PLANNING BOARD MEETING
City Hall - 950 Locust St., Carter Lake, Iowa
Monday, March 10, 2025, 7:00 P.M.

AGENDA

Roll Call

Approval of the Agenda

1. Consent Agenda
    a. Building Permits listing
    b. City Council Minutes
    c. Planning Board Minutes
2. New Business
    a. The Landing Reserve LLC – rezoning request
    b. ZUM Services - text amendment
        i. Review of terms of Conditional Use Permit
    c. Overland Development – request for public hearing
    d. T-Mobile Permit – removal and upgraded equipment
    e. TSL fence permit – replacing existing fence
3. Old Business
    a. Planning Board member election of officers
    b. Reminder special workshop 03/24/25 - review of zoning code
4. Comments
5. Adjourn

PLANNING BOARD MEETING
Monday, February 10, 2025, 7:00 P.M.

Board Chair Ed Palandri called the meeting to order at 7:00 p.m. Roll Call: Present: Ed Palandri, Jay Gundersen, Ray Pauly, Robert Horan and Drew Evers are present. Absent Kathryn Dueling and Tim Podraza.

Evers moved to approve the agenda, seconded by Gundersen; unanimous approval; Pauly moved to approve the consent agenda seconded by Horan; unanimously approved.

New Business:

Overland Development was present to share their development plan for 2 or 3 story apartment complex for senior residents 55+ at the corner of 9th and Avenue K. The group will be presenting information to the council at their workshop on Wednesday evening. The property will need to proceed through rezoning to allow this development to happen.

The Landing Reserve LLC presented plans for new units at the property located west of Lagoon Drive. There was much discussion on the plans and ideas for future development. Several residents voiced concerns over what will be happening in the area since it will be short-term rental cabins. Gundersen moved to set public hearing for Monday, March 10th at 7pm. Seconded by Evers, Roll Call: Yea: Gundersen, Evers, Pauly, Horan; Ney – Paladri.

Planning board tabled election of officers to next month when the rest of the board can attend.

The property occupied by Zum Transportation Services needs to go through public hearing for text amendment change for the use to be allowed; Pauly moved to set hearing for Monday March 10 at 7 p.m. seconded by Horan. Ney-Palandri Yea-Pauly, Horan Gundersen, Evers

Evers moved to adjourn seconded by Gundersen at 8:54 p.m.

Adjourn at 8:35 p.m.

CARTER LAKE CITY COUNCIL MEETING

Monday, February 17, 2025

Mayor Ronald Cumberledge called the regular meeting to order at 7:00 p.m.

Roll call of the council, present: Mayor Ronald Cumberledge, Jacob Hanika, Jackie Wahl, Aaron Grell, Victor Skinner and Jason Gundersen; City Attorney David Levy and Clerk Jackie Carl.

Gundersen moved to approve the agenda, seconded by Skinner, unanimously approved. Gundersen moved to approve the consent agenda, Hanika; unanimously approved. Consent agenda includes the following: Department head reports from Parks, Library, Community Center, Senior Services, Maintenance, Police, Fire/EMS; City council minutes from December; Overtime and comp-time reports for December; abstract of claims, receipts and financial reports for January 2025.

Mayor Cumberledge asked for council support to install traffic control signs at the corner of 5th and K with the additional driveway being opened on the south side of the trailer park and the new trail extension in the same areas. Gundersen moved to approve seconded by Skinner, unanimously approved.

Attorney David Levy provided an update on the notice to demolish the garage at 122 Carter Lake Club as a dangerous building. Property owner Skip Wray was present to ask the council to allow him time to make improvements. Gundersen moved with a strong statement if there is not significant improvements by the May 2025 council meeting he will move to proceed with demolishing, seconded by Skinner. Unanimously approved.

Gundersen moved to approve adding holiday pay as a benefit for permanent part time employees. Seconded by Wahl, unanimously approved.

Gundersen moved to approve the second reading to adopt the "Carter Lake Code of Ordinances", Wahl presented some areas of concern. The Council and clerk just received the list therefore the Clerk request time to research and visit with the Codification consultant to verify before responding. Gundersen moved to set the tax rate hearing for Monday, April 7th at 7 p.m. seconded by Hanika. Gundersen moved to approve the Pottawattamie County Hazard Mitigation Plan , seconded by Skinner; unanimously approved. Gundersen moved to decline approving payment to the contractor for the trail project, due to failure to complete per agreement; seconded by Skinner, unanimously approved. Gundersen moved to set wage for new employee Nick Walton $24.04 seconded by Skinner; unanimously approved. Gundersen moved to set wage for new full-time employee in the maintenance department, Aiden Chambers, $16, seconded by Hanika; unanimously approved.

Jackie Carl, City Clerk Ronald Cumberledge, Mayor

Permit #	Contractor	Description	Appl Date	Fee(s)
Status	Owner	Sub-Division Lot	Issued Date	Paid
Appl Type	Location	Type of Use	Expire Date Cost of Work	Amount Due
D46-25	FREIGHT TRAIN EXPRESS	LOT # 7 - DEMO & HAUL MATERIAL	1-29-25	50.00
Issued	LAKESIDE ESTATES		1-29-25	50.00
Contractor	3510 N 9TH ST		7-28-25	.00
		D46-25	FEE	50.00
D47-25	OWNER AS GEN CONTRACTOR	DEMO HOME FROM SMOKE/FIRE	2-11-25	50.00
Issued	GUNDERSEN, JASON		2-11-25	50.00
Contractor	201 CAROLINA DR		8-10-25	.00
		D47-25	FEE	50.00
EL036-25	OWNER AS GEN CONTRACTOR	SUB FOR RC010-24 : ELECTRICAL	1-02-25	45.50
Issued	TCP CORP		1-02-25	45.50
Contractor	1313 HIATT ST	Residential, Multiple Family	12-28-25	.00
		EL036-25	FEE	45.50
EL037-25	DAVID'S ELECTRIC	REPLACE PEDESTAL POWER BOX	1-10-25	54.00
Issued	LAKESIDE ESTATES		1-10-25	54.00
Contractor	3510 N 9TH ST	Residential, Multiple Family	1-05-26	.00
		EL037-25	FEE	54.00
EL038-25	KOCSIS ELECTRIC	SUB FOR RC012-24 : NEW	2-11-25	41.10
Issued	RALPH KLUG		2-11-25	41.10
Contractor	4426 N 17TH ST	Residential, Multiple Family	2-06-26	.00
		EL038-25	FEE	41.10
EL039-25	POWERTECH	SUB FOR RC013-25 : ELECTRICAL	2-27-25	321.56
Issued	DRISCOLL, JOSH		2-27-25	.00
Contractor	506 REDICK BLVD	Residential, Multiple Family	2-22-26	321.56
		EL039-25	FEE	321.56
			PAID	.00
			DUE	321.56
M092-25	MOORES SERVICES INC.	SUB FOR RC010-24 : MECHANICAL	1-02-25 350.00	38.00
Issued	TCP CORP		1-02-25	38.00
Contractor	1313 HIATT ST		7-01-25	.00
		M092-25	350.00 FEE	38.00
M093-25	GREATER OMAHA REFRIGERATI	REFRGERATION LINES FROM WALK	1-15-25 21,000.00	80.70
Issued	PONCA TRIBE OF NEBRASKA		1-15-25	.00
Contractor	1001 AVENUE H		7-14-25	80.70
		M093-25	21,000.00 FEE	80.70
			PAID	.00
			DUE	80.70

Permit #	Contractor	Description	Appl Date	Fee(s)
Status / Appl Type	Owner / Location	Sub-Division / Type of Use	Lot / Issued Date / Expire Date	Cost of Work / Paid / Amount Due
M094-25	FRED'S HEATING & AIR	REPLACE HVAC SYSTEM	1-22-25	13,000.00 53.00
Issued	DANIEL MCKEIGHAN		1-22-25	53.00
Contractor	1500 AVENUE Q		7-21-25	.00
		M094-25		13,000.00 FEE 53.00
M095-25	THERMAL SERVICES	REPLACE FURNACE	1-22-25	6,000.00 .00
Issued	CARTER LAKE OWEN MEMORIAL		1-22-25	.00
Contractor	1120 WILLOW DR		7-21-25	.00
		M095-25		6,000.00 FEE .00
M096-25	AIRESERV	LOT # 41 : REPLACE FURNACE	2-11-25	4,434.99 38.30
Issued	LAKESIDE ESTATES		2-11-25	38.30
Contractor	3510 N 9TH ST		8-10-25	.00
		M096-25		4,434.99 FEE 38.30
M097-25	RJ NELSON CO	REPLACE FURNACE	2-18-25	4,000.00 38.30
Issued	RANDY SMITH		2-18-25	38.30
Contractor	706 REDICK BLVD		8-17-25	.00
		M097-25		4,000.00 FEE 38.30
MR385-22	OWNER AS GEN CONTRACTOR	REPLACE SHINGLES ON EXISTING	5-24-22	2,500.00 18.50
Issued	BOWMAN, JAMES		1-30-25	18.50
Contractor	1306 DORENE BLVD		7-29-25	.00
		MR385-22		2,500.00 FEE 18.50
P095-25	GUNDERSEN GRADING	REMODEL EXISTING BATHROOM	1-03-25	52.60
Issued	GUNDERSEN, JASON		1-03-25	52.60
Contractor	201 CAROLINA DR		7-02-25	.00
		P095-25		FEE 52.60
P096-25	GUNDERSEN GRADING	LOT# 78 & #181 - WATER RISER	2-10-25	33.00
Issued	LAKESIDE ESTATES		2-10-25	33.00
Contractor	3510 N 9TH ST		8-09-25	.00
		P096-25		FEE 33.00
P097-25	GUNDERSEN GRADING	LOT # 81 : WATER RISER REPAIR	2-11-25	28.25
Issued	LAKESIDE ESTATES		2-11-25	28.25
Contractor	3510 N 9TH ST		8-10-25	.00
		P097-25		FEE 28.25
P098-25	ELEDGE PLUMBING	NEW 40GAL WATER HEATER	2-18-25	80.70
Issued	RANDY SMITH		2-18-25	80.70
Contractor	706 REDICK BLVD		8-17-25	.00

Permit #	Contractor	Description	Appl Date	Fee(s)

Status / Appl Type	Owner / Location	Sub-Division / Type of Use	Lot	Issued Date / Expire Date	Cost of Work		Paid / Amount Due
		P098-25				FEE	80.70
P099-25	GRELL PLUMBING	REMOVE & REPLACE OLD GAS LINE		2-25-25			62.75
Issued	FRANK CORCHRAN			2-25-25			62.75
Contractor	4306 N 7TH ST			8-24-25			.00
		P099-25				FEE	62.75
RA056-25	AB CRAFTSMAN LLC	ADDITION TO RA043-24 &		1-07-25	3,000.00		44.63
Issued	MIKE KLINE			1-16-25			44.63
Contractor	111 SHORELINE DR	Residential, Multiple Family		7-15-25			.00
		RA056-25			3,000.00	FEE	44.63
RA057-25	DAVE'S DO IT ALL REMODELI	12' x 10' REAR DECK		1-07-25	4,000.00		104.06
Issued	DAVID HIERS			1-16-25			104.06
Contractor	1105 WILLOW DR	Residential, Multiple Family		7-15-25			.00
		RA057-25			4,000.00	FEE	104.06
RC013-25	DAVIS & REED HOMES	ORIGINAL PERMIT:RC005-23(FIRE)		1-07-25	477,351.00		492.04
Issued	DRISCOLL, JOSH			1-15-25			492.04
Contractor	506 REDICK BLVD	Residential, Multiple Family		7-14-25			.00
		RC013-25			477,351.00	FEE	492.04
RE146-25	OWNER AS GEN CONTRACTOR	REPLACE WINDOWS S4S & SIDING		1-17-25	2,000.00		50.00
Issued	GILBERTO CHICAS CHAVEZ			1-17-25			50.00
Contractor	1117 WILLOW DR	Residential, Multiple Family		7-16-25			.00
		RE146-25			2,000.00	FEE	50.00
RE147-25	HOMETOWN ROOFING	STANDARD RE-ROOF		1-29-25	10,939.04		30.00
Issued	WADE, TAMI L TAYLOR			1-29-25			30.00
Contractor	1535 STELLA AVE	Residential, Multiple Family		7-28-25			.00
		RE147-25			10,939.04	FEE	30.00
RE148-25	TURTLE ROOFING	RE-SIDE		2-11-25	7,000.00		30.00
Issued	LANTZ, ANNA			2-11-25			30.00
Contractor	912 CACHELIN DR	Residential, Multiple Family		8-10-25			.00
		RE148-25			7,000.00	FEE	30.00
ROW146-25	OWNER AS GEN CONTRACTOR	SECONDARY ACCESS 5TH & AVE K		1-30-25	1,000.00		100.00
Issued	LAKESIDE ESTATES			1-30-25			100.00
Contractor	3510 N 9TH ST			7-29-25			.00
		ROW146-25			1,000.00	FEE	100.00

Permit #	Contractor	Description	Appl Date	Fee(s)

Status / Appl Type	Owner / Location	Sub-Division / Type of Use	Lot	Issued Date / Expire Date	Cost of Work		Paid / Amount Due
ROW147-25	BLACK HILLS ENERGY	NEW SERVICE		2-24-25	1,000.00		100.00
Issued	PRAIRIE FLOWER CASINO			2-24-25			.00
Contractor	1031 1/2 AVENUE H			8-23-25			100.00
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		ROW147-25			1,000.00	FEE	100.00
						PAID	.00
						DUE	100.00
ROW148-25	BLACK HILLS ENERGY	AVENUE H SEWER PROJECT		2-24-25	1,000.00		100.00
Issued	CITY OF CARTER LAKE			2-24-25			.00
Contractor	AVENUE H			8-23-25			100.00
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		ROW148-25			1,000.00	FEE	100.00
						PAID	.00
						DUE	100.00
ROW149-25	BLACK HILLS ENERGY	SERVICE REPLACEMENT 6/19/24		2-24-25	1,000.00		100.00
Issued	WILLIAM SEATON			2-24-25			.00
Contractor	1409 NEPTUNE DR			8-23-25			100.00
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		ROW149-25			1,000.00	FEE	100.00
						PAID	.00
						DUE	100.00
ROW150-25	BLACK HILLS ENERGY	SERVICE REPLACEMENT 6/17/24		2-24-25	1,000.00		100.00
Issued	JIM BOWMAN			2-24-25			.00
Contractor	1302 CEDAR ST			8-23-25			100.00
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		ROW150-25			1,000.00	FEE	100.00
						PAID	.00
						DUE	100.00
ROW151-25	BLACK HILLS ENERGY	NEW SERVICE 9/2/24		2-24-25	1,000.00		100.00
Issued	TORRES, ROBERT & KERRI			2-24-25			.00
Contractor	190 MARINA CT			8-23-25			100.00
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		ROW151-25			1,000.00	FEE	100.00
						PAID	.00
						DUE	100.00
ROW152-25	BLACK HILLS ENERGY	RETIRED SERVICE-LOT 16 6/18/24		2-24-25	1,000.00		100.00
Issued	CHLUPACEK, KENNETH JR			2-24-25			.00
Contractor	17 CARTER LAKE CLB			8-23-25			100.00
					---		---
		ROW152-25			1,000.00	FEE	100.00
						PAID	.00
						DUE	100.00
ROW153-25	BLACK HILLS ENERGY	REPLACEMENT SERVICE - LOT 74		2-24-25	1,000.00		100.00
Issued	JEFF MARSHALL			2-24-25			.00
Contractor	73 CARTER LAKE CLB			8-23-25			100.00

Permit #	Contractor	Description	Appl Date	Fee(s)

Status / Appl Type	Owner / Location	Sub-Division / Type of Use	Lot	Issued Date / Expire Date	Cost of Work		Paid / Amount Due
		ROW153-25			1,000.00	FEE	100.00
						PAID	.00
						DUE	100.00
ROW154-25	BLACK HILLS ENERGY	REPLACEMENT SERVICE - LOT 84		2-24-25	1,000.00		100.00
Issued	CLAPP, CHARLIE			2-24-25			.00
Contractor	83 CARTER LAKE CLB			8-23-25			100.00
		ROW154-25			1,000.00	FEE	100.00
						PAID	.00
						DUE	100.00
ROW155-25	BLACK HILLS ENERGY	LEAK OR LINE HIT - 4/24/24		2-24-25	1,000.00		100.00
Issued	POLINSKI, PHILO - SHARON			2-24-25			.00
Contractor	55 CARTER LAKE CLB			8-23-25			100.00
		ROW155-25			1,000.00	FEE	100.00
						PAID	.00
						DUE	100.00
ROW156-25	BLACK HILLS ENERGY	SERVICE REPLACEMENT 6/19/24		2-24-25	1,000.00		100.00
Issued	THOMAS PODERYS			2-24-25			.00
Contractor	1910 LAGOON DR			8-23-25			100.00
		ROW156-25			1,000.00	FEE	100.00
						PAID	.00
						DUE	100.00
ROW157-25	BLACK HILLS ENERGY	NEW SERVICE 11/19/24		2-24-25	1,000.00		100.00
Issued	CITY OF CARTER LAKE			2-24-25			.00
Contractor	N 17TH STREET			8-23-25			100.00
		ROW157-25			1,000.00	FEE	100.00
						PAID	.00
						DUE	100.00
GRAND TOTAL				36	567,575.03	FEE	3,036.99
						PAID	1,534.73
						DUE	1,502.26

TOTAL TYPE	DESCRIPTION	PERMIT COUNT	FEE	AMOUNT PAID	AMOUNT DUE
UNDEFINED	UNDEFINED DESCRIPTION	36	3036.99	1534.73	1502.26

NOTICE OF PUBLIC HEARNG
Carter Lake Planning Board on March 10, 2025, at 7:00 P.M.
at Carter Lake City Hall located at 950 Locust Street

THE BOARD WILL BE ACCEPTING COMMENTS CONCERNING PROPOSED ZONING AND TEXT AMENDMENTS TO THE LAND USE DEVELOPMENT ORDINANCES FOR THE CITY OF CARTER LAKE, IOWA

The Land Use Development Ordinances adopted by the City of Carter Lake, Iowa on August 28, 2006, shall be amended as follows:

1. Amend the base zoning of these (4) parcels from R-1/R-2 to R-3 (Urban Residential Multi-family)
2. Amend the R-3 zoning text within the Unified Land Development Ordinance to expand on the district allowing for resort development as outlined below:
    a. Section 7, R-3 Urban Residential Multi-Family, 701 Purpose - This district is intended to provide for low and medium density multi-family residential development, with gross densities generally between 12 and 24 units per acre. These developments often are characterized by low-rise buildings in multiple structure configurations, with an emphasis on open space, convenient parking, and, in many cases, common community facilities such as clubhouses and swimming pools.

       This district is also appropriate for larger townhouse complexes, while still accommodating lower density forms of development. "This district allows for resort development limited to 1-2 story, 'cabin style' detached units, with an emphasis on open space, not to exceed 6 units per acre. Limited commercial uses consistent and compatible with recreational and residential uses to be approved as an approved conditional use."
3. Add the following definition of "Limited Resort Lodging" to the list of residential use types and approve this use within R3 within the Unified Land Development Ordinance. The definition is outlined below:
    a. Section 3 USE TYPES, 304 Residential Use Types, Item K Provides tourist accommodations including guest rooms or suites, which are intended or designed to be used, rented, or hired out to guests (transient visitors) intending to occupy the room for less than 32 consecutive days, with various recreational amenities. The guest rooms or suites are independently accessible from the outside, parking space located on the property, with a minimum unit size of 190 square feet, no more than 2 stories tall, no more than 6 units per acre, with accessory functions like offices, maintenance, retail, and reception areas provided on the property in separate buildings from the units.
4. Within the Unified Land Ordinance, amend Table 4-1 Use Matrix to reflect the Limited Resort Lodging use within R3 per item 3 above, and expand the allowed conditional uses within R3 as outlined in Exhibit E (with the general understanding that the conditional uses will be requested on the 4 subject parcels).

At said time and place, individuals may appear and speak in favor of or against the proposals to amend the ordinance. Written comments on the Amendment must be received by the City Clerk prior to the start of the public hearing. At the conclusion of the public hearing, the Planning Board will consider the Amendment and take appropriate action thereon, including making recommendations to the Carter Lake City Council.

You have received this notice because your property is within 300 feet
of the property under consideration for amendment and mailed notice is required.

NOTICE OF PUBLIC HEARNG
Carter Lake Planning Board on March 10, 2025, at 7:00 P.M.
at Carter Lake City Hall located at 950 Locust Street

THE BOARD WILL BE ACCEPTING COMMENTS CONCERNING PROPOSED ZONING AND TEXT AMENDMENTS TO THE LAND USE DEVELOPMENT ORDINANCES FOR THE CITY OF CARTER LAKE, IOWA

The Land Use Development Ordinances adopted by the City of Carter Lake, Iowa on August 28, 2006, shall be amended as follows:

1. Amend the text for 308 Parking Use Types to add

c. Transportation Services

The use of lot or land area for the storage or layover of a transportation service provided under contract to public or non-public group(s)

At said time and place, individuals may appear and speak in favor of or against the proposals to amend the ordinance. Written comments on the Amendment must be received by the City Clerk prior to the start of the public hearing. At the conclusion of the public hearing, the Planning Board will consider the Amendment and take appropriate action thereon, including making recommendations to the Carter Lake City Council.

You have received this notice because your property is within 300 feet of the property under consideration for amendment and mailed notice is required.

NOTICE OF PUBLIC HEARNG
MARCH 10, 2025, at 7:00 P.M.
CARTER LAKE PLANNING BOARD

LOCATION OF MEETING:
CARTER LAKE CITY HALL
950 LOCUST ST., CARTER LAKE, IA

CONCERNING THIS PROPERTY

THE PLANNING BOARD WILL BE ACCEPTING COMMENTS CONCERNING PROPOSED ZONING AND TEXT AMENDMENTS TO THE LAND USE DEVELOPMENT ORDINANCES FOR THE CITY OF CARTER LAKE, IOWA

INTERESTED IN MORE INFORMATION?

STOP AT CITY HALL TO REVIEW PROPOSED CHANGES

FENCE & RETAINING WALL CONSTRUCTION PERMIT APPLICATION

CITY OF CARTER LAKE, IOWA
Building & Zoning Department
950 Locust Street
Carter Lake, IA 51510
Telephone: 712.847.0535
Fax: 712.347.5454
Inspection Request: 712.847.0535

Permit Amount	Permit #

JOB SITE ADDRESS: 2732 NORTH 5TH STREET, CARTER LAKE, IOWA 51510-1508	**PARCEL NUMBER:** 754420252011
LEGAL DESCRIPTION: ☑ *Attachment*	**ACREAGE:** 2.53

ZONING DISTRICT:
☐ R-1 Urban Residential Single-Family District ☐ R-2 Urban Residential Mixed-Density District ☐ R-3 Urban Residential Multi-Family District ☐ R/CC CL Club Special Residential District
☐ RM Mobile Home Residential District ☑ C/L Locust Street Mixed Use Corridor District ☐ C-1 Limited Commercial/Office District ☐ C-2 General Commercial District
☐ BP Business Park District ☐ T-C Town Center ☐ C/A Abbott Drive Corridor District ☐ M-1 Limited Industrial District ☐ M-2 General Industrial District ☐ MC Mixed Use District
☐ PUD Planned Unit Development Overlay District ☐ W Water-Oriented Development Overlay District ☐ FP/FW Floodplain Overlay District

PROPERTY OWNER: HASTINGS FAMILY HOLDINGS, LLC			**PHONE NUMBER:** 531-444-4820
PROPERTY OWNER ADDRESS: 10001 SOUTH 152ND STREET	**STATE:** NEBRASKA	**ZIP CODE:** 68138-3801	**EMAIL:** chris.stara@4tsl.com
GENERAL CONTRACTOR NAME: DENTON CONSTRUCTION	**STATE LICENSE #:** 7787526		**PHONE NUMBER:** 620-253-4027
CONTRACTOR MAILING ADDRESS: 606 AVENUE P, DODGE CITY		**STATE:** KANSAS	**ZIP CODE:** 67801-7021

THE PROPERTY SHALL COMPLY WITH ALL CITY OF CARTER LAKE ZONING ORDINANCE. ALL NEIGHBORHOOD COVENANTS AND EASEMENTS ARE THE RESPONSIBILITY OF THE BUILDER OR HOMEOWNER.

Property Type/Use: ☑ Commercial / Industrial ☐ Residential ☐ Multi-Family ☐ Other_____
Class of Work: ☐ New ☐ Addition ☐ Alteration ☐ Repair ☑ Replacement
Height & Length: 6' High ~723' Length
Type of Fence: ☐ Wood ☑ Chain link ☑ Plastic/Vinyl ☐ Other _____

The wall/fence as described below is totally within the boundaries of the property? ☑ Yes ☐ No
The wall/fence as described below is located on the property line? ☑ Yes ☐ No

See the attached notarized authorization letter from the adjacent property owner. ☐ Yes ☐ No (If required)

CONSTRUCTION INFORMATION		
ESTIMATED CONSTRUCTION COST: $ 30,722.05		
RESIDENTIAL FEES		
Retaining Wall over 4' (feet) in height		**Flat Rate $30.00**
Fence up to 6' (feet) in height		**Flat Rate $30.00**
COMMERCIAL PERMIT FEES		
Based on Valuation (see next page to figure valuation)		
		AMOUNTS
After calculating the square footage with the permit valuation multiplier and determining your total permitted valuation. Use the Building Permit Fee Schedule and determine your Building Permit Fee. This permit fee will be verified during plan review and collected at the time of permit issuance. *(Commercial - see next page to figure cost)*	**BUILDING PERMIT FEE**	$ 449.54
Figuring the Plan Review Fee at 25% of the calculated Building Permit Fee cost. The Plan Review Fee will be a required, a nonrefundable deposit at the time of your permit application submittal. *(see next page to figure cost)*	**PLAN REVIEW FEE** *(Submittal deposit)*	$ 112.39
	TOTAL AMOUNT	$ 561.93

I have indicated all natural and man-made water courses which may have impact on or be impacted by the proposed retaining wall, block wall or fence. I understand and agree that should the City of Carter Lake determine that this retaining wall, block wall or fence be detrimental to the safe flow of any water course, this permit will be rendered invalid immediately. I further agree that if I fail to adhere to the above requirements, the retaining wall, block wall or fence may be abated, removed or altered at my expense. I certify that I have read this Application and state that the above information is correct. I agree to comply with the City's ordinances and state laws relating to building construction.

APPLICANT SIGNATURE _____ DATE 1/8/2025

Issued By:	Date:

BUILDING PERMIT FEE SCHEDULE

TOTAL VALUATION	FEE
$1 to $500	$ 23.50
$501 to $2,000	$ 23.50 for the first $ 500.00 plus $ 3.05 for each additional $ 100.00, or fraction, thereof, to and including $ 2,000.00
$2,001 to $25,000	$ 69.25 for the first $ 2,000.00 plus $ 14.00 for each additional $ 1,000.00, or fraction, thereof, to and including $ 25,000.00
$25,001 to $50,000	$ 391.75 for the first $ 25,000.00 plus $10.10 for each additional $ 1,000.00, or fraction, thereof, to and including $ 50,000.00
$50,001 to $100,000	$ 643.75 for the first $ 50,000.00 plus $ 7.00 for each additional $ 1,000.00, or fraction, thereof, to and including $ 100,000.00
$100,001 to $500,000	$ 993.75 for the first $ 100,000.00 plus $ 5.60 for each additional $ 1,000.00, or fraction, thereof, to and including $ 500,000.00
$500,001 to $1,000,000	$ 3,233.75 for the first $ 500,000.00 plus $ 4.75 for each additional $ 1,000.00, or fraction, thereof, to and including $ 1,000,000.00
$1,000,001 and up	$ 5,608.75 for the first $ 1,000,000.00 plus $ 3.65 for each additional $ 1,000.00, or fraction, thereof...

FENCES

1. When located within a front yard shall not exceed four feet (4') in height measured from the adjacent ground level;
2. When located in a rear yard, six-foot (6') privacy fences shall be allowed from the rear of the house to the rear property line, height measured from the adjacent ground level.
a. When yard abuts the lake, it is unlawful for any person, firm association, or corporation to build, construct or maintain a solid six-foot (6') privacy fence in their lakeside yard. No application can be made to the Board of Adjustment for the establishment of a privacy fence on above said properties, exception for required six-foot (6') fence around pools.
3. When located in a side yard, six-foot (6') privacy fences shall be allowed from the rear of the house to the front of the house only by special permit from the Board of Adjustment. Height to be measured from the adjacent ground.
a. When yard abuts the lake it is unlawful for any person, firm, association or corporation to build, construct or maintain a solid six-foot (6) privacy fence in their side yard. No application can be made to the Board of Adjustment for the establishment of a privacy fence on above said properties.
4. Fences shall be located so no part thereof is within one foot (1') of any alley or street right-of-
a. Except in areas where streets or alleys have no curb and gutter, fences shall be located no closer than five foot (5') from the edge of alley or street surface to allow for snow removal. No application to the Board of Adjustment or the City Council can be made to place such fences closer to the edge of the alley or street surface.
5. No portion of any fence shall exceed six feet (6') in height, measured from the adjacent ground.
6. Corner lots – Privacy fences on corner lots and double corner lots shall only be allowed directly behind the residence and not be allowed along side yards.
7. Fence installation – It is unlawful for any person, firm, association or corporation to build, construct or maintain any fence of any kind unless the poles/posts are on the inside of the fence facing the property upon which the fence is being installed, and the finish side of the fence shall be placed on the side of the poles/posts facing the property other than the property of the owner.
8. Exception for the Carter Lake Club Area – In the historic and unique district known as "The Carter Lake Club" area, fences as described above may be installed where no neighbors view of the lake is impeded by said fence.
a. Fences installed along "Club Area" sidewalks may be installed on city right-of-way with City Council permission at a distance from said sidewalk to be determined by the City Council.
9. Swimming pools, dog runs and fence gates.
a. An outdoor swimming pool with a depth of eighteen inches (18") or more, the edge of which is less than four feet (4') above grade, shall be completely surrounded by a fence not less than six feet (6') in height. The fence shall be so constructed as not to allow a four-inch (4") diameter sphere to pass thru the fence. A principal or an accessory building or a retaining wall may be used as a part of such enclosure.
b. Dog runs shall be enclosed by a fence of sufficient height and construction to contain the dog at all times. A closed top shall be installed if necessary to contain the dog.
c. All gates or doors opening through an enclosure to a pool or a dog run shall be equipped with a self-closing and self-latching device for keeping the gate or door securely closed at all times when not in actual use, except the door of any building which forms a part of the enclosure need not be so equipped. The Building inspector may permit other protective devises or structures to be used so long as the degree of protection afforded by the substitute device or structure is not less than the protection afforded herein.
10. Materials
a. Fences shall be constructed of wood, chain-link, PVC/resin, stone or masonry materials, or ornamental metals only. Wood fences shall utilize standard building lumber only. Barbed wire and/or electrified fences are not permitted and are defined as any fence that includes in its material barbs, blades, razors, electric current or other features specifically designed to injure or abrade an individual or animal who attempts to negotiate the fence. Wire mesh fences may be permitted to enclose tennis courts and game and recreation areas on public land and residential lots.

Please make be certain that you want to proceed with this project when you submit your application.
The fees that you submit are not refundable once the application is submitted.


Standard
Chain Link
(212.20')
Black-Vinyl
Coated Chain Link
261.79'
Standard
Chain Link
(248')

FOR OFFICE USE: CASE # _____ Receipt # _____
Z.B.A. Public Hearing: _____ Amount _____

CITY OF CARTER LAKE

APPLICATION FOR PLANNING BOARD AGENDA

1. APPLICANT: OPG Carter Lake Partners, LLC Phone: 785-201-4046
   Address: 250 N. Santa Ave. Suite A Salina, KS 67401 *Status: C.P.
2. REPRESENTED BY: Austin Kack Phone: 785-201-4046
   Address: 250 N. Santa Ave. Suite A Salina, KS 67401
3. STREET ADDRESS/LOCATION: NE Corner of 9th Street and Ave. K, Carter Lake, IA
4. LEGAL DESCRIPTION: CARTER LAKE-AUD SUB 21-75-44 LT 5 LTS C, D & E
5. OWNERS NAME: Mikel USA, Inc.
6. OWNERS ADDRESS: 2813 N. 9th Carter Lake, IA 51510
7. REASONS FOR REQUEST AND INTENDED USES: Feedback on rezoning for an independent-living senior community.
8. ZONING DISTRICT: R-2
9. PRESENT USE: Vacant Land
10. COPY OF BLUEPRINTS OF INTENDED STRUCTURE. Attached.
11. ADMINISTRATIVE DECISION ISSUED: _____

FOR OFFICE USE

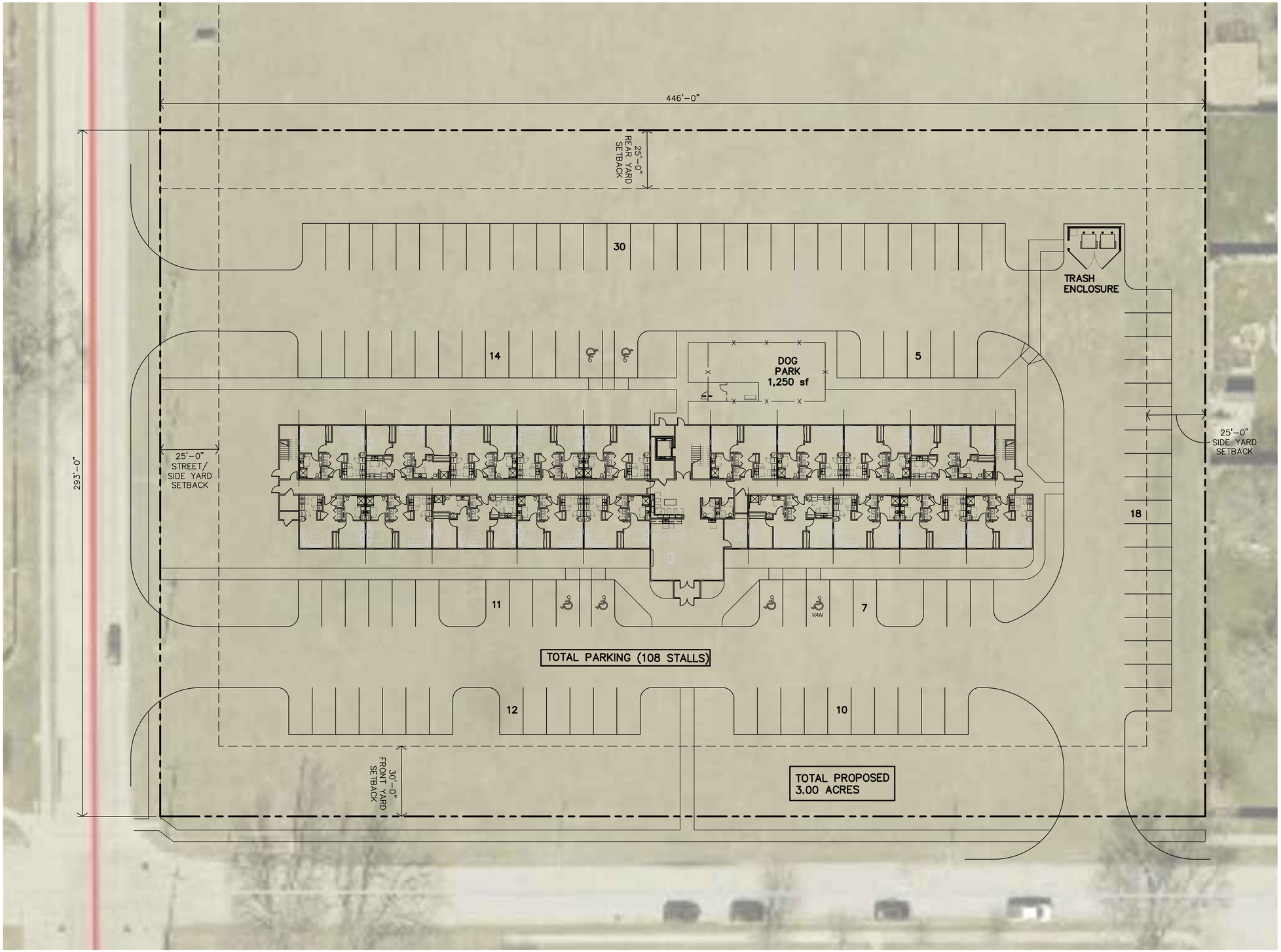
12. ATTACHED TO THE APPLICATION ARE:
    a. Denied "Building Permit Application" Form……..… _____
    b. Approves……..……..…… _____
    c. Restrictions……..…… _____

THE FACTS PRESENTED ABOVE ARE TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE:

13. SIGNATURE: Austin J. Kack Date: 1-30-25

TYPED OR PRINTED NAME: Austin J. Kack *Status: C.P.

***NOTE:** *P.O. = Property Owner* *C.P. = Contract Purchaser*
O.H. = Legal Optionholder *A. = Owner's authorized agent*



A **SITE PLAN**
1" = 20'-0"

JonesGillamRenz
730 N. Ninth
Salina, KS 67401
785.827.0386
1881 Main Street, Suite 301
Kansas City, MO 64108
jgr@jgrarchitects.com

THE RESIDENCE AT CARTER LAKE

NEW SENIOR LIVING FACILITY

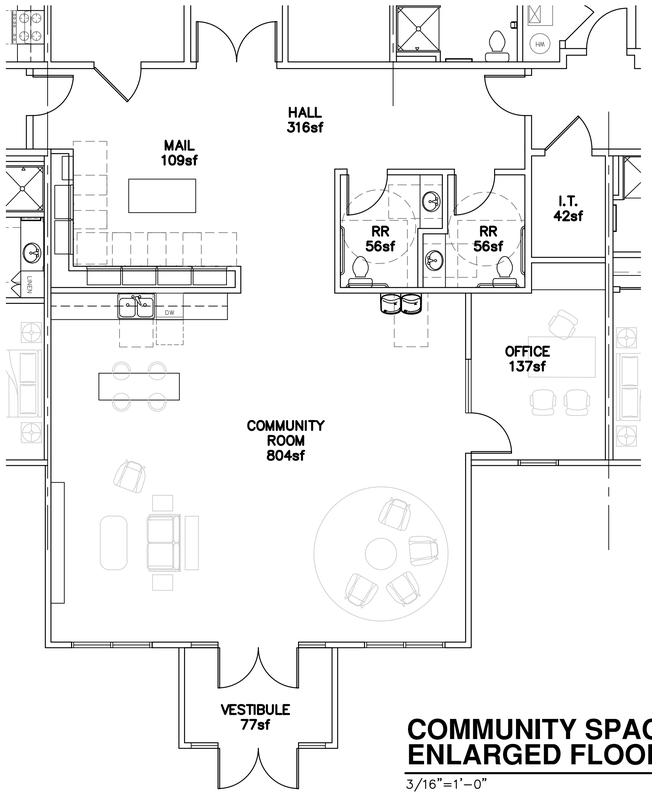
CARTER LAKE, IOWA

PRELIMINARY DRAWING NOT FOR CONSTRUCTION

REVISION:

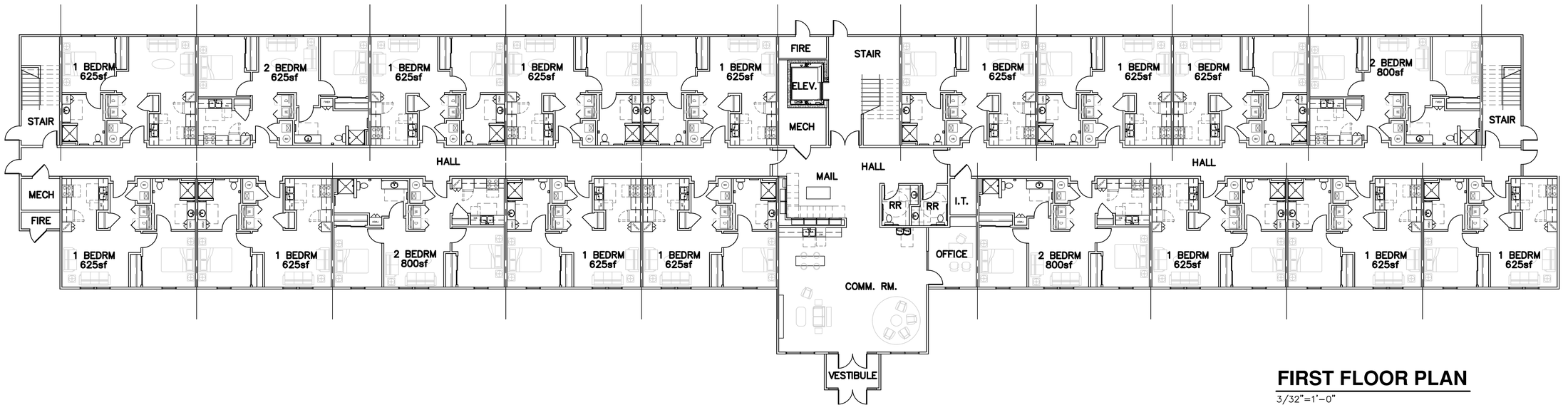
DATE: 1-29-2025
JOB: 25-3489
SHEET NO.:

A1.2



COMMUNITY SPACES ENLARGED FLOOR PLAN

3/16"=1'-0"



FIRST FLOOR PLAN

3/32"=1'-0"

JonesGillamRenz
730 N. Ninth
Salina, KS 67401
785.827.0386
1881 Main Street, Suite 301
Kansas City, MO 64108
jgr@jgrarchitects.com

THE RESIDENCE AT CARTER LAKE

NEW SENIOR LIVING FACILITY

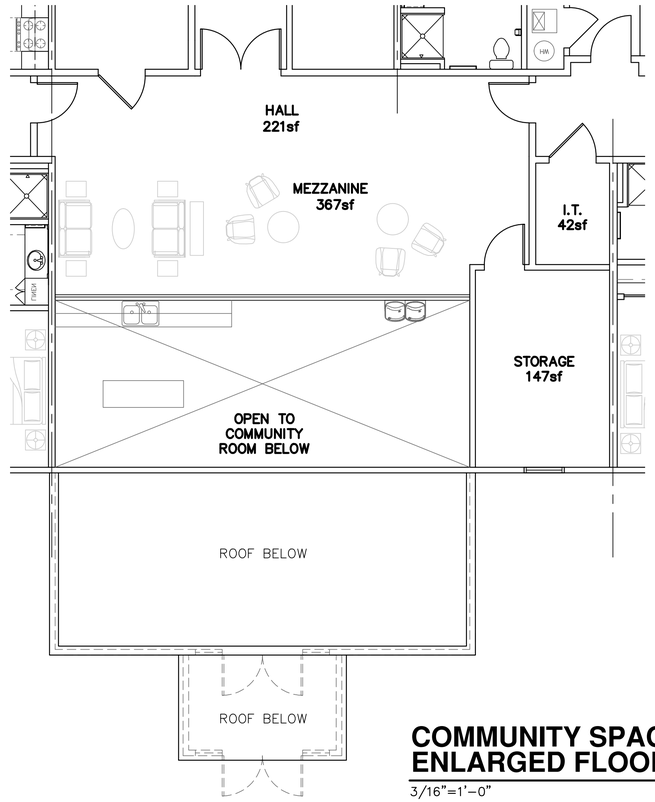
CARTER LAKE, IOWA

PRELIMINARY DRAWING NOT FOR CONSTRUCTION

REVISION:

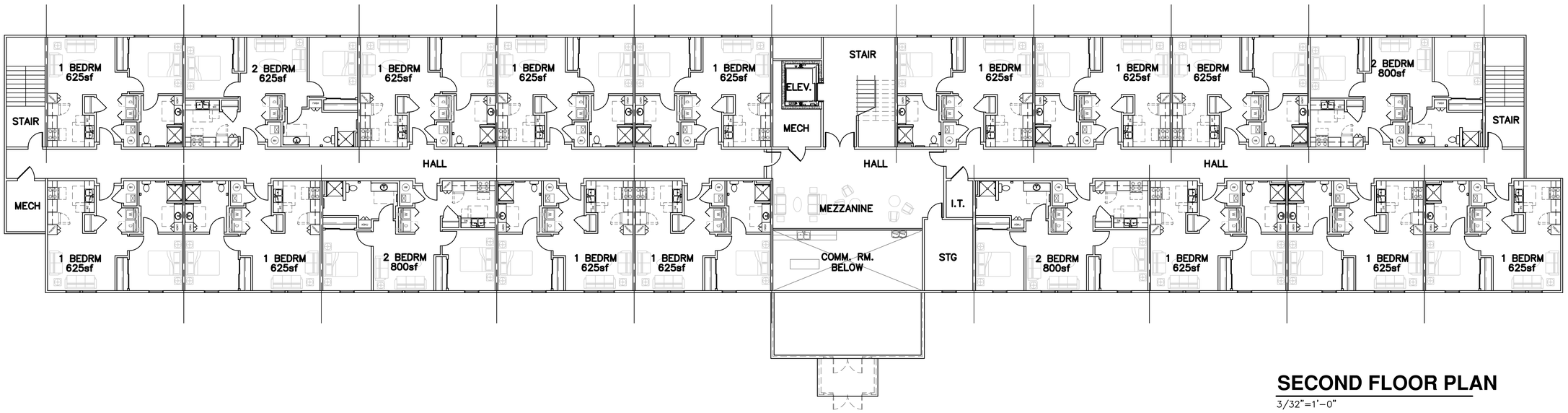
DATE: 1-29-2025
JOB: 25-3489
SHEET NO.:

A2.1



COMMUNITY SPACES ENLARGED FLOOR PLAN

3/16"=1'-0"



SECOND FLOOR PLAN

3/32"=1'-0"

JonesGillamRenz
730 N. Ninth
Salina, KS 67401
785.827.0386
1881 Main Street, Suite 301
Kansas City, MO 64108
jgr@jgrarchitects.com

THE RESIDENCE AT CARTER LAKE

NEW SENIOR LIVING FACILITY

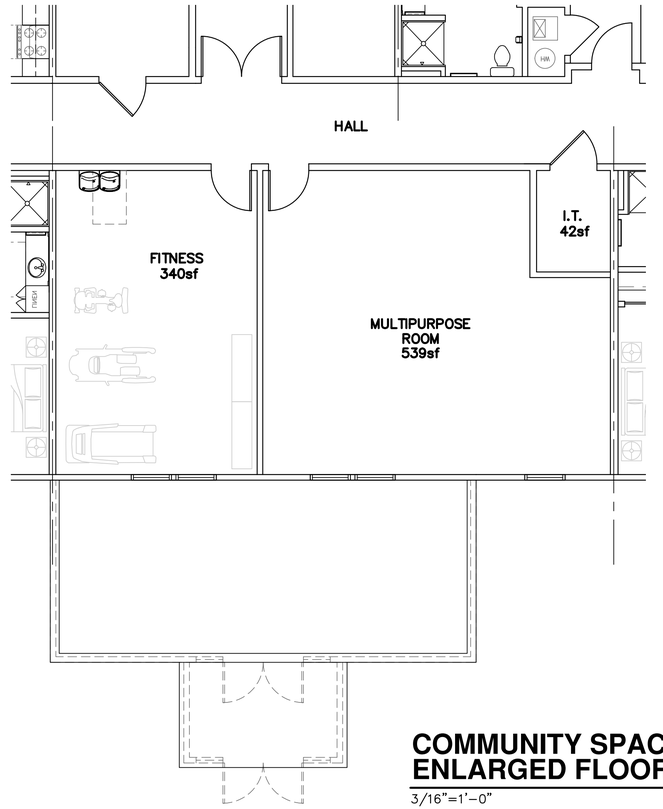
CARTER LAKE, IOWA

PRELIMINARY DRAWING NOT FOR CONSTRUCTION

REVISION:

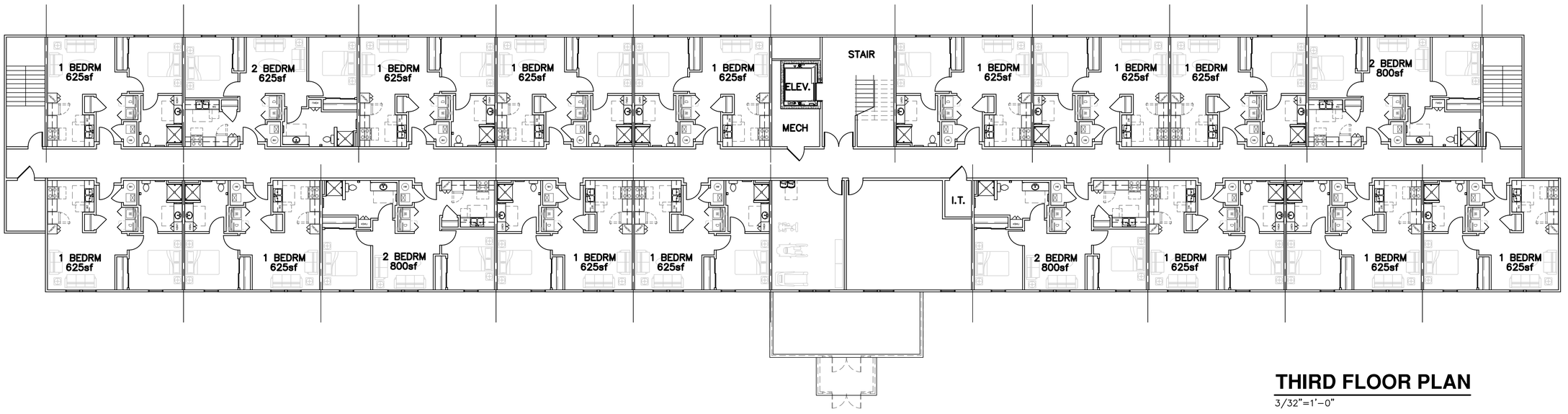
DATE: 1-29-2025
JOB: 25-3489
SHEET NO.:

A2.2



COMMUNITY SPACES ENLARGED FLOOR PLAN

3/16"=1'-0"



THIRD FLOOR PLAN

3/32"=1'-0"

JonesGillamRenz
730 N. Ninth
Salina, KS 67401
785.827.0386
1881 Main Street, Suite 301
Kansas City, MO 64108
jgr@jgrarchitects.com

THE RESIDENCE AT CARTER LAKE

NEW SENIOR LIVING FACILITY

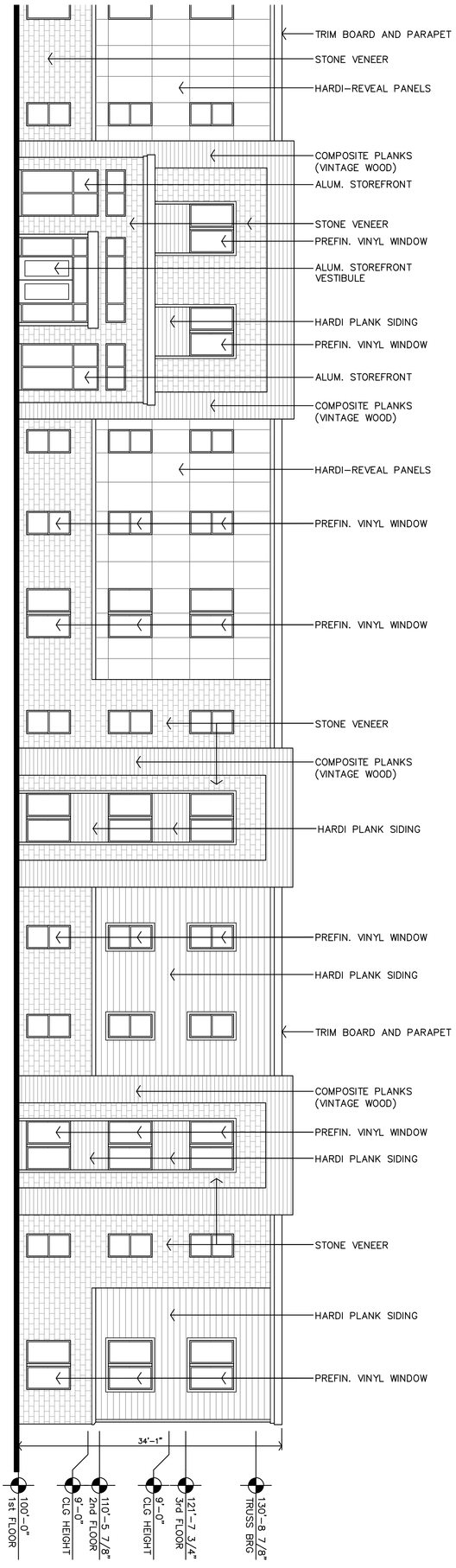
CARTER LAKE, IOWA

PRELIMINARY DRAWING
NOT FOR CONSTRUCTION

REVISION:

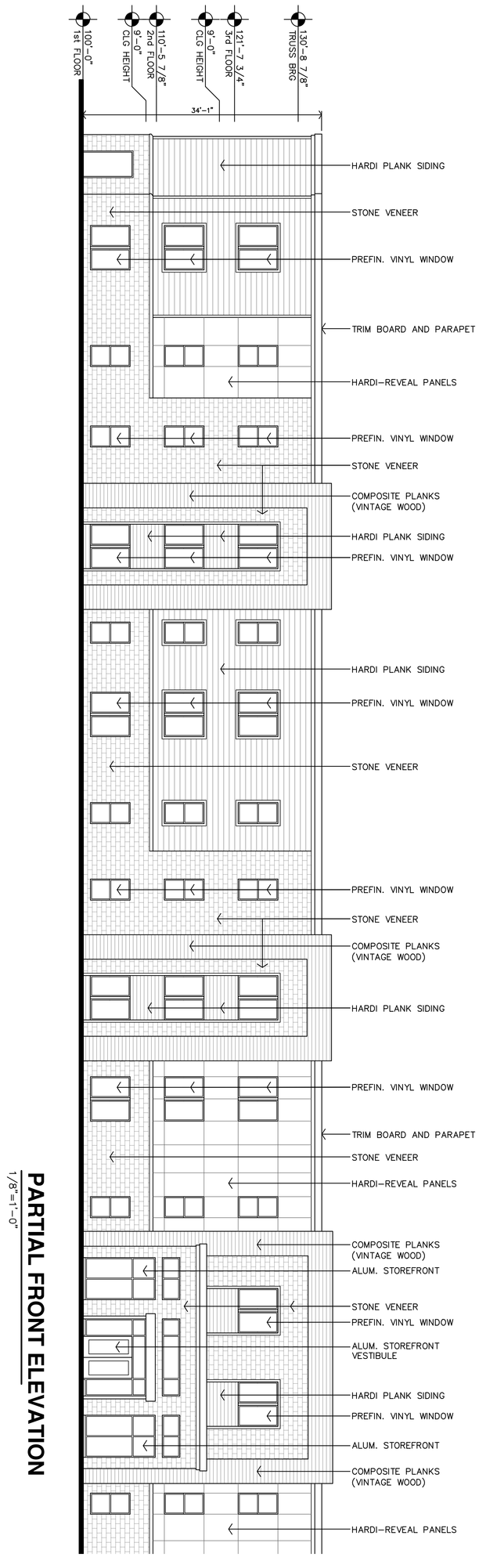
DATE: 1-29-2025
JOB: 25-3489
SHEET NO.:

A2.3



PARTIAL FRONT ELEVATION

1/8"=1'–0"



PARTIAL FRONT ELEVATION

1/8"=1'–0"

A3.1

DATE: 1-29-2025
JOB: 25-3489
SHEET NO.:

REVISION:

PRELIMINARY DRAWING NOT FOR CONSTRUCTION

THE RESIDENCE AT CARTER LAKE

NEW SENIOR LIVING FACILITY

CARTER LAKE, IOWA

JonesGillamRenz
730 N. Ninth
Salina, KS 67401
785.827.0386
1881 Main Street, Suite 301
Kansas City, MO 64108
jgr@jgrarchitects.com

COMMERCIAL CONSTRUCTION PERMIT APPLICATION

CITY OF CARTER LAKE, IOWA
Building & Zoning Department
950 Locust Street
Carter Lake, IA 51510
Telephone: 712.847.0535
Fax: 712.347.5454
Inspection Request: 712.847.0535

Permit Amount	Receipt #	Permit #

JOB SITE ADDRESS: 2614 N 5th St., Carter Lake, IA 51510-1509

PARCEL NUMBER: 754420401901

LEGAL DESCRIPTION: ☐ *Attachment*

PROPERTY SIZE:

ZONING DISTRICT:
☐ R-3 Urban Residential Multi-Family District ☐ R/CC CL Club Special Residential District ☐ C/L Locust Street Mixed Use Corridor District ☐ C-1 Limited Commercial/Office District
☐ C-2 General Commercial District ☐ BP Business Park District ☐ T-C Town Center ☐ C/A Abbott Drive Corridor District ☐ M-1 Limited Industrial District ☐ M-2 General Industrial District
☐ MC Mixed Use District ☐ PUD Planned Unit Development Overlay District ☐ W Water-Oriented Development Overlay District ☐ FP/FW Floodplain Overlay District

PROPERTY OWNER: Hastings Family Holdings LLC

PHONE NUMBER:

PROPERTY OWNER ADDRESS: 2614 N 5th Street

STATE: IA

ZIP CODE: 51510-1509

GENERAL CONTRACTOR NAME: Jacobs Telecommunications Inc

STATE LICENSE #:

PHONE NUMBER:

CONTRACTOR MAILING ADDRESS: 10695 Winnetka Ave Suite 140, Brooklyn Park

STATE: MN

ZIP CODE: 55445

SUB-CONTACTOR NAME & STATE LICENSE #'s:

Electrical: _____ **Plumbing:** _____ **Mechanical:** _____

State License #: _____ **State License #:** _____ **State License #:** _____

Building Type/Use: ☒ General Commercial ☐ Industrial ☐ Multi-Family ☐ Other _____

Class of Work: ☐ New Structure ☐ Addition ☐ Tenant Improvement ☐ Remodel ☒ Other Telecommunication Tower Equipment Upgrade

CONSTRUCTION INFORMATION

PROPOSED CONSTRUCTION DESCRIPTION: AT&T plasn to REMOVE: 6 antennas, 9 radios and asscoiated cabling.
AT&T plans to INSTALL: 9 antennas, 12 radios and associated cabling.

ESTIMATED CONSTRUCTION COST:	PROPOSED BUILDING AREA *(square footage)*:	CODE TYPE OF CONSTRUCTION:
$50,000.00		IIB

PERMIT FEES		AMOUNTS
Building Fee will be based on engineered estimated construction cost or permit valuation using the current Building Valuation Data and adopted Building Permit Fee Schedule. *(see next page to figure cost)*	**Building Fee** *Receipt #:*	$
Figuring the **Plan Review Fee at 25%** of the calculated Building Permit Fee cost. The Plan Review Fee will be a required deposit at the time of your permit application submittal. *(see next page to figure cost)*	**Plan Review Fee** *(submittal deposit)* *Receipt #:*	$
	Total Amount	$

Applicant is responsible for obtaining all other necessary permits or approvals related to the proposed activity, including those that may be required by the State or Federal Government. Applicant will save, indemnify, and keep harmless the City of Carter Lake, Iowa its officers, employees, and agents against all liabilities, judgments cost, and expenses which may accrue against them in consequence of the granting of this permit, inspections, or use of any on –site or off -site improvements placed by virtue hereof, and will in all things strictly comply with all applicable rules, ordinances, and laws. Signature constitutes an attestation by the applicant that application complies with all covenants, conditions, and restrictions.

APPLICANT SIGNATURE: _____ DATE 2/18/2025

Issued By:	Date:

BUILDING VALUATION DATA

Square Foot Construction Costs [a, b, c, d]

Group (2015 International Building Code)	IA	IB	IIA	IIB	IIIA	IIIB	IV	VA	VB
A-1 Assembly, theaters, with stage	229.03	221.51	216.10	207.06	194.68	189.07	200.10	177.95	171.21
A-1 Assembly, theaters, without stage	209.87	202.35	196.94	187.90	175.62	170.01	180.94	158.89	152.15
A-2 Assembly, nightclubs	177.89	172.85	168.07	161.49	151.98	147.78	155.80	137.68	132.99
A-2 Assembly, restaurants, bars, banquet halls	176.89	171.85	166.07	160.49	149.98	146.78	154.80	135.68	131.99
A-3 Assembly, churches	211.95	204.43	199.02	189.98	177.95	172.34	183.02	161.22	154.48
A-3 Assembly, general, community halls, libraries, museums	176.88	169.36	162.95	154.91	141.73	137.12	147.95	125.00	119.26
A-4 Assembly, arenas	208.87	201.35	194.94	186.90	173.62	169.01	179.94	156.89	151.15
B Business	182.89	176.17	170.32	161.88	147.55	142.00	155.49	129.49	123.76
E Educational	192.29	185.47	180.15	172.12	160.72	152.55	166.18	140.46	136.18
F-1 Factory and industrial, moderate hazard	108.98	103.99	97.83	94.17	84.37	80.56	90.16	69.50	65.44
F-2 Factory and industrial, low hazard	107.98	102.99	97.83	93.17	84.37	79.56	89.16	69.50	64.44
H-1 High Hazard, explosives	102.01	97.02	91.86	87.20	78.60	73.79	83.19	63.73	0.00
H234 High Hazard	102.01	97.02	91.86	87.20	78.60	73.79	83.19	63.73	58.67
H-5 HPM	182.89	176.17	170.32	161.88	147.55	142.00	155.49	129.49	123.76
I-1 Institutional, supervised environment	182.53	175.88	170.97	162.73	150.55	146.48	162.73	135.02	130.72
I-2 Institutional, hospitals	308.50	301.79	295.93	287.50	272.14	0.00	281.10	254.09	0.00
I-2 Institutional, nursing homes	213.56	206.85	200.99	192.56	179.22	0.00	186.16	161.17	0.00
I-3 Institutional, restrained	208.37	201.66	195.80	187.37	174.54	167.98	180.97	156.48	148.74
I-4 Institutional, day care facilities	182.53	175.88	170.97	162.73	150.55	146.48	162.73	135.02	130.72
M Mercantile	132.61	127.57	121.79	116.21	106.35	103.15	110.52	92.05	88.36
R-1 Residential, hotels	184.11	177.46	172.55	164.31	152.38	148.31	164.31	136.85	132.55
R-2 Residential, multiple family	154.38	147.73	142.82	134.58	123.25	119.18	134.58	107.72	103.42
R-3 Residential, one- and two-family	143.93	139.97	136.51	132.83	127.95	124.61	130.57	119.73	112.65
R-4 Residential, care/assisted living facilities	182.53	175.88	170.97	162.73	150.55	146.48	162.73	135.02	130.72
S-1 Storage, moderate hazard	101.01	96.02	89.86	86.20	76.60	72.79	82.19	61.73	57.67
S-2 Storage, low hazard	100.01	95.02	89.86	85.20	76.60	71.79	81.19	61.73	56.67
U Utility, miscellaneous	77.82	73.48	69.04	65.52	59.23	55.31	62.58	46.83	44.63

Footnotes:

a. Private Garages use Utility, miscellaneous
b. Unfinished basements (all use group) = $18.25 per square foot
c. For shell only buildings deduct 20 percent
d. N. P. = Not Permitted

TOTAL VALUATION	FEE
$1 to $500	**$ 23.50**
$501 to $2,000	**$ 23.50 for the first $ 500.00 plus $ 3.05 for each additional $ 100.00, or fraction thereof, to and including $ 2,000.00**
$2,001 to $25,000	**$ 69.25 for the first $ 2,000.00 plus $ 14.00 for each additional $ 1,000.00, or fraction thereof, to and including $ 25,000.00**
$25,001 to $50,000	**$ 391.75 for the first $ 25,000.00 plus $10.10 for each additional $ 1,000.00, or fraction thereof, to and including $ 50,000.00**
$50,001 to $100,000	**$ 643.75 for the first $ 50,000.00 plus $ 7.00 for each additional $ 1,000.00, or fraction thereof, to and including $ 100,000.00**
$100,001 to $500,000	**$ 993.75 for the first $ 100,000.00 plus $ 5.60 for each additional $ 1,000.00, or fraction thereof, to and including $ 500,000.00**
$500,001 to $1,000,000	**$ 3,233.75 for the first $ 500,000.00 plus $ 4.75 for each additional $ 1,000.00, or fraction thereof, to and including $ 1,000,000.00**
$1,000,001 and up	**$ 5,608.75 for the first $ 1,000,000.00 plus $ 3.15 for each additional $ 1,000.00, or fraction thereof...**

ZONING DISTRICT REGULATIONS

DISTRICT	Site Area per Housing Unit (sq ft)	Minimum Lot Area (sq ft)	Minimum Lot Width (feet)	Front Yard	Side Yard	Street Side Yard	Rear Yard	Max Height (feet)	Max Building Coverage	Max Impervious Coverage	Floor Area Ratio	Max % of Total Parking Located in Street Yard	Minimum Depth of Landscaping Adjacent to Street Right-of- Way Line (feet)
R-3													
1- FAMILY DETACHED				25	*7	15	25	35	55%	65%	N/A	N/A	20
Conventional Developments	6,000	6,000	60										
Planned Developments	5,000	4,000	45										
1- FAMILY ATTACHED				25	*7	15	25	35	55%	65%	N/A	N/A	20
Conventional Developments	6,000	5,000	45										
Planned Developments	5,000	4,000	40										
DUPLEX				25	*10	15	25	35	55%	65%	N/A	N/A	20
Conventional Developments	3,000	6,000	75										
Planned Developments	3,000	6,000	65										
* 5 ft for each additional story													
TOWNHOUSE				25	*15	15	25	35	55%	65%	N/A	N/A	20
Conventional Developments	2,500	3,000	35										
Planned Developments	2,000	2,500	25										
MULTI-FAMILY				30	25	25	25	35	55%	65%	.50	50%	20
Conventional Developments	2,000	10,000	100										
Planned Developments	1,500	1.0 acre	150										
OTHER PERMITTED USES				25	10	15	25	35	45%	55%	.50	50%	20
Conventional Developments		6,000	60										
Planned Developments		6,000	60										
R/CC													
1 – Family Detached	4,000	4,000	50	10	5	15	10*	35	55%	65%	N/A		10
*20 for garages facing alleys													
1 – Family Attached (section 804)	3,000	7,000	45	10	5	15	10*	35	55%	54%	N/A		10
*20 for garages facing alleys													
Other Permitted Uses		6,000	50	25	10	15	10	35	55%	65%	.50		10
RM													
1 – Family Detached in Conv. Develop.	6,000	6,000	60	25	5	15	25	35	45%	60%	N/A	N/A	20*, 35**
*private **public													
Other Permitted Uses in Conv. Develop.		6,000	60	25	10	15	25	35	45%	60%	.50	50%	20*, 35**
*private **public													
C/L													
Permitted Uses		6,000	75	*Note 1	10	15	25	35	60%	80%	1.0	50%	10

*Note 1 - *Setbacks along Urban Corridors*

Normal minimum setback is 25 feet/ Front yard setback may be reduced to 15 feet if:

1. No parking is placed within the street yard.

2. The entire street yard area is landscaped, with the exception of driveways to parking areas or pedestrian accesses to the principal building on the site.

This setback flexibility shall not be applied on any street without the specific approval of the City Council.

DISTRICT	Site Area per Housing Unit (sq ft)	Minimum Lot Area (sq ft)	Minimum Lot Width (feet)	Front Yard	Side Yard	Street Side Yard	Rear Yard	Max Height (feet)	Max Building Coverage	Max Impervious Coverage	Floor Area Ratio	Max % of Total Parking Located in Street Yard	Minimum Depth of Landscaping Adjacent to Street Right-of- Way Line (feet)
C-1													
Permitted Uses	**N/A**	**6,000**	**60**	**15 (Note 1)**	**7**	**15**	*	**35**	**60%**	**80%**	**.50 (Note 2)**	**75%**	**10**
*** Less of 15% of lot depth or 20 feet** *Note 1: Flexible Yard Setbacks in Planned Districts* The Planning Board and City Council may vary required minimum setbacks in planned districts. However, the setbacks from the front façade of a garage to any public or private street right-of-way (including the boundary of sidewalks) must be at least 20 feet. *Note 2: Flexible Floor Area Ratios in Planned Districts:* The Planning Board and City Council may increase the maximum Floor Area Ratio for a development in a planned district.													
C-2													
Permitted Uses		**6,000**	**65**	**25 (Note 1)**	**0**	**25**	**0**	**35**	**70%**	**90%**	**1.0 (Note 2)**	**100%**	**10**
Note 1: Flexible Yard Setbacks in Planned Districts The Planning Board and City may vary required minimum setbacks in planned districts. Along Arterials designated in the city's Comprehensive Development Plan, the Maintenance Supervisor may require a deeper front-yard setback. *Note 2: Flexible Floor Area Ratios in Planned Districts* The Planning Board and City Council may increase the maximum Floor Area Ratio for a development in a planned district.													
TC													
Multi-family													
Conventional Developments	**2,000**	**10,000**	**100**	**30**	**25**	**25**	**25**	**35**	**55%**	**65%**	**.50 (Note 1)**	**50%**	**Refer to R-3**
Planned Developments	**1,500**	**1.0 acre**	**150**										
All Other Permitted Uses													
Conventional Developments	**N/A**	**10,000**	**No requirement**	**0**	**0**	**0**	**0**	**35**	**50%**	**70%**	**3.0**	**50%**	**0***
Planned Developments													
*** 5 ft. for one story. 5ft. for each additional story** *Note 1: Flexible Floor Area Ratios in Planned Districts* The Planning Board and City may vary required minimum setbacks in planned districts. Along Arterials designated in the city's Comprehensive Development Plan, the Maintenance Supervisor may require a deeper front-yard setback.													
C/A													
Permitted Uses		**8,000**	**80**	**25 (Note 1)**	**0**	**0**	**0**	*	**70%**	**85%**	**3.0 (Note 2)**	**75%**	**15**
*** 60 unless reduced by airport standards** *Note 1: Flexible Yard Setbacks in Planned Districts* The Planning Board and City may vary required minimum setbacks in planned districts. Along Arterials designated in the city's Comprehensive Development Plan, the Maintenance Supervisor may require a deeper front-yard setback. *Note 2: Flexible Floor Area Ratios in Planned Districts* The Planning Board and City Council may increase the maximum Floor Area Ratio for a development in a planned district.													
BP													
Permitted Uses		**20,000**	**100**	**30 (Note 1)**	**10**	**25**	**30**	**60 ***	**50%**	**701%**	**2.0 (Note 2)**	**50%**	**20**
*** "unless reduced by airport approach standard"** *Note 1: Flexible yard Setbacks in Planned Districts* The Planning Board and City Council may vary required minimum setbacks in planned districts. *Note 2: Flexible Floor Area Ratios in Planned Districts* The Planning Board and City Council may increase the maximum Floor Area Ratio for a development in a planned district.													
M-1													
Permitted Uses	**10,000***	**10,000**	**100**	** (Note 1)	**0**	**25**	**10**	**75**	**70%**	**90%**	**1.0 (Note 2)**	**100%**	**10**
*** Minimum District Size (sq ft) ** 25; greater of 35 feet from property line or 50 feet from the centerline along roads on the TEA-21 arterial system** *Note 1: Flexible Yard Setbacks in Planned Districts* The Planning Board and City may vary required minimum setbacks in planned districts. Along Arterials designated in the city's Comprehensive Development Plan, the Maintenance Supervisor may require a deeper front-yard setback. *Note 2: Flexible Floor Area Ratios in Planned Districts* The Planning Board and City Council may increase the maximum Floor Area Ratio for a development in a planned district.													
M-2													
Permitted Uses		**1 acre**	**100**	* **(Note 1)**	**0**	**25**	**10**	**75**	**80%**	**90%**	**1.0 (Note 2)**	**100%**	**10**
***25; greater of 35 feet from property line or 50 feet from the centerline along roads on the TEA-21 arterial system** *Note 1: Flexible Yard Setbacks in Planned Districts* The Planning Board and City may vary required minimum setbacks in planned districts. Along Arterials designated in the city's Comprehensive Development Plan, the Maintenance Supervisor may require a deeper front-yard setback. *Note 2: Flexible Floor Area Ratios in Planned Districts* The Planning Board and City Council may increase the maximum Floor Area Ratio for a development in a planned district.													

DEFINITION OF ZONING DISTRICT

R-3 Urban Residential Multi-Family District
R/CC CL Club Special Residential District
C/L Locust Street Mixed Use Corridor District
C-1 Limited Commercial/Office District
C-2 General Commercial District
T-C Town Center
C/A Abbott Drive Corridor District
BP Business Park District
M-1 Limited Industrial District
M-2 General Industrial District

Note: Provided in Table 1, Height and Area Matrix, are the height and area requirements for each zoning district. Where there are two (2) or more values shown, the first is for the permitted use in the district followed by supplemental requirements for other uses and site conditions. For example, in the R-1 District the minimum lot width is shown as 60/70/35, which means that sixty (60) feet is the minimum lot width for most lots, seventy (70) feet is the minimum lot width for corner lots, and thirty-five (35) feet is the minimum lot width (at the curb) for lots abutting a cul-de-sac. The second value shown for rear and side setbacks in the commercial and industrial zoning districts are for lots that are adjacent to residential areas.

SECTION C- FLOOD PLAIN DEVELOPMENT

Rate Map Information		*Rate Map*	*Flood Zone:* ☐ *.2%* ☐ *AH* ☐ *A* ☐ *AO* ☐ *AE* ☐ *X*	*Floodplain?* ☐ *Yes* ☐ *No*	*Floodway?* ☐ *Yes* ☐ *No*
PROJECT DESCRIPTION	**Type of Development**	☐ *Filing* ☐ *Routine Maintenance* ☐ *Substantial Improvement* ☐ *Grading/Excavation* ☐ *Minor Improvement* ☐ *New Construction (Skip Structural Improvements)*			
	Detailed Description of Development Proposed	☐ *Per Attachment*			
STRUCTURAL IMPROVEMENTS	**Is the existing structure non-conforming?**	☐ *Not Applicable* ☐ *There is no existing structure* ☐ *Yes* ☐ *No*			
	Size of existing structure(s):				
	Value of existing structure(s):	**$**	*Source of value of existing structure*	☐ *Assessor* ☐ *Appraisal*	
	Size of proposed structure and/or addition:				
	Estimated cost of improvements:	**$**			
	Type of structure being constructed/improved:	☐ *Residential Dwelling* ☐ *Non-Residential* ☐ *Accessory Building* ☐ *Other:*			
FLOODPLAIN/FLOODWAY DATA	**Is property located in a designated floodway?**	☐ *Yes* ☐ *No*	*If answered yes, certification must be provided prior to the issuance of a permit to develop, that the proposed development will result in no increase in the 100-year base flood elevation. No new residential or substantially improved buildings are permitted in the floodway.*		
	Is property located in a designated floodway fringe?	☐ *Yes* ☐ *No*	*If this permit is issued, it will be with the condition that the lowest floor (including basement) of any new or substantially improved residential building will be elevated at least 1.0 above the 100-year base flood elevation. If the proposed development is a non-residential building, this permit will be issued with the condition that the lowest floor (including basement) of a new or substantially improved non-residential building will be elevated or flood proofed to at least 1.0 foot above the 100-year base flood elevation. Detached accessory structures to a residential use may be exempt if it meets certain criteria. Contact the Planning Dept. of details.*		
	MSL/NGVD=Mean Sea Level/National Geodetic Vertical Datum of 1929	*Elevation of the 100-Year Base Flood:*		*MSL/NGVD:*	
		Elevation of the proposed development site (natural ground/grade):		*MSL/NGVD:*	
		Required elevation/flood proofing level for lowest floor:		*MSL/NGVD:*	
		Proposed elevation/flood proofing level for lowest floor (including basement):		*MSL/NGVD:*	

PLEASE MAKE CERTAIN THAT YOU WANT TO PROCEED WITH THIS PROJECT WHEN SUBMITTING YOUR APPLICATION. THE 25% PLAN REVIEW FEE IS NON-REFUNDABLE ONCE THE APPLICATION IS SUBMITTED.

PLAN SUBMITTAL REQUIREMENT FOR COMMERCIAL & INDUSTRIAL BUILDINGS

This Includes Tenant Improvements, Additions, Remodels and Accessory Structures

GENERAL INFORMATION FOR SUBMITTAL

- Submit two (02) complete sets of plans in blueprint or photocopy form, with the plan review deposit.
  - Provide two (02) additional plot (site) plans if parcel is on septic along with a completed septic permit application.
  - Pencil drawings on original drawings are not acceptable.
- Plans prepared by an Iowa Registered Professional must be wet stamped, signed and dated on all sheets.
- If plans are NOT prepared by a Licensed Iowa Design Registered Professional then the following information must be on the plans.
  - Iowa Licensed Contractor must place their business name and license number on all sheets prepared by them along with the required signature and date.
- Provide Title Block on each sheet of plans with the following information:
  - Address, Assessor's Parcel Number of proposed construction site
  - Name and Address of design professional, contractor or owner/builder
- The cover sheet for the plans must indicate the square footage break-down, providing all areas separately.
- Plans must be drawn to an approved scale and fully dimensioned: Plot (site) plan approved scales;1"=10, 1"=20' & 1"=30'/Construction plans (other than details) approved scales; ¼"=1'-0" & 1/8"=1'-0" can be used if pre-approved by City Staff.
- Minimum paper size for all plan sets; 11"X 17" paper.
- Revisions to plans must be made on the original drawings and new blueprints or photocopies submitted. No pencil drawing or marks will be accepted on plans at submittal.
- Additions, Remodels, and Tenant Improvements, plans must have complete existing layout (floor) plan, showing what was/is existing prior to remodel or addition. Indicate and label the use of each existing room within the structure along with the door and window locations and sizes.

Plans and specifications must be of sufficient clarity to indicate the location, nature and extent of the work proposed and show in detail that it will conform to the provisions of the technical codes and all relevant laws, ordinances, rules and regulations. The following information is standard requirement for construction documents:

BUILDING PLAN REVIEW REQUIREMENTS

1. Complete Architectural plans, structural plans and material specifications of all work.

2. A Site Plan including the following information:
   a. Size and location of all new construction and all existing structures on the site.
   b. Distances from lot lines.
   c. Established street grades and proposed finish grades.

3. Architectural plans and specifications to include:
   a. Description of uses and the proposed use group(s) for all portions of the building. The design approach for mixed-uses (as applicable).
   b. Proposed type of construction of the building.
   c. Full dimensioned drawings to determine areas and building height.
   d. Adequate details and dimensions to evaluate means of egress, including occupant loads for each floor, exit arrangement and sizes, corridors, doors, stairs, etc.
   e. Exit signs/means of egress lighting, including power supply.
   f. Accessibility scoping provisions.
   g. Description and details of proposed special occupancies such as a covered mall, high-rise, mezzanine, atrium, public garage, etc.
   h. Adequate details to evaluate fire resistive construction requirements, including data substantiating required ratings.
   i. Details of plastic, insulation, and safety glazing installation.
   j. Details of required fire protection systems.

4. Structural plans, specifications, and engineering details to include:
   a. Soils report indicating the soil type and recommended allowable bearing pressure and foundation type.
   b. Signed and sealed structural design calculations which support the member sizes on the drawings.
   c. Details of foundations and superstructure.
   d. Provisions for required special inspections.
   e. Applicable construction standards and material specifications (i.e., masonry, concrete, wood, steel, etc.).
   f. Design Criteria:

      Ground Snow Load: 30 pounds per square foot
      Wind Speed: 90 mph for a 3 second gust /Exposure C
      Seismic Design Category: B
      Weathering Probability for Concrete: Severe
      Frost Line Depth: 42-inches below finish grade

Termite: Moderate to Heavy
Decay: Slight to Moderate
Winter Design Temperature: -5 degrees

MECHANICAL PLAN REVIEW REQUIREMENTS

1. Complete plans and specifications of all heating, ventilating and air- conditioning work.
2. Complete information on all the mechanical equipment and materials including listing, labeling, installation and compliance with specified quality control standards
3. Details on the HVAC equipment including the equipment capacity (Btu/h input), controls, equipment location, access and clearances.
4. A ventilation schedule indicating the outdoor air rates, the estimated occupant load/1,000 ft^2, the floor area of the space and the amount of outdoor air supplied to each space.
5. The location of all outdoor air intakes with respect to sources of combustibles.
6. Duct construction and installation methods, flame spread/smoke development ratings of materials, flexible air duct and connector listing and duct support spacing.
7. Condensate disposal, routing of piping and auxiliary and secondary drain systems.
8. Required exhaust systems, routing of piping and auxiliary and secondary drain systems.
9. Complete details of all Type l and II kitchen hoods, grease duct construction and velocity, clearance to combustibles and fire suppression system. (If applicable).
10. Details of all duct penetrations through fire resistance rated assemblies including shaft, fire dampers and smoke damper locations.
11. Method of supplying combustion air to all fuel fired appliances, the location and size of openings and criteria used to size the openings.
12. Details on the vents used to vent the products of combustion from all fuel burning appliances including the type of venting system, the sizing criteria required for the type of vent and routing of the vent.
13. Boiler and water heater equipment and piping details including safety controls and distribution piping layout.
14. Details on the type of refrigerant, calculations indicating the quantity of refrigerant and refrigerant piping material and the type of connections.
15. Complete details on the gas piping system including materials, installation, valve locations, sizing criteria and calculations (i.e., the longest run of piping, the pressure and pressure drop).

PLUMBING PLAN REVIEW REQUIREMENTS

1. Complete plans and specifications of all plumbing work.
2. Plumbing fixture specifications including identification of the applicable referenced quality control standards and the maximum flow rates for the plumbing fixtures.
3. The basis for the number of plumbing fixtures provided including the occupant load use, the use group and fixtures rate from the plumbing code.
4. Complete dimensions for bathrooms, the location of plumbing fixtures and the wall and floor surface materials.
5. Site plan which indicates the routing of the sanitary, storm and water service with the burial depths for all sewers and water service.
6. Water distribution system sizing criteria and calculations.
7. Water supply and distribution piping plan showing the incoming water supply, distribution piping, and pipe size, the location of the water hammer arrestors and the location of the valves.
8. The location of all backflow preventers, the type of backflow preventers provided for each piece of equipment or outlet and the specified quality control standards referenced in the code.
9. Drainage system piping plan showing the layout of all piping, of plumbing fixtures and the location of cleanouts.
10. Riser diagram(s) of the drain waste and vent piping including the building drain, all horizontal branches and the connections and layout of all fixtures. Pipe sizes, directions of flow, grade of horizontal piping, drainage fixture loads and the method of venting all plumbing fixtures.
11. The location of all indirect waste connections, standpipes, grease traps and separators. (and sizing if applicable).
12. Complete details of the water heater, the method of supplying tempered water to accessible fixtures and the temperature and pressure relief valve discharge.
13. Complete details of the method of draining storm water from the roof including calculations to verify pipe and /or gutter size, the location of all roof drains and the roof area that each group of roof drains is intended to serve and an independent secondary roof drainage system.
14. Piping material specifications to verify compliance with the specified quality control standards for all sanitary, storm and potable water piping (e.g., ASTM B88 for cooper pipe), the type of joints and connections for all piping, the pipe hanger support spacing and details of anchorage and bracing.

ELECTRICAL PLAN REVIEW REQUIREMENTS

1. Complete plans and specifications of all electrical work.
2. Labeling criteria of all electrical equipment.
3. Lighting floor plan including electrical circuits indicating conduit and wiring sizes.
4. Power floor plans including electrical circuits indicating conduit and wiring sizes, equipment and disconnect switches.
5. Exit sign/means of egress lighting location and power supply.
6. Single line diagram including the available fault current and bus bracing.
7. Panel board schedule.
8. Lighting fixtures schedule.
9. Symbol schedule and diagrams.
10. Provide all service and loads calculations.
11. Specifications to include requirements for:
    a. Raceway and conduit with fittings.
    b. Wire and cable.
    c. Electrical boxes, fittings and installation.
    d. Electrical connections.
    e. Electrical wiring devices.
    f. Circuit and motor disconnect
    g. Hangers and supporting devices.
    h. Electrical identification.
    i. Service entrance and details.
    j. Over-current protection.
    k. Switchboards.
    l. Grounding.

m. Transformers.
n. Panel-boards.
o. Motor control centers
p. Lighting fixtures.

ENERGY PLAN REVIEW REQUIREMENTS

Commercial Energy Plan Reviews are based on Chapter 7 of the IECC or the referenced edition of *ASHRAE/IES 90.1-1989,* Energy Code for Commercial and High-Rise Residential Buildings as applicable. In order to perform a thorough Energy Plan Review, the following specifications, drawings and details should be submitted:

Envelope

1. Architectural plans and specifications to include:
   a. Description of uses and the proposed use group(s) for all portions of the building.
   b. Thermal performance of envelope components
   c. Fenestration performance details (U-factor, SC, SHGC, VLT, air leakage rates, etc.).
   d. Fully dimensioned drawings to determine gross and net areas of all envelope components.
   e. Details of vapor barrier and insulation installation, caulking, gasketing, weather-stripping and other means of sealing joints, cracks, holes and penetrations in the building envelope.
   f. ENVSTD output (where applicable) [a]
2. Design conditions (interior and exterior) consistent with local climate.

Electrical Power & Lighting [b]

1. Complete plans and specifications of all electrical work.
2. Riser diagrams(s) of the distribution system indicating:
   a. Check metering provisions for individual dwelling units.
   b. Subdivision of feeders by end use: 1) Lighting, 2) HVAC, 3) SWH and systems over 20 kW.[a]
3. Lighting fixture schedule(s) depicting location, fixture lamps, ballasts, ballast specifications, fixture input watts, fixture wiring methods power factor, etc.
4. Lighting plans(s) for building exterior including total exterior Connected Lighting Power (CLP).
5. Lighting and power floor plans for building interiors including total interior CLP.
6. LTGSTD output (where applicable).
7. Interior and exterior means of lighting control.
8. Electric motor schedule including type, HP and efficiencies. [a]

Mechanical System & Equipment

1. Mechanical equipment data, plans and specifications of all mechanical work including:
   a. Equipment type, capacity (Btuh) and efficiency (peak and part-load).
   b. System design air flow rates (cfm).
   c. Details of equipment/system sizing.
   d. System and / or zone control capabilities including terminal device schedule, provisions for humidity control (where applicable) and the corresponding testing of system controls. [a]
   e. Provisions for automatic setback/shutdown.
   f. Indicate supply and exhaust systems to have automatic shut-off or volume reduction dampers.
   g. Energy consumed by fans in the form of an Air Transport Factor (ATF) and pumps. [a]
2. Enconomizers (air or water) including provisions for integrated control. [a]
3. Duct construction and system static pressure(s), including provisions for sealing.
4. Duct and/or hydronic-piping lining and insulation materials.
5. Provisions for air and/or hydronic system balancing.
6. Boiler and water heater equipment and piping details including safety controls and distribution piping layout.

Service Water Heating (SWH)

1. SWH equipment data including type, capacity and efficiency.
2. SWH pipe insulation, thickness, conductivity and vapor retarder (where appropriate).
3. Water conservation requirements.
4. Energy conservation measures for swimming pools (where applicable).

Accessibility Plan Review Requirements

Accessibility Plan Reviews are based on the specified edition of the ICC/ANSI A117.1 standard as referenced by the building code. In order to perform a thorough Accessibility Plan Review, the following specifications, drawings and details should be submitted.

1. Complete architectural plans and material specifications of all work. Details and plans drawn to scale with sufficient clarity, details and dimensions to show the nature and extent of the work proposed.
2. A site plan including the following information:
   a. Size and location of all new construction and all existing structures on the site.
   b. Location of any recreational facilities (i.e., pool, tennis courts, etc.)
   c. Established street grades and proposed finished grade.
   d. Accessible parking, other locations of public access to the facility, accessible exterior routes and locations of accessible entrances.
3. Architectural plans and specifications to include:
   a. Description of uses and the proposed use group(s) for all portions of the building. The design approach for mixed-uses (as applicable).

b. Fully dimensioned drawings to determine areas and building height.
c. Adequate details and dimensions to evaluate accessible means of egress, including occupant loads for each floor, exit arrangement and sizes, corridors, doors, stairs, areas of refuge, etc.
d. Adequate details and dimensions to evaluate the accessible route to areas required to be accessible, including corridors, doors, protruding objects, maneuvering clearances, clear floor space at fixtures and controls, etc.
e. Accessibility provisions including but not limited to access to services, seating, listening systems, accessible fixtures, elevators, work surfaces, etc.
f. Accessible plumbing facilities and details.
g. Tactile signage provided.
h. Details of required fire protection systems.

Note: The Accessibility Review will cover the scoping requirements in Chapter 11 of the IBC and other accessibility related requirements mainstreamed throughout the applicable building code. Technical requirements covered will be based on the applicable edition of ICC/ANSI A117.1.

Fire Sprinkler Plan Review Requirements

Sprinkler Plan Reviews are based on the specified edition of the applicable NFPA 13 standard as referenced by the building code. In order to perform a thorough Sprinkler Plan Review, the following items should be submitted:

1. Complete plans and specifications for the sprinkler system and related equipment.
2. Description and locations of uses within the building.
3. Design details in accordance with the appropriate reference standard (i.e. NFPA 13, 13D, 13R) as referenced by the building code.
4. Design calculations indicating the discharge requirements of the system with evaluation of the arrangement and source of the water supply.
5. Results of a current flow test indication the location and date of the test.
6. Working drawings indication all pipe sizes and the spacing between branch lines and sprinklers on the branch line.
7. Material specifications and equipment specifications. All material used should be verified that they are installed in accordance with their listing.

INCOMPLETE PLANS WILL NOT BE ACCEPTED

NOTE:

Other Inspections and Fees

1. Inspections outside of normal business hours, per hour (minimum charge – two hours)	**$286.00***
2. Re-Inspection fees assessed under provisions of Section 305.8 per inspection	**$286.00***
3. Inspections for which no fee is specifically indicated, per hour (minimum charge – one half hour)	**$286.00***
4. Additional plan review required by changes, additions or revisions to plans or to plans for which an initial review has been completed (minimum charge – one half hour)	**$286.00***

For use of outside consultants for plan review and Inspections **Actual Costs***

***Or the total hourly cost to the jurisdiction, whichever is greatest. This cost shall include supervision, overhead, equipment, hourly wages and fringe benefits of the employees involved.**

****INSPECTION IS REQUIRED BEFORE COVER-UP AND AT COMPLETION****

Inspection Requests: It shall be the duty of the holder of the building permit or their duly authorized agent to notify the Building & Safety Division when work is ready for inspection.

- Inspections should be scheduled and recorded before 5:00 p.m. the day BEFORE the inspection is requested.
- After Hours, Weekend and Holiday Inspections shall be scheduled and the appropriate fee must be paid at least two-days before the required inspection date.
- All inspections should be called in and recorded to 712.847.0535
- AM scheduled inspections will be performed from 8:00 a.m. to 12:00 p.m. (noon)
- PM scheduled inspections will be performed from 12:00 p.m. (noon) to 4:00 p.m.
- Any special requested inspection times will need to be pre-approved by your scheduled Inspector, the day before.

Contact Information

Building & Zoning Department
Office Hours: 8:00 a.m. to 4:30 p.m.
City Hall: 712.847.0535
Fax: 712.347.5454

SITE PHOTO

PROJECT INFORMATION

SITE NAME:	CARTER LAKE RELO
COUNTY:	POTTAWATTAMIE COUNTY
ADDRESS:	2614 N 5TH ST. CARTER LAKE, IA 51510-1509
JURISDICTION:	CITY OF CARTER LAKE, IA
SITE NUMBER:	OMAHNEU1171
FA NUMBER:	10147256
PTN:	3525A1C6A3, 3525A1C6J7, 3525A1C7WW, 3525A1C7XG, 3525A1C6JC, 3525A1C68S, 3525A1C7C3, 3525A1C7KP
IWM #:	WSUMW0033356, WSUMW0033396, WSUMW0032768, WSUMW0032631, WSUMW0033743, WSUMW0033513, WSUMW0033071, WSUMW0032931
ATC ASSET #:	274849
LATITUDE:	41°16'56.5" N (41.28235833°)
LONGITUDE:	95°55'28.1" W (-95.92448056°)
TOWER OWNER:	AMERICAN TOWER COMPANY 10 PRESIDENTIAL WAY WOBURN, MA 01801
GROUND OWNER:	HASTINGS FAMILY HOLDINGS LLC 2614 N 5TH STREET CARTER LAKE, IA 51510-1509
LANDLORD CONTACT:	-
APPLICANT:	AT&T WIRELESS
AT&T PROJECT MANAGER:	SHAMMIKKA CHISOLM sc872r@att.com
AT&T CONSTRUCTION MANAGER:	PAUL COOK pc1464@att.com

PROJECT CONSULTANTS

ENGINEER:	FULLERTON ENGINEERING CONSULTANTS, LLC
ADDRESS:	1100 E. WOODFIELD ROAD, SUITE 500 SCHAUMBURG, ILLINOIS 60173
CONTACT:	LISA LAVICKA
PHONE:	(847) 908-8400
EMAIL:	llavicka@fullerton-us.com

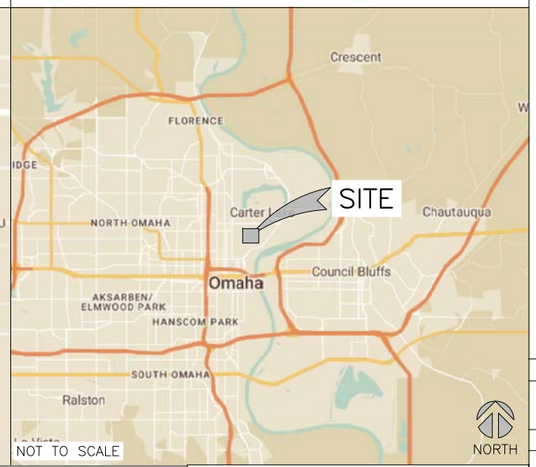
AT&T MOBILITY

SEE B+T GRP POST MODIFICATION MOUNT ANALYSIS REPORT DATED: 01/08/25

PROJECT : E/// MODERNIZATION
SITE # : OMAHNEU1171
FA # : 10147256
PTN # : 3525A1C6A3, 3525A1C6J7, 3525A1C7WW, 3525A1C7XG, 3525A1C6JC, 3525A1C68S, 3525A1C7C3, 3525A1C7KP
IWM # : WSUMW0033356, WSUMW0033396, WSUMW0032768, WSUMW0032631, WSUMW0033743, WSUMW0033513, WSUMW0033071, WSUMW0032931
ATC ASSET#: 274849
JURISDICTION : CITY OF CARTER LAKE, IA
SITE NAME : CARTER LAKE RELO
ADDRESS : 2614 N 5TH ST.
CARTER LAKE, IA 51510-1509

VICINITY MAP

LOCAL MAP



DRIVING DIRECTIONS

DIRECTIONS FROM AT&T ADDRESS; 7900 XERXES AVE S #301, BLOOMINGTON, MN 55431:
GET ON I-35W S FROM AMERICAN BLVD W, PENN AVE S AND W 82ND ST.
TAKE I-35W S, IA-27 S/US-18 E, US-218 S AND I-80 E TO IA-22 E/ROCKINGHAM RD IN DAVENPORT.
TAKE EXIT 8 FROM I-280 E.
FOLLOW ROCKINGHAM RD TO S ROLFF ST.
DESTINATION WILL BE ON THE LEFT.

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

TO OBTAIN LOCATION OF PARTICIPANTS UNDERGROUND FACILITIES BEFORE YOU DIG IN IOWA, CALL IOWA ONE CALL
TOLL FREE: 1-800-292-8989 OR
www.iowaonecall.com
IOWA STATUTE REQUIRES MIN OF 2 WORKING DAYS NOTICE BEFORE YOU EXCAVATE

DRAWING INDEX

SCOPE OF WORK

THIS IS NOT AN ALL INCLUSIVE LIST. CONTRACTOR SHALL UTILIZE SPECIFIED EQUIPMENT PART OR ENGINEER APPROVED EQUIVALENT. CONTRACTOR SHALL VERIFY ALL NEEDED EQUIPMENT TO PROVIDE A FUNCTIONAL SITE. THE PROJECT GENERALLY CONSISTS OF THE FOLLOWING:

TOWER WORK:
- ROTATE EXISTING ANTENNA PLATFORM TO ACHIEVE RFDS AZIMUTHS WITH NO SKEW
- REMOVE (3) EXISTING EPBQ-654L8H8-L2 ANTENNAS (1) PER SECTOR IN POSITION 1. (TYP. OF 3 SECTORS)
- REMOVE (3) EXISTING EPBQ-652L8H8 ANTENNAS (1) PER SECTOR IN POSITION 4. (TYP. OF 3 SECTORS)
- REMOVE (9) EXISTING RRH UNITS (3) PER SECTOR IN POSITION 1. 2. & 4. (TYP. OF 3 SECTORS)
- REMOVE (3) EXISTING E15S09P78 TMA UNITS (1) PER SECTOR IN POSITION 4. (TYP. OF 3 SECTORS)
- REMOVE (12) EXISTING 1 5/8" COAX CABLES
- REMOVE (1) EXISTING 3/8" RET CONTROL CABLE
- RELOCATE (1) EXISTING DC6-48-60-18-8F RAYCAP UNIT
- RELOCATE (1) EXISTING DC6-48-60-0-8C RAYCAP UNIT
- INSTALL (3) PROPOSED KRE 101 2586/1K ANTENNAS (1) PER SECTOR IN POSITION 1. (TYP. OF 3 SECTORS)
- INSTALL (3) PROPOSED AIR6472 B77G B77M ANTENNAS (1) PER SECTOR IN POSITION 2. (TYP. OF 3 SECTORS)
- INSTALL (3) PROPOSED KRE 101 2487/1K ANTENNAS (1) PER SECTOR IN POSITION 3. (TYP. OF 3 SECTORS)
- INSTALL (3) PROPOSED ERICSSON 4471 B30 RRH UNITS (1) PER SECTOR IN POSITION 1. (TYP. OF 3 SECTORS)
- INSTALL (3) PROPOSED ERICSSON 4490 B5/B12A RRH UNITS (1) PER SECTOR IN POSITION 1. (TYP. OF 3 SECTORS)
- INSTALL (3) PROPOSED ERICSSON 4890 B25/B66 RRH UNITS (1) PER SECTOR IN POSITION 3. (TYP. OF 3 SECTORS)
- INSTALL (3) PROPOSED ERICSSON 4494 B14/B29 RRH UNITS (1) PER SECTOR IN POSITION 3. (TYP. OF 3 SECTORS)
- INSTALL (6) PROPOSED D20ORRU B2B BRACKETS OR APPROVED EQUIVALENT (2) PER SECTOR IN POSITION 1 & 3 ON STANDOFFS OF PLATFORM (TYP. OF 3 SECTORS)
- INSTALL MOUNT MODIFICATIONS (SEE MOUNT MODIFICATION DRAWINGS FOR DETAILS)
- INSTALL (1) PROPOSED DC9-48-60-24-8C-EV (ENCLOSURE) RAYCAP UNIT
- INSTALL (1) PROPOSED 0.40" 24 PAIR FIBER TRUNK
- INSTALL (2) PROPOSED 0.96" 6 AWG 6 DC TRUNKS

GROUND WORK:
POWER PLANT:
- REMOVE (1) EXISTING NETSURE 700 POWER PLANT
- REMOVE (24) ABSOLYTE 24V BATTERIES
- REMOVE (1) ABSLOYTE BATTERY RACK
- CONVERT DC LIGHTS AND DC FAN TO -48V
- INSTALL (1) VERTIV STD -48VDC NETSURE 7100 PLANT 1000A W-58V CONV
- INSTALL (10) -48V RECTIFIERS
- INSTALL (9) -58V CONVERTERS
- INSTALL (1) BATTERY RACK NEXT TO POWERPLANT
- INSTALL (20) 190AH BATTERIES IN NEW BATTERY RACK

CIVIL:
- REMOVE (1) DC12-48-60-RM (GEN1)
- REMOVE (3) SHELTER MOUNTED RADIOS
- INSTALL (2) DC12-48-60-RM ON EXISTING RACK BELOW EXISTING DC12
- INSTALL E/// EQUIPMENT IN EXISTING FIF
- INSTALL (2) 6651, (1) 6601, (1) XMU, (1) 6610
- INSTALL BREAKERS AS NEEDED PER ATT-CEM-18002

CODE COMPLIANCE

- 2015 INTERNATIONAL BUILDING CODE
- 2020 NATIONAL ELECTRICAL CODE
- TIA/EIA-222-H STANDARDS

REFERENCE MATERIALS

- THESE DRAWINGS ARE BASED AT&T SCOPING DOCUMENT DATED 04/17/24
- REVISED RFDS PENDING. CONTRACTOR TO USE LATEST VERSION WITH CD'S PER SCOPE OF WORK.

SPECIAL NOTES

- ALL WORK SHALL BE INSTALLED IN CONFORMANCE WITH CURRENT AT&T CONSTRUCTION INSTALLATION GUIDE.
- EXISTING CONDITIONS WILL BE CHANGED & VERIFIED IN FIELD. IF SIGNIFICANT DEVIATIONS OR DETERIORATION ARE ENCOUNTERED AT THE TIME OF CONSTRUCTION, A REPAIR PERMIT WILL BE OBTAINED & CONTRACTOR SHALL NOTIFY ENGINEER IMMEDIATELY.
- THESE DRAWINGS ARE 11"X17" & SCALEABLE ON FULL SHEET SIZE.
- STATEMENT THAT COMPLIANCE WITH THE ENERGY CODE IS NOT REQUIRED.
- SCOPE OF WORK DOES NOT INVOLVE MODIFICATIONS TO EXTERIOR ENVELOPE OF BUILDING, HVAC SYSTEMS OR ELECTRICAL LIGHTING.

DO NOT SCALE DRAWINGS

CONTRACTOR SHALL VERIFY ALL PLANS & EXISTING DIMENSIONS & CONDITIONS ON THE JOB SITE & SHALL IMMEDIATELY NOTIFY THE ARCHITECT OR ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.

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NOT FOR CONSTRUCTION UNLESS LABELED AS FOR CONSTRUCTION

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LICENSED PROFESSIONAL ENGINEER
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22747
IOWA

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10147256
CARTER LAKE RELO
2614 N 5TH ST.
CARTER LAKE, IA
51510-1509

SHEET TITLE
TITLE SHEET

SHEET NUMBER
T1

GENERAL CONSTRUCTION

1. FOR THE PURPOSE OF CONSTRUCTION DRAWINGS, THE FOLLOWING DEFINITIONS SHALL APPLY:
   CONTRACTOR/CM – JACOBS
   SUB–CONTRACTOR – PER TRADE
   OWNER – AT&T WIRELESS
2. ALL SITE WORK SHALL BE COMPLETED AS INDICATED ON THE DRAWINGS AND AT&T PROJECT SPECIFICATIONS.
3. GENERAL CONTRACTOR SHALL VISIT THE SITE AND SHALL FAMILIARIZE HIMSELF WITH ALL CONDITIONS AFFECTING THE PROPOSED WORK AND SHALL MAKE PROVISIONS. GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR FAMILIARIZING HIMSELF WITH ALL CONTRACT DOCUMENTS, FIELD CONDITIONS, DIMENSIONS, AND CONFIRMING THAT THE WORK MAY BE ACCOMPLISHED AS SHOWN PRIOR TO PROCEEDING WITH CONSTRUCTION. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO THE COMMENCEMENT OF WORK.
4. ALL 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.
5. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES, AND APPLICABLE REGULATIONS.
6. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES, AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
7. PLANS ARE NOT TO 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. THEREFORE, IT IS CRITICAL TO FIELD VERIFY DIMENSIONS, SHOULD THERE BE ANY QUESTIONS REGARDING THE CONTRACT DOCUMENTS, 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 AND SUCH MODIFICATIONS SHALL BE INCLUDED AS PART OF WORK AND PREPARED BY THE ENGINEER PRIOR TO PROCEEDING WITH WORK.
8. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
9. IF THE SPECIFIED EQUIPMENT CANNOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION SIWM FOR APPROVAL BY THE ENGINEER PRIOR TO PROCEEDING.
10. 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 CONFIRM TO ALL OSHA REQUIREMENTS AND THE LOCAL JURISDICTION.
11. GENERAL CONTRACTOR SHALL COORDINATE WORK AND SCHEDULE WORK ACTIVITIES WITH OTHER DISCIPLINES.
12. ERECTION SHALL BE DONE IN A WORKMANLIKE MANNER BY COMPETENT EXPERIENCED WORKMAN IN ACCORDANCE WITH APPLICABLE CODES AND THE BEST ACCEPTED PRACTICE. ALL MEMBERS SHALL BE LAID PLUMB AND TRUE AS INDICATED ON THE DRAWINGS.
13. SEAL PENETRATIONS THROUGH FIRE RATED AREAS WITH UL LISTED MATERIALS APPROVED BY LOCAL JURISDICTION. CONTRACTOR SHALL KEEP AREA CLEAN, HAZARD FREE, AND DISPOSE OF ALL DEBRIS.
14. WORK PREVIOUSLY COMPLETED IS 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 BEGINNING CONSTRUCTION.
15. CONTRACTOR SHALL PROVIDE WRITTEN NOTICE TO THE CONSTRUCTION MANAGER 48 HOURS PRIOR TO COMMENCEMENT OF WORK.
16. THE CONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE TO THE SATISFACTION OF THE OWNER.
17. THE CONTRACTOR SHALL CONTACT UTILITY LOCATING SERVICES PRIOR TO THE START OF CONSTRUCTION.
18. GENERAL CONTRACTOR SHALL COORDINATE AND MAINTAIN ACCESS FOR ALL TRADES AND CONTRACTORS TO THE SITE AND/OR BUILDING.
19. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR SECURITY OF THE SITE FOR THE DURATION OF CONSTRUCTION UNTIL JOB COMPLETION.
20. 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.
21. THE GENERAL CONTRACTOR SHALL PROVIDE PORTABLE FIRE EXTINGUISHERS WITH A RATING OF NOT LESS THAN 2–A OT 2–A:10–B:C AND SHALL BE WITHIN 25 FEET OF TRAVEL DISTANCE TO ALL PORTIONS OF WHERE THE WORK IS BEING COMPLETED DURING CONSTRUCTION.
22. 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. THIS SHALL INCLUDE BUT NOT BE LIMITED TO A) FALL PROTECTION, B) CONFINED SIWM, C) ELECTRICAL SAFETY, AND D) TRENCHING & EXCAVATION.
23. 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.
24. 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 STABILIZED TO PREVENT EROSION.
25. CONTRACTOR SHALL MINIMIZE DISTURBANCE TO THE EXISTING SITE DURING CONSTRUCTION. EROSION CONTROL MEASURES, IF REQUIRED DURING CONSTRUCTION, SHALL BE IN CONFORMANCE WITH THE FEDERAL AND LOCAL JURISDICTION FOR EROSION AND SEDIMENT CONTROL.
26. NO FILL OR EMBANKMENT MATERIAL SHALL BE PLACED ON FROZEN GROUNDING. FROZEN MATERIALS, SNOW OR ICE SHALL NOT BE PLACED IN ANY FILL OR EMBANKMENT.
27. THE SUBGRADE SHALL BE BROUGHT TO A SMOOTH UNIFORM GRADE AND COMPACTED TO 95 PERCENT STANDARD PROCTOR DENSITY UNDER PAVEMENT AND STRUCTURES AND 80 PERCENT STANDARD PROCTOR DENSITY IN OPEN SIWM. ALL TRENCHES IN PUBLIC RIGHT OF WAY SHALL BE BACKFILLED WITH FLOWABLE FILL OR OTHER MATERIAL PRE–APPROVED BY THE LOCAL JURISDICTION.
28. ALL NECESSARY RUBBISH, STUMPS, DEBRIS, STICKS, STONES, AND OTHER REFUSE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF IN A LAWFUL MANNER.
29. ALL BROCHURES, OPERATING AND MAINTENANCE MANUALS, CATALOGS, SHOP DRAWINGS, AND OTHER DOCUMENTS SHALL BE TURNED OVER TO THE GENERAL CONTRACTOR AT COMPLETION OF CONSTRUCTION AND PRIOR TO PAYMENT.
30. CONTRACTOR SHALL SUBMIT A COMPLETE SET OF AS–BUILT REDLINES TO THE GENERAL CONTRACTOR UPON COMPLETION OF PROJECT AND PRIOR TO FINAL PAYMENT.
31. CONTRACTOR SHALL LEAVE PREMISES IN A CLEAN CONDITION.
32. THE PROPOSED FACILITY WILL BE UNMANNED AND DOES NOT REQUIRE POTABLE WATER OR SEWER SERVICE, AND IS NOT FOR HUMAN HABITAT (NO HANDICAP ACCESS REQUIRED).
33. OCCUPANCY IS LIMITED TO PERIODIC MAINTENANCE AND INSPECTION, APPROXIMATELY 2 TIMES PER MONTH, BY AT&T TECHNICIANS.
34. NO OUTDOOR STORAGE OR SOLID WASTE CONTAINERS ARE PROPOSED.
35. 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/GPRS WIRELESS SITES" AND "TECHNICAL SPECIFICATION FOR FACILITY GROUNDING". IN CASE OF A CONFLICT BETWEEN THE CONSTRUCTION SPECIFICATION AND THE DRAWINGS, THE DRAWINGS SHALL GOVERN.
36. 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.
37. CONTRACTOR SHALL REMOVE ALL TRASH AND DEBRIS FROM THE SITE ON A DAILY BASIS.
38. INFORMATION SHOWN ON THESE DRAWINGS WAS OBTAINED FROM SITE VISITS AND/OR DRAWINGS PROVIDED BY THE SITE OWNER. CONTRACTORS SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCIES PRIOR TO ORDERING MATERIAL OR PROCEEDING WITH CONSTRUCTION.
39. NO WHITE STROBE LIGHTS ARE PERMITTED. LIGHTING IF REQUIRED, WILL MEET FAA STANDARDS AND REQUIREMENTS.

ANTENNA MOUNTING

40. DESIGN AND CONSTRUCTION OF ANTENNA SUPPORTS SHALL CONFORM TO CURRENT ANSI/TIA–222 OR APPLICABLE LOCAL CODES.
41. 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.
42. 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.
43. DAMAGED GALVANIZED SURFACES SHALL BE REPAIRED BY COLD GALVANIZING IN ACCORDANCE WITH ASTM A780.
44. ALL ANTENNA MOUNTS SHALL BE INSTALLED WITH LOCK NUTS, DOUBLE NUTS AND SHALL BE TORQUED TO MANUFACTURER'S RECOMMENDATIONS.
45. CONTRACTOR SHALL INSTALL ANTENNA PER MANUFACTURER'S RECOMMENDATION FOR INSTALLATION AND GROUNDING.
46. ALL UNUSED PORTS ON ANY ANTENNAS SHALL BE TERMINATED WITH A 50–OHM LOAD TO ENSURE ANTENNAS PERFORM AS DESIGNED.
47. 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 +/– 5% AS DEFINED BY THE RFDS. ANTENNA DOWNTILTS SHALL BE WITHIN +/– 0.5% AS DEFINED BY THE RFDS. REFER TO ND–00246.
48. JUMPERS FROM THE TMA'S MUST TERMINATE TO OPPOSITE POLARIZATION'S IN EACH SECTOR.
49. CONTRACTOR SHALL RECORD THE SERIAL #, SECTOR, AND POSITION OF EACH ACTUATOR INSTALLED AT THE ANTENNAS AND PROVIDE THE INFORMATION TO AT&T.
50. TMA'S SHALL BE MOUNTED ON PIPE DIRECTLY BEHIND ANTENNAS AS CLOSE TO ANTENNA AS FEASIBLE IN A VERTICAL POSITION.

TORQUE REQUIREMENTS

51. ALL RF CONNECTIONS SHALL BE TIGHTENED BY A TORQUE WRENCH.
52. ALL RF CONNECTIONS, GROUNDING HARDWARE AND ANTENNA HARDWARE SHALL HAVE A TORQUE MARK INSTALLED IN A CONTINUOUS STRAIGHT LINE FROM BOTH SIDES OF THE CONNECTION.
    A. RF CONNECTION BOTH SIDES OF THE CONNECTOR.
    B. GROUNDING AND ANTENNA HARDWARE ON THE NUT SIDE STARTING FROM THE THREADS TO THE SOLID SURFACE. EXAMPLE OF SOLID SURFACE: GROUND BAR, ANTENNA BRACKET METAL.

FIBER & POWER CABLE MOUNTING

53. THE FIBER OPTIC TRUNK CABLES SHALL BE INSTALLED INTO CONDUITS, CHANNEL CABLE TRAYS, OR CABLE TRAY. WHEN INSTALLING FIBER OPTIC TRUNK CABLES INTO A CABLE TRAY SYSTEM, THEY SHALL BE INSTALLED INTO AN INTER DUCT AND 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 (60) SIXTY FEET AND SECURELY FASTENED TO THE CABLE TRAY SYSTEM. NFPA 70 (NEC) ARTICLE 770 RULES SHALL APPLY.
54. THE TYPE TC–ER CABLES SHALL BE INSTALLED INTO CONDUITS, CHANNEL CABLE TRAYS, OR CABLE TRAY AND SHALL BE SECURED AT INTERVALS NOT EXCEEDING (6) SIX FEET. AN EXCEPTION; WHERE TYPE TC–ER CABLES ARE NOT SUBJECT TO PHYSICAL DAMAGE, CABLES SHALL BE PERMITTED TO MAKE A TRANSITION BETWEEN CONDUITS, CHANNEL CABLE TRAYS, OR CABLE TRAY WHICH ARE SERVING UTILIZATION EQUIPMENT OR DEVICES, A DISTANCE (6) SIX FEET SHALL NOT BE EXCEEDED WITHOUT CONTINUOUS SUPPORTING. NFPA 70 (NEC) ARTICLES 336 AND 392 RULES SHALL APPLY.
55. WHEN INSTALLING OPTIC FIBER TRUNK CABLES OR TYPE TC–ER CABLES INTO CONDUITS, NFPA 70 (NEC) ARTICLE 300 RULES SHALL APPLY.

56–61 RESERVED FOR ADDITIONAL NOTES.

COAXIAL CABLE NOTES

62. TYPES AND SIZES OF THE ANTENNA CABLE 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.
63. CONTRACTOR SHALL VERIFY THE DOWN–TILT OF EACH ANTENNA WITH A DIGITAL LEVEL.
64. CONTRACTOR SHALL CONFIRM COAX COLOR CODING PRIOR TO CONSTRUCTION.
65. ALL JUMPERS TO THE ANTENNAS FROM THE MAIN TRANSMISSION LINE SHALL BE 1/2" DIA. LDF AND SHALL NOT EXCEED 6'–0".
66. ALL COAXIAL CABLE SHALL BE SECURED TO THE DESIGNED SUPPORT STRUCTURE, IN AN APPROVED MANNER, AT DISTANCES NOT TO EXCEED 4'–0" OC.
67. CONTRACTOR SHALL FOLLOW ALL MANUFACTURER'S RECOMMENDATIONS REGARDING BOTH THE INSTALLATION AND GROUNDING OF ALL COAXIAL CABLES, CONNECTORS, ANTENNAS, AND ALL OTHER EQUIPMENT.
68. CONTRACTOR 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 WIREMEN IN COMPLIANCE WITH MANUFACTURER'S SPECIFICATION AND RECOMMENDATION.
69. CONTRACTOR SHALL PROVIDE STRAIN–RELIEF AND CABLE SUPPORTS FOR ALL CABLE ASSEMBLIES, COAX CABLES, AND RET CONTROL CABLES. CABLE STRAIN–RELIEFS AND CABLE SUPPORTS SHALL BE APPROVED FOR THE PURPOSE. INSTALLATION SHALL BE IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS AND RECOMMENDATIONS.
70. CONTRACTOR TO VERIFY THAT EXISTING COAX HANGERS ARE STACKABLE SNAP IN HANGERS. IF EXISTING HANGERS ARE NOT STACKABLE SNAP IN HANGERS THE CONTRACTOR SHALL REPLACE EXISTING HANGERS WITH NEW SNAP IN HANGERS IF APPLICABLE.

GENERAL CABLE AND EQUIPMENT NOTES

71. CONTRACTOR SHALL BE RESPONSIBLE TO VERIFY ANTENNA, TMAS, DIPLEXERS, AND COAX CONFIGURATION, MAKE AND MODELS PRIOR TO INSTALLATION.
72. ALL CONNECTIONS FOR HANGERS, SUPPORTS, BRACING, ETC. SHALL BE INSTALLED PER TOWER MANUFACTURER'S RECOMMENDATIONS.
73. CONTRACTOR SHALL REFERENCE THE TOWER STRUCTURAL ANALYSIS/DESIGN DRAWINGS FOR DIRECTIONS ON CABLE DISTRIBUTION/ROUTING.
74. ALL OUTDOOR RF CONNECTORS/CONNECTIONS SHALL BE WEATHERPROOFED, EXCEPT THE RET CONNECTORS, USING BUTYL TAPE AFTER INSTALLATION AND FINAL CONNECTIONS ARE MADE. 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.
75. IF REQUIRED TO PAINT ANTENNAS AND/OR COAX:
    A. TEMPERATURE SHALL BE ABOVE 50° F.
    B. PAINT COLOR MUST BE APPROVED BY BUILDING OWNER/LANDLORD.
    C. FOR REGULATED TOWERS, FAA/FCC APPROVED PAINT IS REQUIRED.
    D. DO NOT PAINT OVER COLOR CODING OR ON EQUIPMENT MODEL NUMBERS.
76. ALL CABLES SHALL BE GROUNDED WITH COAXIAL CABLE GROUND KITS. FOLLOW THE MANUFACTURER'S RECOMMENDATIONS.
    A. GROUNDING AT THE ANTENNA LEVEL.
    B. GROUNDING AT MID LEVEL, TOWERS WHICH ARE OVER 200'–0", ADDITIONAL CABLE GROUNDING REQUIRED.
    C. GROUNDING AT BASE OF TOWER PRIOR TO TURNING HORIZONTAL.
    D. GROUNDING OUTSIDE THE EQUIPMENT SHELTER AT ENTRY PORT.
    E. GROUNDING INSIDE THE EQUIPMENT SHELTER AT THE ENTRY PORT.
77. ALL PROPOSED GROUND BAR DOWNLEADS ARE TO BE TERMINATED TO THE EXISTING ADJACENT GROUND BAR DOWNLEADS A MINIMUM DISTANCE OF 4'–0" BELOW GROUND BAR. TERMINATIONS MAY BE EXOTHERMIC OR COMPRESSION.

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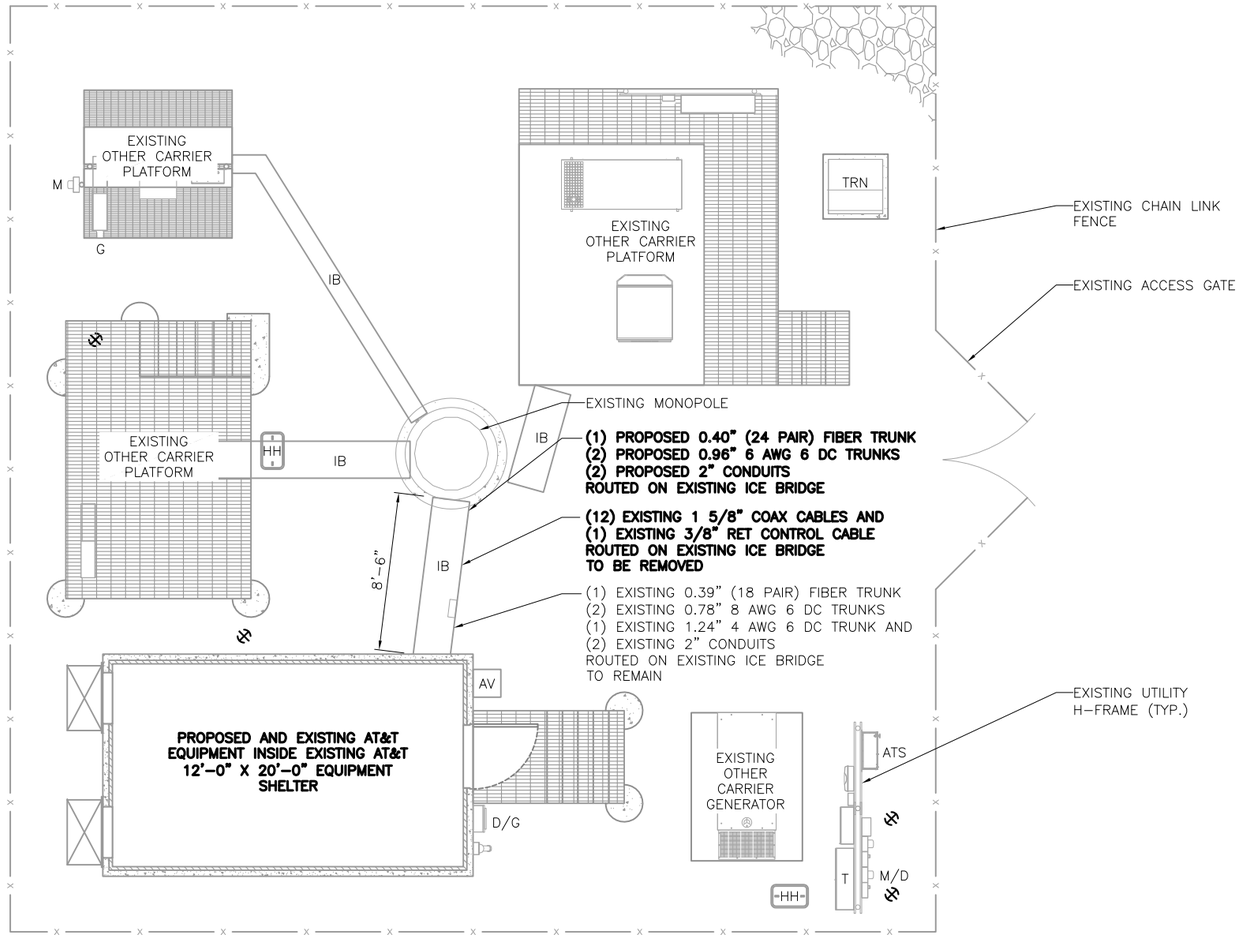
SHEET TITLE

NOTES & SPECIFICATIONS

SHEET NUMBER

SP1



NORTH

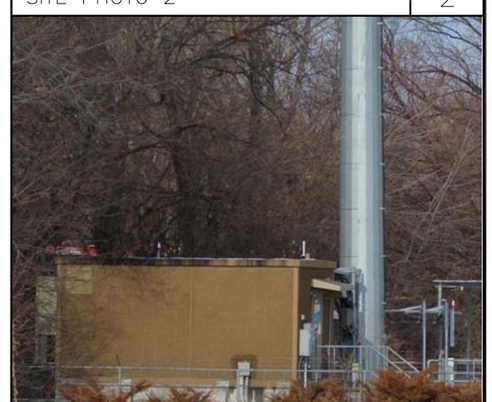
COMPOUND PLAN

0 1' 2' 4'

SCALE: 1/4" = 1'-0" (24x36)
(OR) 1/8" = 1'-0" (11x17)

1

SITE PHOTO 2 | 2



SITE PHOTO 1 | 3

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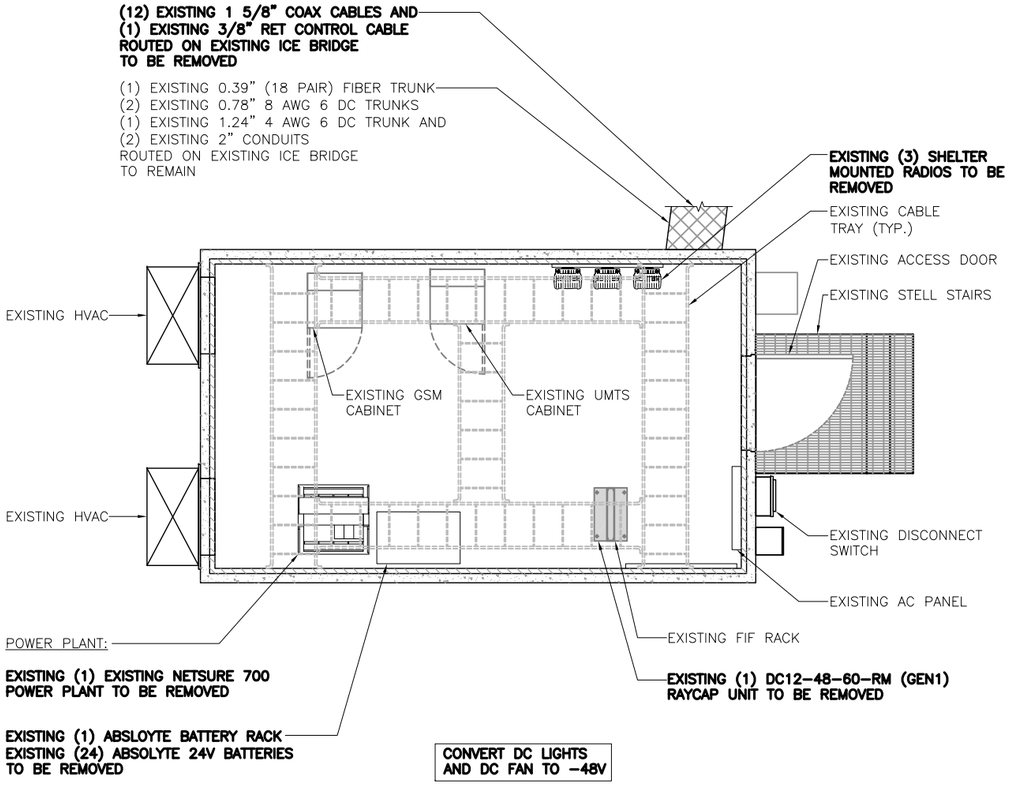
SHEET TITLE

COMPOUND PLAN

SHEET NUMBER

A1

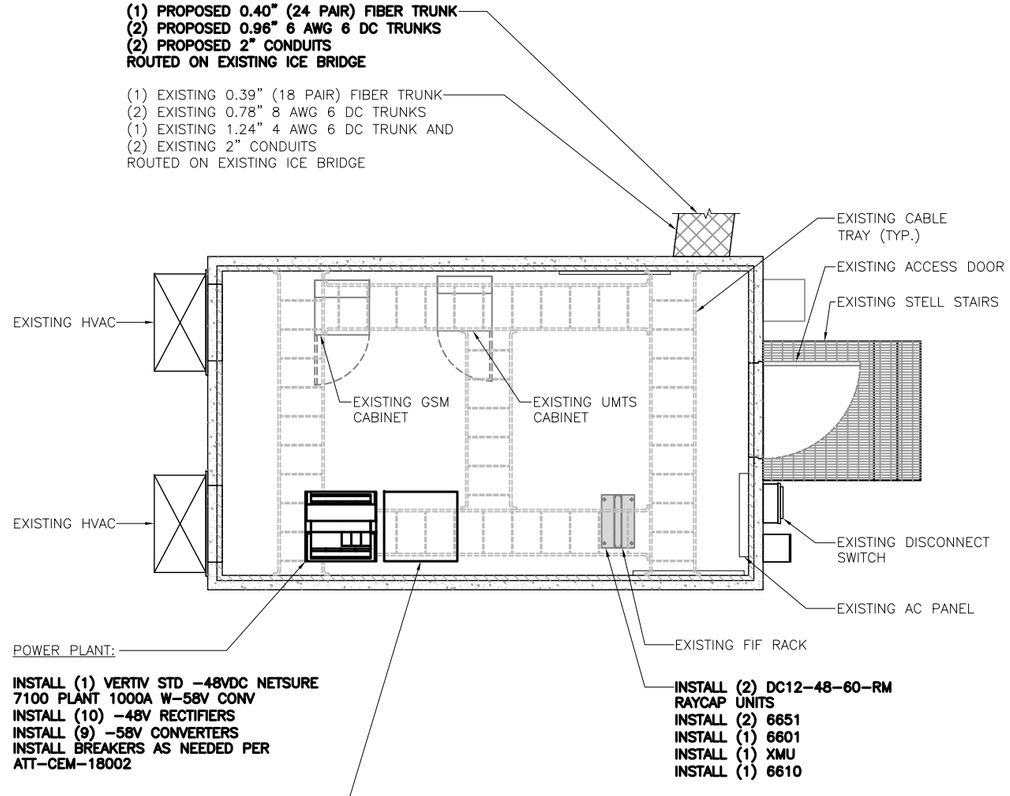


EXISTING EQUIPMENT PLAN

0 1' 2' 3'

SCALE: 3/8" = 1'-0" (24x36)
(OR) 3/16" = 1'-0" (11x17)

1



PROPOSED EQUIPMENT PLAN

0 1' 2' 3'

SCALE: 3/8" = 1'-0" (24x36)
(OR) 3/16" = 1'-0" (11x17)

2

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REVISIONS

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A	01/28/25	ISSUED FOR REVIEW	GL
B	02/04/25	ISSUED FOR REVIEW	GL
0	02/13/25	ISSUED FOR CONSTRUCTION	RV

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LICENSED PROFESSIONAL ENGINEER
DANIEL W. SMITH
22747
IOWA

E/// MODERNIZATION
10147256
CARTER LAKE RELO
2614 N 5TH ST.
CARTER LAKE, IA
51510-1509

SHEET TITLE

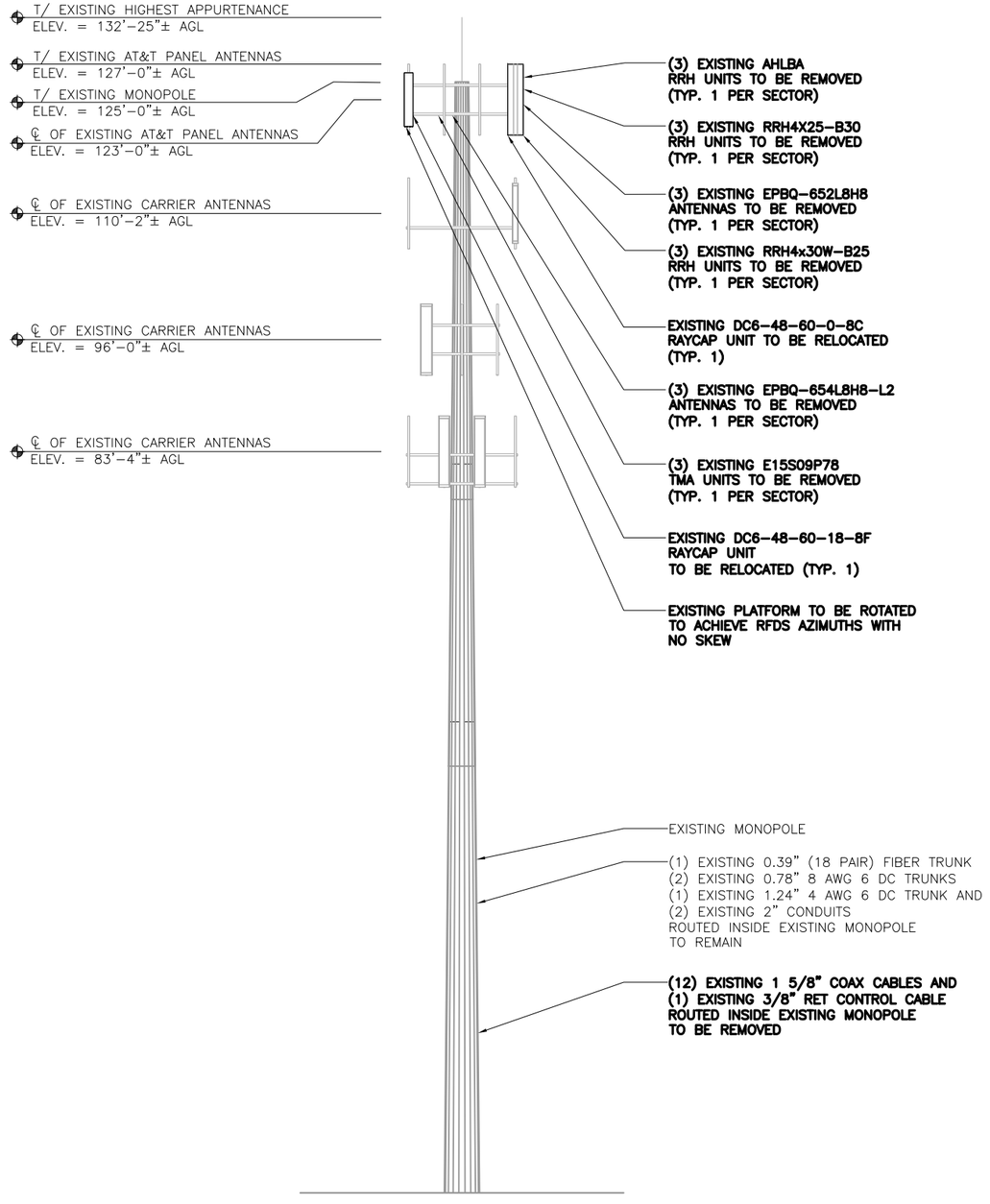
EQUIPMENT PLAN

SHEET NUMBER

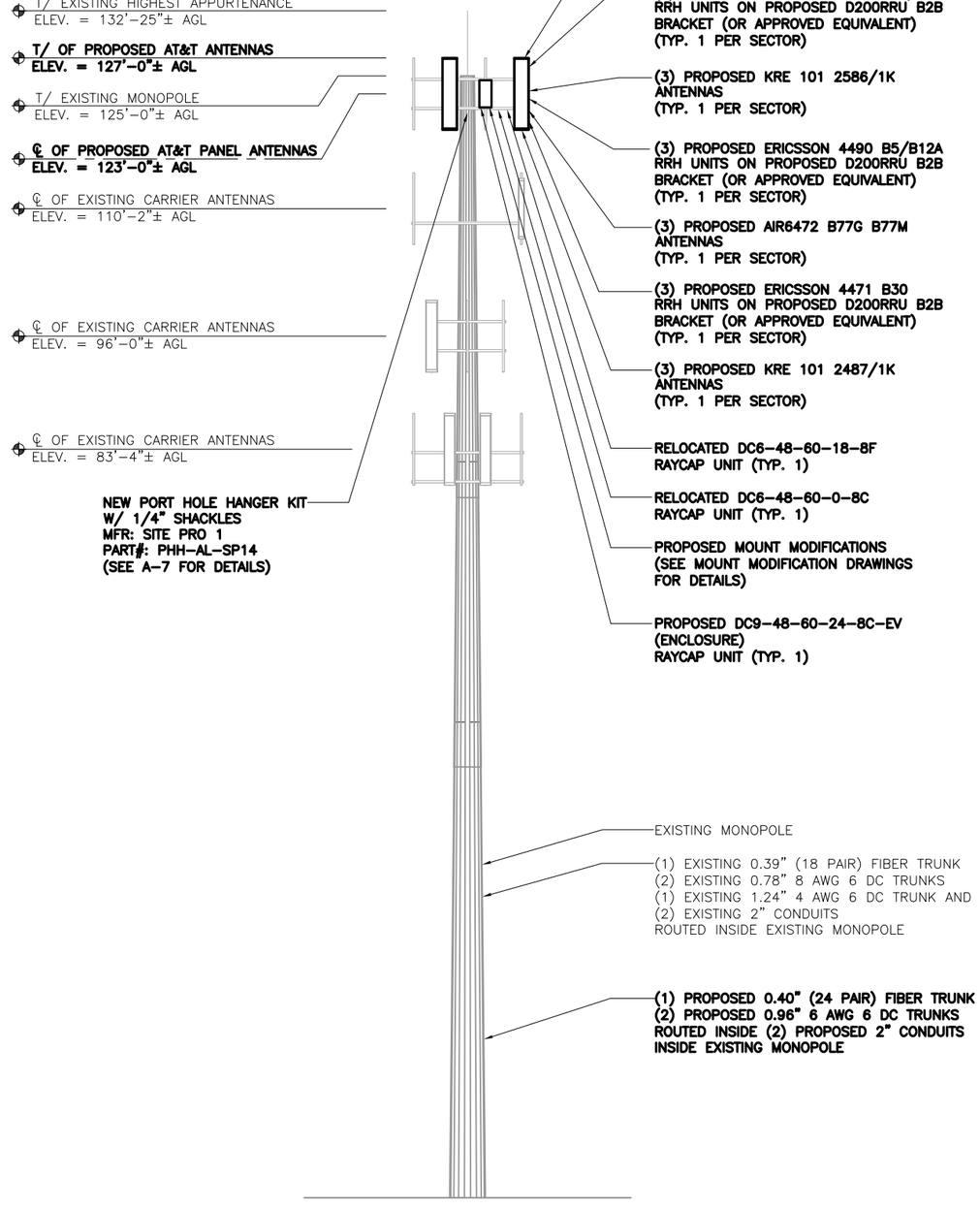
A2

BIRD NOTE: YES – HAWK – 120'– MARCH TO MAY NESTING SEASON

- TOWER STRUCTURAL CALCULATIONS PREPARED BY OTHERS. CONTRACTOR TO VERIFY WITH PROJECT MANAGER TO OBTAIN A COPY
- CONTRACTOR TO REFER TO TOWER STRUCTURAL CALCULATIONS FOR ADDITIONAL LOADS. NO ERECTION OR MODIFICATION OF TOWER SHALL BE MADE WITHOUT APPROVAL OF STRUCTURAL ENGINEER.



EXISTING TOWER ELEVATION | SCALE N.T.S. | 1



PROPOSED TOWER ELEVATION | SCALE N.T.S. | 2

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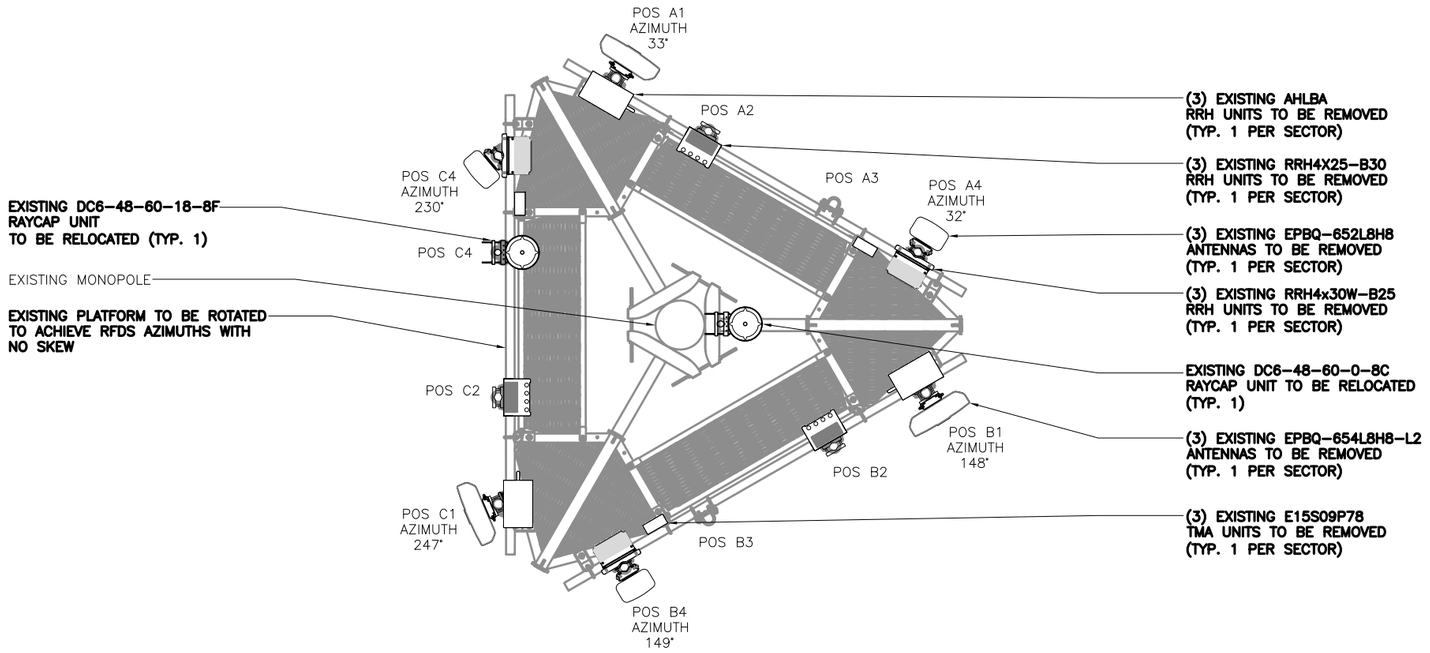
SHEET TITLE
TOWER ELEVATION

SHEET NUMBER
A3



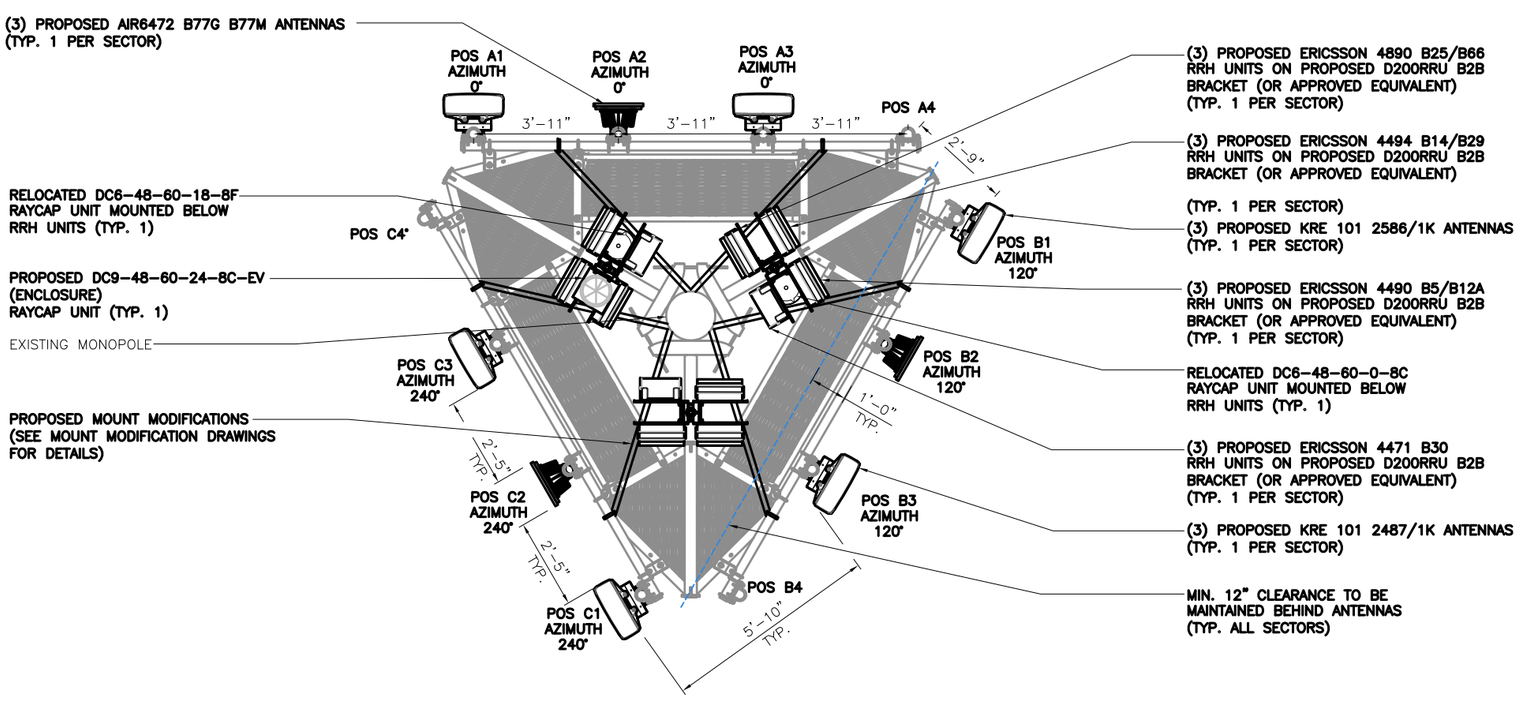
EXISTING ANTENNA PLAN

0 6" 1' 2'

SCALE: 1/2" = 1'-0" (24x36)
(OR) 1/4" = 1'-0" (11x17)

1

SEE B+T GRP POST MODIFICATION MOUNT ANALYSIS REPORT DATED: 01/08/25



PROPOSED ANTENNA PLAN

0 6" 1' 2'

SCALE: 1/2" = 1'-0" (24x36)
(OR) 1/4" = 1'-0" (11x17)

2

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51510-1509

SHEET TITLE

ANTENNA PLAN

SHEET NUMBER

A4

PROPOSED ANTENNA CONFIGURATION AND CABLE SCHEDULE

SECTOR	POS	TECH	ANTENNA	ANTENNA ℄ HEIGHT	AZIMUTH	TMA/RRH MODEL #	DC SURGE AND DISTRIBUTION	CABLE TYPE	CABLE LENGTH (+20%)	DOWNTILTS
A	1	-	ERICSSON (N) KRE 101 2586/1K	123' AGL	0°	(1) ERICSSON 4471 B30 (N) (1) ERICSSON 4490 B5/B12A (N)	(1) RAYCAP (N) DC9-48-60-24-8C-EV (RAD = 123') (1) RAYCAP (XR) DC6-48-60-18-8F (RAD = 123') (1) RAYCAP (XR) DC6-48-60-0-8C (RAD = 123')	(2) DC TRUNK LINES (N 6 GAUGE 0.96") (1) FIBER LINE (X 0.39") (1) CONDUIT (X 2" CARFLEX NON-METALLIC)	165'	0
	2	5G CBAND	ERICSSON (N) AIR6472 B77G B77M	123' AGL	0°	-		(1) DC TRUNK LINE (X 4 GAUGE 1.24") (1) FIBER LINE (N 0.40") (2) CONDUITS (N 2")		0
	3	-	ERICSSON (N) KRE 101 2487/1K	123' AGL	0°	(1) ERICSSON 4494 B14/B29 (N) (1) ERICSSON 4890 B25/B66 (N)		(2) DC TRUNK LINES (X 8 GAUGE 0.78") (1) CONDUIT (X 2" CARFLEX NON-METALLIC) FIBER LINE SHARED W/A2		0
	4	-	-	-	-	-		-		-
B	1	-	ERICSSON (N) KRE 101 2586/1K	123' AGL	120°	(1) ERICSSON 4471 B30 (N) (1) ERICSSON 4490 B5/B12A (N)		DC TRUNK LINE SHARED W/A1 FIBER LINE SHARED W/A1	165'	0
	2	5G CBAND	ERICSSON (N) AIR6472 B77G B77M	123' AGL	120°	-		DC TRUNK LINE SHARED W/A2 FIBER LINE SHARED W/A2		0
	3	-	ERICSSON (N) KRE 101 2487/1K	123' AGL	120°	(1) ERICSSON 4494 B14/B29 (N) (1) ERICSSON 4890 B25/B66 (N)		DC TRUNK LINE SHARED W/A3 FIBER LINE SHARED W/A2		0
	4	-	-	-	-	-		-		-
C	1	-	ERICSSON (N) KRE 101 2586/1K	123' AGL	240°	(1) ERICSSON 4471 B30 (N) (1) ERICSSON 4490 B5/B12A (N)		DC TRUNK LINE SHARED W/A1 FIBER LINE SHARED W/A1	165'	0
	2	5G CBAND	ERICSSON (N) AIR6472 B77G B77M	123' AGL	240°	-		DC TRUNK LINE SHARED W/A2 FIBER LINE SHARED W/A2		0
	3	-	ERICSSON (N) KRE 101 2487/1K	123' AGL	240°	(1) ERICSSON 4494 B14/B29 (N) (1) ERICSSON 4890 B25/B66 (N)		DC TRUNK LINE SHARED W/A3 FIBER LINE SHARED W/A2		0
	4	-	-	-	-	-		-		-

* INCLUDES SAFETY FACTOR OF 20' FT. (10 FT. AT BOTH ENDS OF CABLE RUN). CONTRACTOR TO VERIFY RF DATA WITH AT&T WIRELESS CONSTRUCTION MANAGER AND/OR RF ENGINEER PRIOR TO INSTALLATION

(N) = NEW
(X) = EXISTING
(XR) = EXISTING/RELOCATED
(E) = ELECTRICAL
(M) = MECHANICAL

ANTENNA & CABLE CONFIGURATION

NOT TO SCALE

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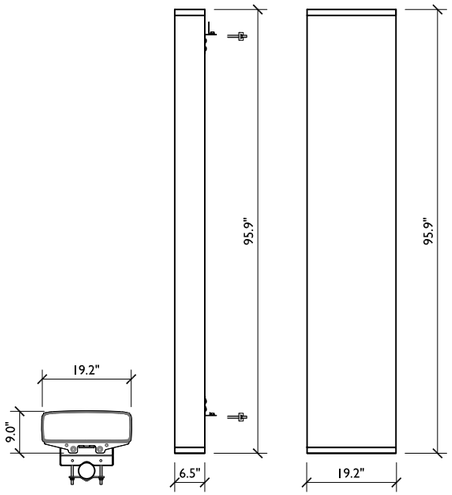
SHEET TITLE
ANTENNA & CABLE CONFIGURATION

SHEET NUMBER
A5

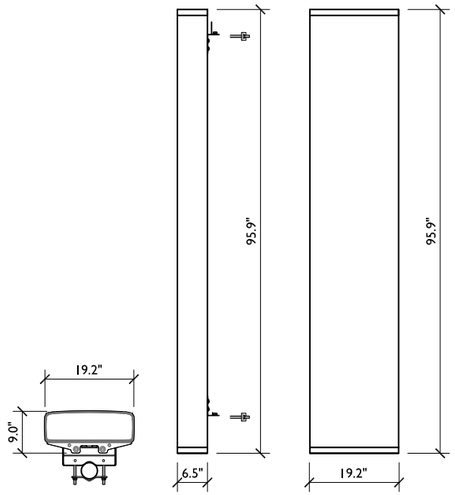


ERICSSON - KRE101 2487/1K

ANTENNA 4008 2L 2M 2.4m

FREQUENCY RANGE	2x 698-894 MHz 4x 1695-2360 MHz
ANTENNA	80 Lbs
CLAMPS	10 Lbs
TOTAL WEIGHT	90 Lbs

ANTENNA SPECIFICATION | NOT TO SCALE | 1

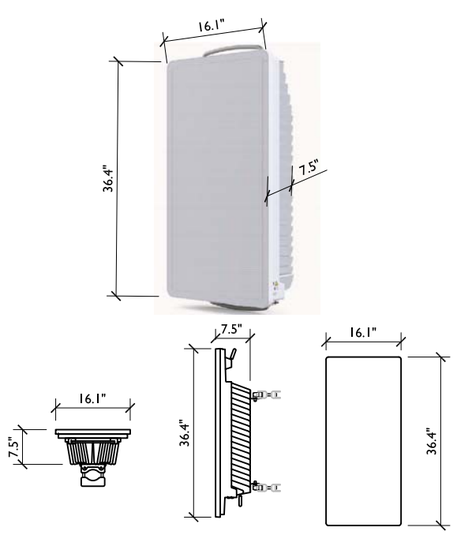


ERICSSON - KRE101 2586/1

ANTENNA 4008 2L 2M 2.4m

FREQUENCY RANGE	2x 698-894 MHz 4x 1695-2360 MHz
ANTENNA	80 Lbs
CLAMPS	10 Lbs
TOTAL WEIGHT	90 Lbs

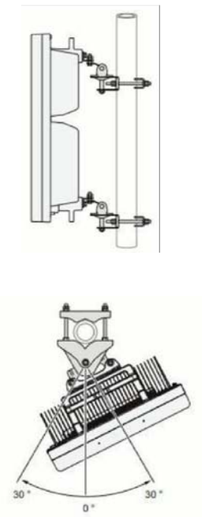
ANTENNA SPECIFICATION | NOT TO SCALE | 2



ERICSSON - AIR 6472 B77G B77M

WEIGHT 77 Lbs

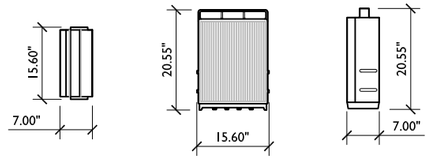
ANTENNA SPECIFICATION | NOT TO SCALE | 3



ERICSSON - AIR ANTENNAS MOUNTING

BRACKET SUPPORTING AIR WITH TILTING +/-20 DEGREE AND RIGHT/LEFT 30 DEGREE

ANTENNA MOUNTING DETAIL | NOT TO SCALE | 4

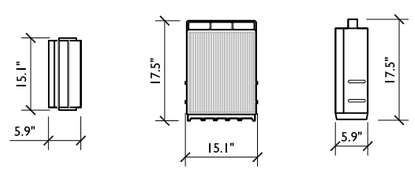


ERICSSON - RADIO 4490 B5/B12A

DUAL BAND REMOTE RADIO

TOTAL WEIGHT	65 Lbs

RRH SPECIFICATION | NOT TO SCALE | 5

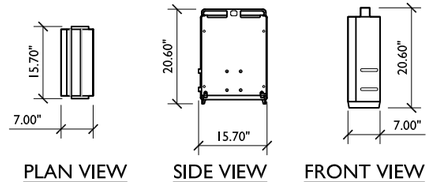


ERICSSON - RADIO 4494 B14/B29

DUAL BAND REMOTE RADIO

TOTAL WEIGHT	57.3 Lbs

RRH SPECIFICATION | NOT TO SCALE | 6

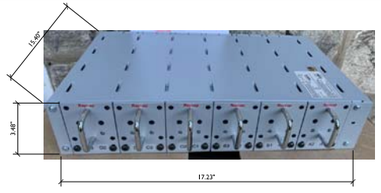


ERICSSON - RADIO 4890 B25/B66

DUAL BAND REMOTE RADIO

TOTAL WEIGHT	67.2 Lbs

RRH SPECIFICATION | NOT TO SCALE | 7

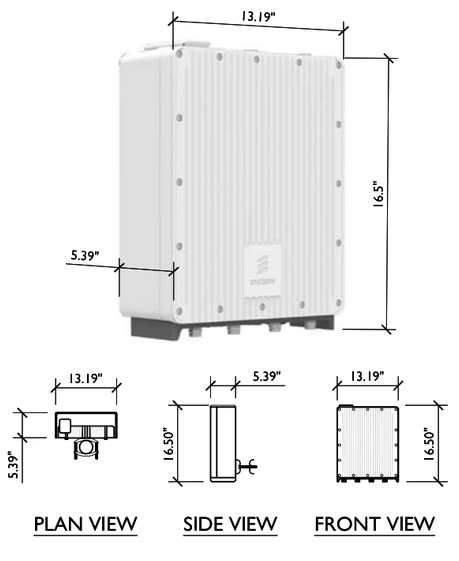


RAYCAP - DC12-48-60-RM

RACK MOUNT RM SERIES, DC SURGE PROTECTION FOR RRH

DC12-45-60-RM	27 Lbs

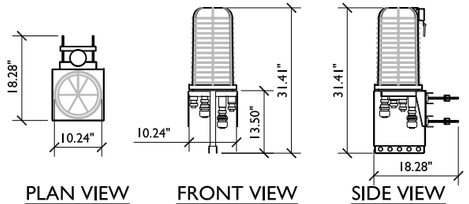
DC12 SPECIFICATION | NOT TO SCALE | 8



ERICSSON - RRUS 4471 B30

FREQUENCY RANGE	TX = 2350-2360 MHz RX = 2305-2315 MHz
TOTAL WEIGHT	46.0 Lbs

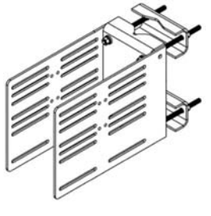
RRH SPECIFICATION | NOT TO SCALE | 9



RAYCAP - DC9-48-60-24-8C-EV

SYSTEM WEIGHT	16.0 Lbs
MOUNT WEIGHT	10.2 Lbs
TOTAL WEIGHT	26.2 Lbs
DIMENSIONS (LxWxH)	18.28"x10.24"x31.4"

DC9 RAYCAP SPECIFICATION | NOT TO SCALE | 10



ROSENBERGER - D200RRU

UNIVERSAL DOUBLE RRU MOUNT

NOTE:
OR APPROVED EQUIVALENT

BRACKET SPECIFICATION | NOT TO SCALE | 11

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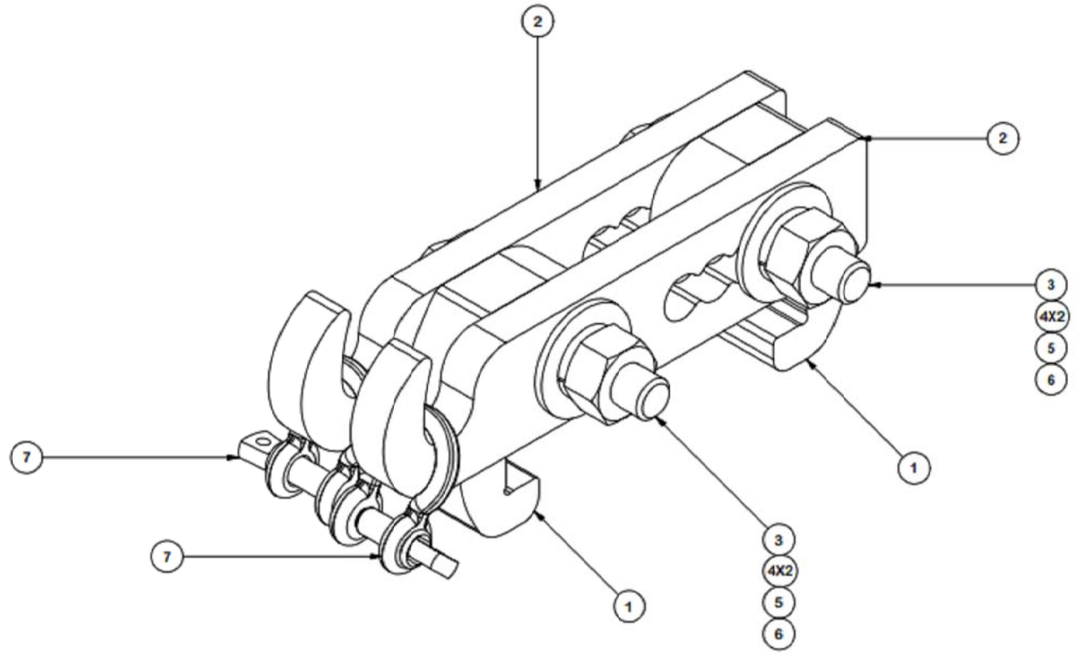
EQUIPMENT DETAILS

SHEET NUMBER

A6

PARTS LIST						
ITEM	QTY	PART NO.	PART DESCRIPTION	LENGTH	UNIT WT.	NET WT.
1	2	X-HHR-HANGH	1" MILL PLATE (A572 GR50)	12 in	1.14	2.29
2	2	X-HHR-HANGL	1/2" MILL PLATE (A572 GR.50)	12 in	1.34	2.68
3	2	G1203	1/2" x 3" HDG HEX BOLT GR5 FULL THREAD	3 in	0.22	0.43
4	4	G12FW	1/2" HDG USS FLATWASHER	3/32 in	0.03	0.14
5	2	G12LW	1/2" HDG LOCKWASHER	1/8 in	0.01	0.03
6	2	G12NUT	1/2" HDG HEAVY 2H HEX NUT		0.07	0.14
7	2	SHK14	1/4" SCREW PIN SHACKLE		0.10	0.21
					TOTAL WT. #	5.92



FINISH:
HOT DIP GALVANIZED.

TOLERANCE NOTES

TOLERANCES ON DIMENSIONS, UNLESS OTHERWISE NOTED ARE:
SAWED, SHEARED AND GAS CUT EDGES *(± 0.030")*
DRILLED AND GAS CUT HOLES *(± 0.030")* - NO CONING OF HOLES
LASER CUT EDGES AND HOLES *(± 0.010")* - NO CONING OF HOLES
BENDS AND ANGLES ARE ± 1/2 DEGREE
ALL OTHER MACHINING *(± 0.030")*
ALL OTHER ASSEMBLY *(± 0.060")*

DESCRIPTION: PORT HOLE HANGER KIT W/ 1/4" SHACKLES

SITE PRO 1 — A valmont COMPANY — Engineering Support Team: 1-888-753-7446

CPD NO.	DRAWN BY	ENG. APPROVAL	PART NO.	PAGE
	CMFL 5/10/2023		PHH-AL-SP14	1 OF 3
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SHEET TITLE
EQUIPMENT DETAILS

SHEET NUMBER
A7

ERICSSON RBS 6601 BBU

DIMENSIONS: (DXHXW) **16" X 3" X 19"**

WEIGHT **22 LBS**

6601 BBU SPECIFICATION | NOT TO SCALE | 1

ERICSSON 6651

DIMENSIONS: (DXHXW) 1.73" X 19.01" X 15.08"

WEIGHT 17 LBS

6651 BBU SPECIFICATION | NOT TO SCALE | 2

NOT USED | NOT TO SCALE | 3

ERICSSON 6610 SITE CONTROLLER

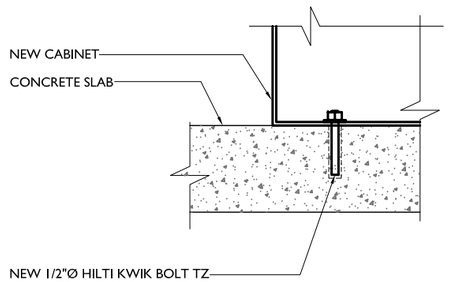
DIMENSIONS: (DXHXW) 1.57" X 5.51" X 1.26"

WEIGHT 0.28 LBS

6610 BBU SPECIFICATION | NOT TO SCALE | 4

ERICSSON XMU BBU

XMU BBU SPECIFICATION | NOT TO SCALE | 5



CABINET CONNECTION DETAIL | NOT TO SCALE | 6

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SHEET TITLE

EQUIPMENT DETAILS

SHEET NUMBER

A8

NETSURE™ 48V VRLA BATTERY RACK

VERTIV.

KEY FEATURES

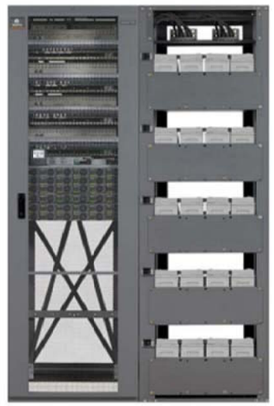
- Battery connection cables are supplied with factory installed lugs for easy installation
- Circuit breakers provide individual battery string disconnect with alarm
- Compatible with any DC power system for versatility
- Complies with industry standards: UL Listed and Seismic Zone 4 compliant

Compact, flexible design is Seismic Zone 4 rated and ideal for telecommunications facilities requiring modular battery plants.

Product Overview

The NetSure™ 48V VRLA Battery Rack provides back-up capacity up to 1050 amp-hours per bay for -48V applications. Model 48BA800 battery racks accommodate five strings of VRLA batteries in a four-post construction rack. Each string is available with 100 amp, 150 amp or 200 amp disconnect breakers.

When deploying equipment at greenfield sites or upgrading existing infrastructure, this rack can be integrated with a NetSure DC power system to deliver ample battery backup. The NetSure system is equipped with an NCU controller that controls low voltage battery disconnect and monitors battery recharge and discharge current. Battery life is maximized through monitoring and controlling battery voltage and current during charge cycles.



48V Battery Rack with NetSure™ 7100 DC Power System

NETSURE™ 48V VRLA BATTERY RACK

VERTIV.

Technical Specifications

DC OUTPUT	
Output Capacity	800 amps per bay
ENVIRONMENTAL	
Operating Ambient Temperature Range	-40°C to +40°C (-40°F to +104°F)
Storage Ambient Temperature Range	-40°C to +85°C (-40°F to +185°F)

Application

The NetSure™ 48V VRLA Battery Rack is designed for use in wireline and wireless communication systems installed in small offices, huts, CEVs and CUEs. It is also designed for use with NetSure DC power systems, and is compatible with most DC power equipment.

Additional Information

Additional specification, engineering and installation information may be obtained by requesting SAG588820400.

Single-Bay Battery Rack

AT&T
7900 XERXES AVE. S
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AMERICAN TOWER®

Fullerton
DESIGN DEVELOP CONSTRUCT
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TEL: 847-908-8400
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REVISIONS

REV.	DATE	DESCRIPTION	INITIALS
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B	02/04/25	ISSUED FOR REVIEW	GL
0	02/13/25	ISSUED FOR CONSTRUCTION	RV

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SHEET TITLE

EQUIPMENT DETAILS

SHEET NUMBER

A9

NETSURE™ 7100 SERIES

DC Power System

VERTIV.

KEY FEATURES

- Indoor seismic Zone 4 rated enclosure option, 84"H x 28"W x 28"D
- High Efficiency — 96.5% efficient eSure rectifiers ensure optimized total cost of ownership
- Modular Design — simple to install and operate; allows incremental cost-effective system growth
- Advanced Controller — offers battery management, site monitoring and configuration management
- Multiple AC Input Configurations – single or three phase input from 208 to 277/480 VAC
- Remote Access – Supports HTTPS with multiple browsers, network element management via Modbus or SNMP (v2 or v3)
- Dual Port Option – allows permanent Ethernet connection with DHCP and automatically converts the front access port to the default IP user access Ethernet port
- Front Accessible — allows for easy installation, additions and maintenance
- Safety Compliance — NEBS Level 3 certified; UL Listed to UL subject 1801
- New ultra-high density 3500 watt rectifiers provide 438 amps in 1RU of rack space, up to 2500 amps per bay.

Versatile DC power solution with high efficiency eSure™ rectifiers and converters, modular distribution, and advanced control and monitoring accepts single or three-phase input up to 277/480 VAC.

Description

The modular NetSure™ 7100 Series power system with 3500 watt or 2000 watt rectifiers and 1500 watt DC to DC converters provides up to 4000 amps of current for -48 volt systems with up to 520 amps at +24 volts. The basic components of the power system include the NetSure Control Unit (NCU), module mounting shelf assemblies which house the rectifiers and converters, and a modular distribution cabinet.

The NetSure 7100 power system contains a powerful, microprocessor-based control system capable of monitoring and controlling up to 60 rectifiers and converters. The NCU controller provides a full color LCD display, which can be activated at the touch of a keypad.

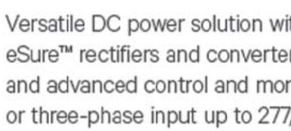
Each shelf can accommodate up to six plug'n'play rectifiers, which are controlled by the NCU. Additional shelves can be added as load requirements increase. The 2000 watt rectifiers and 1500 watt -48 VDC to +24 VDC converters are housed in shelves that occupy 1 RU. Each shelf accommodates rectifiers in all six positions and converters in three positions.

The NetSure 7100 can be expanded to up to three distribution bays for a total capacity of 4000 amps and up to twelve distribution panels. Each NetSure 7100 distribution cabinet is modular by row and position.

NetSure 7100

Four distinct distribution cabinet sizes are available to accommodate from one to four distribution panels. This allows the system to be configured in relay racks of various heights for installation in low-profile sites or atop batteries or other equipment to make more effective use of floor space. Several distribution panels are available offering different combinations of distribution positions, low voltage disconnect and battery disconnect options.

Distribution device options include 1 amp to 300 amp bullet-style circuit breakers, 3 amp to 125 amp TPS-style fuses in plug-in bullet-style holders, 100 amp to 800 amp GJ/218-style circuit breakers, 70 amp to 250 amp TPL-B-style fuses and 70 amp to 600 amp TPH-style fuses. These devices can be configured for both -48 V load and battery disconnect and +24 V load (bullet devices only). A GMT fuse module is also available.



High-Efficiency eSure Rectifiers R48-3500e3 (left) R48-3500e (center) & R48-2000e3 (right)

Application

The NetSure 7100 system is ideal for wireless, and wireline applications, including cell sites, MTSOs, small COs, datacenters, co-locations, huts, vaults and enclosures.

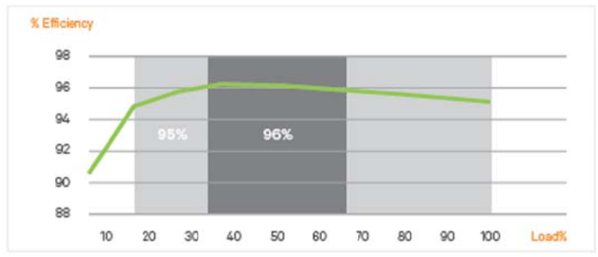
Technical Specifications (System)

SYSTEM FEATURES	
System Voltage, Nominal	-48 VDC (-42.0 VDC to -58.0 VDC range)
Output Voltage, Secondary	+24 VDC (+24.0 VDC to +28.0 VDC range)
Input Voltage	Single Phase: 208/240/277 VAC (277 VAC for 3500 W rectifiers only) Three Phase: 208 VAC or 277/480 VAC (277/480 VAC for 3500 W rectifiers only)
Control	Microprocessor (NCU)
RATED OUTPUT CAPACITY	
Bay, Rectifier/ Converter	2500 amps (48VDC) and 520 amps (24VDC)
Bay, Distribution	2000 amps (48 VDC) and 520 amps (24 VDC)
Rectifier	3500 W (R48-3500e3 or R48-3500) or 2000 W (R48-2000e3)
Shelf	438 amps (3500W rectifiers) or 250 amps (2000W rectifiers)
Distribution Panel	600 amps
PHYSICAL CHARACTERISTICS	
Framework Type	Rail-mount (can be mounted in an enclosure or relay rack)
Mounting Width	23 inches
Mounting Depth	20 inches, 9 inch front projection
Access	Front access for installation, operation and maintenance

ENVIRONMENTAL	
Operating Temperature	-40 °F to 104 °F (-40 °C to 40 °C) continuous operation
Storage	-40 °F to 185 °F (-40 °C to 85 °C)
Humidity	0% to 95% relative humidity, non-condensing
Ventilation	Rectifiers and converters are fan-cooled front to rear
EMI/RFI Suppression	Conforms to FCC rules Part 15, Subpart B, Class B and EN55022 Class B, radiated and conducted
Safety Compliance	UL Listed 1801, cUL, NEBS Level 3

Ordering Information

PART NUMBER	DESCRIPTION
582127000	NetSure™ 7100 DC power system
1M830CNA	NCU controller
1R483500E3	3500 W eSure rectifier, 1RU height
588706400	Power shelf for 1RU 3500W rectifiers
1R483500E	3500 W eSure™ rectifier, 1RU height
588706000	Power shelf for 3 RU 3500 W rectifiers
1R482000E3	2000 W eSure rectifier, 1RU height
1C48241500	1500 W -48 VDC to +24 VDC converter
588705300	Power shelf for 1 RU (2000 W) rectifiers and converters



R48-2000e3 Efficiency Curve at 250 VAC Nominal

SYSTEM ELEMENTS

-48 VDC NetSure 7100

1. AC Connection Panel (both sides)
2. DC Distribution Cabinet
3. NetSure Control Unit
4. Rectifiers/Converters
5. Relay Rack or Enclosure

VertivCo.com | Vertiv Headquarters, 1050 Dearborn Drive, Columbus, OH, 43085, USA

DC-00169 (R10/17)

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51510–1509

SHEET TITLE

EQUIPMENT DETAILS

SHEET NUMBER

A10

Vertiv™ eSure™ Converter

C48/58 -2000P3

VERTIV.

Key Benefits

Converter, 48 to 58 VDC, 2000 W Peak / 1600 W Average

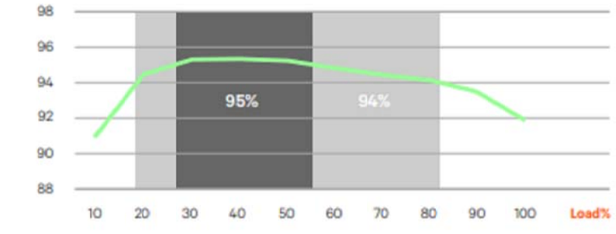
- Reduce power consumption and lower operating costs with 95% peak efficiency.
- Easily add capacity with hot pluggable interchangeable components.
- Ensure high availability with wide input voltage range from 41 VDC to 58 VDC.
- Power your 5G sites in the harsh environments with operation from -40°C to +65°C.
- Enjoy peace of mind with high quality UL recognized design.

Easily support higher power 5G remote radios on cell towers with modular 2000 watt eSure™ power extend converters.

Description

The Vertiv™ eSure™ C48/58-2000P3 high-efficiency converter is designed to operate from a nominal -48 VDC source to provide nominal -58 VDC load power, which is adjustable to application needs up to 2000 watts peak, 1600 watts average. This constant power converter designed with the latest patented switchmode technology, uses digital signal processing (DSP) for efficient operation.

The eSure C48/58-2000P3 DC to DC converter is ideal for feeding high power remote radio heads (RRHs). 58 VDC is regulated over a wide input range to minimize voltage drop in the cable feeding the RRH and sustain operation to end of battery discharge. When redundancy is critical or loads are high, multiple eSure C48/58-2000P3 converters can be connected in parallel to support a variety of telecom applications. Unified remote management and control of the power system is enabled when combined with a Vertiv™ NetSure™ controller.



C48/58-2000P3 Efficiency Curve at 53.5 VDC Nominal Input

CONVERTER SPECIFICATION | NOT TO SCALE | 1

Vertiv™ eSure™ Rectifier

R48-2000e3

VERTIV.

Benefits

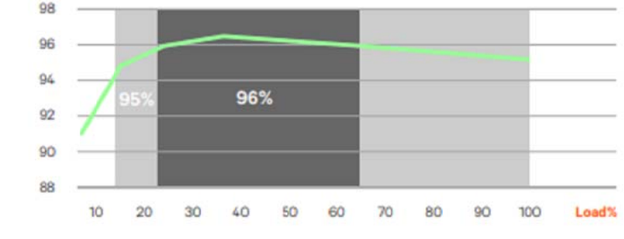
- Optimize the amount of energy delivered and reduce power consumption with over 96% efficiency.
- Increase space for revenue generating equipment with modules that pack more power in a small space with high power density.
- Facilitate easy maintenance, expansion and system changes with hot swappable capabilities.
- Enjoy increased reliability and active load sharing with Digital Signal Processing (DSP) which translates into fewer components and optimized operation.
- Appreciate the flexibility to utilize in a variety of applications with a wide input voltage range of 85 VAC to 300 VAC and full power output at temperatures from -40°C to +65°C.

In addition to reducing power consumption and lowering operating cost, eSure™ high-efficiency rectifiers offer superior performance and uncompromised reliability.

Description

The 2000 watt high-efficiency eSure rectifier (model R48-2000e3) converts standard AC supply voltages into stable nominal -48 VDC voltage that is adjustable to application needs. This constant power rectifier designed with the latest patented switch-mode technology, uses DSP (Digital Signal Processing) for efficient operation.

The R48-2000e3 can be connected in parallel with other rectifiers and converters to support a variety of telecom applications. Unified remote management and control of the power system is enabled when combined with a Vertiv™ controller.



R48-2000e3 Efficiency Curve at 250 VAC Nominal

RECTIFIER SPECIFICATION | NOT TO SCALE | 2

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SHEET TITLE

EQUIPMENT DETAILS

SHEET NUMBER

A11

PowerSafe® SBS Front Terminal

Telecommunications *NEBS™ Compliant**

Battery Range Summary

The PowerSafe® SBS Front Terminal battery further extends the technical leadership of the PowerSafe SBS battery range. PowerSafe SBS Front Terminal monoblocs retain the benefits of Thin Plate Pure Lead (TPPL) technology such as long life, high energy density and superior shelf life. They also deliver exceptional cyclic performance in both float and fast charge applications, even in the hottest and harshest operating environments.

Where conventional Valve Regulated Lead Acid (VRLA)/ Absorbed Glass Mat (AGM) batteries struggle to cope with harsh conditions and frequent power outages, cutting edge TPPL technology makes PowerSafe SBS batteries the perfect solution for the challenging operating conditions of today's telecommunication networks.

PowerSafe SBS batteries are designed to the highest quality standards, with a unique manufacturing process providing superior energy and power, high performance and proven reliability. There is no substitute for PowerSafe SBS Front Terminal batteries.

Features and Benefits

- Capacity range 31-190Ah
- 12V monobloc configurations
- Multiple string configurations available
- Two year shelf life
- SR-4228 compliant
- Proven long service life
- High energy density and cycling capability

Visit us at www.enersys.com

EnerSys. Powering Full Solutions | RESERVE POWER

*NEBSTM Compliant GRid-Core
Includes the following: SBS B8F, SBS B10F, SBS B14F, SBS C11F, SBS 100F, SBS 112F, SBS 145F, SBS 165F, SBS 170F and SBS 190F.

Publication No: US-SBSF-RS-AB June 2016

Construction

- Utilizes TPPL technology. Thin positive grids are produced from high purity lead using a unique manufacturing process to maximize corrosion resistance and service life while increasing energy density
- Separators are AGM made from high purity, superior quality fibers. The electrolyte is absorbed within the AGM, preventing acid spills in case of accidental damage
- Electrolyte is produced from extremely high purity acid to reduce self-discharge rates and float currents
- Container and cover made from flame retardant UL94-V0 material, highly resistant to shock and vibration
- Front terminal batteries use tin-plated copper terminals.
- Self-regulating one way pressure relief valves prevent ingress of atmospheric oxygen

Installation and Operation

- Space efficient footprint
- VRLA design, reduces maintenance requirements
- Lifting handles for easy handling
- Greater than 10 year life expectancy in float service at 77°F (25°C)
- TPPL technology provides increased active material surface area which yields increased energy density
- Operating temperature:
  -40°F (-40°C) to 122°F (50°C)
  Recommended temperature:
  68°F (20°C) to 86°F (30°C)

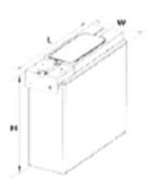
Standards

- Approved as non-hazardous cargo for ground, sea and air transportation in accordance with US DOT Regulation 49 and ICAO & IATA Packing Instruction 906. Please see our SDS for complete details at www.enersys.com
- Complies with Telcordia® SR-4228, Network Equipment Building System (NEBS™) Criteria Levels
- The management systems governing the manufacture of this product are ISO 9001:2008 and ISO 14001:2004 certified

General Specifications

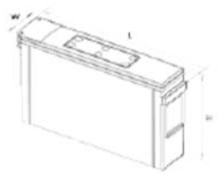
			Nominal Capacity		Nominal Dimensions											Electrolyte (1.300 S.G.)				Pure Acid (H_2SO_4) Acid			
PowerSafe® SBS Battery	Number of Cells	Nominal Voltage (V)	8hr. Rate 1.75Vpc @ 77°F	10hr. Rate 1.80Vpc @ 25°F	Length in	Length mm	Width in	Width mm	Height in	Height mm	Typical Weight lbs	Typical Weight kg	Short Circuit Current (Amps)	Internal** Resistance MilliOhms	Terminals	Volume (per bloc) gal	Volume (per bloc) L	Weight (per bloc) lbs	Weight (per bloc) kg	Volume (per bloc) gal	Volume (per bloc) L	Weight (per bloc) gal	Weight (per bloc) L	Lead Weight (per bloc) lbs	Lead Weight (per bloc) kg
SBS B8F	6	12	31	31	11.9	303	3.80	97.0	6.26	159	22.7	10.3	1270	10.0	M6 M	0.37	1.42	4.05	1.84	0.11	0.40	1.61	0.73	15.6	7.08
SBS B10F	6	12	38	38	11.9	303	3.80	97.0	7.24	184	28.2	12.8	1290	9.00	M6 M	0.48	1.80	5.1	52.34	0.13	0.51	2.04	0.93	17.7	8.03
SBS B14F	6	12	62	62	11.9	303	3.80	97.0	10.4	264	42.0	19.1	1800	7.00	M6 M	0.79	2.95	8.4	52.83	0.22	0.83	3.25	1.52	29.6	13.4
SBS C11F	6	12	92	91	16.4	417	4.10	105	10.1	256	61.6	27.9	2300	5.50	M6 M	1.28	4.85	12.9	5.50	0.35	1.36	5.50	2.49	43.4	19.7
SBS 100F	6	12	100	100	15.6	395	4.30	108	11.3	287	71.9	32.6	2210	5.60	M6 M	1.34	5.09	14.6	6.60	0.38	1.43	5.77	2.62	49.7	22.5
SBS 112F	6	12	112	112	22.1	561	4.90	125	8.98	228	90.4	41.0	2500	5.00	M6 M	1.71	6.48	18.5	8.41	0.48	1.82	7.25	3.24	56.8	25.8
SBS 145F	6	12	145	145	17.8	452	6.80	172	9.37	238	105	47.6	4100	2.00	M6 M	2.25	8.51	24.2	11.0	0.62	2.39	9.66	4.38	72.4	32.8
SBS 165F	6	12	165	165	17.8	452	6.77	172	10.8	274	117	52.8	3700	2.30	M6 M	2.45	9.27	26.5	12.0	0.64	2.42	9.72	4.41	82.7	37.5
SBS 170F	6	12	170	170	22.1	561	4.90	125	11.1	283	116	52.5	3400	4.00	M6 M	2.09	7.92	22.7	10.2	0.59	2.23	8.99	4.08	82.0	37.2
SBS 190F	6	12	190	190	22.1	561	4.90	125	12.4	316	132	60.0	3800	3.30	M6 M	2.34	8.86	25.3	11.5	0.65	2.48	10.1	4.56	95.9	43.4

**Resistance values are for reference only and not intended to represent an Ohmic Value or Baseline measurement



SBS B8F - B14F
SBS C11F

SBS 100F - 112F



SBS 145F, 165F - 190F

EnerSys. Powering Full Solutions

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EnerSys EMEA EH Europa GmbH, Baarerstrasse 18, 6300 Zug, Switzerland Tel: +41 44 215 7410
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EQUIPMENT DETAILS

SHEET NUMBER

A12

NO DETAIL | NO SCALE | 1

NO DETAIL | NO SCALE | 2

1. CONTRACTOR IS TO REFER TO AT&T'S MOST CURRENT RADIO FREQUENCY DATA SHEET (RFDS) PRIOR TO CONSTRUCTION.
2. THE SIZE, HEIGHT, AND DIRECTION OF THE ANTENNAS SHALL BE ADJUSTED TO ACHIEVE THE AZIMUTHS SPECIFIED AND LIMIT SHADOWING AND TO MEET THE SYSTEM REQUIREMENTS.
3. CONTRACTOR SHALL VERIFY THE HEIGHT OF THE ANTENNA WITH THE AT&T WIRELESS PROJECT MANAGER.
4. VERIFY TYPE AND SIZE OF TOWER LEG PRIOR TO ORDERING ANY ANTENNA MOUNT.
5. UNLESS NOTED OTHERWISE THE CONTRACTOR MUST PROVIDE ALL MATERIAL NECESSARY.
6. ANTENNA AZIMUTHS ARE DEGREES OFF OF TRUE NORTH, BEARING CLOCKWISE, IN WHICH ANTENNA FACE IS DIRECTED. ALL ANTENNAS (AND SUPPORTING STRUCTURES AS PRACTICAL) SHALL BE ACCURATELY ORIENTED IN THE SPECIFIED DIRECTION.
7. CONTRACTOR SHALL VERIFY ALL RF INFORMATION PRIOR TO CONSTRUCTION.
8. SWEEP TEST SHALL BE PERFORMED BY GENERAL CONTRACTOR AND SUBMITTED TO AT&T WIRELESS CONSTRUCTION SPECIALIST. TEST SHALL BE PERFORMED PER AT&T WIRELESS STANDARDS.
9. CABLE LENGTHS WERE DETERMINED BASED ON THE DESIGN DRAWING. CONTRACTOR TO VERIFY ACTUAL LENGTH DURING PRE-CONSTRUCTION WALK.
10. CONTRACTOR TO USE ROSENBERGER FIBER LINE HANGER COMPONENTS (OR ENGINEER APPROVED EQUAL).

ANTENNA & CABLING NOTES | NO SCALE | 3

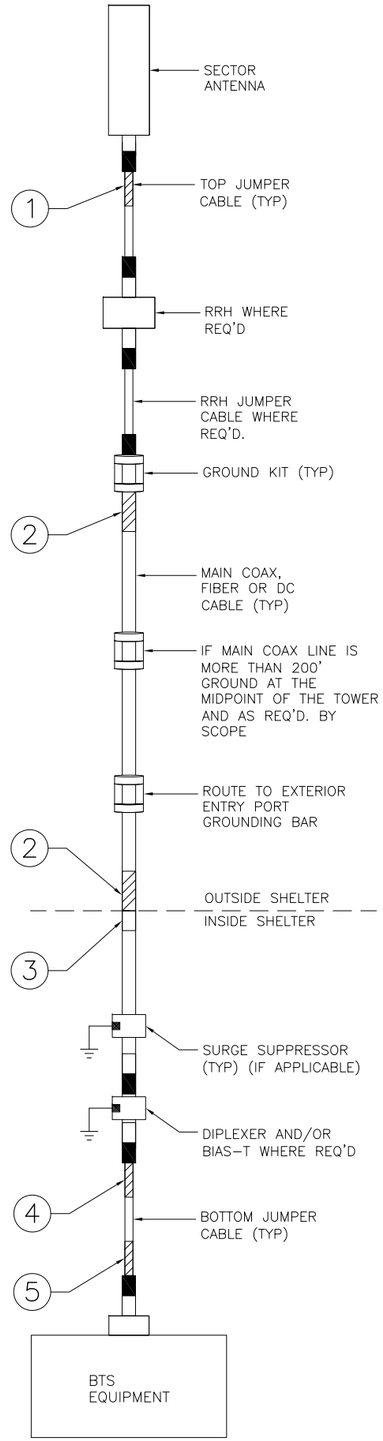
RF, DC, & COAX CABLE MARKING LOCATIONS TABLE

NO	LOCATIONS
1	EACH TOP-JUMPER SHALL BE COLOR CODED WITH (1) SET OF 3" WIDE BANDS.
2	EACH MAIN COAX SHALL BE COLOR CODED WITH (1) SET OF 3" WIDE BANDS NEAR THE TOP-JUMPER CONNECTION AND WITH (1) SET OF 3/4" WIDE COLOR BANDS JUST PRIOR TO ENTERING THE BTS OR TRANSMITTER BUILDING.
3	CABLE ENTRY PORT ON THE INTERIOR OF THE SHELTER.
4	ALL BOTTOM JUMPERS SHALL BE COLOR CODED WITH (1) SET OF 3/4" WIDE BANDS ON EACH END OF THE BOTTOM JUMPER.
5	ALL BOTTOM JUMPERS SHALL BE COLOR CODED WITH (1) SET OF 3/4" WIDE BANDS ON EACH END OF THE BOTTOM JUMPER.

CABLE MARKING DIAGRAM | NO SCALE | 4

1. THE ANTENNA SYSTEM COAX SHALL BE LABELED WITH VINYL TAPE.
2. THE STANDARD IS BASED ON EIGHT COLORED TAPES-RED, BLUE, GREEN, YELLOW, ORANGE, BROWN, WHITE, AND VIOLET. THESE TAPES MUST BE 3/4" WIDE & UV RESISTANT SUCH AS SCOTCH 35 VINYL ELECTRICAL COLOR CODING TAPE AND SHOULD BE READILY AVAILABLE TO THE ELECTRICIAN OR CONTRACTOR ON SITE.
3. USING COLOR BANDS ON THE CABLES, MARK ALL RF CABLE BY SECTOR AND CABLE NUMBER AS SHOWN ON "CABLE COLOR CHART".
4. WHEN AN EXISTING COAXIAL LINE THAT IS INTENDED TO BE A SHARED LINE BETWEEN TECHNOLOGIES IS ENCOUNTERED, THE CONTRACTOR SHALL REMOVE THE EXISTING COLOR CODING SCHEME AND REPLACE IT WITH THE COLOR CODING STANDARD. IN THE ABSENCE OF AN EXISTING COLOR CODING AND TAGGING SCHEME, OR WHEN INSTALLING PROPOSED COAXIAL CABLES, THIS GUIDELINE SHALL BE IMPLEMENTED AT THAT SITE REGARDLESS OF TECHNOLOGY.
5. ALL COLOR CODE TAPE SHALL BE 3M-35 AND SHALL BE INSTALLED USING A MINIMUM OF (3) THREE WRAPS OF TAPE AND SHALL BE NEATLY TRIMMED AND SMOOTHED OUT SO AS TO AVOID UNRAVELING.
6. ALL COLOR BANDS INSTALLED AT THE TOP OF THE TOWER SHALL BE A MINIMUM OF 3" WIDE, AND SHALL HAVE A MINIMUM OF 3/4" OF SPACE BETWEEN EACH COLOR.
7. ALL COLOR CODES SHALL BE INSTALLED SO AS TO ALIGN NEATLY WITH ONE ANOTHER FROM SIDE-TO-SIDE.
8. IF EXISTING CABLES AT THE SITE ALREADY HAVE A COLOR CODING SCHEME AND THEY ARE NOT INTENDED TO BE REUSED OR SHARED WITH THE NEW TECHNOLOGY, THE EXISTING COLOR CODING SCHEME SHALL REMAIN UNTOUCHED.

CABLE MARKING NOTES | NO SCALE | 5



CABLE COLOR CODING DIAGRAM | NO SCALE | 6

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0	02/13/25	ISSUED FOR CONSTRUCTION	RV

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LICENSED PROFESSIONAL ENGINEER
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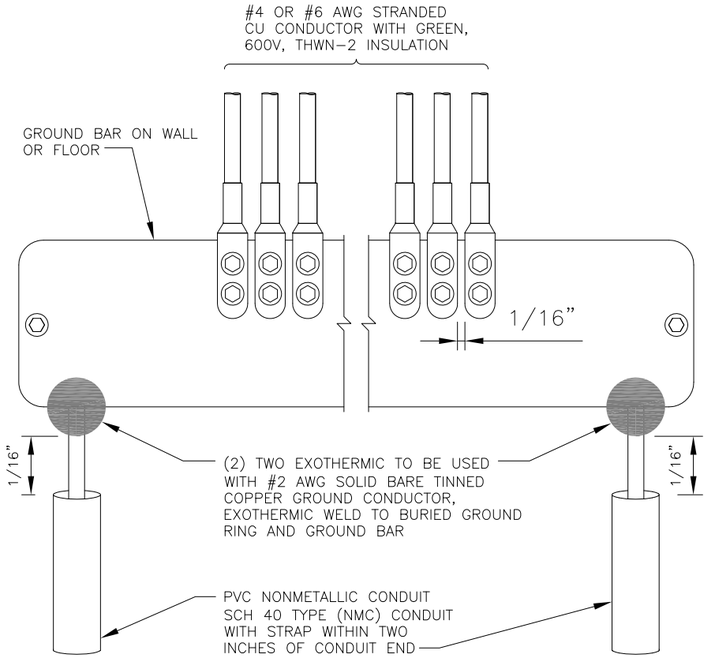
51510-1509

SHEET TITLE

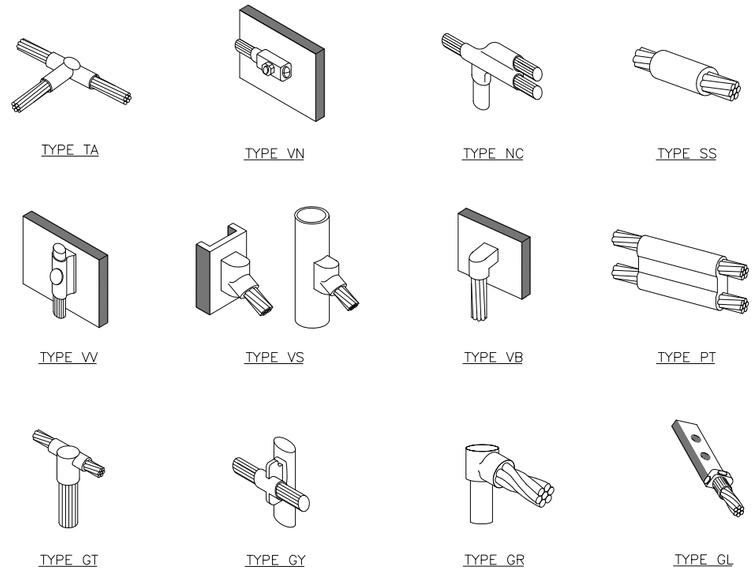
CABLE NOTES & COLOR CODING

SHEET NUMBER

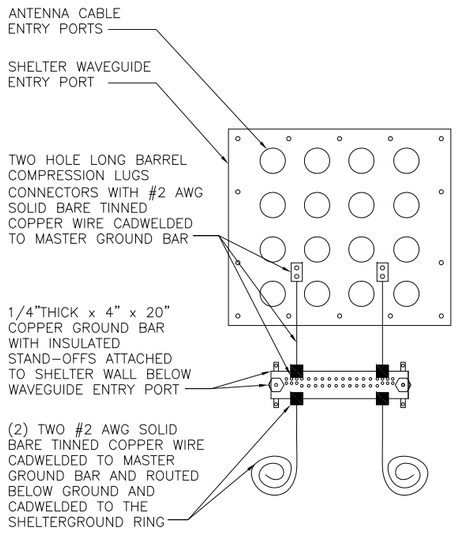
A13



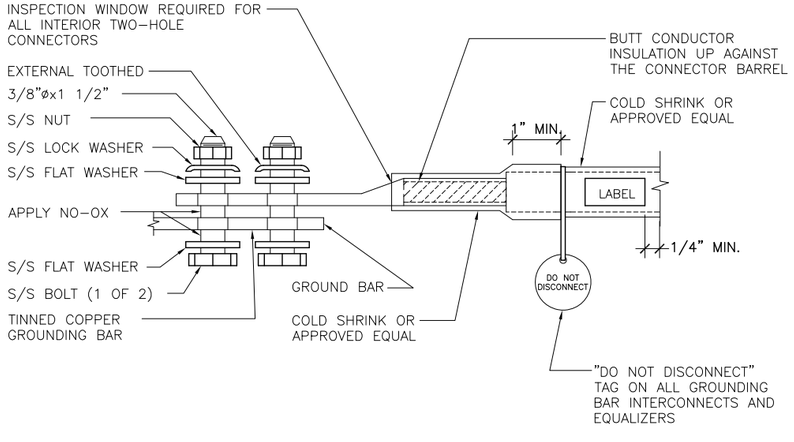
GROUND BAR DETAILS | NO SCALE | 1



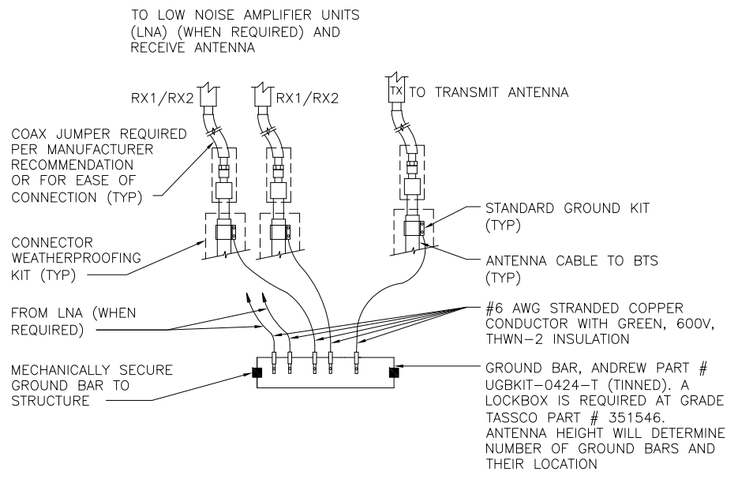
CALDWELD DETAILS | NO SCALE | 2



SHELTER GROUND BAR DETAIL | NO SCALE | 3



EXTERIOR TWO HOLE LUG DETAIL | NO SCALE | 4



ANTENNA GROUND BAR DETAIL | NO SCALE | 5

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10147256
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2614 N 5TH ST.
CARTER LAKE, IA
51510-1509

SHEET TITLE

GROUNDING DETAILS

SHEET NUMBER

E1

AMERICAN TOWER® CORPORATION

This report was prepared for American Tower Corporation by

B+T GRP

Antenna Mount Analysis Report

Mount Type	:	**12.5 ft. Platform Mount**
ATC Asset Name	:	**Carter Lake IA**
ATC Asset Number	:	**274849**
Engineering Number	:	**14858878_C9_06**
Mount Elevation	:	**120 ft.**
Carrier	:	**AT&T Mobility**
Carrier Site Name	:	**Carter Lake Relo**
Carrier Site Number	:	**WSUMW0033356**
Site Location	:	**2614 N 5th St.** **Carter Lake, IA 51510-1509** **41.28233°, -95.92450°**
County	:	**Pottawattamie**
Date	:	**January 8, 2025**
Max Usage	:	**71%**
Result	:	**Contingent Pass**

Prepared By:
Colton Jung
Project Engineer I

Reviewed By:

LICENSED PROFESSIONAL ENGINEER
CHAD E. TUTTLE
No. 16832
IOWA

I hereby certify that this engineering document was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Iowa

Signature: Date: 1/8/25

CHAD E. TUTTLE Lic. No. 16832

My license renewal date is December, 31 2026

Pages or sheets covered by this seal: 1-55

Introduction

The purpose of this report is to summarize results of the antenna mount analysis performed for AT&T Mobility at 120 ft.

Supporting Documents

Spec. Sheet	Spec Sheet for SitePro1 Part# F3P-12W, August 30, 2017
	Spec Sheet for SitePro1 Part# F3P-HRK12, dated September 14, 2017
Previous Mount Analysis	EFI Global, Inc. Project # 14858878_C8_04, dated September 29, 2024
RFDS	RFDS-18002 dated July 30, 2024; FA 10147256
Photos	Site Photos from 2024
Structural Evaluation Letter	American Tower Corporation Engineering # 14858878_C2_05, dated August 19, 2024

Analysis

This antenna mount was analyzed using RISA-3D v22.0.1 analysis software.

Basic Wind Speed:	111 mph (3-Second gust)
Basic Wind Speed w/ Ice:	50 mph (3-Second Gust) w/ 1.18" radial ice concurrent
Codes:	ANSI/TIA-222-I
Structure Class:	II
Exposure Category:	C
Topographic Procedure:	Method 1
Topographic Feature:	Flat
Crest Height:	0 ft.
Crest Length:	0 ft.
Spectral Response:	Ss = 0.086, S_1 = 0.051
Site Class:	D - Stiff Soil
Live Loads:	Lm = 500 lbs.*, Lv = 250 lbs.*

*Live Load(s) reduction is confirmed to either not govern or not be applicable.

Conclusion

Based on the analysis results, the antenna mount meets the requirements per the applicable codes listed above provided the modifications listed below are completed:

1. Install modifications per ATC drawing #14858878_C9_06.

If you have any questions or require additional information, please reach out to your American Tower contact. If you do not have an American Tower contact and have an Engineering question, please contact MountAnalysis@americantower.com. Please include the American Tower site name, site number, and engineering number in the subject line for any questions.

[B+T Group | 1717 S. Boulder Ave, Suite# 300, Tulsa, OK 74119 | Office# 918 587 4630 | Fax# 918 295 0265 | www.btgrp.com]

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CARTER LAKE RELO
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SHEET TITLE

SUPPLEMENTAL

SHEET NUMBER

R1

AMERICAN TOWER® CORPORATION

Antenna Loading

Mount Centerline (ft)	Antenna Centerline (ft)	Qty	Antenna Model
120	123	3	Ericsson KRE 101 2586/1K
		3	Ericsson AIR 6472 B77G B77M (67.2lbs)
		3	Ericsson KRE 101 2487/1K
		1	Raycap DC6-48-60-0-8C
		1	Raycap DC9-48-60-24-8C-EV (Enclosure)
		1	Raycap DC6-48-60-18-8F ("Squid")
		3	Ericsson Radio 4471 B30
		3	Ericsson Radio 4890HP 48B2/B25 48B66 M01 (68.3lbs)
		3	Ericsson Radio 4490HP 44B5 44B12A C (68.3lbs)
		3	Ericsson Radio 4494 44B14 20B29 M01

Structure Usages

Structural Component	Controlling Usage	Pass/Fail
Face Horizontals	61%	Pass
Mount Pipes	62%	Pass
Truss Arm Members	71%	Pass
Connection Angles	59%	Pass
Connection Plate	12%	Pass
Connection Tube	11%	Pass
Support Rail	43%	Pass
Support Horizontal Pipe	18%	Pass
Support Rail Angle	19%	Pass
Support Horizontal Plates	4%	Pass
Equipment Pipes	38%	Pass
Mod-Stabilizers	19%	Pass
Mount-to-Tower Connections	62%	Pass

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10147256
CARTER LAKE RELO
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CARTER LAKE, IA
51510-1509

SHEET TITLE
SUPPLEMENTAL

SHEET NUMBER
R2

SITE DATA INPUT WORKSHEET - INDOOR SITE POWER ESTIMATE TOOL

Region:	W
Market:	AZ/NM
FA:	10147256
USID:	114757
Location Name:	CARTER LAKE RELO
Date Calc Completed:	4/17/2024
Completed By:	Fullerton
PACE JOB ID:	MRUMW051347
Job Description:	
Field Notes:	

-48V PRIMARY VOLTAGE DC PLANT SPECIFIED				
+24VDC EQUIPMENT LOAD:	0 WATTS	=	0 AMPS	at +24V
-48VDC EQUIPMENT LOAD:	1416 WATTS	=	27 AMPS	at -48V
-58VDC EQUIPMENT LOAD:	14082 WATTS	=	243 AMPS	at -58V
NO SECONDARY 58V LOADS - DC CONVERTER SYSTEM NOT REQUIRED				
TOTAL PRIMARY 48V LOAD:	15195 WATTS	=	282 AMPS	at -48V

(DC PLANT CONFIGURATION CAN BE REVIEWED ON DC PLANT WORKSHEET)		
DC PLANT: Vertiv STD -48VDC NetSure 7100 Plant 1000A w-58V CONV		
-48V RECTIFIERS REQUIRED (N+1):	10	
-48V RECTIFIER SLOTS:	15	
CONV. TYPE: UNIVERSAL SLOTS - RIGHT 3 RECT SLOTS/SHELF CAN BE USED FOR CONV		
-58V CONVERTERS REQUIRED:	9	ALL SLOTS USED
-58V SLOTS:	9	ALL SLOTS USED
ESTIMATED BATTERY RESERVE TIME		
5 190 AH 48V STRINGS =	4.88 HOURS	(4 HOUR MINIMUM BATTERY RESERVE)

ESTIMATED SITE MAX. AC LOAD (AMPS):	152.48 AMPS
ESTIMATE 200A SERVICE SUFFICIENT	

ESTIMATED AC GEN CAPACITY REQUIRED	28	KW

RECOMMENDED ENVIROSYSTEM:	3-TONS COOLING
SPECIFIED ENVIROMENTAL SYSTEM:	6-TONS
ESTIMATE SUFFICIENT HVAC CAPACITY	

STEP 1: ENTER QUANTITIES OF EQUIPMENT & DC OPERATING VOLTAGE:

STEP 2: ENTER DC PLANT TYPE FROM DROP-DOWN MENU:

("GENERIC" +24V or -48V DC PLANT CAN BE SELECTED FOR ANY MANUFACTURER'S DC PLANT)

Vertiv STD -48VDC NetSure 7100 Plant 1000A w-58V CONV

-48V PRIMARY DC PLANT SPECIFIED

(DC PLANT CONFIGURATION CAN BE REVIEWED ON DC PLANT WORKSHEET)

STEP 2A: THIS STEP ONLY SHOWN IF "GENERIC" DC PLANT PLANT TYPE HAS BEEN SELECTED:

STEP 2B: THIS STEP ONLY SHOWN IF TYCO GPS2424 DC PLANT PLANT TYPE HAS BEEN SELECTED:

STEP 3: DO YOU WANT TO CONFIGURE A STANDARD STAND-ALONE DC CONVERTER SYSTEM? N

NOTE: IF YOU SELECT "Y" ANY INTEGRATED DC PLANT CONVERTER OPTIONS WILL BE BYPASSED

STEP 4: ENTER INDOOR SITE BUILDING/SHELTER DATA:

(Square footage used for interior AC lighting LOAD calculation)

SELECT SITE ENCLOSURE TYPE & SIZE: 11' 5" x 20' SHELTER

STEP 5: ENTER SITE HVAC SYSTEM DATA:

	Type	Size	QTY
SPECIFY INDIVIDUAL Cooling UNIT/CNTLR:	HVAC	3	2
SPECIFY INDIVIDUAL Cooling UNIT/CNTLR:			
SPECIFY INDIVIDUAL Cooling UNIT/CNTLR:			
SPECIFY INDIVIDUAL Cooling UNIT/CNTLR:			
SPECIFY INDIVIDUAL Cooling UNIT/CNTLR:			
SPECIFY INDIVIDUAL Cooling UNIT/CNTLR:			

ARE THERE SITE HVAC HEATING UNITS? N

TOTAL SPECIFIED SITE HVAC: 6-TONS **ESTIMATED HVAC REQUIREMENT:** 3-TONS COOLING

IF NextGen_with_Gen_Control IS SELECTED USER NEEDS TO VERIFY GENERATOR RUN ALARM IS WIRED THROUGH SMART CONTROLLER.
DC LOADS FOR SHELTER ENVIROMENTAL SYSTEMS ARE AUTOMATICLY ADDED TO THE DC PLANT LOAD

STEP 6: ENTER SITE STATIONARY GENERATOR DATA:

DOES SITE HAVE A STATIONARY GENERATOR? N

ESTIMATED AC GEN CAPACITY REQUIRED: 28 KW

STEP 7: ENTER SITE BATTERY CONFIGURATION DATA:

SELECT SINGLE STRING BATTERY CAPACITY (AH): 190

SPECIFY TOTAL QUANTITY OF BATTERY STRINGS: 5

TOTAL SITE BATTERY CAPACITY (AH): 950

NOTE: STANDARD BATTERY CAPACITY HAS BEEN SPECIFIED

NOTE: 12 VOLT MONOBLOCK BATTERIES - 4 batteries per -48V String

ESTIMATED BATTERY RESERVE TIME: 4.9 HOURS (NO SITE GENSET)

- SITES WITH STATIONARY GENSETS
- Equipped with Vertiv DC Plant (NEQ.20068) equipped with 200 amp Battery disconnect breakers shall receive no greater than 2 shelves of 180 AH batteries.
- All other locations with legacy DC plants (typically equipped with battery disconnect breakers <200 amps) shall receive no greater than 3 shelves of 180 AH batteries

- ALL SITES WITHOUT A STATIOINARY GENSET
- Shall be engineered with 4 hours of battery reserve.

SITE POWER CALCULATION TOOL - VERSION 5.39 - February 7, 2024

ANY QUESTIONS PLEASE CONTACT RICK BADGERO (RB6620@ATT.COM)

NOTE: LOAD VALUES FOR ANY EQUIPMENT CAN BE USER SPECIFIED ON THE POWER CONSUMPTION WORKSHEET - USER CHANGES TO DEFAULT LOAD VALUES ARE HIGHLIGHTED IN BRIGHT YELLOW

QTY	Ericsson	VOLTAGE	WATTS
	LTE 4G & Multi-Std EQUIPMENT		
1	Ericsson LTE IRBS6601 BBU - 1 DUL	48	100
0	Ericsson LTE RBS6601 BBU - 2 DUL	48	0
0	Ericsson WCDMA RBS6601 - 1 DUW	48	0
0	Ericsson LTE RBS6601 BBU - 1DUS	48	0
0	Ericsson LTE RBS6601 BBU - 2DUS	48	0
1	Ericsson XMU	48	40
0	Ericsson LTE RBS5216	48	0
0	P614 PIM Card	48	0
0	6630 BBU Card	48	0
0	6648 BBU Card	48	0
0	6675 BBU Card	48	0
2	6651 BBU Card	48	544
0	6673 Router	48	0
0	6674 BBU Card	48	0
1	6610 Site Controller	48	6
	(FUTURE)		
	(FUTURE)		
	(FUTURE)		
	(FUTURE)		
	(FUTURE)		
	(FUTURE)		
	(FUTURE)		
	(FUTURE)		
	(FUTURE)		
	(FUTURE)		
	(FUTURE)		
	(FUTURE)		
	(FUTURE)		
	(FUTURE)		

QTY	IN/OUT	Radio Heads	VOLTAGE	WATTS
0		RRUS 11	48	0
0		RRUS12 + A2	48	0
0		RRUS 32 B66	48	0
0		RRUS 32 B30	48	0
0		RRUS 32 B2	48	0
0		RRUS 4402 B66/B25	48	0
0		RRU 4415 B25	48	0
3	OUT	RRUS 4471 B30	58	1608
0		RRU 4426 B66	48	0
0		RRU 4478 B12	48	0
0		RRU 4478 B14	48	0
0		RRU 4478 B5	48	0
0		RRUS E2 B29	48	0
0		RRUS 2012 B29	48	0
0		RRUS 4449 B5/B12	48	0
0		RRUS 8843 B2/B66	48	0
0		RRUS 2203 B2, B5	48	0
0		RRUS 2205 B46	48	0
0		AIR 3246 B25, B66	48	0
0		AIR 5331 radio	48	0
0		AIR 1281 radio	48	0
0		AIR 1641 B25/B66	48	0
0		LPRU 4410 B5/B12	48	0
0		LPRU 4420 B25/B66	48	0
0		RRUS 2203 B14	48	0
0		AIR 6488 B48	48	0
		AIR 6419 B77	48	0
0		AIR 6449 B77	48	0
0		RRU 8863 B77	48	0
0		RRUS 4460 B2/B66	48	0
0		AIR 6464 B77 D/G (6419 + 6449 in single mount)	48	0
0		Air 5322 Radio	48	0
0		Radio 4435 B77D	48	0
0		RRU 4467 n77 Dual C-band/3.45Ghz	48	0
3	OUT	RRU 4490 B5/B12 Dual band	58	2967
0		RRU 4408 3.45 GHz Pico Radio	48	0
3	OUT	RRU 4890 B2/B5-B66	58	3327
		AIR 6419 B77D	48	0
3	OUT	RRU 4494 B14, B29	58	2244
3	OUT	AIR 6472 B77D, B77M	58	3936
		(FUTURE)		
		(FUTURE)		
		(FUTURE)		
		(FUTURE)		

QTY	ALU-Nokia	VOLTAGE	WATTS
	LTE 4G & Multi-Std EQUIPMENT		
0	A-LU 9926 LTE BBU (w/max. 3 eCEM-u)	48	0
0	Nokia FSM-4 Chassis (LTE-AMIA, ASIAx3, ABIAx3)	48	0
0	Nokia FSM-4 Chassis (5G- AMIA, ASIKx3, ABILx3)	48	0
0	Nokia FSM-4 Chassis (C-RAN-AMIA, ASLx3, ABIOx3)	48	0
	(FUTURE)		
	(FUTURE)		
	(FUTURE)		
	(FUTURE)		
	(FUTURE)		
	(FUTURE)		
	(FUTURE)		
	(FUTURE)		
	(FUTURE)		
	(FUTURE)		
	(FUTURE)		
	(FUTURE)		

QTY	IN/OUT	Radio Heads	VOLTAGE	WATTS
0		2X40 (L7)	48	0
0		2x40 (B29)	48	0
0		2X60 (U8)	48	0
0		2X60 (U9)	48	0
0		2X60 B66 (L2)	48	0
0		2X60 (L8)	48	0
0		2X60 (L9)	48	0
0		4X25 B30 (L3)	48	0
0		2X60 B4 (L9)	48	0
0		4X30 B25 (L9)	48	0
0		4X45 B66a (L2)	48	0
0		Flexi B14 FRBI	48	0
0		AirScale B5 AHCA	48	0
0		AirScale B30 AHNA	48	0
0		AirScale (Micro) B25 AHFB	48	0
0		AirScale (Micro) B66 AHIB	48	0
0		AirScale Dual Band B25/66 AHFIB	48	0
0		AirScale Dual Band B12/14 AHLBA	48	0
0		AirScale Dual Band B5/29 AHBCB	48	0
0		AirScale AAS 39 GHz AEWB	48	0
0		AirScale TribandB12/B14/B29 AHLBBA	48	0
0		AirScale Band 77 AEQK	48	0
0		AirScale Band 77 AZQW	48	0
0		AirScale MAA n77 AEQK	48	0
0		AirScale MAA n77 AEQKI	48	0
0		AirScale MAA n78 AEQU	48	0
0		AirScale n77 AZQW	48	0
0		AirScale (Micro) n77 AWHQN	48	0
0		AirScale DB B25/66 AHFII	48	0
0		AirScale DB MAA n77/3.45 GHz AQQQA	48	0
		(FUTURE)		
		(FUTURE)		
		(FUTURE)		

QTY	TX RF AMP (MCPA or SCPA) EQPT.	VOLTAGE	WATTS
0	Andrew (12 module mcpa FRAME)	24	0
0	Andrew 135 Watt Module	24	0
	(FUTURE)		
0	Powerwave 12 module mcpa FRAME)	24	0
0	Powerwave 90 Watt Module	24	0
0	Powerwave 120 Watt Module	24	0
0	Powerwave 180 Watt Module	24	0
	(FUTURE)		
0	CCI 125 Watt DAB SCPA Module	24	0
0	CCI 125 Watt DAC SCPA Module	24	0
	(FUTURE)		

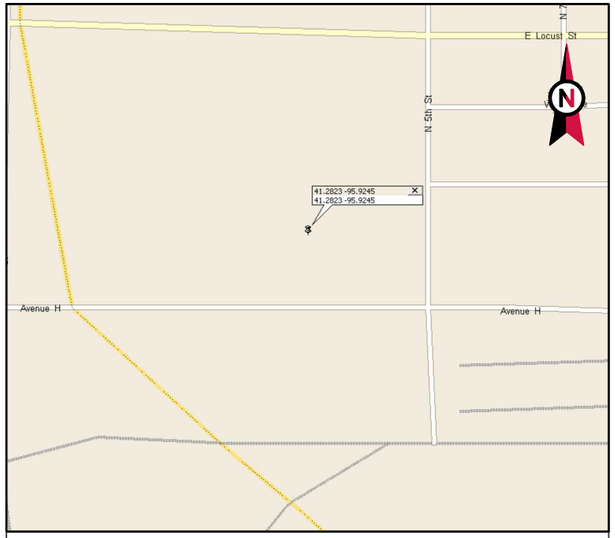
QTY	ANCILLARY CELL SITE EQUIPMENT	VOLTAGE	WATTS
0	A-LU 7705 SIAD	48	0
	(FUTURE)		
0	A-LU MPR-9500 MW Service Switch - MSS	48	0
0	A-Lu MPR-9500 MW Outdoor Unit - ODU	48	0
0	A-Lu MPR-9500 MW MPT-HL (Indoor)	48	0
1	02 HD SIAD S9500	48	266
0	Cisco MWR-2941 SIAD	48	0
0	Cisco SIAD ASR-901	48	0
0	Cisco 15310 EOS (SONET) MUX	48	0
0	Cisco 15454 MSP (MW Ring Config.)	48	0
	(FUTURE)		
0	Tru-Position LMU (E911)	48	0
1	GENERIC Ethernet NID	48	60
0	GENERIC Hydrogen Detector	48	0
0	GENERIC RET Controller	48	0
0	GENERIC RXAIT	48	0
0	GENERIC Smoke Detector	48	0
0	GENERIC TMA System	48	0
0	GENERIC Tower Lighting (DC)	48	0
0	NG480	48	0
0	Cisco 2911	48	0
	(FUTURE)		
0	FLX-12 Cabinet	48	0
0	FLX-16 Cabinet	48	0
0	FLX-21 Cabinet	48	0
0	FLX-42 Cabinet	48	0
	(FUTURE)		
0	Commscope 48v/24v DC Conv (PS-CONV-48-24)	48	0
	(FUTURE)		
	(FUTURE)		

(CUSTOM DC LOADS DEFINED ON POWER CONSUMPTION WORKSHEET)

QTY	IN/OUT	USER SPECIFIED DC EQUIPMENT	VOLTAGE	WATTS
1		DC Lights	48	200
1		DC Fan	48	200
0			48	0
0			48	0
0			48	0
0			48	0
0			48	0
0			48	0
0			48	0
0			48	0
0			48	0
0			48	0
0			48	0
0			48	0
		TOTAL USER SPECIFIED WATTS:		400
		TOTAL +24V (27V) AMPS:	0	
		TOTAL -48V (54V) AMPS:	7.4	
		TOTAL -58V (58V) AMPS:	0	

(CUSTOM AC LOADS DEFINED ON POWER CONSUMPTION WORKSHEET)

QTY	USER SPECIFIED AC EQUIPMENT	VOLTAGE	KVA
0			0
0			0
0			0
0			0
0			0
0			0
0			0
0			0
		TOTAL USER SPECIFIED KVA:	0
		TOTAL 120VAC AMPS:	0
		TOTAL 240VAC AMPS:	0



VICINITY MAP

AMERICAN TOWER®

SITE NAME: CARTER LAKE IA
SITE NUMBER: 274849
ATC PROJECT NUMBER: 14858878_C9_06
SITE ADDRESS: 2614 N 5TH ST.
CARTER LAKE, IA
51510-1509

LOCATION MAP

MOUNT REINFORCEMENT DRAWINGS
PREPARED FOR AT&T MOBILITY

PROJECT TEAM

TOWER OWNER

AMERICAN TOWER
10 PRESIDENTAL WAY
WOBURN, MA 01801

ENGINEERED BY

ATC TOWER SERVICES
3500 REGENCY PARKWAY, SUITE 100
CARY, NC 27518

CARRIER INFORMATION

CARRIER: AT&T MOBILITY
CARRIER SITE NAME: CARTER LAKE RELO
CARRIER SITE NUMBER: WSUMW0033356

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

PROJECT DESCRIPTION

THE PROJECT DEPICTED IN THESE PLANS ARE BASED ON THE RECOMMENDATIONS OUTLINED IN THE STRUCTURAL ANALYSIS COMPLETED UNDER ENGINEERING PROJECT NUMBER 14858878_C9_06 DATED 01/08/25. SATISFACTORY COMPLETION OF THE WORK INDICATED IN THESE PLANS WILL RESULT IN THE STRUCTURE MEETING THE REQUIREMENTS OF THE SPECIFICATIONS UNDER WHICH THE STRUCTURAL WAS COMPLETED.

PROJECT NOTE

THE PROJECT DEPICTED IN THESE PLANS QUALIFIES AS AN ELIGIBLE FACILITIES REQUEST ENTITLED TO EXPEDITED REVIEW UNDER 47 U.S.C. § 1455(A) AS A MODIFICATION OF AN EXISTING WIRELESS TOWER THAT INVOLVES THE COLLOCATION, REMOVAL, AND/OR REPLACEMENT OF TRANSMISSION EQUIPMENT THAT IS NOT A SUBSTANTIAL CHANGE UNDER CFR § 1.6100 (B)(7).

COMPLIANCE CODE

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

1. ANSI/TIA/EIA: STRUCTURAL STANDARDS (222-I EDITION)

PROJECT LOCATION

GEOGRAPHIC COORDINATES

LATITUDE: 41.28233°

LONGITUDE: -95.92450°

SHEET	SHEET TITLE	REV.
G-001	COVER	0
G-002	IBC GENERAL NOTES AND MOUNT MODIFICATION INSPECTION	0
S-101	MODIFICATION PROFILE	0
S-102	SAFETY CLIMB LAYOUT	0
R-901	SUPPLEMENTAL	0
---	POST MODIFICATION MOUNT ANALYSIS REPORT	---

LICENSED PROFESSIONAL ENGINEER
CHAD E. TUTTLE
No. 16832
IOWA

I hereby certify that this engineering document was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Iowa

Signature _____ Date 1/8/25

CHAD E. TUTTLE Lic. No. 16832

My license renewal date is December, 31 2026

Pages or sheets covered by this seal: 1-5

B+T GRP
1717 S. BOULDER
SUITE 300
TULSA, OK 74119
PH: (918) 587-4630
towersupport@btgrp.com

REV.	DESCRIPTION	BY	DATE
0	FIRST ISSUE	PMS	01/08/25

ATC SITE NUMBER:
274849

ATC SITE NAME:
CARTER LAKE IA
IA

SITE ADDRESS:
2614 N 5TH ST.
CARTER LAKE, IA 51510-1509

DRAWN BY:	PMS
APPROVED BY:	CJ
DATE DRAWN:	01/08/25
ATC JOB NO:	14858878_C9_06

COVER

SHEET NUMBER: G-001

REVISION: 0

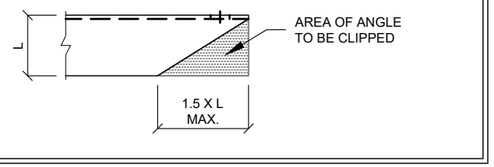
GENERAL

1. ALL WORK TO BE COMPLETED PER APPLICABLE LOCAL, STATE, FEDERAL CODES AND ORDINANCES AND COMPLY WITH ATC CONSTRUCTION SPECIFICATIONS FOR WIRELESS TOWER SITES. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING AND ABIDING BY ALL REQUIRED PERMITS.
2. ALL WORK INDICATED ON THESE DRAWINGS SHALL BE PERFORMED BY QUALIFIED CONTRACTORS EXPERIENCED IN TOWER AND FOUNDATION CONSTRUCTION.
3. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF RECORD IMMEDIATELY OF ANY INSTALLATION INTERFERENCES. ALL NEW WORK SHALL ACCOMMODATE EXISTING CONDITIONS. DETAILS NOT SPECIFICALLY SHOWN ON THE DRAWINGS SHALL FOLLOW SIMILAR DETAILS FOR THIS JOB.
4. ANY SUBSTITUTIONS SHALL CONFORM TO THE REQUIREMENTS OF THESE NOTES AND SPECIFICATIONS, AND SHOULD BE SIMILAR TO THOSE SHOWN. ALL SUBSTITUTIONS SHALL BE SUBMITTED TO THE ENGINEER OF RECORD FOR REVIEW AND APPROVAL PRIOR TO FABRICATION.
5. ANY MANUFACTURED DESIGN ELEMENTS SHALL CONFORM TO THE REQUIREMENTS OF THESE NOTES AND SPECIFICATIONS AND SHOULD BE SIMILAR TO THOSE SHOWN. THESE DESIGN ELEMENTS MUST BE STAMPED BY AN ENGINEER PROFESSIONALLY REGISTERED IN THE STATE OF THE PROJECT, AND SUBMITTED TO THE ENGINEER OF RECORD FOR APPROVAL PRIOR TO FABRICATION.
6. ALL WORK SHALL BE DONE IN ACCORDANCE WITH LOCAL CODES AND OSHA SAFETY REGULATIONS.
7. THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN AND EXECUTION OF ALL MISCELLANEOUS SHORING, BRACING, TEMPORARY SUPPORTS, ETC. NECESSARY, PER ANSI/TIA-322 AND ANSI/ASSE A10.48, TO PROVIDE A COMPLETE AND STABLE STRUCTURE AS SHOWN ON THESE DRAWINGS.
8. CONTRACTOR'S PROPOSED INSTALLATION SHALL NOT INTERFERE, NOR DENY ACCESS TO, ANY EXISTING OPERATIONAL AND SAFETY EQUIPMENT.

STRUCTURAL STEEL

1. ALL DETAILING, FABRICATION AND ERECTION OF STRUCTURAL STEEL SHALL CONFORM TO THE AISC SPECIFICATIONS, LATEST EDITION.
2. ALL EXPOSED STRUCTURAL STEEL MEMBERS SHALL BE HOT-DIPPED GALVANIZED AFTER FABRICATION PER ASTM A123. EXPOSED STEEL HARDWARE AND ANCHOR BOLTS SHALL BE GALVANIZED PER ASTM A153 OR B695.
3. ALL U-BOLTS SHALL BE ASTM A36 OR EQUIVALENT, WITH LOCKING DEVICE, UNLESS NOTED OTHERWISE.
4. FIELD CUT EDGES, EXCEPT DRILLED HOLES, SHALL BE GROUND SMOOTH.
5. ALL FIELD CUT SURFACES, FIELD DRILLED HOLES & GROUND SURFACES WHERE EXISTING PAINT OR GALVANIZATION REMOVAL WAS REQUIRED SHALL BE REPAIRED WITH (2) BRUSHED COATS OF ZRC GALVILITE COLD GALVANIZING COMPOUND PER ASTM A780 AND MANUFACTURERS RECOMMENDATIONS.
6. ALL STRUCTURAL STEEL EMBEDDED IN THE CONCRETE SHALL BE APPLIED WITH (2) BRUSHED COATS OF POLYGUARD CA-14 MASTIC OR EQUIVALENT. REFER TO THE MANUFACTURER SPECIFICATIONS FOR SURFACE PREPARATION AND APPLICATION. APPLICATION OF POLYGUARD 400 WRAP IS NOT ESSENTIAL.
7. CONTRACTOR SHALL PERFORM WORK ON ONLY ONE (1) TOWER FACE AND REPLACE/REINFORCE ONE (1) BOLT/MEMBER AT A TIME.
8. ALL FIELD DRILLED HOLES TO BE USED FOR FIELD BOLTING INSTALLATION SHALL BE STANDARD HOLES, AS DEFINED BY AISC, UNLESS NOTED OTHERWISE.

MAXIMUM ALLOWABLE ANGLE CLIP



PAINT

1. AS REQUIRED, CLEAN AND PAINT PROPOSED STEEL ACCORDING TO FAA ADVISORY CIRCULAR AC 70/7460-1L.

WELDING

1. ALL WELDING TO BE PERFORMED BY AWS CERTIFIED WELDERS AND CONDUCTED IN ACCORDANCE WITH THE LATEST EDITION OF THE AWS WELDING CODE D1.1.
2. ALL WELDS SHALL BE INSPECTED VISUALLY. IF DIRECTED BY ENGINEER OF RECORD, 25% OF WELDS SHALL BE INSPECTED WITH DYE PENETRANT OR MAGNETIC PARTICLE (100% IF REJECTABLE DEFECTS ARE FOUND) TO MEET THE ACCEPTANCE CRITERIA OF AWS D1.1. REPAIR ALL WELDS AS NECESSARY.
3. INSPECTION SHALL BE PERFORMED BY AN AWS CERTIFIED WELD INSPECTOR.
4. ALL ELECTRODES TO BE LOW HYDROGEN, MATCHING FILLER AND/OR BASE METAL, PER AWS D1.1, UNLESS NOTED OTHERWISE.
5. IN CASES WHERE BASE METAL GRADE IS UNKNOWN, ALL WELDING ON LATTICE TOWERS SHALL BE DONE WITH E70XX ELECTRODES; ALL WELDING ON POLE STRUCTURES SHALL BE DONE WITH E80XX ELECTRODES, UNLESS NOTED OTHERWISE.
6. PRIOR TO FIELD WELDING GALVANIZED MATERIAL, CONTRACTOR SHALL GRIND OFF GALVANIZING 1/2" BEYOND ALL FIELD WELD SURFACES. AFTER WELD AND WELD INSPECTION IS COMPLETE, REPAIR ALL GROUND AND WELDED SURFACES WITH ZRC GALVILITE COLD GALVANIZING COMPOUND PER ASTM A780 AND MANUFACTURERS RECOMMENDATIONS.

BOLT TIGHTENING PROCEDURE

1. STRUCTURAL CONNECTIONS TO BE ASSEMBLED AND INSPECTED IN ACCORDANCE WITH RCSC SPECIFICATIONS.
2. FLANGE BOLTS SHALL BE INSTALLED AND TIGHTENED USING DIRECT TENSION INDICATING (DTI) SQUIRTER WASHERS. DTI SQUIRTER WASHERS ARE TO BE INSTALLED AND ORIENTED / TIGHTENED PER MANUFACTURER SPECIFICATIONS TO ACHIEVE DESIRED LEVEL OF BOLT PRE-TENSION.
3. IN LIEU OF USING DTI SQUIRTER WASHERS, FLANGE BOLTS MAY BE TIGHTENED USING AISC / RCSC "TURN-OF-THE-NUT" METHOD, PENDING APPROVAL BY THE ENGINEER OF RECORD (EOR). TIGHTEN FLANGE BOLTS USING THE CHART BELOW:

BOLT LENGTHS UP TO AND INCLUDING FOUR DIAMETERS

1/2"	BOLTS UP TO AND INCLUDING 2.0 INCH LENGTH	+1/3 TURN BEYOND SNUG TIGHT
5/8"	BOLTS UP TO AND INCLUDING 2.5 INCH LENGTH	+1/3 TURN BEYOND SNUG TIGHT
3/4"	BOLTS UP TO AND INCLUDING 3.0 INCH LENGTH	+1/3 TURN BEYOND SNUG TIGHT
7/8"	BOLTS UP TO AND INCLUDING 3.5 INCH LENGTH	+1/3 TURN BEYOND SNUG TIGHT
1"	BOLTS UP TO AND INCLUDING 4.0 INCH LENGTH	+1/3 TURN BEYOND SNUG TIGHT
1-1/8"	BOLTS UP TO AND INCLUDING 4.5 INCH LENGTH	+1/3 TURN BEYOND SNUG TIGHT
1-1/4"	BOLTS UP TO AND INCLUDING 5.0 INCH LENGTH	+1/3 TURN BEYOND SNUG TIGHT
1-3/8"	BOLTS UP TO AND INCLUDING 5.5 INCH LENGTH	+1/3 TURN BEYOND SNUG TIGHT
1-1/2"	BOLTS UP TO AND INCLUDING 6.0 INCH LENGTH	+1/3 TURN BEYOND SNUG TIGHT

BOLT LENGTHS OVER FOUR DIAMETERS BUT NOT EXCEEDING EIGHT DIAMETERS

1/2"	BOLTS 2.25 TO 4.0 INCH LENGTH	+1/2 TURN BEYOND SNUG TIGHT
5/8"	BOLTS 2.75 TO 5.0 INCH LENGTH	+1/2 TURN BEYOND SNUG TIGHT
3/4"	BOLTS 3.25 TO 6.0 INCH LENGTH	+1/2 TURN BEYOND SNUG TIGHT
7/8"	BOLTS 3.75 TO 7.0 INCH LENGTH	+1/2 TURN BEYOND SNUG TIGHT
1"	BOLTS 4.25 TO 8.0 INCH LENGTH	+1/2 TURN BEYOND SNUG TIGHT
1-1/8"	BOLTS 4.75 TO 9.0 INCH LENGTH	+1/2 TURN BEYOND SNUG TIGHT
1-1/4"	BOLTS 5.25 TO 10.0 INCH LENGTH	+1/2 TURN BEYOND SNUG TIGHT
1-3/8"	BOLTS 5.75 TO 11.0 INCH LENGTH	+1/2 TURN BEYOND SNUG TIGHT
1-1/2"	BOLTS 6.25 TO 12.0 INCH LENGTH	+1/2 TURN BEYOND SNUG TIGHT

BOLT TIGHTENING PROCEDURE (CONTINUED)

4. SPLICE BOLTS SUBJECT TO DIRECT TENSION SHALL BE INSTALLED AND TIGHTENED AS PER SECTION 8.2.1 OF THE AISC "SPECIFICATION FOR STRUCTURAL JOINTS USING A325 OR A490 BOLTS", LOCATED IN THE AISC MANUAL OF STEEL CONSTRUCTION. THE INSTALLATION PROCEDURE IS PARAPHRASED AS FOLLOWS:

   FASTENERS SHALL BE INSTALLED IN PROPERLY ALIGNED HOLES AND TIGHTENED BY ONE OF THE METHODS DESCRIBED IN SUBSECTION 8.2.1 THROUGH 8.2.4.

   8.2.1 TURN-OF-NUT PRETENSIONING
   BOLTS SHALL BE INSTALLED IN ALL HOLES OF THE CONNECTION AND BROUGHT TO A SNUG TIGHT CONDITION AS DEFINED IN SECTION 8.1, UNTIL ALL THE BOLTS ARE SIMULTANEOUSLY SNUG TIGHT AND THE CONNECTION IS FULLY COMPACTED. FOLLOWING THIS INITIAL OPERATION ALL BOLTS IN THE CONNECTION SHALL BE TIGHTENED FURTHER BY THE APPLICABLE AMOUNT OF ROTATION SPECIFIED ABOVE. DURING THE TIGHTENING OPERATION THERE SHALL BE NO ROTATION OF THE PART NOT TURNED BY THE WRENCH. TIGHTENING SHALL PROGRESS SYSTEMATICALLY.

5. ALL OTHER BOLTED CONNECTIONS SHALL BE BROUGHT TO A SNUG TIGHT CONDITION AS DEFINED IN SECTION 8.1 OF THE SPECIFICATION.

   ALL BOLT HOLES SHALL BE ALIGNED TO PERMIT INSERTION OF THE BOLTS WITHOUT UNDUE DAMAGE TO THE THREADS. BOLTS SHALL BE PLACED IN ALL HOLES WITH WASHERS POSITIONED AS REQUIRED AND NUTS THREADED TO COMPLETE THE ASSEMBLY. COMPACTING THE JOINT TO THE SNUG-TIGHT CONDITION SHALL PROGRESS SYSTEMATICALLY FROM THE MOST RIGID PART OF THE JOINT. THE SNUG-TIGHTENED CONDITION IS THE TIGHTNESS THAT IS ATTAINED WITH A FEW IMPACTS OF AN IMPACT WRENCH OR THE FULL EFFORT OF AN IRONWORKER USING AN ORDINARY SPUD WRENCH TO BRING THE CONNECTED PLIES INTO FIRM CONTACT.

MODIFICATION INSPECTION NOTES

THE MOUNT MODIFICATION INSPECTION (MMI) PROCEDURE IS INTENDED TO CONFIRM THAT CONSTRUCTION AND INSTALLATION MEETS ENGINEERING DESIGN, ATC PROCEDURES AND ATC STANDARD SPECIFICATIONS FOR WIRELESS TOWER SITES.

TO ENSURE THAT THE REQUIREMENTS OF THE MMI ARE MET, IT IS VITAL THAT THE GENERAL CONTRACTOR SUBMIT ALL REQUIRED PHOTOGRAPHS AND DRAWINGS TO AMERICAN TOWER CORPORATION (ATC).

GENERAL CONTRACTOR

THE GENERAL CONTRACTOR IS REQUIRED TO:

- REVIEW THE REQUIREMENTS OF THE MMI CHECKLIST.
- UNDERSTAND ALL INSPECTION REQUIREMENTS.

THE GENERAL CONTRACTOR SHALL PERFORM AND RECORD THE INSPECTION RESULTS IN ACCORDANCE WITH THE REQUIREMENTS OF THE MMI CHECKLIST.

MOUNT MODIFICATION INSPECTION CHECKLIST

INSPECTION DOCUMENT	DESCRIPTION	INSPECTION TESTING REQUIRED	RESPONSIBILITY
ON-SITE COLD GALVANIZING VERIFICATION	PHOTOGRAPHIC EVIDENCE OF COLD GALVANIZATION TYPE AND APPLICATION IN ALL APPLICABLE LOCATIONS TO BE INCLUDED WITHIN THE MMI REPORT	✔	GC
GC AS-BUILT DRAWINGS WITH CONSTRUCTION RED-LINES	"AS-BUILT" DRAWINGS INDICATING ANY APPROVED CHANGES TO ENGINEERED PLANS TO MMI FOR APPROVAL/REVIEW AND INCLUSION IN MMI REPORT	✔	GC
PHOTOGRAPHS	PHOTOGRAPHIC EVIDENCE OF MOUNT MODIFICATION INSPECTION, ON SITE REMEDIATION, AND ITEMS FAILING INSPECTION & REQUIRING FOLLOW UP TO BE INCLUDED WITHIN THE MMI REPORT. COMPLETE PHOTO LOG IS TO BE SUBMITTED WITHIN MMI REPORT.	✔	GC

TABLE KEY:
MMI - MOUNT MODIFICATION INSPECTION
GC - GENERAL CONTRACTOR
ATC - AMERICAN TOWER CORPORATION

B+T GRP
1717 S. BOULDER
SUITE 300
TULSA, OK 74119
PH: (918) 587-4630
towersupport@btgrp.com

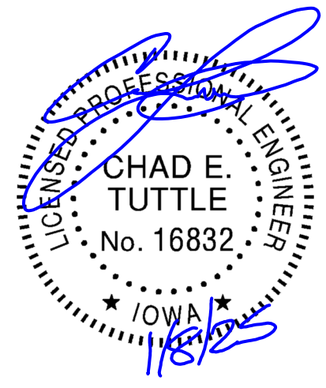
REV.	DESCRIPTION	BY	DATE
0	FIRST ISSUE	PMS	01/08/25

ATC SITE NUMBER:
274849

ATC SITE NAME:
CARTER LAKE IA

IA

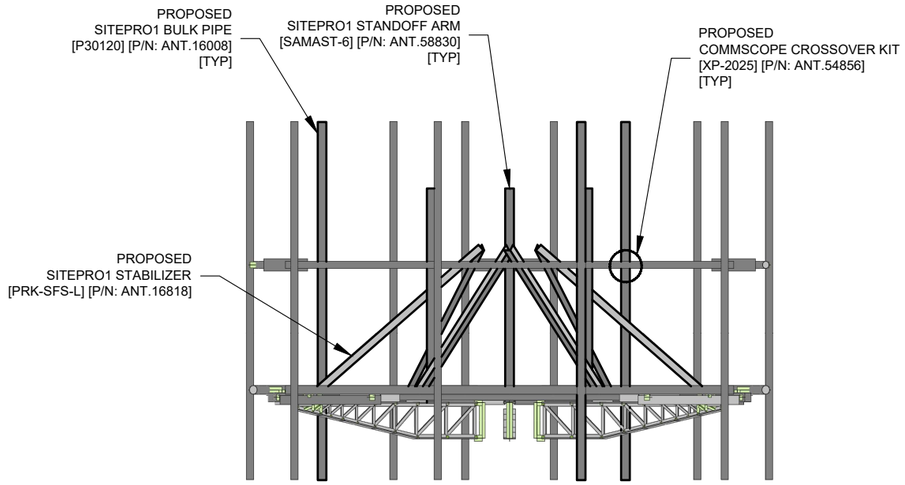
SITE ADDRESS:
2614 N 5TH ST.
CARTER LAKE, IA 51510-1509



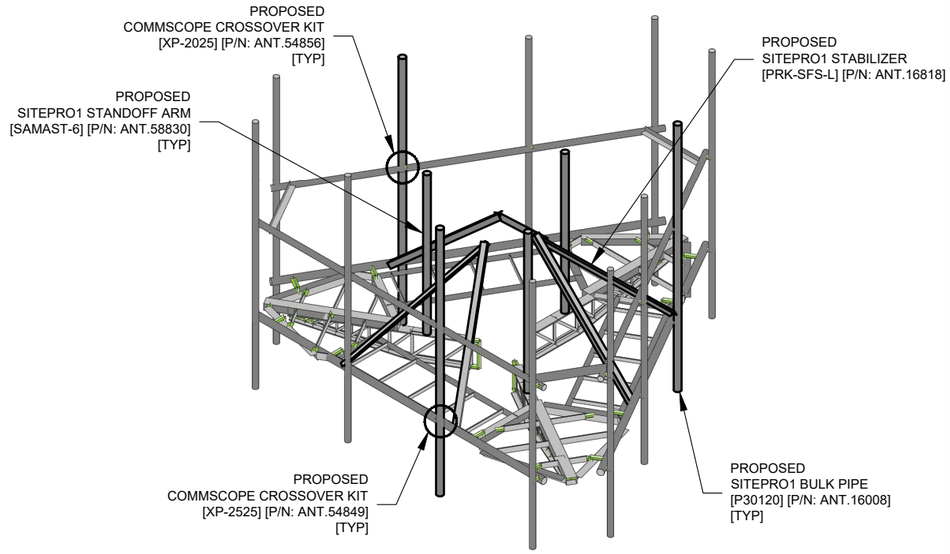
DRAWN BY:	PMS
APPROVED BY:	CJ
DATE DRAWN:	01/08/25
ATC JOB NO:	14858878_C9_06

IBC GENERAL NOTES AND MOUNT MODIFICATION INSPECTION

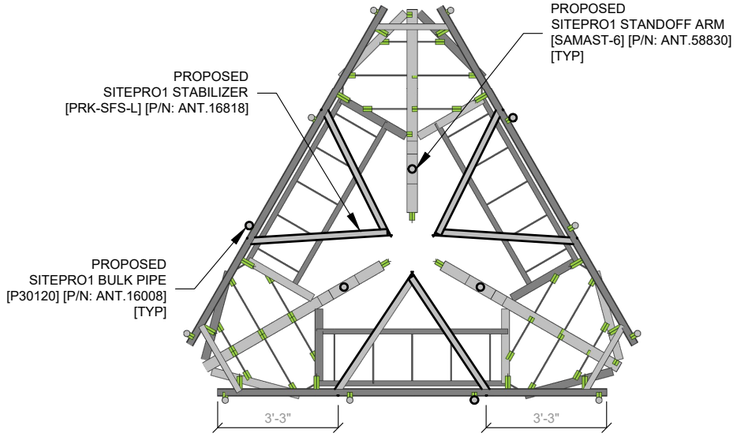
SHEET NUMBER:	REVISION:
G-002	0



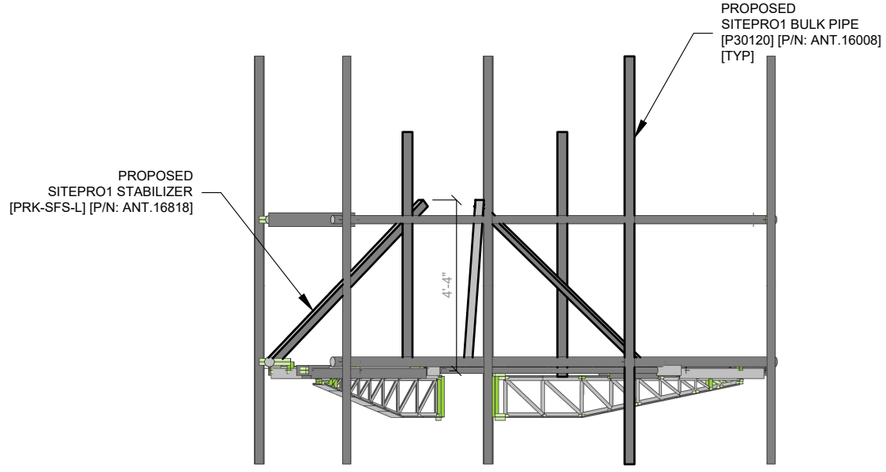
TYPICAL MOUNT MODIFICATION
FRONT VIEW



TYPICAL MOUNT MODIFICATION
ISOMETRIC VIEW



TYPICAL MOUNT MODIFICATION
TOP VIEW



TYPICAL MOUNT MODIFICATION
SIDE VIEW

REINFORCEMENT MATERIALS LIST (ALL SECTORS)

QUANTITY REQUIRED	MANUFACTURER	PART NUMBER	DESCRIPTION	LENGTH	PART WEIGHT (lb)	WEIGHT (lb)	NOTES
1	SITEPRO1	PRK-SFS-L	SUPPORT RAIL REINFORCEMENT KIT (LONG)	---	642.04	642.04	
3	SITEPRO1	SAMAST-6	6' STANDOFF ARM MAST	---	28.11	84.33	
3	COMMSCOPE	XP-2025	CROSSOVER PLATE 2-3/8" OD X 2-7/8" OD	---	8.29	24.87	
3	COMMSCOPE	XP-2525	CROSSOVER PLATE 2.875" O.D. TO 2.875" O.D.	---	12.70	38.10	
3	SITEPRO1	P30120	BULK PIPE	10'-0"	58.00	174.00	
					TOTAL WEIGHT (lb)	963.34	

NOTE:
IN THE EVENT A PROPOSED MODIFICATION PART LISTED IN THE DRAWINGS IS NOT AVAILABLE, AN APPROVED EQUIVALENT CAN BE SUBSTITUTED. FOR APPROVAL OF EQUIVALENT PART OR QUESTIONS PLEASE CONTACT AMERICAN TOWER PMI INBOX AT PMI@AMERICANTOWER.COM.

B+T GRP
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SUITE 300
TULSA, OK 74119
PH: (918) 587-4630
towersupport@btgrp.com

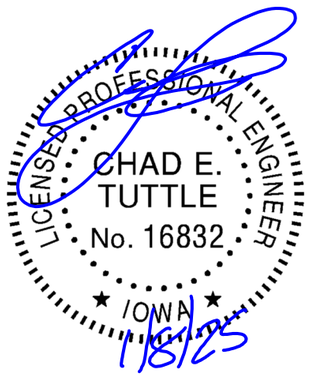
REV.	DESCRIPTION	BY	DATE
0	FIRST ISSUE	PMS	01/08/25

ATC SITE NUMBER:
274849

ATC SITE NAME:
CARTER LAKE IA

IA

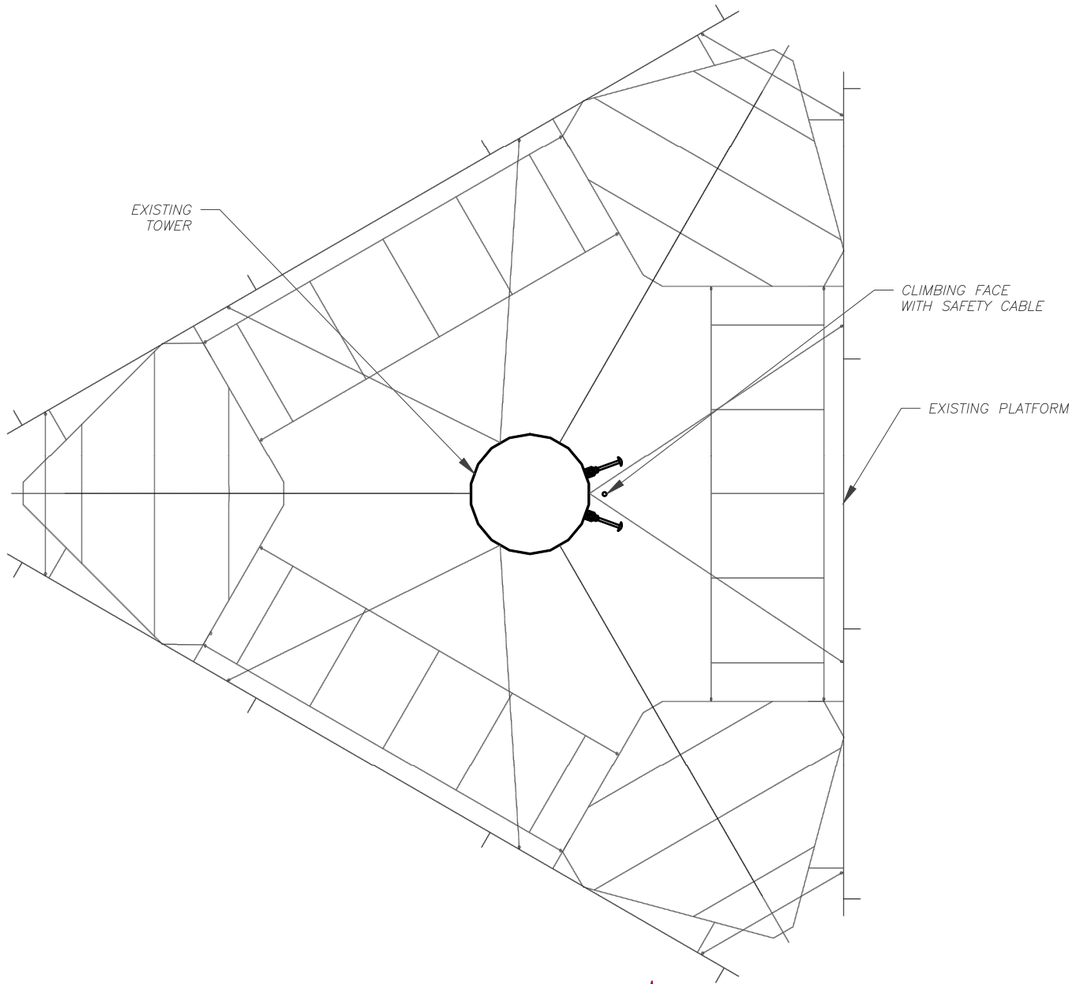
SITE ADDRESS:
2614 N 5TH ST.
CARTER LAKE, IA 51510-1509



DRAWN BY:	PMS
APPROVED BY:	CJ
DATE DRAWN:	01/08/25
ATC JOB NO:	14858878_C9_06

MODIFICATION PROFILE

SHEET NUMBER:	REVISION:
S-101	0



SAFETY CLIMB LOCATION

N

NOTE:
CONTRACTOR TO INSTALL MOUNT MODIFICATIONS PER THE MANUFACTURERS SPECIFICATION. MODIFICATIONS SHALL NOT OBSTRUCT, INTERFERE, OR BLOCK EXISTING SAFETY CLIMB SYSTEM. IF ANY OF THESE OCCURS DURING INSTALLATION CONTACT THE AMERICAN TOWER PMI INBOX PMI@AMERICANTOWER.COM

B+T GRP
1717 S. BOULDER
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REV.	DESCRIPTION	BY	DATE
0	FIRST ISSUE	PMS	01/08/25

ATC SITE NUMBER:
274849

ATC SITE NAME:
CARTER LAKE IA

IA

SITE ADDRESS:
2614 N 5TH ST.
CARTER LAKE, IA 51510-1509

LICENSED PROFESSIONAL ENGINEER
CHAD E. TUTTLE
No. 16832
IOWA
1/8/25

DRAWN BY:	PMS
APPROVED BY:	CJ
DATE DRAWN:	01/08/25
ATC JOB NO:	14858878_C9_06

SAFETY CLIMB LAYOUT

SHEET NUMBER:	REVISION:
S-102	0

AMERICAN TOWER®
CORPORATION

Structural Analysis Report

Structure	:	125 ft Monopole
ATC Asset Name	:	CARTER LAKE IA
ATC Asset Number	:	274849
Engineering Number	:	14858878_C3_02
Proposed Carrier	:	AT&T MOBILITY
Carrier Site Name	:	CARTER LAKE RELO
Carrier Site Number	:	WSUMW0033356
Site Location	:	2614 N 5th St. Carter Lake, IA 51510-1509 41.2823° N, 95.9245° W
County	:	Pottawattamie
Date	:	June 27, 2024
Max Usage	:	73%
Analysis Result	:	Pass

Created By:

Steven Nedrud
Structural Engineer II

(signature)

I hereby certify that this engineering document was prepared by me or under my direct personal supervision and I am a duly licensed Professional Engineer under the laws of the State of Iowa.

Printed or typed name: Bryan Lanier
License Number: 24543
My license renewal date is December 31, 2025
Pages or sheets covered by this seal: ALL

(date)

Table of Contents

Introduction

The purpose of this report is to summarize results of a structural analysis performed on the 125 ft Monopole tower to reflect the change in loading by AT&T MOBILITY.

Supporting Documents

Tower:	DaVinnci Job #10235-1869, dated December 14, 2010
Foundation:	ATC Engineering File #46636772, dated February 11, 2011
Geotechnical:	ISG & Associates Project #10185, dated January 5, 2011

Analysis

The tower was analyzed using American Tower Corporation's tower analysis software. This program considers an elastic three-dimensional model and second-order effects per ANSI/TIA-222.

Basic Wind Speed:	90 mph (3-second gust, Vasd) / 115 mph (3-second gust, Vult)
Basic Wind Speed w/ Ice:	40 mph (3-second gust) w/ 0.75" radial ice concurrent
Code(s):	ANSI/TIA-222-G / 2015 IBC
Structure Class:	II
Exposure Category:	C
Topographic Category:	1
Crest Height:	0 ft
Spectral Response:	Ss = 0.09, S_1 = 0.05
Site Class:	D - Stiff Soil - Default

Conclusion

Based on the analysis results, the structure meets the requirements per the applicable codes listed above. The tower and foundation can support the equipment as described in this report.

If you have any questions or require additional information, please reach out to your American Tower contact. If you do not have an American Tower contact and have an Engineering question, please contact **Engineering@americantower.com** Please include the American Tower asset name, asset number, and engineering number in the subject line for any questions.

Structure Usages

Structural Component	Usage	Control	Result
Pole Shaft	73.4%	1.2D + 1.6W	Pass
Serviceability Usage	44.1%	1.0D + 1.0W	Pass
Base Plate @ 0.0 ft	63.4%	Rods	Pass
Pier	62.6%	Flexure [Steel]	Pass

Maximum Reactions

Foundation	Moment (k-ft)	Axial (k)	Shear (k)
Monopole Base	2,094.0	33.6	23.1

Reactions shown reflect the results from the Load Case with maximum Moment

Structure base reactions were analyzed using available geotechnical and foundation information.

AT&T MOBILITY Final Loading

Elev (ft)	Qty	Equipment	Lines
125.0	1	Raycap DC6-48-60-18-8F ("Squid")	(1) 1.24" (31.6mm) 4 AWG 6
123.0	1	Raycap DC6-48-60-0-8C	(1) 0.39" (10mm) Fiber Trunk (1) 0.40" (10.3mm) Fiber (2) 0.78" (19.7mm) 8 AWG 6 (2) 0.96" (24.3mm) Cable (3) 2" Carflex Non-Metallic Conduit (1) 2" conduit
	1	Raycap DC9-48-60-24-8C-EV (Enclosure)	
	3	Ericsson AIR 6472 B77G B77M (67.2lbs)	
	3	Ericsson KRE 101 2487/1K	
	3	Ericsson Radio 4471 B30	
	3	Ericsson Radio 4490HP 44B5 44B12A C (68.3lbs)	
	3	Ericsson Radio 4494 44B14 20B29 M01	
	3	Ericsson Radio 4890HP 48B2/B25 48B66 M01 (68.3lbs)	
	3	KMW EPBQ-654L8H8-L2	
120.0	1	Platform with Handrails	-

Install proposed lines inside the pole shaft.

Other Existing/Reserved Loading

Elev (ft)	Qty	Equipment	Lines	Carrier
110.6	3	CellMax CMA-B/6521/E0-6	-	CRICKET COMMUNICATIONS
110.0	3	T-Arm	(6) 7/8" Coax	CRICKET COMMUNICATIONS
97.0	1	Ceragon RFU-D-HP	(1) 0.19" (4.8mm) Fiber (1) 0.40" (10mm) Coax (2) 1.8" (45.72mm) Fiber	T-MOBILE
	1	Commscope VHLP4-11W/A		
	2	Commscope HELIAX FiberFeed 12 RRU Pendant Connect		
	3	Commscope FFVV-65C-R3-V1		
	3	Nokia AEHC		
	3	Nokia AHFIG		
	3	Nokia AHFII Airscale RRH 4T4R B25/66 480W		
95.0	1	Platform with Handrails	-	T-MOBILE
84.0	1	Platform with Handrails	(2) 1 5/8" Hybriflex	VERIZON WIRELESS
	1	Raycap RVZDC-6627-PF-48		
	3	Ericsson 8843 Rev 2		
	3	Ericsson AIR 6449 B77D/ C-Band		
	3	Ericsson Radio 4408 w/ Integrated Panel		
	3	Ericsson Radio 4449 - B13&B5		
	6	Commscope NHH-65C-R2B		

(If table breaks across pages, please see previous page for data in merged cells)

Standard Conditions

All engineering services performed by ATC Tower Services, LLC are prepared on the basis that the information used is current and correct. This information may consist of, but is not limited to the following:

- Information supplied by the client regarding antenna, mounts, and feed line loading
- Information from drawings, design and analysis documents, and field notes in the possession of ATC Tower Services, LLC

It is the responsibility of the client to ensure that the information provided to ATC Tower Services, LLC and used in the performance of our engineering services is correct and complete.

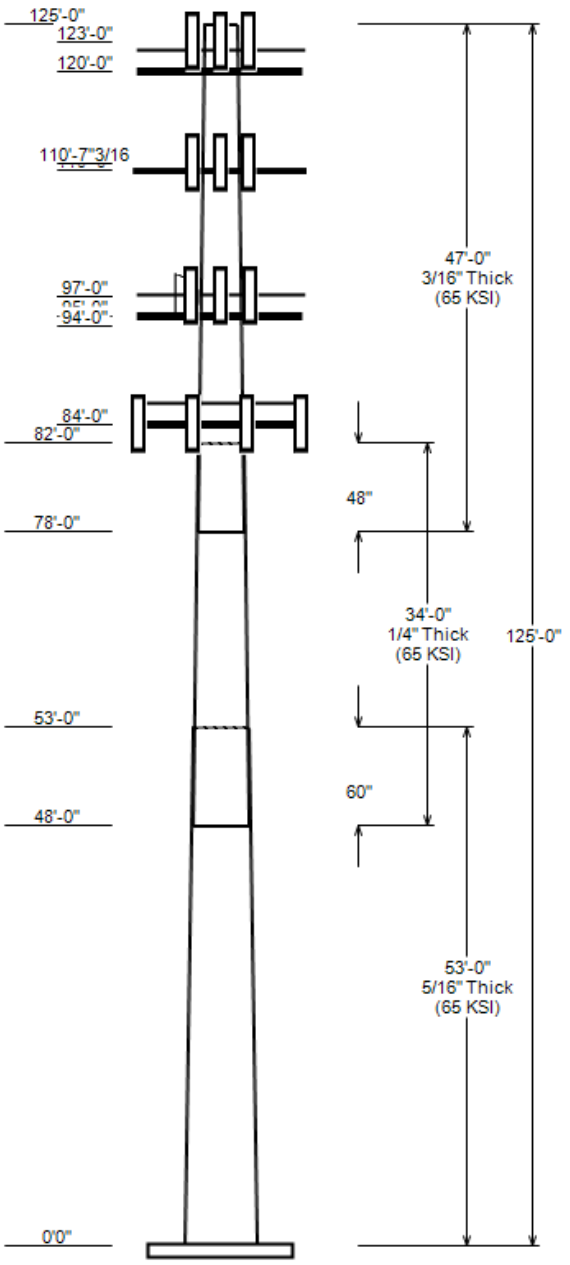
All assets of American Tower Corporation, its affiliates, and subsidiaries (collectively "American Tower") are inspected at regular intervals. Based upon these inspections and in the absence of information to the contrary, American Tower assumes that all structures were constructed in accordance with the drawings and specifications.

Unless explicitly agreed by both the client and ATC Tower Services, LLC, all services will be performed in accordance with the current revision of ANSI/TIA-222.

All services are performed, results obtained, and recommendations made in accordance with generally accepted engineering principles and practices. ATC Tower Services, LLC is not responsible for the conclusions, opinions and recommendations made by others based on the information supplied herein.

ANALYSIS PARAMETERS

Design Wind:	90 mph	**Ice Wind:**	40 mph w/ 0.8" ice	**Service Wind:**	60 mph
Structure Class:	II	**Exposure:**	C	**S_s:** 0.094	**S_1:** 0.045
				Topo Category:	**1**
Structure Height:	125.0 ft	**Base Elevation:**	0.00 ft	**Structure Type:**	Taper
Base Diameter:	47.00 in	**Base Rotation:**	0.00°	**Taper:**	0.2390 (in/ft)



POLE SECTION PROPERTIES

Section	Length (ft)	Flat Diameter (in) Top	Flat Diameter (in) Bottom	Thick (in)	Joint Type	Joint Length (in)	Pole Shape	Yield Strength (ksi)
1	53.000	34.33	47.00	0.312		0.00	18 Sides	65
2	34.000	27.90	36.03	0.250	Slip Joint	60.00	18 Sides	65
3	47.000	18.00	29.23	0.188	Slip Joint	48.00	18 Sides	65

DISCRETE APPURTENANCE

Elev (ft)	Description
125.0	(1) Raycap DC6-48-60-18-8F ("Squid")
123.0	(3) Ericsson Radio 4494 44B14 20B29 M
123.0	(3) Ericsson KRE 101 2487/1K
123.0	(3) Ericsson Radio 4490HP 44B5 44B12
123.0	(1) Raycap DC9-48-60-24-8C-EV (Enclo
123.0	(3) Ericsson AIR 6472 B77G B77M (67.2l
123.0	(3) KMW EPBQ-654L8H8-L2
123.0	(1) Raycap DC6-48-60-0-8C
123.0	(3) Ericsson Radio 4471 B30
123.0	(3) Ericsson Radio 4890HP 48B2/B25 48
120.0	(1) Generic Round Platform with Handrail
110.6	(3) CellMax CMA-B/6521/E0-6
110.0	(3) Generic Round T-Arm
97.0	(2) Commscope HELIAX FiberFeed 12 R
97.0	(3) Nokia AEHC
97.0	(1) Ceragon RFU-D-HP
97.0	(3) Nokia AHFIG
97.0	(1) Commscope VHLP4-11W/A
97.0	(3) Nokia AHFII Airscale RRH 4T4R B25/
97.0	(3) Commscope FFVV-65C-R3-V1
95.0	(1) Generic Flat Platform with Handrails
94.0	(3) Generic Mount Reinforcement
84.0	(3) Generic Mount Reinforcement
84.0	(1) Generic Flat Platform with Handrails
84.0	(3) Ericsson Radio 4449 - B13&B5
84.0	(1) Raycap RVZDC-6627-PF-48
84.0	(3) Ericsson 8843 Rev 2
84.0	(3) Ericsson Radio 4408 w/ Integrated Pa
84.0	(3) Ericsson AIR 6449 B77D/ C-Band
84.0	(6) Commscope NHH-65C-R2B

LINEAR APPURTENANCE

Elev To (ft)	Description
125.0	(1) 1.24" (31.6mm) 4 AWG 6
123.0	(1) 0.40" (10.3mm) Fiber
123.0	(1) 2" Carflex Non-Metallic Conduit
123.0	(1) 0.39" (10mm) Fiber Trunk
123.0	(1) 2" conduit
123.0	(2) 2" Carflex Non-Metallic Conduit
123.0	(2) 0.96" (24.3mm) Cable
123.0	(2) 0.78" (19.7mm) 8 AWG 6
110.0	(6) 7/8" Coax
97.0	(1) 0.40" (10mm) Coax
97.0	(2) 1.8" (45.72mm) Fiber
97.0	(1) 0.19" (4.8mm) Fiber
84.0	(2) 1 5/8" Hybriflex

GLOBAL BASE REACTIONS

Load Case	Moment (kip-ft)	Axial (kip)	Shear (kip)
1.2D + 1.6W	2093.99	33.61	23.12
0.9D + 1.6W	2054.39	25.20	22.91
1.2D + 1.0Di + 1.0Wi	441.52	55.13	5.02
(1.2 + 0.2Sds) * DL + E EMAM	73.57	33.15	0.67
(1.2 + 0.2Sds) * DL + E ELFM	86.76	33.15	0.84
(0.9 - 0.2Sds) * DL + E EMAM	72.40	23.91	0.67
(0.9 - 0.2Sds) * DL + E ELFM	85.51	23.91	0.84
1.0D + 1.0W	513.33	28.05	5.69

DISH SERVICEABILITY

Load Case	Elevation (ft)	Deflection (in)	Rotation (°)
1.0D + 1.0W	97.0	12.1458	1.2172

ANALYSIS PARAMETERS

Location:	Pottawattamie County,IA	**Height:**	125 ft
Type and Shape:	Taper, 18 Sides	**Base Diameter:**	47.00 in
Manufacturer:	TransAmerican	**Top Diameter:**	18.00 in
		Taper:	0.2390 in/ft
		Rotation:	0.000º

ICE & WIND PARAMETERS

Structure Class:	II	**Design Wind Speed:**	90 mph
Exposure Category:	C	**Design Wind Speed w/ Ice:**	40 mph
Topographic Category:	1	**Design Ice Thickness:**	0.75 in
Crest Height:	0 ft	**Service Wind Speed:**	60 mph

SEISMIC PARAMETERS

Analysis Method:	Equivalent Modal Analysis & Equivalent Lateral Force Methods				
Site Class:	D - Stiff Soil		**Period Based on Rayleigh Method (sec):**		2.25
T_L (sec):	12	**P:**	1	**C_s:**	0.030
S_{ds}:	0.100	**S_{d1}:**	0.072	**C_s Max:**	0.030
S_s:	0.094	**S_1:**	0.045	**C_s Min:**	0.030
F_a:	1.600	**F_v:**	2.400		

LOAD CASES

1.2D + 1.6W	90 mph Wind with No Ice
0.9D + 1.6W	90 mph Wind with No Ice (Reduced DL)
1.2D + 1.0Di + 1.0Wi	40 mph Wind with 0.75" Radial Ice
(1.2 + 0.2Sds) * DL + E EMAM	Seismic
(1.2 + 0.2Sds) * DL + E ELFM	Seismic
(0.9 - 0.2Sds) * DL + E EMAM	Seismic (Reduced DL)
(0.9 - 0.2Sds) * DL + E ELFM	Seismic (Reduced DL)
1.0D + 1.0W	60 mph Wind with No Ice

SHAFT SECTION PROPERTIES

Section	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Joint Len (in)	Weight (lb)	Bottom Dia (in)	Bottom Elev (ft)	Bottom Area (in^2)	Bottom Ix (in^4)	Bottom W/t Ratio	Bottom D/t Ratio	Top Dia (in)	Top Elev (ft)	Top Area (in^2)	Top Ix (in^4)	Top W/t Ratio	Top D/t Ratio	Taper (in/ft)
1-18	53.00	0.3125	65		0.00	7,218	47.00	0.000	46.31	12,752.5	24.76	150.40	34.33	53.00	33.74	4,934.2	17.61	109.87	0.2390
2-18	34.00	0.2500	65	Slip	60.00	2,911	36.03	48.000	28.39	4,591.3	23.65	144.11	27.90	82.00	21.94	2,119.6	17.92	111.61	0.2390
3-18	47.00	0.1875	65	Slip	48.00	2,230	29.23	78.000	17.29	1,842.4	25.73	155.91	18.00	125.00	10.60	424.9	15.16	96.00	0.2390
			Total Shaft Weight			**12,359**													

DISCRETE APPURTENANCE PROPERTIES

Attach Elev (ft)	Description	Qty	Ka	Vert Ecc (ft)	No Ice Weight (lb)	No Ice EPAa (sf)	No Ice Orientation Factor	Ice Weight (lb)	Ice EPAa (sf)	Ice Orientation Factor
125.00	Raycap DC6-48-60-18-8F ("Squid	1	0.75	0.000	18.90	1.470	0.50	79.57	2.157	0.50
123.00	Ericsson Radio 4890HP 48B2/B25	3	0.75	0.000	68.30	2.202	0.67	127.08	3.159	0.67
123.00	KMW EPBQ-654L8H8-L2	3	0.75	0.000	86.00	18.089	0.61	404.67	21.712	0.61
123.00	Ericsson KRE 101 2487/1K	3	0.75	0.000	94.80	16.762	0.63	395.21	20.371	0.63
123.00	Ericsson Radio 4471 B30	3	0.75	0.000	28.70	1.219	0.50	62.03	1.946	0.50
123.00	Ericsson Radio 4494 44B14 20B2	3	0.75	0.000	57.30	2.202	0.67	111.23	3.159	0.67
123.00	Ericsson Radio 4490HP 44B5 44B	3	0.75	0.000	68.30	2.202	0.67	126.47	3.159	0.67
123.00	Raycap DC9-48-60-24-8C-EV (Enc	1	0.75	0.000	18.50	2.676	1.00	100.69	3.794	1.00
123.00	Raycap DC6-48-60-0-8C	1	0.75	0.000	16.00	3.048	0.67	88.73	4.167	0.67
123.00	Ericsson AIR 6472 B77G B77M (6	3	0.75	0.000	67.20	4.779	0.65	180.29	6.288	0.65
120.00	Generic Round Platform with Ha	1	1.00	0.000	2500.00	27.200	1.00	4083.90	51.104	1.00
110.60	CellMax CMA-B/6521/E0-6	3	0.80	0.000	35.00	6.580	0.71	160.62	9.168	0.71
110.00	Generic Round T-Arm	3	0.75	0.000	312.50	9.700	0.67	565.70	17.690	0.67
97.00	Commscope VHLP4-11W/A	1	0.75	0.000	70.50	17.759	1.00	399.40	20.118	1.00
97.00	Commscope FFVV-65C-R3-V1	3	0.75	0.000	124.60	21.113	0.63	520.73	24.679	0.63
97.00	Nokia AEHC	3	0.75	0.000	103.60	6.844	0.62	251.75	8.535	0.62
97.00	Nokia AHFIG	3	0.75	0.000	79.40	3.082	0.66	154.62	4.253	0.66
97.00	Nokia AHFII Airscale RRH 4T4R	3	0.75	0.000	70.60	2.835	0.67	131.21	3.942	0.67
97.00	Ceragon RFU-D-HP	1	0.75	0.000	26.50	1.187	1.00	55.78	1.882	1.00
97.00	Commscope HELIAX FiberFeed 12	2	0.75	0.000	20.00	0.944	0.50	47.41	1.628	0.50
95.00	Generic Flat Platform with Han	1	1.00	0.000	2500.00	42.400	1.00	4199.74	62.466	1.00
94.00	Generic Mount Reinforcement	3	0.75	0.000	200.00	4.980	0.67	384.68	9.724	0.67
84.00	Ericsson Radio 4408 w/ Integra	3	0.75	0.000	11.10	0.553	0.50	29.24	1.027	0.50
84.00	Ericsson AIR 6449 B77D/ C-Band	3	0.75	0.000	81.60	4.028	0.70	191.61	5.324	0.70
84.00	Raycap RVZDC-6627-PF-48	1	0.75	0.000	32.00	3.781	0.50	135.57	5.030	0.50
84.00	Ericsson 8843 Rev 2	3	0.75	0.000	75.00	1.650	0.50	133.63	2.452	0.50
84.00	Ericsson Radio 4449 - B13&B5	3	0.75	0.000	70.00	1.650	0.50	123.20	2.450	0.50
84.00	Commscope NHH-65C-R2B	6	0.75	0.000	51.60	11.389	0.70	267.43	14.439	0.70
84.00	Generic Flat Platform with Han	1	1.00	0.000	2500.00	42.400	1.00	4177.83	62.208	1.00
84.00	Generic Mount Reinforcement	3	0.75	0.000	200.00	4.980	0.67	382.78	9.676	0.67
Totals	**Row Count: 30**	**74**			**13,534.00**			**28,330.86**		

LINEAR APPURTENANCE PROPERTIES

Load Case Azimuth (deg): 0.00

Elev From (ft)	Elev To (ft)	Qty	Description	Diameter (in)	Weight (lb/ft)	Flat	Max/ Row	Distance Between Rows(in)	Distance Between Cols(in)	Azimuth (deg)	Distance From Face (in)	Exposed To Wind	Carrier
0.00	125.00	1	1.24" (31.6mm) 4 AWG	1.24	1.17	N	0	0	0	0	0	N	AT&T MOBILITY
0.00	123.00	2	0.78" (19.7mm) 8 AWG	0.78	0.59	N	0	0	0	0	0	N	AT&T MOBILITY
0.00	123.00	2	0.96" (24.3mm) Cable	0.96	0.88	N	0	0	0	0	0	N	AT&T MOBILITY
0.00	123.00	2	2" Carflex Non-Metall	2.36	0.68	N	0	0	0	0	0	N	AT&T MOBILITY
0.00	123.00	1	2" Carflex Non-Metall	2.36	0.68	N	0	0	0	0	0	N	AT&T MOBILITY
0.00	123.00	1	0.39" (10mm) Fiber Tr	0.39	0.06	N	0	0	0	0	0	N	AT&T MOBILITY
0.00	123.00	1	2" conduit	2.38	3.65	N	0	0	0	0	0	N	AT&T MOBILITY
0.00	123.00	1	0.40" (10.3mm) Fiber	0.4	0.09	N	0	0	0	0	0	N	AT&T MOBILITY
0.00	110.00	6	7/8" Coax	1.09	0.33	N	0	0	0	0	0	N	CRICKET
0.00	97.00	2	1.8" (45.72mm) Fiber	1.8	2.48	N	0	0	0	0	0	N	T-MOBILE
0.00	97.00	1	0.19" (4.8mm) Fiber	0.19	0.02	N	0	0	0	0	0	N	T-MOBILE
0.00	97.00	1	0.40" (10mm) Coax	0.4	0.1	N	0	0	0	0	0	N	T-MOBILE
0.00	84.00	2	1 5/8" Hybriflex	1.98	1.3	N	1	1	1	90	1	Y	VERIZON WIRELESS

SEGMENT PROPERTIES

Seg Top Elev (ft)	Description *(Max Length: 5 ft)*	Thick (in)	Flat Dia (in)	Area (in^2)	Ix (in^4)	W/t Ratio	D/t Ratio	F'y (ksi)	S (in^3)	Z (in^3)	Weight (lb)
0.00		0.3125	47.000	46.306	12,752.50	24.76	150.40	72.3	534.4	0.0	0.0
5.00		0.3125	45.805	45.121	11,798.10	24.08	146.58	73.1	507.3	0.0	777.8
10.00		0.3125	44.610	43.936	10,892.60	23.41	142.75	73.9	480.9	0.0	757.6
15.00		0.3125	43.415	42.751	10,034.60	22.73	138.93	74.7	455.2	0.0	737.4
20.00		0.3125	42.220	41.566	9,222.90	22.06	135.10	75.5	430.3	0.0	717.3
25.00		0.3125	41.025	40.380	8,456.20	21.38	131.28	76.2	406.0	0.0	697.1
30.00		0.3125	39.830	39.195	7,733.30	20.71	127.46	77	382.4	0.0	676.9
35.00		0.3125	38.635	38.010	7,052.70	20.04	123.63	77.8	359.5	0.0	656.8
40.00		0.3125	37.440	36.825	6,413.30	19.36	119.81	78.6	337.4	0.0	636.6
45.00		0.3125	36.245	35.639	5,813.80	18.69	115.98	79.4	315.9	0.0	616.4
48.00	Bot - Section 2	0.3125	35.528	34.928	5,472.60	18.28	113.69	79.9	303.4	0.0	360.2
50.00		0.3125	35.050	34.454	5,252.80	18.01	112.16	80.2	295.2	0.0	428.0
53.00	Top - Section 1	0.2500	34.833	27.441	4,146.40	22.80	139.33	74.6	234.5	0.0	631.1
55.00		0.2500	34.355	27.061	3,976.80	22.47	137.42	75	228.0	0.0	185.5
60.00		0.2500	33.160	26.113	3,573.30	21.62	132.64	76	212.2	0.0	452.4
65.00		0.2500	31.965	25.165	3,198.00	20.78	127.86	77	197.1	0.0	436.2
70.00		0.2500	30.770	24.217	2,850.00	19.94	123.08	77.9	182.4	0.0	420.1
75.00		0.2500	29.575	23.269	2,528.10	19.10	118.30	78.9	168.4	0.0	404.0
78.00	Bot - Section 3	0.2500	28.858	22.700	2,347.20	18.59	115.43	79.5	160.2	0.0	234.6
80.00		0.2500	28.380	22.320	2,231.50	18.25	113.52	79.9	154.9	0.0	269.9
82.00	Top - Section 2	0.1875	28.277	16.716	1,666.40	24.83	150.81	72.2	116.1	0.0	265.3
84.00		0.1875	27.799	16.432	1,582.80	24.38	148.26	72.7	112.1	0.0	112.8
85.00		0.1875	27.560	16.289	1,542.00	24.15	146.99	73	110.2	0.0	55.7
90.00		0.1875	26.365	15.578	1,348.70	23.03	140.61	74.3	100.8	0.0	271.1
94.00		0.1875	25.409	15.009	1,206.30	22.13	135.51	75.4	93.5	0.0	208.2
95.00		0.1875	25.170	14.867	1,172.30	21.91	134.24	75.6	91.7	0.0	50.8
97.00		0.1875	24.692	14.583	1,106.30	21.46	131.69	76.2	88.2	0.0	100.2
100.00		0.1875	23.975	14.156	1,012.00	20.78	127.87	77	83.1	0.0	146.7
105.00		0.1875	22.780	13.445	867.00	19.66	121.49	78.3	75.0	0.0	234.8
110.00		0.1875	21.585	12.734	736.60	18.54	115.12	79.6	67.2	0.0	222.7
110.60		0.1875	21.442	12.648	721.90	18.40	114.36	79.8	66.3	0.0	25.9
115.00		0.1875	20.390	12.023	620.00	17.41	108.75	80.9	59.9	0.0	184.7
120.00		0.1875	19.195	11.311	516.30	16.29	102.37	82.2	53.0	0.0	198.5
123.00		0.1875	18.478	10.885	460.10	15.61	98.55	82.6	49.0	0.0	113.3
125.00		0.1875	18.000	10.600	424.90	15.16	96.00	82.6	46.5	0.0	73.1
										Total:	**12,359.7**

CALCULATED FORCES

Load Case: 1.2D + 1.6W — 90 mph Wind with No Ice — 24 Iterations

Gust Response Factor: 1.10
Dead load Factor: 1.20
Wind Load Factor: 1.60

Wind Importance Factor 1.00

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	Phi Pn (kips)	Phi Vn (kips)	Phi Tn (ft-kips)	Phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-33.61	-23.12	0	-2,093.99	0.00	2,093.99	3,012.45	1,506.23	5,785.78	2,897.19	0	0	0.734
5.00	-32.47	-22.88	0	-1,978.40	0.00	1,978.40	2,967.55	1,483.78	5,552.69	2,780.47	0.12	-0.23	0.723
10.00	-31.35	-22.64	0	-1,864.03	0.00	1,864.03	2,920.96	1,460.48	5,320.96	2,664.43	0.48	-0.46	0.711
15.00	-30.26	-22.39	0	-1,750.85	0.00	1,750.85	2,872.67	1,436.34	5,090.84	2,549.20	1.09	-0.69	0.698
20.00	-29.19	-22.14	0	-1,638.88	0.00	1,638.88	2,822.70	1,411.35	4,862.59	2,434.91	1.95	-0.94	0.684
25.00	-28.15	-21.88	0	-1,528.17	0.00	1,528.17	2,771.03	1,385.51	4,636.46	2,321.67	3.06	-1.18	0.669
30.00	-27.14	-21.60	0	-1,418.79	0.00	1,418.79	2,717.67	1,358.83	4,412.69	2,209.62	4.43	-1.43	0.652
35.00	-26.15	-21.32	0	-1,310.79	0.00	1,310.79	2,662.62	1,331.31	4,191.54	2,098.88	6.06	-1.68	0.635
40.00	-25.19	-21.02	0	-1,204.21	0.00	1,204.21	2,605.87	1,302.94	3,973.26	1,989.58	7.95	-1.93	0.615
45.00	-24.27	-20.78	0	-1,099.09	0.00	1,099.09	2,547.43	1,273.72	3,758.10	1,881.84	10.11	-2.19	0.594
48.00	-23.73	-20.62	0	-1,036.76	0.00	1,036.76	2,511.56	1,255.78	3,630.60	1,818.00	11.54	-2.34	0.580
50.00	-23.13	-20.46	0	-995.51	0.00	995.51	2,487.31	1,243.65	3,546.31	1,775.79	12.54	-2.45	0.570
53.00	-22.26	-20.28	0	-934.13	0.00	934.13	1,841.83	920.91	2,618.92	1,311.40	14.13	-2.61	0.725
55.00	-21.93	-20.09	0	-893.56	0.00	893.56	1,826.03	913.01	2,560.30	1,282.06	15.25	-2.71	0.709
60.00	-21.19	-19.79	0	-793.14	0.00	793.14	1,785.34	892.67	2,414.91	1,209.25	18.25	-3.01	0.668

65.00	-20.47	-19.48	0	-694.21	0.00	694.21	1,742.97	871.48	2,271.34	1,137.36	21.57	-3.31	0.623
70.00	-19.78	-19.17	0	-596.81	0.00	596.81	1,698.90	849.45	2,129.84	1,066.50	25.19	-3.6	0.572
75.00	-19.13	-18.91	0	-500.98	0.00	500.98	1,653.14	826.57	1,990.67	996.81	29.1	-3.87	0.515
78.00	-18.74	-18.74	0	-444.26	0.00	444.26	1,624.87	812.44	1,908.38	955.61	31.58	-4.03	0.477
80.00	-18.35	-18.60	0	-406.78	0.00	406.78	1,605.69	802.84	1,854.07	928.41	33.29	-4.13	0.450
82.00	-17.97	-18.46	0	-369.58	0.00	369.58	1,086.18	543.09	1,255.15	628.51	35.05	-4.23	0.606
84.00	-13.11	-13.86	0	-332.66	0.00	332.66	1,075.52	537.76	1,221.54	611.68	36.84	-4.33	0.557
85.00	-13.00	-13.70	0	-318.80	0.00	318.80	1,070.08	535.04	1,204.77	603.28	37.75	-4.39	0.541
90.00	-12.54	-13.43	0	-250.32	0.00	250.32	1,041.90	520.95	1,121.48	561.57	42.48	-4.65	0.458
94.00	-11.51	-12.89	0	-196.59	0.00	196.59	1,018.13	509.07	1,055.59	528.58	46.46	-4.84	0.384
95.00	-8.59	-10.72	0	-183.69	0.00	183.69	1,012.02	506.01	1,039.24	520.39	47.48	-4.88	0.362
97.00	-7.15	-7.69	0	-162.26	0.00	162.26	999.60	499.80	1,006.70	504.10	49.54	-4.97	0.329
100.00	-6.93	-7.46	0	-139.19	0.00	139.19	980.45	490.23	958.31	479.86	52.69	-5.08	0.297
105.00	-6.58	-7.17	0	-101.88	0.00	101.88	947.19	473.60	878.92	440.11	58.1	-5.25	0.239
110.00	-5.19	-6.24	0	-66.03	0.00	66.03	912.24	456.12	801.35	401.27	63.67	-5.39	0.170
110.60	-5.08	-5.60	0	-62.29	0.00	62.29	907.93	453.97	792.17	396.67	64.35	-5.4	0.163
115.00	-4.83	-5.34	0	-37.66	0.00	37.66	875.59	437.80	725.83	363.45	69.36	-5.49	0.109
120.00	-1.68	-3.60	0	-10.95	0.00	10.95	837.26	418.63	652.62	326.79	75.14	-5.55	0.036
123.00	-0.11	-0.08	0	-0.16	0.00	0.16	808.68	404.34	606.33	303.62	78.62	-5.56	0.001
125.00	0.00	-0.07	0	0.00	0.00	0.00	787.55	393.77	574.90	287.88	80.95	-5.56	0.000

CALCULATED FORCES

Load Case: 0.9D + 1.6W — 90 mph Wind with No Ice (Reduced DL) — 24 Iterations

Gust Response Factor: 1.10
Dead load Factor: 0.90
Wind Load Factor: 1.60

Wind Importance Factor 1.00

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	Phi Pn (kips)	Phi Vn (kips)	Phi Tn (ft-kips)	Phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-25.20	-22.91	0	-2,054.39	0.00	2,054.39	3,012.45	1,506.23	5,785.78	2,897.19	0	0	0.718
5.00	-24.32	-22.63	0	-1,939.85	0.00	1,939.85	2,967.55	1,483.78	5,552.69	2,780.47	0.12	-0.22	0.706
10.00	-23.46	-22.36	0	-1,826.69	0.00	1,826.69	2,920.96	1,460.48	5,320.96	2,664.43	0.48	-0.45	0.694
15.00	-22.63	-22.09	0	-1,714.89	0.00	1,714.89	2,872.67	1,436.34	5,090.84	2,549.20	1.07	-0.68	0.681
20.00	-21.81	-21.80	0	-1,604.46	0.00	1,604.46	2,822.70	1,411.35	4,862.59	2,434.91	1.91	-0.92	0.667
25.00	-21.01	-21.51	0	-1,495.44	0.00	1,495.44	2,771.03	1,385.51	4,636.46	2,321.67	3	-1.16	0.652
30.00	-20.23	-21.21	0	-1,387.88	0.00	1,387.88	2,717.67	1,358.83	4,412.69	2,209.62	4.34	-1.4	0.636
35.00	-19.47	-20.90	0	-1,281.84	0.00	1,281.84	2,662.62	1,331.31	4,191.54	2,098.88	5.94	-1.64	0.618
40.00	-18.73	-20.59	0	-1,177.33	0.00	1,177.33	2,605.87	1,302.94	3,973.26	1,989.58	7.79	-1.89	0.599
45.00	-18.03	-20.34	0	-1,074.37	0.00	1,074.37	2,547.43	1,273.72	3,758.10	1,881.84	9.91	-2.14	0.578
48.00	-17.61	-20.18	0	-1,013.37	0.00	1,013.37	2,511.56	1,255.78	3,630.60	1,818.00	11.3	-2.29	0.565
50.00	-17.16	-20.01	0	-973.02	0.00	973.02	2,487.31	1,243.65	3,546.31	1,775.79	12.28	-2.4	0.555
53.00	-16.50	-19.84	0	-912.98	0.00	912.98	1,841.83	920.91	2,618.92	1,311.40	13.84	-2.55	0.706
55.00	-16.24	-19.63	0	-873.31	0.00	873.31	1,826.03	913.01	2,560.30	1,282.06	14.93	-2.65	0.691
60.00	-15.66	-19.33	0	-775.15	0.00	775.15	1,785.34	892.67	2,414.91	1,209.25	17.87	-2.95	0.650
65.00	-15.11	-19.03	0	-678.51	0.00	678.51	1,742.97	871.48	2,271.34	1,137.36	21.11	-3.24	0.606
70.00	-14.57	-18.73	0	-583.38	0.00	583.38	1,698.90	849.45	2,129.84	1,066.50	24.66	-3.52	0.556
75.00	-14.07	-18.48	0	-489.75	0.00	489.75	1,653.14	826.57	1,990.67	996.81	28.49	-3.79	0.500
78.00	-13.78	-18.33	0	-434.31	0.00	434.31	1,624.87	812.44	1,908.38	955.61	30.92	-3.94	0.463
80.00	-13.48	-18.20	0	-397.66	0.00	397.66	1,605.69	802.84	1,854.07	928.41	32.59	-4.04	0.437
82.00	-13.19	-18.07	0	-361.27	0.00	361.27	1,086.18	543.09	1,255.15	628.51	34.3	-4.14	0.588
84.00	-9.61	-13.57	0	-325.13	0.00	325.13	1,075.52	537.76	1,221.54	611.68	36.06	-4.23	0.541
85.00	-9.52	-13.40	0	-311.56	0.00	311.56	1,070.08	535.04	1,204.77	603.28	36.95	-4.29	0.526
90.00	-9.18	-13.13	0	-244.54	0.00	244.54	1,041.90	520.95	1,121.48	561.57	41.58	-4.55	0.445
94.00	-8.40	-12.61	0	-192.00	0.00	192.00	1,018.13	509.07	1,055.59	528.58	45.47	-4.73	0.372
95.00	-6.25	-10.50	0	-179.39	0.00	179.39	1,012.02	506.01	1,039.24	520.39	46.46	-4.77	0.351
97.00	-5.22	-7.51	0	-158.39	0.00	158.39	999.60	499.80	1,006.70	504.10	48.48	-4.86	0.320
100.00	-5.06	-7.28	0	-135.86	0.00	135.86	980.45	490.23	958.31	479.86	51.56	-4.97	0.288
105.00	-4.80	-6.99	0	-99.46	0.00	99.46	947.19	473.60	878.92	440.11	56.85	-5.13	0.231
110.00	-3.77	-6.09	0	-64.49	0.00	64.49	912.24	456.12	801.35	401.27	62.3	-5.27	0.165
110.60	-3.70	-5.46	0	-60.83	0.00	60.83	907.93	453.97	792.17	396.67	62.96	-5.28	0.158
115.00	-3.51	-5.21	0	-36.82	0.00	36.82	875.59	437.80	725.83	363.45	67.87	-5.37	0.105
120.00	-1.19	-3.55	0	-10.79	0.00	10.79	837.26	418.63	652.62	326.79	73.52	-5.42	0.035
123.00	-0.08	-0.08	0	-0.16	0.00	0.16	808.68	404.34	606.33	303.62	76.92	-5.43	0.001
125.00	0.00	-0.07	0	0.00	0.00	0.00	787.55	393.77	574.90	287.88	79.2	-5.43	0.000

CALCULATED FORCES

Load Case: 1.2D + 1.0Di + 1.0Wi — 40 mph Wind with 0.75" Radial Ice — 23 Iterations

Gust Response Factor: 1.10
Dead load Factor: 1.20
Wind Load Factor: 1.00
Ice Dead Load Factor: 1.00
Wind Importance Factor: 1.00
Ice Importance Factor: 1.00

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	Phi Pn (kips)	Phi Vn (kips)	Phi Tn (ft-kips)	Phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-55.13	-5.02	0	-441.52	0.00	441.52	3,012.45	1,506.23	5,785.78	2,897.19	0	0	0.171
5.00	-53.69	-4.96	0	-416.41	0.00	416.41	2,967.55	1,483.78	5,552.69	2,780.47	0.03	-0.05	0.168
10.00	-52.25	-4.90	0	-391.61	0.00	391.61	2,920.96	1,460.48	5,320.96	2,664.43	0.1	-0.1	0.165
15.00	-50.81	-4.84	0	-367.12	0.00	367.12	2,872.67	1,436.34	5,090.84	2,549.20	0.23	-0.15	0.162
20.00	-49.40	-4.77	0	-342.93	0.00	342.93	2,822.70	1,411.35	4,862.59	2,434.91	0.41	-0.2	0.158
25.00	-48.01	-4.70	0	-319.09	0.00	319.09	2,771.03	1,385.51	4,636.46	2,321.67	0.64	-0.25	0.155
30.00	-46.64	-4.62	0	-295.60	0.00	295.60	2,717.67	1,358.83	4,412.69	2,209.62	0.93	-0.3	0.151
35.00	-45.31	-4.54	0	-272.49	0.00	272.49	2,662.62	1,331.31	4,191.54	2,098.88	1.27	-0.35	0.147
40.00	-44.00	-4.46	0	-249.77	0.00	249.77	2,605.87	1,302.94	3,973.26	1,989.58	1.67	-0.4	0.142
45.00	-42.72	-4.39	0	-227.47	0.00	227.47	2,547.43	1,273.72	3,758.10	1,881.84	2.12	-0.46	0.138
48.00	-41.97	-4.34	0	-214.30	0.00	214.30	2,511.56	1,255.78	3,630.60	1,818.00	2.42	-0.49	0.135
50.00	-41.24	-4.30	0	-205.62	0.00	205.62	2,487.31	1,243.65	3,546.31	1,775.79	2.63	-0.51	0.132
53.00	-40.17	-4.25	0	-192.72	0.00	192.72	1,841.83	920.91	2,618.92	1,311.40	2.96	-0.54	0.169
55.00	-39.73	-4.20	0	-184.23	0.00	184.23	1,826.03	913.01	2,560.30	1,282.06	3.19	-0.57	0.165
60.00	-38.67	-4.12	0	-163.22	0.00	163.22	1,785.34	892.67	2,414.91	1,209.25	3.82	-0.63	0.157
65.00	-37.64	-4.03	0	-142.64	0.00	142.64	1,742.97	871.48	2,271.34	1,137.36	4.51	-0.69	0.147
70.00	-36.63	-3.94	0	-122.48	0.00	122.48	1,698.90	849.45	2,129.84	1,066.50	5.26	-0.75	0.136
75.00	-35.65	-3.86	0	-102.76	0.00	102.76	1,653.14	826.57	1,990.67	996.81	6.07	-0.8	0.125
78.00	-35.08	-3.81	0	-91.17	0.00	91.17	1,624.87	812.44	1,908.38	955.61	6.59	-0.84	0.117
80.00	-34.56	-3.77	0	-83.55	0.00	83.55	1,605.69	802.84	1,854.07	928.41	6.95	-0.86	0.112
82.00	-34.05	-3.74	0	-76.00	0.00	76.00	1,086.18	543.09	1,255.15	628.51	7.31	-0.88	0.152
84.00	-25.07	-2.84	0	-68.53	0.00	68.53	1,075.52	537.76	1,221.54	611.68	7.68	-0.9	0.135
85.00	-24.92	-2.80	0	-65.69	0.00	65.69	1,070.08	535.04	1,204.77	603.28	7.87	-0.91	0.132
90.00	-24.20	-2.74	0	-51.67	0.00	51.67	1,041.90	520.95	1,121.48	561.57	8.85	-0.96	0.115
94.00	-22.45	-2.60	0	-40.71	0.00	40.71	1,018.13	509.07	1,055.59	528.58	9.68	-1	0.099
95.00	-17.88	-2.17	0	-38.11	0.00	38.11	1,012.02	506.01	1,039.24	520.39	9.89	-1.01	0.091
97.00	-14.00	-1.65	0	-33.77	0.00	33.77	999.60	499.80	1,006.70	504.10	10.32	-1.03	0.081
100.00	-13.62	-1.59	0	-28.82	0.00	28.82	980.45	490.23	958.31	479.86	10.97	-1.05	0.074
105.00	-13.01	-1.52	0	-20.86	0.00	20.86	947.19	473.60	878.92	440.11	12.09	-1.09	0.061
110.00	-10.66	-1.29	0	-13.29	0.00	13.29	912.24	456.12	801.35	401.27	13.25	-1.12	0.045
110.60	-10.15	-1.16	0	-12.52	0.00	12.52	907.93	453.97	792.17	396.67	13.39	-1.12	0.043
115.00	-9.67	-1.09	0	-7.43	0.00	7.43	875.59	437.80	725.83	363.45	14.43	-1.14	0.031
120.00	-4.80	-0.65	0	-1.99	0.00	1.99	837.26	418.63	652.62	326.79	15.63	-1.15	0.012
123.00	-0.25	-0.02	0	-0.04	0.00	0.04	808.68	404.34	606.33	303.62	16.35	-1.15	0.000
125.00	0.00	-0.02	0	0.00	0.00	0.00	787.55	393.77	574.90	287.88	16.83	-1.15	0.000

CALCULATED FORCES

Load Case: 1.0D + 1.0W — 60 mph Wind with No Ice — 23 Iterations

Gust Response Factor: 1.10
Dead load Factor: 1.00
Wind Load Factor: 1.00
Wind Importance Factor 1.00

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	Phi Pn (kips)	Phi Vn (kips)	Phi Tn (ft-kips)	Phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-28.05	-5.69	0	-513.33	0.00	513.33	3,012.45	1,506.23	5,785.78	2,897.19	0	0	0.187
5.00	-27.16	-5.63	0	-484.86	0.00	484.86	2,967.55	1,483.78	5,552.69	2,780.47	0.03	-0.06	0.184
10.00	-26.30	-5.56	0	-456.71	0.00	456.71	2,920.96	1,460.48	5,320.96	2,664.43	0.12	-0.11	0.180
15.00	-25.46	-5.50	0	-428.90	0.00	428.90	2,872.67	1,436.34	5,090.84	2,549.20	0.27	-0.17	0.177
20.00	-24.64	-5.43	0	-401.40	0.00	401.40	2,822.70	1,411.35	4,862.59	2,434.91	0.48	-0.23	0.174
25.00	-23.84	-5.36	0	-374.24	0.00	374.24	2,771.03	1,385.51	4,636.46	2,321.67	0.75	-0.29	0.170
30.00	-23.06	-5.29	0	-347.44	0.00	347.44	2,717.67	1,358.83	4,412.69	2,209.62	1.09	-0.35	0.166
35.00	-22.30	-5.22	0	-320.99	0.00	320.99	2,662.62	1,331.31	4,191.54	2,098.88	1.48	-0.41	0.161
40.00	-21.56	-5.14	0	-294.92	0.00	294.92	2,605.87	1,302.94	3,973.26	1,989.58	1.95	-0.47	0.157
45.00	-20.84	-5.08	0	-269.22	0.00	269.22	2,547.43	1,273.72	3,758.10	1,881.84	2.48	-0.54	0.151
48.00	-20.42	-5.04	0	-253.98	0.00	253.98	2,511.56	1,255.78	3,630.60	1,818.00	2.83	-0.57	0.148
50.00	-19.95	-5.00	0	-243.90	0.00	243.90	2,487.31	1,243.65	3,546.31	1,775.79	3.07	-0.6	0.145
53.00	-19.26	-4.96	0	-228.90	0.00	228.90	1,841.83	920.91	2,618.92	1,311.40	3.46	-0.64	0.185
55.00	-19.03	-4.91	0	-218.98	0.00	218.98	1,826.03	913.01	2,560.30	1,282.06	3.74	-0.66	0.181
60.00	-18.48	-4.84	0	-194.44	0.00	194.44	1,785.34	892.67	2,414.91	1,209.25	4.47	-0.74	0.171
65.00	-17.94	-4.76	0	-170.26	0.00	170.26	1,742.97	871.48	2,271.34	1,137.36	5.28	-0.81	0.160
70.00	-17.42	-4.69	0	-146.43	0.00	146.43	1,698.90	849.45	2,129.84	1,066.50	6.17	-0.88	0.148
75.00	-16.91	-4.63	0	-122.97	0.00	122.97	1,653.14	826.57	1,990.67	996.81	7.13	-0.95	0.134
78.00	-16.62	-4.60	0	-109.08	0.00	109.08	1,624.87	812.44	1,908.38	955.61	7.74	-0.99	0.124
80.00	-16.31	-4.56	0	-99.89	0.00	99.89	1,605.69	802.84	1,854.07	928.41	8.16	-1.01	0.118
82.00	-16.00	-4.53	0	-90.76	0.00	90.76	1,086.18	543.09	1,255.15	628.51	8.59	-1.04	0.159
84.00	-11.71	-3.40	0	-81.69	0.00	81.69	1,075.52	537.76	1,221.54	611.68	9.03	-1.06	0.144
85.00	-11.64	-3.36	0	-78.29	0.00	78.29	1,070.08	535.04	1,204.77	603.28	9.25	-1.07	0.141
90.00	-11.28	-3.30	0	-61.46	0.00	61.46	1,041.90	520.95	1,121.48	561.57	10.42	-1.14	0.120
94.00	-10.40	-3.17	0	-48.27	0.00	48.27	1,018.13	509.07	1,055.59	528.58	11.39	-1.19	0.102
95.00	-7.85	-2.64	0	-45.10	0.00	45.10	1,012.02	506.01	1,039.24	520.39	11.64	-1.2	0.094
97.00	-6.46	-1.89	0	-39.83	0.00	39.83	999.60	499.80	1,006.70	504.10	12.15	-1.22	0.085
100.00	-6.27	-1.83	0	-34.17	0.00	34.17	980.45	490.23	958.31	479.86	12.92	-1.25	0.078
105.00	-5.98	-1.76	0	-25.01	0.00	25.01	947.19	473.60	878.92	440.11	14.25	-1.29	0.063
110.00	-4.76	-1.53	0	-16.22	0.00	16.22	912.24	456.12	801.35	401.27	15.62	-1.32	0.046
110.60	-4.63	-1.37	0	-15.30	0.00	15.30	907.93	453.97	792.17	396.67	15.78	-1.32	0.044
115.00	-4.40	-1.31	0	-9.26	0.00	9.26	875.59	437.80	725.83	363.45	17.01	-1.35	0.031
120.00	-1.66	-0.89	0	-2.71	0.00	2.71	837.26	418.63	652.62	326.79	18.43	-1.36	0.010
123.00	-0.09	-0.02	0	-0.04	0.00	0.04	808.68	404.34	606.33	303.62	19.29	-1.36	0.000
125.00	0.00	-0.02	0	0.00	0.00	0.00	787.55	393.77	574.90	287.88	19.86	-1.36	0.000

EQUIVALENT LATERAL FORCES METHOD ANALYSIS

(Based on ASCE7-10 Chapters 11, 12 and 15)

Spectral Response Acceleration for Short Period (S_S):	0.094
Spectral Response Acceleration at 1.0 Second Period (S_1):	0.045
Long-Period Transition Period (T_L – Seconds):	12
Importance Factor (I_e):	1.000
Site Coefficient F_a:	1.600
Site Coefficient F_v:	2.400
Response Modification Coefficient (R):	1.500
Design Spectral Response Acceleration at Short Period (S_{ds}):	0.100
Design Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.072
Seismic Response Coefficient (C_s):	0.030
Upper Limit C_S:	0.030
Lower Limit C_S:	0.030
Period based on Rayleigh Method (sec):	2.250
Redundancy Factor (p):	1.000
Seismic Force Distribution Exponent (k):	1.880
Total Unfactored Dead Load:	28.050 k
Seismic Base Shear (E):	0.840 k

SEISMIC FORCES

(1.2 + 0.2Sds) * DL + E ELFM **Seismic**

Segment	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
34	124	75	635	0.006	5	92
33	121.5	143	1,160	0.011	9	175
32	117.5	248	1,890	0.018	15	303
31	112.8	228	1,611	0.015	13	279
30	110.3	32	216	0.002	2	39
29	107.5	282	1,819	0.017	14	344
28	102.5	294	1,735	0.016	14	359
27	98.5	182	998	0.009	8	223
26	96	134	700	0.006	5	164
25	94.5	68	343	0.003	3	83
24	92	276	1,329	0.012	10	337
23	87.5	356	1,560	0.014	12	435
22	84.5	73	298	0.003	2	89
21	83	152	603	0.006	5	185
20	81	305	1,154	0.011	9	372
19	79	309	1,118	0.010	9	377
18	76.5	293	999	0.009	8	358
17	72.5	502	1,545	0.014	12	612
16	67.5	518	1,395	0.013	11	632
15	62.5	534	1,245	0.012	10	652
14	57.5	550	1,097	0.010	9	672
13	54	225	398	0.004	3	274
12	51.5	690	1,119	0.010	9	842
11	49	467	690	0.006	5	570
10	46.5	419	561	0.005	4	511
9	42.5	714	808	0.008	6	872
8	37.5	735	657	0.006	5	896
7	32.5	755	516	0.005	4	921
6	27.5	775	387	0.004	3	946
5	22.5	795	273	0.002	2	970
4	17.5	815	175	0.002	1	995
3	12.5	835	95	0.001	1	1,019
2	7.5	856	37	0.000	0	1,044
1	2.5	876	5	0.000	0	1,069
Raycap DC6-48-60-18-8F ("Squid")	125	19	162	0.002	1	23
Ericsson Radio 4471 B30	123	86	714	0.007	6	105
Ericsson Radio 4494 44B14 20B29 M01	123	172	1,426	0.013	11	210
Ericsson Radio 4490HP 44B5 44B12A C (68.3lbs)	123	205	1,700	0.016	13	250
Ericsson Radio 4890HP 48B2/B25 48B66 M01 (68.3	123	205	1,700	0.016	13	250

lbs)						
Raycap DC9-48-60-24-8C-EV (Enclosure)	123	18	153	0.001	1	23
Raycap DC6-48-60-0-8C	123	16	133	0.001	1	20
Ericsson AIR 6472 B77G B77M (67.2lbs)	123	202	1,672	0.016	13	246
Ericsson KRE 101 2487/1K	123	284	2,359	0.022	18	347
KMW EPBQ-654L8H8-L2	123	258	2,140	0.020	17	315
Generic Round Platform with Handrails	120	2,500	19,799	0.184	155	3,050
CellMax CMA-B/6521/E0-6	110.6	105	714	0.007	6	128
Generic Round T-Arm	110	938	6,307	0.059	49	1,144
Commscope HELIAX FiberFeed 12 RRU Pendant Connect	97	40	213	0.002	2	49
Ceragon RFU-D-HP	97	26	141	0.001	1	32
Nokia AHFII Airscale RRH 4T4R B25/66 480W	97	212	1,126	0.010	9	258
Nokia AHFIG	97	238	1,266	0.012	10	291
Nokia AEHC	97	311	1,652	0.015	13	379
Commscope VHLP4-11W/A	97	70	375	0.004	3	86
Commscope FFVV-65C-R3-V1	97	374	1,986	0.018	16	456
Generic Flat Platform with Handrails	95	2,500	12,776	0.119	100	3,050
Generic Flat Platform with Handrails	84	2,500	10,144	0.094	79	3,050
Generic Mount Reinforcement	94	600	3,006	0.028	24	732
Generic Mount Reinforcement	84	600	2,434	0.023	19	732
Ericsson Radio 4408 w/ Integrated Panel	84	33	135	0.001	1	41
Ericsson Radio 4449 - B13&B5	84	210	852	0.008	7	256
Ericsson 8843 Rev 2	84	225	913	0.008	7	275
Raycap RVZDC-6627-PF-48	84	32	130	0.001	1	39
Ericsson AIR 6449 B77D/ C-Band	84	245	993	0.009	8	299
Commscope NHH-65C-R2B	84	310	1,256	0.012	10	378
	Totals:	**28,049**	**107,550**	**1.000**	**841**	**34,221**

SEISMIC FORCES

(0.9 - 0.2Sds) * DL + E ELFM **Seismic (Reduced DL)**

Segment	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
34	124	75	635	0.006	5	66
33	121.5	143	1,160	0.011	9	126
32	117.5	248	1,890	0.018	15	218
31	112.8	228	1,611	0.015	13	201
30	110.3	32	216	0.002	2	28
29	107.5	282	1,819	0.017	14	248
28	102.5	294	1,735	0.016	14	259
27	98.5	182	998	0.009	8	161
26	96	134	700	0.006	5	118
25	94.5	68	343	0.003	3	60
24	92	276	1,329	0.012	10	243
23	87.5	356	1,560	0.014	12	313
22	84.5	73	298	0.003	2	64
21	83	152	603	0.006	5	134
20	81	305	1,154	0.011	9	268
19	79	309	1,118	0.010	9	272
18	76.5	293	999	0.009	8	258
17	72.5	502	1,545	0.014	12	442
16	67.5	518	1,395	0.013	11	456
15	62.5	534	1,245	0.012	10	470
14	57.5	550	1,097	0.010	9	484
13	54	225	398	0.004	3	198
12	51.5	690	1,119	0.010	9	607
11	49	467	690	0.006	5	411
10	46.5	419	561	0.005	4	369
9	42.5	714	808	0.008	6	629
8	37.5	735	657	0.006	5	646
7	32.5	755	516	0.005	4	664
6	27.5	775	387	0.004	3	682
5	22.5	795	273	0.002	2	700
4	17.5	815	175	0.002	1	717
3	12.5	835	95	0.001	1	735
2	7.5	856	37	0.000	0	753

1	2.5	876	5	0.000	0	771
Raycap DC6-48-60-18-8F ("Squid")	125	19	162	0.002	1	17
Ericsson Radio 4471 B30	123	86	714	0.007	6	76
Ericsson Radio 4494 44B14 20B29 M01	123	172	1,426	0.013	11	151
Ericsson Radio 4490HP 44B5 44B12A C (68.3lbs)	123	205	1,700	0.016	13	180
Ericsson Radio 4890HP 48B2/B25 48B66 M01 (68.3 lbs)	123	205	1,700	0.016	13	180
Raycap DC9-48-60-24-8C-EV (Enclosure)	123	18	153	0.001	1	16
Raycap DC6-48-60-0-8C	123	16	133	0.001	1	14
Ericsson AIR 6472 B77G B77M (67.2lbs)	123	202	1,672	0.016	13	177
Ericsson KRE 101 2487/1K	123	284	2,359	0.022	18	250
KMW EPBQ-654L8H8-L2	123	258	2,140	0.020	17	227
Generic Round Platform with Handrails	120	2,500	19,799	0.184	155	2,200
CellMax CMA-B/6521/E0-6	110.6	105	714	0.007	6	92
Generic Round T-Arm	110	938	6,307	0.059	49	825
Commscope HELIAX FiberFeed 12 RRU Pendant Connect	97	40	213	0.002	2	35
Ceragon RFU-D-HP	97	26	141	0.001	1	23
Nokia AHFII Airscale RRH 4T4R B25/66 480W	97	212	1,126	0.010	9	186
Nokia AHFIG	97	238	1,266	0.012	10	210
Nokia AEHC	97	311	1,652	0.015	13	273
Commscope VHLP4-11W/A	97	70	375	0.004	3	62
Commscope FFVV-65C-R3-V1	97	374	1,986	0.018	16	329
Generic Flat Platform with Handrails	95	2,500	12,776	0.119	100	2,200
Generic Flat Platform with Handrails	84	2,500	10,144	0.094	79	2,200
Generic Mount Reinforcement	94	600	3,006	0.028	24	528
Generic Mount Reinforcement	84	600	2,434	0.023	19	528
Ericsson Radio 4408 w/ Integrated Panel	84	33	135	0.001	1	29
Ericsson Radio 4449 - B13&B5	84	210	852	0.008	7	185
Ericsson 8843 Rev 2	84	225	913	0.008	7	198
Raycap RVZDC-6627-PF-48	84	32	130	0.001	1	28
Ericsson AIR 6449 B77D/ C-Band	84	245	993	0.009	8	215
Commscope NHH-65C-R2B	84	310	1,256	0.012	10	272
	Totals:	**28,049**	**107,550**	**1.000**	**841**	**24,681**

(1.2 + 0.2Sds) * DL + E EMAM **Seismic**

CALCULATED FORCES

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (fr-kips)	Mu Mx (ft-kips)	Resultant Moment (ft-kips)	Phi Pn (kips)	Phi Vn (kips)	Phi Tn (kips)	Phi Mn (kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-33.15	-0.67	0.00	-73.57	0.00	73.57	3,012.45	1,506.23	5,786	2,897.19	0.00	0.00	0.04
5.00	-32.11	-0.67	0.00	-70.21	0.00	70.21	2,967.55	1,483.78	5,553	2,780.47	0.00	-0.01	0.04
10.00	-31.09	-0.66	0.00	-66.86	0.00	66.86	2,920.96	1,460.48	5,321	2,664.43	0.02	-0.02	0.04
15.00	-30.09	-0.66	0.00	-63.54	0.00	63.54	2,872.67	1,436.34	5,091	2,549.20	0.04	-0.02	0.04
20.00	-29.12	-0.65	0.00	-60.25	0.00	60.25	2,822.70	1,411.35	4,863	2,434.91	0.07	-0.03	0.04
25.00	-28.18	-0.64	0.00	-56.99	0.00	56.99	2,771.03	1,385.51	4,636	2,321.67	0.11	-0.04	0.04
30.00	-27.26	-0.64	0.00	-53.78	0.00	53.78	2,717.67	1,358.83	4,413	2,209.62	0.16	-0.05	0.03
35.00	-26.36	-0.63	0.00	-50.59	0.00	50.59	2,662.62	1,331.31	4,192	2,098.88	0.22	-0.06	0.03
40.00	-25.49	-0.62	0.00	-47.45	0.00	47.45	2,605.87	1,302.94	3,973	1,989.58	0.29	-0.07	0.03
45.00	-24.98	-0.62	0.00	-44.35	0.00	44.35	2,547.43	1,273.72	3,758	1,881.84	0.37	-0.08	0.03
48.00	-24.41	-0.61	0.00	-42.50	0.00	42.50	2,511.56	1,255.78	3,631	1,818.00	0.42	-0.09	0.03
50.00	-23.57	-0.60	0.00	-41.28	0.00	41.28	2,487.31	1,243.65	3,546	1,775.79	0.46	-0.09	0.03
53.00	-23.29	-0.60	0.00	-39.47	0.00	39.47	1,841.83	920.91	2,619	1,311.40	0.52	-0.10	0.04
55.00	-22.62	-0.60	0.00	-38.27	0.00	38.27	1,826.03	913.01	2,560	1,282.06	0.56	-0.10	0.04
60.00	-21.97	-0.60	0.00	-35.29	0.00	35.29	1,785.34	892.67	2,415	1,209.25	0.68	-0.12	0.04
65.00	-21.34	-0.60	0.00	-32.31	0.00	32.31	1,742.97	871.48	2,271	1,137.36	0.81	-0.13	0.04
70.00	-20.72	-0.60	0.00	-29.32	0.00	29.32	1,698.90	849.45	2,130	1,066.50	0.95	-0.14	0.04
75.00	-20.36	-0.61	0.00	-26.31	0.00	26.31	1,653.14	826.57	1,991	996.81	1.11	-0.16	0.04
78.00	-19.99	-0.61	0.00	-24.50	0.00	24.50	1,624.87	812.44	1,908	955.61	1.21	-0.17	0.04
80.00	-19.62	-0.61	0.00	-23.28	0.00	23.28	1,605.69	802.84	1,854	928.41	1.28	-0.17	0.04
82.00	-19.43	-0.61	0.00	-22.06	0.00	22.06	1,086.18	543.09	1,255	628.51	1.35	-0.18	0.05
84.00	-14.27	-0.62	0.00	-20.83	0.00	20.83	1,075.52	537.76	1,222	611.68	1.43	-0.18	0.05
85.00	-13.84	-0.62	0.00	-20.21	0.00	20.21	1,070.08	535.04	1,205	603.28	1.47	-0.19	0.05
90.00	-13.50	-0.62	0.00	-17.10	0.00	17.10	1,041.90	520.95	1,121	561.57	1.67	-0.20	0.04
94.00	-12.69	-0.62	0.00	-14.60	0.00	14.60	1,018.13	509.07	1,056	528.58	1.85	-0.22	0.04

CALCULATED FORCES

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (fr-kips)	Mu Mx (ft-kips)	Resultant Moment (ft-kips)	Phi Pn (kips)	Phi Vn (kips)	Phi Tn (kips)	Phi Mn (kips)	Total Deflect (in)	Rotation (deg)	Ratio
95.00	-9.47	-0.60	0.00	-13.98	0.00	13.98	1,012.02	506.01	1,039	520.39	1.90	-0.22	0.04
97.00	-7.70	-0.58	0.00	-12.79	0.00	12.79	999.60	499.80	1,007	504.10	1.99	-0.23	0.03
100.00	-7.34	-0.57	0.00	-11.05	0.00	11.05	980.45	490.23	958	479.86	2.14	-0.24	0.03
105.00	-6.99	-0.56	0.00	-8.18	0.00	8.18	947.19	473.60	879	440.11	2.39	-0.25	0.03
110.00	-5.81	-0.51	0.00	-5.37	0.00	5.37	912.24	456.12	801	401.27	2.66	-0.26	0.02
110.60	-5.41	-0.49	0.00	-5.07	0.00	5.07	907.93	453.97	792	396.67	2.69	-0.26	0.02
115.00	-5.10	-0.47	0.00	-2.91	0.00	2.91	875.59	437.80	726	363.45	2.94	-0.27	0.01
120.00	-1.88	-0.19	0.00	-0.58	0.00	0.58	837.26	418.63	653	326.79	3.23	-0.27	0.00
123.00	-0.02	0.00	0.00	0.00	0.00	0.00	808.68	404.34	606	303.62	3.40	-0.27	0.00
125.00	0.00	0.00	0.00	0.00	0.00	0.00	787.55	393.77	575	287.88	3.51	-0.27	0.00

(1.2 + 0.2Sds) * DL + E ELFM **Seismic**

CALCULATED FORCES

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (fr-kips)	Mu Mx (ft-kips)	Resultant Moment (ft-kips)	Phi Pn (kips)	Phi Vn (kips)	Phi Tn (kips)	Phi Mn (kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-33.15	-0.84	0.00	-86.76	0.00	86.76	3,012.45	1,506.23	5,786	2,897.19	0.00	0.00	0.04
5.00	-32.11	-0.85	0.00	-82.54	0.00	82.54	2,967.55	1,483.78	5,553	2,780.47	0.01	-0.01	0.04
10.00	-31.09	-0.85	0.00	-78.30	0.00	78.30	2,920.96	1,460.48	5,321	2,664.43	0.02	-0.02	0.04
15.00	-30.09	-0.86	0.00	-74.04	0.00	74.04	2,872.67	1,436.34	5,091	2,549.20	0.05	-0.03	0.04
20.00	-29.12	-0.86	0.00	-69.76	0.00	69.76	2,822.70	1,411.35	4,863	2,434.91	0.08	-0.04	0.04
25.00	-28.18	-0.86	0.00	-65.47	0.00	65.47	2,771.03	1,385.51	4,636	2,321.67	0.13	-0.05	0.04
30.00	-27.26	-0.86	0.00	-61.17	0.00	61.17	2,717.67	1,358.83	4,413	2,209.62	0.19	-0.06	0.04
35.00	-26.36	-0.86	0.00	-56.87	0.00	56.87	2,662.62	1,331.31	4,192	2,098.88	0.26	-0.07	0.04
40.00	-25.49	-0.86	0.00	-52.57	0.00	52.57	2,605.87	1,302.94	3,973	1,989.58	0.34	-0.08	0.04
45.00	-24.98	-0.86	0.00	-48.29	0.00	48.29	2,547.43	1,273.72	3,758	1,881.84	0.43	-0.09	0.04
48.00	-24.41	-0.85	0.00	-45.73	0.00	45.73	2,511.56	1,255.78	3,631	1,818.00	0.49	-0.10	0.04
50.00	-23.57	-0.84	0.00	-44.02	0.00	44.02	2,487.31	1,243.65	3,546	1,775.79	0.53	-0.11	0.03
53.00	-23.29	-0.84	0.00	-41.49	0.00	41.49	1,841.83	920.91	2,619	1,311.40	0.60	-0.11	0.04
55.00	-22.62	-0.84	0.00	-39.81	0.00	39.81	1,826.03	913.01	2,560	1,282.06	0.65	-0.12	0.04
60.00	-21.97	-0.83	0.00	-35.63	0.00	35.63	1,785.34	892.67	2,415	1,209.25	0.78	-0.13	0.04
65.00	-21.34	-0.82	0.00	-31.48	0.00	31.48	1,742.97	871.48	2,271	1,137.36	0.92	-0.14	0.04
70.00	-20.72	-0.81	0.00	-27.37	0.00	27.37	1,698.90	849.45	2,130	1,066.50	1.08	-0.16	0.04
75.00	-20.36	-0.81	0.00	-23.30	0.00	23.30	1,653.14	826.57	1,991	996.81	1.25	-0.17	0.04
78.00	-19.99	-0.80	0.00	-20.87	0.00	20.87	1,624.87	812.44	1,908	955.61	1.36	-0.18	0.03
80.00	-19.62	-0.79	0.00	-19.27	0.00	19.27	1,605.69	802.84	1,854	928.41	1.43	-0.18	0.03
82.00	-19.43	-0.79	0.00	-17.69	0.00	17.69	1,086.18	543.09	1,255	628.51	1.51	-0.19	0.05
84.00	-14.27	-0.64	0.00	-16.11	0.00	16.11	1,075.52	537.76	1,222	611.68	1.59	-0.19	0.04
85.00	-13.84	-0.63	0.00	-15.48	0.00	15.48	1,070.08	535.04	1,205	603.28	1.63	-0.19	0.04
90.00	-13.50	-0.62	0.00	-12.34	0.00	12.34	1,041.90	520.95	1,121	561.57	1.84	-0.21	0.04
94.00	-12.69	-0.59	0.00	-9.87	0.00	9.87	1,018.13	509.07	1,056	528.58	2.02	-0.22	0.03
95.00	-9.47	-0.47	0.00	-9.28	0.00	9.28	1,012.02	506.01	1,039	520.39	2.06	-0.22	0.03
97.00	-7.70	-0.41	0.00	-8.34	0.00	8.34	999.60	499.80	1,007	504.10	2.15	-0.22	0.02
100.00	-7.34	-0.39	0.00	-7.12	0.00	7.12	980.45	490.23	958	479.86	2.30	-0.23	0.02
105.00	-7.00	-0.38	0.00	-5.16	0.00	5.16	947.19	473.60	879	440.11	2.54	-0.24	0.02
110.00	-5.81	-0.32	0.00	-3.28	0.00	3.28	912.24	456.12	801	401.27	2.79	-0.24	0.02
110.60	-5.41	-0.30	0.00	-3.09	0.00	3.09	907.93	453.97	792	396.67	2.82	-0.24	0.01
115.00	-5.10	-0.29	0.00	-1.76	0.00	1.76	875.59	437.80	726	363.45	3.05	-0.25	0.01
120.00	-1.88	-0.11	0.00	-0.33	0.00	0.33	837.26	418.63	653	326.79	3.31	-0.25	0.00
123.00	-0.02	0.00	0.00	0.00	0.00	0.00	808.68	404.34	606	303.62	3.47	-0.25	0.00
125.00	0.00	0.00	0.00	0.00	0.00	0.00	787.55	393.77	575	287.88	3.58	-0.25	0.00

(0.9 - 0.2Sds) * DL + E ELFM **Seismic (Reduced DL)**

CALCULATED FORCES

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (fr-kips)	Mu Mx (ft-kips)	Resultant Moment (ft-kips)	Phi Pn (kips)	Phi Vn (kips)	Phi Tn (kips)	Phi Mn (kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-23.91	-0.84	0.00	-85.51	0.00	85.51	3,012.45	1,506.23	5,786	2,897.19	0.00	0.00	0.04
5.00	-23.16	-0.85	0.00	-81.29	0.00	81.29	2,967.55	1,483.78	5,553	2,780.47	0.00	-0.01	0.04
10.00	-22.42	-0.85	0.00	-77.06	0.00	77.06	2,920.96	1,460.48	5,321	2,664.43	0.02	-0.02	0.04

CALCULATED FORCES

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (fr-kips)	Mu Mx (ft-kips)	Resultant Moment (ft-kips)	Phi Pn (kips)	Phi Vn (kips)	Phi Tn (kips)	Phi Mn (kips)	Total Deflect (in)	Rotation (deg)	Ratio
15.00	-21.70	-0.85	0.00	-72.82	0.00	72.82	2,872.67	1,436.34	5,091	2,549.20	0.04	-0.03	0.04
20.00	-21.00	-0.85	0.00	-68.57	0.00	68.57	2,822.70	1,411.35	4,863	2,434.91	0.08	-0.04	0.04
25.00	-20.32	-0.85	0.00	-64.31	0.00	64.31	2,771.03	1,385.51	4,636	2,321.67	0.13	-0.05	0.04
30.00	-19.66	-0.85	0.00	-60.05	0.00	60.05	2,717.67	1,358.83	4,413	2,209.62	0.18	-0.06	0.03
35.00	-19.01	-0.85	0.00	-55.79	0.00	55.79	2,662.62	1,331.31	4,192	2,098.88	0.25	-0.07	0.03
40.00	-18.38	-0.85	0.00	-51.55	0.00	51.55	2,605.87	1,302.94	3,973	1,989.58	0.33	-0.08	0.03
45.00	-18.01	-0.84	0.00	-47.32	0.00	47.32	2,547.43	1,273.72	3,758	1,881.84	0.42	-0.09	0.03
48.00	-17.60	-0.84	0.00	-44.79	0.00	44.79	2,511.56	1,255.78	3,631	1,818.00	0.48	-0.10	0.03
50.00	-17.00	-0.83	0.00	-43.11	0.00	43.11	2,487.31	1,243.65	3,546	1,775.79	0.52	-0.10	0.03
53.00	-16.80	-0.83	0.00	-40.62	0.00	40.62	1,841.83	920.91	2,619	1,311.40	0.59	-0.11	0.04
55.00	-16.31	-0.82	0.00	-38.96	0.00	38.96	1,826.03	913.01	2,560	1,282.06	0.64	-0.11	0.04
60.00	-15.84	-0.81	0.00	-34.86	0.00	34.86	1,785.34	892.67	2,415	1,209.25	0.76	-0.13	0.04
65.00	-15.39	-0.81	0.00	-30.78	0.00	30.78	1,742.97	871.48	2,271	1,137.36	0.90	-0.14	0.04
70.00	-14.95	-0.80	0.00	-26.75	0.00	26.75	1,698.90	849.45	2,130	1,066.50	1.06	-0.15	0.03
75.00	-14.69	-0.79	0.00	-22.77	0.00	22.77	1,653.14	826.57	1,991	996.81	1.23	-0.17	0.03
78.00	-14.41	-0.78	0.00	-20.40	0.00	20.40	1,624.87	812.44	1,908	955.61	1.33	-0.17	0.03
80.00	-14.15	-0.77	0.00	-18.83	0.00	18.83	1,605.69	802.84	1,854	928.41	1.41	-0.18	0.03
82.00	-14.01	-0.77	0.00	-17.29	0.00	17.29	1,086.18	543.09	1,255	628.51	1.48	-0.18	0.04
84.00	-10.29	-0.62	0.00	-15.75	0.00	15.75	1,075.52	537.76	1,222	611.68	1.56	-0.19	0.04
85.00	-9.98	-0.61	0.00	-15.12	0.00	15.12	1,070.08	535.04	1,205	603.28	1.60	-0.19	0.03
90.00	-9.74	-0.60	0.00	-12.06	0.00	12.06	1,041.90	520.95	1,121	561.57	1.81	-0.20	0.03
94.00	-9.15	-0.58	0.00	-9.65	0.00	9.65	1,018.13	509.07	1,056	528.58	1.98	-0.21	0.03
95.00	-6.83	-0.46	0.00	-9.08	0.00	9.08	1,012.02	506.01	1,039	520.39	2.02	-0.21	0.02
97.00	-5.55	-0.40	0.00	-8.15	0.00	8.15	999.60	499.80	1,007	504.10	2.11	-0.22	0.02
100.00	-5.29	-0.38	0.00	-6.96	0.00	6.96	980.45	490.23	958	479.86	2.25	-0.22	0.02
105.00	-5.04	-0.37	0.00	-5.05	0.00	5.05	947.19	473.60	879	440.11	2.49	-0.23	0.02
110.00	-4.19	-0.31	0.00	-3.20	0.00	3.20	912.24	456.12	801	401.27	2.74	-0.24	0.01
110.60	-3.90	-0.30	0.00	-3.02	0.00	3.02	907.93	453.97	792	396.67	2.77	-0.24	0.01
115.00	-3.68	-0.28	0.00	-1.72	0.00	1.72	875.59	437.80	726	363.45	2.99	-0.24	0.01
120.00	-1.36	-0.11	0.00	-0.32	0.00	0.32	837.26	418.63	653	326.79	3.25	-0.25	0.00
123.00	-0.02	0.00	0.00	0.00	0.00	0.00	808.68	404.34	606	303.62	3.40	-0.25	0.00
125.00	0.00	0.00	0.00	0.00	0.00	0.00	787.55	393.77	575	287.88	3.51	-0.25	0.00

(0.9 - 0.2Sds) * DL + E EMAM **Seismic (Reduced DL)**

CALCULATED FORCES

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (fr-kips)	Mu Mx (ft-kips)	Resultant Moment (ft-kips)	Phi Pn (kips)	Phi Vn (kips)	Phi Tn (kips)	Phi Mn (kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-23.91	-0.67	0.00	-72.40	0.00	72.40	3,012.45	1,506.23	5,786	2,897.19	0.00	0.00	0.03
5.00	-23.16	-0.67	0.00	-69.04	0.00	69.04	2,967.55	1,483.78	5,553	2,780.47	0.00	-0.01	0.03
10.00	-22.42	-0.66	0.00	-65.70	0.00	65.70	2,920.96	1,460.48	5,321	2,664.43	0.02	-0.02	0.03
15.00	-21.70	-0.65	0.00	-62.39	0.00	62.39	2,872.67	1,436.34	5,091	2,549.20	0.04	-0.02	0.03
20.00	-21.01	-0.65	0.00	-59.13	0.00	59.13	2,822.70	1,411.35	4,863	2,434.91	0.07	-0.03	0.03
25.00	-20.32	-0.64	0.00	-55.90	0.00	55.90	2,771.03	1,385.51	4,636	2,321.67	0.11	-0.04	0.03
30.00	-19.66	-0.63	0.00	-52.71	0.00	52.71	2,717.67	1,358.83	4,413	2,209.62	0.16	-0.05	0.03
35.00	-19.01	-0.62	0.00	-49.57	0.00	49.57	2,662.62	1,331.31	4,192	2,098.88	0.21	-0.06	0.03
40.00	-18.38	-0.61	0.00	-46.47	0.00	46.47	2,605.87	1,302.94	3,973	1,989.58	0.28	-0.07	0.03
45.00	-18.01	-0.61	0.00	-43.42	0.00	43.42	2,547.43	1,273.72	3,758	1,881.84	0.36	-0.08	0.03
48.00	-17.60	-0.60	0.00	-41.60	0.00	41.60	2,511.56	1,255.78	3,631	1,818.00	0.41	-0.09	0.03
50.00	-17.00	-0.59	0.00	-40.40	0.00	40.40	2,487.31	1,243.65	3,546	1,775.79	0.45	-0.09	0.03
53.00	-16.80	-0.59	0.00	-38.63	0.00	38.63	1,841.83	920.91	2,619	1,311.40	0.51	-0.10	0.04
55.00	-16.31	-0.58	0.00	-37.45	0.00	37.45	1,826.03	913.01	2,560	1,282.06	0.55	-0.10	0.04
60.00	-15.84	-0.58	0.00	-34.53	0.00	34.53	1,785.34	892.67	2,415	1,209.25	0.66	-0.11	0.04
65.00	-15.39	-0.58	0.00	-31.62	0.00	31.62	1,742.97	871.48	2,271	1,137.36	0.79	-0.13	0.04
70.00	-14.95	-0.59	0.00	-28.71	0.00	28.71	1,698.90	849.45	2,130	1,066.50	0.93	-0.14	0.04
75.00	-14.69	-0.59	0.00	-25.78	0.00	25.78	1,653.14	826.57	1,991	996.81	1.09	-0.15	0.04
78.00	-14.42	-0.59	0.00	-24.02	0.00	24.02	1,624.87	812.44	1,908	955.61	1.19	-0.16	0.03
80.00	-14.15	-0.59	0.00	-22.83	0.00	22.83	1,605.69	802.84	1,854	928.41	1.26	-0.17	0.03
82.00	-14.01	-0.59	0.00	-21.65	0.00	21.65	1,086.18	543.09	1,255	628.51	1.33	-0.17	0.05
84.00	-10.29	-0.61	0.00	-20.46	0.00	20.46	1,075.52	537.76	1,222	611.68	1.40	-0.18	0.04

CALCULATED FORCES

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (fr-kips)	Mu Mx (ft-kips)	Resultant Moment (ft-kips)	Phi Pn (kips)	Phi Vn (kips)	Phi Tn (kips)	Phi Mn (kips)	Total Deflect (in)	Rotation (deg)	Ratio
85.00	-9.98	-0.61	0.00	-19.85	0.00	19.85	1,070.08	535.04	1,205	603.28	1.44	-0.18	0.04
90.00	-9.74	-0.61	0.00	-16.81	0.00	16.81	1,041.90	520.95	1,121	561.57	1.64	-0.20	0.04
94.00	-9.15	-0.61	0.00	-14.37	0.00	14.37	1,018.13	509.07	1,056	528.58	1.82	-0.21	0.04
95.00	-6.83	-0.59	0.00	-13.76	0.00	13.76	1,012.02	506.01	1,039	520.39	1.86	-0.22	0.03
97.00	-5.55	-0.57	0.00	-12.59	0.00	12.59	999.60	499.80	1,007	504.10	1.95	-0.22	0.03
100.00	-5.29	-0.56	0.00	-10.88	0.00	10.88	980.45	490.23	958	479.86	2.10	-0.23	0.03
105.00	-5.04	-0.55	0.00	-8.06	0.00	8.06	947.19	473.60	879	440.11	2.35	-0.25	0.02
110.00	-4.19	-0.50	0.00	-5.29	0.00	5.29	912.24	456.12	801	401.27	2.61	-0.26	0.02
110.60	-3.90	-0.48	0.00	-4.99	0.00	4.99	907.93	453.97	792	396.67	2.64	-0.26	0.02
115.00	-3.68	-0.46	0.00	-2.87	0.00	2.87	875.59	437.80	726	363.45	2.88	-0.26	0.01
120.00	-1.35	-0.19	0.00	-0.57	0.00	0.57	837.26	418.63	653	326.79	3.16	-0.27	0.00
123.00	-0.02	0.00	0.00	0.00	0.00	0.00	808.68	404.34	606	303.62	3.33	-0.27	0.00
125.00	0.00	0.00	0.00	0.00	0.00	0.00	787.55	393.77	575	287.88	3.44	-0.27	0.00

ANALYSIS SUMMARY

	Base Reactions						Max Usage	
Load Case	Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)	Elev (ft)	Interaction Ratio
1.2D + 1.6W	23.12	0.00	33.61	0.00	0.00	2093.99	0.00	0.73
0.9D + 1.6W	22.91	0.00	25.20	0.00	0.00	2054.39	0.00	0.72
1.2D + 1.0Di + 1.0Wi	5.02	0.00	55.13	0.00	0.00	441.52	0.00	0.17
(1.2 + 0.2Sds) * DL + E ELFM	0.84	0.00	33.15	0.00	0.00	86.76	82.00	0.05
(1.2 + 0.2Sds) * DL + E EMAM	0.67	0.00	33.15	0.00	0.00	73.57	82.00	0.05
(0.9 - 0.2Sds) * DL + E ELFM	0.84	0.00	23.91	0.00	0.00	85.51	82.00	0.04
(0.9 - 0.2Sds) * DL + E EMAM	0.67	0.00	23.91	0.00	0.00	72.40	82.00	0.05
1.0D + 1.0W	5.69	0.00	28.05	0.00	0.00	513.33	0.00	0.19

ASSET:	274849, CARTER LAKE IA	CODE:	ANSI/TIA-222-G
CUSTOMER:	AT&T MOBILITY	PROJECT:	14858878

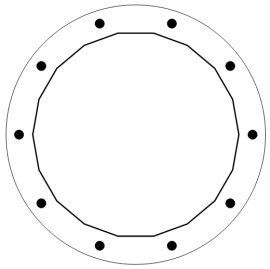
BASE PLATE ANALYSIS @ 0 FT

APPLIED REACTIONS

Moment (k-ft)	Axial (k)	Shear (k)
2093.99	33.61	23.12

PLATE PARAMETERS (ID# 17291)

Width:	60	in
Shape:	Round	
Thickness:	2	in
Grade:	A572-60	
Yield Strength:	60	ksi
Tensile Strength:	75	ksi
Rod Detail Type:	d	
Clear Distance	2.813	in
Base Weld Size:	0.125	in
Orientation Offset:	-	°
Analysis Type:	Plastic	
Neutral Axis:	126	°



ANCHOR ROD PARAMETERS

Class	Arrangement	Quantity	Diameter (in)	Circle (in)	Grade	F_y (ksi)	F_u (ksi)	Spacing (in)	Offset (°)
Original [ID#17703]	Radial	10	2.25	54	A615-75	75	100	-	-

COMPONENT PROPERTIES

Component	ID	Gross Area (in^2)	Net Area (in^2)	Individual Inertia (in^4)	Moment of Inertia (in^4)	Threads/in
Pole	47"ø x 0.3125" (18 Sides)	45.6030	-	-	12426.72	-
Bolt Group	Original (10) 2.25"ø	3.9761	3.2477	0.8393	10723.30	4.5

REACTION DISTRIBUTION

Component	ID	Moment M_u (k-ft)	Axial Load P_u (k)	Shear V_u (k)	Moment Factor
Pole	47"ø x 0.3125" (18 Sides)	2094.0	33.61	23.12	1.000
Bolt Group	Original (10) 2.25"ø	2094.0	-	23.12	1.000

BASE PLATE BEND LINE ANALYSIS @ 0 FT

POLE PROPERTIES

Flat-to-Flat Diameter:	47.25	in	Flat Width:	8.331	in	Neutral Axis:	126	°
Point-to-Point Diameter:	47.98	in	Flat Radians:	0.349	rad	Bend Line Limits:	3.292 to 4.248	rad
Orientation Offset:	-	°						

PLATE PROPERTIES

Bend Line	Chord Length (in)	Additional Length (in)	Section Modulus (in^3)	Applied Moment M_u (k-in)	Moment Capacity ΦM_n (k-in)	Flexure Result $M_u/\Phi M_n$	
Flats	32.574	0.00	32.574	410.1	1759.0	23.3%	✓
Corners	31.490	0.00	31.490	337.7	1700.5	19.9%	✓
Circumferential	37.524	0.00	37.524	337.7	2026.3	16.7%	✓

PLASTIC ANCHOR ROD ANALYSIS

Class	Group Quantity	Rod Diameter (in)	Applied Axial Load P_u (k)	Applied Shear Load V_u (k)	Compressive Capacity ΦP_n (k)	Interaction Result	
Original	10	2.25	158.0	3.4	259.8	63.4%	✓

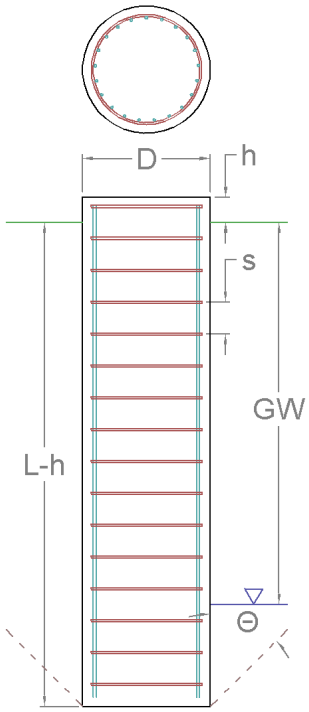
PIER FOUNDATION ANALYSIS

GLOBAL REACTIONS

Moment (k-ft)	Axial (k)	Shear (k)
2,093.99	33.61	23.12

FOUNDATION PARAMETERS

Pier Diameter:	D	6.00	ft
Pier Embedment Depth:	L-h	30.0	ft
Pier Height above Grade:	h	0.50	ft
Concrete Compressive Strength:		4,000	psi
Vertical Rebar:		(24) #9 bars [60 ksi]	
Tie Rebar:	s	#5 bars @ 12.0" c/c [60 ksi]	
Rebar Clear Cover:		3.00	in



SOIL PARAMETERS

Water Table Depth [BGL]: GW 5 ft

Layer Depth (ft) Top	Layer Depth (ft) Bottom	Unit Weight pcf	Cohesion psf	Friction Angle °	Ultimate Skin Friction psf	Ultimate Net Bearing psf
0	1	105	0	0	0	0
1	5	110	900	28	450	0
5	8	105	0	28	150	0
8	10	105	0	28	150	0
10	12	107	0	28	250	0
12	15	107	0	28	300	0
15	20	108	0	28	400	0
20	25	110	0	28	500	0
25	31	131	1,300	0	600	11,700

SOIL STRENGTH ANALYSIS

Volume of Concrete (ft^3)	Buoyant Weight of Concrete (k)	Skin Friction Resistance (k)	Inflection Point [BGL] (ft)
862.37	85.25	215.83	18.13

SOIL MOMENT ANALYSIS

Total Lateral Resistance (k)	Moment at Inflection Point, M_u (k-ft)	Additional Resistance (k-ft)	Nominal Moment Capacity, ΦM_n (k-ft)	Soil Moment Usage, $M_u / \Phi M_n$
1,530.98	2,524.81	0.00	9,183.83	**27.5%**

SOIL COMPRESSION ANALYSIS

Compressive Bearing Resistance (k)	Compressive Force, P_u (k)	Additional Resistance (k)	Nominal Compressive Capacity, ΦP_n (k)	Soil Compressive Usage, $P_u / \Phi P_n$
330.81	72.63	0.00	409.98	**17.7%**

REINFORCING STEEL STRENGTH ANALYSIS

Rebar Cage Diameter (in)	Steel Elastic Modulus, E (ksi)	Strength Bending/Tension Reduction Factor, Φ_b	Strength Shear Reduction Factor, Φ_v	Strength Compression Reduction Factor, Φ_c
63.622	29,000	0.9	0.75	0.65

PIER REINFORCING MOMENT ANALYSIS

Design Moment, M_u (k-ft)	Nominal Moment Capacity, $\Phi_b M_n$ (k-ft)	Bending Reinforcement Ratio	Pier Rebar Flexure Usage, $M_u/\Phi_b M_n$
2,107.46	3,364.54	0.01	**62.6%**

PIER REINFORCING COMPRESSION ANALYSIS

Buoyant Weight of Concrete (k)	Design Compression, P_u (k)	Nominal Compressive Capacity, $\Phi_p P_n$ (k)	Pier Rebar Compressive Usage, $P_u / \Phi_p P_n$
85.25	72.63	7,904.79	**0.9%**

PIER REINFORCING SHEAR ANALYSIS

Design Shear, V_u (k)	Nominal Shear Capacity, $\Phi_v V_n$ (k)	Pier Rebar Shear Usage, $V_u / \Phi_v V_n$
130.27	521.77	**25.0%**