



AMERICAN FORK CITY DEVELOPMENT REVIEW COMMITTEE AGENDA

Regular Session
July 28, 2025
Monday 10:00 AM

American Fork City Public Works Building
275 East 200 North
American Fork City, UT 84003

<https://www.americanfork.gov/AgendaCenter>

Development Review Committee Members

Patrick O'Brien, Dev. Services Director

Sam Kelly, Public Works Director

Aaron Brems, Fire Chief

Notice is hereby given that the American Fork City Development Review Committee will meet in regular session on July 28, 2025, at the American Fork City Public Works building, 275 East 200 North commencing at 10:00 AM. The agenda shall be as follows:

1. Regular Session

- a. Roll Call
2. **Common Consent Agenda** (Common Consent is that class of DRC action that requires no further discussion or which is routine in nature. All items on the Common Consent Agenda are adopted by a single motion unless removed from the Common Consent Agenda).
 - a. Approval of the July 14, 2025, Development Review Committee minutes.
3. **Action Items** (Action Items is that class of DRC action that requires further discussion on Preliminary Plans, Final Plats, and Site Plans. The Development Review Committee Board will have authority to approve Preliminary Plans and Final Plats but make a recommending action on Site Plans.)
 - a. Review and recommendation on an application for a Commercial Site Plan, known as AT&T Tower Upgrade UTL04060 (1175 E 50 S), located at 1175 E 50 S, American Fork City. The Commercial Site Plan will be on approximately 2.14 acres and will be in the Profession Office (PO-1) Zone.
4. **Other Business**
 - a. Upcoming Projects
5. **Adjournment**

Dated this 23rd day of July 2025

Patrick O'Brien

Development Services Director

**The order of agenda items may change at the discretion of the Development Review Committee*

AMERICAN FORK CITY
DEVELOPMENT REVIEW COMMITTEE REGULAR SESSION

July 14th, 2025

The American Fork City Development Review Committee met in a regular session on July 14th, 2025, at the American Fork Public Works Building, 275 East 200 North, commencing at 8:00 a.m.

Development Review Committee:

Assistant City Engineer: Kelvin Smith

Development Services Director: Patrick O'Brien

Fire Chief: Aaron Brems

Staff Present:

Ben Hunter	City Engineer
Annalisa Reed	Planner
Cody Opperman	Planner II
Angie McKee	Administrative Assistant I
Dan Loveland	Chief Building Official

Others Present: Cinda Hill, Sherri D Shephard, Michle Shephard, John Klemas, Russell Ballantyne, Marie Ober, Angelina Allred, Colleen Magleby, Ken Schow, Linda Bethers, Lori Domino, Lynda Gull, Camille Davies, Ernest B Taylor, Robert Blakely, Gary Harding, Curt Lund, Pam Schurig, Doris Vaughn, Chris Haertel, Stephanie Herrera, Steve Kerr

REGULAR SESSION

Roll Call

COMMON CONSENT AGENDA

UNAPPROVED MINUTES

07.14.2025

Minutes of the July 7th, 2025, Development Review Committee Regular Session.

Patrick O'Brien motioned to approve the Common Consent agenda

Kelvin Smith seconded the motion

Voting was as follows:

Patrick O'Brien	AYE
Aaron Brems	AYE
Kelvin Smith	AYE

The motion passed

PUBLIC HEARING

- a. Public hearing on an application for an Amended Final Plat, known as Mira Vista Phase 4, located at approximately 530 S 1040 E, American Fork City. The Amended Final Plat will be for approximately 0.63 acres and will be in the Residential (R3-7500) Zone.**

Opened Public Hearing

Sherry Shephard voiced her concern with the density of this project as she feels there are currently culinary water pressure issues, as well as parking access. She also believes that with this being a senior community she does not think having 3 levels is advisable.

UNAPPROVED MINUTES

07.14.2025

Cinda Hill is wondering how decisions are being made on a property easement without a vote from the property owners. She would like to know if a geo-technical study has been done on the property, and how the parking places in the south lot are being included in the easement when they are supposed to be available for the current residents, some of which are severely disabled. She is also concerned that there will not be room for trash and emergency vehicles to turn around, and if there are still 3-bedroom condos on the plans, she is concerned that with that many rooms, people under 55 could be moving in, and there is not enough parking for 3 cars.

Linda Beathers questioned why this developer is in such a hurry, as they were just notified of this meeting late last week, with some residents not even receiving a letter. She added that they also had a hard time finding the information online, or there would have been another 8-10 more people at this meeting. She voiced her concerns about the current parking lot that is going to be turned into a street, as people invested a lot of money because there was a plan in place for the last phase to be a two-story building that looked like what they already have. She disagrees with things being changed at the last minute to accommodate a builder who will come in, build, and then leave the current homeowners with a mess.

John Klemas informed the committee that he moved in after the first developer had withdrawn, and he was told there would be 4 buildings similar to what already exists, but he believes the word "similar" to be somewhat vague. He informed the committee that the HOA at that time stood in front of the bulldozers and prevented construction, so the previous builder sued them and won for blocking the construction. He would like to avoid having that happen this time. While he agrees that there will be some inconveniences during construction, it is only temporary and will be worth the improvement. He also noted that with the new building, there will be new people paying into the HOA to maintain the property, and that will make it less likely for the people sitting here today to face an increase. He added that while he would prefer to see a two-story building instead of a three-story building, if they had not fought the developer last time, it would have been a two-story building. He would also like to see all of the people represented, not just a couple of special interests.

Marie Ober said she has lived in the condos for 5 years and served on the board for 3 years. She spoke of the settlement agreement from the lawsuit and informed the group that while they were hoping to have another meeting to make things more specific, that never happened. She noted that part of the agreement was to continue the project of four units, but allow the fourth wing to be an entity by itself, so they would have access to the property and clubhouse and property, but they would be able to have their own CC&R's and rule themselves, while trying to be similar to the current rules. She believes that it does not matter who approves or disapproves; the company still has the right to build on their own property. She noted that after working with the contractor

UNAPPROVED MINUTES

07.14.2025

and their lawyers, the owners and their lawyer, the board felt very comfortable with what they were proposing and hoped that development would get going quite fast as this has been an empty lot for more than 13 years. She stated that she has seen the proposal for the new building, and she does not have a problem with it. She concluded that she feels it is time to put this to rest and let the developers build their building on the property that they own.

Steve Kerr has given the site a name, the misbegotten garden.

Lorraine Price said she believes the proposed building is way too big for the size of the property, and while she agrees that they have a right to build, they should build something that fits on that property. She added that she also sees parking as a problem and thinks there needs to be enough room for emergency vehicles to get in and out easily.

Linda Beathers spoke again to clarify that they did not lose a lawsuit, but rather it was conceded on the advice of an insurance company. She added that most of the residents did not agree with that advice nor with the second agreement that none of the owners knew about, except the three-member board, until after it was a done deal. Her understanding was that the easement was a construction easement and was only meant to be temporary, and when she had an attorney look at all of the information, she was told the process followed was illegal.

Cinda Hill showed the property on the county map and said she feels that the property owners should have been able to vote on whether this property was sold or not because it was landlocked by all of the current owners of the property.

Linda Beathers noted that she has been grateful for the city staff during this process.

Linda Gull voiced her concern that the new developers bought 8 parking spaces that the current residents use, and she is concerned that in the future those will no longer be available for use.

Linda Beathers noted that the current parking spaces are assigned to the residents.

UNAPPROVED MINUTES

07.14.2025

Stephanie Herrera assured the residents that they do not plan on taking away the current parking.

Gary Harting said he is worried about fire truck access to a 3-story building.

Closed Public Hearing

Patrick O'Brien spoke to the process of noticing and apologized if some of the residents did not receive the notice. He also informed the residents as to where they can find meeting notices on the city's website.

ACTION ITEMS

- a. Review and action on an application for a Final Plat, known as RBD Reception Center, located at approximately 241 W Main Street, American Fork City. The Final Plat will be for approximately 1.09 acres and will be in the Central Commercial (CC-2) Zone.**

Cody Opperman reviewed the background information for action item letter a: The applicant has applied for a Final Plat to develop a Reception Center along Main Street. The final plat is the first application that will be required for the property. Following the final plat will be the commercial site plan that is currently under review. As the final plat shows two individual lots, owned by the applicant, parking and access associated with the two lots are shared between each other. A shared access and parking agreement has been established between the two lots and each new use that will be associated with the commercial site plan shall be required to have the corresponding parking for their uses.

UNAPPROVED MINUTES

07.14.2025

Patrick O'Brien asked the engineers if the access issue on the west side of the property had been addressed.

Ben Hunter informed that while the 26-foot access had been discussed, that is something that will be addressed as they go through the commercial site plan process.

Aaron Brems moved to approve the proposed Final Plat, located at approximately 241 W Main Street, American Fork City, in the Central Commercial (CC-2) Zone, subject to any conditions found in the staff report.

Patrick O'Brien Seconded the motion

Voting was as follows:

Patrick O'Brien	AYE
Aaron Brems	AYE
Kelvin Smith	AYE

The motion passed

Other Business

Patrick O'Brien mentioned that due to the amount of interest in the Mira Vista project, he will make sure the residents are notified as to when and where the next meeting will take place.

Adjournment

Patrick O'Brien motioned to adjourn the meeting.

Kelvin Smith seconded the motion.

Voting was as follows:

Patrick O'Brien	AYE
Aaron Brems	AYE
Kelvin Smith	AYE

UNAPPROVED MINUTES

07.14.2025

The motion passed

Meeting adjourned at 10:36 AM

Angie McKee

Administrative Assistant I

The order of agenda items may change to accommodate the needs of the committee, public and staff.



Agenda Topic

Review and action on an application for a Commercial Site Plan, known as AT&T Tower Upgrade UTL04060 Site Plan, located at 1175 East 50 South, American Fork City. The Commercial Site Plan will be on approximately 2.14 acres and will be in the Professional Office PO-1 zone.

BACKGROUND INFORMATION		
Location:		1175 E 50 S American Fork, UT 84003
Project Type:		Commercial Site Plan, Equipment Upgrades
Applicants:		Jill Drake, Smart Link Group
Existing Land Use:		Professional Office
Proposed Land Use:		N/A
Surrounding Land Use:	North	Professional Office
	South	Pleasant Grove City
	East	Pleasant Grove City
	West	Professional Office
Existing Zoning:		PO-1
Proposed Zoning:		N/A
Surrounding Zoning:	North	PO-1
	South	Pleasant Gove City Residential
	East	Pleasant Gove City
	West	PO-1
Square Footage (By Use)		3,445
Total Number of Units		N/A
Parking Requirement		N/A

Background

The applicant has applied for a Commercial Site Plan to make upgrades to the existing cellular equipment. The project looks to perform equipment upgrades to the 3,445 square feet of space on the roof that is currently being used for equipment.

Section 17.6.101 – Administrative Site Plan Review

Wherever the terms of this code require submission and approval of a site plan, such review shall be conducted in accordance with the following provisions.

1. Planning commission to approve. The planning commission, acting in an administrative capacity, shall have the function, duty and power to approve or disapprove a project plan and to attach such modifications or conditions as may be deemed appropriate to improve the layout, to ensure that the project will not pose any detrimental effect to persons or property, or to protect the health, safety, and general welfare of the citizens of the city.
2. Application required. Application for site plan approval shall be submitted on forms provided by the city and shall be accompanied by maps and drawings showing the following:
 - a. The location of all existing and proposed buildings and structures on the site, with full dimensions showing the distance between buildings and distances from buildings to adjacent property lines.
 - b. The location of all parking spaces, driveways, and points of vehicular ingress and egress.
 - c. A landscaping plan showing the location, types, and initial sizes of all planting materials to be used together with the location of fences, walls, hedges, and decorative materials.
 - d. Preliminary elevations of main buildings showing the general appearance and types of external materials to be used.
 - e. The locations of solid waste receptacles and trash pick-up areas.
3. Appeals permitted. Any person aggrieved by a determination of the planning commission may request a hearing before the city council who shall have the authority to reverse, affirm or modify any decision of said commission. Any such appeal shall be filed within ten days of the determination of the planning commission.
4. Issuance of a permit. A building permit shall not be issued for any building or structure or external alterations thereto until the provisions of this section have been complied with. Any construction not in conformance with an approved site plan shall be considered a violation of this code. Any building permit issued shall ensure that development is undertaken and completed in conformity with the plans as approved.
5. Expiration of Site plan approval. A site plan approval issued pursuant to this section shall expire and have no further force or effect if the building, activity, construction, or occupancy authorized by the approval is not commenced within two (2) years of the date

of the approval. Up to a twelve (12) month extension may be approved by the land use authority subject to payment of an extension fee equal to one-half of the current filing fee.

Project Conditions of Approval

1. Address all outstanding DRC Comments

Findings of Fact

1. The Commercial Site Plan meets the requirements of Section Sec 17.6.112 Low Power Radio Service Antenna Facilities (Cellular Phone Transmission Towers And Facilities)

Project Map



Standards Conditions of Approval

APPLICANT is responsible and shall submit/post/obtain all necessary documentation and evidence to comply with these Standard Conditions of Approval prior to any platting, permitting, or any other form of authorization by the City including plat recording or other property conveyance to the City and prior to scheduling a pre-construction meeting. All recording shall take place at the Utah County Recorder's Office.

1. **Title Report:** Submit an updated Title Report not older than 30 days or other type of appropriate verification that shows all dedications to the City are free and clear of encumbrances, taxes, or other assessments.
2. **Property Taxes and Liens:** Submit evidence that all the property taxes, for the current and/or previous years, liens, and agricultural land use roll over fees have been paid in full.
3. **Water Rights:** Submit evidence that all the required water rights have been conveyed to American Fork City.
4. **Performance Guarantee:** Post a performance guarantee for all required public and essential common improvements.
5. **Easements and Agreements:** Submit/record a long-term Storm Water Pollution Prevention Maintenance Agreement signed and dated by the property owner and any required easement documentation.
6. **Land Disturbance Permit:** Obtain a Land Disturbance Permit.
7. **Compliance with the Plan Review Comments:** All plans and documents shall comply with all the Technical Review Committee comments and the City Engineer's final review.
8. **Commercial Structure:** Record an Owner Acknowledgment and Utility Liability Indemnification if the proposed building is a multi-unit commercial structure served by a single utility service.
9. **Sensitive Lands:** Record all applicable documents required for compliance with the City's Sensitive Lands Ordinance.
10. **Utility Notification Form:** Submit a Subdivision Utility Notification Form.
11. **Professional Verification:** Submit final stamped construction documentation by all appropriate professionals.
12. **Fees:** Payment of all development, inspection, recording, streetlight, and other project related fees.
13. **Mylar:** Submit a Mylar. All plats will receive final verification of all formats, notes, conveyances, and other items contained on the plat by City staff (recorder, legal, engineer, GIS, planning).



Staff Recommendation

The Commercial Site Plan meets the requirements of Section 17.6.101. Staff recommends APPROVING the application WITH CONDITIONS.

Potential Motions – Commercial Site Plan

Approval

I move to approve the proposed Commercial Site Plan, located at 1175 E 50 N, American Fork City, in the Professional Office (PO-1), subject to any conditions found in the staff report.

Denial

I move to deny the proposed Commercial Site Plan, located at 1175 E 50 N, American Fork City, in the Professional Office (PO-1).

Table

I move to table action of the proposed Commercial Site Plan, located at 1175 E 50 N, American Fork City, in the Professional Office (PO-1), and instruct staff/developer to.....



NOTES

1. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS.
2. ANTENNAS AND MOUNTS OMITTED FOR CLARITY.
3. SITE PLAN DISCLAIMER: THE EXISTING INFORMATION SHOWN IN THESE PLANS HAVE BEEN BASED ON EXISTING SITE INFORMATION PROVIDED BY OTHERS. THE GPD GROUP HAS NOT COMPLETED A SITE SURVEY AND THEREFORE MAKES NO CLAIMS AS TO THE ACCURACY OF INFORMATION DEPICTED ON THIS SHEET.

7670 S CHESTER ST
ENGLEWOOD, CO 80112

1220 OLD ALPHARETTA ROAD
SUITE 380
ALPHARETTA, GA 30005

GPD GROUP
Professional Corporation
520 South Main Street, Suite 2531
Akron, OH 44311
330.572.2100 Fax 330.572.2101

GPD JOB #:	2024723.02/ 86662.01
DRAWN BY:	KNM
CHECKED BY:	MRL
RFDS:	5886502

REV	DATE	DESCRIPTION
0	03/25/2025	EQUIPMENT SWAP
B	02/03/2025	ADDING STRUCTURAL MODS
A	06/10/2024	ISSUED FOR REVIEW

03/26/25

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT.

EAST AMERICAN FORK
UTL04060
1175 EAST 50 SOUTH
AMERICAN FORK, UT 84003
CELL SITE RF MODIFICATIONS

SHEET TITLE
SITE PLAN

SHEET NUMBER
C-1



SITE PLAN

© GOOGLE EARTH 2024

1/16"=1'-0"

COAX & CABLE INFORMATION

- ALL EXISTING CABLES/COAX TO REMAIN UNLESS NOTED OTHERWISE
- (3) EXISTING 18-PAIR FIBER TRUNK
- (6) EXISTING #8 AWG DC POWER TRUNKS
- (6) EXISTING 7/8" COAX ROUTED WITHIN EXISTING ROOFTOP

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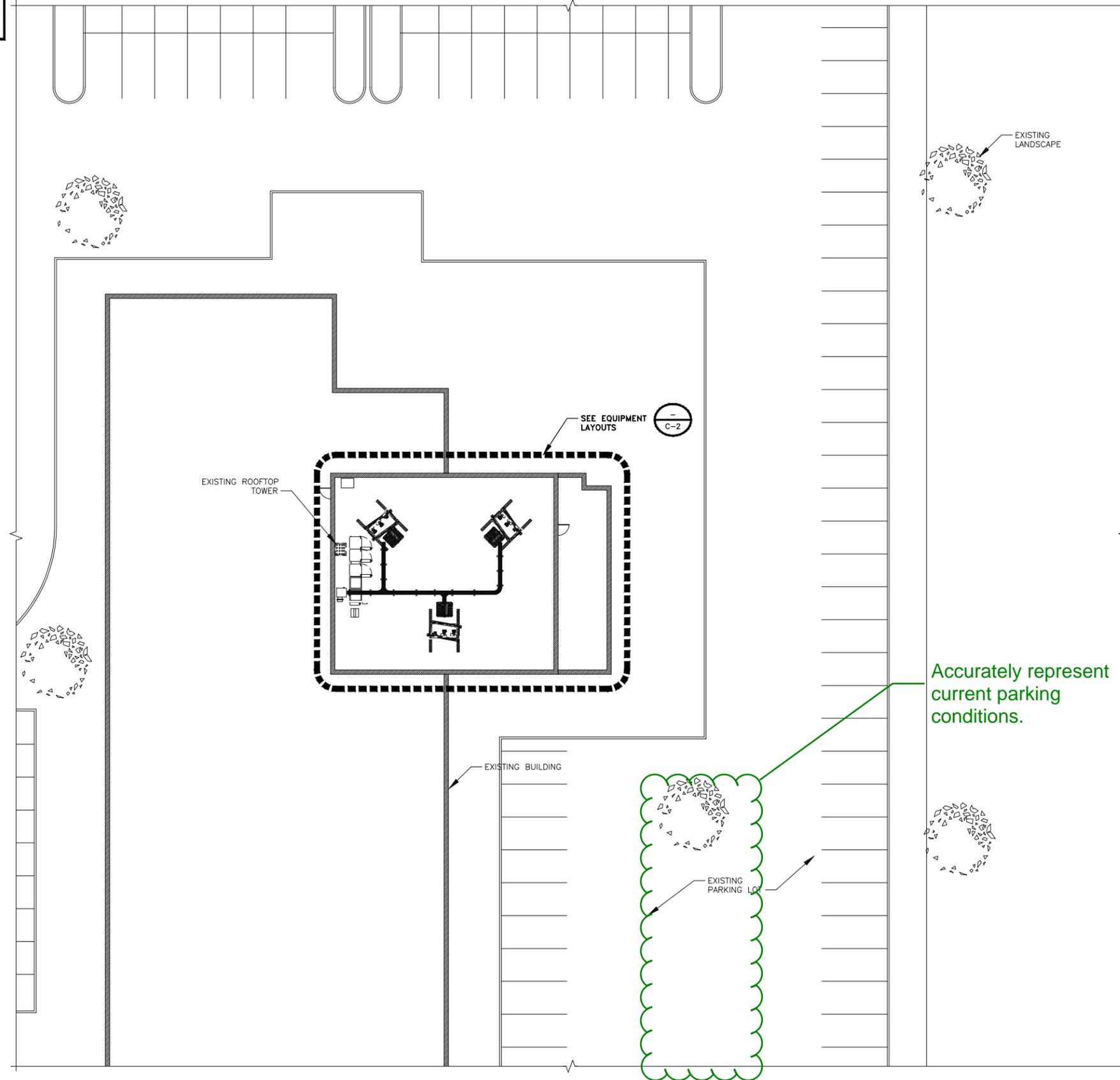
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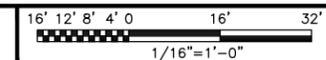
EAST AMERICAN FORK
UTL04060
1175 EAST 50 SOUTH
AMERICAN FORK, UT 84003
CELL SITE RF MODIFICATIONS

SHEET TITLE
ENLARGED SITE PLAN

SHEET NUMBER
C-1.1



ENLARGED SITE PLAN



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3. NO BATTERY SCOPE OF WORK ASSOCIATED WITH THIS PROJECT.



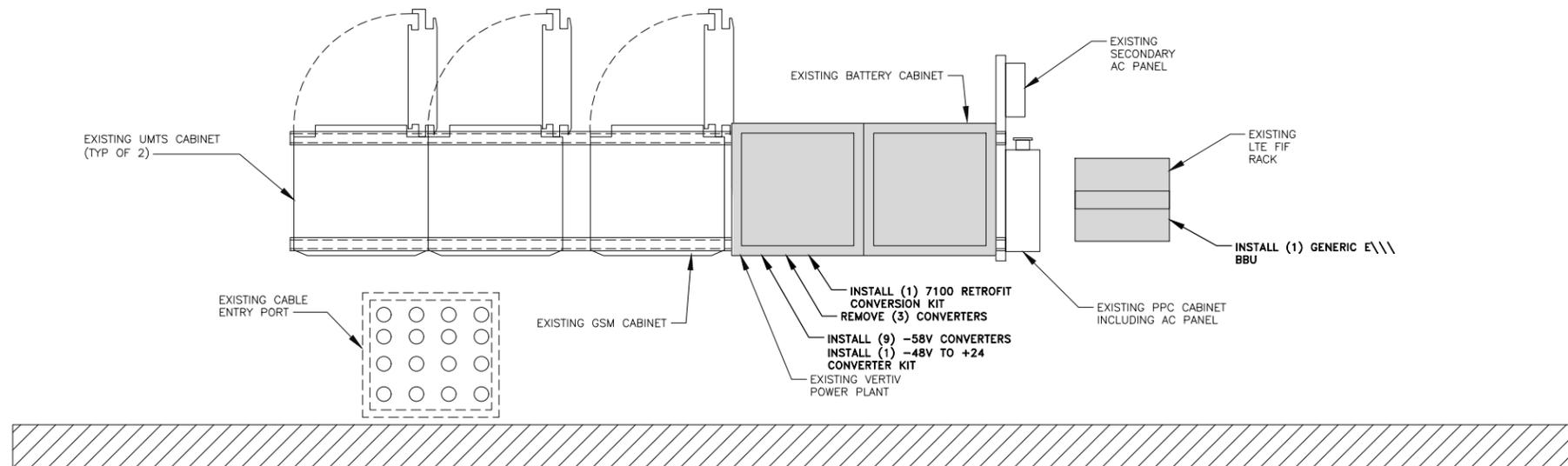
GPD JOB #: 2024723.02/ 86662.01

DRAWN BY: KNM

CHECKED BY: MRL

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UTL04060
1175 EAST 50 SOUTH
AMERICAN FORK, UT 84003
CELL SITE RF MODIFICATIONS

SHEET TITLE
EQUIPMENT LAYOUTS

SHEET NUMBER
C-2



NOTES

1. THIS DRAWING IS INTENDED TO DEPICT THE GENERAL LOCATION AND HEIGHT OF THE NEW EQUIPMENT ON THE EXISTING TOWER.
2. CONTRACTOR TO REFER TO THE TOWER STRUCTURAL ANALYSIS AND ~~COORDINATE COAX WITH THE SITE CONSTRUCTION MANAGER.~~

STRUCTURAL MODIFICATIONS REQUIRED:

STRUCTURAL MODIFICATION REQUIRED. REFER TO STRUCTURAL MODIFICATION DESIGN BY GPD GROUP PROFESSIONAL CORPORATION, DATED JANUARY 27, 2025. NO ADDITIONAL LOADING TO BE ADDED UNTIL STRUCTURAL MODIFICATIONS ARE INSTALLED.

EQUIPMENT PAINTING / FILMING NOTE:

NEW EXPOSED EQUIPMENT SHALL BE PAINTED WITH AT&T APPROVED, RF TRANSPARENT, UV RESISTANT, OUTDOOR RATED PAINT TO MATCH EXISTING. PAINT SHALL ONLY BE APPLIED AS DIRECTED BY AT&T AND EQUIPMENT MANUFACTURER.

ALTERNATIVELY, EQUIPMENT MAY BE WRAPPED WITH AT&T APPROVED, RF TRANSPARENT, UV RESISTANT, OUTDOOR RATED CONCEALMENT FILM COLORED TO MATCH EXISTING. FILM SHALL ONLY BE APPLIED AS DIRECTED BY AT&T AND EQUIPMENT MANUFACTURER.

REFER TO AT&T MACRO BUILD STANDARDS (ATT-790-202-083), ANTENNA STEALTHING FOR PAINTING AND FILMING REQUIREMENTS.

ALL METAL REMAINING WITHIN THE ANTENNA FIELD MUST BE PAINTED WITH PIM PAINT F.V. THERE ALL METAL OBSTRUCTIONS ARE PAINTED.

COAX & CABLE INFORMATION

- ALL EXISTING CABLES/COAX TO REMAIN UNLESS NOTED OTHERWISE
- (3) EXISTING 18-PAIR FIBER TRUNK
- (6) EXISTING #8 AWG DC POWER TRUNKS
- (6) EXISTING 7/8" COAX
- ROUTED WITHIN EXISTING ROOFTOP



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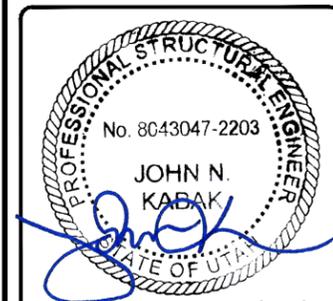
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AMERICAN FORK, UT 84003
CELL SITE RF MODIFICATIONS

SHEET TITLE
ELEVATIONS

SHEET NUMBER
C-3

Is there a missing sentence here? ends in "," and not "."?

Was the intent to list the site construction manager?

3
C-4
57'-0" ± GAMMA SECTOR
OVERALL AT&T ANTENNA TIP



FINAL SOUTH ELEVATION



COAX & CABLE INFORMATION

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CHECKED BY: MRL

RFDS: 5886502

SECTOR	TECH.		ANTENNA MODEL		AZIMUTH		ANTENNA TIP HEIGHT		RRH/RRU MODEL & RELATED EQUIPMENT	
	EXIST.	FINAL	EXIST.	FINAL	EXIST.	FINAL	EXIST.	FINAL	EXIST.	FINAL
A1	LTE	5G	*XXQLH-654L8H8-IVT	NNH4-65C-R6-UPM	55°	55°	57'-0"	57'-0"	*DUAL RRH 4T4R B12/14 320W AHLBA *DUAL RRH 4T4R B25/66 320W AHFIB	4490 B5/B12A AIR6419 B77G
A2	LTE	5G	*XXQLH-654L8H8-IVT	NNH4-65C-R6-UPM	55°	55°	57'-0"	57'-0"	*RRH 4T4R B5 160W AHCA *RRH 4T4R B30 100W AHNA *RRH2X40-AWS-RDEM	AIR 6419 B77D 4494 B14/B29 4890 B25/B66
A3	LTE	-	*7750	-	55°	-	57'-0"	-	-	-
A4	-	-	-	-	-	-	-	-	-	-
B1	LTE	5G	*XXQLH-654L8H8-IVT	NNH4-65C-R6-UPM	195°	195°	57'-0"	57'-0"	*DUAL RRH 4T4R B12/14 320W AHLBA *DUAL RRH 4T4R B25/66 320W AHFIB	4490 B5/B12A AIR6419 B77G
B2	LTE	5G	*XXQLH-654L8H8-IVT	NNH4-65C-R6-UPM	195°	195°	57'-0"	57'-0"	*RRH 4T4R B5 160W AHCA *RRH 4T4R B30 100W AHNA *RRH2X40-AWS-RDEM	AIR 6419 B77D 4494 B14/B29 4890 B25/B66
B3	LTE	-	*7750	-	195°	-	57'-0"	-	-	-
B4	-	-	-	-	-	-	-	-	-	-
G1	LTE	5G	*XXQLH-654L8H8-IVT	NNH4-65C-R6-UPM	305°	305°	57'-0"	57'-0"	*DUAL RRH 4T4R B12/14 320W AHLBA *DUAL RRH 4T4R B25/66 320W AHFIB	4490 B5/B12A AIR6419 B77G
G2	LTE	5G	*XXQLH-654L8H8-IVT	NNH4-65C-R6-UPM	305°	305°	57'-0"	57'-0"	*RRH 4T4R B5 160W AHCA *RRH 4T4R B30 100W AHNA *RRH2X40-AWS-RDEM	AIR 6419 B77D 4494 B14/B29 4890 B25/B66
G3	LTE	-	*7750	-	305°	-	57'-0"	-	-	-
G4	-	-	-	-	-	-	-	-	-	-

*TO BE REMOVED

0	03/25/2025	EQUIPMENT SWAP
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A	06/10/2024	ISSUED FOR REVIEW
REV	DATE	DESCRIPTION



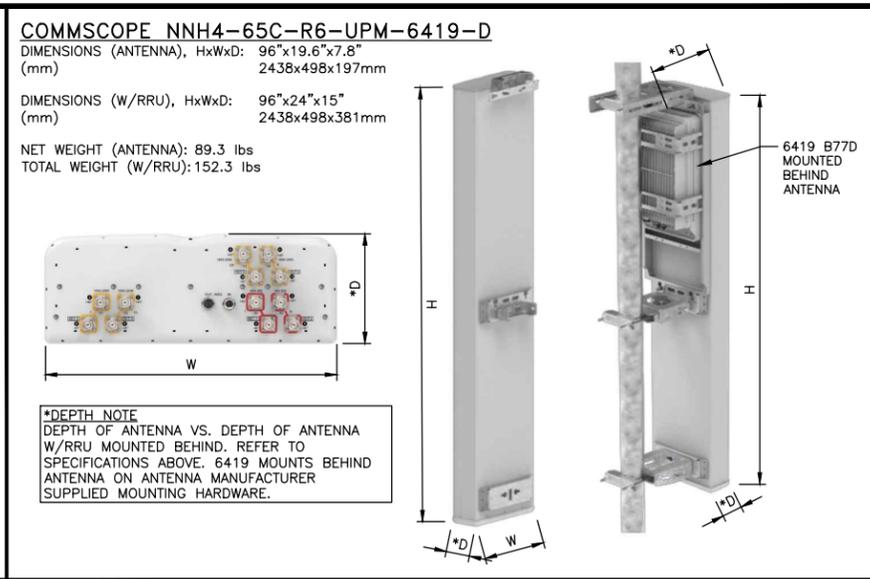
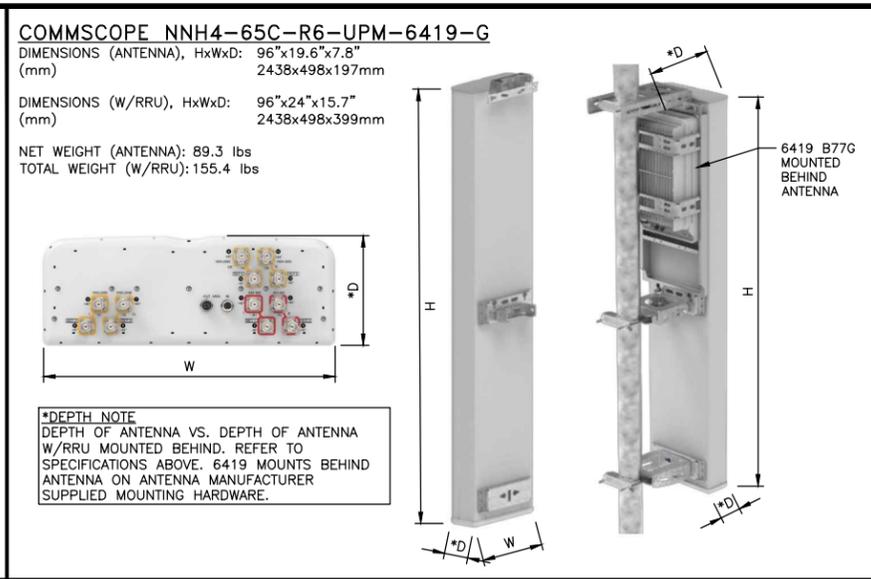
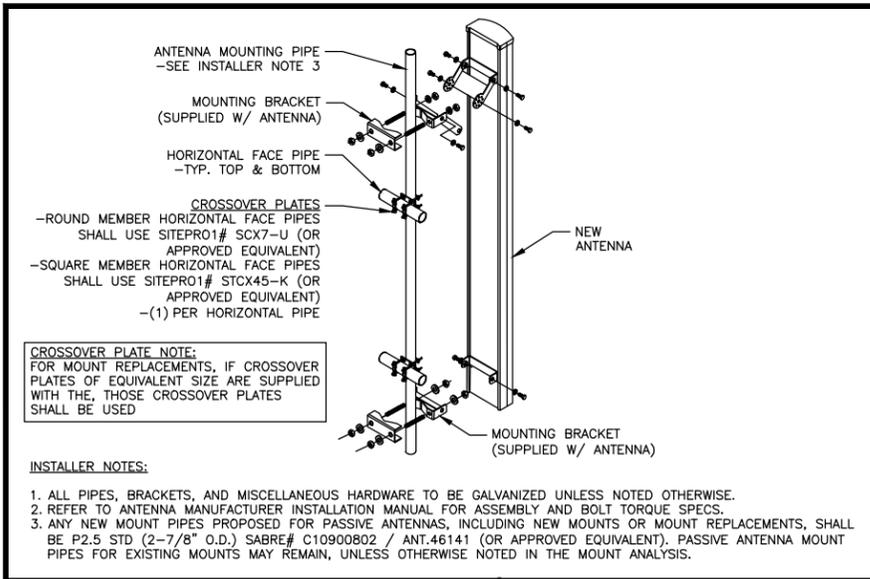
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SHEET TITLE
ANTENNA SCHEDULE &
LAYOUTS

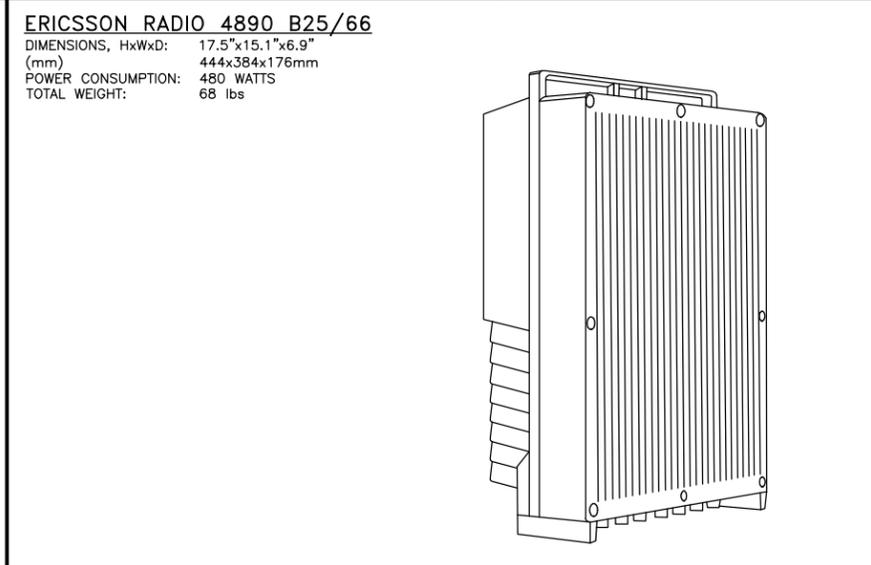
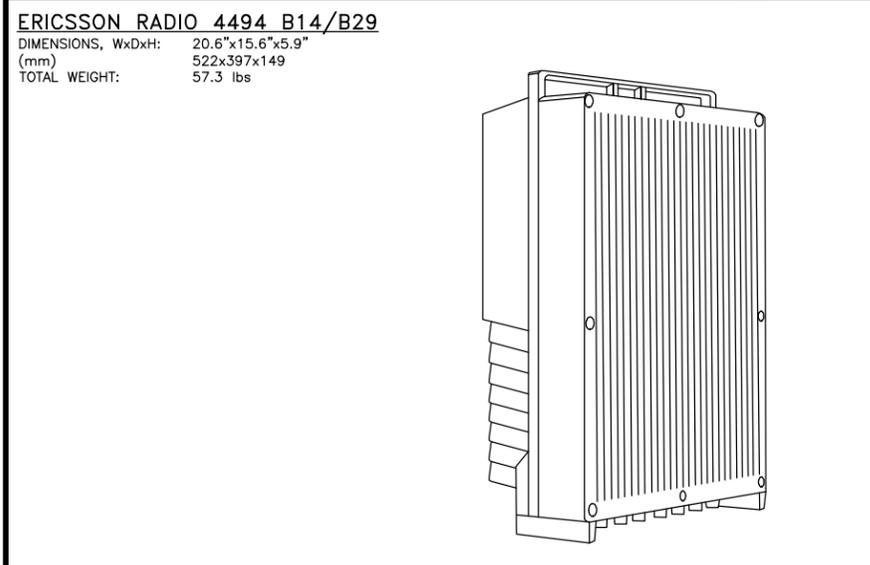
SHEET NUMBER
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ANTENNA PIPE MOUNTING DETAIL NO SCALE 1

PROPOSED ANTENNA SPECIFICATIONS NO SCALE 2

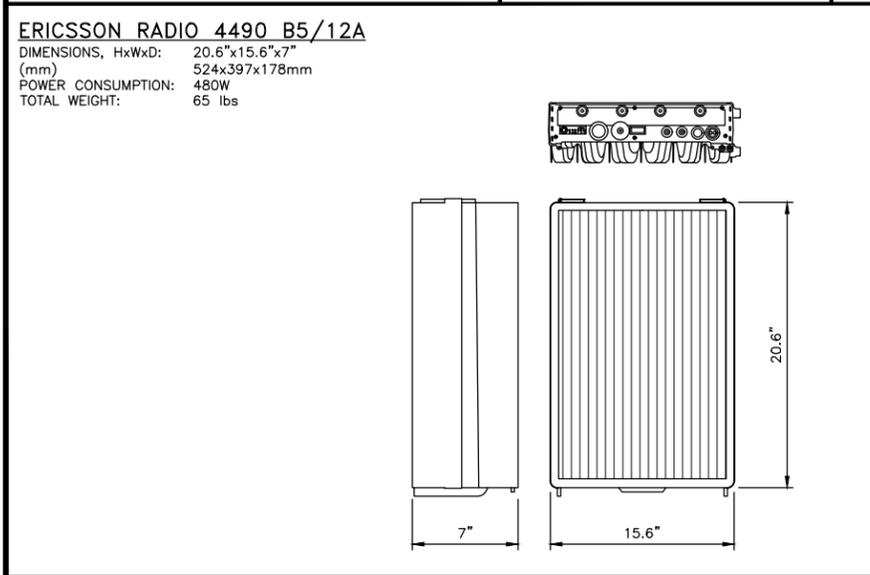
PROPOSED ANTENNA SPECIFICATIONS NO SCALE 3



RRU SPECIFICATIONS NO SCALE 4

RRU SPECIFICATIONS NO SCALE 5

DETAIL NOT USED 6



RRU SPECIFICATIONS NO SCALE 7

DETAIL NOT USED NO SCALE 8

DETAIL NOT USED NO SCALE 9



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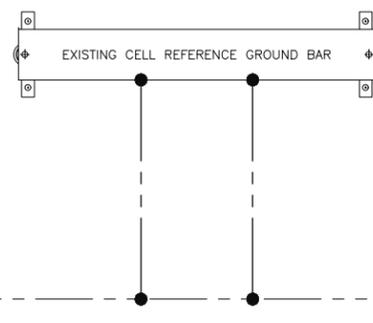
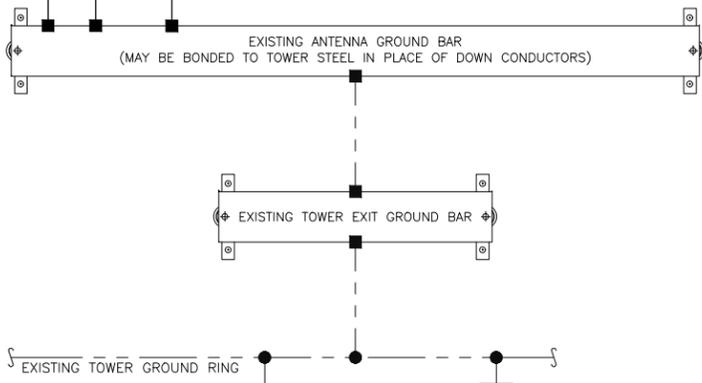
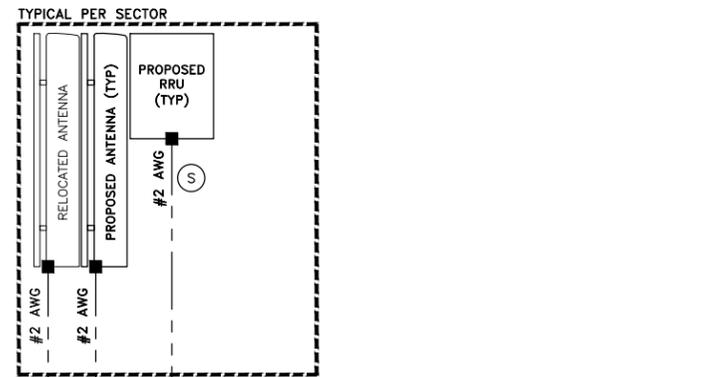
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SHEET TITLE
EQUIPMENT DETAILS

SHEET NUMBER
C-5



Check. Is note "I" missing? H, I, J, K,...

- EXOTHERMIC CONNECTION
- MECHANICAL CONNECTION
- ⊕ GROUND ROD
- ⊕ T TEST GROUND ROD WITH INSPECTION SLEEVE

LEGEND

1. GROUNDING IS SHOWN DIAGRAMMATICALLY ONLY.
2. CONTRACTOR SHALL GROUND ALL EQUIPMENT AS A COMPLETE SYSTEM. GROUNDING SHALL BE IN COMPLIANCE WITH NEC SECTION 250 AND AT&T GROUNDING AND BONDING REQUIREMENTS (ATT-TP-76416) AND MANUFACTURER'S SPECIFICATIONS.
3. ALL GROUND CONDUCTORS SHALL BE COPPER; NO ALUMINUM CONDUCTORS SHALL BE USED.

NOTES

- (A) **EXTERIOR GROUND RING:** #2 AWG SOLID COPPER, BURIED AT A DEPTH OF AT LEAST 30 INCHES BELOW GRADE, OR 6 INCHES BELOW THE FROST LINE AND APPROXIMATELY 24 INCHES FROM THE EXTERIOR WALL OR FOOTING. (ATT-TP-76416 2.2.3.5 / 7.5.1)
- (B) **TOWER GROUND RING:** THE GROUND RING SYSTEM SHALL BE INSTALLED AROUND AN ANTENNA TOWER'S LEGS, AND/OR GUY ANCHORS. WHERE SEPARATE SYSTEMS HAVE BEEN PROVIDED FOR THE TOWER AND THE BUILDING, AT LEAST TWO BONDS SHALL BE MADE BETWEEN THE TOWER RING GROUND SYSTEM AND THE BUILDING RING GROUND SYSTEM USING MINIMUM #2 AWG SOLID COPPER CONDUCTORS. (ATT-TP-76416 / 7.5.1)
- (C) **INTERIOR GROUND RING:** #2 AWG STRANDED GREEN INSULATED COPPER CONDUCTOR EXTENDED AROUND THE PERIMETER OF THE EQUIPMENT AREA. ALL NON-TELECOMMUNICATIONS RELATED METALLIC OBJECTS FOUND WITHIN A SITE SHALL BE GROUNDED TO THE INTERIOR GROUND RING WITH #6 AWG STRANDED GREEN INSULATED CONDUCTOR. (ATT-TP-76416 / 7.6.4)
- (D) **BOND TO INTERIOR GROUND RING:** #2 AWG SOLID TINNED COPPER WIRE PRIMARY BONDS SHALL BE PROVIDED AT LEAST AT FOUR POINTS ON THE INTERIOR GROUND RING, LOCATED AT THE CORNERS OF THE BUILDING. (ATT-TP-76416 7.5.2.2)
- (E) **GROUND ROD:** UL LISTED COPPER CLAD STEEL. MINIMUM 5/8" DIAMETER BY EIGHT FEET LONG. GROUND RODS SHALL BE INSTALLED WITH INSPECTION SLEEVES. GROUND RODS SHALL BE DRIVEN TO THE DEPTH OF GROUND RING CONDUCTOR. (ATT-TP-76416)
- (F) **CELL REFERENCE GROUND BAR:** POINT OF GROUND REFERENCE FOR ALL COMMUNICATIONS EQUIPMENT FRAMES. ALL BONDS ARE MADE WITH #2 AWG UNLESS NOTED OTHERWISE STRANDED GREEN INSULATED COPPER CONDUCTORS. BOND TO GROUND RING WITH (2) #2 SOLID TINNED COPPER CONDUCTORS. (ATT-TP-76416 / 7.6.7)
- (G) **HATCH PLATE GROUND BAR:** BOND TO THE INTERIOR GROUND RING WITH TWO #2 AWG STRANDED GREEN INSULATED COPPER CONDUCTORS. WHEN A HATCH-PLATE AND A CELL REFERENCE GROUND BAR ARE BOTH PRESENT, THE CRGB MUST BE CONNECTED TO THE HATCH-PLATE AND TO THE INTERIOR GROUND RING USING (2) TWO #2 AWG STRANDED GREEN INSULATED COPPER CONDUCTORS EACH.
- (H) **EXTERIOR CABLE ENTRY PORT GROUND BARS:** LOCATED AT THE ENTRANCE TO THE CELL SITE BUILDING. BOND TO GROUND RING WITH A #2 AWG SOLID TINNED COPPER CONDUCTORS WITH AN EXOTHERMIC WELD AND INSPECTION SLEEVE. (ATT-TP-76416 / 7.6.7.2)
- (J) **TOWER EXIT GROUND BAR:** #2 AWG SOLID TINNED COPPER BOND TO THE TOWER GROUND RING. (ATT-TP-76416 / 7.4.2.6)
- (K) **TELCO GROUND BAR:** BOND TO BOTH CELL REFERENCE GROUND BAR AND EXTERIOR GROUND RING. (ATT-TP-76416 / 7.6.8)
- (L) **FRAME BONDING:** THE BONDING POINT FOR TELECOM EQUIPMENT FRAMES SHALL BE THE GROUND BUS THAT IS NOT ISOLATED FROM THE EQUIPMENTS METAL FRAMEWORK. BOND THE FRAME GROUND TO THE "I" SECTION OF THE CELL REFERENCE GROUND BAR OR SUPPLEMENTARY CONDUCTOR. (ATT-TP-76416 6.5.3 AND 7.8)
- (M) **INTERIOR UNIT BONDS:** METAL FRAMES, CABINETS AND INDIVIDUAL METALLIC UNITS LOCATED WITH THE AREA OF THE INTERIOR GROUND RING REQUIRE A #6 AWG STRANDED GREEN INSULATED COPPER BOND TO THE INTERIOR GROUND RING. (ATT-TP-76416 / 7.12.3.1)
- (N) **FENCE AND GATE GROUNDING:** METAL FENCES WITHIN 7 FEET OF THE EXTERIOR GROUND RING OR OBJECTS BONDED TO THE EXTERIOR GROUND RING SHALL BE BONDED TO THE GROUND RING WITH A #2 AWG SOLID TINNED COPPER CONDUCTOR AT AN INTERVAL NOT EXCEEDING 25 FEET. BONDS SHALL BE MADE AT EACH GATE POST AND ACROSS GATE OPENINGS. (ATT-TP-76416 / 7.12.2.2)
- (P) **EXTERIOR UNIT BONDS:** METALLIC OBJECTS, EXTERNAL TO OR MOUNTED TO THE BUILDING, SHALL BE BONDED TO THE EXTERIOR GROUND RING. (ATT-TP-76416 7.12.2)
- (Q) **ICE BRIDGE SUPPORTS:** EACH ICE BRIDGE LEG SHALL BE BONDED TO THE GROUND RING WITH #2 AWG BARE TINNED COPPER CONDUCTOR. PROVIDE EXOTHERMIC WELDS AT BOTH THE ICE BRIDGE LEG AND BURIED GROUND RING. (ATT-TP-76416 / 7.4.2.6)
- (R) **DURING ALL DC POWER SYSTEM CHANGES INCLUDING DC SYSTEM CHANGE OUTS, RECTIFIER REPLACEMENTS OR ADDITIONS, BREAKER DISTRIBUTION CHANGES, BATTERY ADDITIONS, BATTERY REPLACEMENTS AND INSTALLATIONS OR CHANGES TO DC CONVERTER SYSTEMS IT SHALL BE REQUIRED THAT SERVICE CONTRACTORS VERIFY ALL DC POWER SYSTEMS ARE EQUIPPED WITH A MASTER DC SYSTEM RETURN GROUND CONDUCTOR FROM THE DC POWER SYSTEM COMMON RETURN BUS DIRECTLY CONNECTED TO THE CELL SITE REFERENCE GROUND BAR (CRGB) PER TP76300 SECTION H 6 AND TP76416 FIGURE 7-11 REQUIREMENTS.**
- (S) **OUTDOOR GROUNDING CONDUCTORS:** GROUNDING CONDUCTORS INSTALLED OUTDOORS AND RUN ENTIRELY ABOVE GRADE SHALL BE TINNED STRANDED COPPER AND BE SUNLIGHT RESISTANT.

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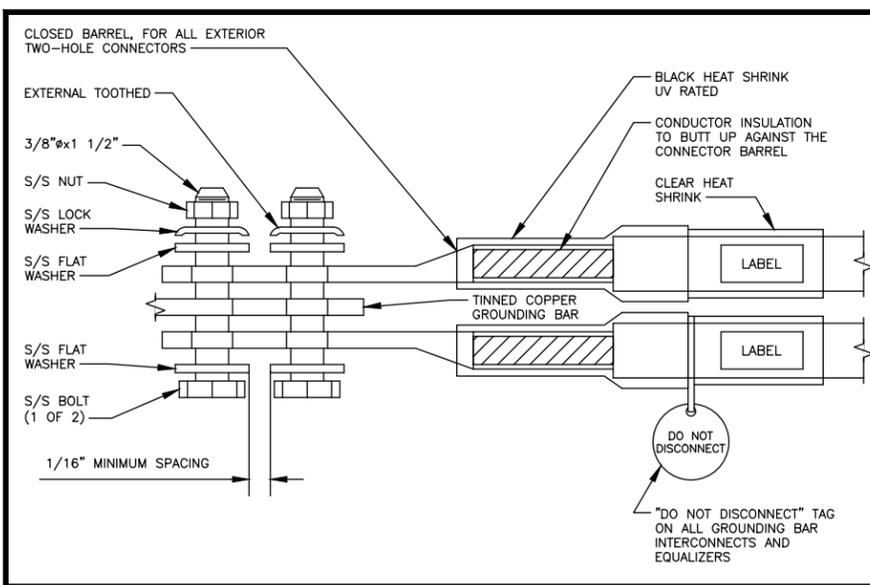
SHEET TITLE
GROUNDING ONE-LINE
DIAGRAM

SHEET NUMBER
G-1

GROUNDING ONE-LINE DIAGRAM

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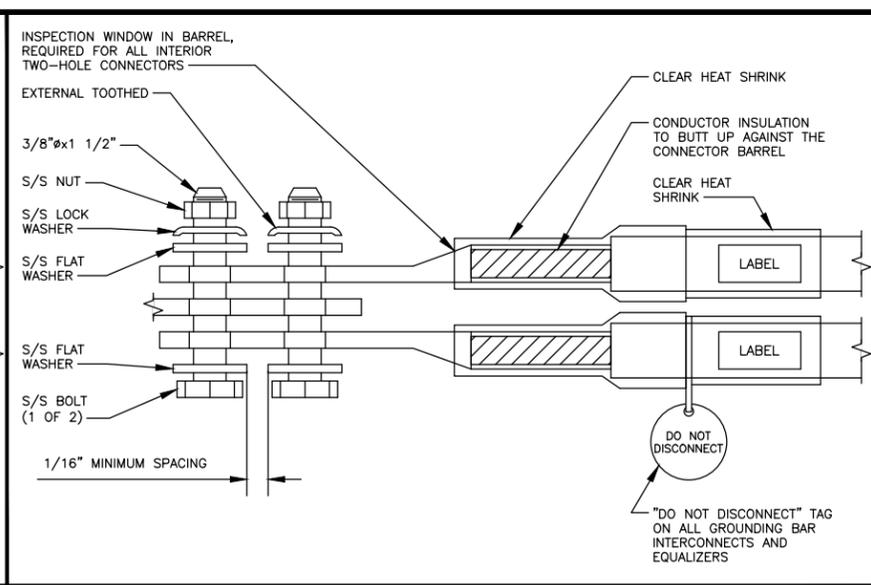
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INTERIOR TWO HOLE LUG

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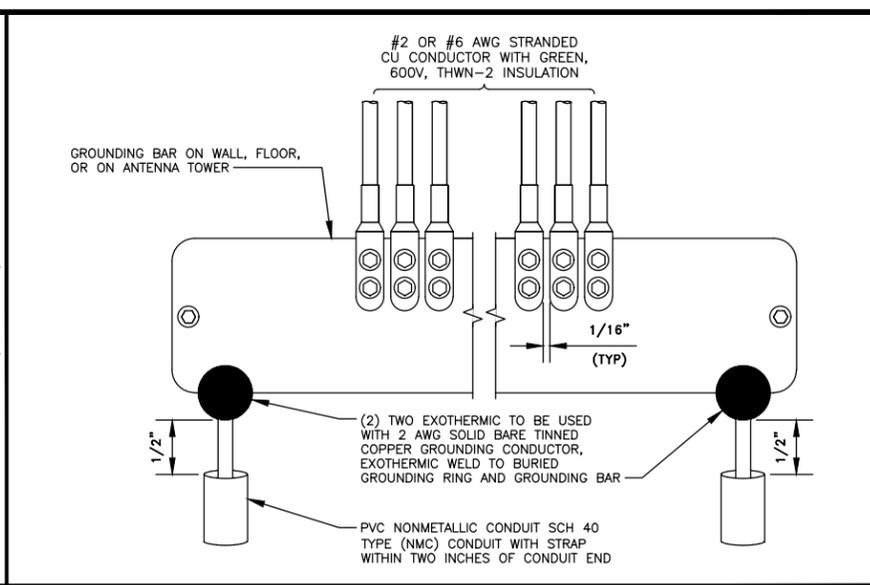
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EXTERIOR TWO HOLE LUG

NO SCALE

2



INSTALLATION OF GROUNDING CONDUCTOR TO GROUNDING BAR

NO SCALE

3

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 PROTECTORS

- (EC) CABLE ENTRY PORTS (HATCH PLATES) (#2)
- (EC) TELCO GROUND BAR (#2)
- (EC) COMMERCIAL POWER COMMON NEUTRAL/GROUND BOND (#2)
- (AT&T) CELL SITE +24V POWER SUPPLY RETURN BAR (#2)
- (AT&T) CELL SITE -48V POWER SUPPLY RETURN BAR (#2)
- (EC) GENERATOR FRAMEWORK (IF AVAILABLE) (#2)
- (AT&T) RECTIFIER FRAMES
- (AT&T) ANTENNA SUPPRESSION

SECTION "A" - SURGE ABSORBERS

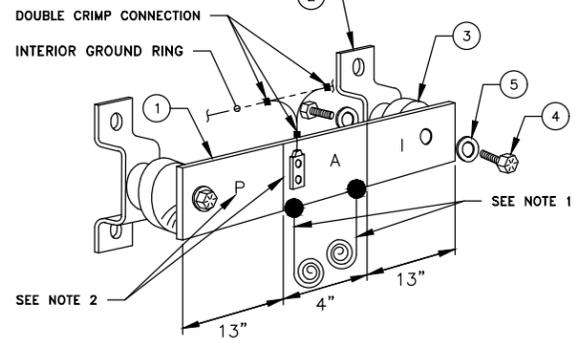
- (EC) INTERIOR GROUND RING (#2)
- (EC) EXTERNAL EARTH GROUND FIELD (BURIED GROUND RING) (#2)
- (EC) METALLIC COLD WATER PIPE (IF AVAILABLE) (#2)
- (EC) BUILDING STEEL (IF AVAILABLE) (#2)

SECTION "I" - ISOLATED GROUNDING ZONE

- (AT&T) ALL CELL SITE COMMUNICATIONS EQUIPMENT FRAMES

DETAIL NOTES

1. EXOTHERMICALLY WELD #2 AWG BARE TINNED SOLID COPPER CONDUCTOR TO GROUND BAR. ROUTE CONDUCTOR TO BURIED GROUND RING AND PROVIDE PARALLEL EXOTHERMIC WELD.
2. EC SHALL PERMANENTLY MARK THE LINES BETWEEN EACH SECTION AND LABEL EACH SECTION ("P", "A", "I") WITH 1" HIGH LETTERS.
3. GROUND BAR SHALL BE ENGRAVED PER AT&T SPECIFICATIONS TO PREVENT THEFT.



1. ALL MAIN CABLES WILL BE GROUNDED W/ COAXIAL CABLE GROUND KITS AT:
 - A. THE ANTENNA LEVEL.
 - B. MID LEVEL IF TOWER IS OVER 200'.
 - C. BASE OF TOWER PRIOR TO TURNING HORIZONTAL.
 - D. OUTSIDE THE EQUIPMENT SHELTER AT ENTRY PORT.
 - E. INSIDE THE EQUIPMENT SHELTER AT THE ENTRY PORT.
2. ALL PROPOSED GROUND BAR DOWNLEADS ARE TO BE CADWELDED TO THE EXISTING ADJACENT GROUND BAR DOWNLEADS A MINIMUM DISTANCE OF FOUR FEET BELOW GROUND BAR.
3. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY ANTENNA AND COAX CONFIGURATION, MAKE AND MODELS PRIOR TO INSTALLATION.
4. DO NOT ALLOW THE COPPER CONDUCTOR TO TOUCH THE GALVANIZED GUY WIRE AT THE CONNECTION POINT OR AT ANY OTHER POINT. NO EXOTHERMICALLY WELDED CONNECTION SHALL BE MADE TO THE GUY WIRE.
5. SUBCONTRACTOR SHALL GROUND ALL EQUIPMENT INCLUDING ANTENNAS, RET MOTORS, TMA'S, COAX CABLES, AND RET CONTROL CABLES AS A COMPLETE SYSTEM. GROUNDING SHALL BE EXECUTED BY QUALIFIED PERSONEL IN COMPLIANCE WITH MANUFACTURER'S SPECIFICATIONS AND RECOMMENDATIONS.
6. DO NOT INSTALL CABLE GROUNDING KIT AT A BEND AND ALWAYS DIRECT GROUNDING CONDUCTOR DOWN TO GROUNDING BAR.
7. GROUNDING KIT SHALL BE TYPE AND PART NUMBER AS SUPPLIED OR RECOMMENDED BY CABLE MANUFACTURER.
8. WEATHERPROOFING SHALL BE TYPE AND PART NUMBER AS SUPPLIED OR RECOMMENDED BY CABLE MANUFACTURER.
9. ALL EXTERIOR HEAT SHRINK OR HEAT SHRINK EXPOSED TO U/V LIGHT SHALL BE BLACK. ALL INTERIOR HEAT SHRINK SHALL BE CLEAR.
10. NUMBER OF GROUNDING BARS MAY VARY DEPENDING ON THE TYPE OF TOWER, ANTENNA LOCATION, AND CONNECTION ORIENTATION. THE SUBCONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING ADDITIONAL GROUNDING BAR AS REQUIRED, PROVIDING 50% SPARE CONNECTION POINTS.
11. PROVIDE GROUNDING KIT 6" BEFORE TURN TRANSITION FROM TOWER TO ICE BRIDGE.

(MGB) REFERENCE GROUNDING BAR

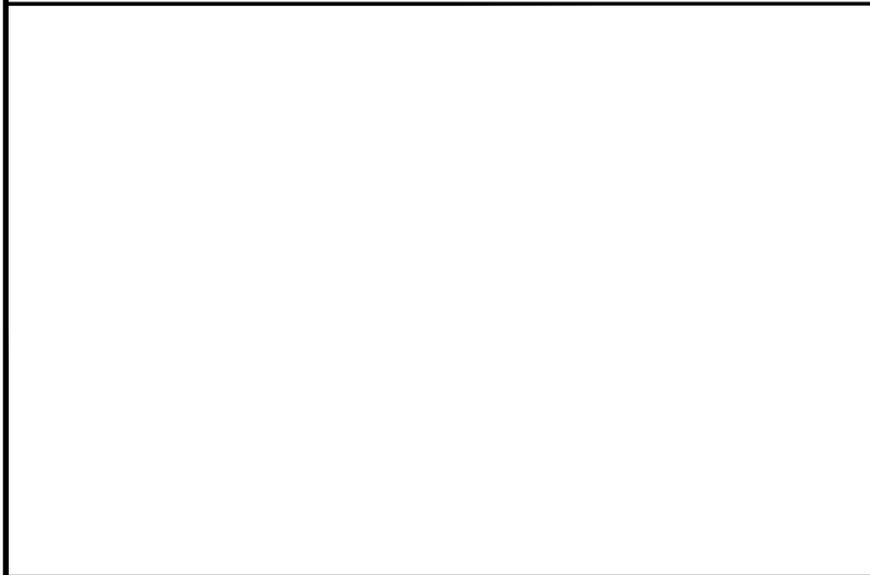
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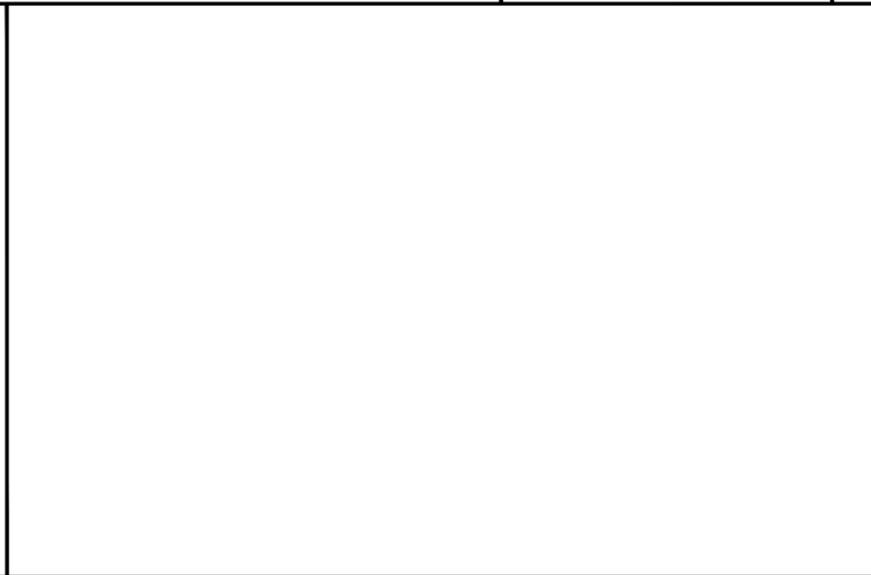
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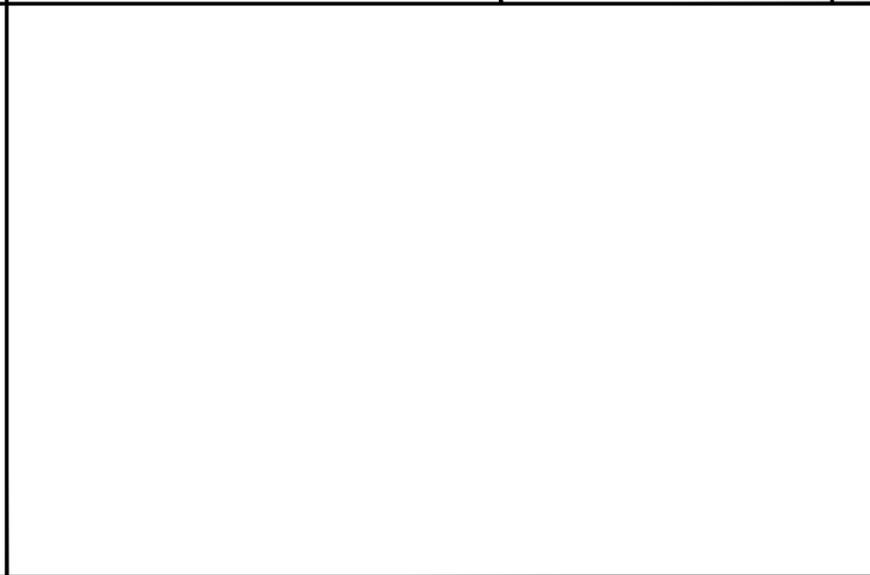
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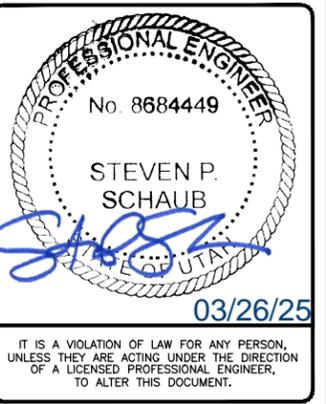
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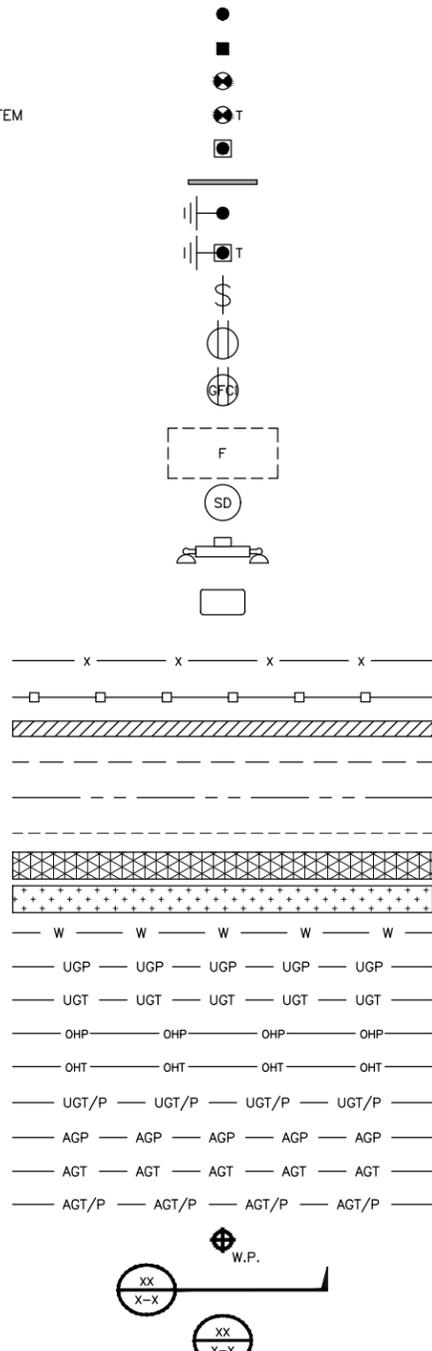
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SHEET NUMBER
G-2

EXOTHERMIC CONNECTION
 MECHANICAL CONNECTION
 CHEMICAL ELECTROLYTIC GROUNDING SYSTEM
 TEST CHEMICAL ELECTROLYTIC GROUNDING SYSTEM
 EXOTHERMIC WITH INSPECTION SLEEVE
 GROUNDING BAR
 GROUND ROD
 TEST GROUND ROD WITH INSPECTION SLEEVE
 SINGLE POLE SWITCH
 DUPLEX RECEPTACLE
 DUPLEX GFCI RECEPTACLE
 FLUORESCENT LIGHTING FIXTURE
 (2) TWO LAMPS 48-T8
 SMOKE DETECTION (DC)
 EMERGENCY LIGHTING (DC)
 SECURITY LIGHT W/PHOTOCELL LITHONIA ALXW
 LED-1-25A400/51K-SR4-120-PE-DEBTDX
 CHAIN LINK FENCE
 WOOD/WROUGHT IRON FENCE
 WALL STRUCTURE
 LEASE AREA
 PROPERTY LINE (PL)
 SETBACKS
 ICE BRIDGE
 CABLE TRAY
 WATER LINE
 UNDERGROUND POWER
 UNDERGROUND TELCO
 OVERHEAD POWER
 OVERHEAD TELCO
 UNDERGROUND TELCO/POWER
 ABOVE GROUND POWER
 ABOVE GROUND TELCO
 ABOVE GROUND TELCO/POWER
 WORKPOINT
 SECTION REFERENCE
 DETAIL REFERENCE



LEGEND

AB ANCHOR BOLT	IN INCH
ABV ABOVE	INT INTERIOR
AC ALTERNATING CURRENT	LB(S) POUND(S)
ADDL ADDITIONAL	LF LINEAR FEET
AFF ABOVE FINISHED FLOOR	LTE LONG TERM EVOLUTION
AFG ABOVE FINISHED GRADE	MAS MASONRY
AGL ABOVE GROUND LEVEL	MAX MAXIMUM
AIC AMPERAGE INTERRUPTION CAPACITY	MB MACHINE BOLT
ALUM ALUMINUM	MECH MECHANICAL
ALT ALTERNATE	MFR MANUFACTURER
ANT ANTENNA	MGB MASTER GROUND BAR
APPROX APPROXIMATE	MIN MINIMUM
ARCH ARCHITECTURAL	MISC MISCELLANEOUS
ATS AUTOMATIC TRANSFER SWITCH	MTL METAL
AWG AMERICAN WIRE GAUGE	MTS MANUAL TRANSFER SWITCH
BATT BATTERY	MW MICROWAVE
BLDG BUILDING	NEC NATIONAL ELECTRIC CODE
BLK BLOCK	NM NEWTON METERS
BLKG BLOCKING	NO. NUMBER
BM BEAM	# NUMBER
BTC BARE TINNED COPPER CONDUCTOR	NTS NOT TO SCALE
BOF BOTTOM OF FOOTING	OC ON-CENTER
CAB CABINET	OSHA OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION
CANT CANTILEVERED	OPNG OPENING
CHG CHARGING	P/C PRECAST CONCRETE
CLG CEILING	PCS PERSONAL COMMUNICATION SERVICES
CLR CLEAR	PCU PRIMARY CONTROL UNIT
COL COLUMN	PRC PRIMARY RADIO CABINET
COMM COMMON	PP POLARIZING PRESERVING
CONC CONCRETE	PSF POUNDS PER SQUARE FOOT
CONSTR CONSTRUCTION	PSI POUNDS PER SQUARE INCH
DBL DOUBLE	PT PRESSURE TREATED
DC DIRECT CURRENT	PWR POWER CABINET
DEPT DEPARTMENT	QTY QUANTITY
DF DOUGLAS FIR	RAD RADIUS
DIA DIAMETER	RECT RECTIFIER
DIAG DIAGONAL	REF REFERENCE
DIM DIMENSION	REINF REINFORCEMENT
DWG DRAWING	REQ'D REQUIRED
DWL DOWEL	RET REMOTE ELECTRIC TILT
EA EACH	RF RADIO FREQUENCY
EC ELECTRICAL CONDUCTOR	RMC RIGID METALLIC CONDUIT
EL ELEVATION	RRH REMOTE RADIO HEAD
ELEC ELECTRICAL	RRU REMOTE RADIO UNIT
EMT ELECTRICAL METALLIC TUBING	RWY RACEWAY
ENG ENGINEER	SCH SCHEDULE
EQ EQUAL	SHT SHEET
EXP EXPANSION	SIAD SMART INTEGRATED ACCESS DEVICE
EXT EXTERIOR	SIM SIMILAR
EW EACH WAY	SPEC SPECIFICATION
FAB FABRICATION	SQ SQUARE
FF FINISH FLOOR	SS STAINLESS STEEL
FG FINISH GRADE	STD STANDARD
FIF FACILITY INTERFACE FRAME	STL STEEL
FIN FINISH(ED)	TEMP TEMPORARY
FLR FLOOR	THK THICKNESS
FDN FOUNDATION	TMA TOWER MOUNTED AMPLIFIER
FOC FACE OF CONCRETE	TN TOE NAIL
FOM FACE OF MASONRY	TOA TOP OF ANTENNA
FOS FACE OF STUD	TOC TOP OF CURB
FOW FACE OF WALL	TOF TOP OF FOUNDATION
FS FINISH SURFACE	TOP TOP OF PLATE (PARAPET)
FT FOOT	TOS TOP OF STEEL
FTG FOOTING	TOW TOP OF WALL
GA GAUGE	TVSS TRANSIENT VOLTAGE SURGE SUPPRESSION
GEN GENERATOR	TYP TYPICAL
GFCI GROUND FAULT CIRCUIT INTERRUPTER	UG UNDERGROUND
GLB GLUE LAMINATED BEAM	UL UNDERWRITERS LABORATORY
GLV GALVANIZED	UNO UNLESS NOTED OTHERWISE
GPS GLOBAL POSITIONING SYSTEM	UMTS UNIVERSAL MOBILE TELECOMMUNICATIONS SYSTEM
GND GROUND	UPS UNINTERRUPTIBLE POWER SYSTEM (DC POWER PLANT)
GSM GLOBAL SYSTEM FOR MOBILE	VIF VERIFIED IN FIELD
HDC HOT DIPPED GALVANIZED	W WIDE
HDR HEADER	W/ WITH
HGR HANGER	WD WOOD
HVAC HEAT/VENTILATION/AIR CONDITIONING	WP WEATHERPROOF
HT HEIGHT	WT WEIGHT
IGR INTERIOR GROUND RING	

ABBREVIATIONS



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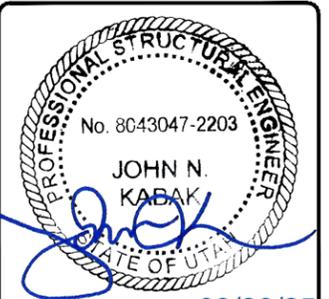
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 AMERICAN FORK, UT 84003
 CELL SITE RF MODIFICATIONS

SHEET TITLE
 LEGEND & ABBREVIATIONS

SHEET NUMBER
GN-1

GENERAL CONSTRUCTION NOTES

GENERAL CONSTRUCTION

- FOR THE PURPOSE OF CONSTRUCTION DRAWINGS, THE FOLLOWING DEFINITIONS SHALL APPLY:
GENERAL CONTRACTOR: OVERLAND CONTRACTING INC. (B&V)
CONTRACTOR: (CONSTRUCTION)
OWNER: AT&T
- ALL SITE WORK SHALL BE COMPLETED AS INDICATED ON THE DRAWINGS AND AT&T PROJECT SPECIFICATIONS.
- GENERAL CONTRACTOR SHALL VISIT THE SITE AND SHALL FAMILIARIZE HIMSELF WITH ALL CONDITIONS AFFECTING THE PROPOSED WORK AND SHALL MAKE NECESSARY PROVISIONS. PRIOR TO PROCEEDING WITH CONSTRUCTION, GENERAL CONTRACTOR SHALL FAMILIARIZE HIMSELF WITH ALL CONTRACT DOCUMENTS, SITE CONDITIONS, DIMENSIONS, AND CONFIRMING THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON PLAN. ANY DISCREPANCIES SHALL BE REPORTED TO THE ENGINEER PRIOR TO THE COMMENCEMENT OF WORK.
- MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES. GENERAL CONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS, AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF WORK.
- ALL WORK CARRIED OUT SHALL COMPLY WITH APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS IN ADDITION TO LOCAL JURISDICTIONAL CODES, ORDINANCES, AND APPLICABLE REGULATIONS.
- UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES, AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS SHOWN ON THE DRAWINGS.
- PLANS SHALL NOT BE SCALED. THESE PLANS ARE INTENDED TO BE A DIAGRAMMATIC OUTLINE ONLY, UNLESS OTHERWISE NOTED. DIMENSIONS SHOWN ARE TO FINISH SURFACES, UNLESS OTHERWISE NOTED. SPACING BETWEEN EQUIPMENT IS THE MINIMUM REQUIRED CLEARANCE. IT IS CRITICAL TO FIELD VERIFY ALL DIMENSIONS. SHOULD THERE BE ANY QUESTIONS REGARDING THE PLAN, THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING A CLARIFICATION FROM THE ENGINEER PRIOR TO PROCEEDING WITH THE WORK. DETAILS ARE INTENDED TO SHOW DESIGN INTENT. MODIFICATIONS MAY BE REQUIRED TO SUIT JOB DIMENSIONS OR CONDITIONS. SUCH MODIFICATIONS SHALL BE INCLUDED AS PART OF WORK AND APPROVED BY THE ENGINEER PRIOR TO PROCEEDING WITH WORK.
- THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
- IF THE SPECIFIED EQUIPMENT CANNOT BE INSTALLED AS SHOWN ON THE PLAN, THE CONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION SPACE FOR APPROVAL BY THE ENGINEER PRIOR TO PROCEEDING.
- GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR THE SAFETY OF WORK AREA, ADJACENT AREAS, AND BUILDING OCCUPANTS THAT ARE LIKELY TO BE AFFECTED BY THE WORK UNDER THIS CONTRACT. WORK SHALL CONFORM TO ALL OSHA REQUIREMENTS AND THE LOCAL JURISDICTION.
- GENERAL CONTRACTOR SHALL COORDINATE AND SCHEDULE WORK ACTIVITIES WITH OTHER DISCIPLINES.
- ERECTION SHALL BE DONE IN A WORKMANLIKE MANNER BY COMPETENT, EXPERIENCED WORKMEN IN ACCORDANCE WITH APPLICABLE CODES AND THE BEST ACCEPTED PRACTICE. ALL MEMBERS SHALL BE LAID PLUMB AND TRUE AS INDICATED ON THE DRAWINGS.
- SEAL PENETRATIONS THROUGH FIRE RATED AREAS, SHALL BE MADE WITH UL LISTED MATERIALS, APPROVED BY THE LOCAL JURISDICTION. CONTRACTOR SHALL KEEP AREA CLEAN AND HAZARD FREE, AND DISPOSE OF ALL DEBRIS DAILY.
- AS-BUILT CONDITIONS ARE REPRESENTED BY LIGHT SHADED LINES AND NOTES. THE SCOPE OF WORK FOR THIS PROJECT IS REPRESENTED BY DARK SHADED LINES AND NOTES. CONTRACTOR SHALL NOTIFY THE GENERAL CONTRACTOR OF ANY EXISTING CONDITIONS THAT DEVIATE FROM THE DRAWINGS PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.
- CONTRACTOR SHALL PROVIDE WRITTEN NOTICE TO THE CONSTRUCTION MANAGER, 48 HOURS PRIOR TO COMMENCEMENT OF WORK.
- THE CONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING, AND STRUCTURES DURING CONSTRUCTION OPERATIONS. ANY DAMAGED AREAS/ SITE ELEMENTS SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE TO THE SATISFACTION OF THE OWNER.
- THE CONTRACTOR SHALL CONTACT UTILITY LOCATING SERVICES PRIOR TO THE START OF CONSTRUCTION. CONTRACTOR IS ALSO RESPONSIBLE FOR THE NOTIFICATION OF TIER-TWO FACILITY/UTILITY OWNERS.
- GENERAL CONTRACTOR SHALL COORDINATE AND MAINTAIN ACCESS FOR ALL TRADES AND CONTRACTORS TO THE SITE AND/OR BUILDING.
- THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR SECURITY OF THE SITE FOR THE DURATION OF CONSTRUCTION UNTIL JOB COMPLETION.
- THE GENERAL CONTRACTOR SHALL MAINTAIN IN GOOD CONDITION ONE COMPLETE SET OF PLANS WITH ALL REVISIONS, ADDENDA, AND CHANGE ORDERS, ON THE PREMISES, AT ALL TIMES.
- THE CONTRACTOR SHALL PROVIDE PORTABLE FIRE EXTINGUISHERS WITH A RATING OF NOT LESS THAN 2-A OT 2-A:10-B:C LOCATED WITHIN 25 FEET OF TRAVEL DISTANCE TO WORK ALL AREAS OR WHERE WORK IS BEING PERFORMED DURING CONSTRUCTION.
- ALL EXISTING ACTIVE SEWER, WATER, GAS, ELECTRIC, AND OTHER UTILITIES SHALL BE PROTECTED AT ALL TIMES, AND WHERE REQUIRED FOR THE PROPER EXECUTION OF THE WORK, SHALL BE RELOCATED AS DIRECTED BY THE ENGINEER. EXTREME CAUTION SHOULD BE USED BY THE CONTRACTOR WHEN EXCAVATING OR DRILLING PIERS AROUND OR NEAR UTILITIES. CONTRACTOR SHALL PROVIDE SAFETY TRAINING FOR THE WORKING CREW. TRAINING SHALL INCLUDE BUT NOT BE LIMITED TO A) FALL PROTECTION, B) CONFINED SPACE, C) ELECTRICAL SAFETY, AND D) TRENCHING & EXCAVATION.
- ALL EXISTING INACTIVE SEWER, WATER, GAS, ELECTRIC, AND OTHER UTILITIES, WHICH INTERFERE WITH THE EXECUTION OF THE WORK, SHALL BE REMOVED, CAPPED, PLUGGED, OR OTHERWISE DISCONNECTED AT POINTS WHICH WILL NOT INTERFERE WITH THE EXECUTION OF THE WORK, AS DIRECTED BY THE RESPONSIBLE ENGINEER, AND SUBJECT TO THE APPROVAL OF THE OWNER AND/OR LOCAL UTILITIES.
- THE AREAS OF THE OWNER'S PROPERTY DISTURBED BY THE WORK AND NOT COVERED BY THE TOWER, EQUIPMENT, OR DRIVEWAY, SHALL BE GRADED TO A UNIFORM SLOPE AND PROPERLY STABILIZED TO PREVENT EROSION.
- CONTRACTOR SHALL MINIMIZE DISTURBANCE TO THE SITE DURING CONSTRUCTION. EROSION CONTROL AND SEDIMENT CONTROL MEASURES, IF REQUIRED DURING CONSTRUCTION, SHALL BE IN CONFORMANCE WITH FEDERAL AND/OR LOCAL JURISDICTIONS.
- FILL OR EMBANKMENT MATERIAL SHALL NOT BE PLACED ON FROZEN GROUND. FROZEN MATERIALS, SNOW, OR ICE SHALL NOT BE PLACED IN ANY FILL OR EMBANKMENT.
- THE SUBGRADE SHALL BE BROUGHT TO A SMOOTH UNIFORM GRADE AND COMPACTED TO 95 PERCENT STANDARD PROCTOR UNDER PAVEMENT AND STRUCTURES AND 80 PERCENT STANDARD PROCTOR IN OPEN SPACE. ALL TRENCHES IN THE PUBLIC RIGHT-OF-WAY SHALL BE BACKFILLED WITH FLOWABLE FILL OR OTHER MATERIAL, PRE-APPROVED BY THE LOCAL JURISDICTION.
- ALL NECESSARY RUBBISH, STUMPS, DEBRIS, STICKS, STONES, AND OTHER REFUSE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF IN A LAWFUL MANNER.
- ALL BROCHURES, OPERATION MANUALS, MAINTENANCE MANUALS, CATALOGS, SHOP DRAWINGS, AND OTHER DOCUMENTS SHALL BE TURNED OVER TO THE GENERAL CONTRACTOR AT COMPLETION OF CONSTRUCTION AND PRIOR TO PAYMENT.

- CONTRACTOR SHALL SUBMIT A COMPLETE SET OF AS-BUILT REDLINES TO THE GENERAL CONTRACTOR UPON COMPLETION OF PROJECT AND PRIOR TO FINAL PAYMENT.
- THE PROPOSED FACILITY WILL BE UNMANNED, DOES NOT REQUIRE POTABLE WATER OR SEWER SERVICE, AND IS NOT FOR HUMAN HABITAT (NO HANDICAP ACCESS REQUIRED).
- OCCUPANCY IS LIMITED TO PERIODIC MAINTENANCE AND INSPECTION OF APPROXIMATELY TWO TIMES PER MONTH BY AT&T TECHNICIANS.
- NO OUTDOOR STORAGE OR SOLID WASTE CONTAINERS ARE PROPOSED.
- ALL MATERIAL SHALL BE FURNISHED AND WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE LATEST REVISION AT&T MOBILITY GROUNDING STANDARD "TECHNICAL SPECIFICATION FOR CONSTRUCTION OF GSM WIRELESS SITES" AND "TECHNICAL SPECIFICATION FOR FACILITY GROUNDING". IN CASE OF A CONFLICT BETWEEN THE CONSTRUCTION SPECIFICATIONS AND THE DRAWINGS, THE DRAWINGS SHALL GOVERN.
- CONTRACTORS SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS AND INSPECTIONS REQUIRED FOR CONSTRUCTION. IF CONTRACTOR CANNOT OBTAIN A PERMIT, THEY MUST NOTIFY THE GENERAL CONTRACTOR IMMEDIATELY.
- CONTRACTOR SHALL REMOVE ALL TRASH AND DEBRIS FROM THE SITE ON A DAILY BASIS.
- CONTRACTOR SHALL LEAVE PREMISES IN A CLEAN CONDITION.
- INFORMATION SHOWN ON THESE DRAWINGS WAS OBTAINED FROM SITE OBSERVATIONS AND/OR DRAWINGS PROVIDED BY THE SITE OWNER. CONTRACTORS SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCIES PRIOR TO ORDERING MATERIAL OR PROCEEDING WITH CONSTRUCTION.
- WHITE STROBE LIGHTS ARE NOT PERMITTED. IF LIGHTING IS REQUIRED, IT SHALL MEET FAA STANDARDS AND REQUIREMENTS.
- ALL COAXIAL CABLE CONTRACTOR SHALL INSTALL PER MANUFACTURER'S INSTRUCTIONS AND RECOMMENDATIONS.

ANTENNA MOUNTING

- DESIGN AND CONSTRUCTION OF ANTENNA SUPPORTS SHALL CONFORM TO CURRENT ANSI/TIA-222 OR APPLICABLE LOCAL CODES.
- ALL STEEL MATERIALS SHALL BE GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A123 "ZINC (HOT-DIP GALVANIZED) COATINGS ON IRON AND STEEL PRODUCTS", UNLESS NOTED OTHERWISE.
- ALL BOLTS, ANCHORS AND MISCELLANEOUS HARDWARE SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153 "ZINC-COATING (HOT-DIP) ON IRON AND STEEL HARDWARE", UNLESS NOTED OTHERWISE.
- DAMAGED GALVANIZED SURFACES SHALL BE REPAIRED BY COLD GALVANIZING IN ACCORDANCE WITH ASTM A780.
- ALL ANTENNA MOUNTS SHALL BE INSTALLED WITH LOCK WASHERS AND/OR DOUBLE NUTS, AND SHALL BE TORQUED TO MANUFACTURER'S RECOMMENDATIONS.
- CONTRACTOR SHALL INSTALL ANTENNA AND ASSOCIATED GROUNDING PER MANUFACTURER'S RECOMMENDATIONS.
- ALL UNUSED PORTS ON ANY ANTENNA OR TMA, SHALL BE COVERED BY CONCEALOR CAP WITH PROPER WEATHER PROOFING OR BE TERMINATED WITH A 50 Ω LOAD.
- PRIOR TO SETTING ANTENNA AZIMUTHS AND DOWNTILTS, ANTENNA CONTRACTOR SHALL CHECK THE ANTENNA MOUNT FOR TIGHTNESS AND ENSURE THAT THEY ARE PLUMB. ANTENNA AZIMUTHS SHALL BE SET FROM TRUE NORTH AND BE ORIENTED WITHIN +/- 3 DEGREES AS DEFINED BY THE RFDS. ANTENNA DOWNTILTS SHALL BE WITHIN +/- 0.5 DEGREES AS DEFINED BY THE RFDS. REFER TO ATT-002-290-210.
- JUMPERS FROM THE TOWER MOUNTED AMPLIFIERS MUST TERMINATE TO OPPOSITE POLARIZATIONS IN EACH SECTOR.
- CONTRACTOR SHALL RECORD THE SERIAL NUMBER, SECTOR, AND POSITION OF EACH ACTUATOR INSTALLED AT THE ANTENNAS AND PROVIDE THE INFORMATION TO AT&T.
- TOWER MOUNTED AMPLIFIERS SHALL BE MOUNTED ON PIPE DIRECTLY BEHIND ANTENNAS AS CLOSE TO ANTENNA AS FEASIBLE IN A VERTICAL POSITION.
- ANTENNAS SHALL HAVE A 4'-0" MINIMUM CENTER-TO-CENTER HORIZONTAL SEPARATION.

TORQUE REQUIREMENTS

- ALL RF CONNECTIONS SHALL BE TIGHTENED BY A TORQUE WRENCH.
- A TORQUE MARK FORMING A CONTINUOUS STRAIGHT LINE IS TO BE MADE IN THE FOLLOWING APPLICATIONS:
 - RF CONNECTIONS - MARK BOTH SIDES OF THE CONNECTOR
 - GROUNDING AND ANTENNA HARDWARE - MARK ON THE NUT SIDE OF THE BOLT, STARTING FROM THE THREADS TO THE SOLID SURFACE. SOLID SURFACE EXAMPLES INCLUDE A GROUND BAR OR ANTENNA BRACKET METAL.
- ALL 8M ANTENNA HARDWARE SHALL BE TIGHTENED TO 9 LB-FT (12 NM).
- ALL 12M ANTENNA HARDWARE SHALL BE TIGHTENED TO 43 LB-FT (58 NM).
- ALL GROUNDING HARDWARE SHALL BE TIGHTENED UNTIL THE LOCK WASHER COLLAPSES AND THE GROUNDING HARDWARE IS NO LONGER LOOSE.
- ALL DIN TYPE CONNECTIONS SHALL BE TIGHTENED TO 18-22 LB-FT (24.4 - 29.8 NM).
- ALL N TYPE CONNECTIONS SHALL BE TIGHTENED TO 15-20 LB-IN (1.7 - 2.3 NM).

FIBER & POWER CABLE MOUNTING

- THE FIBER OPTIC TRUNK CABLES SHALL BE INSTALLED IN CONDUITS OR INNERDUCT. WHEN UTILIZING A CABLE TRAY SYSTEM, PLACE FIBER OPTIC TRUNK CABLE INTO AN INTER-DUCT. A PARTITION BARRIER SHALL BE INSTALLED BETWEEN THE 600 VOLT CABLES AND THE INTER-DUCT IN ORDER TO SEGREGATE CABLE TYPES. OPTIC FIBER TRUNK CABLES SHALL HAVE APPROVED CABLE RESTRAINTS EVERY (6) SIX FEET AND SHALL BE SECURELY FASTENED TO THE CABLE TRAY SYSTEM. NFPA 70 (NEC) ARTICLE 770 RULES SHALL APPLY.
- TYPE TC-ER CABLES SHALL BE INSTALLED INTO CONDUITS OR CABLE TRAYS, AND SHALL BE SECURED AT INTERVALS NOT EXCEEDING (6) FEET. WHERE TYPE TC-ER CABLES ARE NOT SUBJECT TO PHYSICAL DAMAGE, CABLES SHALL BE PERMITTED TO MAKE A TRANSITION BETWEEN CONDUITS OR CABLE TRAYS THAT ARE SERVICING UTILIZATION EQUIPMENT OR DEVICES. A TRANSITION DISTANCE EXCEEDING (6) FEET REQUIRES CONTINUOUS SUPPORTING. NFPA 70 (NEC) ARTICLES 336 AND 392 RULES SHALL APPLY.
- WHEN INSTALLING OPTIC FIBER TRUNK CABLES OR TYPE TC-ER CABLES INTO CONDUITS, NFPA 70 (NEC) ARTICLE 300 RULES SHALL APPLY.

COAXIAL CABLE NOTES

- TYPES AND SIZES OF THE ANTENNA CABLES ARE BASED ON ESTIMATED LENGTHS. PRIOR TO ORDERING CABLE, CONTRACTOR SHALL VERIFY ACTUAL LENGTH BASED ON CONSTRUCTION LAYOUT AND NOTIFY THE PROJECT MANAGER IF ACTUAL LENGTHS EXCEED ESTIMATED LENGTHS.
- CONTRACTOR SHALL VERIFY THAT THE DOWNTILT OF EACH ANTENNA IS WITHIN +/- 0.5 DEGREES OF SPECIFICATION WITH AN OCI APPROVED DIGITAL LEVEL.
- CONTRACTOR SHALL CONFIRM COAX COLOR CODING PRIOR TO CONSTRUCTION. REFER TO LATEST REVISION OF THE "ANTENNA SYSTEM LABELING STANDARD."
- ALL COAXIAL CABLE SHALL BE SECURED TO THE DESIGNED SUPPORT STRUCTURE IN AN APPROVED MANNER, NOT TO EXCEED MANUFACTURER'S RECOMMENDATIONS.
- COAXIAL CABLE SHALL BE SECURED TO THE DESIGNATED SUPPORT STRUCTURE(S) PER MANUFACTURER'S SPECIFICATIONS.

GENERAL CABLE AND EQUIPMENT NOTES

- CONTRACTOR SHALL BE RESPONSIBLE TO VERIFY ANTENNA, TMAS, DIPLEXERS, COAX CONFIGURATION, MAKES, AND MODELS PRIOR TO INSTALLATION.
- ALL CONNECTIONS FOR HANGERS, SUPPORTS, BRACING, ETC. SHALL BE INSTALLED PER TOWER MANUFACTURER'S RECOMMENDATIONS.
- CONTRACTOR SHALL REFERENCE THE TOWER STRUCTURAL ANALYSIS/DESIGN DRAWINGS FOR DIRECTIONS ON CABLE DISTRIBUTION/ROUTING.
- AFTER INSTALLATION AND FINAL CONNECTIONS ARE MADE, ALL OUTDOOR RF CONNECTORS/CONNECTIONS SHALL BE WEATHERPROOFED. EXCEPT THE RET CONNECTORS, USING BUTYL TAPE. BUTYL TAPE SHALL HAVE A MINIMUM OF ONE-HALF TAPE WIDTH OVERLAP ON EACH TURN AND EACH LAYER SHALL BE WRAPPED THREE TIMES. WEATHERPROOFING SHALL BE SMOOTH WITHOUT BUCKLING. BUTYL BLEEDING IS NOT ALLOWED. SELF BONDING TAPE AND PLASTIC ENCLOSURES ARE PERMITTED PER ATT-002-290-041, SECTION 7.
- IF REQUIRED TO PAINT ANTENNAS AND/OR COAX:
 - TEMPERATURE SHALL BE ABOVE 50 DEGREES FAHRENHEIT.
 - PAINT COLOR MUST BE APPROVED BY BUILDING OWNER/LANDLORD.
 - FOR REGULATED TOWERS, FAA/FCC APPROVED PAINT IS REQUIRED.
 - DO NOT PAINT OVER COLOR CODING OR ON EQUIPMENT MODEL NUMBERS.
- ALL CABLES SHALL BE GROUNDING WITH COAXIAL CABLE GROUND KITS. AT THE FOLLOWING LOCATIONS PER MANUFACTURER'S RECOMMENDATIONS:
 - THE ANTENNA LEVEL.
 - THE MID LEVEL, TOWERS WHICH ARE OVER 200'-0", ADDITIONAL CABLE GROUNDING REQUIRED.
 - BASE OF TOWER PRIOR TO TURNING HORIZONTAL.
 - OUTSIDE THE EQUIPMENT SHELTER AT ENTRY PORT.
- ANTENNA CONTRACTOR SHALL FURNISH AND INSTALL A 12'-0" T-BOOM SECTOR ANTENNA MOUNT INCLUDING ALL HARDWARE, IF APPLICABLE.

SAFETY

- CONSTRUCTION WORK PRESENTS UNIQUE THREATS TO HEALTH AND SAFETY. THE CONTRACTOR IS RESPONSIBLE TO EDUCATE THEIR WORK FORCE OF THESE DANGERS AND LIMIT THEIR EXPOSURE TO HAZARDS. THIS EDUCATION SHALL INCLUDE BUT NOT BE LIMITED TO APPLICABLE TRAINING COURSES AND CERTIFICATIONS, PROPER PERSONAL PROTECTIVE EQUIPMENT USAGE, DAILY TAILGATE MEETINGS AND ANY OTHER PREVENTATIVE MEASURES WHICH MAY BE REASONABLY EXPECTED. THE CONTRACTOR AND ALL SUB-CONTRACTORS SHALL BE RESPONSIBLE FOR THE SAFETY OF THE WORK AREA, ADJACENT AREAS AND ANY PROPERTY OCCUPANTS WHO MAY BE AFFECTED BY THE WORK UNDER CONTRACT. THE CONTRACTOR SHALL REVIEW ALL LANDOWNER, PRIME CONTRACTOR, CARRIER, OSHA, AND LOCAL SAFETY GUIDELINES AND AT ALL TIMES SHALL CONFORM TO THE MOST RESTRICTIVE OF THESE STANDARDS TO ENSURE A SAFE WORKPLACE.
- TOWER WORK PRESENTS ADDITIONAL THREATS TO HEALTH AND SAFETY. ALL TOWER WORKERS WORKING ON A TOWER MUST BE ADEQUATELY TRAINED AND MONITORED TO ENSURE THAT SAFE WORK PRACTICES ARE LEARNED AND FOLLOWED. AS REQUIRED BY OSHA, WHEN WORKING ON EXISTING COMMUNICATION TOWERS, EMPLOYEES MUST BE PROVIDED WITH APPROPRIATE FALL PROTECTION, TRAINED TO USE THIS FALL PROTECTION PROPERLY, AND THE USE OF FALL PROTECTION MUST BE CONSISTENTLY SUPERVISED AND ENFORCED BY THE CONTRACTOR.



7670 S CHESTER ST
ENGLEWOOD, CO 80112



1220 OLD ALPHARETTA ROAD
SUITE 380
ALPHARETTA, GA 30005



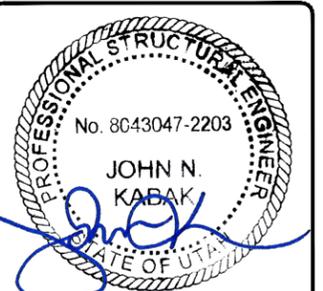
GPD JOB #: 2024723.02/ 86662.01

DRAWN BY: KNM

CHECKED BY: MRL

RFDS: 5886502

REV	DATE	DESCRIPTION
0	03/25/2025	EQUIPMENT SWAP
B	02/03/2025	ADDING STRUCTURAL MODS
A	06/10/2024	ISSUED FOR REVIEW



03/26/25

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT.

EAST AMERICAN FORK
UTL04060
1175 EAST 50 SOUTH
AMERICAN FORK, UT 84003
CELL SITE RF MODIFICATIONS

SHEET TITLE
GENERAL CONSTRUCTION
NOTES

SHEET NUMBER
GN-2

GENERAL SITE WORK AND DRAINAGE NOTES

PART 1 – GENERAL

CONTRACTOR SHALL PROVIDE CLEARING, GRUBBING, STRIPPING, EROSION CONTROL, SURVEY, LAYOUT, SUBGRADE PREPARATION, AND FINISH GRADING AS REQUIRED TO COMPLETE THE PROPOSED WORK SHOWN IN THESE PLANS.

1.1 REFERENCES:

- A. DOT (STATE DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, CURRENT EDITION)
- B. ASTM (AMERICAN SOCIETY FOR TESTING AND MATERIALS)
- C. OSHA (OCCUPATION SAFETY AND HEALTH ADMINISTRATION)

1.2 INSPECTION AND TESTING:

- A. FIELD TESTING OF EARTHWORK COMPACTION AND CONCRETE CYLINDERS SHALL BE PERFORMED BY AN INDEPENDENT TESTING LAB. THIS WORK SHALL BE COORDINATED BY THE SUBCONTRACTOR.
- B. ALL WORK SHALL BE INSPECTED AND RELEASED BY THE GENERAL CONTRACTOR. THE INSPECTIONS SHALL BE CARRIED OUT WITH SPECIFIC CONCERN FOR PROPER PERFORMANCE OF THE WORK AS SPECIFIED AND/OR CALLED FOR ON THE PLAN. IT IS THE SUBCONTRACTOR'S RESPONSIBILITY TO REQUEST THE REQUIRED INSPECTIONS PRIOR TO PROCEEDING WITH FURTHER WORK THAT WOULD MAKE PARTS OF WORK INACCESSIBLE OR DIFFICULT TO INSPECT.

1.3 SITE MAINTENANCE AND PROTECTION:

- A. PROVIDE ALL NECESSARY JOB SITE MAINTENANCE FROM COMMENCEMENT OF WORK UNTIL COMPLETION OF THE SUBCONTRACT.
- B. AVOID DAMAGE TO THE SITE AND TO EXISTING FACILITIES, STRUCTURES, TREES, AND SHRUBS DESIGNATED TO REMAIN. TAKE PROTECTIVE MEASURES TO PREVENT DAMAGED TO EXISTING FACILITIES THAT ARE NOT DESIGNATED FOR MODIFICATION OR REMOVAL.
- C. KEEP SITE FREE OF PONDING WATER.
- D. PROVIDE EROSION CONTROL MEASURES IN ACCORDANCE WITH STATE DOT AND EPA REQUIREMENTS.
- E. PROVIDE AND MAINTAIN ALL TEMPORARY FENCING, BARRICADES, WARNING SIGNS, AND SIMILAR DEVICES NECESSARY TO PROTECT AGAINST THEFT FROM PROPERTY DURING THE ENTIRE DURATION OF CONSTRUCTION. REMOVE ALL SUCH DEVICES UPON COMPLETION OF THE WORK.
- F. DO NOT INTERRUPT EXISTING UTILITIES SERVING FACILITIES OCCUPIED BY THE OWNER OR OTHERS, EXCEPT WHEN PERMITTED IN WRITING BY THE ENGINEER AND THEN ONLY AFTER ACCEPTABLE TEMPORARY UTILITY SERVICES HAVE BEEN PROVIDED.

- 1. NOTICE TO ENGINEER SHALL BE PROVIDED A MINIMUM OF 48 HOURS PRIOR TO OUTAGE.

PART 2 – PRODUCTS

- 2.1 SUITABLE BACKFILL: ASTM D2321 (CLASS I, II, III OR IVA) FREE FROM FROZEN LUMPS, REFUSE, STONES OR ROCKS LARGER THAN THREE (3) INCHES IN ANY DIMENSION.
- 2.2 NON-POROUS GRANULAR EMBANKMENT AND BACKFILL: ASTM D2321 (CLASS III, IVA OR IVB) COARSE AGGREGATE. FREE FROM FROZEN LUMPS, REFUSE, STONES OR ROCKS LARGER THAN THREE (3) INCHES IN ANY DIMENSION.
- 2.3 POROUS GRANULAR EMBANKMENT AND BACKFILL: ASTM D2321 (CLASS IA, IB OR II) COARSE AGGREGATE FREE FROM FROZEN LUMPS, REFUSE, STONES, OR ROCKS LARGER THAN THREE (3) INCHES IN DIAMETER, OR OTHER MATERIAL THAT MAY MAKE THE INORGANIC MATERIAL UNSUITABLE FOR BACKFILL.
- 2.4 SELECT STRUCTURAL FILL: GRANULAR FILL MATERIAL MEETING THE REQUIREMENTS OF ASTM E850-95. FOR USE AROUND AND UNDER STRUCTURES WHERE STRUCTURAL FILL MATERIAL IS REQUIRED.
- 2.5 GRANULAR BEDDING AND TRENCH BACKFILL: WELL-GRADED SAND MEETING THE GRADATION REQUIREMENTS OF ASTM D2487 (CLASSIFIED AS SE OR SW-SM SOILS).
- 2.6 COARSE AGGREGATE FOR ACCESS ROAD SUBBASE COURSE SHALL CONFORM TO ASTM D2940.
- 2.7 UNSUITABLE MATERIAL: HIGH AND MODERATELY PLASTIC SILTS AND CLAYS (LL>45). MATERIAL CONTAINING REFUSE, FROZEN LUMPS, DEMOLISHED BITUMINOUS MATERIAL, VEGETATIVE MATTER, WOOD, STONES IN EXCESS OF 3 INCHES IN DIAMETER, AND DEBRIS. THESE WILL BE SOILS CLASSIFIED BY ASTM AS PT, MH, CH, OH, ML, AND OL.
- 2.8 GEOTEXTILE FABRIC: MIRAFI 500X OR APPROVED EQUIVALENT.
- 2.9 PLASTIC MARKING TAPE SHALL BE ACID AND ALKALI RESISTANT POLYETHYLENE FILM SPECIFICALLY MANUFACTURED FOR MARKING AND LOCATING UNDERGROUND UTILITIES, SIX (6) INCHES WIDE WITH A MINIMUM THICKNESS OF 0.004" TAPE SHALL HAVE MINIMUM STRENGTH OF 1,500 PSI IN BOTH DIRECTIONS AND MANUFACTURED WITH INTEGRAL CONDUCTORS, FOIL BACKING OR OTHER MEANS TO ENABLE DETECTION BY A METAL DETECTOR WHEN BURIED UP TO 3 FEET DEEP. THE METALLIC CORE OF THE TAPE SHALL BE ENCASED IN A PROTECTIVE JACKET OR PROVIDED WITH OTHER MEANS TO PROTECT IT FROM CORROSION. TAPE COLOR SHALL BE RED FOR ELECTRIC UTILITIES AND ORANGE FOR TELECOMMUNICATION UTILITIES.

PART 3 – EXECUTION

3.1 GENERAL:

- A. BEFORE STARTING GENERAL SITE PREPARATION ACTIVITIES, INSTALL EROSION AND SEDIMENT CONTROL MEASURES. THE WORK AREA SHALL BE CONSTRUCTED AND MAINTAINED IN SUCH CONDITION THAT IN THE EVENT OF A RAIN EVENT, THE SITE CAN PROPERLY DRAIN AT ANY TIME.
- B. PRIOR TO SURVEY, LAYOUT, STAKING, AND MARKING, ESTABLISH AND MAINTAIN ALL LINES, GRADES, ELEVATIONS, AND BENCHMARKS NEEDED FOR EXECUTION OF THE WORK.
- C. CLEAR AND GRUB THE AREA WITHIN THE LIMITS OF THE SITE. REMOVE TREES, BRUSH, STUMPS, RUBBISH, OTHER DEBRIS, AND VEGETATION RESTING ON OR PROTRUDING THROUGH THE GROUND SURFACE.
 - 1. REMOVE THE FOLLOWING MATERIALS TO A DEPTH OF NO LESS THAN 12 INCHES BELOW THE ORIGINAL GROUND SURFACE: ROOTS, STUMPS, BRUSH, REFUSE, AND OTHER DEBRIS EMBEDDED IN OR PROTRUDING THROUGH THE GROUND SURFACE. RAKE, DISK, OR PLOW THE AREA TO A DEPTH OF NO LESS THAN 6 INCHES, AND REMOVE MATERIAL TO A DEPTH OF 12 INCHES BELOW THE BOTTOM DEPTH OF ROOTS AND OTHER DEBRIS.
 - 2. REMOVE TOPSOIL MATERIAL COMPLETELY FROM THE SURFACE UNTIL THE SOIL NO LONGER MEETS THE DEFINITION OF TOPSOIL. AVOID MIXING TOPSOIL WITH SUBSOIL OR OTHER UNDESIRABLE MATERIALS.
 - 3. EXCEPT WHERE EXCAVATION TO GREATER DEPTH IS INDICATED, FILL DEPRESSIONS RESULTING FROM CLEARING, GRUBBING, AND DEMOLITION WORK COMPLETELY WITH SUITABLE FILL.
- D. ALL DEBRIS RESULTING FROM CLEARING AND GRUBBING OPERATIONS SHALL BE REMOVED FROM THE SITE AND DISPOSED OF IN AN AUTHORIZED LANDFILL. BURNING OF DEBRIS WILL NOT BE PERMITTED.
- E. PRIOR TO EXCAVATING, THOROUGHLY EXAMINE THE AREA TO BE EXCAVATED AND/OR TRENCHED TO VERIFY THE LOCATIONS OF FEATURES INDICATED ON THE DRAWINGS AND TO ASCERTAIN THE EXISTENCE AND LOCATION OF ANY STRUCTURE, UNDERGROUND STRUCTURE, OR OTHER ITEM NOT SHOWN THAT MIGHT INTERFERE WITH THE PROPOSED CONSTRUCTION. NOTIFY THE CONSTRUCTION MANAGER OF ANY OBSTRUCTIONS THAT WILL PREVENT ACCOMPLISHMENT OF THE WORK AS INDICATED ON THE PLANS.
- F. SEPARATE AND STOCKPILE ALL EXCAVATED MATERIALS SUITABLE FOR BACKFILL. ALL EXCESS EXCAVATED AND UNSUITABLE MATERIALS SHALL BE DISPOSED OF OFF-SITE IN A LEGAL MANNER.

3.2 BACKFILL:

- A. AFTER COMPLETING CONSTRUCTION OF A STRUCTURE, INCLUDING EXPIRATION OF THE SPECIFIED MINIMUM CURING PERIOD FOR CAST-IN-PLACE CONCRETE, BACKFILL THE EXCAVATION WITH APPROVED MATERIAL TO RESTORE THE REQUIRED FINISHED GRADE.
 - 1. PRIOR TO PLACING BACKFILL AROUND STRUCTURES, ALL FORMS SHALL BE REMOVED AND THE EXCAVATION CLEANED OF ALL TRASH, DEBRIS, AND UNSUITABLE MATERIALS.
 - 2. BACKFILL BY PLACING AND COMPACTING SUITABLE BACKFILL MATERIAL IN UNIFORM HORIZONTAL LAYERS OF NO GREATER THAN 8-INCHES LOOSE THICKNESS. WHERE HAND OPERATED COMPACTORS ARE USED, THE FILL MATERIAL SHALL BE PLACED IN LIFTS NOT TO EXCEED 4 INCHES IN LOOSE DEPTH.
 - 3. IF THE DENSITY TESTING INDICATES THAT THE CONTRACTOR HAS NOT OBTAINED THE SPECIFIED DENSITY, THE SUCCEEDING LAYER SHALL NOT BE PLACED UNTIL THE SPECIFICATION REQUIREMENTS ARE MET UNLESS OTHERWISE AUTHORIZED BY THE GEOTECHNICAL ENGINEER. THE CONTRACTOR SHALL TAKE WHATEVER APPROPRIATE ACTION IS NECESSARY, SUCH AS DISKING AND DRYING, ADDING WATER, OR INCREASING THE COMPACTIVE EFFORT TO MEET THE MINIMUM COMPACTION REQUIREMENTS.
- B. THOROUGHLY COMPACT EACH LAYER OF BACKFILL TO A MINIMUM OF 95 PERCENT OF THE MAXIMUM DRY DENSITY AS PROVIDED BY THE STANDARD PROCTOR TEST, ASTM D698.

3.3 TRENCH EXCAVATION:

- A. UTILITY TRENCHES SHALL BE EXCAVATED AT LOCATIONS, DEPTHS, AND WIDTHS SHOWN ON PLAN, OR AS DIRECTED BY THE GENERAL CONTRACTOR. EXCAVATION CONTRACTOR SHALL PROVIDE SHORING, SHEETING, AND BRACING AS REQUIRED TO PREVENT CAVING OR SLOUGHING OF THE TRENCH WALLS.
- B. THE TRENCH WIDTH SHALL EXTEND A MINIMUM OF 6 INCHES BEYOND THE OUTSIDE EDGE OF THE OUTERMOST CONDUIT.

3.4 TRENCH BACKFILL:

- A. NOTIFY THE GENERAL CONTRACTOR 24 HOURS IN ADVANCE OF BACKFILLING.
- B. PROVIDE GRANULAR BEDDING MATERIAL IN ACCORDANCE WITH THE PLAN AND THE UTILITY REQUIREMENTS.
- C. CONDUCT UTILITY CHECK TESTS BEFORE BACKFILLING. BACKFILL AND COMPACT TRENCH BEFORE ACCEPTANCE TESTING.
- D. PLACE GRANULAR TRENCH BACKFILL UNIFORMLY ON BOTH SIDES OF THE CONDUITS IN 6-INCH UNCOMPACTED LIFTS AND TO 12 INCHES OVER THE CONDUITS. SOLIDLY RAM AND TAMP BACKFILL INTO SPACE AROUND CONDUITS.
- E. PROTECT CONDUIT FROM LATERAL MOVEMENT, IMPACT DAMAGE, OR UNBALANCED LOADING.
- F. ABOVE THE CONDUIT EMBEDMENT ZONE, PLACE AND COMPACT THE BACKFILL MATERIAL IN MAXIMUM 8-INCH THICK LOOSE LIFTS TO RESTORE THE REQUIRED FINISHED SURFACE GRADE.
- G. COMPACT THE TRENCH BACKFILL A MINIMUM OF 95 PERCENT OF THE MAXIMUM DRY DENSITY AS PROVIDED BY THE STANDARD PROCTOR TEST, ASTM D698.

3.5 AGGREGATE ACCESS ROAD:

- A. CLEAR, GRUB, STRIP, AND EXCAVATE FOR THE ACCESS ROAD AS SHOWN ON PLAN. SCARIFY TO A DEPTH OF 6 INCHES AND PROOF-ROLL. ALL HOLES, RUTS, SOFT PLACES, AND OTHER DEFECTS SHALL BE CORRECTED.
- B. THE SUBGRADE OF THE DISTURBED AREA SHALL BE COMPACTED TO NOT LESS THAN 95 PERCENT OF THE MAXIMUM DRY DENSITY AS PROVIDED BY THE MODIFIED PROCTOR TEST, ASTM D1557.
- C. AFTER PREPARATION OF THE ROAD SUBGRADE IS COMPLETE, INSTALL THE GEOTEXTILE FABRIC (MIRAFI 500X) AT LOCATIONS INDICATED ON THE PLAN BY ROLLING THE FABRIC OUT LONGITUDINALLY ALONG THE ROADWAY. THE FABRIC SHALL NOT BE DRAGGED ACROSS THE SUBGRADE. PLACE THE ENTIRE ROLL IN A SINGLE OPERATION AND ROLL IT OUT AS SMOOTHLY AS POSSIBLE.
 - 1. GEOTEXTILE FABRIC OVERLAPS THAT ARE PARALLEL TO THE ROADWAY WILL BE PERMITTED ALONG THE CENTERLINE OF THE ROAD AND AT LOCATIONS BEYOND THE ROADWAY SURFACE WIDTH (I.E. WITHIN THE SHOULDER WIDTH) ONLY. NO LONGITUDINAL OVERLAPS SHALL BE LOCATED BETWEEN THE CENTERLINE AND THE SHOULDER. PARALLEL OVERLAPS SHALL BE A MINIMUM OF 3 FEET WIDE.
 - 2. TRANSVERSE (PERPENDICULAR TO THE ROADWAY) GEOTEXTILE FABRIC OVERLAPS AT THE END OF A ROLL SHALL OVERLAP IN THE DIRECTION OF THE AGGREGATE PLACEMENT WITH THE PREVIOUS ROLL ON TOP OF THE NEW ROLL, AND SHALL HAVE A MINIMUM LENGTH OF 3 FEET.
 - 3. ALL GEOTEXTILE FABRIC OVERLAPS SHALL BE PINNED WITH STAPLES OR NAILS A MINIMUM OF 10 INCHES LONG TO INSURE PROPER POSITIONING DURING PLACEMENT OF AGGREGATE. PIN LONGITUDINAL SEAMS AT A MINIMUM OF 25-FOOT INTERVALS AND TRANSVERSE SEAMS AT A MINIMUM OF 5-FOOT INTERVALS.
- D. THE AGGREGATE BASE AND SURFACE AGGREGATE SHALL BE CONSTRUCTED IN LAYERS NOT MORE THAN 4 INCHES (COMPACTED) IN THICKNESS. AGGREGATE TO BE PLACED ON GEOTEXTILE FABRIC SHALL BE END-DUMPED ON THE FABRIC FROM THE FREE END OF THE FABRIC OR OVER PREVIOUSLY PLACED AGGREGATE. THE FIRST LIFT SHALL BE BLADED DOWN TO A THICKNESS OF 8 INCHES PRIOR TO COMPACTION. AT NO TIME SHALL EQUIPMENT, EITHER TRANSPORTING THE AGGREGATE OR GRADING THE AGGREGATE, BE PERMITTED ON THE ROADWAY WITH LESS THAN 4 INCHES OF MATERIAL COVERING THE GEOTEXTILE FABRIC.
- E. THE AGGREGATE SHALL BE IMMEDIATELY COMPACTED TO NOT LESS THAN 95 PERCENT OF THE MAXIMUM DRY DENSITY AS DETERMINED BY THE MODIFIED PROCTOR TEST, ASTM D1557. A TAMPING ROLLER, PNEUMATIC-TIRED ROLLER, OR VIBRATORY MACHINE, OR ANY COMBINATION THEREOF MAY BE USED FOR COMPACTION PROCEDURES. THE TOP LAYER SHALL BE GIVEN A FINAL ROLLING WITH A THREE-WHEEL OR TANDEM ROLLER.

3.6 FINISH GRADING:

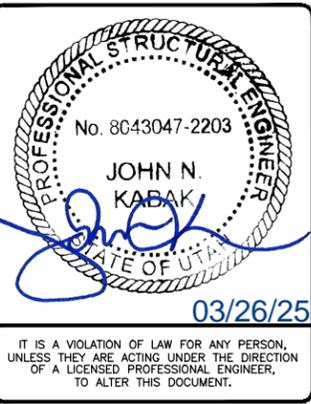
- A. PERFORM ALL GRADING TO PROVIDE POSITIVE DRAINAGE AWAY FROM STRUCTURES AND SMOOTH SURFACE DRAINAGE OF THE ENTIRE AREA WITHIN THE LIMITS OF CONSTRUCTION. GRADING SHALL PROPERLY BLEND WITH SURROUNDING TOPOGRAPHY AND STRUCTURES.
- B. IF DEEMED SUITABLE PER GEOTECHNICAL ENGINEER, UTILIZE FILL MATERIAL RESULTING FROM EXCAVATION FOR THE CONSTRUCTION OF FILLS, EMBANKMENTS, AND FOR REPLACEMENT OF REMOVED UNSUITABLE MATERIALS.
- C. ACHIEVE FINISHED GRADE BY PLACING A MINIMUM OF 4 INCHES OF 1/2" - 3/4" CRUSHED STONE ON IF APPLICABLE, TOP OF SOIL STABILIZER FABRIC.
- D. REPAIR ALL ACCESS ROADS AND SURROUNDING AREAS DISTURBED DURING THE COURSE OF THIS WORK TO THEIR ORIGINAL CONDITION.

- 3.7 ASPHALT PAVING: SHALL BE PERFORMED PER COLORADO DEPARTMENT OF TRANSPORTATION (CDOT), DIVISION 400 - CDOT PAVEMENT STANDARDS AND SPECIFICATIONS.



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DRAWN BY:	KNM
CHECKED BY:	MRL
RFDS:	5886502

REV	DATE	DESCRIPTION
0	03/25/2025	EQUIPMENT SWAP
B	02/03/2025	ADDING STRUCTURAL MODS
A	06/10/2024	ISSUED FOR REVIEW



EAST AMERICAN FORK
UTL04060
1175 EAST 50 SOUTH
AMERICAN FORK, UT 84003
CELL SITE RF MODIFICATIONS

SHEET TITLE
GENERAL SITE WORK &
DRAINAGE NOTES

SHEET NUMBER
GN-3

GENERAL CONCRETE WORK NOTES

PART 1 – GENERAL

1.1 SCOPE:

- A. FORM WORK, REINFORCING STEEL, ACCESSORIES, CAST-IN PLACE CONCRETE, FINISHING, CURING, AND TESTING FOR STRUCTURAL CONCRETE FOUNDATIONS.

1.2 REFERENCES:

- A. ACI (AMERICAN CONCRETE INSTITUTE)
 - 1. ACI 301 SPECIFICATION FOR STRUCTURAL CONCRETE FOR BUILDINGS.
 - 2. ACI 304 RECOMMENDED PRACTICE FOR MEASURING, MIXING, TRANSPORTING AND PLACING CONCRETE.
 - 3. ACI 305 RECOMMENDED PRACTICE FOR HOT WEATHER CONCRETING.
 - 4. ACI 306 RECOMMENDED PRACTICE FOR COLD WEATHER CONCRETING.
 - 5. ACI 308 STANDARD PRACTICE FOR CURING CONCRETING.
 - 6. ACI 309 STANDARD PRACTICE FOR CONSOLIDATION OF CONCRETE.
 - 7. ACI 318 BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE.
 - 8. ACI 347 RECOMMENDED PRACTICE FOR CONCRETE FORMWORK.
- B. THE APPLICABLE STANDARDS OF THE AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM) ARE REFERENCED IN THE ACI STANDARDS AND ARE A PART OF THIS SPECIFICATION.

PART 2 – PRODUCTS

2.1 REINFORCING MATERIALS:

- B. REINFORCING BARS: ASTM A615, GRADE 60, PROPOSED DEFORMED BILLET-STEEL BARS, PLAIN FINISH.
- C. CONTRACTOR SHALL FURNISH CHAIRS, BOLSTERS, BAR SUPPORTS, SPACERS AS REQUIRED FOR SUPPORT OF REINFORCING STEEL AND WIRE FABRIC.

2.2 CONCRETE MATERIALS:

- A. PORTLAND CEMENT SHALL BE TYPE II, CONFORMING TO ASTM C-150.
- B. AGGREGATE SHALL CONFORM TO ASTM C-33.
 - 1. FINE AGGREGATE SHALL BE UNIFORMLY GRADED, CLEAN, SHARP, AND WASHED NATURAL OR CRUSHED SAND, FREE FROM ORGANIC IMPURITIES.
 - 2. COARSE AGGREGATE SHALL BE NATURAL WASHED GRAVEL OR CRUSHED ROCK CONSISTING HARD, STRONG, DURABLE PIECES, FREE FROM ADHERENT COATINGS.
 - 3. MAXIMUM SIZE OF COARSE AGGREGATE SHALL BE 3/4 INCH IN ACCORDANCE WITH THE REQUIREMENTS OF ASTM C-33 GRADATION SIZE NO. 67.
- C. WATER USED IN CONCRETE MIX SHALL BE POTABLE, CLEAN, AND FREE FROM OILS, ACIDS, SALTS, CHLORIDES, ALKALI, SUGAR, VEGETABLE, OR OTHER DELETARIOUS SUBSTANCES.
- D. THE CONCRETE SHALL CONTAIN AN AIR-ENTRAINING ADMIXTURE COMPLYING WITH THE REQUIREMENTS OF ASTM C-260 AND ACI 212. 1R AND A WATER-REDUCING ADMIXTURE COMPLYING WITH THE REQUIREMENTS OF ASTM C-494 AND ACI 212.1R. ADMIXTURES SHALL BE PURCHASED AND BATCHED IN LIQUID SOLUTION. THE USE OF CALCIUM CHLORIDE OR AN ADMIXTURE CONTAINING CALCIUM CHLORIDE IS PROHIBITED. ADMIXTURES SHALL BE OF THE SAME MANUFACTURER TO ASSURE COMPATIBILITY. ACCEPTABLE MANUFACTURERS ARE:
 - 1. W.R. GRACE
 - 2. SIKA CORPORATION
 - 3. MASTER BUILDERS
 - 4. EUCLID CHEMICAL COMPANY
- E. CURING COMPOUND SHALL CONFORM TO ASTM C309, TYPE I, ID, CLASS A AND B, AND ASTM C171 AS APPLICABLE.

2.3 CONCRETE MIX:

- A. PROPORTION CONCRETE MIX IN ACCORDANCE WITH REQUIREMENTS OF ACI 301. THE STRENGTH OF CONCRETE SHALL BE AS INDICATED ON THE DRAWINGS. WHERE STRENGTH IS NOT CLEARLY INDICATED, CONCRETE OF MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 4,000 PSI SHALL BE USED.
- B. THE CONCRETE MIX SHALL BE DESIGNED FOR A MAXIMUM SLUMP OF THREE INCHES AT THE POINT OF DISCHARGE. MIXES OF THE STIFFEST CONSISTENCY THAT CAN BE EFFICIENTLY PLACED SHALL BE USED.
- C. ALL CONCRETE SHALL HAVE THREE (3) TO FIVE (5) PERCENT ENTRAINED AIR.
- D. ALL STRUCTURAL CONCRETE SHALL CONTAIN A WATER-REDUCING AGENT.

PART 3 – EXECUTION

3.1 GENERAL:

- A. CONSTRUCT AND ERECT THE FORM WORK IN ACCORDANCE WITH ACI 301 AND ACI 347.
- B. COLD-WEATHER CONCRETING SHALL BE IN ACCORDANCE WITH ACI 306.
- C. HOT-WEATHER CONCRETING SHALL BE IN ACCORDANCE WITH ACI 305.

3.2 INSERTS, EMBEDDED COMPONENTS, AND OPENINGS:

- A. CONTRACTOR SHALL CHECK ALL CIVIL, ARCHITECTURAL, STRUCTURAL, AND ELECTRICAL DRAWINGS FOR OPENINGS, SLEEVES, ANCHOR BOLTS, INSERTS, AND OTHER ITEMS TO BE INCORPORATED INTO THE CONCRETE WORK.
- B. COORDINATE THE WORK OF OTHER SECTION IN FORMING AND SETTING OPENINGS, RECESSES, SLOTS, CHASES, ANCHORS, INSERTS, AND OTHER ITEMS TO BE EMBEDDED.
- C. EMBEDDED ITEMS SHALL BE SET ACCURATELY IN LOCATION, ALIGNMENT, ELEVATION AND PLUMBNESS, LOCATED AND MEASURED FROM ESTABLISHED SURVEYED REFERENCE BENCHMARKS.

- D. EMBEDDED ITEMS SHALL BE ANCHORED INTO PLACE IN A MANNER TO PREVENT MOVEMENT DURING CONCRETE PLACEMENT AND CONSOLIDATION. COMPONENTS FORMING A PART OF A COMPLETE ASSEMBLY SHALL BE ALIGNED BEFORE ANCHORING INTO PLACE. PROVIDE TEMPORARY BRACING, ANCHORAGE, AND TEMPLATES AS REQUIRED TO MAINTAIN THE SETTING AND ALIGNMENT.

3.3 REINFORCEMENT PLACEMENT:

- A. PLACE REINFORCEMENT ACCORDING TO CONSTRUCTION PLAN SET DRAWINGS AND IN ACCORDANCE WITH ACI 301 AND ACI 318.
- B. ACCURATELY POSITION, SUPPORT, AND SECURE REINFORCEMENT AGAINST DISPLACEMENT FROM FORM WORK CONSTRUCTION OR CONCRETE PLACEMENT AND CONSOLIDATION. SUPPORT REINFORCING ON METAL CHAIRS, RUNNERS, BOLSTERS, SPACERS AND HANGERS.
- C. SPLICES OF REINFORCING BARS SHALL BE CLASS B UNLESS SPECIFIED OTHERWISE ON THE DRAWINGS. SPLICES SHALL BE STAGGERED AND FULL DEVELOPMENT LENGTH SHALL BE PROVIDED ACROSS JOINTS.
- D. LOCATE REINFORCING TO PROVIDE CONCRETE COVER AND SPACING SHOWN ON THE DRAWINGS. MINIMUM COVER SHALL BE AS REQUIRED BY ACI 318.
- E. WELDING OF AND TO ANY REINFORCING MATERIALS, INCLUDING TACK WELDING OF CROSSING BARS, IS STRICTLY PROHIBITED.

3.4 CONCRETE PLACEMENT:

- A. PRIOR TO PLACING CONCRETE, THE FORMS AND REINFORCEMENT SHALL BE THOROUGHLY INSPECTED; ALL TEMPORARY BRACING, TIES, AND CLEATS REMOVED; ALL OPENINGS FOR UTILITIES PROPERLY BOXED; ALL FORMS PROPERLY SECURED IN THEIR CORRECT POSITION AND MADE TIGHT. ALL REINFORCEMENT AND EMBEDDED ITEMS SHALL BE SECURED IN THEIR PROPER LOCATIONS. ALL OLD AND DRY CONCRETE AND DIRT SHALL BE CLEANED OFF AND ALL STANDING WATER AND OTHER FOREIGN MATERIAL REMOVED.
- B. CONCRETE SHALL BE IN ACCORDANCE WITH ACI 301 AND ACI 304 AND SHALL BE PLACED AT SUCH A RATE THAT THE CONCRETE PREVIOUSLY PLACED IS STILL PLASTIC AND INTEGRATED WITH THE FRESH CONCRETE. CONCRETE PLACEMENT, ONCE STARTED, SHALL BE CARRIED ON AS A CONTINUOUS OPERATION UNTIL THE SECTION IS COMPLETED. COLD JOINTS ARE NOT ALLOWED UNLESS PRE-APPROVED BY ENGINEER.
- C. ALL CONCRETE SHALL BE THOROUGHLY CONSOLIDATED AND COMPACTED BY VIBRATION SPACING, RODDING, OR FORKING DURING THE OPERATION OF PLACING IN ACCORDANCE WITH ACI 309. THE CONCRETE SHALL BE THOROUGHLY WORKED AROUND REINFORCEMENT, EMBEDDED ITEMS, AND INTO THE CORNER OF THE FORMS SO AS TO ELIMINATE ALL AIR POCKETS AND VOIDS.

3.5 FINISHING:

- A. FINISHING OF THE FLOOR SLABS SHALL BE IN ACCORDANCE WITH ACI 302.1 SECTION 7.2 AND SHALL INCLUDE A MINIMUM OF THREE TROWELINGS. IN ACCORDANCE WITH ASTM E 1155 THE SLAB FINISH TOLERANCE AS MEASURED SHALL HAVE AN OVERALL TEST NUMBER FOR FLATNESS OF Ff= 20 AND F1 = 15. THE MINIMUM LOCAL NUMBER FOR FLATNESS, Ff= 15 AND F1=10.
- B. SURFACE OF FLOOR SLAB SHALL RECEIVE TWO COATS OF CLEAR SEALER/HARDNER.
- C. ABOVE GRADE WALL SURFACES SHALL HAVE A SMOOTH FORM FINISH AS DEFINED IN CHAPTER 10 OF ACI 301.

3.6 CURING:

- A. FRESHLY DEPOSITED CONCRETE SHALL BE PROTECTED FROM PREMATURE DRYING AND EXCESSIVELY HOT AND COLD TEMPERATURES, AND SHALL BE MAINTAINED WITH MINIMUM MOISTURE LOSS AT A RELATIVELY CONSTANT TEMPERATURE FOR A PERIOD OF TIME NECESSARY FOR THE HYDRATION OF THE CEMENT AND PROPER CURING OF THE CONCRETE.
- B. CONCRETE SHALL BE KEPT CONTINUOUSLY MOIST AT LEAST OVERNIGHT, IMMEDIATELY FOLLOWING THE INITIAL CURING, BEFORE THE CONCRETE HAS DRIED. ADDITIONAL CURING SHALL BE ACCOMPLISHED BY ONE OF THE FOLLOWING MATERIALS OR METHODS:
 - 1. PONDING OR CONTINUOUS SPRINKLING.
 - 2. ABSORPTIVE MAT OR FABRIC KEPT CONTINUOUSLY WET.
 - 3. NON-ABSORPTIVE FILM (POLYETHYLENE) OVER PREVIOUSLY SPRINKLED SURFACE.
 - 4. SAND OR OTHER COVERING KEPT CONTINUOUSLY WET.
 - 5. CONTINUOUS STEAM (NOT EXCEEDING 150 DEGREES FAHRENHEIT OR VAPOR MIST BATH.
 - 6. CURING COMPOUND APPLIED IN TWO COATS, SPRAYED IN PERPENDICULAR DIRECTION
- C. THE FINAL CURING SHALL CONTINUE UNTIL THE CUMULATIVE NUMBER OF DAYS OR FRACTION THEREOF, NOT NECESSARILY CONSECUTIVE, DURING WHICH TEMPERATURE OF THE AIR IN CONTACT WITH CONCRETE IS ABOVE 50 DEGREES FAHRENHEIT HAS TOTALED SEVEN (7) DAYS. CONCRETE SHALL NOT BE PERMITTED TO FREEZE DURING THE CURING PERIOD. RAPID DRYING AT THE END OF THE CURING PERIOD SHALL BE PREVENTED.



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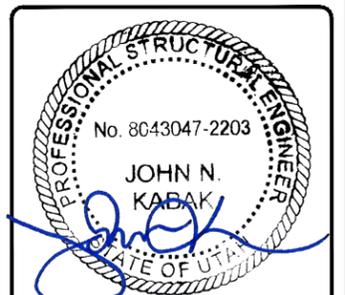
GPD JOB #: 2024723.02/ 86662.01

DRAWN BY: KNM

CHECKED BY: MRL

RFDS: 5886502

O	03/25/2025	EQUIPMENT SWAP
B	02/03/2025	ADDING STRUCTURAL MODS
A	06/10/2024	ISSUED FOR REVIEW
REV	DATE	DESCRIPTION



03/26/25

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT.

EAST AMERICAN FORK
UTL04060
1175 EAST 50 SOUTH
AMERICAN FORK, UT 84003
CELL SITE RF MODIFICATIONS

SHEET TITLE
GENERAL CONCRETE WORK
NOTES

SHEET NUMBER
GN-4

GENERAL STRUCTURAL STEEL NOTES

PART 1 – GENERAL

1.1 SCOPE:

- A. PROVIDE FABRICATION AND ERECTION OF STRUCTURAL STEEL AND OTHER ELEMENTS AS SHOWN ON THE DRAWINGS OR REQUIRED BY OTHER SECTIONS OF THESE SPECIFICATIONS.

1.2 REFERENCES:

- A. AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC). MANUAL OF STEEL CONSTRUCTION, ALLOWABLE STRESS DESIGN (ASD).
- B. AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM).
 ASTM A36: STRUCTURAL STEEL
 ASTM A53: PIPE, STEEL BLACK AND HOT DIPPED, ZINC-COATED WELDED AND SEAMLESS.
 ASTM A108: STEEL BARS, CARBON, COLD FINISHED, STANDARD QUALITY.
 ASTM A123: ZINC (HOT-DIPPED GALVANIZED) COATING ON IRON AND STEEL PRODUCTS.
 ASTM A307: CARBON STEEL BOLTS AND STUD, 60,000 P.S.I. TENSILE STRENGTH.
 ASTM A325: HIGH-STRENGTH BOLT FOR STRUCTURAL STEEL JOINTS.
 ASTM A490: HEAT-TREATED, STRUCTURAL STEEL BOLTS, 150 (KSI) (1035MPA) TENSILE STRENGTH.
 ASTM A500: COLD-FORMED WELDED AND SEAMLESS CARBON STEEL STRUCTURAL TUBING IN ROUNDS AND SHAPES.
 ASTM A563: CARBON AND ALLOY STEEL NUTS.
 ASTM B695: COATINGS OF ZINC MECHANICALLY DEPOSITED ON IRON AND STEEL.
 ASTM F436: HARDENED STEEL WASHERS.
 ASTM F959: COMPRESSIBLE-WASHER-TYPE DIRECT TENSION INDICATOR FOR USE WITH STRUCTURAL FASTENERS.
- C. AMERICAN WELDING SOCIETY (AWS):
 AWS A5.1: COVERED CARBON STEEL ARC WELDING ELECTRODES.
 AWS A5.5: LOW ALLOY STEEL COVERED ARC WELDING ELECTRODES.
 AWS D1.1: STRUCTURAL WELDING CODE – STEEL.
- D. RESEARCH COUNCIL ON STRUCTURAL CONNECTIONS (RCSC): "SPECIFICATIONS FOR STRUCTURAL JOINTS USING ASTM A325 BOLTS OR ASTM A490 BOLTS." AS ENDORSED BY AISC.
- E. STEEL STRUCTURES PAINTING COUNCIL (SSPC):
 SSPC-SP3: POWER TOOL CLEANING.
 SSPC-PAINT 11: RED IRON OXIDE, ZINC CHROME, RAW LINSEED OIL OR ALKYD PAINT.

1.3 SUBMITTALS:

- A. SUBMIT THE FOLLOWING FOR APPROVAL:
 - 1. FABRICATION AND ERECTION DRAWINGS SHOWING ALL DETAILS, CONNECTIONS, MATERIAL DESIGNATIONS, AND ALL TOP STEEL ELEVATIONS.
 - B. WELDERS SHALL BE QUALIFIED AS PRESCRIBED IN AWS D1.1.

PART 2 – PRODUCTS

2.1 STRUCTURAL STEEL:

- A. SHAPES, PLATES, AND BARS SHALL CONFORM TO ASTM A36.
- B. STRUCTURAL TUBING SHALL CONFORM TO ASTM A500, GRADE B. STEEL PIPE SHALL CONFIRM TO ASTM A53, TYPE E OR S, GRADE B.

2.2 ANCHOR BOLTS:

- A. ANCHOR BOLTS SHALL CONFORM TO ASTM A307 WITH HEAVY HEXAGONAL NUTS.

2.3 BOLTS:

- A. COMMON (MACHINE) BOLTS SHALL CONFORM TO ASTM A307 GRADE A AND NUTS TO ASTM A563. ONE COMMON BOLT ASSEMBLY SHALL CONSIST OF A BOLT, A HEAVY HEX NUT, AND A HARDENED WASHER.
- B. HIGH-STRENGTH BOLTS SHALL CONFORM TO ASTM A325 ONE HIGH. STRENGTH BOLT ASSEMBLY SHALL CONSIST OF A HEAVY HEX STRUCTURAL BOLT, A HEAVY HEX NUT, AND A HARDENED WASHER CONFORMING TO ASTM F436. THE HARDENED WASHER SHALL BE INSTALLED AGAINST THE ELEMENT TURNED IN TIGHTENING. UNLESS NOTED OTHERWISE ON THE DRAWINGS, ALL CONNECTIONS SHALL BE BEARING TYPE CONNECTIONS.

2.4 WELDING ELECTRODES:

- A. WELDING ELECTRODES SHALL COMPLY WITH AWS D1.1 USING A5.1 OR A5.5 E70XX AND SHALL BE COMPATIBLE WITH THE WELDING PROCESS SELECTED.

2.5 PRIMER:

- A. PRIMER SHALL BE RED OXIDE-CHROMATE PRIMER COMPLYING WITH SSPC PAINT SPECIFICATION NO. 11.

PART 3 – EXECUTION

3.1 FABRICATION:

- A. SHOP FABRICATE AND ASSEMBLY MATERIALS AS SPECIFIED HEREIN.
 - 1. FABRICATE ITEMS OF STRUCTURAL STEEL IN ACCORDANCE WITH THE AISC-ASD SPECIFICATIONS, AND AS INDICATED ON THE APPROVED SHOP DRAWINGS.
 - 2. ALL EXPOSED STRUCTURAL STEEL SHALL BE HOT DIP GALVANIZED PER ASTM.
 - 3. PROPERLY MARK AND MATCH-MARK MATERIALS FOR FIELD ASSEMBLY AND FOR IDENTIFICATION AS TO INTENDED LOCATION.
 - 4. FABRICATE AND DELIVER IN A SEQUENCE WHICH WILL EXPEDITE ERECTION AND MINIMIZE FIELD HANDLING OF MATERIALS.
 - 5. WHERE FINISHING IS REQUIRED, COMPLETE THE ASSEMBLY, INCLUDING THE WELDING OF UNITS, BEFORE START OF FINISHING OPERATIONS.
 - 6. THE FINISH SURFACE OF MEMBERS EXPOSED IN THE FINISHED STRUCTURE SHALL BE FREE FROM MARKINGS, BURNS, AND OTHER DEFECTS.
- B. PROVIDE CONNECTIONS AS SPECIFIED HEREIN:
 - 1. PROVIDE BOLTS AND WASHERS OF TYPES AND SIZE REQUIRED FOR COMPLETION OF FIELD ERECTION. USE 3/4" DIAMETER A325 BOLTS UNLESS NOTED OTHERWISE.
 - 2. INSTALL HIGH STRENGTH THREADED FASTENERS IN ACCORDANCE WITH "SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 OR ASTM A490 BOLTS."

- 3. WELDED CONSTRUCTION SHALL COMPLY WITH AWS D1.1 FOR PROCEDURES, APPEARANCE, QUALITY OF WELD, AND METHODS USED IN CORRECTING WELDED WORK.
- 4. THE FABRICATOR SHALL FURNISH AND INSTALL ERECTION CLIPS FOR FIT-UP OF WELDED CONNECTIONS.
- 5. DOUBLE ANGLE MEMBERS SHALL HAVE WELDED FILLERS SPACED IN ACCORDANCE WITH CHAPTER E4 OF THE AISC-ASD SPECIFICATION.
- 6. GUSSET AND STIFFENER PLATES SHALL BE 3/8" THICK MINIMUM.

3.2 PRIMING:

- A. STRUCTURAL STEEL SHALL BE PRIMED AS SPECIFIED HEREIN, UNLESS SHOWN OTHERWISE ON THE DRAWINGS.
- B. STRUCTURAL STEEL SURFACE PREPARATION SHALL CONFIRM TO SSPC-SP3, "POWER TOOL CLEANING."
- C. SURFACE PREPARATION AND PRIMER SHALL BE IN ACCORDANCE WITH AISC CODE OF STANDARD PRACTICE IN THE ASD MANUAL OF STEEL CONSTRUCTION.
- D. MATERIALS SHALL REMAIN CLOSED UNTIL REQUIRED FOR USE. MANUFACTURER'S POT-LIFE REQUIREMENTS SHALL BE STRICTLY ADHERED TO.
- E. PRIMER SHALL BE APPLIED TO DRY, CLEAN, PREPARED SURFACE AND UNDER FAVORABLE CONDITIONS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. UNLESS OTHERWISE RECOMMENDED BY THE MANUFACTURER, PRIMING SHALL NOT BE DONE WHEN AMBIENT TEMPERATURE IS LESS THAN 50 DEGREES FAHRENHEIT, THE RELATIVE HUMIDITY IS MORE THAN 90 PERCENT, OR THE SURFACE TEMPERATURE IS LESS THAN 5 DEGREES FAHRENHEIT ABOVE THE DEW POINT.
- F. GENERALLY ALL PRIMER SHALL BE SPRAY APPLIED. BRUSH OR ROLLER APPLICATION SHALL BE LIMITED TO TOUCHUP AND TO AREAS NOT ACCESSIBLE BY SPRAY GUN.
- G. PRIMER SHALL BE UNIFORMLY APPLIED WITHOUT RUNS, SAGS, SOLVENT BLISTERS, DRY SPRAY, OR OTHER BLEMISHES. ALL BLEMISHES AND OTHER IRREGULARITIES SHALL BE REPAIRED OR REMOVED AND THE AREA RE-COATED. SPECIAL ATTENTION SHALL BE PAID TO CREVICES, WELD LINES, BOLT HEADS, CORNERS, EDGES, ETC., TO OBTAIN THE REQUIRED NOMINAL FILM THICKNESS.
- H. DRY COAT FILM THICKNESS OF THE PRIMER SHALL BE 2.0 MILLIMETERS
- I. IF THE PRIMER IS DAMAGED BY WELDING OR IN ANY OTHER MANNER, THE AREA SHALL BE TOUCHED UP AND REPAIRED. THE TOUCHUP PAINT SHALL BE COMPATIBLE WITH THE PREVIOUS APPLIED PRIMER COAT WITH MINIMUM DRY FILM THICKNESS OF 1.5 MILLIMETERS.

3.3 INSTALLATION:

- A. INSTALLATION OF STRUCTURAL STEEL SHALL COMPLY WITH AISC "CODE OF STANDARD PRACTICE."
- B. STRUCTURAL FIELD WELDING SHALL BE DONE BY THE ELECTRIC SUBMERGED OR SHIELDED METAL ARC PROCESS. WELDED CONSTRUCTION METHODS SHALL COMPLY WITH AWS D1.1.
- C. PROVIDE ANCHOR BOLTS AND OTHER CONNECTORS REQUIRED FOR SECURING STRUCTURAL STEEL TO MASONARY WALLS AND TO OTHER IN-PLACE WORK. PROVIDE TEMPLATES AND OTHER DEVICES NECESSARY FOR PRESETTING BOLTS AND ANCHORS TO ACCURATE LOCATIONS.
- D. SPLICE MEMBERS ONLY WHERE INDICATED ON THE DRAWINGS.
- E. PROVIDE TEMPORARY SHORING BRACING WITH CONNECTIONS OF SUFFICIENT STRENGTH TO BEAR IMPOSED LOADS. REMOVE TEMPORARY CONNECTIONS AND MEMBERS WHEN PERMANENT MEMBERS ARE IN PLACE AND THE FINAL CONNECTIONS HAVE BEEN MADE.
- F. BEFORE ASSEMBLY ALIGN AND ADJUST MEMBERS AND OTHER SURFACES WHICH WILL BE IN THE PERMANENT CONTACT, BEFORE ASSEMBLY.
- G. AS A MINIMUM, HIGH-STRENGTH BOLTS, SHALL BE TIGHTENED TO A "SNUG-TIGHT" CONDITION AS DEFINED IN THE LATEST AISC SPECIFICATIONS. ALL HIGH-STRENGTH BOLTS SPECIFIED ON THE DESIGN DRAWINGS TO BE USED IN PRETENSIONED OR SLIP-CRITICAL JOINTS SHALL BE TIGHTENED TO A BOLT TENSION NOT LESS THAN SPECIFIED IN AISC TABLE J3.1. INSTALLATION SHALL BE BY ANY OF THE FOLLOWING METHODS: TURN-OF NUT METHOD, A DIRECT-TENSION-INDICATOR, TWIST-OFF-TYPE TENSION-CONTROL BOLT, CALIBRATED WRENCH, OR ALTERNATIVE DESIGN BOLT.



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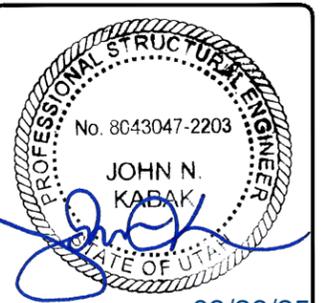
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EAST AMERICAN FORK
UTL04060
1175 EAST 50 SOUTH
AMERICAN FORK, UT 84003
CELL SITE RF MODIFICATIONS

SHEET TITLE
GENERAL STRUCTURAL
STEEL NOTES

SHEET NUMBER
GN-5

GENERAL ELECTRICAL NOTES

PART 1 – GENERAL

1.1 GENERAL CONDITIONS:

- CONTRACTOR SHALL INSPECT THE EXISTING SITE CONDITIONS PRIOR TO PERFORMING WORK. ANY QUESTIONS ARISING DURING THE BID PERIOD REGARDING THE CONTRACTORS FUNCTIONS, THE SCOPE OF WORK, OR ANY OTHER ISSUE RELATED TO THIS PROJECT SHALL BE BROUGHT UP DURING THE BID PERIOD WITH THE PROJECT MANAGER FOR CLARIFICATION, PRIOR TO THE AWARD OF THE CONTRACT.
- THE CONTRACTOR SHALL OBTAIN PERMITS, LICENSES, AND PAY ALL FEES REQUIRED FOR THE CONSTRUCTION PERFORMANCE OF THE WORK UNDER THIS SECTION.
- THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS. DRAWING SHALL NOT BE SCALED TO DETERMINE DIMENSIONS. DRAWINGS SHOW THE GENERAL ARRANGEMENT OF ALL SYSTEMS AND COMPONENTS COVERED UNDER THIS SECTION.

1.2 LAWS, REGULATIONS, ORDINANCES, STATUTES, AND CODES:

- ALL WORK SHALL BE INSTALLED IN ACCORDANCE WITH THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE, AND ALL APPLICABLE LOCAL LAWS, REGULATIONS, ORDINANCES, STATUTES, AND CODES. CONDUIT BENDS SHALL BE THE RADIUS BEND FOR THE TRADE SIZE OF CONDUIT IN COMPLIANCE WITH THE LATEST EDITIONS OF NEC.

1.3 REFERENCES:

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- ASTM (AMERICAN SOCIETY FOR TESTING AND MATERIALS)
- ICE (INSULATED CABLE ENGINEERS ASSOCIATION)
- NEMA (NATIONAL ELECTRICAL MANUFACTURER'S ASSOCIATION)
- NFPA (NATIONAL FIRE PROTECTION ASSOCIATION)
- OSHA (OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION)
- UL (UNDERWRITERS LABORATORIES, INC.)
- AT&T GROUNDING AND BONDING STANDARDS TP-76416

1.4 SCOPE OF WORK:

- WORK UNDER THIS SECTION SHALL CONSIST OF FURNISHING ALL LABOR, MATERIAL, AND ASSOCIATED SERVICES REQUIRED TO COMPLETE REQUIRED CONSTRUCTION AND TO ACHIEVE OPERATIONAL STATUS.
- ALL ELECTRICAL EQUIPMENT UNDER THIS CONTRACT SHALL BE PROPERLY TESTED, ADJUSTED, AND ALIGNED BY THE CONTRACTOR.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL EXCAVATING, DRAINING, TRENCHING, BACKFILLING, AND REMOVAL OF EXCESS SOIL, FILL, AND DEBRIS.
- THE CONTRACTOR SHALL FURNISH THE OWNER WITH CERTIFICATES OF A FINAL INSPECTION AND APPROVAL FROM THE JURISDICTIONAL AUTHORITIES.
- IF APPLICABLE, THE CONTRACTOR SHALL PREPARE A COMPLETE SET OF AS-BUILT DRAWINGS TO DOCUMENT ALL WIRING EQUIPMENT CONDITIONS AND CHANGES WHILE COMPLETING THIS CONTRACT. THE AS-BUILT DRAWINGS SHALL BE SUBMITTED AT COMPLETION OF THE PROJECT TO THE APPROPRIATE PARTY.

PART 2 – PRODUCTS

2.1 GENERAL:

- ALL MATERIALS AND EQUIPMENT SHALL BE NEW, UL LISTED, AND FREE FROM DEFECTS.
- ALL EQUIPMENT SHALL BEAR THE UNDERWRITERS LABORATORIES (UL) LABEL OF APPROVAL AND SHALL CONFORM TO REQUIREMENT OF THE NATIONAL ELECTRICAL CODE.
- ALL ITEMS, MATERIALS, AND EQUIPMENT SHALL BE ACCEPTABLE TO THE JURISDICTIONAL AUTHORITY AND SUITABLE FOR THE USE INTENDED.
- ALL OVERCURRENT DEVICES SHALL HAVE AN INTERRUPTING CURRENT RATING OF GREATER THAN THE SHORT CIRCUIT CURRENT TO WHICH THEY ARE SUBJECTED (10,000 AIC MINIMUM). CONTRACTOR SHALL VERIFY THAT AVAILABLE SHORT CIRCUIT CURRENT DOES NOT EXCEED THE RATING OF ELECTRICAL EQUIPMENT IN ACCORDANCE WITH ARTICLE 110.24 NEC OR THE MOST CURRENT ADOPTED CODE PER THE GOVERNING JURISDICTION.

2.2 MATERIALS AND EQUIPMENT:

- CONDUIT:**
 - RIGID METAL CONDUIT (RMC) SHALL BE HOT-DIPPED GALVANIZED INSIDE AND OUTSIDE INCLUDING ENDS AND THREADS, AND ENAMELED OR LACQUERED INSIDE IN ADDITION TO GALVANIZING.
 - LIQUIDTIGHT FLEXIBLE METAL CONDUIT SHALL BE UL LISTED.
 - CONDUIT CLAMPS, STRAPS, AND SUPPORTS SHALL BE STEEL OR MALLEABLE IRON. ALL FITTINGS SHALL BE COMPRESSION AND CONCRETE-TIGHT TYPE. GROUNDING BUSHINGS WITH INSULATED THROATS SHALL BE INSTALLED ON ALL CONDUIT TERMINATIONS.
 - NONMETALLIC CONDUIT AND FITTINGS SHALL BE SCHEDULE 40 PVC AND INSTALLED USING SOLVENT-CEMENT-TYPE JOINTS AS RECOMMENDED BY THE MANUFACTURER.
- CONDUCTORS AND CABLE:**
 - CONDUCTORS AND CABLE SHALL BE FLAME-RETARDANT, MOISTURE AND HEAT RESISTANT THERMOPLASTIC, SINGLE CONDUCTOR, COPPER, TYPE THHN/THWN-2, 600 VOLT, SIZE AS INDICATED, ON PLANS THE MINIMUM SIZE CONDUCTOR USED SHALL BE #12 AWG.
 - #10 AWG AND SMALLER CONDUCTOR SHALL BE SOLID OR STRANDED. #8 AWG AND LARGER CONDUCTORS SHALL BE STRANDED.
 - SOLDERLESS COMPRESSION TYPE CONNECTORS SHALL BE USED FOR TERMINATION OF ALL STRANDED CONDUCTORS.
 - STRAIN-RELIEF SUPPORTS GRIPS SHALL BE HUBBELL KELLEMS OR APPROVED EQUAL. CABLES SHALL BE SUPPORTED IN ACCORDANCE WITH THE NEC AND CABLE MANUFACTURER'S RECOMMENDATIONS.
 - ALL CONDUCTORS SHALL BE TAGGED AT BOTH ENDS OF THE CONDUCTOR, AT ALL PULL BOXES, J-BOXES, EQUIPMENT, CABINETS SHALL BE IDENTIFIED WITH APPROVED PLASTIC TAGS (ACTION CRAFT, BRADY, OR APPROVED EQUAL).
- DISCONNECT SWITCHES:**
 - DISCONNECT SWITCHES SHALL BE HEAVY DUTY, DEAD-FRONT, QUICK-MAKE, QUICK-BREAK, EXTERNALLY OPERABLE, HANDLE LOCKABLE, INTERLOCK WITH COVER IN CLOSED POSITION, RATING AS INDICATED, UL LABELED, FURNISHED IN NEMA 3R ENCLOSURE, SQUARE-D, OR ENGINEERED APPROVED EQUAL.

D. CHEMICAL ELECTROLYTIC GROUNDING SYSTEM:

- INSTALL CHEMICAL GROUNDING AS REQUIRED. THE SYSTEM SHALL BE ELECTROLYTIC MAINTENANCE FREE ELECTRODE CONSISTING OF RODS WITH A MINIMUM #2 AWG CU EXOTHERMICALLY WELDED PITGAL, PROTECTIVE BOXES, AND BACKFILL MATERIAL. MANUFACTURER SHALL BE LYNCOLE XIT GROUNDING ROD TYPES K2-(*)CS OR K2L-(*)CS (*) LENGTH AS REQUIRED.
- GROUND ACCESS BOX SHALL BE A POLYPLASTIC BOX FOR NON-TRAFFIC APPLICATIONS, INCLUDING BOLT DOWN FLUSH COVER WITH "BREATHER" HOLES, XIT MODEL #XB-22. ALL DISCONNECT SWITCHES AND CONTROLLING DEVICES SHALL BE PROVIDED WITH ENGRAVED LAMICOID NAMEPLATES INDICATING EQUIPMENT CONTROLLED, BRANCH CIRCUITS IDENTIFICATION NUMBERING, AND THE ELECTRICAL POWER SOURCE.
- BACKFILL MATERIAL SHALL BE LYNCONITE AND LYNCOLE GROUNDING GRAVEL.

E. SYSTEM GROUNDING:

- ALL GROUNDING COMPONENTS SHALL BE TINNED AND GROUNDING CONDUCTOR SHALL BE #2 AWG BARE, SOLID, TINNED COPPER. ABOVE-GRADE GROUNDING CONDUCTORS SHALL BE INSULATED WHERE NOTED.
- GROUNDING BUSES SHALL BE BARE, TINNED, ANNEALED COPPER BARS OF RECTANGULAR CROSS SECTION. STANDARD BUS BARS MGB SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR AND THEY SHALL NOT BE FABRICATED OR MODIFIED IN THE FIELD. ALL GROUNDING BUSES SHALL BE IDENTIFIED WITH MINIMUM 3/4" LETTERS BY STENCILING OR DESIGNATION PLATE.
- CONNECTORS SHALL BE HIGH CONDUCTIVITY, HEAVY DUTY, LISTED AND LABELED AS GROUNDING CONNECTORS FOR THE MATERIALS USED. USE TWO-HOLE COMPRESSION LUGS WITH CLEAR HEAT SHRINK FOR MECHANICAL CONNECTIONS. USE TWO-HOLE COMPRESSION LUGS WITH INSPECTION WINDOW AND CLEAR HEAT SHRINK FOR INTERIOR AND BLACK HEAT SHRINK FOR EXTERIOR.
- EXOTHERMIC WELDED CONNECTIONS SHALL BE PROVIDED IN KIT FORM AND SELECTED FOR THE SPECIFIC TYPES, SIZES, AND COMBINATIONS OF CONDUCTORS AND OTHER ITEMS TO BE CONNECTED.
- GROUND RODS SHALL BE ERICO #615800, COPPER-CLAD STEEL WITH HIGH STRENGTH STEEL CORE AND ELECTROLYTIC GRADE COPPER OUTER SHEATH, MOLTEN WELDED TO CORE, AND 5/8"x10"-0". ALL GROUNDING RODS SHALL BE INSTALLED WITH INSPECTION SLEEVES AS SHOWN ON DRAWINGS.
- INSTALL AN EQUIPMENT GROUNDING CONDUCTOR IN ALL CONDUITS IN COMPLIANCE WITH THE AT&T SPECIFICATIONS AND NEC. THE EQUIPMENT GROUNDING CONDUCTORS SHALL BE BONDED AT ALL JUNCTION BOXES, PULLBOXES, DISCONNECT SWITCHES, STARTERS, AND EQUIPMENT CABINETS.

F. OTHER MATERIALS:

- THE CONTRACTOR SHALL PROVIDE OTHER MATERIALS, THOUGH NOT SPECIFICALLY DESCRIBED, WHICH ARE REQUIRED FOR A COMPLETELY OPERATIONAL SYSTEM AND PROPER INSTALLATION OF THE WORK.
- PROVIDE PULL BOXES AND JUNCTION BOXES WHERE SHOWN OR REQUIRED BY NEC.

G. PANELS AND LOAD CENTERS:

- ALL PANEL DIRECTORIES SHALL BE TYPEWRITTEN.

PART 3 – EXECUTION

3.1 GENERAL:

- ALL MATERIAL AND EQUIPMENT SHALL BE INSTALLED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
- DURING INSTALLATION AND CONSTRUCTION PERIODS EQUIPMENT SHALL BE TIGHTLY COVERED AND PROTECTED AGAINST DIRT, WATER, AND CHEMICAL OR MECHANICAL INJURY.
- LABOR AND WORKMANSHIP:**
 - ALL LABOR FOR THE INSTALLATION OF MATERIALS AND EQUIPMENT FURNISHED FOR THE ELECTRICAL SYSTEM SHALL BE INSTALLED BY EXPERIENCED WIREMEN IN A NEAT AND WORKMAN-LIKE MANNER.
 - ALL ELECTRICAL EQUIPMENT SHALL BE ADJUSTED, ALIGNED, AND TESTED BY THE CONTRACTOR AS REQUIRED TO CONFIRM THE INTENDED PERFORMANCE.
 - UPON COMPLETION OF WORK, THE CONTRACTOR SHALL THOROUGHLY CLEAN ALL EXPOSED EQUIPMENT, REMOVE ALL NECESSARY LABELS, DEBRIS, CRATING, OR CARTONS, AND LEAVE THE INSTALLATION FINISHED AND READY FOR OPERATION.

3.2 COORDINATION:

- THE CONTRACTOR SHALL COORDINATE THE INSTALLATION OF ELECTRICAL ITEMS WITH THE OWNER-FURNISHED EQUIPMENT DELIVERY SCHEDULE TO PREVENT UNNECESSARY DELAYS IN THE SCHEDULED WORK.

3.3 INSTALLATION:

- CONDUIT:**
 - ALL ELECTRICAL WIRING SHALL BE INSTALLED IN CONDUIT AS SPECIFIED. NO CONDUIT OR TUBING OF LESS THAN 3/4" TRADE SIZE SHALL BE UTILIZED.
 - PROVIDE RIGID PVC SCHEDULE 80 CONDUITS FOR ALL RISERS UNLESS OTHERWISE NOTED. EMT MAY BE INSTALLED FOR EXTERIOR CONDUITS WHERE NOT SUBJECT TO PHYSICAL DAMAGE.
 - INSTALL SCHEDULE 40 PVC CONDUIT WITH A MINIMUM COVER OF 24" UNDER ROADWAYS, PARKING LOTS, STREETS, AND ALLEYS. CONDUIT SHALL HAVE A MINIMUM COVER OF 18" IN ALL NON-TRAFFIC APPLICATIONS (REFER TO 2020 OR LATEST NEC, TABLE 300.5).
 - USE GALVANIZED FLEXIBLE STEEL CONDUIT AT LOCATIONS OF DIRECT CONNECTION TO EQUIPMENT THAT MOVES OR VIBRATES, OR FOR EASE OF MAINTENANCE. USE LIQUID TIGHT, FLEXIBLE METAL CONDUIT FOR OUTDOOR APPLICATIONS. INSTALL GALVANIZED FLEXIBLE STEEL CONDUIT AT ALL POINTS OF CONNECTION TO EQUIPMENT MOUNTED ON SUPPORTS TO ALLOW FOR EXPANSION AND CONTRACTION.
 - A RUN OF CONDUIT BETWEEN BOXES OR EQUIPMENT SHALL NOT CONTAIN MORE THAN THE EQUIVALENT OF THREE QUARTER-BENDS. CONDUIT BEND SHALL BE MADE WITH THE UL LISTED BENDER OR FACTORY 90 DEGREE ELBOWS MAY BE USED.
 - FIELD FABRICATED CONDUITS SHALL BE CUT SQUARE WITH A CONDUIT CUTTING TOOL AND REAMED TO PROVIDE A SMOOTH INSIDE SURFACE.
 - CONTRACTOR IS RESPONSIBLE FOR PROTECTING ALL CONDUITS DURING CONSTRUCTION. TEMPORARY OPENINGS IN THE CONDUIT SYSTEM SHALL BE PLUGGED OR CAPPED TO PREVENT ENTRANCE OF MOISTURE OR FOREIGN MATTER. CONTRACTOR SHALL REPLACE ANY CONDUITS CONTAINING FOREIGN MATERIALS THAT CANNOT BE REMOVED.
 - ALL CONDUITS SHALL BE SWABBED CLEAN BY PULLING AN APPROPRIATE SIZE MANDREL THROUGH THE CONDUIT BEFORE INSTALLATION OF CONDUCTORS OR CABLES. CONDUIT SHALL BE FREE OF DIRT AND DEBRIS.
 - INSTALL PULL STRINGS IN ALL CLEAN EMPTY CONDUITS. IDENTIFY PULL STRINGS AT EACH END.
 - INSTALL 2" HIGHLY VISIBLE AND DETECTABLE TAPE 12" ABOVE ALL UNDERGROUND CONDUITS AND CONDUCTORS.
 - CONDUITS SHALL BE INSTALLED IN SUCH A MANNER AS TO INSURE AGAINST COLLECTION OF TRAPPED CONDENSATION.

- PROVIDE CORE DRILLING AS NECESSARY FOR PENETRATIONS TO ALLOW FOR RACEWAYS AND CABLES TO BE ROUTED THROUGH THE BUILDING. DO NOT PENETRATE STRUCTURAL MEMBERS. SLEEVES AND/OR PENETRATIONS IN FIRE RATED CONSTRUCTION SHALL BE EFFECTIVELY SEALED WITH FIRE RATED MATERIAL WHICH SHALL MAINTAIN THE FIRE RATING OF THE WALL OR STRUCTURE. FIRE STOPS AT FLOOR PENETRATIONS SHALL BE INSTALLED TO PREVENT PASSAGE OF WATER, SMOKE, FIRE, AND FUMES. ALL MATERIAL SHALL BE UL APPROVED FOR THIS PURPOSE.

B. CONDUCTORS AND CABLE:

- ALL POWER WIRING SHALL BE COLOR CODED AS FOLLOWS:

DESCRIPTION	208/240/120 VOLT SYSTEMS
PHASE A	BLACK
PHASE B	RED
PHASE C	BLUE
NEUTRAL	WHITE
GROUNDING	GREEN

- SPLICES SHALL BE MADE ONLY AT OUTLETS, JUNCTION BOXES, OR ACCESSIBLE RACEWAY CONDULETS APPROVED FOR THIS PURPOSE.
- PULLING LUBRICANTS SHALL BE UL APPROVED. CONTRACTOR SHALL USE NYLON OR HEMP ROPE FOR PULLING CONDUCTOR OR CABLES INTO THE CONDUIT.
- CABLES SHALL BE NEATLY TRAINED, WITHOUT INTERLACING, AND BE OF SUFFICIENT LENGTH IN ALL BOXES AND EQUIPMENT TO ALLOW FOR A NEAT ARRANGEMENT. CABLES SHALL BE SECURED IN A MANNER TO AVOID TENSION ON CONDUCTORS AND/OR TERMINALS. CONDUCTORS SHALL BE PROTECTED FROM MECHANICAL INJURY AND MOISTURE. SHARP BENDS OVER CONDUIT BUSHINGS ARE PROHIBITED. DAMAGED CABLES SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.

C. DISCONNECT SWITCHES:

- INSTALL DISCONNECT SWITCHES LEVEL AND PLUMB, AND CONNECT TO WIRING SYSTEM AND GROUNDING SYSTEM AS REQUIRED.

D. GROUNDING:

- ALL METALLIC PARTS OF ELECTRICAL EQUIPMENT WHICH DO NOT CARRY CURRENT SHALL BE GROUNDED IN ACCORDANCE WITH THE REQUIREMENTS OF THE BUILDING MANUFACTURER, AT&T GROUNDING AND BONDING STANDARDS TP-76416, TP-76300, AND THE NATIONAL ELECTRICAL CODE.
- PROVIDE ELECTRICAL GROUNDING AND BONDING SYSTEM WITH ASSEMBLY OF MATERIALS, INCLUDING GROUNDING ELECTRODES, BONDING JUMPERS, AND ADDITIONAL ACCESSORIES AS REQUIRED FOR A COMPLETE INSTALLATION.
- ALL GROUNDING CONDUCTORS SHALL PROVIDE A STRAIGHT DOWNWARD PATH TO GROUND. GROUNDING CONDUCTORS SHALL NOT BE LOOPED OR SHARPLY BENT. ROUTE GROUNDING CONNECTIONS AND CONDUCTORS TO GROUND IN THE SHORTEST AND STRAIGHTEST PATHS POSSIBLE TO MINIMIZE TRANSIENT VOLTAGE RISES.
- AT BUILDINGS AND/OR NEW TOWERS GREATER THAN 75 FEET IN HEIGHT AND WHERE THE MAIN GROUNDING CONDUCTORS ARE REQUIRED TO BE ROUTED TO GRADE, THE CONTRACTOR SHALL ROUTE TWO GROUNDING CONDUCTORS FROM THE ROOFTOP, TOWERS, AND WATER TOWER GROUND RING, TO THE EXISTING GROUNDING SYSTEM. THE GROUNDING CONDUCTORS SHALL NOT BE SMALLER THAN #2 AWG COPPER. ROOFTOP GROUND RING SHALL BE BONDED TO THE EXISTING GROUNDING SYSTEM, THE BUILDING STEEL COLUMNS, THE LIGHTNING PROTECTION SYSTEM, AND/OR THE BUILDING MAIN WATER LINE (FERROUS OR NONFERROUS METAL PIPING ONLY). SEE STANDARD 6.3.2.2.
- TIGHTEN GROUNDING AND BONDING CONNECTORS, INCLUDING SCREWS AND BOLTS, IN ACCORDANCE WITH MANUFACTURER'S PUBLISHED TORQUE TIGHTENING SPECIFICATIONS. WHERE MANUFACTURER'S TORQUE REQUIREMENTS ARE NOT AVAILABLE, TIGHTEN CONNECTIONS TO COMPLY WITH TIGHTENING TORQUE VALUES SPECIFIED IN UL TO ASSURE PERMANENT AND EFFECTIVE GROUNDING.
- CONTRACTOR SHALL VERIFY THE LOCATIONS OF GROUNDING TIE-IN POINTS TO THE EXISTING GROUNDING SYSTEM. ALL UNDERGROUND GROUNDING CONNECTIONS SHALL BE MADE BY THE EXOTHERMIC WELD PROCESS AND INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.
- ALL GROUNDING CONNECTIONS SHALL BE INSPECTED FOR TIGHTNESS. EXOTHERMIC WELDED CONNECTIONS SHALL BE APPROVED BY THE INSPECTOR HAVING JURISDICTION PRIOR TO PERMANENT CONCEALMENT.
- APPLY CORROSION-RESISTANCE FINISH TO FIELD CONNECTIONS AND AREAS/COMPONENTS WHERE FACTORY APPLIED PROTECTIVE COATINGS HAVE BEEN DESTROYED.
- A SEPARATE, CONTINUOUS, INSULATED EQUIPMENT GROUNDING CONDUCTOR SHALL BE INSTALLED IN ALL FEEDER AND BRANCH CIRCUITS.
- BOND ALL INSULATED GROUNDING BUSHINGS WITH A BARE #6 AWG GROUNDING CONDUCTOR TO A GROUND BUS.
- DIRECT-BURIED GROUNDING CONDUCTORS SHALL BE INSTALLED AT A NOMINAL DEPTH OF 30" MINIMUM BELOW GRADE, OR 6" MINIMUM BELOW THE FROST LINE, USING THE GREATER OF THE TWO DISTANCES.
- ALL GROUNDING CONDUCTORS EMBEDDED IN OR PENETRATING CONCRETE SHALL BE INSTALLED IN SCHEDULE 40 PVC CONDUIT.
- THE INSTALLATION OF A CHEMICAL ELECTROLYTIC GROUNDING SYSTEM IN STRICT ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. REMOVE SEALING TAPE FROM LEACHING AND BREATHER HOLES. INSTALL THE PROTECTIVE BOX FLUSH WITH GRADE.
- IF COAX ON THE ICE BRIDGE IS MORE THAN 6 FEET FROM THE GROUND BAR AT THE BASE OF THE TOWER, INSTALL A SECOND GROUND BAR AT THE END OF THE ICE BRIDGE TO GROUND THE COAX CABLE GROUNDING KITS AND IN-LINE ARRESTORS.
- CONTRACTOR SHALL REPAIR, AND/OR REPLACE, EXISTING GROUNDING SYSTEM COMPONENTS DAMAGED DURING CONSTRUCTION AT THE CONTRACTORS EXPENSE.

3.5 ACCEPTANCE TESTING:

- CERTIFIED PERSONNEL USING CERTIFIED EQUIPMENT SHALL PERFORM REQUIRED TESTS AND SUBMIT WRITTEN TEST REPORTS UPON COMPLETION.
- WHEN MATERIAL AND/OR WORKMANSHIP IS FOUND TO BE NON-COMPLIANT WITH THE SPECIFIED REQUIREMENTS, THE NON-COMPLIANT ITEMS/ELEMENTS SHALL BE PROMPTLY REMOVED FROM THE PROJECT SITE AND REPLACED WITH ITEMS COMPLYING WITH THE SPECIFIED REQUIREMENTS.
- TEST PROCEDURES:**
 - ALL FEEDERS SHALL HAVE INSULATION TESTED AFTER INSTALLATION, BEFORE CONNECTION TO DEVICES. THE CONDUCTORS SHALL TEST FREE FROM SHORT CIRCUITS AND GROUNDS. TESTING SHALL BE FOR ONE MINUTE USING 1,000VOLT DC.
 - PRIOR TO ENERGIZING CIRCUITRY, TEST WIRING DEVICES FOR ELECTRICAL CONTINUITY AND PROPER POLARITY CONNECTIONS.
 - MEASURE AND RECORD VOLTAGES BETWEEN PHASES AND BETWEEN PHASE CONDUCTORS AND NEUTRALS. SUBMIT A REPORT OF MAXIMUM AND MINIMUM VOLTAGES TO APPROPRIATE PARTS.
 - PERFORM GROUNDING TEST TO MEASURE RESISTANCE OF GROUNDING SYSTEM USING THE IEEE STANDARD 3-POINT "FALL-OF-POTENTIAL" METHOD. PROVIDE PLOTTED TEST VALUES AND LOCATION SKETCH. NOTIFY THE ENGINEER IMMEDIATELY IF MEASURED VALUE IS OVER 5 OHMS.



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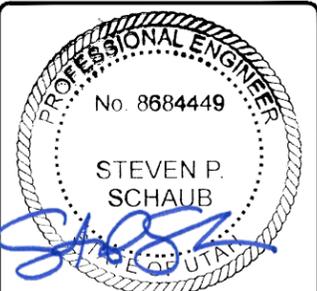
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DRAWN BY: KNM

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RFDS: 5886502

REV	DATE	DESCRIPTION
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03/26/25

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EAST AMERICAN FORK
UTL04060
1175 EAST 50 SOUTH
AMERICAN FORK, UT 84003
CELL SITE RF MODIFICATIONS

SHEET TITLE
GENERAL ELECTRICAL
NOTES

SHEET NUMBER

GN-6

BATTERY SAFETY NOTES

PART 1 – GENERAL

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1. ANSI/IEEE (AMERICAN NATIONAL STANDARDS INSTITUTE)
2. ASTM (AMERICAN SOCIETY FOR TESTING AND MATERIALS)
3. ICE (INSULATED CABLE ENGINEERS ASSOCIATION)
4. NEMA (NATIONAL ELECTRICAL MANUFACTURER'S ASSOCIATION)
5. NFPA (NATIONAL FIRE PROTECTION ASSOCIATION)
6. OSHA (OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION)
7. UL (UNDERWRITERS LABORATORIES. INC.)
8. AT&T GROUNDING AND BONDING STANDARDS TP-76416
9. IFC (INTERNATIONAL FIRE CODE)
10. IMC (INTERNATIONAL MECHANICAL CODE)

1.3 SCOPE OF WORK:

- A. WORK UNDER THIS SECTION SHALL CONSIST OF FURNISHING ALL LABOR, MATERIAL, AND ASSOCIATED SERVICES REQUIRED TO COMPLETE REQUIRED CONSTRUCTION AND TO ACHIEVE OPERATIONAL STATUS.
- B. ALL ELECTRICAL EQUIPMENT UNDER THIS CONTRACT SHALL BE PROPERLY TESTED, ADJUSTED, AND ALIGNED BY THE CONTRACTOR.
- C. THE BATTERY & POWER SYSTEMS ARE EQUIPPED WITH TEMPERATURE SENSORS & ARE PRE-PROGRAMMED WITH THE BATTERY VOLTAGE TEMPERATURE COMPENSATION & BATTERY THERMAL RUNAWAY MANAGEMENT FEATURES ENABLED PER AT&T MOBILITY'S SPECIFICATIONS.
- D. DOOR(S) INTO EQUIPMENT ROOM MUST BE PROVIDED WITH APPROVED SIGNS AND APPROPRIATELY MARKED NFPA 704 PLACARD THAT STATE THE FOLLOWING:
 - EQUIPMENT ROOM CONTAINS ENERGIZED BATTERY SYSTEMS
 - EQUIPMENT ROOM CONTAINS ENERGIZED ELECTRICAL CIRCUITS
 - BATTERY ELECTROLYTE SOLUTIONS WHERE PRESENT, ARE CORROSIVE LIQUIDS
- E. CABINETS SHALL HAVE EXTERIOR LABELS THAT IDENTIFY THE MANUFACTURER AND MODEL NUMBER OF THE SYSTEM AND ELECTRICAL RATING (VOLTAGE AND CURRENT) OF THE CONTAINED BATTERY SYSTEM. SIGNS WITHIN THE CABINET SHALL INDICATE RELEVANT ELECTRICAL, CHEMICAL, AND FIRE HAZARDS.

PART 2 – PRODUCTS

2.1 GENERAL:

- A. ALL MATERIALS AND EQUIPMENT SHALL BE NEW, UL LISTED, AND FREE FROM DEFECTS.
- B. ALL EQUIPMENT SHALL BEAR THE UNDERWRITERS LABORATORIES (UL) LABEL OF APPROVAL AND SHALL CONFORM TO REQUIREMENT OF THE NATIONAL ELECTRICAL CODE.
- C. ALL ITEMS, MATERIALS, AND EQUIPMENT SHALL BE ACCEPTABLE TO THE JURISDICTIONAL AUTHORITY AND SUITABLE FOR THE USE INTENDED.
- D. ALL OVERCURRENT DEVICES SHALL HAVE AN INTERRUPTING CURRENT RATING OF GREATER THAN THE SHORT CIRCUIT CURRENT TO WHICH THEY ARE SUBJECTED (10,000 AIC MINIMUM). CONTRACTOR SHALL VERIFY THAT AVAILABLE SHORT CIRCUIT CURRENT DOES NOT EXCEED THE RATING OF ELECTRICAL EQUIPMENT IN ACCORDANCE WITH ARTICLE 110.24 NEC OR THE MOST CURRENT ADOPTED CODE PER THE GOVERNING JURISDICTION.

2.2 MATERIALS AND EQUIPMENT:

- A. BATTERIES:
 1. BATTERIES SHALL BE VRLA (VALVE REGULATED LEAD-ACID) BATTERIES COMPLYING WITH IFC 1207.
 2. CONTRACTOR TO INSTALL ENERSYS POWERSAFE SBS BATTERIES OR ENGINEERING APPROVED EQUIVALENT.
- B. POWER PLANTS/CABINETS:
 1. POWER PLANTS/CABINETS SHALL BE EQUIPPED WITH TEMPERATURE SENSORS AND ARE PRE-PROGRAMMED WITH THE BATTERY VOLTAGE TEMPERATURE COMPENSATION & BATTERY THERMAL RUNAWAY MANAGEMENT FEATURES ENABLED PER AT&T MOBILITY'S SPECIFICATIONS.
 2. CONTRACTOR TO INSTALL POWER PLANTS/CABINETS PER AT&T SPECIFICATIONS; AND COMPLYING WITH IFC 1207 AND IMC 502.4.
- C. BATTERY RACKS/CABINETS:
 1. BATTERY RACKS/CABINETS SHALL BE EQUIPPED WITH TEMPERATURE SENSORS PER AT&T MOBILITY'S SPECIFICATIONS.
 2. CONTRACTOR TO INSTALL BATTERY RACKS/CABINETS PER AT&T SPECIFICATIONS; AND COMPLYING WITH IFC 1207 AND IMC 502.4.

IFC 1207 CODE ANALYSIS & COMPLIANCE INFORMATION

- SAFETY CAPS (IFC 1207.6.4) – VRLA BATTERIES HAVE SELF-RESEALING SAFETY VENTS WITH FLASH ARRESTORS WHICH SATISFY THIS CODE REQUIREMENT.
- THERMAL RUNAWAY MANAGEMENT (IFC 1207.6.5) – POWER PLANTS/CABINETS SHALL BE EQUIPPED WITH TEMPERATURE SENSORS AND ARE PRE-PROGRAMMED WITH THE BATTERY VOLTAGE TEMPERATURE COMPENSATION AND BATTERY THERMAL RUNAWAY MANAGEMENT FEATURES ENABLED. BATTERY RACKS/CABINETS SHALL BE EQUIPPED WITH TEMPERATURE SENSORS.
- SPILL CONTROL (IFC 1207.6.2) – NOT REQUIRED FOR VRLA BATTERIES PER EXCEPTION.
- NEUTRALIZATION (IFC 1207.6.2) – CONTRACTOR TO ENSURE THAT BATTERY SPILL CLEAN-UP KIT IS PROVIDED ON SITE, CAPABLE OF NEUTRALIZING A MINIMUM OF X GALLONS OF SPILLED ELECTROLYTE (WHERE X=3% OF THE TOTAL VOLUME CALCULATED IN THE ELECTROLYTE CALCULATIONS).
- VENTILATION (IFC 1207.6.1) – EXHAUST FAN WILL LIMIT CONCENTRATION TO 1% VIA HYDROGEN SENSOR AND MAKEUP AIR INTAKE. HYDROGEN SENSOR TO ACTIVATE DAMPER/FAN AT 1% CONCENTRATION AND SIGNAL AN ALARM TO A MONITORED FACILITY AT 2% CONCENTRATION.
- SIGNAGE (IFC 1207.4.8) – AT&T WILL PLACE UV-RESISTANT SIGNS ON THE EXTERIOR OF THE SHELTER DOOR CAPABLE OF WITHSTANDING THE HARSH SUNLIGHT OUTDOORS PER IFC 1207.4.8. IN THE CASE THAT BATTERIES ARE INSTALLED IN A CABINET, CONTRACTOR SHALL PLACE SIGNAGE ON THE CABINET DOOR PER IFC 1207.4.8.
- SEISMIC PROTECTION (IFC 1207.4.4) – CONTRACTOR WILL ENSURE THAT ANY NEW BATTERY RACKS HAVE THE REQUIRED BRACING TO MEET SEISMIC ZONE 4.
- SMOKE DETECTION (IFC 1207.5.4) – SMOKE DETECTORS TO BE TIED INTO EXISTING ALARMING SYSTEMS. AT&T TO VERIFY OPERATION OF SMOKE DETECTOR/ALARM.

IMC 502.4 CODE ANALYSIS & COMPLIANCE INFORMATION

- (IMC 502.4) STATIONARY STORAGE BATTERY SYSTEMS. STATIONARY STORAGE BATTERY SYSTEMS, AS REGULATED BY SECTION 1207 OF THE INTERNATIONAL FIRE CODE, SHALL BE PROVIDED WITH VENTILATION IN ACCORDANCE WITH IMC 502.4. EXCEPTION: LITHIUM-ION AND LITHIUM METAL POLYMER BATTERIES SHALL NOT REQUIRE ADDITIONAL VENTILATION BEYOND THAT WHICH WOULD NORMALLY BE REQUIRED FOR HUMAN OCCUPANCY OF THE SPACE.



7670 S CHESTER ST
ENGLEWOOD, CO 80112



1220 OLD ALPHARETTA ROAD
SUITE 380
ALPHARETTA, GA 30005



GPD GROUP
Professional Corporation

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Akron, OH 44311
330.572.2100 Fax 330.572.2101

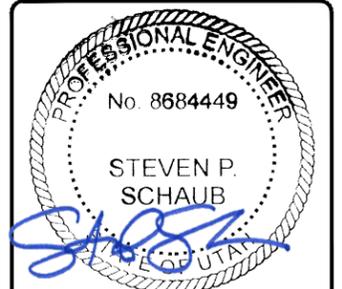
GPD JOB #: 2024723.02/ 86662.01

DRAWN BY: KNM

CHECKED BY: MRL

RFDS: 5886502

REV	DATE	DESCRIPTION
0	03/25/2025	EQUIPMENT SWAP
B	02/03/2025	ADDING STRUCTURAL MODS
A	06/10/2024	ISSUED FOR REVIEW



IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT.

EAST AMERICAN FORK
UTL04060
1175 EAST 50 SOUTH
AMERICAN FORK, UT 84003
CELL SITE RF MODIFICATIONS

SHEET TITLE
BATTERY SAFETY NOTES

SHEET NUMBER
GN-7

EAST AMERICAN FORK

FA #: 10115113

CLIENT #: UTL04060

USID #: 86662



STRUCTURE INFORMATION:

STRUCTURE MAPPING: TEP/JOB #: 344056.1019024
 STRUCTURE HEIGHT: 48'-0" ROOFTOP
 MOUNT TYPE: FRP ANGLES IN SHROUD
 STRUCTURE LOCATION:
 LAT.: 40° 22' 36.0"
 LONG.: -111° 46' 1.5"
 STREET ADDRESS: 1175 EAST 50 SOUTH
 CITY, STATE ZIP: AMERICAN FORK, UT 84003
 COUNTY: UTAH
 REFERENCED ANALYSIS: GPD/PROJ. #: 2024723.02.86662.01
 ANALYSIS DATE: 1/27/2025

CODE COMPLIANCE:

GOVERNING CODES: TIA-222-H & 2021 IBC
 WIND SPEEDS: 103 MPH 3 SECOND GUST
 40 MPH 3 SECOND GUST
 ICE THICKNESS: 1/4"
 RISK CATEGORY: II
 EXPOSURE CATEGORY: B
 TOPO CATEGORY: 1
SEISMIC CRITERIA:
 SITE CLASS: D
 1-SECOND SPECTRAL RESPONSE ACCELERATION (S_1): 0.491
 SHORT PERIOD SPECTRAL RESPONSE ACCELERATION (S_s): 1.333



EAST AMERICAN FORK
FA #: 10115113

DESIGN DRAWINGS
PREPARED FOR:



CLIENT #: UTL04060

REV.	DATE	DESCRIPTION
0	1/27/25	INITIAL RELEASE

PROJECT CONTACTS:

CLIENT CONTACT:

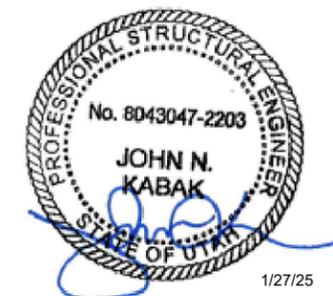
ADAM MERRICK
 1220 OLD ALPHARETTA RD, SUITE 380
 ALPHARETTA, GA 30005

ENGINEER CONTACT:

GPD GROUP, PROFESSIONAL CORPORATION
 520 SOUTH MAIN STREET, SUITE 2531
 AKRON, OH 44311
 (330) 572-2100
 FOR QUESTIONS PLEASE EMAIL:
 GPDMODS@GPDGROUP.COM

SHEET INDEX:

- T-01: TITLE SHEET
- MI-01: MODIFICATION INSPECTION CHECKLIST
- N-01: PROJECT NOTES
- N-02: ADDITIONAL PROJECT NOTES
- S-01: ROOFTOP PLAN & MODIFICATION SCHEDULE
- S-02: MODIFICATION DETAILS & SECTIONS
- S-03: ADDITIONAL SECTIONS



EAST AMERICAN FORK
 1175 EAST 50 SOUTH
 AMERICAN FORK, UT 84003

TITLE SHEET

ISSUED FOR:	
PERMIT	1/27/2025
BID	-
CONSTRUCTION	-
RECORD	-

ENGINEER	DESIGNER
JRS	RV
PROJECT MANAGER	APPROVED BY
CB	JNK

JOB NO.
2024723.02.86662.01

QUALIFIED ENGINEERING SERVICES ARE AVAILABLE FROM GPD TO ASSIST CONTRACTORS IN CLASS IV CONSTRUCTION PLAN REVIEWS. FOR REQUESTING QUALIFIED ENGINEERING SERVICES PLEASE CONTACT GPD AT GPDMODS@GPDGROUP.COM.

T-01

MODIFICATION INSPECTION NOTES

GENERAL

1. THE MI IS AN ON-SITE VISUAL AND HANDS-ON INSPECTION OF STRUCTURE MODIFICATIONS INCLUDING A REVIEW OF CONSTRUCTION REPORTS AND ADDITIONAL PERTINENT DOCUMENTATION PROVIDED BY THE GENERAL CONTRACTOR (GC), AS WELL AS ANY INSPECTION DOCUMENTS PROVIDED BY 3RD PARTY INSPECTORS. THE MI IS TO ENSURE THE INSTALLATION WAS CONSTRUCTED IN ACCORDANCE WITH THE MODIFICATION DRAWINGS; IN ACCORDANCE WITH APPLICABLE INDUSTRY STANDARDS; AND AS DESIGNED BY THE ENGINEER OF RECORD (EOR).
2. NO DOCUMENT, CODE OR POLICY CAN ANTICIPATE EVERY SITUATION THAT MAY ARISE. ACCORDINGLY, THIS CHECKLIST IS INTENDED TO SERVE AS A SOURCE OF GUIDING PRINCIPLES IN ESTABLISHING GUIDELINES FOR MODIFICATION INSPECTION.
3. THE MI IS TO CONFIRM INSTALLATION CONFIGURATION AND WORKMANSHIP ONLY AND IS NOT A REVIEW OF THE MODIFICATION DESIGN ITSELF, AND THE MI INSPECTOR DOES NOT TAKE OWNERSHIP OF THE MODIFICATION DESIGN. THE MI INSPECTOR SHALL INSPECT AND NOTE CONFORMANCE/NONCONFORMANCE AND PROVIDE TO THE STRUCTURE OWNER AND EOR FOR EVALUATION.
4. TO ENSURE THAT THE REQUIREMENTS OF THE MODIFICATION INSPECTION ARE MET, IT IS VITAL THAT THE GENERAL CONTRACTOR (GC) AND THE MI INSPECTOR BEGIN COMMUNICATING AND COORDINATING AS SOON AS A PO OR PAYMENT IS RECEIVED. IT IS EXPECTED THAT EACH PARTY WILL BE PROACTIVE IN REACHING OUT TO THE OTHER PARTY. CONTACT LISTED ON THE TITLE SHEET SHALL BE CONTACTED IF SPECIFIC INSPECTOR CONTACT INFORMATION IS NOT KNOWN.

FAILING INSPECTION CORRECTIONS

1. IF THE MODIFICATION INSTALLATION WOULD FAIL THE MODIFICATION INSPECTION ("FAILED MODIFICATION INSPECTION"), THE GC SHALL WORK WITH MI INSPECTOR TO COORDINATE A REMEDIATION PLAN IN ONE OF TWO WAYS:
 - CORRECT FAILING ISSUES TO COMPLY WITH THE SPECIFICATIONS CONTAINED IN THE ORIGINAL MODIFICATION DRAWINGS AND COORDINATE A SUPPLEMENT MODIFICATION INSPECTION.
 - OR, WITH STRUCTURE OWNER'S APPROVAL, THE GC MAY WORK WITH THE ENGINEER OF RECORD TO RE-ANALYZE THE MODIFICATION/REINFORCEMENT USING THE AS-BUILT CONDITION.

SERVICE LEVEL COMMITMENT

1. THE FOLLOWING RECOMMENDATIONS AND SUGGESTIONS ARE OFFERED TO ENHANCE THE EFFICIENCY AND EFFECTIVENESS OF DELIVERING AN MI REPORT:
 - THE GC SHALL PROVIDE A MINIMUM OF 5 BUSINESS DAYS NOTICE, PREFERABLY 10, TO THE MI INSPECTOR AS TO WHEN THE SITE WILL BE READY FOR THE MI TO BE CONDUCTED.
 - THE GC AND MI INSPECTOR COORDINATE CLOSELY THROUGHOUT THE ENTIRE PROJECT.
 - WHEN POSSIBLE, IT IS PREFERRED TO HAVE THE GC AND MI INSPECTOR ON-SITE SIMULTANEOUSLY FOR ANY GUY WIRE TENSIONING OR RE-TENSIONING OPERATIONS.
 - WHEN POSSIBLE, IT IS PREFERRED TO HAVE THE GC AND MI INSPECTOR ON-SITE DURING THE MI TO HAVE ANY MINOR DEFICIENCIES CORRECTED DURING THE INITIAL MI. THEREFORE, THE GC MAY CHOOSE TO COORDINATE THE MI CAREFULLY TO ENSURE ALL CONSTRUCTION FACILITIES ARE AT THEIR DISPOSAL WHEN THE MI INSPECTOR IS ON SITE.
 - IT MAY BE BENEFICIAL TO INSTALL ALL STRUCTURE MODIFICATIONS PRIOR TO CONDUCTING THE FOUNDATION INSPECTIONS TO ALLOW THE FOUNDATION AND MODIFICATION INSPECTION(S) TO COMMENCE WITH ONE SITE VISIT.

REQUIRED PHOTOS

1. BETWEEN THE GC AND THE MI INSPECTOR THE FOLLOWING PHOTOGRAPHS, AT A MINIMUM, ARE TO BE TAKEN AND INCLUDED IN THE MI REPORT:
 - PRE-CONSTRUCTION GENERAL SITE CONDITION
 - PHOTOGRAPHS DURING THE REINFORCEMENT MODIFICATION CONSTRUCTION/ERECTION AND INSPECTION
 - RAW MATERIALS
 - PHOTOS OF ALL CRITICAL DETAILS
 - FOUNDATION MODIFICATIONS
 - WELD PREPARATION
 - BOLT INSTALLATION
 - FINAL INSTALLED CONDITION
 - SURFACE COATING REPAIR
 - POST CONSTRUCTION PHOTOGRAPHS
 - FINAL INFIELD CONDITION
 - ANY OTHER PHOTOS DEEMED RELEVANT TO SHOW COMPLETE DETAILS OF THE MODIFICATIONS.
2. PHOTOS OF ELEVATED MODIFICATIONS TAKEN ONLY FROM THE GROUND SHALL BE CONSIDERED INADEQUATE.

MODIFICATION INSPECTION CHECKLIST		
REQUIRED	REPORT ITEM	BRIEF DESCRIPTION
PRE-CONSTRUCTION		
X	MI CHECKLIST DRAWING	THIS CHECKLIST SERVES AS A GUIDELINE FOR THE REQUIRED CONSTRUCTION DOCUMENTS AND INSPECTIONS FOR THIS MODIFICATION
X	EOR APPROVED SHOP DRAWINGS	PRIOR TO FABRICATION, THE CONTRACTOR SHALL PROVIDE DETAILED ASSEMBLY DRAWINGS AND/OR SHOP DRAWINGS TO THE EOR FOR APPROVAL.
X	FABRICATION INSPECTION	A LETTER FROM THE FABRICATOR STATING THAT ALL FABRICATION (I.E. DRILLING, CUTTING, WELDING, SHEARING, MILLING, GALVANIZING, ETC) HAS BEEN DONE ACCORDING TO INDUSTRY STANDARDS AND ALL APPLICABLE ANSI/ASTM STANDARDS.
NA	FABRICATOR CERTIFIED WELD INSPECTION	A CWI SHALL INSPECT ALL FABRICATION WELDS IN ACCORDANCE WITH AWS D1.1 AND A REPORT DETAILING THE RESULTS SHALL BE PROVIDED TO THE MI INSPECTOR FOR INCLUSION IN THE MI REPORT.
X	MATERIAL TEST REPORTS (MTR)	MATERIAL TEST REPORTS SHALL BE PROVIDED FOR ALL MATERIAL USED. MTR'S SHALL BE PROVIDED TO THE MI INSPECTOR FOR INCLUSION IN THE MI REPORT.
NA	FABRICATOR NDE INSPECTION REPORT	CRITICAL SHOP WELDS THAT REQUIRE ADDITIONAL TESTING ARE NOTED WITHIN THE MODIFICATION DRAWINGS. A CERTIFIED NDT INSPECTOR SHALL PERFORM NON-DESTRUCTIVE EXAMINATION ON ALL PJP, CJP, AND FILLET WELDS >5/16" IN ACCORDANCE WITH AWS D1.1 AND A REPORT DETAILING THE RESULTS SHALL BE PROVIDED TO THE MI INSPECTOR FOR INCLUSION IN THE MI REPORT.
NA	NDE OF MONOPOLE BASE PLATE	A NDE OF THE POLE TO BASE PLATE CONNECTION IS REQUIRED AND A WRITTEN REPORT SHALL BE PROVIDED TO THE MI INSPECTOR FOR INCLUSION IN THE MI REPORT.
X	PACKING SLIPS	PACKING/SHIPPING LIST FOR ALL MATERIAL USED DURING CONSTRUCTION OF THE MODIFICATION SHALL BE PROVIDED.
DURING CONSTRUCTION		
NA	PRE-POUR REBAR INSPECTIONS	A 3 RD PARTY VISUAL OBSERVATION OF THE EXCAVATION AND REBAR SHALL BE PERFORMED BEFORE PLACING THE CONCRETE. A WRITTEN REPORT SHALL BE PROVIDED TO THE MI INSPECTOR FOR INCLUSION IN THE MI REPORT.
NA	POST-INSTALLED REBAR AND/OR DOWEL INSPECTIONS	PHOTOGRAPHIC DOCUMENTATION OF DRILL HOLE SIZES AND DEPTHS SHALL BE RECORDED BEFORE SETTING THE POST INSTALLED REBAR AND DOWELS WITH EPOXY/GROUT.
NA	CONCRETE COMP. STRENGTH & SLUMP TEST	THE CONCRETE MIX DESIGN, SLUMP TEST, AND COMPRESSIVE STRENGTH TESTS SHALL BE PROVIDED AS PART OF THE MI REPORT.
NA	EARTHWORK: LIFT & DENSITY REPORT	REPORT DETAILING SOIL COMPACTION TEST RESULTS TO BE INCLUDED IN THE MI REPORT.
NA	MICROPILE/ROCK ANCHOR	MICROPILES AND ROCK ANCHORS SHALL BE INSPECTED BY A 3 RD PARTY. INSPECTION SHALL VERIFY ANCHOR SIZE, STEEL GRADE, AND HOLE DEPTHS. PHOTOGRAPHIC DOCUMENTATION OF ALL MEASUREMENTS ALONG WITH THE PULL TEST RESULTS SHALL BE INCLUDED IN THE MI REPORT.
NA	HELICAL ANCHOR	HELICAL INSTALLER SHALL SUBMIT FINAL SEALED HELICALS DESIGN, TORQUE LOGS, AND FINAL LOAD TEST RESULTS TO BE INCLUDED IN THE MODIFICATION INSPECTION REPORT.
NA	POST-INSTALLED ANCHOR ROD VERIFICATION	POST INSTALLED ANCHOR ROD VERIFICATION SHALL BE PERFORMED AND SHALL INCLUDE PHOTO VERIFICATION OF HOLE DEPTH, HOLE CLEANOUT AND ROUGHENING, AND EPOXY LABELING. REPORT SHALL BE PROVIDED TO THE MI INSPECTOR FOR INCLUSION IN THE MI REPORT.
NA	3 RD PARTY FIELD CERTIFIED WELD INSPECTION	A CWI SHALL CONDUCT A VISUAL INSPECTION OF ALL FIELD WELDS IN ACCORDANCE WITH AWS D1.1. CRITICAL WELDS THAT REQUIRE ADDITIONAL TESTING ARE NOTED IN THE MODIFICATION DRAWINGS.
X	ON-SITE COLD GALVANIZING VERIFICATION	THE GENERAL CONTRACTOR SHALL PROVIDE WRITTEN AND PHOTOGRAPHIC DOCUMENTATION TO THE MI INSPECTOR VERIFYING THAT ANY ON-SITE COLD GALVANIZING WAS APPLIED PER MANUFACTURER SPECIFICATIONS.
NA	TENSION TWIST & PLUMB DELIVERABLES	THE GENERAL CONTRACTOR SHALL PROVIDE WRITTEN AND PHOTOGRAPHIC DOCUMENTATION TO THE MI INSPECTOR VERIFYING THE STRUCTURE TWIST AND PLUMB CONDITION AS WELL AS THE WIRE TENSIONS (AS REQUIRED). REPORT SHALL INCLUDE PRE-TENSION, PLUMB & TWIST RESULTS, POST-TENSION REPORT, POST PLUMB AND TWIST REPORT, AND PHOTOS OF THE TENSION GAUGES FOR ALL GUY WIRES.
X	GC AS-BUILT DRAWINGS	THE GENERAL CONTRACTOR SHALL SUBMIT A LEGIBLE COPY OF THE ORIGINAL DESIGN DRAWINGS EITHER STATING "INSTALLED AS DESIGNED" OR NOTING ANY CHANGES THAT WERE REQUIRED AND APPROVED BY THE ENGINEER OF RECORD. EOR/RFI FORMS APPROVING ALL CHANGES SHALL BE SUBMITTED.
NA	BOLT PRE-TENSION VERIFICATION	TURN-OF-THE NUT METHOD IS THE DEFAULT METHOD FOR PRE-TENSIONING BOLTS. MATCH-MARKINGS SHALL BE PRESENT ON EACH FASTENER FOR INSPECTION PURPOSES AND SHALL BE APPLIED IN ACCORDANCE WITH THE REQUIREMENTS OF THE RCSC SPECIFICATION. ALTERNATIVE PRE-TENSIONING METHODS ARE NOT ALLOWED WITHOUT PRIOR EOR CONSENT.
ADDITIONAL TESTING AND INSPECTIONS:		
NA	MECHANICAL ANCHOR VERIFICATION	INSTALLATION TORQUE SHALL BE VERIFIED FOR THE POST INSTALLED ANCHORS. A REPORT SHALL BE PROVIDED FOR INCLUSION IN THE MI INDICATING RESULTS.
POST-CONSTRUCTION		
X	CONSTRUCTION COMPLIANCE LETTER	A LETTER FROM THE GENERAL CONTRACTOR STATING THAT THE WORKMANSHIP WAS PERFORMED IN ACCORDANCE WITH INDUSTRY STANDARDS AND THESE MODIFICATION DRAWINGS, INCLUDING LISTING ADDITIONAL PARTIES TO THE MODIFICATION PROCESS.
NA	POST-INSTALLED ANCHOR ROD PULL TESTS	POST-INSTALLED ANCHOR RODS SHALL BE TESTED BY A PULL TEST INSPECTOR AND A REPORT SHALL BE PROVIDED INDICATING TESTING RESULTS.
X	PHOTOGRAPHS	PHOTOGRAPHS SHALL BE SUBMITTED TO THE MI INSPECTOR. PHOTOS SHALL DOCUMENT ALL PHASES OF THE CONSTRUCTION. THE PHOTOS SHALL BE ORGANIZED IN A MANNER THAT EASILY IDENTIFIES THE EXACT LOCATION OF THE PHOTO.
NA	BOLT HOLE INSTALLATION VERIFICATION REPORT	THE MI INSPECTOR SHALL VERIFY THE INSTALLATION AND TIGHTNESS OF 10% OF ALL NON PRE-TENSIONED BOLTS INSTALLED AS PART OF THE MODIFICATION. THE MI INSPECTOR SHALL LOOSEN THE NUT AND VERIFY THE BOLT HOLE SIZE AND CONDITION. THE MI REPORT SHALL CONTAIN THE COMPLETED BOLT INSTALLATION VERIFICATION REPORT, INCLUDING THE SUPPORTING PHOTOGRAPHS.
X	MI INSPECTOR REDLINE OR RECORD DRAWING(S)	THE MI INSPECTOR SHALL OBSERVE AND REPORT ANY DISCREPANCIES BETWEEN THE CONTRACTOR'S REDLINE DRAWING AND THE ACTUAL COMPLETED INSTALLATION.
*THE MI CHECKLIST SHALL BE REVIEWED PRIOR TO THE START OF CONSTRUCTION. ALL PARTIES TO THE MODIFICATION SHALL UNDERSTAND ALL REQUIREMENTS AND INSPECTION/DOCUMENTATION THAT IS APPLICABLE TO THE SCOPE OF WORK THEY ARE PERFORMING. ERRORS ON THE MI CHECKLIST SHALL BE BROUGHT TO THE ATTENTION OF THE STRUCTURE/STRUCTURE OWNER AND EOR AS SOON AS POSSIBLE.		



REV	DATE	DESCRIPTION
0	1/27/25	INITIAL RELEASE

EAST AMERICAN FORK
 1175 EAST 50 SOUTH
 AMERICAN FORK, UT 84003
MODIFICATION INSPECTION CHECKLIST

ISSUED FOR:	
PERMIT	1/27/2025
BID	-
CONSTRUCTION	-
RECORD	-

ENGINEER	DESIGNER
JRS	RV
PROJECT MANAGER	APPROVED BY
CB	JNK

JOB NO.
2024723.02.86662.01



MI-01

GENERAL NOTES

- THIS DESIGN IS IN ACCORDANCE WITH THE GOVERNING PROVISIONS OF ALL LOCALLY ADOPTED BUILDING CODES, MATERIALS, FABRICATION, INSTALLATION, AND ALL OTHER SERVICES PROVIDED BY THE CONTRACTOR SHALL CONFORM TO THE ABOVE MENTIONED CODES AND THE CONTRACT SPECIFICATIONS.
- THIS DESIGN ASSUMES THE EXISTING STRUCTURE HAS BEEN WELL MAINTAINED, IS IN GOOD CONDITION, AND IS WITHOUT DEFECT. BENT MEMBERS, CORRODED MEMBERS, LOOSE BOLTS, CRACKED WELDS AND OTHER MEMBER DEFECTS HAVE NOT BEEN CONSIDERED. THIS DESIGN IS BEING PROVIDED WITHOUT THE BENEFIT OF A CONDITION ASSESSMENT BY GPD.
- THE CONTRACTOR SHALL VISIT THE SITE PRIOR TO BIDDING; ANY PROBLEMS WITH ACCESS, INTERFERENCE, ETC. SHALL BE RESOLVED PRIOR TO MOBILIZATION. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS AND NOTE ANY EXISTING CONDITIONS THAT ARE NOT REPRESENTED ON THESE DRAWINGS OR THAT INTERFERE WITH THE CONTINUOUS INSTALLATION OF THE MODIFICATIONS. CONTRACTOR SHALL NOTE ALL ATTACHMENT POINTS, ANTENNAS, MOUNTS, COAX, LIGHTING, CLIMBING SUPPORTS, STEP BOLTS, PORT HOLES, AND ANY OTHER APPURTENANCES IN THE REGION OF THE MODIFICATIONS. GPD SHALL BE CONTACTED IMMEDIATELY TO EVALUATE THE SIGNIFICANCE OF ANY DEVIATION PRIOR TO ORDERING MATERIAL.
- ALL MATERIAL SPECIFIED FOR THIS PROJECT MUST BE NEW AND FREE OF ANY DEFECTS. ANY MATERIAL SUBSTITUTIONS, INCLUDING BUT NOT LIMITED TO ALTERED SIZES AND/OR STRENGTHS, MUST BE REVIEWED BY THE OWNER AND ENGINEER. CONTRACTOR SHALL PROVIDE DOCUMENTATION TO ENGINEER FOR DETERMINING IF SUBSTITUTE IS SUITABLE FOR USE AND MEETS THE ORIGINAL DESIGN CRITERIA. DIFFERENCES FROM THE ORIGINAL DESIGN, INCLUDING MAINTENANCE, REPAIR AND REPLACEMENT, SHALL BE NOTED. ESTIMATES OF COSTS/CREDITS ASSOCIATED WITH THE SUBSTITUTION (INCLUDING RE-DESIGN COSTS AND COSTS TO SUB-CONTRACTORS) SHALL BE PROVIDED TO THE ENGINEER.
- CONTRACTOR IS RESPONSIBLE FOR ENGAGING A MODIFICATION INSPECTOR AT THE TIME OF AWARD TO COORDINATE AN INSPECTION SCHEDULE AND ENSURE PROPER DOCUMENTATION IS RETAINED THROUGHOUT THE PROJECT. REFER TO SHEET MI-01 FOR MODIFICATION INSPECTION CHECKLIST.
- SPECIAL INSPECTIONS: UNLESS OTHERWISE SPECIFIED WITHIN THE PLANS OR REQUIRED BY THE BUILDING OFFICIAL, SPECIAL INSPECTIONS AND TESTS ARE NOT REQUIRED FOR GROUP U OCCUPANCIES, BUT NOT LIMITED TO, THOSE LISTED IN SECTION 312.1 (IBC SECTION 1704.2, EXCEPTION 2). CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING IF ANY SPECIAL INSPECTIONS ARE REQUIRED BY THE JURISDICTION HAVING AUTHORITY. IF REQUIRED BY THE JURISDICTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE COORDINATION AND SCHEDULING OF THE SPECIAL INSPECTIONS WITH THE ENGINEER OF RECORD. IN THOSE CASES, SPECIAL INSPECTIONS MUST BE COMPLETED PRIOR TO FINAL INSPECTION APPROVAL.
- INSTALLATION OF THE PROPOSED LOADING IS BY OTHERS AND IS BEYOND THE SCOPE OF THESE DRAWINGS.
- ALL CONTRACTORS AND LOWER TIER CONTRACTORS MUST ACKNOWLEDGE IN WRITING TO THE OWNER AND GPD THAT THEY HAVE OBTAINED, UNDERSTAND, AND WILL FOLLOW THE OWNER STANDARDS OF PRACTICE, CONSTRUCTION GUIDELINES, ALL SITE AND TOWER SAFETY PROCEDURES, ALL PRODUCT LIMITATIONS AND INSTALLATION PROCEDURES USED ON SITE, AND PROPOSED MODIFICATIONS DESCRIBED. RECEIPT OF ACKNOWLEDGMENT MUST OCCUR PRIOR TO BEGINNING CONSTRUCTION. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE THIS DOCUMENTATION FOR THE OWNER AND GPD ON COMPANY LETTERHEAD AND IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO OBTAIN THIS DOCUMENTATION FROM LOWER TIER SUBCONTRACTORS (ON SUBCONTRACTOR LETTERHEAD) AND DELIVER IT TO THE OWNER AND GPD.
- STRUCTURAL MODIFICATION WORK SPECIFIED ON THESE PLANS SHALL BE ACCOMPLISHED BY KNOWLEDGEABLE WORKMEN WITH CONSTRUCTION EXPERIENCE. THE CONTRACTOR SHALL SUBMIT CERTIFICATIONS TO THE OWNER.
- CONTRACTOR SHALL PERFORM ALL WORK IN SUCH A MANNER AS TO PROTECT THE EXISTING AND ADJACENT STRUCTURES AND SHALL BE RESPONSIBLE TO PROPERLY REPAIR ANY DAMAGE THAT OCCURS AS A RESULT OF THE WORK.
- CEASE OPERATIONS AND NOTIFY OWNER AND ENGINEER IMMEDIATELY IF THE SAFETY OR INTEGRITY OF THE STRUCTURE APPEARS TO BE ENDANGERED. PROPERLY BRACE AND SUPPORT STRUCTURE BEFORE RESUMING OPERATIONS.
- DO NOT CUT OR ALTER ANY STRUCTURAL MEMBERS WITHOUT WRITTEN AUTHORIZATION OF THE ENGINEER UNLESS INDICATED ON THE STRUCTURAL DRAWINGS.
- THESE DRAWINGS DO NOT INDICATE THE METHOD OF CONSTRUCTION. ANY TECHNIQUES OR PROCEDURES IMPLIED BY THESE DRAWINGS ARE SCHEMATIC IN NATURE AND ARE SUGGESTIONS ONLY. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK AND SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION METHODS, MEANS, TECHNIQUES, SEQUENCES, AND PROCEDURES.
- THE CONTRACTOR AND ALL SUB-CONTRACTORS SHALL BE RESPONSIBLE FOR THE SAFETY OF THEIR WORK FORCE, THE WORK AREA, ADJACENT AREA, AND ANY PROPERTY OCCUPANTS WHO MAY BE AFFECTED BY THE WORK UNDER CONTRACT. THE CONTRACTOR SHALL REVIEW AND ABIDE BY ALL OWNER, PRIME CONTRACTOR, CARRIER, OSHA, AND LOCAL SAFETY GUIDELINES. ALL WORKERS SHALL UTILIZE APPROPRIATE FALL PROTECTION AND SAFETY EQUIPMENT THAT IS UP-TO-DATE AND INSPECTED PER OSHA AND INDUSTRY GUIDELINES. ALL WORKERS SHALL BE TRAINED AND MONITORED TO ENSURE SAFE WORKING PRACTICES ARE MAINTAINED.
- CONTRACTOR IS RESPONSIBLE FOR TEMPORARILY REMOVING ALL COAX, T-BRACKETS, ANTENNA MOUNTS, AND ANY OTHER APPURTENANCE THAT MAY INTERFERE WITH THE MODIFICATIONS. ALL APPURTENANCES MUST BE REPLACED AND/OR RESTORED TO ITS ORIGINAL LOCATION. SOME ATTACHMENTS MAY REQUIRE CUSTOM MODIFICATIONS TO PROPERLY FIT THE MODIFIED REGION OF THE STRUCTURE. THESE CUSTOMIZATIONS ARE DESIGNED BY OTHERS AND MUST BE APPROVED BY THE ENGINEER PRIOR TO REMOVING SUCH ATTACHMENTS. ANY CARRIER DOWNTIME MUST BE COORDINATED WITH THE OWNER IN WRITING.
- CONTRACTOR SHALL ONLY WORK WITHIN THE LIMITS OF THE OWNER'S PROPERTY OR LEASE AREA AND APPROVED EASEMENTS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY WORK IS WITHIN THESE BOUNDARIES. CONTRACTOR SHALL EMPLOY A SURVEYOR AS REQUIRED. ANY WORK OUTSIDE THESE BOUNDARIES SHALL BE APPROVED IN WRITING BY THE LAND OWNER PRIOR TO MOBILIZATION. CONSTRUCTION STAKING AND BOUNDARY MARKING IS THE RESPONSIBILITY OF THE CONTRACTOR.
- THE STRUCTURAL INTEGRITY OF THIS DESIGN EXTENDS TO THE COMPLETE CONDITION ONLY. THE CONTRACTOR MUST BE COGNIZANT THAT THE REMOVAL OF ANY STRUCTURAL COMPONENT HAS THE POTENTIAL TO CAUSE THE PARTIAL OR COMPLETE COLLAPSE OF THE STRUCTURE. ALL NECESSARY PRECAUTIONS MUST BE TAKEN TO ENSURE THE STRUCTURAL INTEGRITY, INCLUDING, BUT NOT LIMITED TO, ENGINEERING ASSESSMENT OF CONSTRUCTION STRESSES WITH INSTALLATION MAXIMUM WIND SPEED AND/OR TEMPORARY BRACING AND SHORING.
- CONTRACTOR IS RESPONSIBLE FOR ALL TEMPORARY LOCAL SHORING, TEMPORARY GLOBAL SHORING, AND ALL SHORING OF SURROUNDING BUILDINGS, PADS, AND OTHER OUTDOOR SITE OBSTRUCTIONS. ALL SHORING, TEMPORARY BRACING, AND TEMPORARY SUPPORTS ARE THE RESPONSIBILITY OF THE CONTRACTOR.
- FAA/FCC FILING AND LIGHTING MAY BE REQUIRED. ALL GOVERNMENTAL REGULATORY DETERMINATIONS AND FILINGS BY OTHERS, NOT GPD.
- CONTRACTOR SHALL TAKE NECESSARY ACTIONS TO PROVIDE SAFE WORKING CONDITIONS INCLUDING, BUT NOT LIMITED TO, HAVING ANY FM SIGNALS TURNED OFF. CONTRACTOR SHALL HAVE PROPER RADMAN FOR NOTIFICATION OF EXCESSIVE RF EXPOSURE FOR ALL INDIVIDUALS WORKING ON SITE IF FM ANTENNAS ARE PRESENT. CONTRACTOR SHALL BE AWARE OF RF WARNING SIGNS AND TAKE PROPER PRECAUTIONS.
- ALL MANUFACTURERS HARDWARE AND ASSEMBLY INSTRUCTIONS SHALL BE FOLLOWED EXACTLY. DEVIATION FROM THE INSTRUCTIONS IS UNACCEPTABLE AND REQUIRES WRITTEN APPROVAL FROM ENGINEER.
- DO NOT SCALE DRAWINGS.
- ROOFTOP ACCESS, CLIMBING FACILITIES, SAFETY CLIMB AND ALL ASSOCIATED HARDWARE SHALL NOT BE IMPEDED OR MODIFIED WITHOUT THE WRITTEN CONSENT OF GPD.
- ANY WORK PERFORMED WITHOUT A PREFABRICATION MAPPING IS DONE AT THE RISK OF THE GC AND/OR FABRICATOR.
- IMPROPER FIT-UP OF NEW BOLTED HARDWARE DUE TO OVERSIZED, DOUBLE-PUNCHED, OR SLOTTED HOLES FOUND ON THE EXISTING STRUCTURE SHALL BE REPORTED TO GPD AND THE TOWER OWNER IMMEDIATELY. INSTALLATION OF SUCH HARDWARE WILL NOT BE ACCEPTABLE AND ALL COSTS ASSOCIATED WITH REMEDYING THE INSTALLATION WILL BE THE RESPONSIBILITY OF THE GC.

- THE SUBCONTRACTOR SHALL REPAIR ALL EXISTING FLOOR, ROOF, CEILING, AND WALL SURFACES AND FINISHING DISTURBED DURING CONSTRUCTION. ALL EXTERIOR FINISHES ARE REQUIRED TO RESULT IN A SMOOTH FINISH TO MATCH THE EXISTING CONDITIONS TO THE SATISFACTION OF THE OWNER.
- ALL ABANDONED HOLES AS A RESULT OF THIS DESIGN SHALL BE SEALED WITH A SEALANT MEETING THE REQUIREMENTS OF ASTM C920.
- PENETRATION OF THE ROOF MEMBRANE IS PROHIBITED EXCEPT WHERE DESIGNED AND WITH THE APPROVAL OF THE BUILDING OWNER OR MANAGEMENT. COORDINATE MEMBRANE REPLACEMENT AND/OR REPAIR WITH THE OWNER'S ROOFING CONSULTANT TO MAINTAIN EXISTING WARRANTY.
- ROOFTOP HAS A SLIGHT SLOPE TOWARDS EXISTING ROOF DRAINS. ALL EXISTING ROOF DRAINS & ROOF DRAINING PATTERNS SHALL NOT BE OBSTRUCTED OR DISTURBED (VERIFY IN FIELD). ANTENNA FRAMES SHALL BE PLUMB & LEVEL (NOTIFY EOR IF UNABLE TO ACHIEVE).
- CARE SHALL BE TAKEN DURING INSTALLATION OF NEW ANCHORAGE OR OTHER TYPES OF PENETRATING MODIFICATIONS SO THAT EXISTING REINFORCING STEEL IN CONCRETE OR MASONRY IS NOT DAMAGED. CONTACT ENGINEER IMMEDIATELY IF EXISTING STEEL IS ENCOUNTERED.
- PENETRATIONS TO THE BUILDING ENVELOPE SHALL BE FINISHED IN A MANNER THAT MAINTAINS A WEATHER-PROOF BARRIER BETWEEN THE EXTERIOR AND INTERIOR OF THE STRUCTURE. THE CONTRACTOR SHALL COORDINATE REMEDIATION WORK WITH THE BUILDING OWNER PRIOR TO INSTALLATION TO ENSURE ACCEPTANCE OF THE FINAL CONDITION.

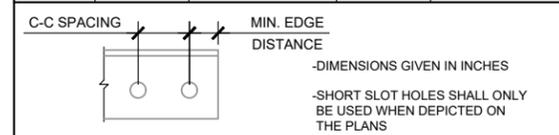
STRUCTURAL STEEL NOTES

- ALL NEW STEEL SHALL BE HOT-DIPPED GALVANIZED PER ASTM A123, ASTM A153/A153M, OR ASTM A653 G90, AS APPLICABLE FOR FULL WEATHER PROTECTION. FOR HIGH STRENGTH STEEL FASTENERS WHERE HOT-DIPPED GALVANIZING IS NOT PERMITTED MAGNI 565 COATING (OR ENGINEER APPROVED EQUIVALENT) SHALL BE USED. IN ADDITION ALL NEW STEEL SHALL BE PAINTED TO MATCH EXISTING STEEL AND/OR BUILDING MATERIAL. CONTRACTOR SHALL OBTAIN WRITTEN PERMISSION TO PROTECT STEEL BY ANY OTHER MEANS.
- ALL EXPOSED STRUCTURAL STEEL AS THE RESULT OF THIS SCOPE OF WORK INCLUDING, BUT NOT LIMITED TO, DAMAGED MEMBERS, FIELD WELDS, FIELD CUT MEMBERS, FIELD DRILLED HOLES, AND SHAFT INTERIORS (WHERE APPLICABLE), SHALL BE SOLVENT CLEANED AND HAVE TWO (2) COATS OF BRUSHED ON ZRC ZINC RICH COLD GALVANIZING PAINT APPLIED AND SHALL BE PAINTED TO MATCH THE TOWER FINISH (WHERE APPLICABLE). PHOTO DOCUMENTATION IS REQUIRED TO BE SUBMITTED TO THE MODIFICATION INSPECTOR.
- ALL STRUCTURAL STEEL SHALL CONFORM TO THE LISTED REQUIREMENTS U.N.O. IN THESE DRAWINGS:
 - STEEL ANGLE: ASTM A572 GRADE 50 (Fy=50 KSI)
 - SOLID ROUND: ASTM A36 (Fy=36 KSI)
 - PIPE (ROUND): ASTM A53 GRADE B (Fy=35 KSI)
 - HSS TUBE (ROUND): ASTM A500 GRADE C (Fy=50 KSI)
 - HSS TUBE (SQUARE): ASTM A500 GRADE C (Fy=50 KSI)
 - W-SHAPES: ASTM A992 (Fy=50 KSI)
 - CHANNELS: ASTM A992 (Fy=50 KSI)
 - PLATE: ASTM A572 GRADE 50 (Fy=50KSI)
 - ANCHOR RODS: ASTM A193 GRADE B7
 - THREADED ROD: ASTM F1554 GRADE 36
 - BOLTS: ASTM A325 TYPE 1
 - U-BOLTS: ASTM A307 GRADE A
 - NUTS: ASTM A563 GRADE DH
 - NUTS (ANCHOR RODS): ASTM A194 GRADE 2H
 - WASHERS (AS REQUIRED): ASTM F436 TYPE 1
 - LOCKING DEVICES: PAL-NUT OR SPLIT WASHER
 - WELDING ELECTRODES, SMAW: E70XX
 - WELDING ELECTRODES, FCAW: E7XT-XX

- ALL BOLT ASSEMBLIES FOR STRUCTURAL MEMBERS REPRESENTED IN THIS DRAWING REQUIRE LOCKING DEVICES TO BE INSTALLED.
- ALL BOLTS, INCLUDING U-BOLTS, SHALL BE TIGHTENED IN ACCORDANCE WITH AISC "SNUG TIGHT" REQUIREMENTS, U.N.O.
- ALL U-BOLTS SPECIFIED SHALL MEET THE REQUIREMENTS OF ASME B18.31.5-2011 BENT BOLTS.
- ALL NEW BOLT ASSEMBLIES SHALL BE OF SUFFICIENT LENGTH TO ENSURE THE END OF THE BOLT IS FLUSH WITH, OR PROTRUDES BEYOND, THE FACE OF THE NUT AFTER TIGHTENING IS COMPLETE.
- STRUCTURAL STEEL SHOP DRAWINGS SHALL BE PROVIDED TO ENGINEER FOR REVIEW PRIOR TO FABRICATION.
- UNLESS NOTED OTHERWISE, ALL NEW MEMBERS SHALL MAINTAIN THE EXISTING MEMBER WORK LINES AND NOT INTRODUCE ECCENTRICITIES INTO THE STRUCTURE.
- WELDING OF ANY KIND IS NOT PERMITTED ON SITE UNLESS SPECIFIED WITHIN THESE DRAWINGS. OXY FUEL GAS WELDING OR BRAZING IS STRICTLY PROHIBITED. SPECIFICALLY, NO TORCH CUTTING OR OPEN FLAME IS PERMITTED ON SITE. ALL HOLES SHALL BE CUT WITH A GRINDER.

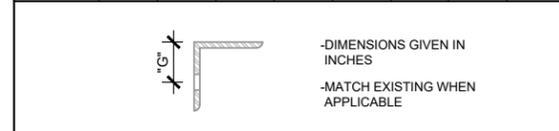
BOLT SCHEDULE

BOLT DIAMETER	STANDARD HOLE	SHORT SLOT	MIN. EDGE DISTANCE	C-C SPACING
1/2	9/16	9/16x11/16	7/8	1-1/2
5/8	11/16	11/16x7/8	1-1/8	1-7/8
3/4	13/16	13/16x1	1-1/4	2-1/4
7/8	15/16	15/16x1-1/8	1-1/2	2-5/8
1	1-1/8	1-1/8x1-5/16	1-3/4	3

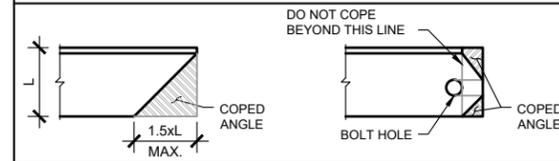


WORKABLE GAGES

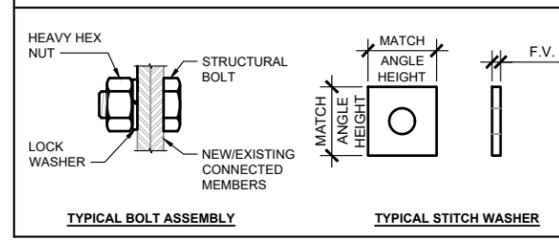
LEG	6	5	4	3-1/2	3	2-1/2	2	1-3/4
G	3-1/2	3	2-1/2	2	1-3/4	1-3/8	1-1/8	1



ALLOWABLE ANGLE COPE



BOLTING DETAILS



- ALL DIMENSIONS REPRESENTED IN THESE TABLES ARE AISC MINIMUM REQUIREMENTS. CONTRACTOR SHALL VERIFY EXISTING CONDITIONS IN FIELD AND NOTIFY ENGINEER IF DISTANCES ARE LESS THAN THOSE PROVIDED.
- THE DIMENSIONS PROVIDED ARE MINIMUM REQUIREMENTS. ACTUAL DIMENSIONS OF PROPOSED MEMBERS WITHIN THESE DRAWINGS MAY VARY FROM THE AISC MINIMUM REQUIREMENTS.
- AS AN ALTERNATIVE TO USING A LOCK WASHER PAL-NUTS CAN BE INSTALLED ABOVE THE HEX NUT. ALL BOLTS MUST HAVE LOCKING DEVICES INSTALLED AS PART OF THE ASSEMBLY.
- ADDITIONAL HARDENED FLAT WASHERS MAY BE REQUIRED IN CASES WHERE OVERSIZED OR SLOTTED HOLES ARE PRESENT. EXISTING CONDITIONS SHALL BE APPROVED BY THE EOR.



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EAST AMERICAN FORK
1175 EAST 50 SOUTH
AMERICAN FORK, UT 84003

PROJECT NOTES

ISSUED FOR:	
PERMIT	1/27/2025
BID	-
CONSTRUCTION	-
RECORD	-

ENGINEER	DESIGNER
JRS	RV
PROJECT MANAGER	APPROVED BY
CB	JNK

JOB NO.
2024723.02.86662.01

N-01

**RADIO FREQUENCY (RF) TRANSPARENT FIBER
REINFORCING POLYMER (FRP) NOTES**

- ALL FRP SHEET AND STRUCTURAL COMPONENTS USED IN VISION SCREENS SHALL BE TRANSPARENT TO ELECTRO-MAGNETIC RADIATION AT THE FREQUENCIES REQUIRED BY THE OWNER. THE CONTRACTOR SHALL VERIFY RF TRANSPARENCY AT THE REQUIRED FREQUENCIES WITH THE FRP MANUFACTURER PRIOR TO FABRICATION OF THE VISION SCREENS.
- THE MATERIAL SPECIFIED SHALL BE FURNISHED BY A REPUTABLE AND QUALIFIED MANUFACTURER OF DEMONSTRATED ABILITY WHO HAS ROUTINELY ENGAGED IN THE MANUFACTURE OF FIBER REINFORCED POLYMER COMPOSITES.
- SUBSTITUTION OF ANY COMPONENT OR MODIFICATION OF SYSTEM WILL BE MADE ONLY AFTER APPROVAL BY THE ENGINEER.
- ALL SYSTEMS, SUB-SYSTEMS, AND STRUCTURES WILL BE FACTORY-FABRICATED AND ASSEMBLED TO THE BEST PRACTICAL SIZES FOR TRANSPORTATION.
- ALL MATERIAL AND EQUIPMENT NECESSARY FOR THE FABRICATION AND INSTALLATION OF THE FRP PRODUCTS WILL BE STORED BEFORE, DURING, AND AFTER SHIPMENT IN A MANNER TO PREVENT CRACKING, TWISTING, BENDING BREAKING, CHIPPING OR DAMAGED OF ANY KIND TO THE MATERIAL OR EQUIPMENT, INCLUDING ULTRAVIOLET DAMAGE.
- MATERIAL USED IN THE MANUFACTURE OF FRP PRODUCTS SHALL BE OF THE QUALITY AND FREE FROM DEFECTS AND IMPERFECTION THAT MAY AFFECT THE PERFORMANCE OF THE FINISHED PRODUCT.
- ALL FRP PRODUCTS WILL BE MANUFACTURED USING THE PULTRUSION MANUFACTURING PROCESS WITH EITHER THERMOSET POLYESTER OR THERMOSET VINYLESTER RESINS INCLUDING FLAMMABILITY AND ULTRAVIOLET (UV) INHIBITOR ADDITIVES. A SYNTHETIC SURFACE VEIL SHALL BE THE OUTERMOST LAYER OF THE EXTERIOR SURFACE. ALL EXPOSED SURFACES SHALL BE SMOOTH AND TRUE TO FORM. AFTER FABRICATION, ALL CUT ENDS, HOLES, AND ABRASIONS OF FRP COMPOSITE PRODUCTS WILL BE SEALED WITH A COMPATIBLE RESIN COATING CONTAINING A UV INHIBITOR TO PREVENT MOISTURE INFILTRATION.
- ALL FIELD CUT AND DRILLED EDGES, HOLES, AND ABRASIONS SHALL BE SEALED WITH A CATALYZED RESIN COMPATIBLE WITH THE ORIGINAL RESIN AS RECOMMENDED BY THE MANUFACTURER OF THE FRP COMPONENT. THE SEALING RESIN SHALL CONTAIN A UV INHIBITOR.
- COATINGS SHALL BE OF A TEXTURE AND COLOR TO MATCH NEARBY EXISTING SURFACES. PAINTED COATING SHALL BE A TWO-COMPONENT UV STABILIZED URETHANE COATING COMPATIBLE WITH THE FRP COMPONENTS IN THE VISION SCREEN. PAINTING AND COLOR REQUIREMENTS SHALL BE CONFIRMED WITH THE OWNER.
- MATERIAL PROPERTIES LENGTH WISE (LW) AND CROSSWISE (CW) OF THE FRP COMPONENTS SHALL BE EQUAL TO OR GREATER THAN THE FOLLOWING:
- ALL FRP MEMBERS SHALL BE STRONGWELL 500/525 RESIN SERIES.
- THE TEMPERATURE IS ASSUMED TO BE AT A RANGE WHERE FRP WILL DEVELOP ITS FULL CAPACITY. ELEVATED TEMPERATURE EFFECTS ARE OUTSIDE THE SCOPE OF THIS DESIGN, CONSULT WITH FRP FABRICATOR AS REQUIRED.
- ALL CONNECTIONS TO FRP SHALL BE ADHESIVE BONDED IN ADDITION TO BOLTED AS RECOMMENDED BY STRONGWELL. ALL CONNECTIONS ARE ASSUMED TO DEVELOP THE CAPACITY OF THE CONNECTED FRP MEMBER SHAPE AND ALL CONNECTIONS TO FRP SHALL BE DESIGNED BY THE FRP FABRICATOR FAMILIAR WITH STRONGWELL UNLESS NOTED OTHERWISE.

STRUCTURAL PROFILES		
MATERIAL PROPERTY (ULTIMATE: NO SAFETY FACTOR)	LENGTHWISE (PSI)	CROSSWISE (PSI)
TENSILE STRENGTH	33,000	7,500
TENSILE MODULUS	2,500,000	800,000
COMPRESSIVE STRENGTH	33,000	16,500
COMPRESSIVE MODULUS	3,000,000	1,000,000
FLEXURAL STRENGTH	33,000	11,000
FLEXURAL MODULUS	1,600,000	800,000
MODULUS OF ELASTICITY, SQUARE AND RECTANGULAR TUBES (FULL SECTION)	3,200,000	N/A
SHEAR MODULUS (FULL SECTION)	420,000	N/A
INTERLAMINAR SHEAR	4,500	N/A
SHEAR STRENGTH BY PUNCH	5,500	N/A
MAXIMUM BEARING STRENGTH	30,000	18,000
IN-PLANE SHEAR	7,000	7,000

FLAT SHEETS		
MATERIAL PROPERTY (ULTIMATE: NO SAFETY FACTOR)	LENGTHWISE (PSI)	CROSSWISE (PSI)
FLEXURAL STRENGTH, FLATWISE	35,000	15,000
FLEXURAL MODULUS, FLATWISE	2,000,000	1,100,000
TENSILE STRENGTH	20,000	10,000
TENSILE MODULUS	1,800,000	1,800,000
COMPRESSIVE STRENGTH, EDGEWISE	24,000	16,000
COMPRESSIVE MODULUS, EDGEWISE	1,800,000	1,000,000
BEARING STRENGTH	32,000	32,000
SHEAR STRENGTH	7,000	7,000

FRP FASTENERS*					
MATERIAL PROPERTY (ULTIMATE: NO SAFETY FACTOR)	3/8"	1/2"	5/8"	3/4"	1"
THREAD SHEAR CAPACITY (LB)	1,250	2,500	3,900	5,650	7,400
COMPRESSIVE STRENGTH, EDGEWISE	1,000	2,000	3,120	4,520	6,200
COMPRESSIVE MODULUS, EDGEWISE	60,000	60,000	60,000	60,000	60,000
BEARING STRENGTH	2,000,000	2,000,000	2,000,000	2,500,000	2,500,000
SHEAR STRENGTH	55,000	55,000	55,000	55,000	60,000
SHEAR STRENGTH	4,200	7,400	11,600	17,200	27,400

*NOTE: INSTALLATION, INCLUDING TORQUE AND LUBRICATION SHALL BE PER MANUFACTURER SPECIFICATIONS.



EAST AMERICAN FORK
FA #: 10115113

DESIGN DRAWINGS
PREPARED FOR:



CLIENT #: UTL04060

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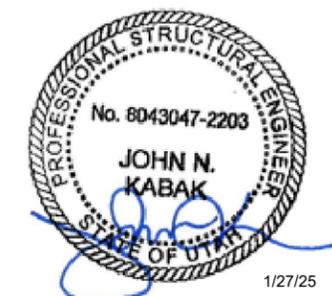
EAST AMERICAN FORK
1175 EAST 50 SOUTH
AMERICAN FORK, UT 84003
ADDITIONAL PROJECT NOTES

ISSUED FOR:	
PERMIT	1/27/2025
BID	-
CONSTRUCTION	-
RECORD	-

ENGINEER	DESIGNER
JRS	RV
PROJECT MANAGER	APPROVED BY
CB	JNK

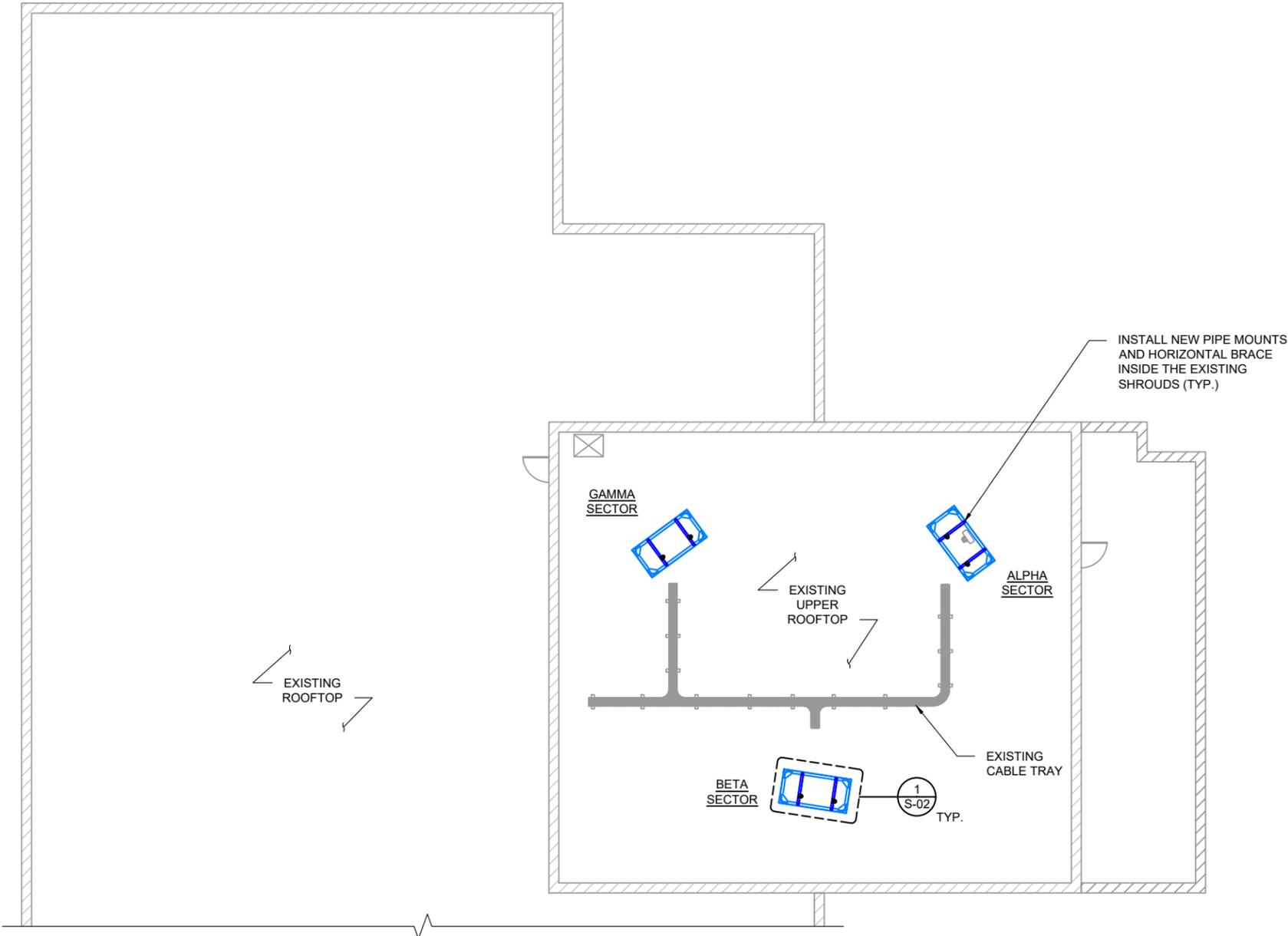
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N-02



MODIFICATION SCHEDULE					
MEMBER TYPE	ELEVATION	EXISTING MEMBER	NEW MEMBER	REFERENCE DETAIL/SHEET	NOTES
MOUNT	48'-0"±	MOUNTS	-	-	REMOVE EXISTING MOUNTS AND ALL ASSOCIATED HARDWARE FROM INSIDE OF EXISTING SHROUDS.
UNISTRUT		UNISTRUT	-	-	REMOVE EXISTING UNISTRUT AND ALL ASSOCIATED HARDWARE FROM INSIDE OF EXISTING SHROUDS.
HORIZONTAL		-	(2) L3x3x3/8 PER SECTOR	SHEETS S-02 & S-03	INSTALL NEW HORIZONTAL BRACE INSIDE EXISTING SHROUDS.
PIPE MOUNTS		-	(2) P2-1/2 STD PIPE MOUNTS PER SECTOR		INSTALL NEW PIPE MOUNT INSIDE THE EXISTING SHROUDS.
BASE PLATE BOLTS		5/8"Ø BOLTS (QUANTITY VARIES)	(4) 5/8"Ø BOLTS PER BASE PLATE		TIGHTEN OR REPLACE EXISTING LOOSE BOLTS WITH NEW BOLTS OF THE SAME SIZE AND GRADE. INSTALL NEW BOLTS IN LOCATION OF MISSING BOLTS.

NOTE:
1. ALL MATERIAL REMOVED FROM THE STRUCTURE SHALL BE DISPOSED OF BY THE CONTRACTOR OFF SITE.



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ROOFTOP PLAN &
MODIFICATION SCHEDULE

ISSUED FOR:	
PERMIT	1/27/2025
BID	-
CONSTRUCTION	-
RECORD	-

ENGINEER	DESIGNER
JRS	RV
PROJECT MANAGER	APPROVED BY
CB	JNK

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LEGEND	
	- NEW FRP MEMBERS
	- STEEL MEMBERS
	- EXISTING FRP MEMBERS

ROOFTOP PLAN
N.T.S.

NORTH

S-01

REV.	DATE	DESCRIPTION
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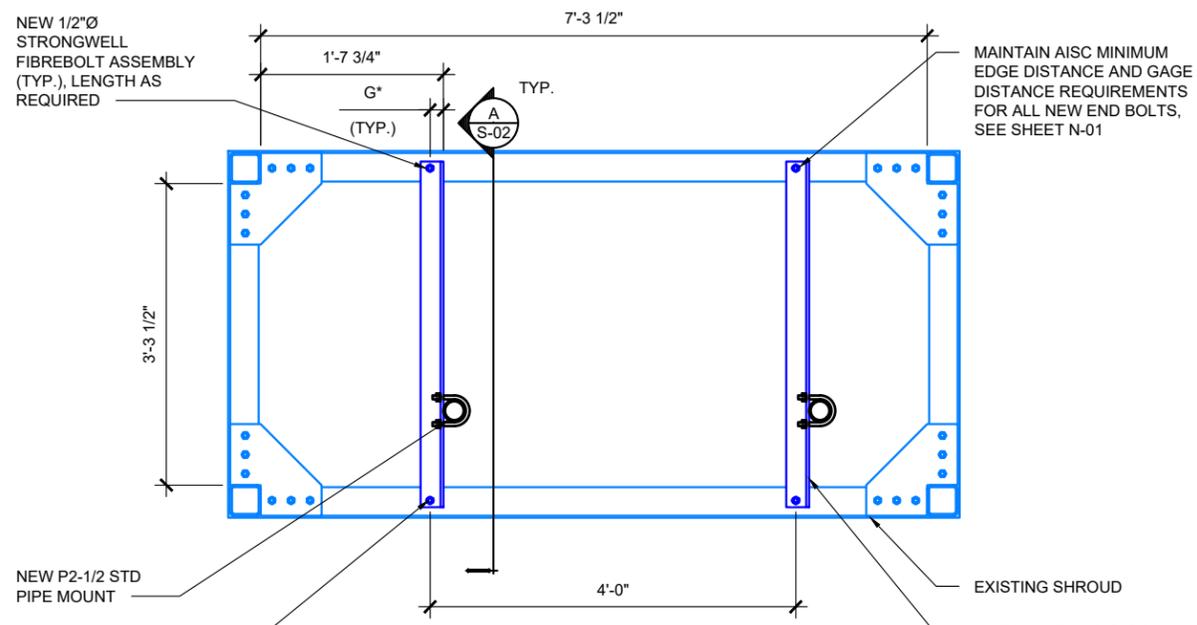
EAST AMERICAN FORK
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AMERICAN FORK, UT 84003
**MODIFICATION DETAILS
& SECTIONS**

ISSUED FOR:	
PERMIT	1/27/2025
BID	-
CONSTRUCTION	-
RECORD	-

ENGINEER	DESIGNER
JRS	RV
PROJECT MANAGER	APPROVED BY
CB	JNK

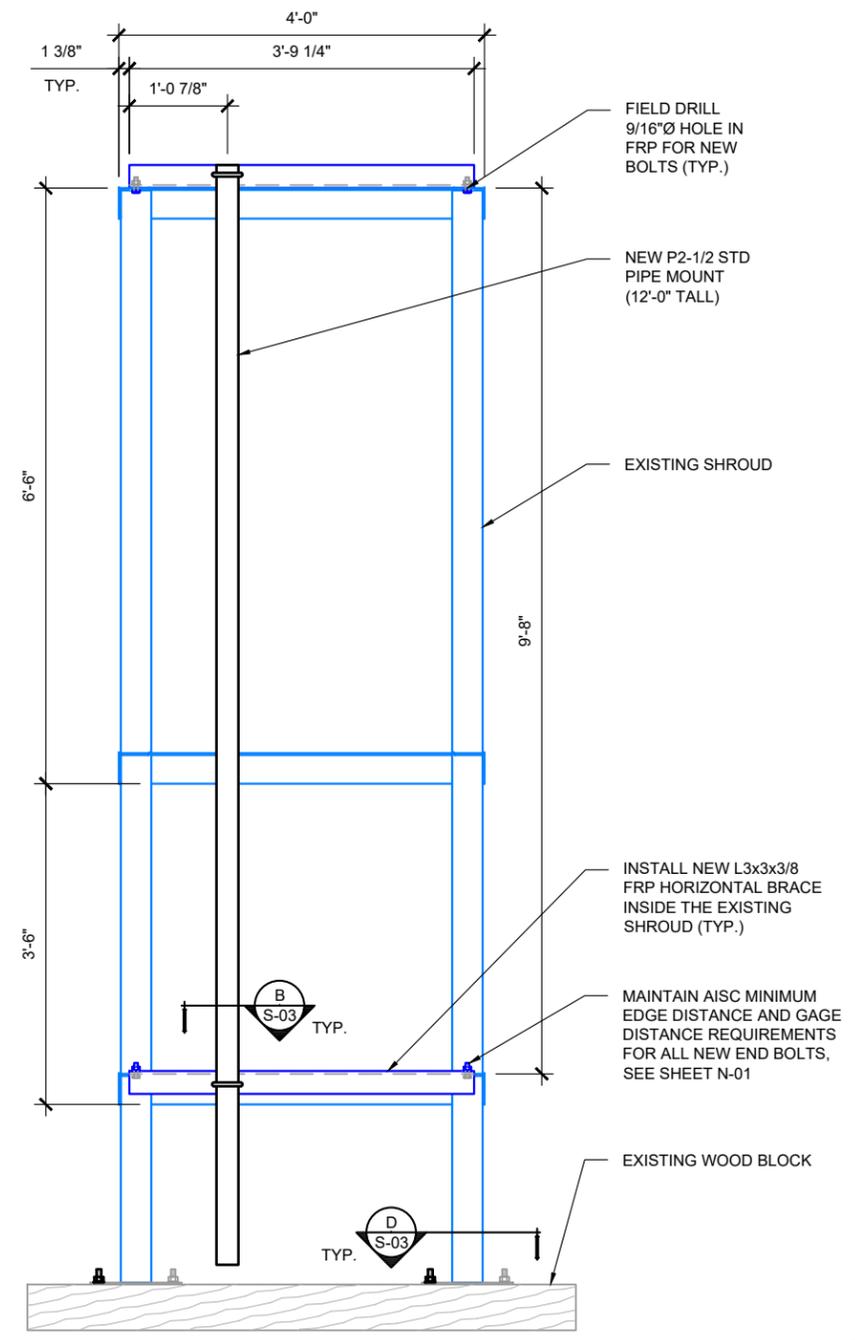
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S-02

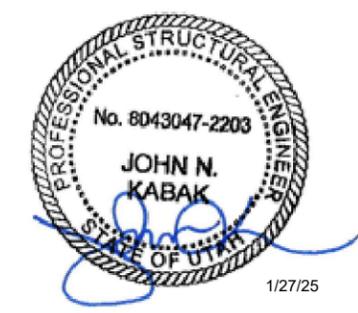


1 EXISTING SHROUD ENCLOSURE
S-02 SCALE: 1/2" = 1'-0"

* SEE WORKABLE GAGES SCHEDULE ON SHEET N-01.

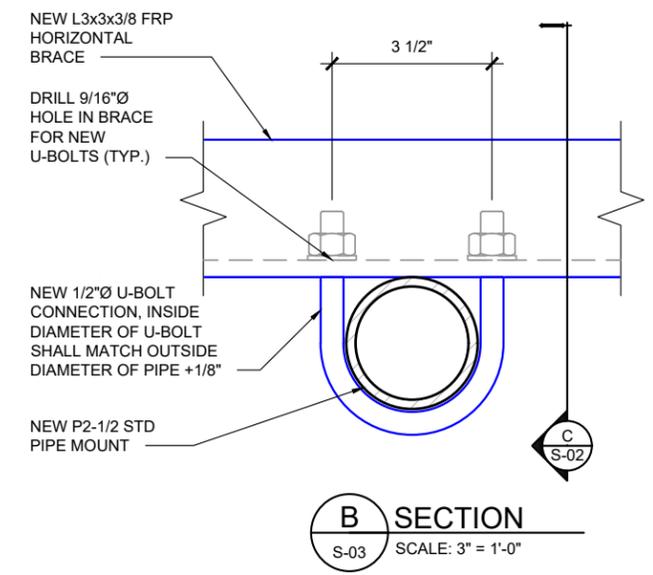


A SECTION
S-02 SCALE: 1/2" = 1'-0"

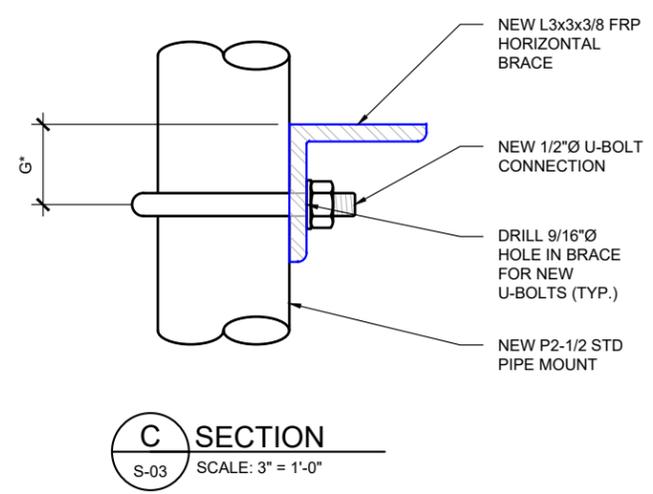


LEGEND

	- NEW FRP MEMBERS
	- STEEL MEMBERS
	- EXISTING FRP MEMBERS

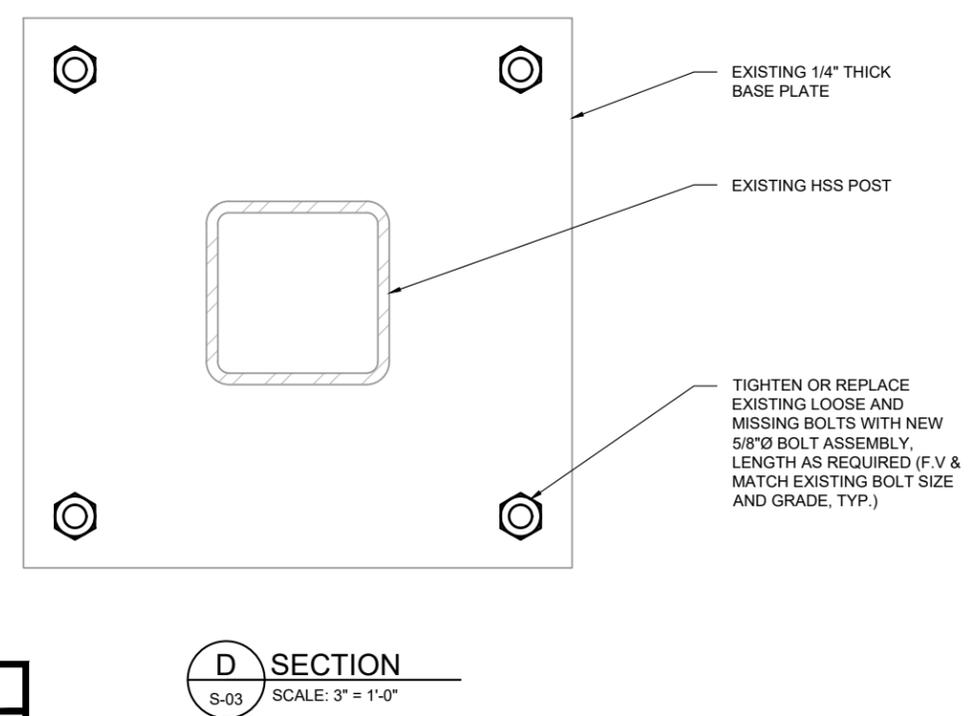


B SECTION
S-03 SCALE: 3" = 1'-0"



C SECTION
S-03 SCALE: 3" = 1'-0"

* SEE WORKABLE GAGES SCHEDULE ON SHEET N-01.



D SECTION
S-03 SCALE: 3" = 1'-0"

LEGEND	
	- NEW FRP MEMBERS
	- STEEL MEMBERS
	- EXISTING FRP MEMBERS

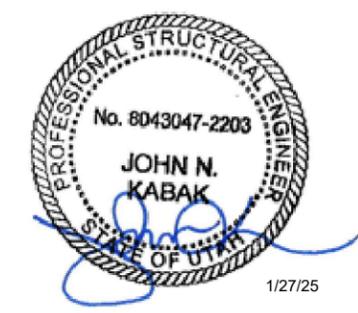
REV.	DATE	DESCRIPTION
0	1/27/25	INITIAL RELEASE

EAST AMERICAN FORK
1175 EAST 50 SOUTH
AMERICAN FORK, UT 84003
ADDITIONAL SECTIONS

ISSUED FOR:	
PERMIT	1/27/2025
BID	-
CONSTRUCTION	-
RECORD	-

ENGINEER	DESIGNER
JRS	RV
PROJECT MANAGER	APPROVED BY
CB	JNK

JOB NO.
2024723.02.86662.01



1/27/25

S-03

Next Step
Post Entitlement Review
Required.
 Revise and resubmit following the DRC meeting to address remaining comments

Ancso
 1220 Old Alpharetta Road, Suite 380
 Alpharetta, GA 30005

Next Step
Proceed to the Development
Review Committee on
07.28.2025

American Fork City Development Review	
Public Infrastructure Reviewed dhoward 07/22/2025	
Sewer/Storm Drain Division Reviewed ahardy 07/23/2025	
	Engineering Division Reviewed rburkhill 07/23/2025
Water/PI Division Reviewed jbrems 07/22/2025	Planning and Zoning Reviewed Areed 07/22/2025



Chad Burton
 520 South Main Street, Suite 2531
 Akron, OH 44311
 (614) 859-1623
 cburton@gpdgroup.com

GPD# 2024723.02.86662.01
 January 28, 2025

STRUCTURAL ANALYSIS REPORT WITH MODIFICATION DESIGN

AT&T DESIGNATION: **USID #:** **86662**
Site FA #: **10115113**
Client #: **UTL04060**
Site Name: **East American Fork**

ANALYSIS CRITERIA: **Codes:** **TIA-222-H & 2021 IBC**
103 mph (3-second gust) w/ 0" ice
40 mph (3-second gust) w/ 0.25" ice
Ss = 1.333, S1 = 0.491

SITE DATA: **1175 East 50 South, American Fork, UT 84003, Utah County**
Latitude 40° 22' 36.00" N, Longitude 111° 46' 01.50" W
(3) FRP Shrouds on 48'-0" Rooftop

Re-Submittal Acknowledgment Statement
The Applicant is responsible for reviewing all documents to ensure all comments have been addressed.
 _____ [Applicant Initial] I understand that a Review Cycle is not complete unless and until the applicant replies to all of the required modifications and requests for additional information noted on the previous submittal.
 _____ [Applicant Initial] I hereby acknowledge that this re-submittal addresses all required modifications and requests for additional information noted on the previous submittal.
 _____ [Applicant Initial] This is the _____ [Ex: 1st] complete re-submittal of the subdivision constituting the start of the _____ [Same Number] Review Cycle.

To whom it may concern,

GPD is pleased to submit this Structural Analysis Report with Modification Design to determine the structural integrity of the aforementioned structure. The purpose of the analysis is to determine the suitability of the structure with the existing and proposed loading configuration detailed in the analysis report.

Analysis Results

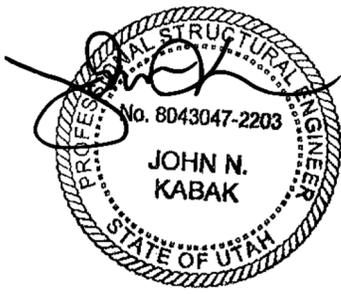
Mount Stress Level with Proposed Equipment: 68.8% Pass
 Rooftop Stress Ratio with Proposed Equipment: Adequate Pass

In order for the results of this analysis to be accurate modifications by GPD (Project #: 2024723.02.86662.01, dated: 1/27/2025) must be properly installed.

We at GPD appreciate the opportunity of providing our continuing professional services to you and Ancso. If you have any questions or need further assistance on this or any other projects, please do not hesitate to call.

Respectfully submitted,

John N. Kabak, S.E.
 Utah #: 8043047-2203



1/28/2025

SUMMARY & RESULTS

The purpose of this analysis was to verify whether the existing structure is capable of carrying the proposed loading configuration as specified by AT&T Mobility and commissioned by AnSCO.

This analysis has been performed in accordance with the 2021 International Building Code based upon a 3-second gust wind speed of 103 mph. Applicable Standard references and design criteria are listed in Appendices A & B.

The new mounts and antennas will be installed inside the existing concealment shrouds. There will be no increase in wind loads, and negligible increase in the seismic and dead loading when compared to the overall loads on the structure based on the previous structural analysis by Maser (Project #: 18739004A, dated: 2/26/2019). The increase in capacity of any individual structural component was found to be less than 5% for gravity loads and 10% for lateral loads when compared to the original design and will not require alteration per Section 503.3 & 503.4 Exception 1 of the 2021 IEBC.

ANALYSIS SUMMARY AND RESULTS

Member	Capacity	Results
Pipe Mounts	7.2%	Pass
FRP Horizontals	52.3%	Pass
FRP Bolts	68.8%	Pass
Rooftop	Adequate	Pass

RECOMMENDATIONS

In order for the results of this analysis to be accurate modifications by GPD (Project #: 2024723.02.86662.01, dated: 1/27/2025) must be properly installed.

ANALYSIS METHOD

Risa-3D (Version 22.0.0), a commercially available software program, was used to create a three-dimensional model of the structure and calculate primary member stresses for various load cases. Selected output from the analysis is included in the Appendices. The following table details the information provided to complete this structural analysis. This analysis is solely based on this information.

DOCUMENTS PROVIDED

Document	Remarks	Source
Construction Drawings	GPD Job #: 2024723.02/86662.01 Rev A, dated: 6/10/2024	GPD
Structure Mapping	TEP Project #: 344056.1019024, dated: 12/3/2024	GPD
Previous Conditional Structure Analysis	Maser Project #: 18739004A, dated: 2/26/2019	AT&T
Mount Modification Drawings	GPD Job #: 2024723.02.86662.01, dated: 1/27/2025	GPD

ASSUMPTIONS

This structural analysis is based on the theoretical capacity of the members and is not a condition assessment of the structure. This analysis is from information supplied, and therefore, its results are based on and are as accurate as that supplied data. GPD has made no independent determination, nor is it required to, of its accuracy. The following assumptions were made for this structural analysis.

1. The structure member sizes and shapes are considered accurate as supplied. Material grades not supplied have been assumed based on previous experience with similar structures.
2. The appurtenance configuration is as supplied, determined from available photos, and/or as modeled in the analysis. It is assumed to be complete and accurate. All antennas, mounts, coax and waveguides are assumed to be properly installed and supported as per manufacturer requirements.
3. All mounts, if applicable, are considered adequate to support the loading. No actual analysis of the mount(s) is performed. This analysis is limited to analyzing the structure only.
4. The structures have been properly maintained in accordance with TIA Standards and/or with manufacturer's specifications.
5. All welds and connections are assumed to develop at least the member capacity unless determined otherwise and explicitly stated in this report.
6. All prior structural modifications, if applicable, are assumed to be as per data supplied/available and to have been properly installed.
7. Loading interpreted from photos is accurate to $\pm 5'$ AGL, antenna size accurate to ± 3.3 sf, and coax equal to the number of existing antennas without reserve.
8. All existing and proposed loading has been taken from the available site photos as well as documents supplied to GPD at the time of generating this report. All such documents are listed in the Documents Provided Table and are assumed to be accurate. GPD is not responsible for loading scenarios outside those conveyed in the supplied documentation.

If any of these assumptions are not valid or have been made in error, this analysis may be affected, and GPD should be allowed to review any new information to determine its effect on the structural integrity of the structure.

DISCLAIMER OF WARRANTIES

GPD has performed a site visit to the structure to verify the member sizes and antenna/coax loading. If the existing conditions are not as represented on the structure elevation contained in this report, we should be contacted immediately to evaluate the significance of the discrepancy. This is not a condition assessment of the structure or foundation. This report does not replace a full structure inspection. The structure and foundations are assumed to have been properly fabricated, erected, maintained, in good condition, twist free, and plumb.

The engineering services rendered by GPD in connection with this structural analysis are limited to a computer analysis of the structure and theoretical capacity of its main structural members. No allowance was made for any damaged, bent, missing, loose, or rusted members (above and below ground). No allowance was made for loose bolts or cracked welds.

This analysis is limited to the designated maximum wind and seismic conditions per the governing structural standards and code. Wind forces resulting in structure vibrations near the structure's resonant frequencies were not considered in this analysis and are outside the scope of this analysis. Lateral loading from any dynamic response was not evaluated under a time-domain based fatigue analysis.

GPD does not analyze the fabrication of the structure (including welding). It is not possible to have all the very detailed information needed to perform a thorough analysis of every structural sub-component and connection of an existing structure. GPD provides a limited scope of service in that we cannot verify the adequacy of every weld, plate connection detail, etc. The purpose of this report is to assess the capability of adding appurtenances usually accompanied by transmission lines to the structure.

It is the owner's responsibility to determine the amount of ice accumulation in excess of the code specified amount, if any, that should be considered in the structural analysis.

The attached sketches are a schematic representation of the analyzed structure. If any material is fabricated from these sketches, the contractor shall be responsible for field verifying the existing conditions, proper fit, and clearance in the field. Any mentions of structural modifications are reasonable estimates and should not be used as a precise construction document. Precise modification drawings are obtainable from GPD, but are beyond the scope of this report.

Typical telecommunication structures are designed to carry gravity, wind, and ice loads. All members, legs, diagonals, struts, and redundant members provide structural stability to the structure with little redundancy. Absence or removal of a member can trigger catastrophic failure unless a substitute is provided before any removal. Legs carry axial loads and derive their strength from shorter unbraced lengths by the presence of redundant members and their connection to the diagonals with bolts or welds. If the bolts or welds are removed without providing any substitute to the frame, the leg is subjected to a higher unbraced length that immediately reduces its load carrying capacity. If a diagonal is also removed in addition to the connection, the unbraced length of the leg is greatly increased, jeopardizing its load carrying capacity. Failure of one leg can result in a structure collapse because there is no redundancy. Redundant members and diagonals are critical to the stability of the structure.

GPD makes no warranties, expressed and/or implied, in connection with this report and disclaims any liability arising from material, fabrication, and erection of this structure. GPD will not be responsible whatsoever for, or on account of, consequential or incidental damages sustained by any person, firm, or organization as a result of any data or conclusions contained in this report. The maximum liability of GPD pursuant to this report will be limited to the total fee received for preparation of this report.

APPENDIX A

Structural Analysis Summary Form

Structural Analysis Summary Form

General Info

Site Name	East American Fork (UTL04060)
Site Number	86662
FA Number	10115113
Date of Analysis	1/28/2025
Company Performing Analysis	GPD

The information contained in this summary report is not to be used independently from the PE stamped structural analysis.

Structure Info

Description	Date
Structure Type	Rooftop
Structure Height (avg. roof height AGL)	48'-0"
Mount Manufacturer	n/a
Mount Model	n/a
Mount Design	n/a
Structural Mapping	TEP Project #: 344056.1019024
Previous Structural Analysis	Maser Project #: 18739004A
Mount Modification Drawings	GPD Job #: 20241723.02.86662.01
Construction Drawings	GPD Job #: 20241723.02.86662.01 Rev A

Design Parameters

Design Code Used	TIA-222-H & 2021 IBC
Location of Tower (County, State)	Utah, UT
Wind Speed (mph)	103 (3-second gust)
Ice Thickness (in)	0.25
Risk Category (I, II, III, IV)	II
Exposure Category (B, C, D)	B
Topographic Category (1 to 5)	1

Analysis Results (% Maximum Usage)

Proposed Condition	
Mount Members (%)	52.3%
Mount Bolts (%)	68.8%
Rooftop (%)	Adequate

Final Loading Configuration

Antenna										
Antenna Owner	Mount Height (ft)	Antenna CL (ft)	Quantity	Type	Manufacturer	Model	Azimuth	Quantity	Manufacturer	Mount Type
AT&T Mobility	53	53	6	Panel	Commscope	NNH4-65C-R6-UPM	55/195/305	3		FRP Shrouds
AT&T Mobility	53	53	3	Panel	Ericsson	6419 B77D	55/195/305			inside the existing shrouds
AT&T Mobility	53	53	3	Panel	Ericsson	6419 B77G	55/195/305			inside the existing shrouds
AT&T Mobility	53	53	3	RRH	Ericsson	4490 B5/B12A				inside the existing shrouds
AT&T Mobility	53	53	3	RRH	Ericsson	4478 B14				inside the existing shrouds
AT&T Mobility	53	53	3	RRH	Ericsson	4890 B25/B66				inside the existing shrouds

APPENDIX B

Mount Analysis

Structure Information	
Supporting Structure Type:	Building
Structure Height:	57 ft
z (Mount Centerline) =	53 ft
G _f (Mount Gust Effect Factor) =	1.00
Risk Category:	II
Rooftop/Penthouse Mounted?	Yes
Apply Wind Speed-Up Factor:	No

Code Specifications	
IBC Edition:	2021
TIA/EIA Code:	H
Ultimate Wind Speed (No Ice)	103 mph (3-s gust)
Ultimate Wind Speed (With Ice)	40 mph (3-s gust)
Ice Thickness	0.25 in
Exposure Category	B
Building Base Elevation (AMSL)	4600 ft

Topographic Inputs	
Topographic Feature:	N/A

Seismic Inputs	
Soil Class:	D (Default)
S ₁ :	1.333
S ₂ :	0.491
S ₃ :	1.066
S ₄ :	0.578
R _e :	2
C _s :	0.533
A _s :	1.0

Mount Components	Section Sets				User's Wind Multiplier	No Ice		Ice Output		Seismic Output	
	Member Type	Length (in)	Side (Longest seeing wind) (in)	Other Side (in)		Area Type (Round or Flat)	K _s	Normal Wind Force (lb/ft)*	Normal Ice Wind Force (lb/ft)*	Normal Ice Wind Force (lb/ft)*	Member Weight (lb/ft)
Pipe Mount	Pipe	120.000	2.875	2.875	Round	0.90	0.00	0.00	0.00	5.48	2.92
FRP Bracing	Angle	43.500	3	3	Flat	0.90	0.00	0.00	0.00	1.67	0.89

*All forces are unfactored.

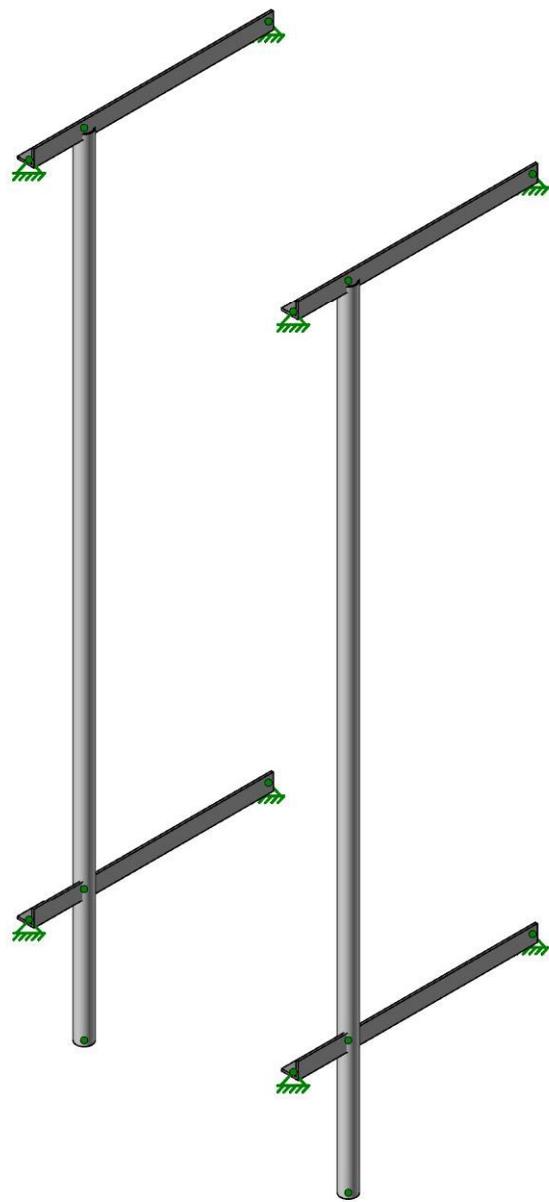
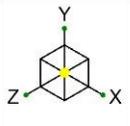
QTY	Appurtenance Model	Appurtenances				Shielding			Ice Output			Seismic Output			
		Loading Elevation (ft)	Height (in)	Front Width (in)	Side Depth (in)	Front Shielding (%)	Side Shielding (%)	K _s and/or block shielding	Normal Wind Force (lbs)	Wt (lbs) (no ice)*	Normal Ice Wind Force (lbs) (w/ ice)*	Wt (lbs) (only ice)*	Appurtenance Wt (lbs)	Seismic Shear Force, V _s (lbs)	Vertical Seismic Load Effect, E _v (lbs)
(1)	NHH-4-65C-RG-UPM-6419-G	53	96	24	15.7	0%	0%	0.90	0.00	155.40	0.00	72.37	155.40	82.86	33.14
(1)	NHH-4-65C-RG-UPM-6419-D	53	96	24	15	0%	0%	0.90	0.00	152.30	0.00	70.93	152.30	81.21	32.48
(1)	4490 B5/B12A	53	20.6	15.6	7	0%	0%	0.90	0.00	65	0.00	10.15	65.00	34.66	13.86
(1)	4478 B14	53	18.1	13.4	8.26	0%	0%	0.90	0.00	59.4	0.00	8.90	59.40	31.67	12.67
(1)	4890 B25/866	53	17.5	15.1	6.9	0%	0%	0.90	0.00	68.00	0.00	8.67	68.00	36.26	14.50

*All forces are unfactored.

Structure Information	
Supporting Structure Type:	Building
Structure Height:	57 ft
z (Mount Centerline) =	53 ft
G ₁ (Mount Gust Effect Factor) =	1.00
Risk Category:	II

Design Factors	
z _e =	1200
a =	7
K _{top} =	0.7
K _c =	0.9
K _{st} =	1
K _d =	0.95
K _s =	0.847
K _z =	N/A

QTY	Appurtenances	Wind Pressure k _z	Wind EPA (No Ice)				Design Wind Forces (lbs @ 30' Increments (No Ice))										Wind EPA (with Ice)									
			Ca Front	Ca Side	Front CaAa (ft ²)	Side CaAa (ft ²)	0	30	60	90	120	150	180	210	240	270	300	330	q _z , with ice (psf)	height factored ice thickness (in)	Ca Front (pp considering ice)	Ca Side (pp considering ice)	Ca Front (ice)	Ca Side (ice)	Front CaAa (ft ²)	Side CaAa (ft ²)
(1)	NHH-4-65C-RG-UPW-6419-G	0.824	1.267	1.361	20.27	14.24	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.000	0.262	1.264	1.353	0.732	0.777	20.54	14.48
(1)	NHH-4-65C-RG-UPW-6419-D	0.824	1.267	1.373	20.27	13.73	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.000	0.262	1.264	1.365	0.732	0.783	20.54	13.97
(1)	4490 B5/E12A	0.824	1.200	1.220	2.68	1.22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.000	0.262	1.200	1.214	0.700	0.707	2.77	1.29
(1)	4478 B14	0.824	1.200	1.200	2.02	1.25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.000	0.262	1.200	1.200	0.700	0.700	2.10	1.31
(1)	4890 B25/B66	0.824	1.200	1.202	2.20	1.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.000	0.262	1.200	1.200	0.700	0.700	2.29	1.07



Envelope Only Solution



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Stokes, James
2024723.02.86662.01

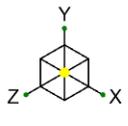
UTL04060 East American Fork

3D Rendering

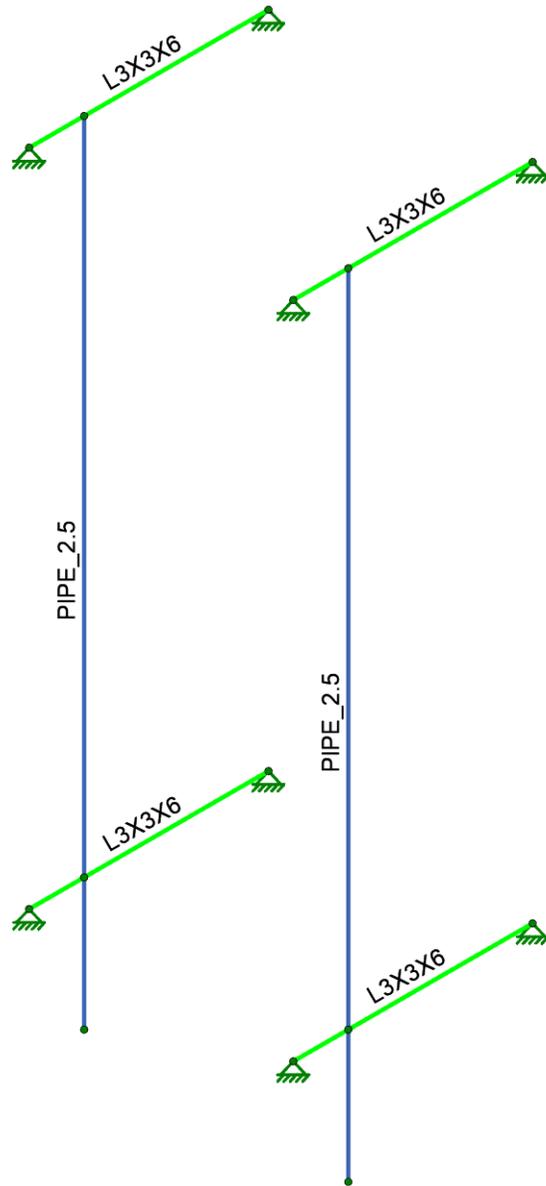
SK-1

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86662 Mounts.Loaded.r3d



Section Sets	
■	Pipe Mount
■	FRP Bracing



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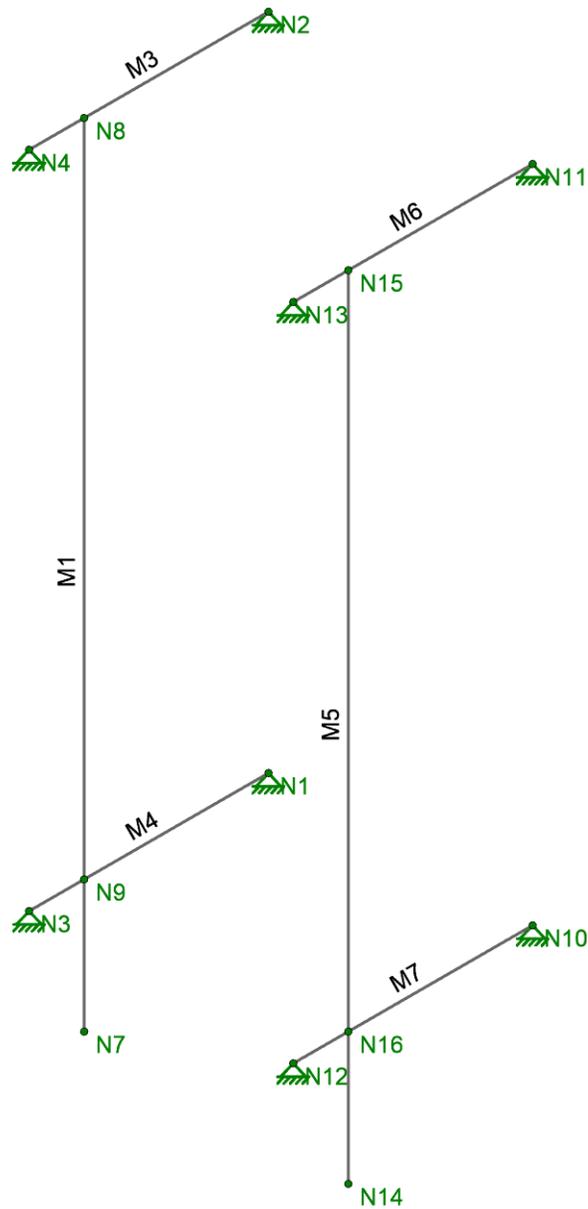
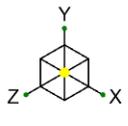


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UTL04060 East American Fork

Member Sizes

SK-2
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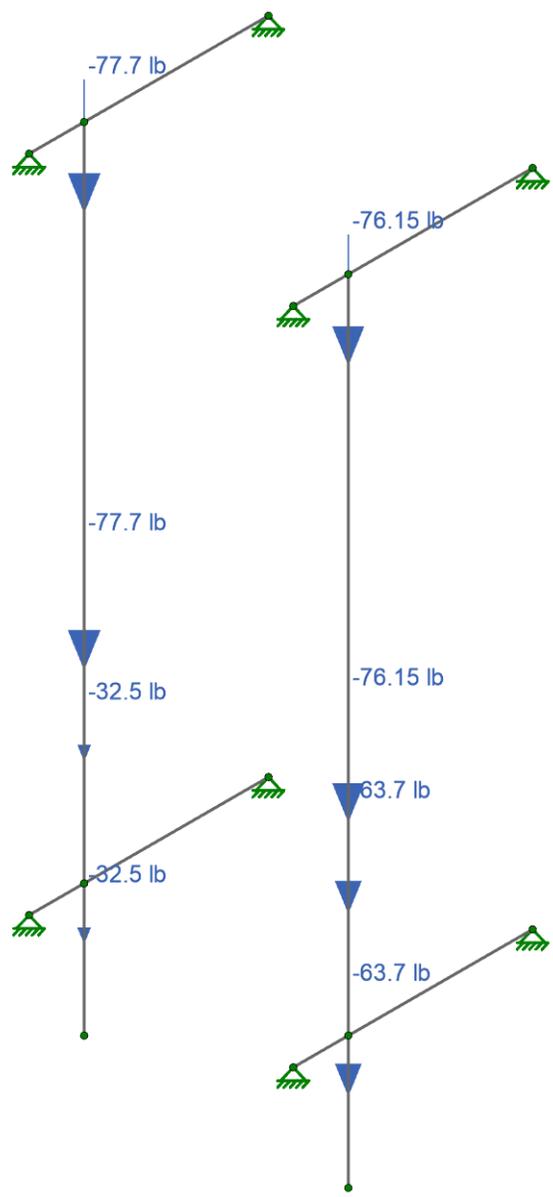
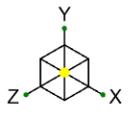
UTL04060 East American Fork

Member & Node Labels

SK-3

Jan 28, 2025 at 10:14 AM

86662 Mounts.Loaded.r3d



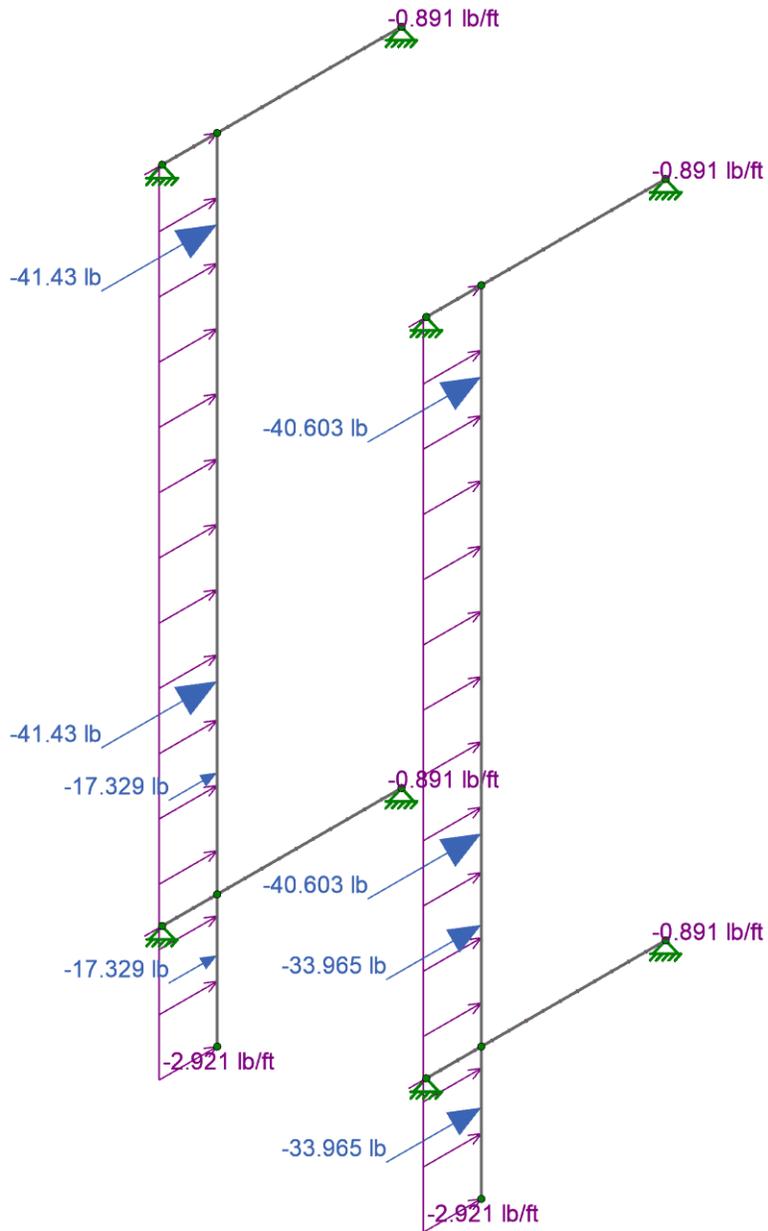
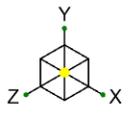
Loads: BLC 1, Dead
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UTL04060 East American Fork

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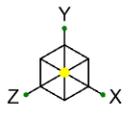
Loads: BLC 28, Seismic 0 deg
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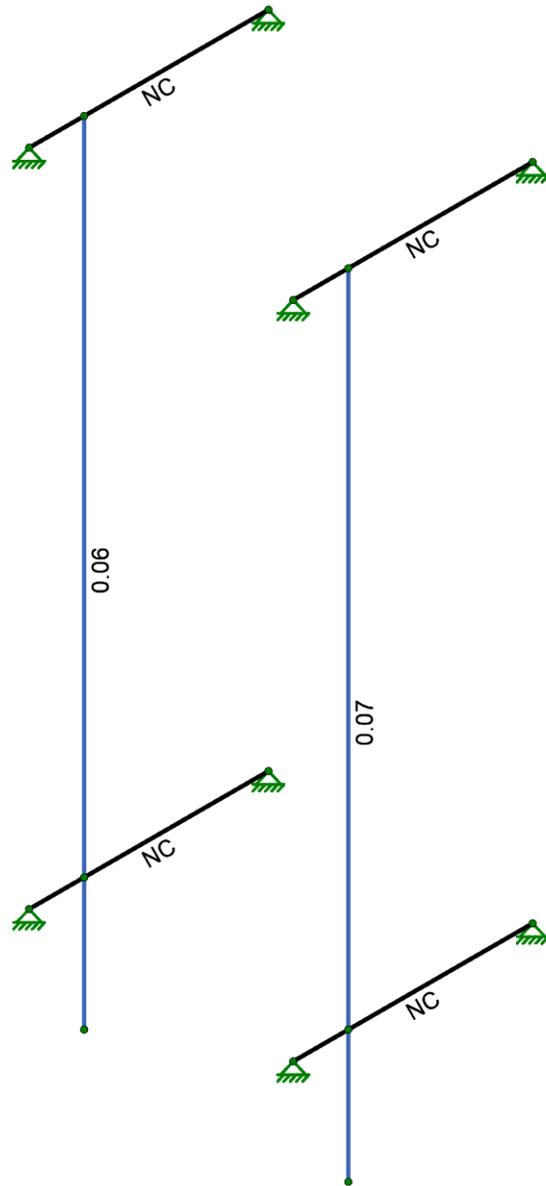
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Stokes, James
2024723.02.86662.01

UTL04060 East American Fork

SK-5
Jan 28, 2025 at 10:15 AM
86662 Mounts.Loaded.r3d



Code Check (Env)	
Black	No Calc
Red	> 1.0
Magenta	.90-1.0
Green	.75-.90
Cyan	.50-.75
Blue	0-.50



Member Code Checks Displayed (Enveloped)
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2024723.02.86662.01

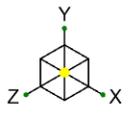
UTL04060 East American Fork

Bending Capacity

SK-6

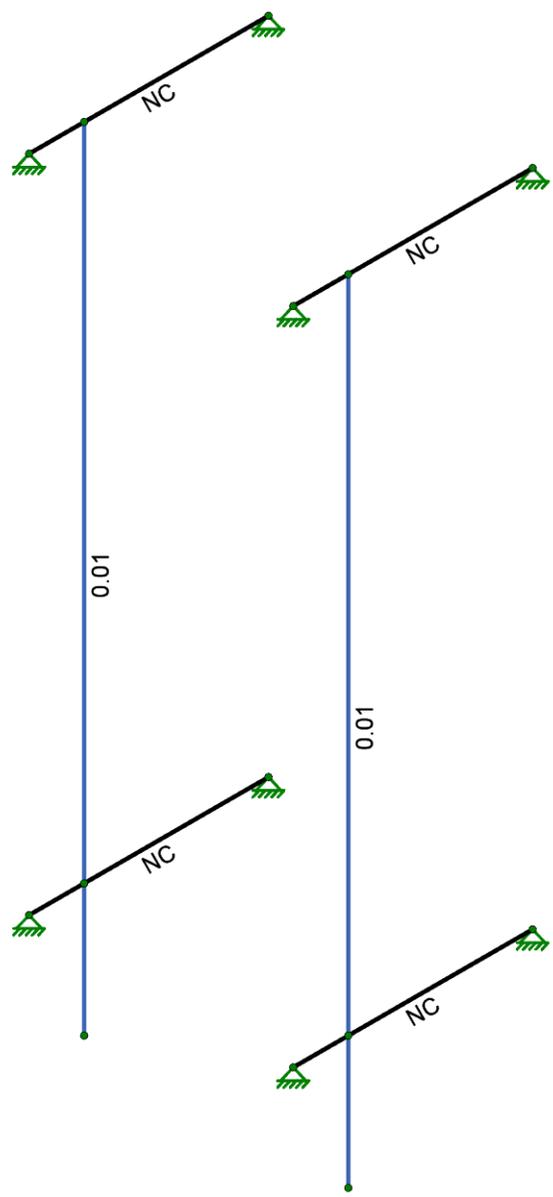
Jan 28, 2025 at 10:15 AM

86662 Mounts.Loaded.r3d



Shear Check (Env)

- No Calc
- > 1.0
- .90-1.0
- .75-.90
- .50-.75
- 0-.50



Member Shear Checks Displayed (Enveloped)
Envelope Only Solution

	GPD	UTL04060 East American Fork	SK-7
	Stokes, James		Jan 28, 2025 at 10:15 AM
	2024723.02.86662.01		Shear Capacity

Model Settings

Number of Reported Sections	10
Number of Internal Sections	100
Member Area Load Mesh Size (in ²)	144
Consider Shear Deformation	Yes
Consider Torsional Warping	Yes
Approximate Mesh Size (in)	12
Transfer Forces Between Intersecting Wood Walls	Yes
Increase Wood Wall Nailing Capacity for Wind Loads	Yes
Include P-Delta for Walls	Yes
Optimize Masonry and Wood Walls	Yes
Maximum Number of Iterations	3
Single	No
Multiple (Optimum)	Yes
Maximum	No

Global Axis corresponding to vertical direction	Y
Convert Existing Data	Yes
Default Global Plane for z-axis	XZ
Plate Local Axis Orientation	Nodal

Hot Rolled Steel	AISC 15th (360-16): LRFD
Stiffness Adjustment	Yes (Iterative)
Notional Annex	None
Connections	None
Cold Formed Steel	None
Stiffness Adjustment	Yes (Iterative)
Wood	None
Temperature	< 100F
Concrete	None
Masonry	None
Aluminum	None
Structure Type	Building
Stiffness Adjustment	Yes (Iterative)
Stainless	None
Stiffness Adjustment	Yes (Iterative)

Compression Stress Block	Rectangular Stress Block
Analyze using Cracked Sections	Yes
Leave room for horizontal rebar splices (2*d bar spacing)	Yes
List forces which were ignored for design in the Detail Report	Yes

Column Min Steel	1
Column Max Steel	8
Rebar Material Spec	ASTM A615
Warn if beam-column framing arrangement is not understood	No
Number of Shear Regions	4
Region 2 & 3 Spacing Increase Increment (in)	4

Code	None
Base Elevation (ft)	
Include the weight of the structure in base shear calcs	Yes



Company : GPD
Designer : Stokes, James
Job Number : 2024723.02.86662.01
Model Name : UTL04060 East American Fork

1/28/2025
10:15:56 AM
Checked By : _____

Model Settings (Continued)

T Z (sec)	
T X (sec)	
C Z	0.02
C X	0.02
R Z	3
R X	3

Node Boundary Conditions

	Node Label	X [k/in]	Y [k/in]	Z [k/in]
1	N4	Reaction	Reaction	Reaction
2	N3	Reaction	Reaction	Reaction
3	N1	Reaction	Reaction	Reaction
4	N2	Reaction	Reaction	Reaction
5	N10	Reaction	Reaction	Reaction
6	N11	Reaction	Reaction	Reaction
7	N12	Reaction	Reaction	Reaction
8	N13	Reaction	Reaction	Reaction

Hot Rolled Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm. Coeff. [$1e^{-5}F^{-1}$]	Density [k/ft ³]	Yield [ksi]	Ry	Fu [ksi]	Rt
1	A53 Gr. B	29000	11154	0.3	0.65	0.49	35	1.5	60	1.2
2	A36 Gr.36	29000	11154	0.3	0.65	0.49	36	1.5	58	1.2
3	A572 Gr.50	29000	11154	0.3	0.65	0.49	50	1.1	65	1.1
4	A992	29000	11154	0.3	0.65	0.49	50	1.1	65	1.1
5	A500 Gr.42	29000	11154	0.3	0.65	0.49	42	1.4	58	1.3
6	A500 Gr.46	29000	11154	0.3	0.65	0.49	46	1.4	58	1.3
7	A500 Gr. 50	29000	11154	0.3	0.65	0.49	50	1.4	62	1.3
8	FRP	2800	450	0.33	0.7	0.114	30	0	30	0

General Materials Properties

	Label	E [ksi]	G [ksi]	Nu	Therm. Coeff. [$1e^{-5}F^{-1}$]	Density [k/ft ³]	Plate Methodology
1	gen Conc3NW	3155	1372	0.15	0.6	0.145	Isotropic
2	gen Conc4NW	3644	1584	0.15	0.6	0.145	Isotropic
3	gen Conc3LW	2085	906	0.15	0.6	0.11	Isotropic
4	gen Conc4LW	2408	1047	0.15	0.6	0.11	Isotropic
5	gen Alum	10600	4077	0.3	1.29	0.173	Isotropic
6	gen Steel	29000	11154	0.3	0.65	0.49	Isotropic
7	RIGID	1e+6		0.3	0	0	Isotropic

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design Rule	Area [in ²]	Iyy [in ⁴]	Izz [in ⁴]	J [in ⁴]
1	Pipe Mount	PIPE 2.5	Column	HSS Pipe	A53 Gr. B	Typical	1.61	1.45	1.45	2.89
2	FRP Bracing	L3X3X6	None	None	FRP	Typical	2.11	1.75	1.75	0.101

General Section Sets

	Label	Shape	Type	Material	Area [in ²]	Iyy [in ⁴]	Izz [in ⁴]	J [in ⁴]
1	GEN1A	RE4X4	Beam	gen Conc3NW	16	21.333	21.333	31.573
2	RIGID		None	RIGID	1e+6	1e+6	1e+6	1e+6

Member Primary Data

	Label	I Node	J Node	Section/Shape	Type	Design List	Material	Design Rule
1	M1	N7	N8	Pipe Mount	Column	HSS Pipe	A53 Gr. B	Typical
2	M3	N2	N4	FRP Bracing	None	None	FRP	Typical
3	M4	N1	N3	FRP Bracing	None	None	FRP	Typical
4	M5	N14	N15	Pipe Mount	Column	HSS Pipe	A53 Gr. B	Typical
5	M6	N11	N13	FRP Bracing	None	None	FRP	Typical
6	M7	N10	N12	FRP Bracing	None	None	FRP	Typical

Member Advanced Data

	Label	Col-Wall Vert Release	Physical	Deflection Ratio Options	Activation	Seismic DR
1	M1		Yes	** NA **		None
2	M3		Yes	** NA **	Exclude	None
3	M4		Yes	** NA **	Exclude	None
4	M5		Yes	** NA **		None
5	M6		Yes	** NA **	Exclude	None
6	M7		Yes	** NA **	Exclude	None

Hot Rolled Steel Design Parameters

	Label	Shape	Length [in]	Lcomp top [in]	Channel Conn.	a [in]	Function
1	M1	Pipe Mount	144	Lbyy	N/A	N/A	Lateral
2	M3	FRP Bracing	43.5	Lbyy	N/A	N/A	Lateral
3	M4	FRP Bracing	43.5	Lbyy	N/A	N/A	Lateral
4	M5	Pipe Mount	144	Lbyy	N/A	N/A	Lateral
5	M6	FRP Bracing	43.5	Lbyy	N/A	N/A	Lateral
6	M7	FRP Bracing	43.5	Lbyy	N/A	N/A	Lateral

Basic Load Cases

	BLC Description	Category	Y Gravity	Point	Distributed
1	Dead	DL	-1	8	
2	No Ice Wind 0 deg	None			
3	No Ice Wind 30 deg	None			
4	No Ice Wind 60 deg	None			
5	No Ice Wind 90 deg	None			
6	No Ice Wind 120 deg	None			
7	No Ice Wind 150 deg	None			
8	No Ice Wind 180 deg	None			
9	No Ice Wind 210 deg	None			
10	No Ice Wind 240 deg	None			
11	No Ice Wind 270 deg	None			
12	No Ice Wind 300 deg	None			
13	No Ice Wind 330 deg	None			
14	Ice Weight	None		8	6
15	Ice Wind 0 deg	None			
16	Ice Wind 30 deg	None			
17	Ice Wind 60 deg	None			
18	Ice Wind 90 deg	None			
19	Ice Wind 120 deg	None			
20	Ice Wind 150 deg	None			
21	Ice Wind 180 deg	None			
22	Ice Wind 210 deg	None			
23	Ice Wind 240 deg	None			
24	Ice Wind 270 deg	None			
25	Ice Wind 300 deg	None			
26	Ice Wind 330 deg	None			
27	Vertical Seismic	None		8	6
28	Seismic 0 deg	None		8	6
29	Seismic 30 deg	None		16	12
30	Seismic 60 deg	None		16	12
31	Seismic 90 deg	None		8	6
32	Seismic 120 deg	None		16	12
33	Seismic 150 deg	None		16	12
34	Seismic 180 deg	None		8	6



Basic Load Cases (Continued)

	BLC Description	Category	Y Gravity	Point	Distributed
35	Seismic 210 deg	None		16	12
36	Seismic 240 deg	None		16	12
37	Seismic 270 deg	None		8	6
38	Seismic 300 deg	None		16	12
39	Seismic 330 deg	None		16	12

Load Combinations

	Description	Solve	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor
1	1.4 Dead	Yes	Y	1	1.4				
2	1.2 Dead + 1.0 Wind @ 0° - No Ice	Yes	Y	1	1.2	2	1		
3	0.9 Dead + 1.0 Wind @ 0° - No Ice	Yes	Y	1	0.9	2	1		
4	1.2 Dead + 1.0 Wind @ 30° - No Ice	Yes	Y	1	1.2	3	1		
5	0.9 Dead + 1.0 Wind @ 30° - No Ice	Yes	Y	1	0.9	3	1		
6	1.2 Dead + 1.0 Wind @ 60° - No Ice	Yes	Y	1	1.2	4	1		
7	0.9 Dead + 1.0 Wind @ 60° - No Ice	Yes	Y	1	0.9	4	1		
8	1.2 Dead + 1.0 Wind @ 90° - No Ice	Yes	Y	1	1.2	5	1		
9	0.9 Dead + 1.0 Wind @ 90° - No Ice	Yes	Y	1	0.9	5	1		
10	1.2 Dead + 1.0 Wind @ 120° - No Ice	Yes	Y	1	1.2	6	1		
11	0.9 Dead + 1.0 Wind @ 120° - No Ice	Yes	Y	1	0.9	6	1		
12	1.2 Dead + 1.0 Wind @ 150° - No Ice	Yes	Y	1	1.2	7	1		
13	0.9 Dead + 1.0 Wind @ 150° - No Ice	Yes	Y	1	0.9	7	1		
14	1.2 Dead + 1.0 Wind @ 180° - No Ice	Yes	Y	1	1.2	8	1		
15	0.9 Dead + 1.0 Wind @ 180° - No Ice	Yes	Y	1	0.9	8	1		
16	1.2 Dead + 1.0 Wind @ 210° - No Ice	Yes	Y	1	1.2	9	1		
17	0.9 Dead + 1.0 Wind @ 210° - No Ice	Yes	Y	1	0.9	9	1		
18	1.2 Dead + 1.0 Wind @ 240° - No Ice	Yes	Y	1	1.2	10	1		
19	0.9 Dead + 1.0 Wind @ 240° - No Ice	Yes	Y	1	0.9	10	1		
20	1.2 Dead + 1.0 Wind @ 270° - No Ice	Yes	Y	1	1.2	11	1		
21	0.9 Dead + 1.0 Wind @ 270° - No Ice	Yes	Y	1	0.9	11	1		
22	1.2 Dead + 1.0 Wind @ 300° - No Ice	Yes	Y	1	1.2	12	1		
23	0.9 Dead + 1.0 Wind @ 300° - No Ice	Yes	Y	1	0.9	12	1		
24	1.2 Dead + 1.0 Wind @ 330° - No Ice	Yes	Y	1	1.2	13	1		
25	0.9 Dead + 1.0 Wind @ 330° - No Ice	Yes	Y	1	0.9	13	1		
26	1.2 Dead + 1.0 Ice Wind @ 0° + 1.0 Ice	Yes	Y	1	1.2	15	1	14	1
27	1.2 Dead + 1.0 Ice Wind @ 30° + 1.0 Ice	Yes	Y	1	1.2	16	1	14	1
28	1.2 Dead + 1.0 Ice Wind @ 60° + 1.0 Ice	Yes	Y	1	1.2	17	1	14	1
29	1.2 Dead + 1.0 Ice Wind @ 90° + 1.0 Ice	Yes	Y	1	1.2	18	1	14	1
30	1.2 Dead + 1.0 Ice Wind @ 120° + 1.0 Ice	Yes	Y	1	1.2	19	1	14	1
31	1.2 Dead + 1.0 Ice Wind @ 150° + 1.0 Ice	Yes	Y	1	1.2	20	1	14	1
32	1.2 Dead + 1.0 Ice Wind @ 180° + 1.0 Ice	Yes	Y	1	1.2	21	1	14	1
33	1.2 Dead + 1.0 Ice Wind @ 210° + 1.0 Ice	Yes	Y	1	1.2	22	1	14	1
34	1.2 Dead + 1.0 Ice Wind @ 240° + 1.0 Ice	Yes	Y	1	1.2	23	1	14	1
35	1.2 Dead + 1.0 Ice Wind @ 270° + 1.0 Ice	Yes	Y	1	1.2	24	1	14	1
36	1.2 Dead + 1.0 Ice Wind @ 300° + 1.0 Ice	Yes	Y	1	1.2	25	1	14	1
37	1.2 Dead + 1.0 Ice Wind @ 330° + 1.0 Ice	Yes	Y	1	1.2	26	1	14	1
38	1.2 Dead + 1.0 Seismic V + 1.0 Seismic H @ 0°	Yes	Y	1	1.2	27	1	28	1
39	0.9 Dead - 1.0 Seismic V + 1.0 Seismic H @ 0°	Yes	Y	1	0.9	27	-1	28	1
40	1.2 Dead + 1.0 Seismic V + 1.0 Seismic H @ 30°	Yes	Y	1	1.2	27	1	29	1
41	0.9 Dead - 1.0 Seismic V + 1.0 Seismic H @ 30°	Yes	Y	1	0.9	27	-1	29	1
42	1.2 Dead + 1.0 Seismic V + 1.0 Seismic H @ 60°	Yes	Y	1	1.2	27	1	30	1
43	0.9 Dead - 1.0 Seismic V + 1.0 Seismic H @ 60°	Yes	Y	1	0.9	27	-1	30	1
44	1.2 Dead + 1.0 Seismic V + 1.0 Seismic H @ 90°	Yes	Y	1	1.2	27	1	31	1
45	0.9 Dead - 1.0 Seismic V + 1.0 Seismic H @ 90°	Yes	Y	1	0.9	27	-1	31	1
46	1.2 Dead + 1.0 Seismic V + 1.0 Seismic H @ 120°	Yes	Y	1	1.2	27	1	32	1
47	0.9 Dead - 1.0 Seismic V + 1.0 Seismic H @ 120°	Yes	Y	1	0.9	27	-1	32	1

Load Combinations (Continued)

	Description	Solve	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor
48	1.2 Dead + 1.0 Seismic V + 1.0 Seismic H @ 150°	Yes	Y	1	1.2	27	1	33	1
49	0.9 Dead - 1.0 Seismic V + 1.0 Seismic H @ 150°	Yes	Y	1	0.9	27	-1	33	1
50	1.2 Dead + 1.0 Seismic V + 1.0 Seismic H @ 180°	Yes	Y	1	1.2	27	1	34	1
51	0.9 Dead - 1.0 Seismic V + 1.0 Seismic H @ 180°	Yes	Y	1	0.9	27	-1	34	1
52	1.2 Dead + 1.0 Seismic V + 1.0 Seismic H @ 210°	Yes	Y	1	1.2	27	1	35	1
53	0.9 Dead - 1.0 Seismic V + 1.0 Seismic H @ 210°	Yes	Y	1	0.9	27	-1	35	1
54	1.2 Dead + 1.0 Seismic V + 1.0 Seismic H @ 240°	Yes	Y	1	1.2	27	1	36	1
55	0.9 Dead - 1.0 Seismic V + 1.0 Seismic H @ 240°	Yes	Y	1	0.9	27	-1	36	1
56	1.2 Dead + 1.0 Seismic V + 1.0 Seismic H @ 270°	Yes	Y	1	1.2	27	1	37	1
57	0.9 Dead - 1.0 Seismic V + 1.0 Seismic H @ 270°	Yes	Y	1	0.9	27	-1	37	1
58	1.2 Dead + 1.0 Seismic V + 1.0 Seismic H @ 300°	Yes	Y	1	1.2	27	1	38	1
59	0.9 Dead - 1.0 Seismic V + 1.0 Seismic H @ 300°	Yes	Y	1	0.9	27	-1	38	1
60	1.2 Dead + 1.0 Seismic V + 1.0 Seismic H @ 330°	Yes	Y	1	1.2	27	1	39	1
61	0.9 Dead - 1.0 Seismic V + 1.0 Seismic H @ 330°	Yes	Y	1	0.9	27	-1	39	1

Envelope Node Reactions

Node Label	X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC		
1	N4	max	49.304	57	241.23	38	69.734	38	0	61	0	61	0	61
2		min	-49.31	44	47.601	51	-41.121	51	0	1	0	1	0	1
3	N3	max	71.423	56	241.368	50	60.88	39	0	61	0	61	0	61
4		min	-71.419	45	47.784	39	-89.522	50	0	1	0	1	0	1
5	N1	max	20.921	56	27.036	58	19.306	39	0	61	0	61	0	61
6		min	-20.931	44	-2.867	47	-27.856	50	0	1	0	1	0	1
7	N2	max	17.387	57	25.078	54	21.949	38	0	61	0	61	0	61
8		min	-17.385	45	-0.964	43	-13.408	51	0	1	0	1	0	1
9	N10	max	26.686	56	32.452	58	25.942	39	0	61	0	61	0	61
10		min	-26.69	44	-4.148	47	-36.195	50	0	1	0	1	0	1
11	N11	max	18.897	57	28.061	54	23.168	38	0	61	0	61	0	61
12		min	-18.901	45	0.105	43	-12.928	51	0	1	0	1	0	1
13	N12	max	96.912	57	282.372	50	83.11	39	0	61	0	61	0	61
14		min	-96.911	45	65.218	39	-117.457	50	0	1	0	1	0	1
15	N13	max	48.162	57	284.937	40	73.817	38	0	61	0	61	0	61
16		min	-48.163	44	61.681	53	-39.513	51	0	1	0	1	0	1
17	Totals:	max	349.678	57	1003.032	37	349.678	38						
18		min	-349.678	44	450.369	57	-349.678	51						

Envelope AISC 15TH (360-16): LRFD Member Steel Code Checks

Member	Shape	Code	Check	Loc[in]	LC	Shear	Check	Loc[in]	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y-y [k-ft]	phi*Mn z-z [k-ft]	Cb	Eqn
1	M1	PIPE 2.5	0.061	24.727	48	0.009	144	40	15797.3	50715	3.596	3.596	1	H1-1b	
2	M5	PIPE 2.5	0.072	24.727	48	0.011	24.727	52	15797.3	50715	3.596	3.596	1	H1-1b	



L3x3x3/8 - Member Properties

Outside Width of Leg in Compression, b	3 in.	
Angle Leg Thickness, t	0.375 in.	
Section Modulus, S_x	0.825 in. ³	
Area, A_g	2.11 in. ²	
Radius of Gyration, r_x	0.581 in.	
Member Length, L	4 Ft.	
Effective Length Factor, K	1.0	2.5.2

Member Material Properties

Characteristic value of the longitudinal compression elastic modulus, E_L	3,000,000 PSI
Characteristic value of the in-plane shear modulus of flange or web, G_{LT}	450,000 PSI

Compression Checks - 4.4.3 - Single Angle Sections with Equal Angles

Limit State #: (1)		
Effective Slenderness Ratio, KL/r	82.6	
Critical Stress, F_{cr}	4,338 PSI	(4-13)
Phi, ϕ	0.70	
Factored Critical Stress, ΦF_{cr}	3,037 PSI	
Limit State #: (2)		
Torsional Buckling Stress, F_{crn}	7,031 PSI	(4-14)
Phi, ϕ	0.80	
Factored Torsional Buckling Stress, ΦF_{crn}	5,625 PSI	

Ultimate Strength

Time Effect Factor, λ	1.0	Table 2-1
Ultimate Strength, ΦP_n	6,407 Lbs.	

Unity Check

Applied Load		
Axial Load	118 Lbs.	SS14
Moment	195 Lbs.*Ft.	SS14

Capacities

Axial Capacity	1.8%
Moment Capacity	50.4%
Unity Check	52.3% Pass

Bending Checks - 5.2.3.5 - Square and Rectangular Tube Sections

Local Buckling Stress of Comp. Flange, F_{cr}	7,031 PSI	(5-10)
Phi, ϕ	0.80	5.2.3
Factored Stress, ΦF_{cr}	5,625 PSI	

Ultimate Strength

Time Effect Factor, λ	1.0	Table 2-1
Ultimate Strength, ΦM_n	387 Lbs.*Ft.	



UTL04060 East American Fork
2024723.02.86662.01
Strongwell FRP Bolts

STRONGWELL FIBERGLASS BOLTS				
Ultimate Load (lb)				
Diam	1 Nut	2 Nut	Single	Double
0.375	1,050	1,470	1,600	3,000
0.5	2,000	2,800	2,600	5,000
0.625	3,100	4,340	3,800	7,500
0.75	4,500	6,300	6,200	12,000
1	6,500	9,700	15,000	22,000
Recommended Safety Factor (Connections) =				3

Capacity Summary	
FRP Angle Bolts	68.8%
Max Capacity	68.8%

Allowable Bearing	Thickness of FRP				
	1/4"	3/8"	1/2"	3/4"	1"
Diam	1/4"	3/8"	1/2"	3/4"	1"
0.375	352	703	1,055	1,406	2109
0.5	469	938	1,406	1,875	2812
0.625	586	1,172	1,758	2,344	3516
0.75	703	1,406	2,109	2,812	4219
1	938	1,875	2,812	3,750	5625

FRP Bolts for FRP Angle Bolts		
Bolt Diameter	0.5	in
# Nuts	1 Nut	
Shear Planes	Single	
Thickness of FRP	1/4"	in
Ultimate Tension	2,000	lb / bolt
Ultimate Shear	2,600	lb / bolt
Allowable Tension	667	lb / bolt
Allowable Shear	867	lb / bolt
Allowable Bearing	469	lb / bolt
Tu	241	lb / bolt
Vu	153	lb / bolt
Interaction Tension	241	lb / bolt
Tension Capacity	36.2%	
Shear Capacity	32.6%	
Interaction Capacity	68.8%	
Max Capacity	68.8%	

FRP Bolts for		
Bolt Diameter	0.75	in
# Nuts	1 Nut	
Shear Planes	Double	
Thickness of FRP	3/8"	in
Ultimate Tension	4,500	lb / bolt
Ultimate Shear	12,000	lb / bolt
Allowable Tension	1,500	lb / bolt
Allowable Shear	4,000	lb / bolt
Allowable Bearing	2,812	lb / bolt
Tu		lb / bolt
Vu		lb / bolt
Interaction Tension		lb / bolt
Tension Capacity	0.0%	
Shear Capacity	0.0%	
Interaction Capacity	0.0%	
Max Capacity	0.0%	

FRP Bolts for		
Bolt Diameter	0.75	in
# Nuts	1 Nut	
Shear Planes	Single	
Thickness of FRP	1/2"	in
Ultimate Tension	4,500	lb / bolt
Ultimate Shear	6,200	lb / bolt
Allowable Tension	1,500	lb / bolt
Allowable Shear	2,067	lb / bolt
Allowable Bearing	2,109	lb / bolt
Tu		lb / bolt
Vu		lb / bolt
Interaction Tension		lb / bolt
Tension Capacity	0.0%	
Shear Capacity	0.0%	
Interaction Capacity	0.0%	
Max Capacity	0.0%	

FRP Bolts for		
Bolt Diameter	0.75	in
# Nuts	1 Nut	
Shear Planes	Double	
Thickness of FRP	1/2"	in
Ultimate Tension	4,500	lb / bolt
Ultimate Shear	12,000	lb / bolt
Allowable Tension	1,500	lb / bolt
Allowable Shear	4,000	lb / bolt
Allowable Bearing	4,218	lb / bolt
Tu		lb / bolt
Vu		lb / bolt
Interaction Tension		lb / bolt
Tension Capacity	0.0%	
Shear Capacity	0.0%	
Interaction Capacity	0.0%	
Max Capacity	0.0%	

APPENDIX C

Modification Design Drawings

GENERAL

1. THE MI IS AN ON-SITE VISUAL CONSTRUCTION REPORTS AND (GC) AS WELL AS ANY IN SPEC INSTALLATION WAS CONSTRUCTED APPLICABLE INDUSTRY STANDARDS.
2. NO DOCUMENT, CODE OR POLICY IS INTENDED TO SERVE AS A INSPECTION.
3. THE MI IS TO CONFIRM INSTA MODIFICATION DESIGN ITSELF. THE MI INSPECTOR SHALL INSP OWNER AND EOR FOR EVALUATION.
4. TO ENSURE THAT THE REQUIR CONTRACTOR (GC) AND THE PAYMENT IS RECEIVED. IT IS PARTY. CONTACT LISTED ON T IS NOT KNOWN.

FAILING INSPECTION

1. IF THE MODIFICATION (INSTA INSPECTION"), THE GC SHALL W
 - CORRECT FAILING ISSUES MODIFICATION DRAWINGS AN OR, WITH STRUCTURE OWN RE-ANALYZE THE MODIFICAT

SERVICE LEVEL COMMIT

1. THE FOLLOWING RECOMMEN EFFECTIVENESS OF DELIVERING
 - THE GC SHALL PROVIDE A M AS TO WHEN THE SITE WILL
 - THE GC AND MI INSPECTOR
 - WHEN POSSIBLE, IT IS PREP ANY GUY WIRE TENSIONING
 - WHEN POSSIBLE, IT IS PREP ANY MINOR DEFICIENCIES COORDINATE THE MI CAREFER THE MI INSPECTOR IS ON SITE
 - IT MAY BE BENEFICIAL TO FOUNDATION INSPECTIONS WITH ONE SITE VISIT.

REQUIRED PHOTOS

1. BETWEEN THE GC AND THE MI INCLUDED IN THE MI REPORT:
 - PRE-CONSTRUCTION GENER PHOTOGRAPHS DURING THE
 - RAW MATERIALS
 - PHOTOS OF ALL CRIT
 - FOUNDATION MODIFICATI
 - WELD PREPARATION
 - BOLT INSTALLATION
 - FINAL INSTALLED CON
 - SURFACE COATING R
 - POST CONSTRUCTION PHOTO
 - FINAL INFIELD CONDI
 - ANY OTHER PHOTOS DEEM
2. PHOTOS OF ELEVATED MODIFIC

MODIFICATION INSPECTION CHECKLIST		
REQUIRED	REPORT ITEM	BRIEF DESCRIPTION
PRE-CONSTRUCTION		
X	MI CHECKLIST DRAWING	THIS CHECKLIST SERVES AS A GUIDELINE FOR THE REQUIRED CONSTRUCTION DOCUMENTS AND INSPECTIONS FOR THIS MODIFICATION
X	EOR APPROVED SHOP DRAWINGS	PRIOR TO FABRICATION, THE CONTRACTOR SHALL PROVIDE DETAILED ASSEMBLY DRAWINGS AND/OR SHOP DRAWINGS TO THE EOR FOR APPROVAL.
X	FABRICATION INSPECTION	A LETTER FROM THE FABRICATOR STATING THAT ALL FABRICATION (I.E. DRILLING, CUTTING, WELDING, SHEARING, MILLING, GALVANIZING, ETC) HAS BEEN DONE ACCORDING TO INDUSTRY STANDARDS AND ALL APPLICABLE ANSII/ASTM STANDARDS.
NA	FABRICATOR CERTIFIED WELD INSPECTION	A CWI SHALL INSPECT ALL FABRICATION WELDS IN ACCORDANCE WITH AWS D1.1 AND A REPORT DETAILING THE RESULTS SHALL BE PROVIDED TO THE MI INSPECTOR FOR INCLUSION IN THE MI REPORT.
X	MATERIAL TEST REPORTS (MTR)	MATERIAL TEST REPORTS SHALL BE PROVIDED FOR ALL MATERIAL USED. MTRS SHALL BE PROVIDED TO THE MI INSPECTOR FOR INCLUSION IN THE MI REPORT.
	FABRICATOR NDE INSPECTION REPORT	CRITICAL SHOP WELDS THAT REQUIRE ADDITIONAL TESTING ARE NOTED WITHIN THE MODIFICATION DRAWINGS. A CERTIFIED NDT INSPECTOR SHALL PERFORM NON-DESTRUCTIVE EXAMINATION ON ALL PJP, CJP, AND FILLET WELDS >5/16" IN ACCORDANCE WITH AWS D1.1 AND A REPORT DETAILING THE RESULTS SHALL BE PROVIDED TO THE MI INSPECTOR FOR INCLUSION IN THE MI REPORT.
	NDE OF MONOPOLE BASE PLATE	A NDE OF THE POLE TO BASE PLATE CONNECTION IS REQUIRED AND A WRITTEN REPORT SHALL BE PROVIDED TO THE MI INSPECTOR FOR INCLUSION IN THE MI REPORT.
	PACKING SLIPS	PACKING/SHIPPING LIST FOR ALL MATERIAL USED DURING CONSTRUCTION OF THE MODIFICATION SHALL BE PROVIDED.
DURING CONSTRUCTION		
	PRE-POUR REBAR INSPECTIONS	A 3 RD PARTY VISUAL OBSERVATION OF THE EXCAVATION AND REBAR SHALL BE PERFORMED BEFORE PLACING THE CONCRETE. A WRITTEN REPORT SHALL BE PROVIDED TO THE MI INSPECTOR FOR INCLUSION IN THE MI REPORT.
	ALLIED REBAR AND/OR DOWEL INSPECTIONS	PHOTOGRAPHIC DOCUMENTATION OF DRILL HOLE SIZES AND DEPTHS SHALL BE RECORDED BEFORE SETTING THE POST INSTALLED REBAR AND DOWELS WITH EPOXY/GROUT.
	RETE COMP. STRENGTH & SLUMP TEST	THE CONCRETE MIX DESIGN, SLUMP TEST, AND COMPRESSIVE STRENGTH TESTS SHALL BE PROVIDED AS PART OF THE MI REPORT.
NA	EARTHWORK: LIFT & DENSITY REPORT	REPORT DETAILING SOIL COMPACTION TEST RESULTS TO BE INCLUDED IN THE MI REPORT.
NA	MICROPILE/ROCK ANCHOR	MICROPILES AND ROCK ANCHORS SHALL BE INSPECTED BY A 3 RD PARTY. INSPECTION SHALL VERIFY ANCHOR SIZE, STEEL GRADE, AND HOLE DEPTHS. PHOTOGRAPHIC DOCUMENTATION OF ALL MEASUREMENTS ALONG WITH THE PULL TEST RESULTS SHALL BE INCLUDED IN THE MI REPORT.
NA	HELICAL ANCHOR	HELICAL INSTALLER SHALL SUBMIT FINAL SEALED HELICALS DESIGN, TORQUE LOGS, AND FINAL LOAD TEST RESULTS TO BE INCLUDED IN THE MODIFICATION INSPECTION REPORT.
NA	POST-INSTALLED ANCHOR ROD VERIFICATION	POST INSTALLED ANCHOR ROD VERIFICATION SHALL BE PERFORMED AND SHALL INCLUDE PHOTO VERIFICATION OF HOLE DEPTH, HOLE CLEANOUT AND ROUGHENING, AND EPOXY LABELING. REPORT SHALL BE PROVIDED TO THE MI INSPECTOR FOR INCLUSION IN THE MI REPORT.
NA	3 RD PARTY FIELD CERTIFIED WELD INSPECTION	A CWI SHALL CONDUCT A VISUAL INSPECTION OF ALL FIELD WELDS IN ACCORDANCE WITH AWS D1.1. CRITICAL WELDS THAT REQUIRE ADDITIONAL TESTING ARE NOTED IN THE MODIFICATION DRAWINGS.
X	ON-SITE COLD GALVANIZING VERIFICATION	THE GENERAL CONTRACTOR SHALL PROVIDE WRITTEN AND PHOTOGRAPHIC DOCUMENTATION TO THE MI INSPECTOR VERIFYING THAT ANY ON-SITE COLD GALVANIZING WAS APPLIED PER MANUFACTURER SPECIFICATIONS.
NA	TENSION TWIST & PLUMB DELIVERABLES	THE GENERAL CONTRACTOR SHALL PROVIDE WRITTEN AND PHOTOGRAPHIC DOCUMENTATION TO THE MI INSPECTOR VERIFYING THE STRUCTURE TWIST AND PLUMB CONDITION AS WELL AS THE WIRE TENSIONS (AS REQUIRED). REPORT SHALL INCLUDE PRE-TENSION, PLUMB & TWIST RESULTS, POST-TENSION REPORT, POST PLUMB AND TWIST REPORT, AND PHOTOS OF THE TENSION GAUGES FOR ALL GUY WIRES.
X	GC AS-BUILT DRAWINGS	THE GENERAL CONTRACTOR SHALL SUBMIT A LEGIBLE COPY OF THE ORIGINAL DESIGN DRAWINGS EITHER STATING "INSTALLED AS DESIGNED" OR NOTING ANY CHANGES THAT WERE REQUIRED AND APPROVED BY THE ENGINEER OF RECORD. EOR/RFI FORMS APPROVING ALL CHANGES SHALL BE SUBMITTED.
NA	BOLT PRE-TENSION VERIFICATION	TURN-OF-THE NUT METHOD IS THE DEFAULT METHOD FOR PRE-TENSIONING BOLTS. MATCH-MARKINGS SHALL BE PRESENT ON EACH FASTENER FOR INSPECTION PURPOSES AND SHALL BE APPLIED IN ACCORDANCE WITH THE REQUIREMENTS OF THE RCSC SPECIFICATION. ALTERNATIVE PRE-TENSIONING METHODS ARE NOT ALLOWED WITHOUT PRIOR EOR CONSENT.
ADDITIONAL TESTING AND INSPECTIONS:		
NA	MECHANICAL ANCHOR VERIFICATION	INSTALLATION TORQUE SHALL BE VERIFIED FOR THE POST INSTALLED ANCHORS. A REPORT SHALL BE PROVIDED FOR INCLUSION IN THE MI INDICATING RESULTS.
POST-CONSTRUCTION		
X	CONSTRUCTION COMPACTION LETTER	A LETTER FROM THE GENERAL CONTRACTOR STATING THAT THE WORKMANSHIP WAS PERFORMED IN ACCORDANCE WITH ALL INDUSTRY STANDARDS AND THESE MODIFICATION DRAWINGS INCLUDING LISTING ADDITIONAL PARTIES TO THE MODIFICATION PROCESS.

Fix the scaling/page size of the modification design drawings so they are legible

GENERAL NOTES

- THIS DESIGN IS IN ACCORDANCE WITH THE GOVERNING PROVISIONS OF ALL LOCALLY ADOPTED BUILDING CODES, MATERIALS, FABRICATION, INSTALLATION, AND ALL OTHER SERVICES PROVIDED BY THE CONTRACTOR SHALL CONFORM TO THE ABOVE MENTIONED CODES AND THE CONTRACT SPECIFICATIONS.
- THIS DESIGN ASSUMES THE EXISTING STRUCTURE HAS BEEN WELL MAINTAINED, IS IN GOOD CONDITION, AND IS WITHOUT DEFECT. BENT MEMBERS, CORRODED MEMBERS, LOOSE BOLTS, CRACKED WELDS, AND OTHER MEMBER DEFECTS HAVE NOT BEEN CONSIDERED. THIS DESIGN IS BEING PROVIDED WITHOUT THE BENEFIT OF A CONDITION ASSESSMENT BY GPD.
- THE CONTRACTOR SHALL VISIT THE SITE PRIOR TO BIDDING. ANY PROBLEMS WITH ACCESS, INTERFERENCE, ETC. SHALL BE RESOLVED PRIOR TO MOBILIZATION. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS AND NOTE ANY EXISTING CONDITIONS THAT ARE NOT REPRESENTED ON THESE DRAWINGS OR THAT INTERFERE WITH THE CONTINUOUS INSTALLATION OF THE MODIFICATIONS. CONTRACTOR SHALL NOTE ALL ATTACHMENT POINTS, APERTURES, MOUNTS, CORNERS, LIGHTING, CLIMBING SURFACES, STEP BOLTS, PORT HOLES, AND ANY OTHER APERTURES IN THE REGION OF THE MODIFICATIONS. GPD SHALL BE CONTACTED IMMEDIATELY TO EVALUATE THE SIGNIFICANCE OF ANY DEVIATION PRIOR TO ORDERING MATERIAL.
- ALL MATERIAL SPECIFIED FOR THIS PROJECT MUST BE NEW AND FREE OF ANY DEFECTS. ANY MATERIAL SUBSTITUTIONS INCLUDING BUT NOT LIMITED TO ALTERED SIZES AND/OR STRENGTHS MUST BE REVIEWED BY THE OWNER AND ENGINEER. CONTRACTOR SHALL PROVIDE DOCUMENTATION TO ENGINEER FOR DETERMINING IF SUBSTITUTE IS SUITABLE FOR USE AND MEETS THE ORIGINAL DESIGN CRITERIA DIFFERENCES FROM THE ORIGINAL DESIGN, INCLUDING MAINTENANCE, REPAIR AND REPLACEMENT SHALL BE NOTED. ESTIMATES OF COSTS/CREDITS ASSOCIATED WITH THE SUBSTITUTION (INCLUDING RE-DESIGN COSTS AND COSTS TO SUB-CONTRACTORS) SHALL BE PROVIDED TO THE ENGINEER.
- CONTRACTOR IS RESPONSIBLE FOR ENGAGING A MODIFICATION INSPECTOR AT THE TIME OF AWARD TO COORDINATE AN INSPECTION SCHEDULE AND ENSURE PROPER DOCUMENTATION IS RETAINED THROUGHOUT THE PROJECT.
- IF LESS OTHERWISE SPECIFIED WITHIN THE PLANS OR REQUIRED BY THE BUILDING CODES AND TESTS ARE NOT REQUIRED FOR GROUP U OCCUPANCIES, BUT NOT IN SECTION 312.1 (BC SECTION 1704.2 EXEMPTION 2), THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING SPECIAL INSPECTIONS REQUIRED BY THE JURISDICTION HAVING JURISDICTION OVER THE PROJECT. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY SPECIAL INSPECTIONS WITH THE ENGINEER'S RECORD. IN THOSE INSTANCES WHERE SPECIAL INSPECTIONS ARE REQUIRED, APPROVALS MUST BE COMPLETED PRIOR TO FINAL INSPECTION APPROVAL.
- PROPOSED LOADING IS BY OTHERS AND IS BEYOND THE SCOPE OF THESE DRAWINGS.
- OWNER TIER CONTRACTORS MUST ACKNOWLEDGE IN WRITING TO THE OWNER AND TAINED, UNDERSTAND, AND WILL FOLLOW THE OWNER STANDARDS OF PRACTICE, RES, ALL SITE AND TOWER SAFETY PROCEDURES, ALL PRODUCT LIMITATIONS AND RES, USED ON SITE, AND PROPOSED MODIFICATIONS DESCRIBED, RECEIPT OF WHICH OCCUR PRIOR TO BEGINNING CONSTRUCTION. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO OBTAIN ALL NECESSARY PERMITS AND APPROVALS FROM THE LOCAL JURISDICTION. THIS DOCUMENTATION FOR THE OWNER AND GPD ON COMPANY LETTERHEAD AND MUST BE SUBMITTED TO THE GENERAL CONTRACTOR TO OBTAIN THIS DOCUMENTATION FROM LOWER TIER CONTRACTORS (CONTRACTOR LETTERHEAD) AND DELIVER IT TO THE OWNER AND GPD.
- STRUCTURAL MODIFICATION WORK SPECIFIED ON THESE PLANS SHALL BE ACCOMPLISHED BY KNOWLEDGEABLE WORKMEN WITH CONSTRUCTION EXPERIENCE. THE CONTRACTOR SHALL SUBMIT CERTIFICATIONS TO THE OWNER.
- CONTRACTOR SHALL PERFORM ALL WORK IN SUCH A MANNER AS TO PROTECT THE EXISTING AND ADJACENT STRUCTURES AND SHALL BE RESPONSIBLE TO PROPERLY REPAIR ANY DAMAGE THAT OCCURS AS A RESULT OF THE WORK.
- CEASE OPERATIONS AND NOTIFY OWNER AND ENGINEER IMMEDIATELY IF THE SAFETY OR INTEGRITY OF THE STRUCTURE APPEARS TO BE ENDANGERED. PROPERLY BRACE AND SUPPORT STRUCTURE BEFORE RESUMING OPERATIONS.
- DO NOT CUT OR ALTER ANY STRUCTURAL MEMBERS WITHOUT WRITTEN AUTHORIZATION OF THE ENGINEER UNLESS INDICATED ON THE STRUCTURAL DRAWINGS.
- THESE DRAWINGS DO NOT INDICATE THE METHOD OF CONSTRUCTION. ANY TECHNIQUES OR PROCEDURES IMPLIED BY THESE DRAWINGS ARE SCHEMATIC IN NATURE AND ARE SUGGESTIONS ONLY. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK AND SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION METHODS, MEANS, TECHNIQUES, SEQUENCES, AND PROCEDURES.
- THE CONTRACTOR AND ALL SUB-CONTRACTORS SHALL BE RESPONSIBLE FOR THE SAFETY OF THEIR WORK FORCE, THE WORK AREA, ADJACENT AREA, AND ANY PROPERTY OCCUPANTS WHO MAY BE AFFECTED BY THE WORK. UNDER CONTRACT, THE CONTRACTOR SHALL REVIEW AND ABIDE BY ALL OWNER, PRIME CONTRACTOR, CARPENTER, AND LOCAL SAFETY, AND OSHA REGULATIONS AND WORKERS COMPENSATION, EMPLOYMENT, AND SAFETY REGULATIONS. ALL WORKERS SHALL BE TRAINED AND MONITORED TO ENSURE SAFE WORKING PRACTICES ARE MAINTAINED.
- CONTRACTOR IS RESPONSIBLE FOR TEMPORARILY REMOVING ALL COAX T-BRACKETS, ANTENNA MOUNTS, AND ANY OTHER APPURTENANCE THAT MAY INTERFERE WITH THE MODIFICATIONS. ALL APPURTENANCES MUST BE REPLACED AND/OR RESTORED TO ITS ORIGINAL LOCATION, SOME ATTACHMENTS MAY REQUIRE CUSTOM MODIFICATIONS TO PROPERLY FIT THE MODIFIED REGION OF THE STRUCTURE. THESE CUSTOMIZATIONS ARE DESIGNED BY OTHERS AND MUST BE APPROVED BY THE ENGINEER PRIOR TO REMOVING SUCH ATTACHMENTS. ANY CARRIER DOWNTIME MUST BE COORDINATED WITH THE OWNER IN WRITING.
- CONTRACTOR SHALL ONLY WORK WITHIN THE LIMITS OF THE OWNER'S PROPERTY OR LEASE AREA AND APPROVED EASEMENTS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY WORK IS WITHIN THESE BOUNDARIES. CONTRACTOR SHALL EMPLOY A SURVEYOR AS REQUIRED. ANY WORK OUTSIDE THESE BOUNDARIES SHALL BE APPROVED IN WRITING BY THE LAND OWNER PRIOR TO MOBILIZATION. CONSTRUCTION STAKING AND BOUNDARY MARKING IS THE RESPONSIBILITY OF THE CONTRACTOR.
- THE STRUCTURAL INTEGRITY OF THIS DESIGN EXTENDS TO THE COMPLETE CONDITION ONLY. THE CONTRACTOR MUST BE COGNIZANT THAT THE REMOVAL OF ANY STRUCTURAL COMPONENT HAS THE POTENTIAL TO CAUSE THE PARTIAL OR COMPLETE COLLAPSE OF THE STRUCTURE. NECESSARY PRECAUTIONS MUST BE TAKEN TO ENSURE THE STRUCTURAL INTEGRITY INCLUDING, BUT NOT LIMITED TO, ENGINEERING ASSESSMENT OF CONSTRUCTION STRESSES WITH INSTALLATION MAXIMUM WIND SPEED AND/OR TEMPORARY BRACING AND SHORING.
- CONTRACTOR IS RESPONSIBLE FOR ALL LOCAL SHORING, TEMPORARY GLOBAL SHORING, AND TEMPORARY SURROUNDING BRACING, ADS, AND OTHER OUTSIDE SITE BRACING. RESPONSIBILITY OF THE SHORING, TEMPORARY BRACING, AND TEMPORARY SUPPORTS ARE THE RESPONSIBILITY OF THE CONTRACTOR.

- THE SUBCONTRACTOR SHALL REPAIR ALL EXISTING FLOOR, ROOF, CEILING, AND WALL SURFACES FINISHING DISTURBED DURING CONSTRUCTION. ALL EXTERIOR FINISHES ARE REQUIRED TO RESULT IN SMOOTH FINISH TO MATCH THE EXISTING CONDITIONS TO THE SATISFACTION OF THE OWNER.
 - ALL ABANDONED HOLES AS A RESULT OF THIS DESIGN SHALL BE SEALED WITH A SEALANT MEETING THE REQUIREMENTS OF ASTM C920.
 - PENETRATION OF THE ROOF MEMBRANE IS PROHIBITED EXCEPT WHERE DESIGNED AND WITH THE APPROVAL OF THE BUILDING OWNER OR MANAGEMENT. COORDINATE MEMBRANE REPLACEMENT AND/OR REPAIR WITH THE OWNER'S ROOFING CONSULTANT TO MAINTAIN EXISTING WARRANTY.
 - ROOFTOP HAS A SLIGHT SLOPE TOWARDS EXISTING ROOF DRAINS. ALL EXISTING ROOF DRAINS & DRAINING PATTERNS SHALL NOT BE OBSTRUCTED OR DISTURBED (VERIFY IN FIELD), ANTENNA FRAMES SHALL BE PLUMB & LEVEL (NOTIFY EOR IF UNABLE TO ACHIEVE).
 - CARE SHALL BE TAKEN DURING INSTALLATION OF NEW ANCHORAGE OR OTHER TYPES OF PENETRATING MODIFICATIONS SO THAT EXISTING REINFORCING STEEL IN CONCRETE OR MASONRY IS NOT DAMAGED. CONTACT ENGINEER IMMEDIATELY IF EXISTING STEEL IS ENCOUNTERED.
 - PENETRATIONS TO THE BUILDING ENVELOPE SHALL BE FINISHED IN A MANNER THAT MAINTAINS WEATHERPROOF BARRIER. BELOW THE EXTERIOR AND INTERIOR OF THE STRUCTURE, THE CONTRACTOR SHALL COORDINATE REPAIRS TO WORK WITH THE BUILDING OWNER PRIOR TO INSTALLATION TO ENSURE ACCEPTANCE OF THE FINAL CONDITION.
- ## STRUCTURAL STEEL NOTES
- ALL NEW STEEL SHALL BE HOT-DIPPED GALVANIZED PER ASTM A123, ASTM A153/A153M, OR ASTM A653 G90, APPLICABLE FOR FULL WEATHER PROTECTION. FOR HIGH STRENGTH STEEL FASTENERS WHERE HOT-DIPPED GALVANIZING IS NOT PERMITTED, MAGN 565 COATING OR ENGINEER APPROVED EQUIVALENT SHALL BE USED. IN ADDITION, ALL NEW STEEL SHALL BE PAINTED TO MATCH EXISTING STEEL AND/OR BUILDING MATERIAL. CONTRACTOR SHALL OBTAIN WRITTEN PERMISSION TO PROTECT STEEL BY ANY OTHER MEANS.
 - ALL EXPOSED STRUCTURAL STEEL AS THE RESULT OF THIS SCOPE OF WORK INCLUDING, BUT NOT LIMITED TO DAMAGED MEMBERS, FIELD WELDS, FIELD CUT MEMBERS, FIELD DRILLED HOLES AND SHAPES, INTERIOR (WHERE APPLICABLE) SHALL BE SOLVENT CLEANED AND HAVE TWO (2) COATS OF GROUND OR ZRC COAT (WHICH COLD GALVANIZING PAINT APPLIED AND SHALL BE PAINTED TO MATCH THE TOWER FINISH WHERE APPLICABLE). PHOTO DOCUMENTATION IS REQUIRED TO BE SUBMITTED TO THE MODIFICATION INSPECTOR.
 - ALL STRUCTURAL STEEL SHALL CONFORM TO THE LISTED REQUIREMENTS U.N.O. IN THESE DRAWINGS:
 - STEEL ANGLE: ASTM A572 GRADE 50 (Fy=50 KSI)
 - SOLID ROUND: ASTM A36 (Fy=36 KSI)
 - PIPE (ROUND): ASTM A53 GRADE B (Fy=35 KSI)
 - HSS TUBE (ROUND): ASTM A500 GRADE C (Fy=50 KSI)
 - HSS TUBE (SQUARE): ASTM A500 GRADE C (Fy=50 KSI)
 - W-SHAPES: ASTM A992 (Fy=50 KSI)
 - CHANNELS: ASTM A992 (Fy=50 KSI)
 - PLATE: ASTM A572 GRADE 50 (Fy=50KSI)
 - ANCHOR RODS: ASTM A193 GRADE B7
 - THREADED ROD: ASTM F1554 GRADE 36
 - U-BOLTS: ASTM A325 TYPE 1
 - NUTS: (ANCHOR RODS): ASTM A307 GRADE A
 - WASERS (AS REQUIRED): ASTM A363 GRADE DH
 - LOCKING DEVICES (REQUIRED): ASTM F194 GRADE 2H
 - WELDING ELECTRODES, SMAW: E70XX
 - WELDING ELECTRODES, FCAW: E70T-XX
 - ALL BOLT ASSEMBLIES FOR STRUCTURAL MEMBERS REPRESENTED IN THIS DRAWING REQUIRE LOCKING DEVICES TO BE INSTALLED.
 - ALL BOLTS, INCLUDING U-BOLTS, SHALL BE TIGHTENED IN ACCORDANCE WITH AISC "SAUG TIGHTENING" REQUIREMENTS, U.N.O.
 - ALL U-BOLTS SPECIFIED SHALL MEET THE REQUIREMENTS OF ASME B18.31.5-2011 BENT BOLTS.
 - ALL NEW BOLT ASSEMBLIES SHALL BE OF SUFFICIENT LENGTH TO ENSURE THE END OF THE BOLT IS FLU WITH, OR PROTRUSING BEYOND, THE FACE OF THE NUT AFTER TIGHTENING IS COMPLETE.
 - STRUCTURAL STEEL SHOP DRAWINGS SHALL BE PROVIDED TO ENGINEER FOR REVIEW PRIOR FABRICATION.
 - UNLESS NOTED OTHERWISE, ALL NEW MEMBERS SHALL MAINTAIN THE EXISTING MEMBER WORK LINES AND NOT INTRODUCE ECCENTRICITIES INTO THE STRUCTURE.
 - WELDING OF ANY KIND IS NOT PERMITTED ON SITE UNLESS SPECIFIED WITHIN THESE DRAWINGS. OXY FUEL GAS WELDING OR BRAZING IS STRICTLY PROHIBITED. SCHEDULED, EQUIPPED, NO TORCH CUTTING OR OPEN FLAME IS PERMITTED ON SITE. ALL HOLES SHALL BE CUT WITH A GRINDK.

RADIO FREQUENCY (RF) TRANSPARENT FIBER REINFORCING POLYMER (FRP) NOTES

- ALL FRP SHEET AND STRUCTURAL COMPONENTS USED IN VISION SCREENS SHALL BE TRANSPARENT TO ELECTRO-MAGNETIC RADIATION AT THE FREQUENCIES REQUIRED BY THE OWNER. THE CONTRACTOR SHALL VERIFY RF TRANSPARENCY AT THE REQUIRED FREQUENCIES WITH THE FRP MANUFACTURER PRIOR TO FABRICATION OF THE VISION SCREENS.
- THE MATERIAL SPECIFIED SHALL BE FURNISHED BY A REPUTABLE AND QUALIFIED MANUFACTURER OF DEMONSTRATED ABILITY WHO HAS ROUTINELY ENGAGED IN THE MANUFACTURE OF FIBER REINFORCED POLYMER COMPOSITES.
- SUBSTITUTION OF ANY COMPONENT OR MODIFICATION OF SYSTEM WILL BE MADE ONLY AFTER APPROVAL BY THE ENGINEER.
- ALL SYSTEMS, SUB-SYSTEMS, AND STRUCTURES WILL BE FACTORY-FABRICATED AND ASSEMBLED TO THE BEST PRACTICAL SIZES FOR TRANSPORTATION.
- ALL MATERIAL AND EQUIPMENT NECESSARY FOR THE FABRICATION AND INSTALLATION OF THE FRP PRODUCTS WILL BE STORED BEFORE DURING AND AFTER SHIPMENT IN A MANNER TO PREVENT CRACKING, TWISTING, BENDING, BREAKING, CHIPPING OR DAMAGED OF ANY KIND TO THE MATERIAL OR EQUIPMENT, INCLUDING ULTRAVIOLET DAMAGE.

MANUFACTURE OF FRP PRODUCTS SHALL BE OF THE QUALITY AND FREE FROM DEFECTS THAT MAY AFFECT THE PERFORMANCE OF THE FINISHED PRODUCT.

FRP PRODUCTS SHALL BE MANUFACTURED USING THE PULTRUSION MANUFACTURING PROCESS WITH VINYLESTER OR THERMOSET VINYLESTER RESINS, INCLUDING FLAMMABILITY, AND FOR ADDITIVES. A SYNTHETIC SURFACE VEIL SHALL BE THE OUTERMOST LAYER OF ALL EXPOSED SURFACES. SURFACES SHALL BE SMOOTH AND TRUETOFORM AFTER DRILLING, HOLES, AND ABRASIONS OF FRP COMPOSITE PRODUCTS WILL BE SEALED WITH A FINISHING CONTAINING A UV INHIBITOR TO PREVENT MOISTURE INFILTRATION.

FRP PRODUCTS SHALL BE MANUFACTURED WITH A CATALYZED RESIN SYSTEM. ALL FRP PRODUCTS SHALL BE SEALED WITH A CATALYZED RESIN SYSTEM. ALL FRP PRODUCTS SHALL BE SEALED WITH A CATALYZED RESIN SYSTEM. ALL FRP PRODUCTS SHALL BE SEALED WITH A CATALYZED RESIN SYSTEM.

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STRUCTURAL PROFILES	LENGTHWISE (PSI)	CROSSWISE (PSI)
MATERIAL PROPERTY (ULTIMATE: NO SAFETY FACTOR)		
TENSILE STRENGTH	33,000	7,500
TENSILE MODULUS	2,500,000	800,000
COMPRESSIVE STRENGTH	33,000	16,500
COMPRESSIVE MODULUS	3,000,000	1,000,000
FLEXURAL STRENGTH	33,000	11,000
FLEXURAL MODULUS	1,600,000	800,000
MODULUS OF ELASTICITY, SQUARE AND RECTANGULAR TUBES (FULL SECTION)	3,200,000	N/A
SHEAR MODULUS (FULL SECTION)	420,000	N/A
INTERLAMINAR SHEAR	4,500	N/A
SHEAR STRENGTH BY PUNCH	5,500	N/A
MAXIMUM BEARING STRENGTH	30,000	18,000
IN-PLANE SHEAR	7,000	7,000

FLAT SHEETS	LENGTHWISE (PSI)	CROSSWISE (PSI)
MATERIAL PROPERTY (ULTIMATE: NO SAFETY FACTOR)		
FLEXURAL STRENGTH, FLATWISE	35,000	15,000
FLEXURAL MODULUS, FLATWISE	2,000,000	1,100,000
TENSILE STRENGTH	20,000	10,000
TENSILE MODULUS	1,800,000	1,800,000
COMPRESSIVE STRENGTH, EDGEWISE	24,000	16,000
COMPRESSIVE MODULUS, EDGEWISE	1,800,000	1,000,000
BEARING STRENGTH	32,000	32,000
SHEAR STRENGTH	7,000	7,000

FRP FASTENERS*	LENGTHWISE (PSI)	CROSSWISE (PSI)
MATERIAL PROPERTY (ULTIMATE: NO SAFETY FACTOR)		
THREAD SHEAR CAPACITY (LB)	1,250	2,500
COMPRESSIVE STRENGTH, EDGEWISE	1,000	2,000
COMPRESSIVE MODULUS, EDGEWISE	60,000	60,000
BEARING STRENGTH	2,000,000	2,000,000
SHEAR STRENGTH	55,000	55,000
SHEAR STRENGTH	4,200	7,400

*NOTE: INSTALLATION, INCLUDING TORQUE AND LUBRICATION SHALL BE PER MANUFACTURER SPECIFICATION

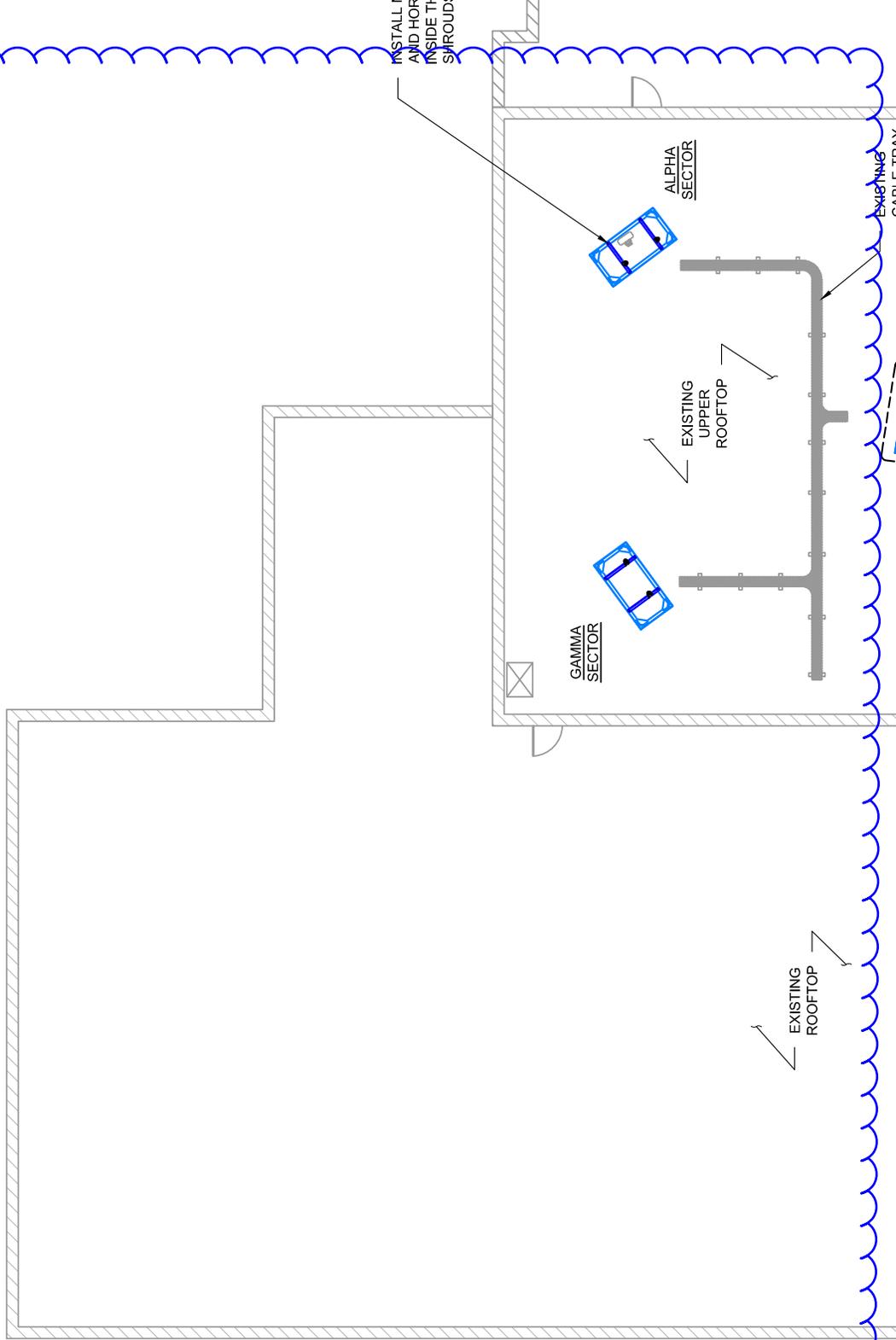
Fix the scaling/page size of the modification design drawings so they are legible

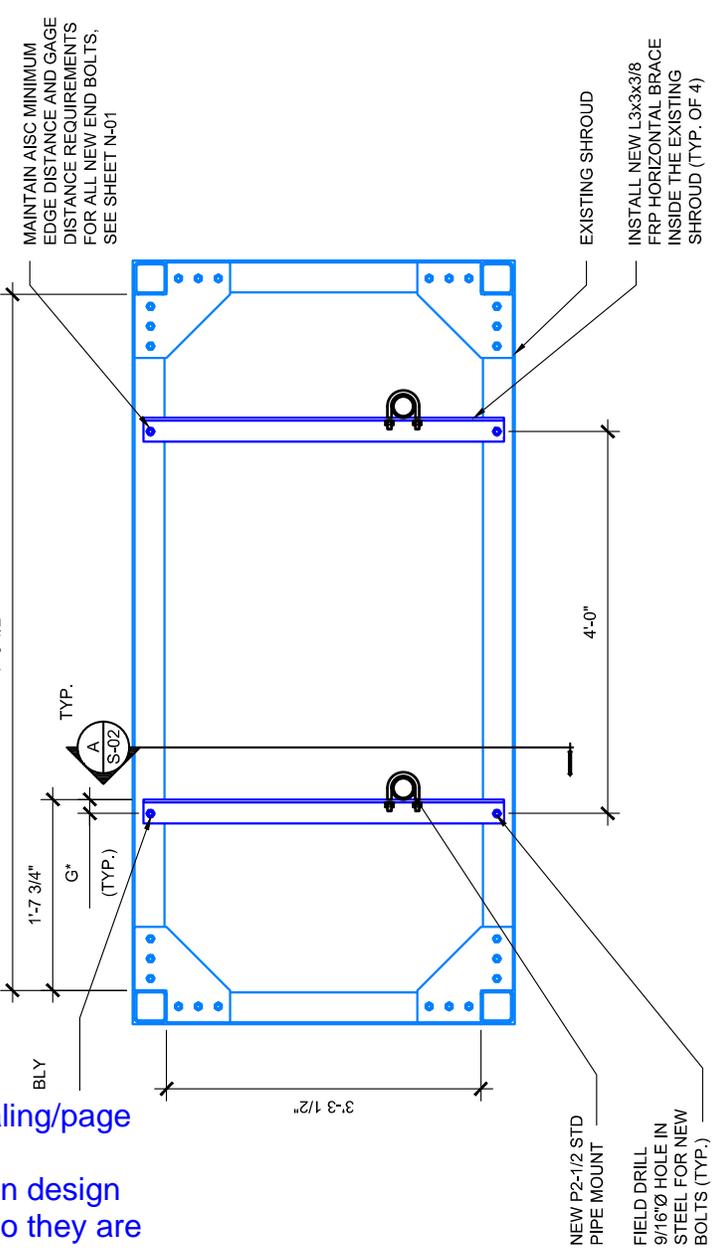
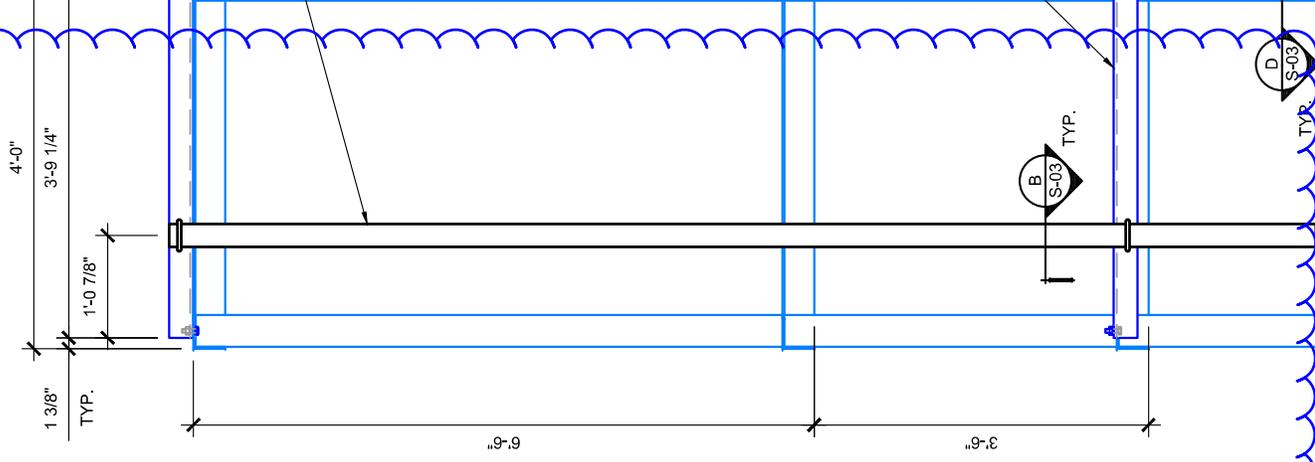
MEMBER TYPE		ELEVATION	EXISTING MEMBER	NOTE
MOUNT	UNISTRUT	48'-0"±	MOUNTS	
HORIZONTAL			UNISTRUT	(2)
PIPE MOUNTS				(2)
BASE PLATE BOLTS				(4)
				(QUANTITY VARIES)

NOTE:

1. ALL MATERIAL REMOVED FROM THE STRUCTURE SHALL BE

Fix the scaling/page size of the modification design drawings so they are legible

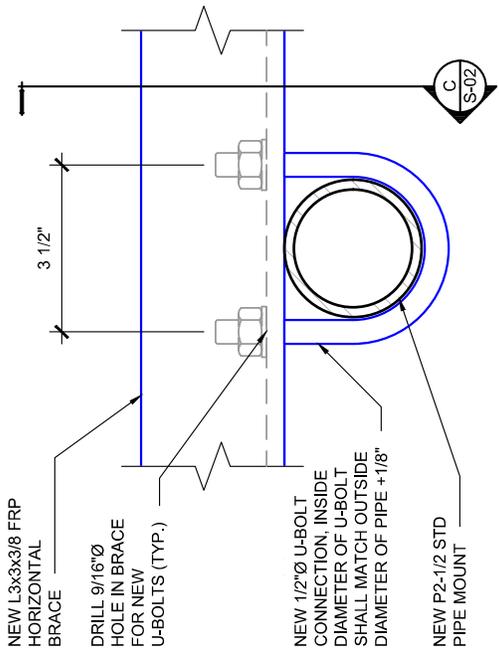




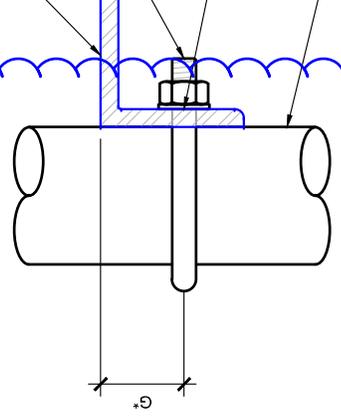
1 EXISTING SHROUD ENCLOSURE
 SCALE: 1/2" = 1'-0"

* SEE WORKABLE GAGES SCHEDULE ON SHEET N-01.

Fix the scaling/page size of the modification design drawings so they are legible

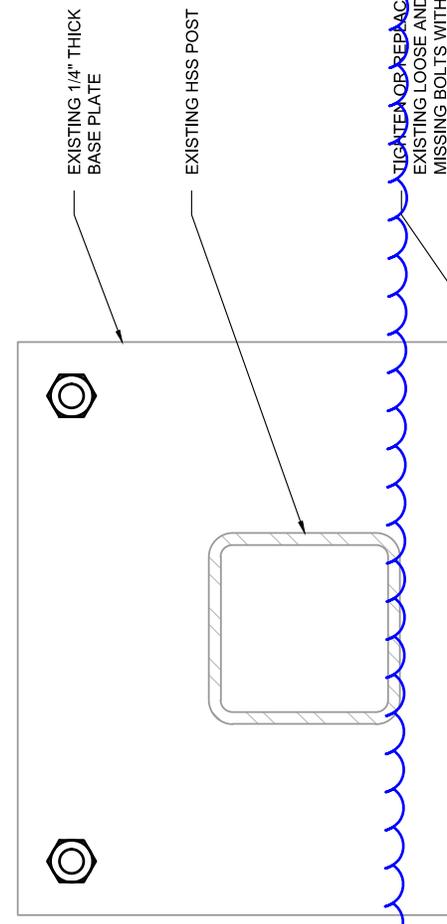


B SECTION
S-03 SCALE: 3" = 1'-0"



C SECTION
S-03 SCALE: 3" = 1'-0"

* SEE WORKABLE GAGES SCHEDULE ON SHEET N-01.



Fix the scaling/page size of the modification design drawings so they are legible