9 TESTING: THE OUTSIDE GROUND RING SHALL BE TESTED AFTER INSTALLATION BUT PRIOR TO BACKFILLING THE GROUND RING TRENCH. THE GROUND FIELD RESISTANCE SHALL MEASURE 5 OHMS OR LESS TO GROUND. ANY DIFFICULTY IN ACHIEVING THIS LEVEL OF RESISTANCE MUST BE BROUGHT TO THE ATTENTION OF THE PROJECT MANAGER. THE RESISTANCE TO GROUND SHALL BE MEASURED USING THE FALL OF POTENTIAL METHOD. TESTING SHALL BE PERFORMED BY AN OWNER PROVIDED INDEPENDENT TESTING LABORATORY FROM WHICH A WRITTEN REPORT SHALL BE PRODUCED FOR REVIEW BY THE PROJECT MANAGER.

3.10 GENERAL NOTES:

- ALL ELECTRICAL WORK SHALL CONFORM TO THE NATIONAL ELECTRICAL CODE.
- ALL GROUNDING SHALL COMPLY WITH THE NATIONAL ELECTRICAL CODE.
- ALL ELECTRICAL ITEMS SHALL BE U.L. APPROVED OR LISTED.
- CONTRACTOR TO OBTAIN ALL PERMITS, PAY PERMIT FEES, AND BE RESPONSIBLE FOR SCHEDULING INSPECTIONS.
- PROVIDE ALL LABOR AND MATERIAL DESCRIBED ON THIS DRAWING, AND ALL ITEMS INCIDENTAL TO COMPLETING AND PRESENTING THIS PROJECT AS FULLY OPERATIONAL.
- GROUNDING CONNECTIONS SHALL BE EXOTHERMIC TYPE ("EXOTHERMIC WELD") TO ANTENNA MASTS, AND THE GROUND BARS. REMAINING GROUNDING CONNECTIONS SHALL BE COMPRESSION FITTINGS.
- GROUND COAXIAL CABLE SHIELDS AT BOTH ENDS WITH COAX CABLE GROUNDING KITS & INSTALL WEATHER PROOFING KIT AT EACH CONNECTION.
- ALL EQUIPMENT FURNISHED BY OTHERS SHALL BE PROVIDED WITH PROPER MOTOR STARTERS, DISCONNECTS, CONTROLS, ETC. BY THE ELECTRICAL CONTRACTOR UNLESS SPECIFICALLY NOTED OTHERWISE. THE ELECTRICAL CONTRACTOR SHALL INSTALL AND COMPLETELY WIRE ALL ASSOCIATED EQUIPMENT IN ACCORDANCE WITH MANUFACTURER'S WIRE DIAGRAMS AND AS REQUIRED FOR A COMPLETE OPERATING INSTALLATION. ELECTRICAL CONTRACTOR SHALL VERIFY AND COORDINATE ELECTRICAL CHARACTERISTICS AND REQUIREMENTS OF EQUIPMENT PRIOR TO ROUGH-IN OF CONDUIT AND WIRING TO AVOID CONFLICTS WHERE APPLICABLE.
- GROUNDING CONDUCTORS SHALL BE COPPER OR SOLID TINNED COPPER. ALL CONNECTIONS MADE BELOW GRADE SHALL BE SOLID TINNED COPPER. ALL CONNECTIONS ABOVE GRADE STRANDED IS PERMITTED.
- ALL EXOTHERMIC WELDS ABOVE FINISHED GRADE SHALL BE PAINTED WITH CO-GALVANIZED ZINC ENRICHED PAINT TO MATCH COLOR OBJECT BONDED TO.
- CONNECT COAX GROUND KITS TO MASTER GROUND BAR AT BASE OF TOWER.
- CONNECT COAX GROUND KITS TO GROUND BUS AT TOP OF TOWER.
- CONNECT RF MODULE GROUND TO GROUND BUS AT TOP OF TOWER.
- PLAN DRAWINGS SHOWN HEREIN DO NOT NECESSARILY DEPICT ELECTRICAL REQUIREMENTS OF INDIVIDUAL EQUIPMENT AND DEVICES SUCH AS THE EQUIPMENT GROUNDING REQUIREMENTS, POWER REQUIREMENTS AND TELCO RACEWAY REQUIREMENTS.
- PLAN DRAWINGS SHOWN HEREIN ARE DIAGRAMMATIC AND DO NOT NECESSARILY DEPICT THE EXACT EQUIPMENT QUANTITIES, LOCATION, LAYOUT AND CONFIGURATION. REFER TO ARCHITECTURAL PLANS FOR EXACT EQUIPMENT LOCATION, LAYOUT AND CONFIGURATION.
- NUMBER OF ANTENNAS REPRESENTED IN THIS DETAIL ARE FOR SHOWING CLARITY OF GROUND SYSTEM REQUIREMENTS ONLY. SEE RF INFO FOR ANTENNA QUANTITY.
- CONTRACTOR TO 'NOALOX' ALL CONNECTIONS TO GROUND BARS.



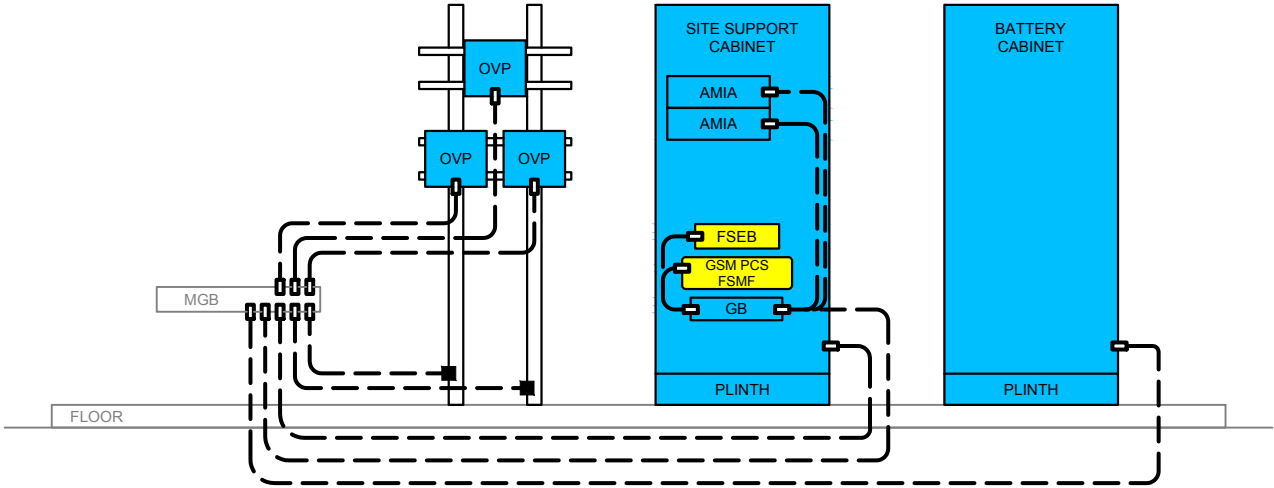
LEGEND

- NEW GROUNDING WIRE
- EXOTHERMIC WELD
- MECHANICAL CONNECTION/DOUBLE HOLE LUG TYPE CONNECTION
- EXISTING ANTENNA/EQUIPMENT
- RELOCATED ANTENNA/EQUIPMENT
- NEW ANTENNA/EQUIPMENT

NOTES:

- SYSTEM MODULE TO CABINET GROUND BAR: #6 AWG STRANDED GREEN JACKETED GROUND WIRE
- AMIA TO CABINET GROUND BAR: #6 AWG STRANDED GREEN JACKETED GROUND WIRE
- DELTA CABINETS TO MASTER GROUND BAR: #2 AWG STRANDED GREEN JACKETED GROUND WIRE
- FSEB TO CABINET GROUND BAR: #6 AWG STRANDED GREEN JACKETED GROUND WIRE
- OVP TO MASTER GROUND BAR: #2 AWG STRANDED GREEN JACKETED GROUND WIRE
- OVP FRAME TO MASTER GROUND BAR: #2 AWG STRANDED GREEN JACKETED GROUND WIRE

NOTE: CONTRACTOR TO INSTALL/REPLACE NEW OR MISSING GROUND BARS AS REQUIRED.

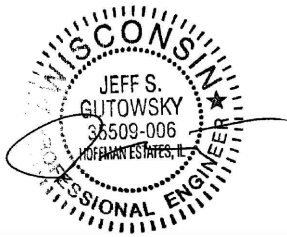


GROUNDING RISER

SCALE: NONE

1

NTPWIRELESS®
EVERY SITE. EVERY DAY



EXPIRES: 07/31/22 SIGNED: 02/02/22

REVISIONS

REV.	ISSUED FOR	DATE	BY
A	FOR CLIENT REVIEW	08/14/20	PS
0	FINAL	09/04/20	KLO
1	REVISION	09/08/20	KLO
2	REVISION	09/10/20	JTB
8	REVISION	06/29/21	SC
3	SA REVISION	07/21/21	KLO
4	REVISION	01/10/22	JTB
Δ	REVISION	02/02/22	JTB

AQUATIC \ DESIGN & PROGRAM MANAGEMENT
CIVIL \ TELECOMMUNICATION \ MECHANICAL
PLUMBING \ ELECTRICAL \ LAND SURVEYING
ACCESSIBILITY CONSULTING \ STRUCTURAL

CHECK: JKR

DRAWN: PS

JOB: 2001125T

GR-1

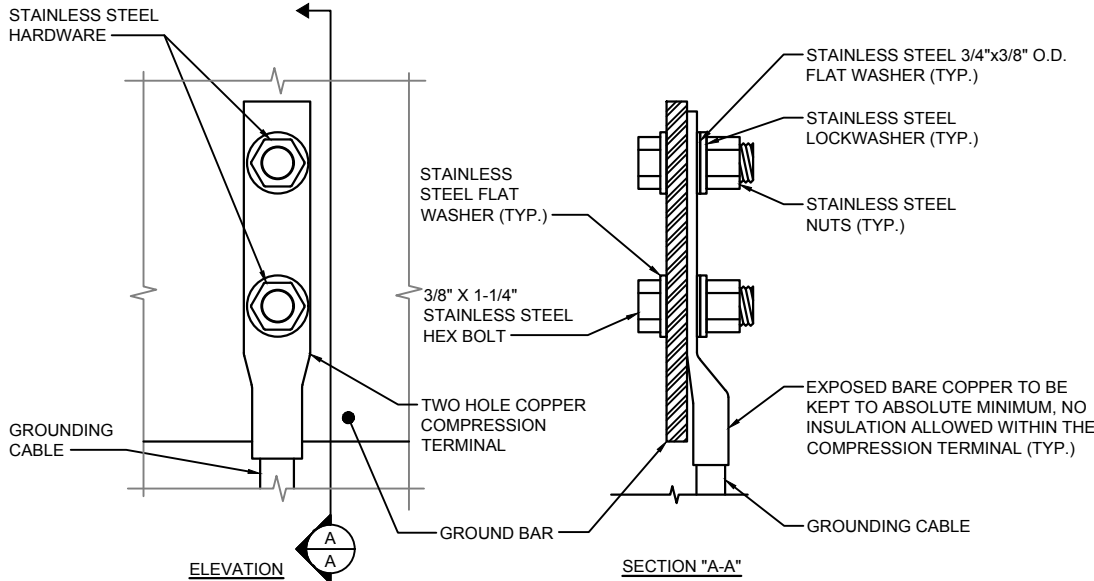
GROUNDING DETAILS

WT GROUP
Engineering with Precision, Pace and Passion
2875 Prichard Avenue Hoffman Estates, IL 60132
T: 224.293.6333 | F: 224.293.6444
wtengineering.com

WT Group
Engineering • Design • Consulting

ML70554A
HOST WT LAKE GENEVA
1003 HOST DRIVE,
LAKE GENEVA, WI 53147

© COPYRIGHT 2022 THE W-T GROUP, LLC



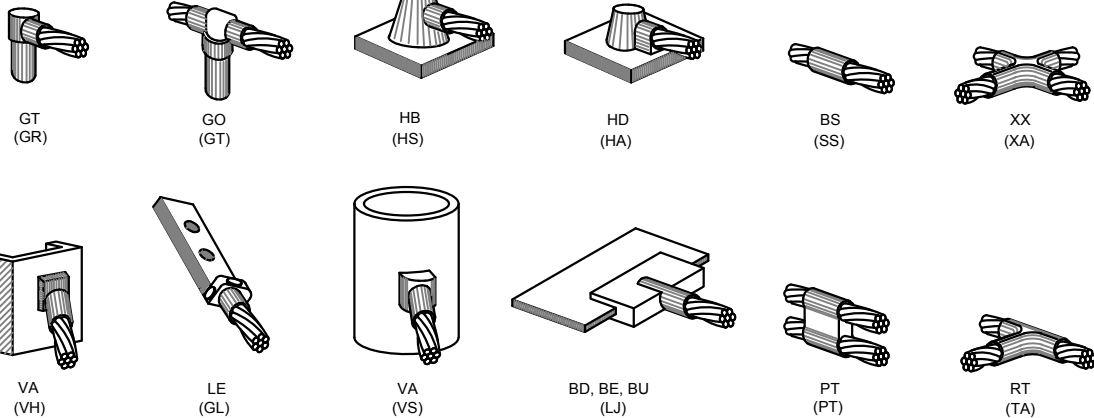
1. OXIDE INHIBITING COMPOUND TO BE USED AT ALL LOCATIONS
2. NO CRIMPING OF SOLID #2. USE EXOTHERMIC WELD ONLY

GROUND BAR CONNECTION DETAIL

SCALE: NONE

1

NOTE:
THE FOLLOWING SYMBOLS SHOWN ARE HARGER
ULTRAWELD EXOTHERMIC CONNECTIONS WITH PART
NUMBERS BELOW. THESE CONNECTIONS MAY BE
CROSS-REFERENCED WITH CADWELD CONNECTIONS
WHICH ARE SHOWN IN PARENTHESIS



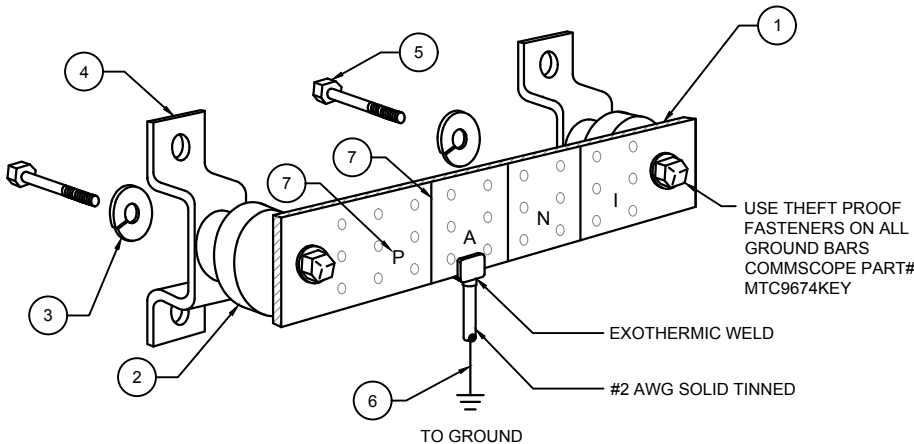
EXOTHERMIC WELD TYPES

SCALE: NONE

2

KEY NOTES:

1. 1/4" THK ELECTRICAL TINNED GROUND BAR HARGER
OR APPROVED EQUAL. HOLE CENTERS TO MATCH
NEMA DOUBLE LUG CONFIGURATION
2. INSULATORS (UNLESS NOTED OTHERWISE)
3. 3/8" STAINLESS STEEL LOCKWASHERS
4. WALL MOUNTING BRACKET
5. 3/8" STAINLESS STEEL BNLF BOLTS
6. EXOTHERMICALLY WELD #2 AWG BARE TINNED SOLID
COPPER CONDUCTOR TO GROUND BAR. ROUTE
CONDUCTOR TO BURIED GROUND RING AND PROVIDE
PARALLEL EXOTHERMIC WELD
7. CONTRACTOR SHALL USE PERMANENT MARKER TO
DRAW THE LINES BETWEEN EACH SECTION AND
LABEL EACH SECTION ("P", "A", "N", "I") WITH 1" HIGH
LETTERS



EACH GROUND CONDUCTOR TERMINATING ON ANY GROUND BAR
SHALL HAVE AN IDENTIFICATION TAG ATTACHED AT EACH END THAT
WILL IDENTIFY ITS ORIGIN AND DESTINATION

SECTION "P" - SURGE PRODUCERS

- COLLECTOR GROUND BAR
- GENERATOR FRAMEWORK (IF AVAILABLE)
- TELCO GROUND BAR
- COMMERCIAL POWER COMMON NEUTRAL/GROUND BOND
- FIBER GROUND BAR
- EQUIPMENT ROOM COLLECTOR GROUND BAR
- HVAC
- RECTIFIER FRAMES

SECTION "A" - SURGE ABSORBERS

- INTERIOR GROUND RING
- EXTERNAL EARTH GROUND FIELD (BURIED GROUND RING)
- METALLIC COLD WATER PIPE (IF AVAILABLE)
- BUILDING STEEL (IF AVAILABLE)
- AC POWER

SECTION "N" - NON-ISOLATED GROUND ZONE EQUIPMENT

- MISCELLANEOUS NON-ISOLATED GROUND ZONE EQUIPMENT
- CABLE TRAY SYSTEM
- EQUIPMENT FRAMES
- BATTERY RACKS
- DC POWER

SECTION "I" - ISOLATED GROUND ZONE

- ISOLATED EQUIPMENT FRAMES
- ISOLATED GROUND BAR - IGB

NOTES:
-EXTERIOR GROUND BARS TO BE TIN PLATED
-HARDWARE SHALL BE STAINLESS STEEL
-CONTRACTOR SHALL GROUP INCOMING WIRES
-CONTRACTOR TO APPLY 'KOPR-SHIELD' TO ALL CONNECTIONS

NOTE:
CONTRACTOR TO INSTALL/REPLACE NEW
OR MISSING GROUND BARS AS REQUIRED.

GROUND BAR DETAIL

SCALE: NONE

3

NTPWIRELESS®
EVERY SITE. EVERY DAY

ML70554A
HOST WT LAKE GENEVA
1003 HOST DRIVE,
LAKE GENEVA, WI 53147



EXPIRES: 07/31/22 SIGNED: 02/02/22

REV.	ISSUED FOR	DATE	BY
A	FOR CLIENT REVIEW	08/14/20	PS
0	FINAL	09/04/20	KLO
1	REVISION	09/08/20	KLO
2	REVISION	09/10/20	JTB
3	REVISION	06/29/21	SC
4	SA REVISION	07/21/21	KLO
5	REVISION	01/10/22	JTB
6	REVISION	02/02/22	JTB

AQUATIC \ DESIGN & PROGRAM MANAGEMENT
CIVIL \ TELECOMMUNICATION \ MECHANICAL
PLUMBING \ ELECTRICAL \ LAND SURVEYING
ACCESSIBILITY CONSULTING \ STRUCTURAL



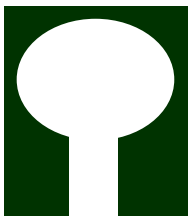
CHECK: JKR

DRAWN: PS

JOB: 2001125T

GR-2

GROUNDING DETAILS



DIXON

**ENGINEERING & INSPECTION SERVICES
FOR THE COATING INDUSTRY**

4811 S. 76th Street
Suite 109
Greenfield, WI 53220
Telephone: (414) 529-1859
Fax: (414) 282-7830

February 16, 2022

RE: Lake Geneva Utility Commission
T-Mobile (ML80166A)
Dodge Spheroid Tank
Drawing Review #2

Mr. Josh Gajewski
Utility Director
Lake Geneva Utility Commission
361 Main Street
Lake Geneva, WI 53147

Dear Mr. Gajewski:

Dixon Engineering, Inc. (DIXON) has reviewed the revised design drawings and the revised structural documents for the T-Mobile upgrade on the Dodge spheroid tank located in Lake Geneva, Wisconsin. The documents reviewed include:

- The revised design drawings for the project were completed by Pramira and they are last dated January 27, 2022.
- The revised structural analysis for the project was completed by AMMTEC Consultants and it is dated January 21, 2022.
- The revised mount analysis for the project was completed by AMMTEC Consultants and it is dated January 25, 2022.

This is the second review by DIXON for this project. In the first review DIXON had a list of items to be addressed labeled A to I. The following is a comment regarding each of the items as they were addressed in the revised documents.

A. The revised structural analysis for the tank have been reviewed and is rejected.

1. The structural analysis is stamped and signed by a Licensed Professional Engineer in the State of Wisconsin.
2. This document with the date is referenced on Sheet T-1 in the design drawings. The current date in the design drawings is incorrect. This date needs to be updated to match the final structural analysis for the project.
3. The calculations state that there are 9 antennas from an unknown carrier that do not significantly affect the analysis. AT&T is on the roof handrail. I am aware that there were 12 AT&T antennas and other equipment (radios, etc.) on the roof. There are also several miscellaneous antennas on the roof handrail. Every piece of equipment that is on the roof handrail needs to be accurately included in the structural analysis.
4. The calculations provided are a comparison between the existing and the proposed effective projected area, existing and proposed lateral loading, and existing and proposed overturning moment. We do not have any information that the tower is adequate to resist the existing loading, so just comparing the proposed loading that does not indicate that the tower has sufficient capacity for this proposed installation and the existing antennas, related equipment, handrail, any other miscellaneous appurtenances, etc. In addition, this method does not meet any of the referenced codes. Calculations need to be performed showing that the current and proposed loading will not negatively affect the structural integrity of the water tower.

5. These calculations need to be performed in accordance with AWWA D100 and the International Building Code.
- B. The mount analysis for the tank has been reviewed and it is rejected.
1. The mount analysis is stamped and signed by a Licensed Professional Engineer in the State of Wisconsin.
 2. This document with the date is referenced on Sheet T-1 in the design drawings. The current date in the design drawings is correct. This date needs to be updated to match the final mount analysis for the project.
 3. The calculations state that there are 9 antennas from an unknown carrier that do not significantly affect the analysis. AT&T is on the roof handrail. I am aware that there were 12 AT&T antennas and other equipment (radios, etc.) on the roof. There are also several miscellaneous antennas on the roof handrail. Every piece of equipment that is on the roof handrail needs to be accurately included in the mount analysis.
- C. The revised design drawing are stamped and signed by a Licensed Professional Engineer in the State of Wisconsin.
- D. No changes are required for this comment.
- E. This item has been addressed.
- F. This item has been addressed.
- G. This item has been addressed.
- H. This item has been addressed.
- I. General Painting Notes were added to the design drawings. There are several revisions and corrections that need to be made in the General Painting Notes:
1. Fully remove the first bullet point after Coating (Exterior) and replace with: The exterior paint repair system will be one prime coat of Tnemec Series N140, one intermediate coat of Tnemec Series 73, and one topcoat of Tnemec Series V700. Paint the exterior to match the existing topcoat color.
 2. Fully remove the first bullet point after Coating (Dry Interior) and replace with: The dry interior paint repair system will be two coats of Tnemec Series N140. Paint the dry interior to match the existing topcoat color.

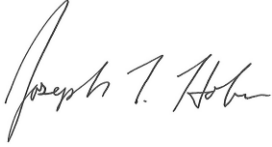
The design drawings and structural documents with revisions need to be resubmitted to DIXON for further review prior to construction. An itemized list of responses to each of the lettered items in this review is required or else DIXON will not start the third drawing review. It can be difficult to verify everything was addressed without responses to follow.

After final approval of the design drawings, DIXON has to schedule and lead a preconstruction meeting at the site prior to the start of any work on the project. During the installation portion of the project, DIXON has two installation inspections contracted to be completed for this project.

Lake Geneva Utility Commission
T-Mobile (ML80166A)
Dodge Spheroid Tank
Drawing Review #2
Page 3

If you have any questions you can call me at 920-470-0957.

FOR DIXON ENGINEERING, INC.,

A handwritten signature in black ink, appearing to read "Joseph T. Hoban". The signature is fluid and cursive, with the first name "Joseph" being more prominent.

Joseph T. Hoban, P.E.
Vice President

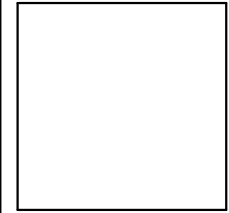
c: James Rowley, DIXON
Chris Kreiner, DIXON
Kayla Mulcahy, DIXON



KAPUR & ASSOCIATES, INC.
CONSULTING ENGINEERS
1224 PINE STREET
BURLINGTON, WISCONSIN 53105
Phone: 262.767.2747 Fax: 262.767.2750
www.kapurengineers.com

PROJECT:
**CEMETERY UTILITY
EXTENSION**

LOCATION:
LAKE GENEVA, WI



RELEASE:
EXHIBITS

REVISIONS:

#	DATE	DESCRIPTION
#	#	#
#	#	#
#	#	#
#	#	#
#	#	#
#	#	#
#	#	#

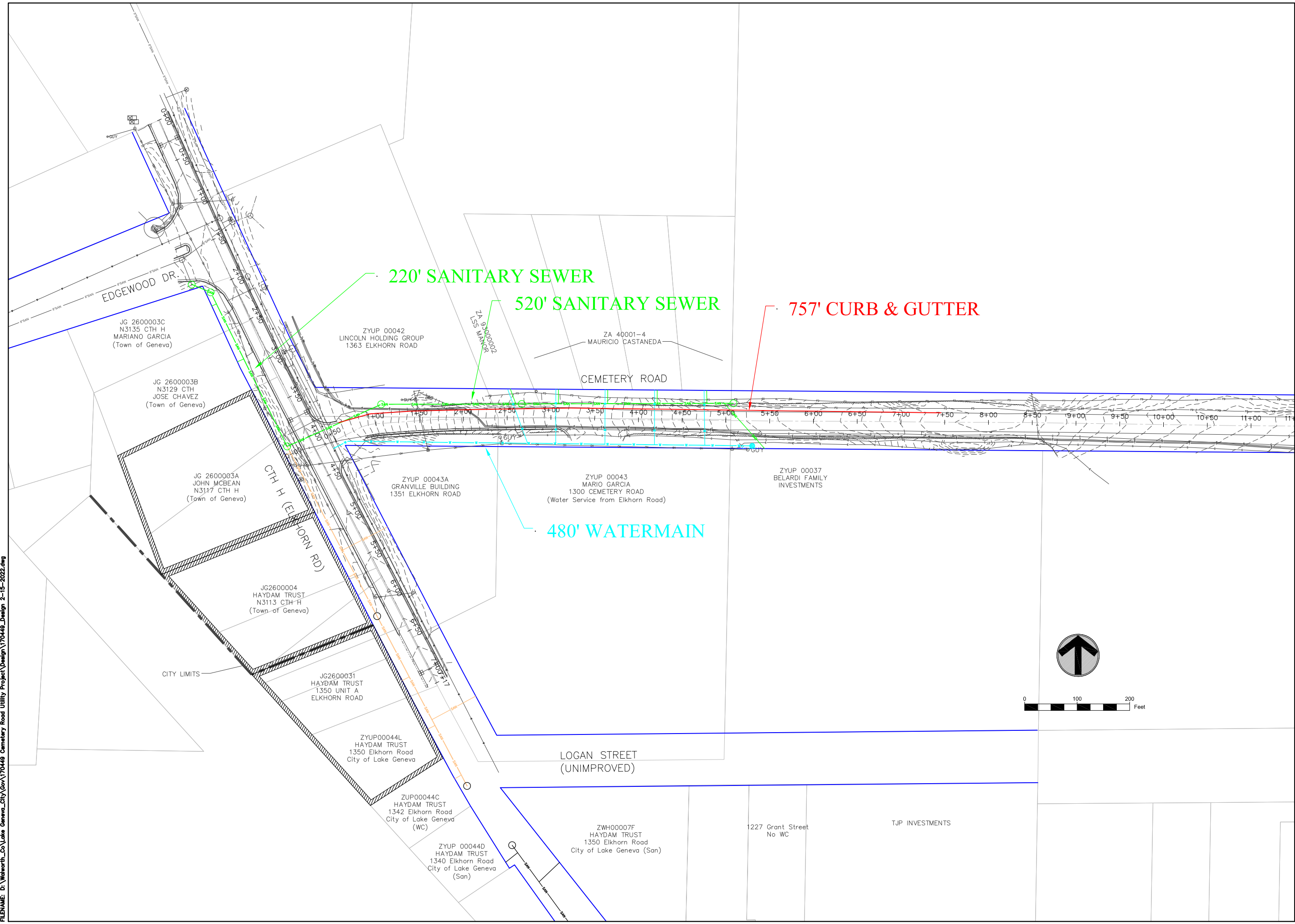


We listen, we innovate,
we turn your ideas into reality.

SHEET:
**CEMETERY
ENLARGEMENT**

PROJECT MANAGER: GLG
PROJECT NUMBER: 17.0449
DATE: 1/8/2018

SHEET NUMBER:
C101



FILENAME: D:\Watworth_Co\Lake Geneva_City\Gov\170449 Cemetery Road Utility Project\Design\170449_Design 2-15-2022.dwg



Cemetery Road Watermain and Sewer Improvements (Outside Pavement)

City of Lake Geneva, Walworth County, Wisconsin

Project Estimate: February 16, 2022

Watermain Construction (6 Benefitted Properties)			Cemetery Road		
Item No.	Item Description	Unit	Qty.	Unit \$	Total \$
202.0110	Roadside Clearing	SY	450	\$ 12.00	\$ 5,400.00
204.0110	Removing Asphaltic Surface	SY	70	\$ 45.00	\$ 3,150.00
204.0150	Removing Curb & Gutter	LF	10	\$ 25.00	\$ 250.00
305.0120	Base Aggregate Dense 1 1/4-Inch	CY	20	\$ 32.00	\$ 640.00
460.1101	HMA Pavement 4 LT 28-58 S, Item also includes tack coat (455.0605)	TON	22	\$ 250.00	\$ 5,500.00
601.0411	Concrete Curb & Gutter 30-Inch Type D	LF	10	\$ 45.00	\$ 450.00
628.2004	Erosion Mat Urban Class I, Type B	SY	410	\$ 5.00	\$ 2,050.00
690.0150	Sawing Asphalt	LF	400	\$ 3.00	\$ 1,200.00
SPV.0060.01	Water Valve & Valve Box 8-Inch	EACH	2	\$ 2,500.00	\$ 5,000.00
SPV.0060.02	Hydrant Assemblies	EACH	1	\$ 6,500.00	\$ 6,500.00
SPV.0060.03	Tracer Wire Access Box	EACH	1	\$ 325.00	\$ 325.00
SPV.0060.04	1" Curb stop/box with extension rod and tracer box	EACH	6	\$ 650.00	\$ 3,900.00
SPV.0060.05	1" Corp Stop	EACH	6	\$ 300.00	\$ 1,800.00
SPV.0090.01	C-900 Water Main 8-Inch	LF	480	\$ 130.00	\$ 62,400.00
SPV.0090.02	1" Water Service, HDPE	LF	310	\$ 100.00	\$ 31,000.00
SPV.0090.03	Hydrant Lead 6-Inch (Granular Backfill)	LF	5	\$ 115.00	\$ 575.00
SPV.0090.04	Erosion Logs	LF	200	\$ 4.50	\$ 900.00
SPV.0105.01	Traffic Control	LS	1	\$ 5,000.00	\$ 5,000.00
SPV.0180.01	Restore Disturbed Areas - Includes Topsoil (625.0100), Mulching (627.0200), Fertilizer Type A (629.0205), Seeding Mix No. 40 (630.0140)	SY	430	\$ 12.00	\$ 5,160.00
	20% Construction Contingency				\$27,160.00
	18.6% Engineering				\$25,258.80
Water Main Subtotal				\$193,618.80	

Sanitary Sewer Construction

Cemetery and Elkhorn Road to Edgwood Drive (7 Benefitted Properties)

Item No.	Item Description	Unit	Qty.	Unit \$	Total \$
202.0110	Roadside Clearing	SY	500	\$ 12.00	\$ 6,000.00
204.0120	Removing Asphaltic Surface	SY	70	\$ 45.00	\$ 3,150.00
460.1101	HMA Pavement 4 MT 28-58 S, Item also includes tack coat (455.0605)	TON	22	\$ 325.00	\$ 7,150.00
628.1504	Silt Fence	LF	510	\$ 2.00	\$ 1,020.00
628.2004	Erosion Mat Urban Class I, Type B	SY	680	\$ 5.00	\$ 3,400.00
628.7015	Inlet Protection Type C	EACH	2	\$ 75.00	\$ 150.00
690.0150	Sawing Asphalt	LF	200	\$ 3.00	\$ 600.00
SPV.0060.01	Sanitary Sewer Manhole Frame & Cover	EACH	6	\$ 900.00	\$ 5,400.00
SPV.0060.02	Elec. Pole Relocation	EACH	1	\$ 5,000.00	\$ 5,000.00
SPV.0060.03	Sanitary Manhole Seal - External	EACH	6	\$ 450.00	\$ 2,700.00
SPV.0090.01	Sanitary Sewer 8-Inch PVC (Granular Backfill)	LF	120	\$ 130.00	\$ 15,600.00
SPV.0090.01	Sanitary Sewer 8-Inch PVC (Spoil Backfill)	LF	620	\$ 100.00	\$ 62,000.00
SPV.0090.02	Sanitary Sewer Service	LF	160	\$ 95.00	\$ 15,200.00
SPV.0180.01	Restore Disturbed Areas - Includes Topsoil (625.0100), Mulching (627.0200), Fertilizer Type A (629.0205), Seeding Mix No. 40 (630.0140).	SY	680	\$ 12.00	\$ 8,160.00
SPV.0105.01	Traffic Control	LS	1	\$25,000.00	\$ 25,000.00
SPV.200.01	Sanitary Sewer Manhole 48-Inch	VF	72	\$ 500.00	\$ 36,000.00
	20% Construction Contingency				\$ 38,106.00
	18.6% Engineering				\$ 35,438.58
Sanitary Sewer Subtotal				\$270,074.58	

TASK ORDER NUMBER #15

CIVIL ENGINEERING SERVICES

This task order is made as of February __, 2022 under the terms and conditions established in the MASTER AGREEMENT FOR ENGINEERING SERVICES, (the Agreement), between the **City of Lake Geneva Utility District** (Owner) and **Kapur & Associates, Inc.** (Engineer). This Task Order is made for the following purpose:

Provide civil engineering services for the complete design, specification preparation and bidding, and construction management engineering for the City of Lake Geneva Utility Commission Cemetery Road Utility Improvements.

The Utility commission is proposing to extend a new public sanitary sewer, a new public watermain, and construct **curb and gutter** within Cemetery Road. Approximately 480 feet of new 8" public watermain will be installed on the south side of Cemetery Road to service six properties. Sanitary sewer will be extended from Edgewood Drive south along Elkhorn Road and then west along the north side of Cemetery Road. The new sanitary sewer will make available sewer connections for eight properties. Curb and gutter will be installed along the North side of Cemetery Road roughly 750' from Elkhorn Road to the west too address reoccurring erosion. This task order provides the detailed design engineering, permitting, bidding and construction oversight for the project. The site survey, feasibility analysis and draft special assessment report were previously completed under separate contract.

Section A. – Scope of Services

Engineer shall perform the following Services:

1. Utilizing topographic survey and mapping previously collected, field reviews and plan preparation for the design of:
 - a. 1200 Feet of Sanitary Sewer on Cemetery Road and Elkhorn Roads.
 - b. 480 Feet of Water Main on Cemetery Road from Elkhorn Road to the East.
 - c. 760 feet of new curb and gutter on the North Side of Cemetery Road From Elkhorn Road to the East.

Plans will be prepared that include utility improvements for sanitary sewer and laterals, watermain and service laterals and curb and gutter. It is anticipated that a traffic control plan will be prepared for this work and as required by federal law and accessible ramps will be reviewed and replaced as needed to meet minimum standards for access. Plans will include location and details of pavement removals, new asphaltic paving, any sidewalk repairs, curb and gutter replacement and restoration.



2. Provide utility coordination of all private utilities for all work including utility location for survey of utility improvements requiring grading or repairs.
3. Kapur will prepare plans, specifications and permit applications as necessary to receive state and local approvals of all civil/site improvements.
4. As part of the project soil borings will be collected to assess the existing soil conditions and structure as well as integrity of the material. The Geotechnical analysis will be done through a sub consultant to Kapur with all coordination being completed by Kapur. The cost for geotechnical will be passed to the Utility at cost.
5. Provide construction cost estimate for all improvements.
6. Prepare and provide Project Manual including but not limited to Advertisement for Bids, Instruction to Bidders, Bid Form, Bidder's Qualification Statement, Agreement, and General Conditions of Contract, Supplementary Conditions, and Special Provisions.
7. Attend Bid Opening.
8. Review Bids, make recommendation for award, and coordinate notice of award, agreement, and notice to proceed documentation.
9. Attend meetings as required and provide updates to the Utility Department.
10. Provide details as needed to complete work.

Construction Management Activities

11. Provide administrative services to manage client coordination/invoicing, project schedules, contract change order documentation, establish project logs, formatting monthly contract quantity estimating and contractor invoicing and contract closeout documentation for base bid projects.
12. Provide construction survey staking for necessary items within the construction contract. This survey provides for a "one time" staking for a particular item. If the contractor damages any stakes, they shall be responsible for the cost to replace those damaged stakes.
13. Coordinate and complete necessary material testing services for work completed.
14. Process payment requests from the contractor for their work and prepare recommendation for payment for Commission approval. Complete final close out documentation and





acceptance of improvements memorandum. **(This task is completed on a monthly basis and is completed for all work approved for the prior month.)**

15. The Engineer will be responsible for notifying, scheduling, conducting, documenting, and distributing minutes of the preconstruction conference.
16. Prepare and provide project update memorandum and provide copies of the daily journal entries to Utility staff upon request.
17. Attend meetings as needed and coordinate with adjacent property owners and business as needed.
18. Upon project completion, all utility data and as-built information will be transferred to the Utility GIS system for permanent records. In addition, as-builts, and AutoCAD information will be provided for City record.

Section B. – Schedule

Engineer shall perform the Scope of Services and deliver the related Documents according to the following schedule. This schedule is subject to change based on actual circumstances and unknown variables and is to be used as an approximation only.:

1. It is anticipated the construction work under the City of Lake Geneva Utility Commission Cemetery Road Utility Improvements will begin in Spring 2023 and be completed in fall of 2023. This schedule has been provided for estimating purposes only. Engineer and staking construction services are estimated on the engineering and survey staff being on site as needed and completing project paperwork for up to 30 weeks.

Section C. – Compensation

In return for the performance of the foregoing obligations, Owner shall pay to Engineer an amount not-to-exceed **Eighty Thousand dollars** (\$80,000.00):

A not-to-exceed amount based on the rates as listed in Attachment A of the Agreement, plus direct expenses. Cost plus services are limited to an agreed maximum figure unless amended.

Engineer may request a change to the billing hours if scope changes, beyond the control of the Engineer, resulting in an extension of the schedule or necessitates a change in personnel.

Compensation for Additional Services (if any) shall be paid by Owner to Engineer according to the hourly billing rates shown in Attachment A of the Agreement.





IN WITNESS WHEREOF, the Owner and Engineer have executed the Task Order.

For: Lake Geneva Utility District

Engineer: Kapur & Associates, Inc.

By: _____

By: Gregory L Governatori

Signature: _____

Signature:  _____

Title: _____

Title: Associate

Date: _____

Date: _____



Kapur Associates, Inc.
Summary of Staff Hours and Labor Costs
for the
City of Lake Geneva
TASK ORDER 15

TASK ORDER 15																				
Cemetery Road Engineering and Construction Management Project - Attachment A																				
CLASSIFICATION			Project Manager		Project Engineer II		Staff Engineer II		SeniorTechnician		Construction Project Engineer		Construction Staff Engineer		Surveyor		Survey Crew		Total Labor	
Average Hourly Wage			\$157.00		\$125.00		\$89.00		\$87.00		\$108.00		\$91.00		\$108.00		\$109.00			
TASK DESCRIPTION		ACT. Code	Hours	Dollars	Hours	Dollars	Hours	Dollars	Hours	Dollars	Hours	Dollars	Hours	Dollars	Hours	Dollars	Hours	Dollars	Hours	Dollars
Cemetery Road Watermain Design																				
Field Review							3	\$267.00											3	\$267.00
Survey/Mapping									4	\$348.00							4	\$436.00	8	\$784.00
Meetings as Required			4	\$628.00	4	\$500.00	6	\$534.00											14	\$1,662.00
Plan Preparation/Review			4	\$628.00	4	\$500.00	64	\$5,696.00											72	\$6,824.00
Watermain Design					4	\$500.00	32	\$2,848.00											36	\$3,348.00
WDNR Permitting					2	\$250.00	6	\$534.00											8	\$784.00
As-Builts																				
																			Subtotal	\$13,669.00
Cemetery/Elkhorn Road Sanitary Sewer																				
Field Review							3	\$267.00											3	\$267.00
Survey/Mapping									4	\$348.00							4	\$436.00	8	\$784.00
Meetings as Required			8	\$1,256.00	8	\$1,000.00	12	\$1,068.00											28	\$3,324.00
Plan Preparation/Review			4	\$628.00	4	\$500.00	54	\$4,806.00											62	\$5,934.00
Sanitary Sewer Design					4	\$500.00	64	\$5,696.00											68	\$6,196.00
WDNR Permitting					2	\$250.00	6	\$534.00											8	\$784.00
As-Builts									8	\$696.00							6	\$654.00	14	\$1,350.00
																			Subtotal	\$18,639.00
Project Manual/Administration																				
Administration			8	\$1,256.00			4	\$356.00											12	\$1,612.00
Advertisement/Project Manual/Specifications			4	\$628.00	8	\$1,000.00	32	\$2,848.00											44	\$4,476.00
Meetings as Required			4	\$628.00			4	\$356.00											8	\$984.00
Post Bid opening activities											8	\$728.00							8	\$728.00
																			Subtotal	\$7,800.00
Construction Management Activities																				
Construction Management Admin			4	\$628.00	20	\$2,500.00							10	\$910.00					34	\$4,038.00
Shop Drawing Approvals					4	\$500.00							4	\$364.00					8	\$864.00
Sanitary Sewer													160	\$14,560.00			10	\$1,090.00	170	\$15,650.00
Watermain													80	\$7,280.00			8	\$872.00	88	\$8,152.00
Curb and Gutter													16	\$1,456.00			4	\$436.00	20	\$1,892.00
Roadway													16	\$1,456.00					16	\$1,456.00
As-Builts													16	\$1,456.00					16	\$1,456.00
GIS Coordination									20	\$1,740.00									20	\$1,740.00
																			Subtotal	\$35,248.00
TOTALS			40	\$6,280.00	64	\$8,000.00	290	\$25,810.00	36	\$3,132.00	8	\$728.00	302	\$27,482.00			36	\$3,924.00	776	\$75,356
																	Expenses:		\$3,800	
																	Project Total:		\$79,156	

Summary of Expenses	Units	Cost	Total
Estimated Expenses			
Geotechnical Borings		\$3,800.00	\$3,800.00
Totals			\$3,800.00