Meeting agenda
Monday, July 25, 2022 6:00pm

Oconee County Board of Zoning Appeals

Council Chambers
415 South Pine Street
Walhalla, S.C. 29691

www.oconeesc.com

YouTube: "YourOconee"

Staff contact
846-638-4218
planninginfo@oconeesc.com

1. Call to order
2. Approval of minutes: 06/27/2022
3. Brief statement about rules and procedures
4. Variance application #VA22-006 – Brooks Engineering Associates – Zachary Wortman is requesting a road variance from the required 150' tangent between curves. TMS# 099-00-02-002, an unaddressed parcel with the closest address of 395 Keowee Town Landing Rd., Salem, SC 29676.
5. Variance application #VA22-008 – Brooks Engineering Associates – Zachary Wortman is requesting a road variance from the required 150' tangent between curves. TMS# 056-00-03-022, an unaddressed parcel with the closest address of 15740 N. Hwy 11, Salem, SC 29676.
6. Special Exception application #SE22-006 – HSB, PA – Sarah Spruill is requesting a special exception hearing for a Communications Tower. TMS# 016-00-001-001 with an address of 100 Bad Creek Road, Salem, SC 92676.
7. Variance application #VA22-0010 – HSB, PA – Sarah Spruill is requesting a 185' height variance (175' maximum) and 215' fall zone variance from the required 360' requirement. TMS# 016-00-001-001 with an address of 100 Bad Creek Road, Salem, SC 92676.
8. Adjourn

OCONEE COUNTY BOARD OF ZONING APPEALS

415 South Pine Street - Walhalla, SC TEL (864) 638-4218 FAX (864) 638-4168

Minutes

6:00 PM – June 27, 2022, 2022

Members in Attendance

Gwen Fowler
Jim Codner
William Decker
Tim Mays
John Eagar

Staff

James Coley, Planning Director
Vivian Kompier, Senior Planner

Media

Lauren Pierce

ITEM 1 – Call to order – Mr. Codner called the meeting to order at 6:00 PM.

ITEM 2 – Motion to approve the minutes from May 23, 2022 – Mr. Eagar made a **motion** to approve the minutes from May 23; seconded by Mr. Mays. Mr. Codner called for a vote. The motion passed unanimously 5/0.

ITEM 3 – Brief statement about rules and procedures – Mr. Codner outlined the proceedings of the meeting going forward:

- Applicant will provide a presentation to state their request (5 minutes).
- Staff will be asked to make any comments regarding the request.
- The public is allowed to voice their approval or opposition to the proposed. Please do not repeat opinions that have already been stated into the record (3-5 minutes).
- Applicant rebuttal
- Board members will discuss in detail.
- Voting

ITEM 4 – 4. Variance application #VA22-004 – John Ramey is requesting a 10' variance from the front setback allowing for construction of a garage. TMS# 327-00-01-014, with an address of 800 Sunview Dr. Seneca, SC 29678

Applicant's opening statement and provision of evidence: Mr. Ramey discussed his misunderstanding of the right-of-way and the setback and how they were combined and the setback was measured from the right-of-way. He has looked into relocating the

garage to another location on the property and does not think it will work anywhere else. There are other buildings in the location in the area. He does not believe that it will be a determined to the community. His neighbors are ok with the variance. There is discrepancy in the state right-of-way if it is 33' from centerline of 37.5' from the centerline.

Staff comments:

- Mr. Coley – stated the setback is measured from the edge of the right-of-way, and shown where in the exhibit

Public Comment:

- Mr. Glenn Hart discussed the right-of-way on state roads
- Four email comments in favor were read into the record.

Applicant rebuttal: He was mistaken in the request when he spoke with his neighbors and has reached out to correct the error in his request

Board questions and discussion:

- Question of grandfathering the property- not relevant.

Consideration of VA22-004:

1. There ***are*** extraordinary and exceptional conditions pertaining to the particular piece of property:
    a. Motion – Mr. Mays made a motion, seconded by Mr. Eagar. No discussion.
    b. Vote

In-favor	Opposed
5	0

    Mr. Codner noted that the criterion passed.

2. These conditions ***do not*** generally apply to other property in the vicinity:
    a. Motion – Mr. Eagar made a motion, seconded by Mr. Mays. No discussion.
    b. Vote

In-favor	Opposed
5	0

    Mr. Codner noted that the criterion passed.

3. Because of these conditions, the application of this chapter to the particular piece of property ***would*** effectively prohibit or unreasonably restrict the utilization of the property; and
    a. Motion – Mr. Eagar made a motion, seconded by Mr. Mays.

b. Vote

In-favor	Opposed
5	0

Mr. Codner noted that the criterion passed.

4. The authorization of a variance ***will not*** be of substantial detriment to adjacent uses or to the public good, and the character of the district will not be harmed by the granting of the variance.
   a. Motion – Mr. Eagar made a motion; seconded by Mr. Mays. No discussion.
   b. Vote

In-favor	Opposed
5	0

Mr. Codner noted that the criterion passed.

5. Mr. Codner asked – Based on the evidence presented to the Board, do I hear a motion that the proposed variance be **Approved.**
   a. Motion – Mr. Eagar made a motion; seconded by Mr. Mays. No discussion.
   b. Vote

In-favor	Opposed
5	0

Mr. Codner noted that variance request was approved.

ITEM 5 - 5. Special Exception application #SE22-005 – Kevin O'Fallon is requesting a Special Exception hearing for an RV and Boat storage facility in the Fair Play Village Overlay. TMS# 337-00-05-081, an unaddressed parcel with the closest address of 844 E. Fair Play Blvd., Fair Play, SC 29643.

Applicant's opening statement and provision of evidence: Mr. O'Fallon has spent 4 years working on this project. He believes that it will add to the community and be a valuable asset to the public that does not have lake front property. He did not know that he needed the special exemption. Mr. O'Fallon presented a letter from the county that he understood to be approval for his project.

Staff comments:

- Mr. Coley confirmed that the overlay district requires all non-residential and non-agricultural uses require a special exemption to be allowed
- Ms. Kompier discussed the letter to DOT that is required for the encroachment permit.

Board questions:

- Board asked if this had buildings- no buildings for storage, building for equipment and electrical, there are lights on the property.

Public comment:

- Peggy Smith- project is needed, will help community
- Harry Tallison- lives next door, in favor

Applicant rebuttal: NA

Board discussion:

- Mr. Mays- The zoning ordinance and overlay were part of the community development process. The community wanted to leave the agricultural and residential to do as they want; all other uses were to be presented to the community for input. The process is working. Buildings would also fall under Appendix A
- Mr. Codner- fits with community

Consideration of SE22-005:

1. In accordance with the comprehensive plan and is consistent with the spirit, purposes, and the intent and specific requirements of this chapter, to include the definition and intent of the district in which the special exception is being requested:
    a. Motion – Mr. Eagar made a motion in the affirmative, seconded by Mr. Decker. A brief discussion followed.
    b. Vote

In-favor	Opposed
5	0

    Mr. Codner noted that the criterion passed.

2. Is in the best interests of the county, the convenience of the community and the public welfare;
    a. Motion – Mr. Eagar made a motion in the affirmative, seconded by Mr. Mays. A brief discussion followed.
    b. Vote

In-favor	Opposed
5	0

    Mr. Codner noted that the criterion passed.

3. Is Suitable in terms of effects on highway traffic, parking and safety with adequate access arrangements to protect streets from undue congestion and hazards.
    a. Motion – Mr. Eagar made a motion; seconded by Mr. Mays. No discussion.

b. Vote

In-favor	Opposed
5	0

Mr. Codner noted that the criterion passed.

4. Mr. Codner asked – Based on the evidence presented to the Board, do I hear a motion that the proposed variance be **Approved.**
    a. Motion – Mr. Eagar made a motion; seconded by Mr. Decker. No discussion.
    b. Vote

In-favor	Opposed
5	0

ITEM 6 - 6. David Sommers of Sommers General Contracting is requesting a Special Exception hearing to build a new 32 bed bunkhouse for volunteers. TMS# 331-00-02-011 with an address of 175 Camp School Ln., Fair Play, SC 29643.
Applicant's opening statement and provision of evidence: Mr. Sommers was not present. Mr. Bill Collins presented in his absence. Rely on volunteers and requesting housing for them. The volunteers allow the camp to function. Previously housed volunteers with churches and other facilities on the parcel. This would be helpful for hosing people on property and make it easier. Mr. Collins discussed the building plans.

Staff comments:
Mr. Coley confirmed this is group housing, and under the group housing ordinance all group housing requires a special exemption.

Board questions:
- Board asked about the program- Mr. Collins described the program.

Public comment:
- None

Applicant rebuttal: NA

Board discussion:
- Mr. Mays- This camp is community minded and part of the community.

Consideration of SE22-005:

1. Is in accordance with the comprehensive plan and consistent with the spirit, purposes, and the intent and specific requirements of this chapter, to include the definition and intent of the district in which the special exception is being requested;
    a. Motion – Mr. Eagar made a motion, seconded by Mr. Mays.

b. Vote

In-favor	Opposed
5	0

Mr. Codner noted that the criterion passed.

2. Is in the best interests of the county, the convenience of the community and the public welfare Motion – Mr. Eagar made a motion in the affirmative, seconded by Mr. Mays. A brief discussion followed.
   a. Vote

In-favor	Opposed
5	0

Mr. Codner noted that the criterion passed.

3. Is suitable for the property in question, and designed, constructed, operated, and maintained so as to be in harmony with and appropriate in appearance to the existing or intended character of the general vicinity;
   a. Motion – Mr. Eagar made a motion in the affirmative, seconded by Mr. Mays. A brief discussion followed.
   b. Vote

In-favor	Opposed
5	0

Mr. Codner noted that the criterion passed.

4. Is suitable in terms of effects on highway traffic, parking and safety with adequate access arrangements to protect streets from undue congestion and hazards.
   a. Motion – Mr. Eagar made a motion in the affirmative; seconded by Mr. Mays. A brief discussion followed.
   b. Vote

In-favor	Opposed
5	0

Mr. Codner noted that the criterion passed.

5. Mr. Codner asked – Based on the evidence presented to the Board, do I hear a motion that the proposed special exception be approved**.**
   a. Motion – Mr. Eagar made a motion; seconded by Mr. Mays. No discussion.
   b. Vote

In-favor	Opposed
5	0

Mr. Codner noted that the criterion passed

Item 7 Adjourn – Mr. Decker made a motion to adjourn; seconded by Mr. Mays. Mr. Codner called for a vote. Motion passed unanimously 5/0.

2) Variance application #VA22-008 – Brooks Engineering Associates – Zachary Wortman is requesting a road variance from the required 150’ tangent between curves. TMS# 056-00-03-022, an unaddressed parcel with the closest address of 15740 N. Hwy 11, Salem, SC 29676.

LAYOUT AND MATERIAL LEGEND

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- EXIST. ADJOINER
- EXIST. STREAM
- EXIST. COUNTY BUFFER
- EXIST. DHEC BUFFER
- EXIST. WETLAND
- EXIST. RIGHT OF WAY
- NEW PROPERTY LINES
- NEW RIGHT OF WAY
- NEW EASEMENT
- BUILDING SETBACK LINE
- P-WE — NEW WATER EASEMENT
- NEW PAVEMENT
- 6inW — NEW WATER DISTRIBUTION MAIN
- FH — NEW FIRE HYDRANT
- COMMON OPEN SPACE

N W E S

0 150 300 450

SCALE: 1"= 150

SITE AND ZONING NOTES

PROPERTY ZONING: CONTROL FREE
PROPERTY SIZE: 138.47 AC.
PROJECT STEEPER THAN 60%: 5.26 AC. (3.8%)
MINIMUM LOT SIZE 0.5 AC. / 21,780 SQ.FT.
SMALLEST PROPOSED LOT: 1.011 AC. / 44,056 SQ.FT.
COMMON OPEN SPACE: 20.70 AC. / 901,636 SQ.FT.
MINIMUM LOT WIDTH: 30' @ R.O.W. (30' REQUIRED)
MAXIMUM BUILDING HEIGHT: 65'
SETBACKS:
FRONT: 25' (REQUIRED)
REAR: 10' (REQUIRED)
SIDE: 5' (REQUIRED)
COUNTY LAKE BUFFER: 25'
SDHEC BUFFER: 35'

PROPOSED LINEAR FEET OF ROAD: 7,526 L.F.

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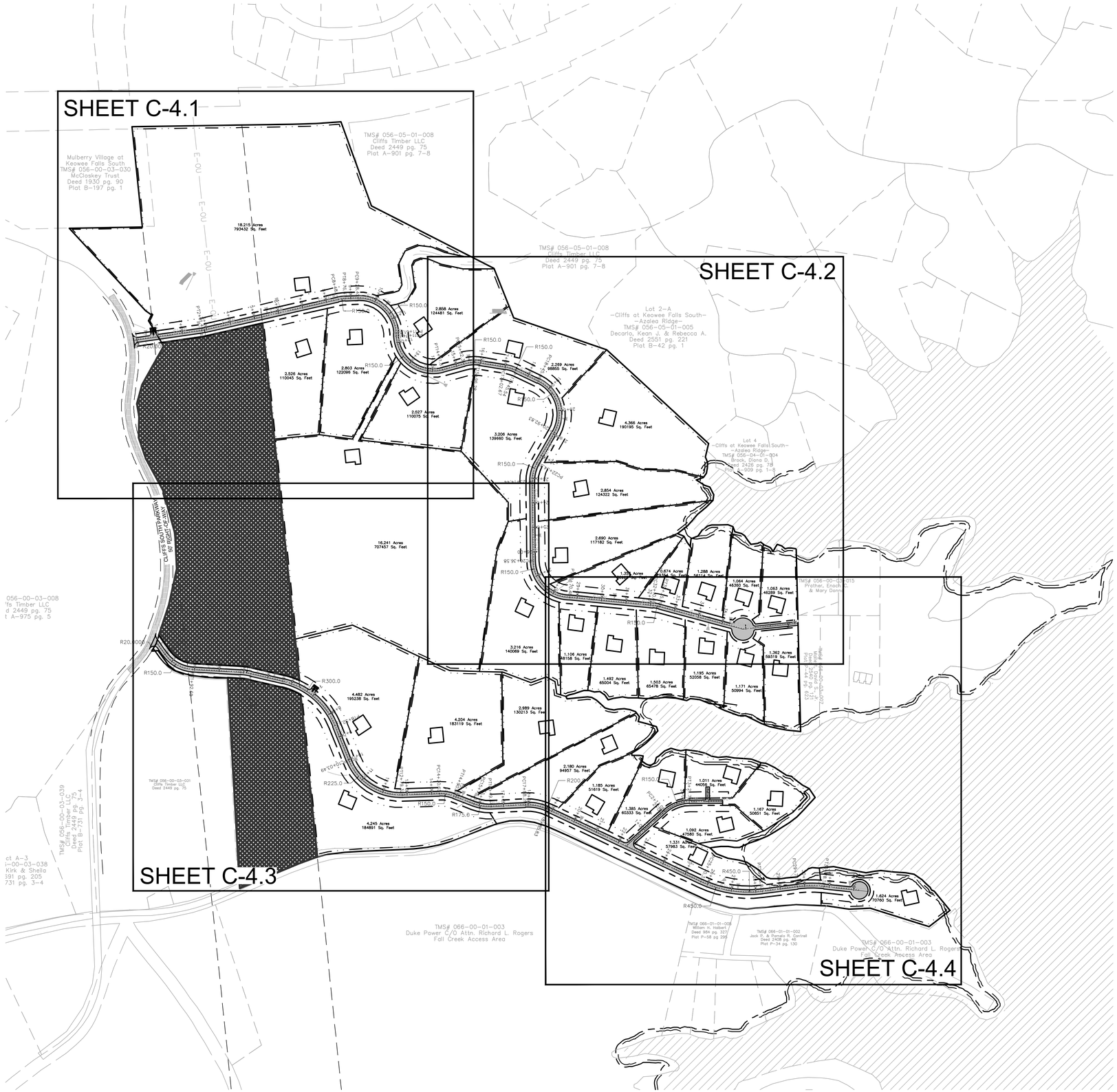
2. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF DETAILS, SPECIFICATIONS, AND OTHER DEVELOPMENT ORDINANCES OF OCONEE CO.
3. ALL SUBDIVISION ROADS WILL BE PRIVATE. MAINTENANCE OF THE ROADS WILL BE THE RESPONSIBILITY OF THE HOME OWNERS ASSOCIATION.

DEVELOPMENT DATA

PROPERTY ADDRESS: SHALLOWFORD ROAD
SALEM, SC 29676
PIN NUMBER: 056-00-03-022
PROPERTY SIZE: 138.47
ZONING REVIEW: OCONEE COUNTY
EROSION CONTROL REVIEW: SCDHEC
STORMWATER REVIEW: SCDHEC
ZONING CLASSIFICATION: CONTROL FREE
PROPOSED NUMBER OF UNITS: 35
PROPOSED DENSITY: 0.25 UNITS/AC.
PROPERTY OWNER: CLIFFS TIMBER LLC
CONTACT: STEWART TATE
ADDRESS: 1400 16TH STREET #320
DENVER, CO 80202
EMAIL: STEWART@SHAWTATE.COM
PHONE: 704-281-0279
DEVELOPER: CLIFFS TIMBER LLC
CONTACT: STEWART TATE
ADDRESS: 1400 16TH STREET #320
DENVER, CO 80202
EMAIL: STEWART@SHAWTATE.COM
PHONE: 704-281-0279
ENGINEER: BROOKS ENGINEERING
CONTACT: MARK BROOKS, PE
ADDRESS: 15 ARLINGTON ST
ASHEVILLE, NC 28801
EMAIL: MBROOKS@BROOKSEA.COM
PHONE: 828-232-4700

1. SEWER WILL BE PROVIDED BY INDIVIDUAL SEPTIC SYSTEMS
2. WATER WILL BE PROVIDED BY THE CITY OF SALEM AS A PUBLIC WATER SYSTEM EXTENSION
3. ALL OTHER UTILITIES TO BE PROVIDED BY LOCAL UTILITY COMPANIES



No.	REVISIONS/SUBMISSIONS	Date
1	SKETCH PLAN TO OCONEE CO.	01-28-2022
2	STORM AND ESC TO SCDHEC	05-13-2022
3	SCDHEC WATER SUBMITTAL	06-14-2022

Revision/Submission number with a triangle indicates changes made on this sheet

NORTH CAROLINA REGISTERED PROFESSIONAL ENGINEER No. 21428 MARK C. BROOKS

BROOKS ENGINEERING ASSOCIATES, PA No. C04882

FINAL DRAWING - FOR REVIEW PURPOSES ONLY

Designed: ZAW
Drawn: ZAW
Checked: JHK
Reviewed: MCB
Scale: AS NOTED
Date: 06-14-2022

15 Arlington Street
Asheville, N.C. 28801
Phone: 1-828-232-4700
Fax: 1-828-232-1331
www.brookssea.com

BROOKS ENGINEERING ASSOCIATES

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CANEBRAKE SUBDIVISION

DEVELOPMENT PLAN

OCONEE COUNTY NORTH CAROLINA

Project No: 566122

C-4.0

Drawing Title: OVERALL SITE PLAN

File Location: L:\2021 Projects\555221 Cliffs Timber_Falls South\Dwg\Civil-Base-PROJECT#.dwg

LAYOUT AND MATERIAL LEGEND

- EXIST. BOUNDARY
- EXIST. ADJOINER
- EXIST. STREAM
- EXIST. COUNTY BUFFER
- EXIST. DHEC BUFFER
- EXIST. WETLAND
- EXIST. RIGHT OF WAY
- NEW PROPERTY LINES
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- P–WE — NEW WATER EASEMENT
- NEW PAVEMENT
- 6inW — NEW WATER DISTRIBUTION MAIN
- FH — NEW FIRE HYDRANT
- COMMON OPEN SPACE

N

W E

S

0 75 150 225

SCALE: 1"= 75

SITE AND ZONING NOTES

PROPERTY ZONING: CONTROL FREE
PROPERTY SIZE: 138.47 AC.
PROJECT STEEPER THAN 60%: 5.26 AC. (3.8%)
MINIMUM LOT SIZE 0.5 AC. / 21,780 SQ.FT.
SMALLEST PROPOSED LOT: 1.011 AC. / 44,056 SQ.FT.
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MINIMUM LOT WIDTH: 30' @ R.O.W. (30' REQUIRED)
MAXIMUM BUILDING HEIGHT: 65'
SETBACKS:
FRONT: 25' (REQUIRED)
REAR: 10' (REQUIRED)
SIDE: 5' (REQUIRED)
COUNTY LAKE BUFFER: 25'
SDHEC BUFFER: 35'

PROPOSED LINEAR FEET OF ROAD: 7,526 L.F.

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SALEM, SC 29676
PIN NUMBER: 056-00-03-022
PROPERTY SIZE: 138.47
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EROSION CONTROL REVIEW: SCDHEC
STORMWATER REVIEW: SCDHEC
ZONING CLASSIFICATION: CONTROL FREE
PROPOSED NUMBER OF UNITS: 35
PROPOSED DENSITY: 0.25 UNITS/AC.
PROPERTY OWNER: CLIFFS TIMBER LLC
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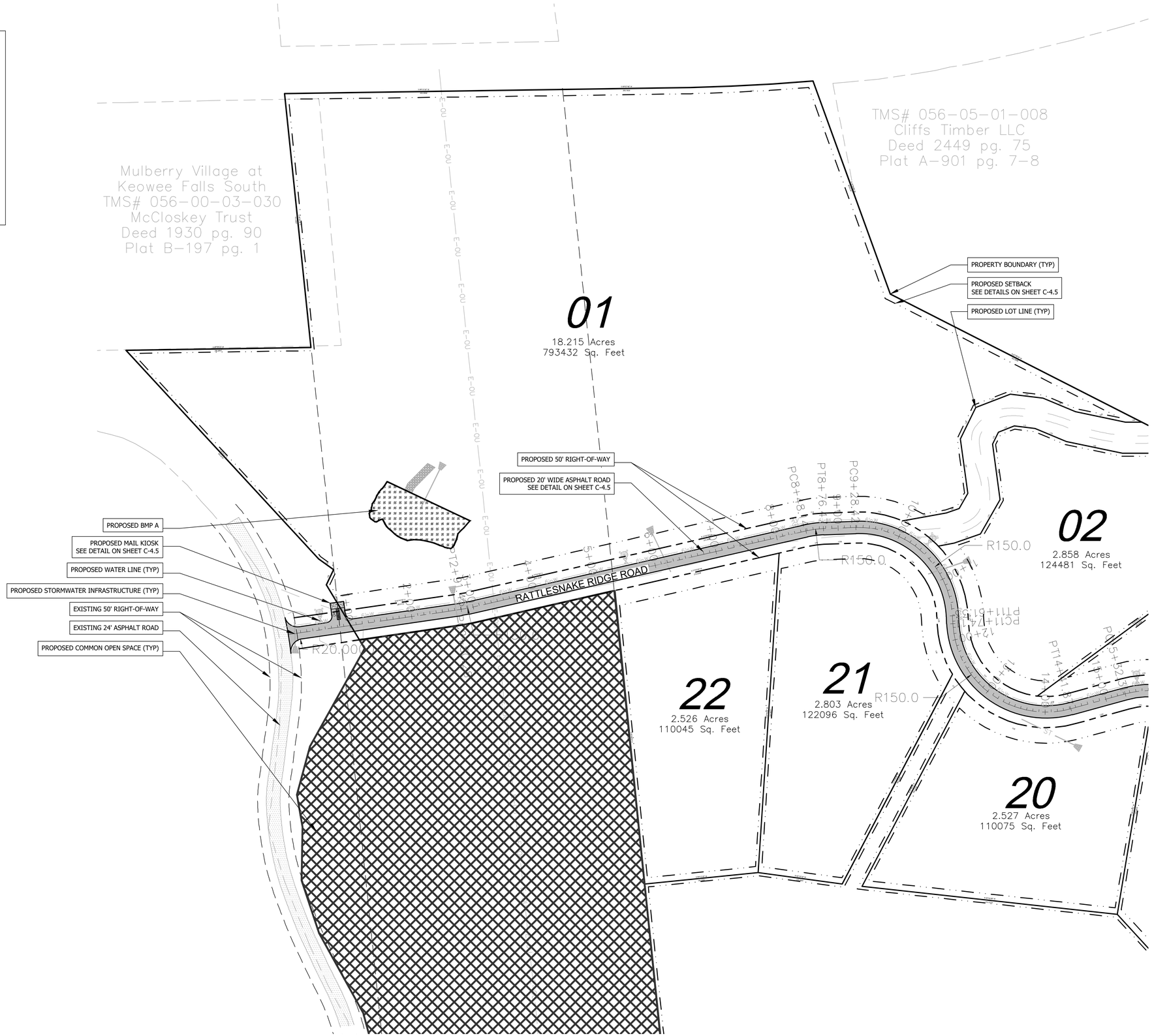

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SOUTH CAROLINA PROFESSIONAL ENGINEER No. 21428 MARK C. BROOKS

BROOKS ENGINEERING ASSOCIATES, PA No. CO4882

FINAL DRAWING - FOR REVIEW PURPOSES ONLY

Reviewed: MCB
Scale: AS NOTED
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Drawn: ZAW
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CANEBRAKE SUBDIVISION
DEVELOPMENT PLAN
OCONEE COUNTY NORTH CAROLINA

Project No: 566122

C-4.1

Drawing Title: SITE PLAN

File Location: L:\2021 Projects\555221 Cliffs Timber_Falls South\Dwg\Civil-Base-PROJECT#.dwg

LAYOUT AND MATERIAL LEGEND

- EXIST. BOUNDARY
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N W E S

0 75 150 225

SCALE: 1"= 75

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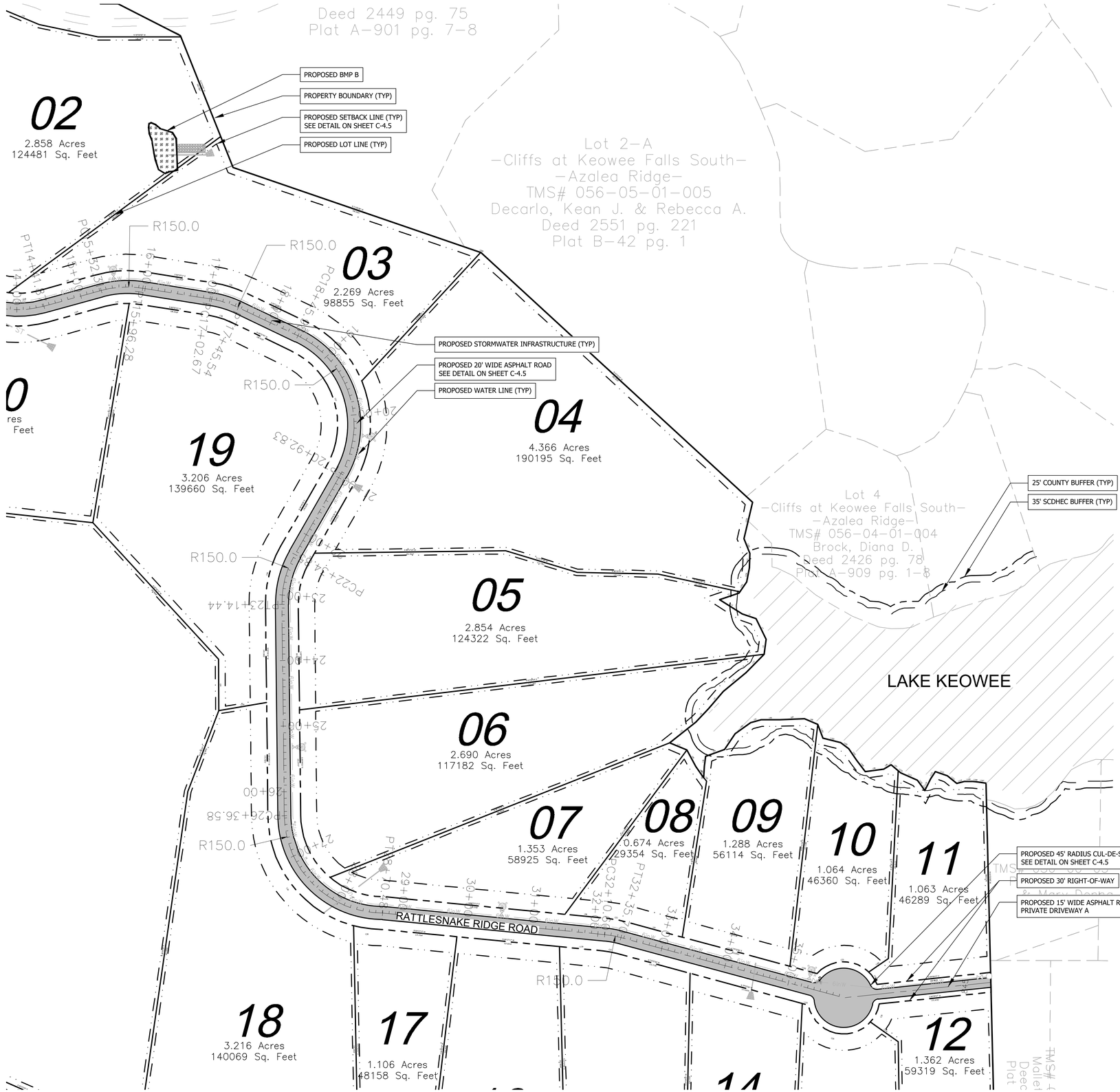

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CANEBRAKE SUBDIVISION
DEVELOPMENT PLAN
OCONEE COUNTY NORTH CAROLINA

Project No: 566122
C-4.2
Drawing Title: SITE PLAN

File Location: L:\2021 Projects\556221 Cliffs Timber_ Falls South\Dwg\Civil-Base-PROJECT#.dwg

LAYOUT AND MATERIAL LEGEND

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- BUILDING SETBACK LINE
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- 6inW — NEW WATER DISTRIBUTION MAIN
- FH — NEW FIRE HYDRANT
- COMMON OPEN SPACE

N W E S

0 75 150 225

SCALE: 1"= 75

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STORMWATER REVIEW: SCDHEC
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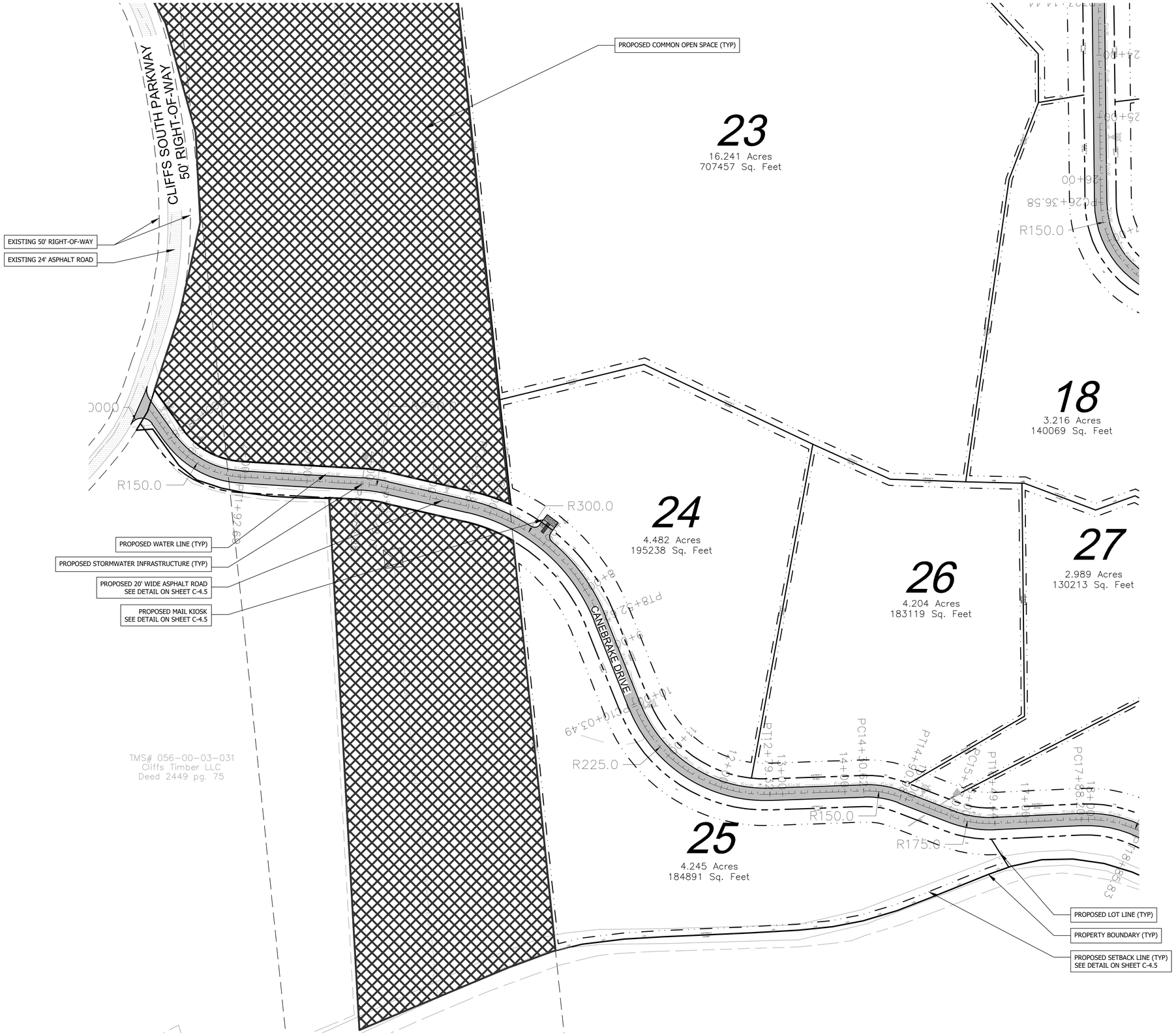
PROPOSED NUMBER OF UNITS: 35
PROPOSED DENSITY: 0.25 UNITS/AC.
PROPERTY OWNER: CLIFFS TIMBER LLC
CONTACT: STEWART TATE
ADDRESS: 1400 16TH STREET #320
DENVER, CO 80202
EMAIL: STEWART@SHAWTATE.COM
PHONE: 704-281-0279
DEVELOPER: CLIFFS TIMBER LLC
CONTACT: STEWART TATE
ADDRESS: 1400 16TH STREET #320
DENVER, CO 80202
EMAIL: STEWART@SHAWTATE.COM
PHONE: 704-281-0279
ENGINEER: BROOKS ENGINEERING
CONTACT: MARK BROOKS, PE
ADDRESS: 15 ARLINGTON ST
ASHEVILLE, NC 28801
EMAIL: MBROOKS@BROOKSEA.COM
PHONE: 828-232-4700

1. SEWER WILL BE PROVIDED BY INDIVIDUAL SEPTIC SYSTEMS
2. WATER WILL BE PROVIDED BY THE CITY OF SALEM AS A PUBLIC WATER SYSTEM EXTENSION.
3. ALL OTHER UTILITIES TO BE PROVIDED BY LOCAL UTILITY COMPANIES



No.	REVISIONS/SUBMISSIONS	Date
1	SKETCH PLAN TO OCONEE CO.	01-28-2022
2	STORM AND ESC TO SCDHEC	05-13-2022
3	SCDHEC WATER SUBMITTAL	06-14-2022

Revision/Submission number with a triangle indicates changes made on this sheet

SOUTH CAROLINA PROFESSIONAL ENGINEER No. 21428 MARK C. BROOKS

BROOKS ENGINEERING ASSOCIATES, PA No. CO4882

FINAL DRAWING - FOR REVIEW PURPOSES ONLY

Designed: ZAW
Drawn: ZAW
Checked: JHK
Reviewed: MCB
Scale: AS NOTED
Date: 06-14-2022

15 Arlington Street
Asheville, N.C. 28801
Phone: 1-828-232-4700
Fax: 1-828-232-1331
www.brooksea.com

BROOKS ENGINEERING ASSOCIATES

Planning • Engineering • Surveying • Environmental Services •

CANEBRAKE SUBDIVISION
DEVELOPMENT PLAN
OCONEE COUNTY NORTH CAROLINA

Project No: 566122
C-4.3
Drawing Title: SITE PLAN

File Location: L:\2021 Projects\555221 Cliffs Timber_Falls South\Dwg\Civil-Base-PROJECT#.dwg

LAYOUT AND MATERIAL LEGEND

- EXIST. BOUNDARY
- EXIST. ADJOINER
- EXIST. STREAM
- EXIST. COUNTY BUFFER
- EXIST. DHEC BUFFER
- EXIST. WETLAND
- EXIST. RIGHT OF WAY
- NEW PROPERTY LINES
- NEW RIGHT OF WAY
- NEW EASEMENT
- BUILDING SETBACK LINE
- P-WE — NEW WATER EASEMENT
- NEW PAVEMENT
- 6inW — NEW WATER DISTRIBUTION MAIN
- FH — NEW FIRE HYDRANT
- COMMON OPEN SPACE

N W E S

0 75 150 225

SCALE: 1"= 75

SITE AND ZONING NOTES

PROPERTY ZONING: CONTROL FREE
PROPERTY SIZE: 138.47 AC.
PROJECT STEEPER THAN 60%: 5.26 AC. (3.8%)
MINIMUM LOT SIZE 0.5 AC. / 21,780 SQ.FT.
SMALLEST PROPOSED LOT: 1.011 AC. / 44,056 SQ.FT.
COMMON OPEN SPACE: 20.70 AC. / 901,636 SQ.FT.
MINIMUM LOT WIDTH: 30' @ R.O.W. (30' REQUIRED)
MAXIMUM BUILDING HEIGHT: 65'
SETBACKS:
FRONT: 25' (REQUIRED)
REAR: 10' (REQUIRED)
SIDE: 5' (REQUIRED)
COUNTY LAKE BUFFER: 25'
SDHEC BUFFER: 35'

PROPOSED LINEAR FEET OF ROAD: 7,526 L.F.

1. ALL DIMENSIONS ARE FROM EDGE OF ASPHALT, FACE OF CURB, FACE OF WALL, OR FACE OF BUILDING UNLESS OTHERWISE NOTED.
2. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF DETAILS, SPECIFICATIONS, AND OTHER DEVELOPMENT ORDINANCES OF OCONEE CO.
3. ALL SUBDIVISION ROADS WILL BE PRIVATE. MAINTENANCE OF THE ROADS WILL BE THE RESPONSIBILITY OF THE HOME OWNERS ASSOCIATION.

DEVELOPMENT DATA

PROPERTY ADDRESS: SHALLOWFORD ROAD
SALEM, SC 29676
PIN NUMBER: 056-00-03-022
PROPERTY SIZE: 138.47
ZONING REVIEW: OCONEE COUNTY
EROSION CONTROL REVIEW: SCDHEC
STORMWATER REVIEW: SCDHEC
ZONING CLASSIFICATION: CONTROL FREE
PROPOSED NUMBER OF UNITS: 35
PROPOSED DENSITY: 0.25 UNITS/AC.
PROPERTY OWNER: CLIFFS TIMBER LLC
CONTACT: STEWART TATE
ADDRESS: 1400 16TH STREET #320
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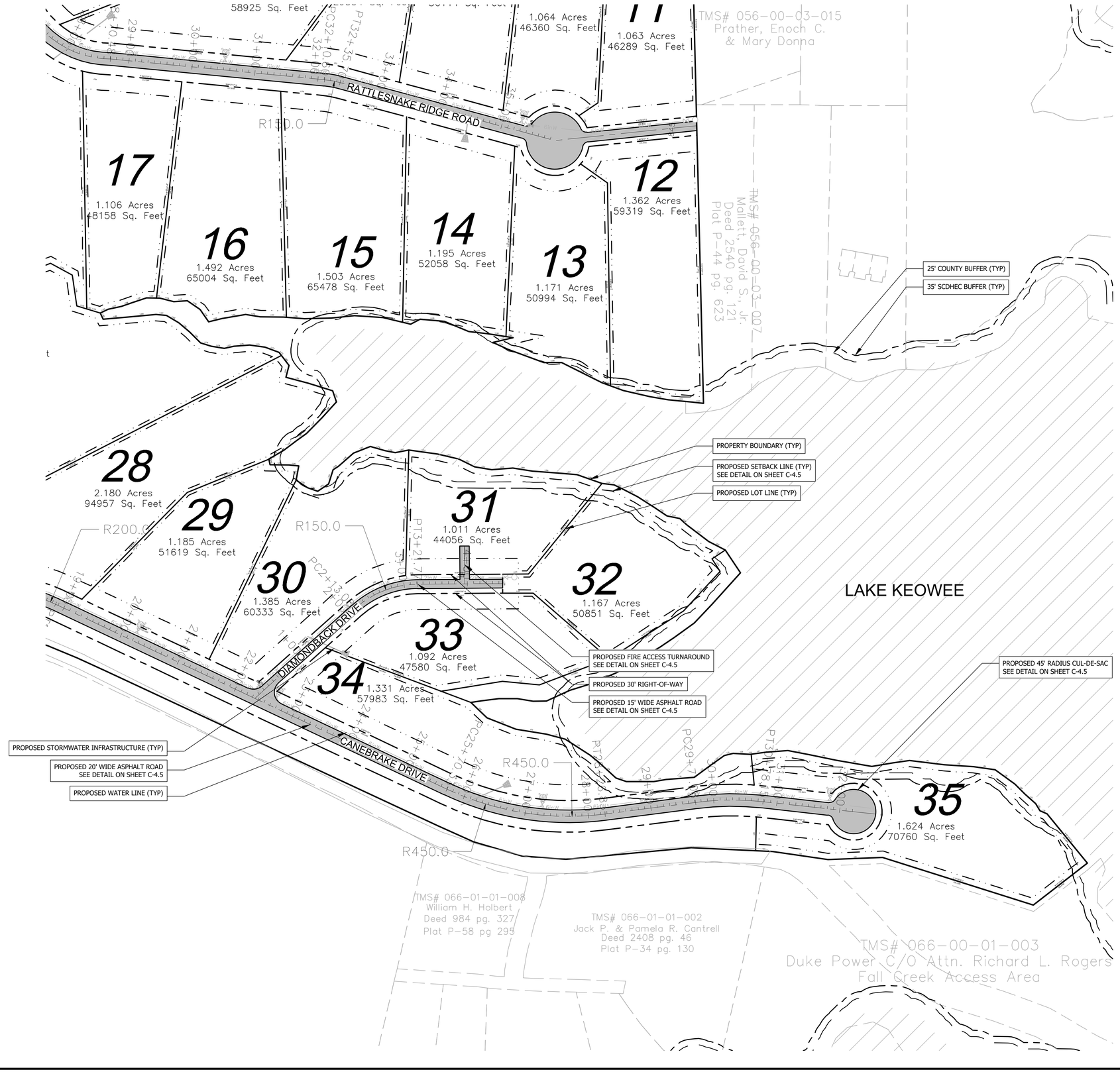

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SOUTH CAROLINA PROFESSIONAL ENGINEER No. 21429 MARK C. BROOKS

BROOKS ENGINEERING ASSOCIATES, PA No. CO4882

FINAL DRAWING - FOR REVIEW PURPOSES ONLY

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Drawn: ZAW
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CANEBRAKE SUBDIVISION
DEVELOPMENT PLAN
OCONEE COUNTY NORTH CAROLINA

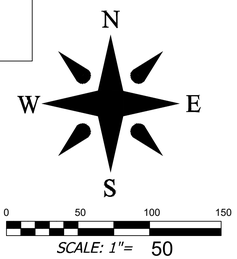
Project No: 566122

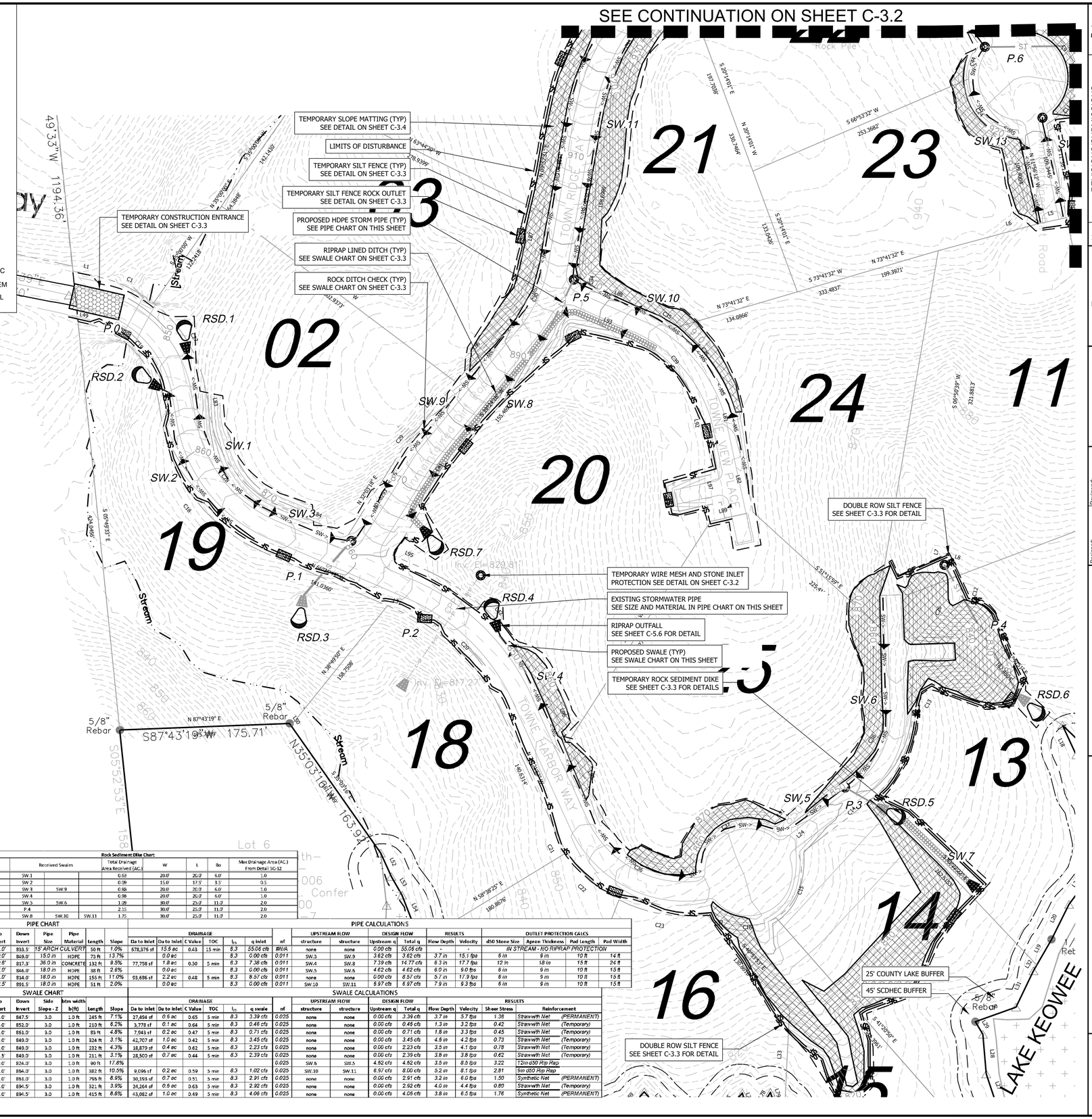
C-4.4

Drawing Title: SITE PLAN

File Location: L:\2021 Projects\555221 Cliffs Timber_Falls South\Dwg\Civil\Base-PROJECT#.dwg

1) Variance application #VA22-006 – Brooks Engineering Associates – Zachary Wortman is requesting a road variance from the required 150’ tangent between curves. TMS# 099-00-02-002, an unaddressed parcel with the closest address of 395 Keowee Town Landing Rd., Salem, SC 29676.





GRADING LEGEND

EXIST. BOUNDARY
EXIST. ADJOINER
EXIST. STREAM
EXIST. STREAM BUFFER
EXIST. WETLAND
EXIST. COUNTY BUFFER
EXIST. DHEC BUFFER
EXIST. STREAM BUFFER
EXIST. RIGHT OF WAY
E–ST EXIST. STORM DRAIN
EXIST. MINOR CONTOUR
EXIST. MAJOR CONTOUR
SF TEMP. SILT FENCE
TEMP. CONSTRUCTION ENTRANCE
LIMITS OF DISTURBANCE
TEMP. REINFORCED STABILIZED OUTLET
PERMANENT SLOPE MATTING
ROCK DITCH CHECK
TEMP. ROCK SEDIMENT DIKE
TEMP. WIRE MESH AND STONE INLET PROTECTION
NEW OUTLET PROTECTION
SWALE W/ TEMPORARY DITCH LINER
SWALE W/ PERMANENT DITCH LINER
RIP RAP LINED DITCH
ST NEW STORM PIPE
NEW MINOR CONTOUR
ELEV NEW MAJOR CONTOUR

DEVELOPMENT DATA

PROPERTY ADDRESS: SHALLOWFORD ROAD
SALEM, SC 29676
PIN NUMBER: 056-00-03-022
PROPERTY SIZE: 138.47
PROJECT SIZE: 63.2AC.
ZONING REVIEW: OCONEE COUNTY
EROSION CONTROL REVIEW: SCDHEC
STORMWATER REVIEW: SCDHEC
ZONING CLASSIFICATION: CONTROL FREE
PROPOSED NUMBER OF UNITS: 35
PROPOSED DENSITY: 0.25 UNITS/AC.
PROPERTY OWNER: CLIFFS TIMBER LLC
CONTACT: STEWART TATE
ADDRESS: 1400 16TH STREET #320
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STORM AND EROSION CONTROL NOTES

1. If necessary, slopes, which exceed eight (8) vertical feet should be stabilized with synthetic or vegetative mats, in addition to hydroseeding. It may be necessary to install temporary slope drains during construction. Temporary berms may be needed until the slope is brought to grade.

2. Stabilization measures shall be initiated as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased, but in no case more than fourteen (14) days after work has ceased, except as stated below.

- Where stabilization by the 14th day is precluded by snow cover or frozen ground conditions stabilization measures must be initiated as soon as practicable.
- Where construction activity on a portion of the Site is temporarily ceased, and earth–disturbing activities will be resumed within 14 days, temporary stabilization measures do not have to be initiated on that portion of the Site.

3. All sediment and erosion control devices shall be inspected once every calendar week. If periodic inspection or other information indicates that a BMP has been inappropriately, or incorrectly, the Permittee must address the necessary replacement or modification required to correct the BMP within 48 hours of identification.

4. Provide silt fence and/or other control devices, as may be required, to control soil erosion during utility construction. All disturbed areas shall be cleaned, graded, and stabilized with grassing immediately after the utility installation. Fill, cover, and temporary seeding at the end of each day are recommended. If water is encountered while trenching, the water should be filtered to remove sediment before being pumped back into any waters of the State.

5. All erosion control devices shall be properly maintained during all phases of construction until the completion of all construction activities and all disturbed areas have been stabilized. Additional control devices may be required during construction in order to control erosion and/or offsite sedimentation. All temporary control devices shall be removed once construction is complete and the site is stabilized.

6. The contractor must take necessary action to minimize the tracking of mud onto paved roadway(s) from construction areas and the generation of dust. The contractor shall daily remove mud/soil from pavement, as may be required.

7. Residential subdivisions require erosion control features for infrastructure as well as for individual lot construction. Individual property owners shall follow these plans during construction or obtain approval of an individual plan in accordance with S.C Reg. 72–300 et seq. and SCR100000.

8. Temporary diversion berms and/or ditches will be provided as needed during construction to protect work areas from upslope runoff and/or to divert sediment–laden water to appropriate traps or stable outlets.

9. All waters of the State (WoS), including wetlands, are to be flagged or otherwise clearly marked in the field. A double row of silt fence is to be installed in all areas where a 50–foot buffer can't be maintained between the disturbed area and all WoS. A 10–foot buffer should be maintained between the last row of silt fence and all WoS.

10. Litter, construction debris, oils, fuels, and building products with significant potential for impact (such as stockpiles of freshly treated lumber) and construction chemicals that could be exposed to storm water must be prevented from becoming a pollutant source in storm water discharges.

11. A copy of the SWPPP, inspections records, and rainfall data must be retained at the construction site or a nearby location easily accessible during normal business hours, from the date of commencement of construction activities to the date that final stabilization is reached.

12. Initiate stabilization measures on any exposed steep slope (3H:1V or greater) where land–disturbing activities have permanently or temporarily ceased, and will not resume for a period of 7 calendar days.

13. Minimize soil compaction and, unless infeasible, preserve topsoil.

14. Minimize the discharge of pollutants from equipment and vehicle washing, wheel wash water, and other wash waters. Wash waters must be treated in a sediment basin or alternative control that provides equivalent or better treatment prior to discharge;

15. Minimize the discharge of pollutants from dewatering of trenches and excavated areas. These discharges are to be routed through appropriate BMPs (sediment basin, filter bag, etc.).

16. The following discharges from sites are prohibited:
    16.1. Wastewater from washout of concrete, unless managed by an appropriate control;
    16.2. Wastewater from washout and cleanout of stucco, paint, form release oils, curing compounds and other construction materials;
    16.3. Fuels, oils, or other pollutants used in vehicle and equipment operation and maintenance; and
    16.4. Soaps or solvents used in vehicle and equipment washing.

17. After construction activities begin, inspections must be conducted at a minimum of at least once every calendar week and must be conducted until final stabilization is reached on all areas of the construction site.

18. If existing BMPs need to be modified or if additional BMPs are necessary to comply with the requirements of this permit and/or SC's Water Quality Standards, implementation must be completed before the next storm event whenever practicable. If implementation before the next storm event is impracticable, the situation must be documented in the SWPPP and alternative BMPs must be implemented as soon as reasonably possible.

19. A Pre–Construction Conference must be held for each construction site with an approved On–Site SWPPP prior to the implementation of construction activities. For non–linear projects that disturb 10 acres or more this conference must be held on–site unless the Department has approved otherwise.

Rock Sediment Dike Chart

Rock Sediment Dike Name	Received Swales			Total Drainage Area Received (AC.)	W	L	Bo	Max Drainage Area (AC.) From Detail SC-12
RSD.1	SW.1			0.63	20.0'	20.0'	6.0'	1.0
RSD.2	SW.2			0.09	15.0'	17.5'	3.5'	0.5
RSD.3	SW.3	SW.9		0.88	20.0'	20.0'	6.0'	1.0
RSD.4	SW.4			0.98	20.0'	20.0'	6.0'	1.0
RSD.5	SW.5	SW.6		1.09	30.0'	25.0'	11.0'	2.0
RSD.6	P.4			2.15	30.0'	25.0'	11.0'	2.0
RSD.7	SW.8	SW.10	SW.11	1.75	30.0'	25.0'	11.0'	2.0

PIPE CHART / **PIPE CALCULATIONS**

							DRAINAGE							UPSTREAM FLOW		DESIGN FLOW		RESULTS		OUTLET PROTECTION CALCS			
Pipe Name	Up Invert	Down Invert	Pipe Size	Pipe Material	Length	Slope	Da to Inlet	Da to Inlet	C Value	TOC	I_{25}	q inlet	nf	structure	structure	Upstream q	Total q	Flow Depth	Velocity	d50 Stone Size	Apron Thickness	Pad Length	Pad Width
P.0 (EX.)	834.0'	833.5'	15' ARCH CULVERT		50 ft	1.0%	678,376 sf	15.6 ac	0.43	15 min	8.3	55.06 cfs	#N/A	none	none	0.00 cfs	55.06 cfs	-	-	IN STREAM - NO RIPRAP PROTECTION			
P.1	859.0'	849.0'	15.0 in	HDPE	73 ft	13.7%		0.0 ac			8.3	0.00 cfs	0.011	SW.3	SW.9	3.62 cfs	3.62 cfs	3.7 in	15.1 fps	6 in	9 in	10 ft	14 ft
P.2 (EX.)	829.8'	817.3'	36.0 in	CONCRETE	132 ft	9.5%	77,758 sf	1.8 ac	0.50	5 min	8.3	7.38 cfs	0.011	SW.4	SW.8	7.39 cfs	14.77 cfs	6.3 in	17.7 fps	12 in	18 in	15 ft	24 ft
P.3	847.0'	846.0'	18.0 in	HDPE	38 ft	2.6%		0.0 ac			8.3	0.00 cfs	0.011	SW.5	SW.6	4.62 cfs	4.62 cfs	6.0 in	9.0 fps	6 in	9 in	10 ft	15 ft
P.4	831.0'	814.0'	18.0 in	HDPE	155 ft	11.0%	93,686 sf	2.2 ac	0.48	5 min	8.3	8.57 cfs	0.011	none	none	0.00 cfs	8.57 cfs	5.7 in	17.9 fps	6 in	9 in	10 ft	15 ft
P.5	892.5'	891.5'	18.0 in	HDPE	51 ft	2.0%		0.0 ac			8.3	0.00 cfs	0.011	SW.10	SW.11	6.97 cfs	6.97 cfs	7.9 in	9.3 fps	6 in	9 in	10 ft	15 ft

SWALE CHART / **SWALE CALCULATIONS**

							DRAINAGE							UPSTREAM FLOW		DESIGN FLOW		RESULTS				
Swale Name	Up Invert	Down Invert	Side Slope - Z	btm width b(ft)	Length	Slope	Da to Inlet	Da to Inlet	C Value	TOC	I_{25}	q swale	nf	structure	structure	Upstream q	Total q	Flow Depth	Velocity	Sheer Stress	Reinforcement	
SW.1	865.0'	847.5'	3.0	1.0 ft	245 ft	7.1%	27,494 sf	0.6 ac	0.65	5 min	8.3	3.39 cfs	0.025	none	none	0.00 cfs	3.39 cfs	3.7 in	5.7 fps	1.38	Strawwith Net	(PERMANENT)
SW.2	865.0'	852.0'	3.0	1.0 ft	210 ft	6.2%	3,778 sf	0.1 ac	0.64	5 min	8.3	0.46 cfs	0.025	none	none	0.00 cfs	0.46 cfs	1.3 in	3.2 fps	0.42	Strawwith Net	(Temporary)
SW.3	865.0'	861.0'	3.0	1.0 ft	83 ft	4.8%	7,943 sf	0.2 ac	0.47	5 min	8.3	0.71 cfs	0.025	none	none	0.00 cfs	0.71 cfs	1.8 in	3.3 fps	0.45	Strawwith Net	(Temporary)
SW.4	859.0'	849.0'	3.0	1.0 ft	324 ft	3.1%	42,707 sf	1.0 ac	0.42	5 min	8.3	3.45 cfs	0.025	none	none	0.00 cfs	3.45 cfs	4.6 in	4.2 fps	0.73	Strawwith Net	(Temporary)
SW.5	859.0'	849.0'	3.0	1.0 ft	232 ft	4.3%	18,879 sf	0.4 ac	0.62	5 min	8.3	2.23 cfs	0.025	none	none	0.00 cfs	2.23 cfs	3.5 in	4.1 fps	0.78	Strawwith Net	(Temporary)
SW.6	855.5'	849.0'	3.0	1.0 ft	211 ft	3.1%	28,500 sf	0.7 ac	0.44	5 min	8.3	2.39 cfs	0.025	none	none	0.00 cfs	2.39 cfs	3.8 in	3.8 fps	0.62	Strawwith Net	(Temporary)
SW.7	840.0'	824.0'	3.0	1.0 ft	90 ft	17.8%							0.025	SW.6	SW.5	4.62 cfs	4.62 cfs	3.5 in	8.5 fps	3.22	12in d50 Rip Rap	
SW.8	904.0'	864.0'	3.0	1.0 ft	382 ft	10.5%	9,096 sf	0.2 ac	0.59	5 min	8.3	1.02 cfs	0.025	SW.10	SW.11	6.97 cfs	8.00 cfs	5.2 in	8.1 fps	2.81	9in d50 Rip Rap	
SW.9	932.0'	861.0'	3.0	1.0 ft	796 ft	8.9%	30,193 sf	0.7 ac	0.51	5 min	8.3	2.91 cfs	0.025	none	none	0.00 cfs	2.91 cfs	3.2 in	6.0 fps	1.50	Synthetic Net	(PERMANENT)
SW.10	907.0'	894.5'	3.0	1.0 ft	321 ft	3.9%	24,264 sf	0.6 ac	0.63	5 min	8.3	2.92 cfs	0.025	none	none	0.00 cfs	2.92 cfs	4.0 in	4.4 fps	0.80	Strawwith Net	(Temporary)
SW.11	931.0'	894.5'	3.0	1.0 ft	415 ft	8.8%	43,082 sf	1.0 ac	0.49	5 min	8.3	4.06 cfs	0.025	none	none	0.00 cfs	4.06 cfs	3.8 in	6.5 fps	1.76	Synthetic Net	(PERMANENT)

No.	REVISIONS/SUBMISSIONS	Date
1	SKETCH PLAN TO OCONEE CO.	01-28-2022
2	OCONEE COUNTY RESUBMISSION	04-19-2022
3	SCDHEC ESC AND STORM SUBMITTAL	04-19-2022

Revision/Submission number with a triangle indicates changes made on this sheet

Mark Brooks
4/19/22
SEAL 21425

BROOKS ENGINEERING ASSOCIATES, PA
No. CO4882

FINAL DRAWING - FOR REVIEW PURPOSES ONLY

Designed: ZAW	Reviewed: MCB
Drawn: ZAW	Scale: AS NOTED
Checked: JHK	Date: 04-19-2022

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Asheville, N.C. 28801
Phone: 1-828-232-4700
Fax: 1-828-232-1331
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• Environmental Services •

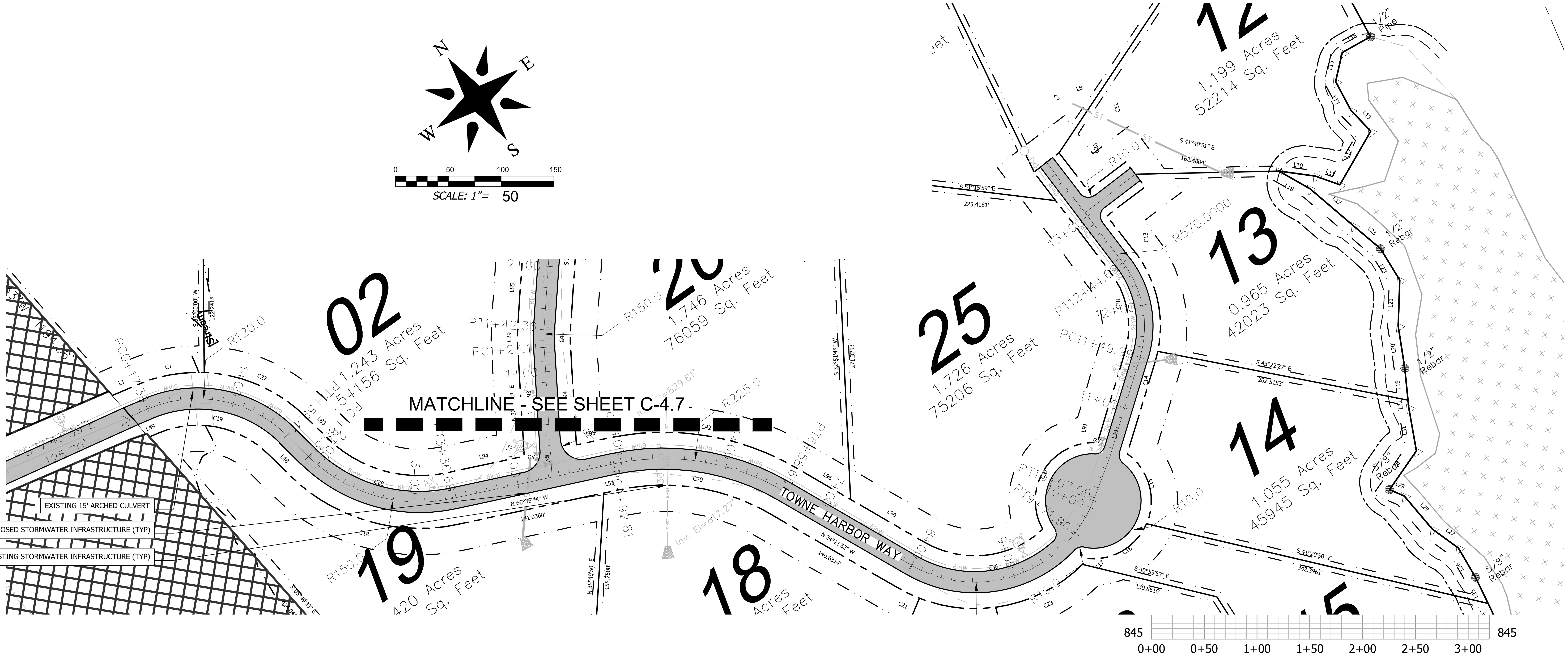
CANEBREAK SUBDIVISION
DEVELOPMENT PLAN
OCONEE COUNTY
NORTH CAROLINA

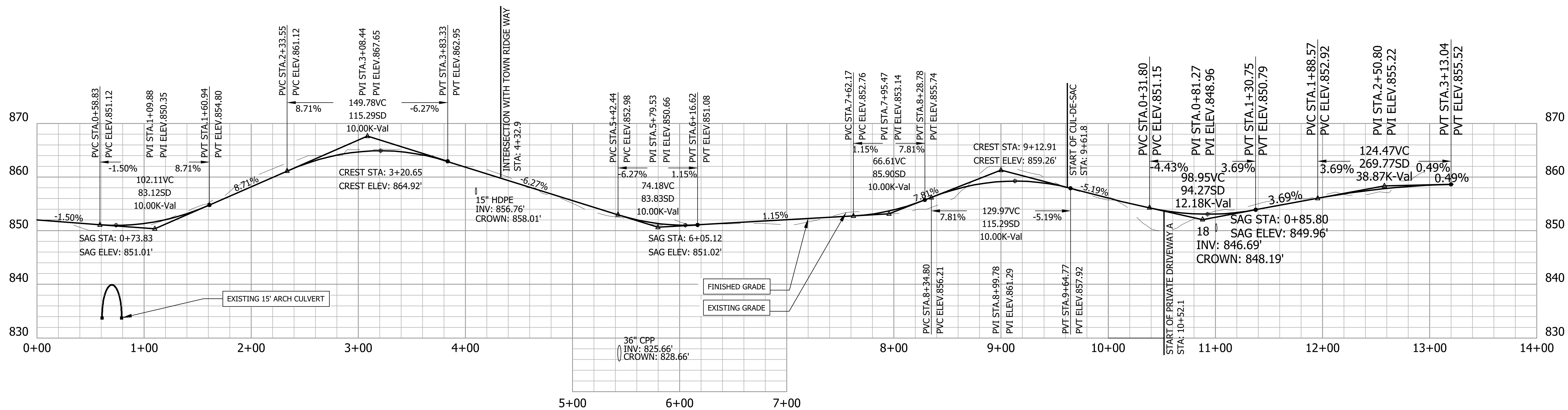
Project No: 555221

C-3.1

Drawing Title:
EROSION AND SEDIMENT CONTROL PLAN

File Location: L:\2022 Projects\560922 Cliffs Timber_Lake Keowee Marina\Dwg\Civil-Base-PROJECT#.dwg





TOWNE HARBOR WAY PROFILE

No.	REVISIONS/SUBMISSIONS	Date
1	SKETCH PLAN TO OCONEE CO.	01-28-2022
2	OCONEE COUNTY RESUBMISSION	04-19-2022
3	SCDHEC ESC AND STORM SUBMITTAL	04-19-2022

Revision/Submission number with a triangle indicates changes made on this sheet

FINAL DRAWING - FOR REVIEW PURPOSES ONLY

BROOKS ENGINEERING ASSOCIATES, PA No. CO4882

Designed:	Drawn:	Checked:	Reviewed:	Scale:	Date:
ZAW	ZAW	JHK	MCB	AS NOTED	04-19-2022

15 Arlington Street
Asheville, N.C. 28801
Phone: 1-828-232-4700
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BROOKS ENGINEERING ASSOCIATES

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CANEBREAK SUBDIVISION

DEVELOPMENT PLAN

OCONEE COUNTY NORTH CAROLINA

Project No: 555221

C-4.6

Drawing Title: ROAD PLAN AND PROFILE

6. Special Exception application #SE22-006 – HSB, PA – Sarah Spruill is requesting a special exception hearing for a Communications Tower. TMS# 016-00-001-001 with an address of 100 Bad Creek Road, Salem, SC 92676.

Special Exceptions

"A special exception use is one which is not permitted by right, but which may be permitted after a public hearing by the board of zoning appeals and all conditions stated in this chapter are met. The zoning chapter lists, by zoning district, those uses that may be allowed by right or by special exception. Uses that are included or fit the intent of these lists will be considered in each zoning district. Chapter 38-212 of the Oconee County Code of Ordinances.

See the Oconee County Code of Ordinances for a comprehensive list of uses that require a special exception hearing.

Requesting a special exception requires a public hearing, through the Board of Zoning Appeals. These hearings are generally held once per month on the fourth Monday. During this hearing the applicant, or their assignee, may speak to the Board regarding their request. Neighbors and citizens are given an opportunity to speak in-favor, or against, the special exception. The public is notified about the request in following ways:

1.Signs or signage on ,adjacent and near the property that the special exception is being requested for.

2. A direct mailing to all property owners within a 250' radius of the property that the special exception is being requested for.

3. An advertisement in a newspaper at least 21 calendar days before the meeting.

The language from the Code of Ordinances regarding Special Exceptions is as follows:

Sec. 38-7.2. - Special exceptions. The board of zoning appeals may grant a special exception only if it finds adequate evidence that any proposed development will meet all of the following general requirements as well as any specific

requirements and standards listed for the proposed use. The board of zoning appeals shall among other things require that any proposed use and location be:

(1)In accordance with the comprehensive plan and is consistent with the spirit, purposes, and the intent and specific requirements of this chapter, to include the definition and intent of the district in which the special exception is being requested;

(2) In the best interests of the county, the convenience of the community and the public welfare;

(3) Suitable for the property in question, and designed, constructed, operated, and maintained so as to be in harmony with and appropriate in appearance to the existing or intended character of the general vicinity;

(4) Suitable in terms of effects on highway traffic, parking and safety with adequate access arrangements to protect streets from undue congestion and hazards.

The developer shall have the burden of providing evidence to the county of compliance with the general requirements of this chapter and the specific requirements of the applicable section. The board of zoning appeals may impose whatever reasonable conditions it deems necessary to ensure that any proposed development will comply substantially with the objectives in this chapter

This document is for informational purposes only and does not supersede or supplant any information within the current code of ordinances. Speak with the Planning & Zoning department for the most accurate information.

Printed August 2018

OCONEE COUNTY BOARD OF ZONING APPEALS

415 South Pine Street –Walhalla, SC **Tel: (864)638-4218 FAX (864) 638-4168**

APPLICATION FOR SPECIAL EXCEPTION

OCONEE COUNTY, SC

APPLICANT: Ronald Howell, Manager Land - Services Duke Energy Carolinas, LLC
Name Title/Organization

MAILING ADDRESS:
(if different from owner)

PHONE (if different from owner): cell: (205) 915-9765

email: Ronald.howell@duke-energy.com

land line: (205) 915-9765

PROPERY OWNER

MAILING ADDRESS: 4720 Piedmont Row Drive, Charlotte, NC 28210

PHONE: cell: (205) 915-9765 email: Ronald.howell@duke-energy.com

land line: (205) 915-9765

PROPERTY INFORMATION

STREET ADDRESS: 100 Bad Creek Road, Salem, SC 29676

TAX PARCEL # 016-00-01-001 DEED BOOK/PAGE: 14-L/221

ZONING DESIGNATION: CFD ACREAGE: 1859

REQUEST

CODE SECTION FROM WHICH A SPECIAL EXCEPTION IS REQUESTED: 32-133

DESCRIPTION OF REQUEST:

Applicant seeks a special exemption to construct a new tower on the above parcel as shown in the attached plans. In addition to the special exception, Applicant also seeks a variance with respect to the height of the tower and the proposed fall zone.

Instructions:

1. **The applicant/owner must respond to the "findings" questions on page 3 of this application (you must answer "why" you believe the application meets the tests for the granting of a Special Exception). See also Section 38-7.2 for additional information. You may attach a separate sheet addressing these questions.**

2 . **You must attach a scaled drawing of the property that reflects, at a minimum, the following:**

(a) property lines, existing buildings, and other relevant site improvements; (b) the nature (and dimensions) of the requested variance; (c) existing buildings and other relevant improvements on adjacent properties; and, (d) topographic, natural features, etc. relevant to the requested variance.

3. **Include additional documentation to support the request as necessary.**

4. **The Zoning Administrator will review the application for sufficiency prior to placing the application on the BZA agenda. If the application does not provide sufficient information, the administrator will contact the applicant to request that the applicant provide the required information. You are encouraged to schedule an application conference with a planner, who will review your application at the time it is submitted to insure the necessary materials is provided.**

5. **The applicant and/or property owner affirms that the applicant or someone acting on the applicant's behalf has made a reasonable effort to determine whether a deed or other document places one or more restrictions on the property that preclude or impede the intended use and has found no record of such a restriction.**

If the Community Development office by separate inquiry determines that such a restriction exists, it shall notify the applicant. If the applicant does not withdraw or modify the application in a timely manner, or at to have the restriction terminated or waived, then the Community Development office will indicate in its report to the Board of Zoning Appeals that granting the requested change would not likely result in the benefit the applicant seeks.

To that end, the applicant hereby affirms that the tract or parcel of land which is subject of the attached application is not restricted by any recorded Covenant that is contrary to, conflicts with, or prohibits the requested activity.

_____ **Applicant Signature**

6-15-2022 **Date**

_____ **Property Owner Signature**

6-15-2022 **Date**

APPLICANT RESPONSES TO
SECTION 38-7.2
(You may attach a separate sheet)

1. The request is in accordance with the comprehensive plan and is consistent with the spirit, purposes, and the intent and specific requirements of this chapter, to include the definition and intent of the district in which the special exception is being requested.

See attached.

2. The request is in the best interests of the county, the convenience of the community and the public welfare.

See attached.

3. The request is suitable for the property in question, and designed, constructed, operated, and maintained so as to be in harmony with and appropriate in appearance to the existing or intended character of the general vicinity.

See attached.

4. The request is suitable in terms of effects on highway traffic, parking and safety with adequate access arrangements to protect streets from undue congestion and hazards.

See attached.

Response to Section 38-7.2.

1. The request is in accordance with the comprehensive plan and is consistent with the spirit, purposes, and the intent and specific requirements of this chapter, to include the definition and intent of the district in which the special exception is being requested.

The proposed tower is located on an 1800+ acre parcel in the far northern part of the County that is zoned a control free district (CFD). With respect to the County's Comprehensive Plan, the parcel is shown as "Utility" on the Existing Land Use Map (Map 11-1), and as "Rural/Agricultural" on the Future Land Use Map (Map 11-2). The Future Land Use Map does not include a separate utility category.

The parcel is also the site of the Bad Creek Reservoir and the Bad Creek Hydro Station. The adjoining Oconee County parcels in the area of the proposed tower are owned by the U.S. Forest Service (TMS 009-00-01-001) and Duke Ventures Real Estate, LLC (TMS 016-00-01-013).

Per Section 38-10.2 of the Oconee County Zoning Ordinance, "[t]he control free district is intended to be the initial zoning district for all parcels within the jurisdiction at the time of initial adoption of zoning in Oconee County, only; any parcel subsequently rezoned to any other district shall not be a part of the control free district at any future date." This district does not impose any use restrictions and includes only limited setback and height requirements.

Applicant seeks a special exception and a variance as to the maximum height requirements in order to construct the proposed tower. This is consistent with and in furtherance of the longstanding use of the parcel incident to the provision of electric power. The Applicant's existing tower is functionally and structurally deficient and cannot be modified in strength or height to meet the Applicant's needs. At this time, it is the only tower located in the service area providing a critical connection to the Bad Creek Hydro Power Plant.

Other commercially available towers are too far from the Applicant's existing network infrastructure and too short to allow for the connection of a commercial site to the Applicant's other sites in the area. Stealth towers, typically modified mono-poles, are limited in their height, load carrying capacity, and the technology that can be mounted on them and still be stealthy. The Applicant needs a tower that is able to carry heavy loading and exceeding the height of a stealth tower. In addition, the tower will include microwave antennas that cannot be behind stealth cladding or features. For all of these reasons, the proposed tower is the best solution to address the Applicant's needs in a prudent and cost-effective manner. There is not a technically feasible or cost-effective alternative.

The proposed tower does not change the use of the property, but rather is in furtherance of the long-term existing use. As such, the Applicant believes this proposal is consistent with the spirit of the zoning ordinance and comprehensive plan.

2. The request is in the best interests of the county, the convenience of the community and the public welfare.

See discussion above. The proposed tower is in a rural area and will have minimal visual impact on any Oconee County resident. With respect to the convenience of the community and the public welfare, the proposed tower is critical to the Applicant and its ability to safely operate its electric generation, transmission, and distribution business.

The new tower will be an important part of the Applicant's day-to-day operations and is part of the fundamental physical infrastructure required to support its SmartGrid, Bad Creek communications, and other Operational Technologies. The taller tower will enable the Applicant to make use of a Land Mobile Radio system, which its first responders will use to help make repairs to critical infrastructure when restoring service to customers. In the Applicant's storm response plan, the Land Mobile Radio system provides a reliable way for employees to communicate during the power-restoration process. The addition of this state-of-the-art communication system supports improved customer restoration times and increased operational reliability, and provides greater safety to the Applicant's employees as they work to maintain power and safe operations in Oconee County.

The tower will also improve communications to area substations and other power grid assets. The microwave system provides backhaul for Land Mobile Radio sites and connects the site to the Applicant's private network.

In addition to the improved communications capacity for the Applicant, this tower will support AT&T's FirstNet emergency response network and improve regular cellular communications. Additional information about FirstNet is attached in Appendix A.

3. The request is suitable for the property in question, and designed, constructed, operated, and maintained so as to be in harmony with and appropriate in appearance to the existing or intended character of the general vicinity.

See attached site plans. The area is shown on the below snip from the County's GIS maps:

As shown there, the proposed tower is in an undeveloped area. The Applicant has worked diligently to make sure that the proposed tower is suitable for the property in question, that it is designed, constructed, operated, and maintained so as to be in harmony with and appropriate in appearance to the existing or intended character of the general vicinity, and that the tower is positioned to maximize function while minimizing any burden or disruption to Oconee County and its residents. The Applicant has a long history in Oconee County and looks forward to extending that partnership for generations to come. The proposed tower is crucial to continuing that relationship and to Duke Energy's commitment to providing electric power safely and efficiently in Oconee County and across its system.

4. The request is suitable in terms of effects on highway traffic, parking and safety with adequate access arrangements to protect streets from undue congestion and hazards.

The new tower will be designed, in the unlikely event of failure, to fall on the Applicant's property and not any public road, per the accompanying "fall letter" included with this package. **Attached as Exhibit 1**. As such, there will be no discernable effect on highway traffic, parking, or safety.

Attachments per Section 32-138.

1. Structural Specifications. **Attached as Exhibit 2**. Two physical copies delivered with package.

2. Technical Specifications. **Attached as Exhibit 3 and Exhibit 4**.
    a. Manufacturer and model number. **See Exhibit 4 at 10-11.**
    b. Frequency band used for transmitting and receiving. **See Exhibit 4 at 10-11.**
    c. Effective radiating power. **See Exhibit 4 at 10-11.**
    d. Mounting position above ground. **See Exhibit 3.**
    e. A study demonstrating compliance with FCC RF exposure limits (all antennas). **See Exhibit 4.**

3. Site Plan. **Attached as Exhibit 5.** Two physical copies delivered with package.

4. Location Map. **Attached as Exhibit 6.** Two physical copies delivered with package.

5. Owner Authorization. Site is owned by the Applicant, Duke Energy Carolinas, LLC. In signing the application, the Applicant provides its written authorization for the application.

6. Visual Impact Analysis.

    Balloon testing was conducted over a cumulative 24 hours on May 11, May 12, and May 17, 2022 using a 4-foot diameter yellow balloon at the height of the proposed tower in the proposed tower location. **Affidavit and Photographs attached as Exhibit 7.** The Applicant received only one inquiry during the balloon testing (business card attached as part of **Exhibit 7**).

7. Alternative to co-location or stealth design. Co-located or stealth designs shall be required unless satisfactory documented evidence can be provided indicating that: (1)The proposed antenna and equipment cannot be accommodated and function as required; (2)The applicant's technical design requirements are such that without unreasonable modifications they cannot function on any existing structure or communication tower under the control of applicant; and (3)The applicant has considered all available publicly-owned sites, and available privately owned sites occupied by a compatible use, including all applicable sites or locations or a combination of sites and locations as described under section 32-133(b) for priority of approval and the applicant has demonstrated that for the reasons described in section 32-133(b) that these sites and/or locations are unsuitable for operation of the facility under applicable state and federal communications regulations, the applicant's technical design requirements and/or valid economic reasons.

    The Applicant certifies that all of the above criteria have been met. As shown by a review of the site plan and a survey of existing towers:

a. All other commercially available towers are too far from the Applicant's existing network infrastructure and too short to allow for the connection of a commercial site to the Applicant's other sites in the area.
b. Stealth towers, typically modified mono-poles, are limited in their height, load carrying capacity, and the technology that can be mounted on them and still be stealthy. The Applicant needs a tower well beyond the height of a stealth tower that is able to carry heavy loading. In addition, the tower will include microwave antennas that cannot be behind stealth cladding or features.

8. Indemnity.
    a. Engineer's statement that the proposed tower will contain only equipment meeting FCC rules. **Attached as Exhibit 8.**
    b. Indemnification Agreement. **Attached as Exhibit 9.**
    c. Proof of Insurance. **Attached as Exhibit 10.**

9. Application fee. Submitted with Application.

Sabre Industries™
INNOVATION DELIVERED

April 19, 2022

Elizabeth Van Egmond
Duke Energy Corporation
5535 Business Parkway
Theodor, AL 36582

RE: Proposed 360' Self-Supporting Tower for Bad Creek (BDC), SC

Dear Elizabeth,

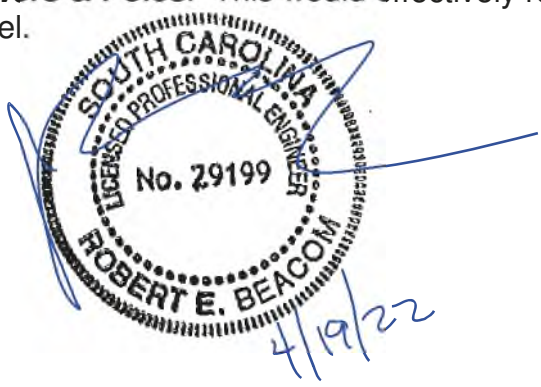
Upon receipt of order, we propose to design and supply the above referenced tower for a Basic Wind Speed of 114 mph with no ice and 30 mph with 1.5" radial ice, Risk Category III, Exposure Category C, and Topographic Category 1, in accordance with the Telecommunications Industry Association Standard ANSI/TIA-222-H, "Structural Standard for Antenna Supporting Structures and Antennas".

When designed according to this standard, the wind pressures and steel strength capacities include several safety factors, resulting in an overall minimum safety factor of 25%. Therefore, it is highly unlikely that the tower will fail structurally in a wind event where the design wind speed is exceeded within the range of the built-in safety factors.

Should the wind speed increase beyond the capacity of the built-in safety factors, to the point of failure of one or more structural elements, the most likely location of the failure would be within one or more of the tower members in the upper portion. This would result in a buckling failure mode, where the loaded member would bend beyond its elastic limit (beyond the point where the member would return to its original shape upon removal of the wind load).

Therefore, it is likely that the overall effect of such an extreme wind event would be localized buckling of a tower section. Assuming that the wind pressure profile is similar to that used to design the tower, the tower is most likely to buckle at the location of the highest combined stress ratio in the upper portion of the tower. This would result in the portion of the tower above the failure location "folding over" onto the portion of the tower below the failure location. ***Please note that this letter only applies to the above referenced tower designed and manufactured by Sabre Towers & Poles***. This would effectively result in a fall radius within the leased area at ground level.

Sincerely,



Robert E. Beacom, P.E., S.E.
Engineering Manager

Sabre Industries™
INNOVATION DELIVERED

Structural Design Report

360' S3R Series SD Self-Supporting Tower
Site: Bad Creek (BDC), SC
Site Number: (BDC)

Prepared for: DUKE ENERGY CORPORATION
by: Sabre Industries ™

Job Number: 22-0885-JDS-R1
Revision A

December 22, 2021

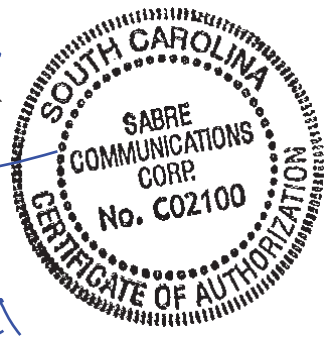
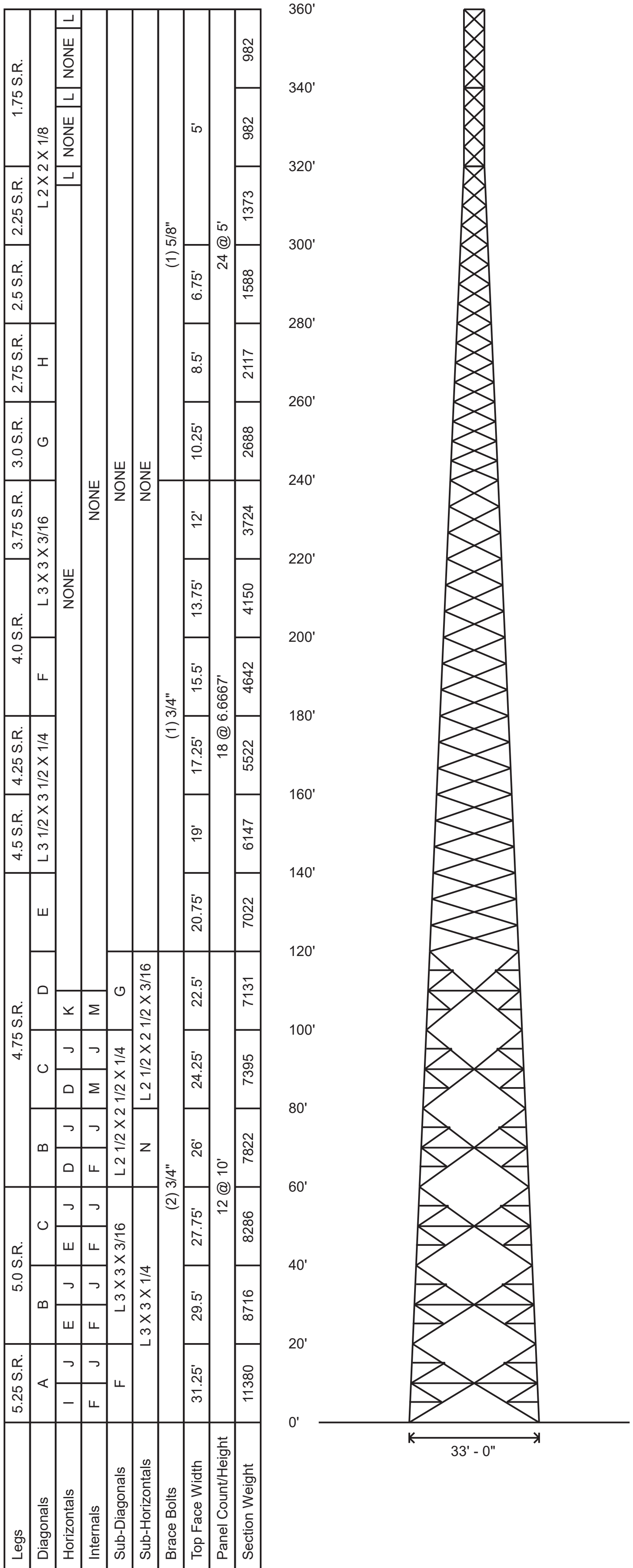


Exhibit 2



Design Criteria - ANSI/TIA-222-H

Wind Speed (No Ice)	114 mph
Wind Speed (Ice)	30 mph
Design Ice Thickness	1.50 in
Risk Category	III
Exposure Category	C
Topographic Factor Procedure	Method 1 (Simplified)
Topographic Category	1
Ground Elevation	2591 ft
Seismic Importance Factor, Ie	1.25
0.2-sec Spectral Response, Ss	0.389 g
1-sec Spectral Response, S1	0.104 g
Site Class	E
Seismic Design Category	D
Basic Seismic Force-Resisting System	Telecommunication Tower (Truss: Steel)

Base Reactions - Wind/Ice

Total Foundation		Individual Footing	
Shear (kips)	120.74	Shear (kips)	72.14
Axial (kips)	356.26	Compression (kips)	805
Moment (ft-kips)	21776	Uplift (kips)	686

Base Reactions - Seismic

Total Foundation		Individual Footing	
Shear (kips)	8.59	Shear (kips)	7.86
Axial (kips)	157.29	Compression (kips)	123
Moment (ft-kips)	2019	Uplift (kips)	39

Notes

1) All legs are A572 Grade 50.
2) All braces are A572 Grade 50.
3) All brace bolts are A325-X.
4) The tower model is S3R Series SD.
5) Transmission lines are to be attached to 15 hole waveguide ladders with 3ft rung spacing.
6) Azimuths are relative (not based on true north).
7) Foundation loads shown are maximums.
8) All unequal angles are oriented with the short leg vertical.
9) Weights shown are estimates. Final weights may vary.
10) Tower Rating: 98.67%
11) This tower design and, if applicable, the foundation design(s) shown on the following page(s) also meet or exceed the requirements of the 2018 International Building Code.

Sabre Industries
7101 Southbridge Drive
P.O. Box 658
Sioux City, IA 51102-0658
Phone: (712) 258-6690
Fax: (712) 279-0814

Job:	**22-0885-JDS-R1-RA**
Customer:	DUKE ENERGY CORPORATION
Site Name:	Bad Creek (BDC), SC (BDC)
Description:	360' S3R
Date:	12/22/2021 By: REB

Designed Appurtenance Loading

Elev	Description	Tx-Line
360	Lightning Rod	(3) 3/8"
360	Lights	(1) 1"
348.4	(1) DS8A09F36U-D	
345.67	(1) SC251-HF3LDF(D00-G3)	
345.36	(1) SC329-HF2LDF(D00-G06)	
340	6ft Sidearm	
340	6ft Sidearm	
340	6ft Sidearm	
340	Adder for HD Side Arm	
340		(1) 7/8"
340		(1) 1 5/8"
340		(1) 7/8"
340	(1) DS7TMA17C Compact TTA	(1) 1/2"
335	(4) 3ft Sidearms	
335	(4) PMP 450	(4) Cat 5
318.4	(1) DS8A09F36U-D	
315.67	(1) SC251-HF3LDF(D00-G3)	
315.36	(1) SC329-HF2LDF(D00-G06)	
310	6ft Sidearm	
310	6ft Sidearm	
310	6ft Sidearm	
310	Adder for HD Side Arm	
310		(1) 1 5/8"

Elev	Description	Tx-Line
310		(1) 1 5/8"
310		(1) 7/8"
290		(2) 1/2"
290	(1) 30,000 sq. in. antenna loading (below top)	(5) 1"
275		(2) 1/2"
275	(1) 30,000 sq. in. antenna loading (below top)	(5) 1"
260		(2) 1/2"
260	(1) 30,000 sq. in. antenna loading (below top)	(5) 1"
245		(2) 1/2"
245	(1) 30,000 sq. in. antenna loading (below top)	(5) 1"
235	(2) Leg Dish Mount	
235	Leg Dish Mount	
235	(1) SB4-W100AB	(2) EW90
235	(2) PADX6-W57AC w/Radome	(4) EW63
190	Leg Dish Mount	
190	(1) SB6-W100AD2	(2) EW90
175	Mid-Lights	
160.63	(1) DB224A	
150	6ft Sidearm	
150		(1) 7/8"
75	(2) Leg Dish Mount	
75	(2) PADX6-W57AC w/Radome	(4) EW63

Material List

Display	Value
A	L 6 X 4 X 3/8
B	L 5 X 3 1/2 X 1/4
C	L 4 X 3 1/2 X 1/4
D	L 3 1/2 X 3 1/2 X 1/4
E	L 4 X 4 X 1/4
F	L 3 X 3 X 1/4
G	L 2 1/2 X 2 1/2 X 3/16

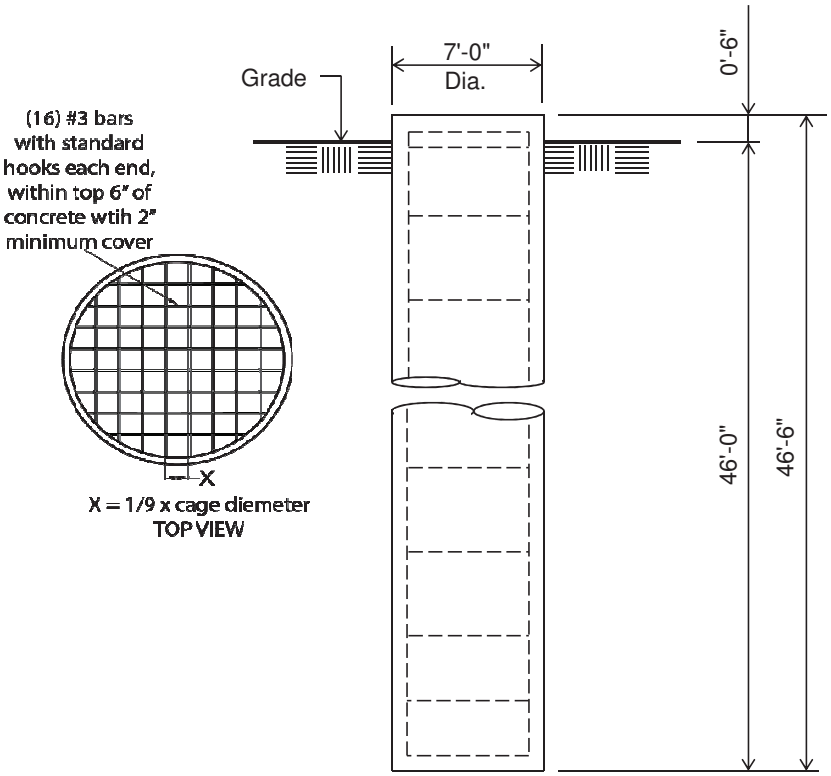
Display	Value
H	L 2 X 2 X 3/16
I	L 4 X 4 X 5/16
J	NONE
K	L 3 X 3 X 5/16
L	L 2 X 2 X 1/8
M	L 3 X 3 X 3/16
N	L 2 1/2 X 2 1/2 X 1/4

Sabre Industries
INNOVATION DELIVERED
Sabre Industries
7101 Southbridge Drive
P.O. Box 658
Sioux City, IA 51102-0658
Phone: (712) 258-6690
Fax: (712) 279-0814

Job:	**22-0885-JDS-R1-RA**
Customer:	DUKE ENERGY CORPORATION
Site Name:	Bad Creek (BDC), SC (BDC)
Description:	360' S3R
Date:	12/22/2021 By: REB

No.: 22-0885-JDS-R1
Date: 12/22/2021
By: REB
Revision A

Customer: DUKE ENERGY CORPORATION
Site: Bad Creek (BDC), SC (BDC)
360 ft. Model S3R Series SD Self Supporting Tower



ELEVATION VIEW
(66.3 cu. yds.)
(3 REQUIRED; NOT TO SCALE)

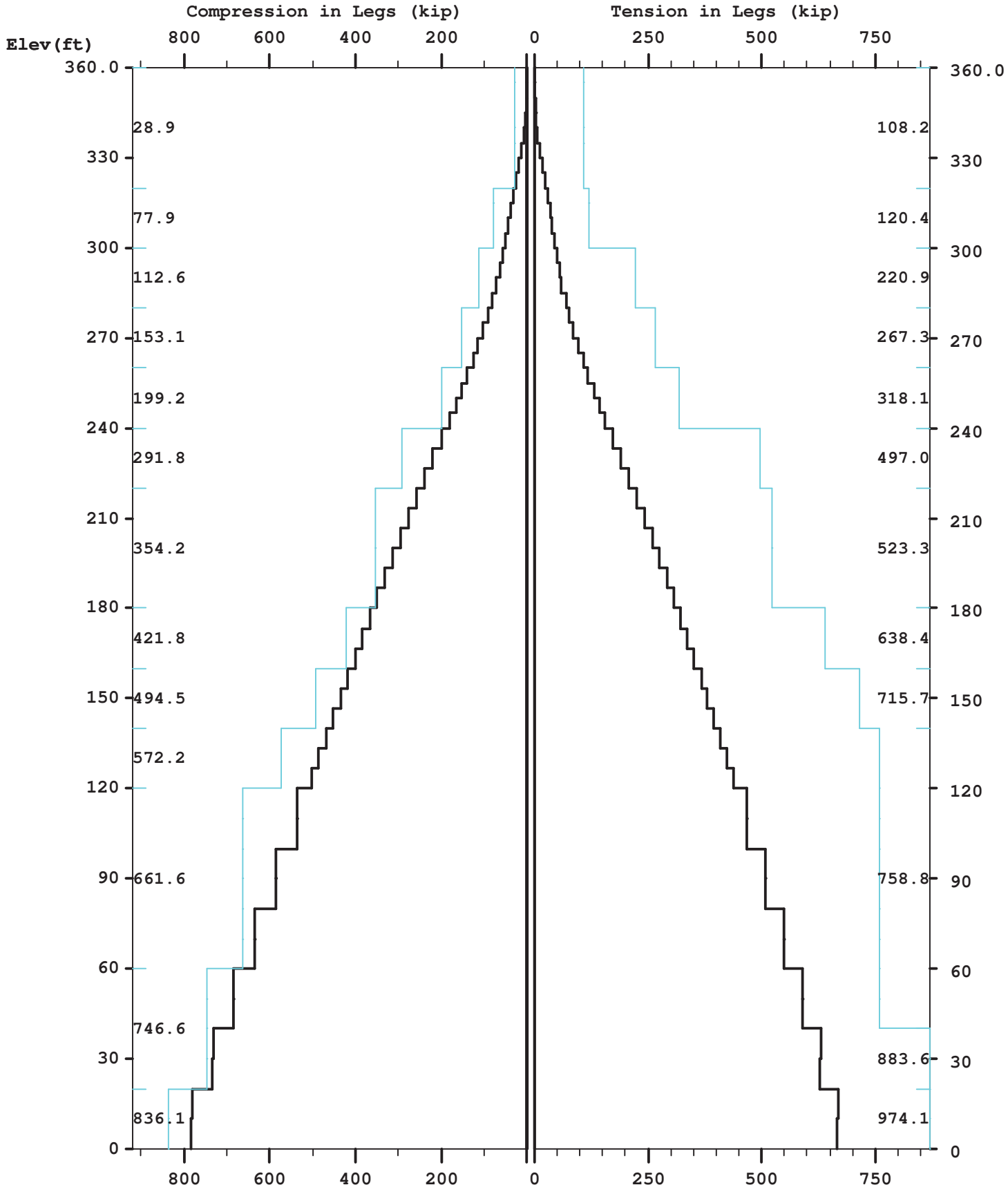
Notes:

1) Concrete shall have a minimum 28-day compressive strength of 4,500 psi, in accordance with ACI 318-14.
2) Rebar to conform to ASTM specification A615 Grade 60.
3) All rebar to have a minimum of 3" concrete cover.
4) All exposed concrete corners to be chamfered 3/4".
5) The foundation design is based on the geotechnical report by Environmental Corporatin of America project no. X2481, dated: 12/16/21.
6) See the geotechnical report for drilled pier installation requirements, if specified.
7) The bottom anchor bolt template shall be positioned as closely as possible to the bottom of the anchor bolts.

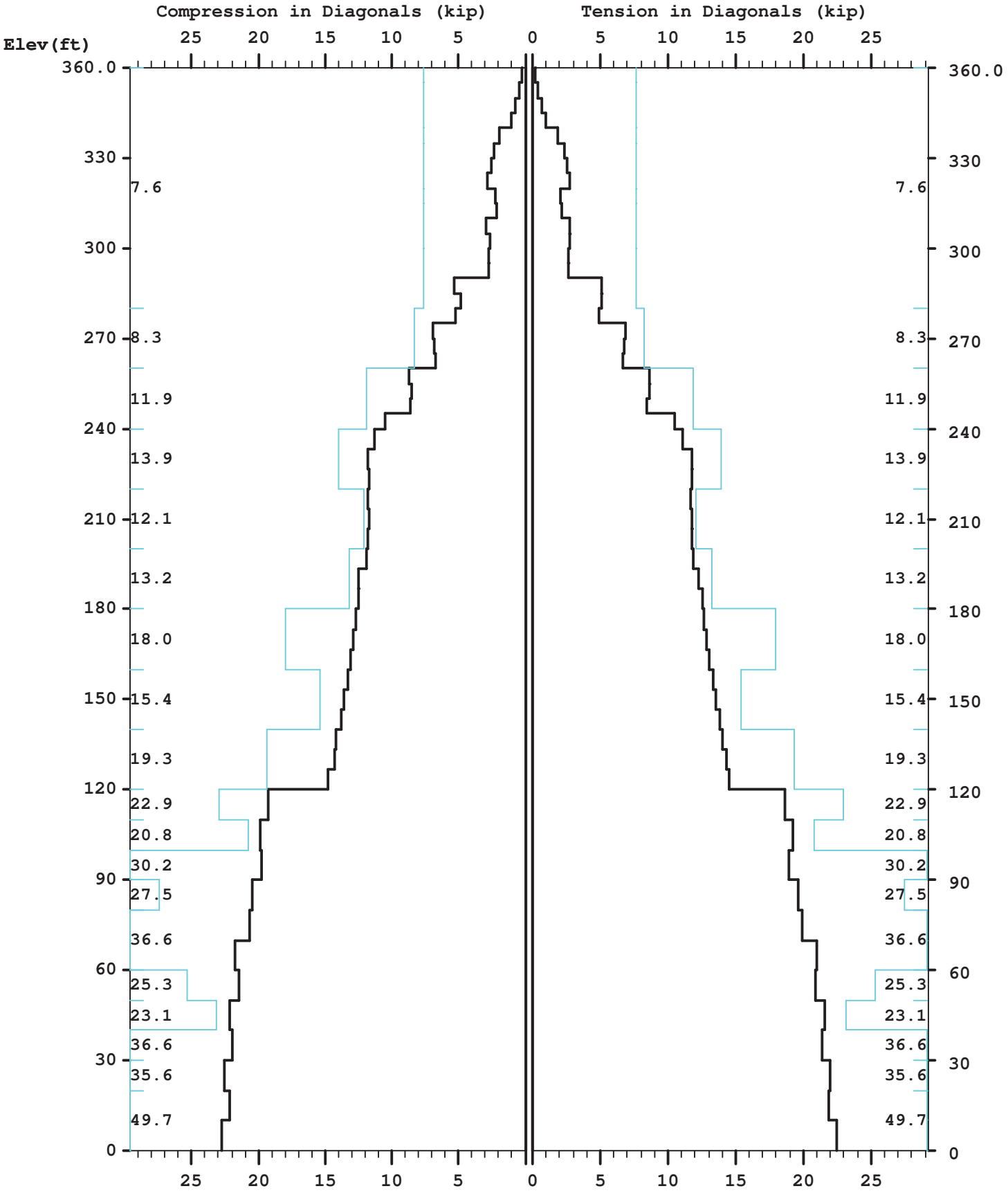
Rebar Schedule per Pier	
Pier	(22) #10 vertical rebar w/ #5 ties, two (2) within top 5" of pier then 12" C/C
Anchor Bolts per Leg	
(6) 1.75" dia. x 87" F1554-105 on a 12" B.C. w/ 10.5" max. projection above concrete.	

7101 Southbridge Dr - P.O. Box 658 - Sioux City, IA 51102-0658 - Phone 712.258.6690 - Fax 712.258.8250

Maximum

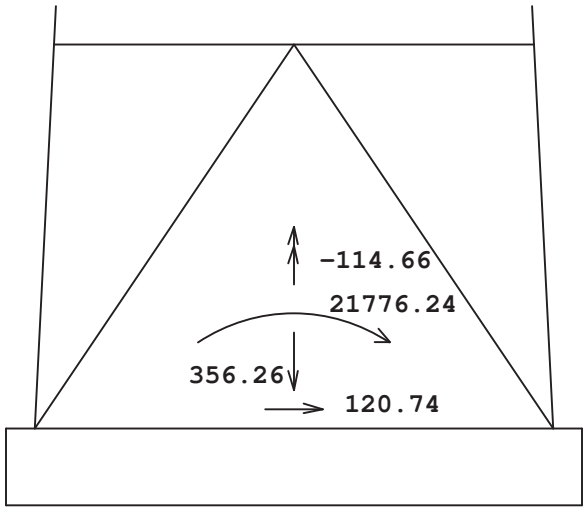

Compression in Legs (kip)
Tension in Legs (kip)
Elev(ft)
800
600
400
200
0
250
500
750
360.0
330
300
270
240
210
180
150
120
90
60
30
0
28.9
77.9
112.6
153.1
199.2
291.8
354.2
421.8
494.5
572.2
661.6
746.6
836.1
108.2
120.4
220.9
267.3
318.1
497.0
523.3
638.4
715.7
758.8
883.6
974.1

Maximum

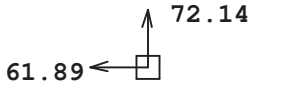

Compression in Diagonals (kip)
Tension in Diagonals (kip)
Elev(ft)
25 20 15 10 5 0 5 10 15 20 25
360.0
330
300
270
240
210
180
150
120
90
60
30
0
7.6
8.3
11.9
13.9
12.1
13.2
18.0
15.4
19.3
22.9
20.8
30.2
27.5
36.6
25.3
23.1
36.6
35.6
49.7

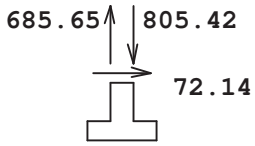
Maximum

TOTAL FOUNDATION LOADS (kip, ft-kip)



INDIVIDUAL FOOTING LOADS (kip)





MAST GEOMETRY (ft)

PANEL TYPE	NO.OF LEGS	ELEV.AT BOTTOM	ELEV.AT TOP	F.W..AT BOTTOM	F.W..AT TOP	TYPICAL PANEL HEIGHT
X	3	355.00	360.00	5.00	5.00	5.00
X	3	340.00	355.00	5.00	5.00	5.00
X	3	335.00	340.00	5.00	5.00	5.00
X	3	320.00	335.00	5.00	5.00	5.00
X	3	315.00	320.00	5.44	5.00	5.00
X	3	300.00	315.00	6.75	5.44	5.00
X	3	280.00	300.00	8.50	6.75	5.00
X	3	260.00	280.00	10.25	8.50	5.00
X	3	240.00	260.00	12.00	10.25	5.00
X	3	220.00	240.00	13.75	12.00	6.67
X	3	200.00	220.00	15.50	13.75	6.67
X	3	180.00	200.00	17.25	15.50	6.67
X	3	160.00	180.00	19.00	17.25	6.67
X	3	140.00	160.00	20.75	19.00	6.67
X	3	120.00	140.00	22.50	20.75	6.67
V	3	110.00	120.00	23.37	22.50	10.00
A	3	100.00	110.00	24.25	23.37	10.00
V	3	90.00	100.00	25.12	24.25	10.00
A	3	80.00	90.00	26.00	25.12	10.00
V	3	70.00	80.00	26.87	26.00	10.00
A	3	60.00	70.00	27.75	26.87	10.00
V	3	50.00	60.00	28.62	27.75	10.00
A	3	40.00	50.00	29.50	28.62	10.00
V	3	30.00	40.00	30.37	29.50	10.00
A	3	20.00	30.00	31.25	30.37	10.00
V	3	10.00	20.00	32.12	31.25	10.00
A	3	0.00	10.00	33.00	32.12	10.00

MEMBER PROPERTIES

MEMBER TYPE	BOTTOM ELEV ft	TOP ELEV ft	X-SECTN AREA in.sq	RADIUS OF GYRAT in	ELASTIC MODULUS ksi	THERMAL EXPANSN /deg
LE	320.00	360.00	2.405	0.438	29000.	0.0000117
LE	300.00	320.00	3.976	0.438	29000.	0.0000117
LE	280.00	300.00	4.909	0.438	29000.	0.0000117
LE	260.00	280.00	5.940	0.438	29000.	0.0000117
LE	240.00	260.00	7.069	0.438	29000.	0.0000117
LE	220.00	240.00	11.045	0.438	29000.	0.0000117
LE	180.00	220.00	12.566	0.438	29000.	0.0000117
LE	160.00	180.00	14.186	0.438	29000.	0.0000117
LE	140.00	160.00	15.904	0.438	29000.	0.0000117
LE	60.00	140.00	17.721	0.438	29000.	0.0000117
LE	20.00	60.00	19.635	0.438	29000.	0.0000117
LE	0.00	20.00	21.648	0.438	29000.	0.0000117
DI	280.00	360.00	0.484	0.626	29000.	0.0000117
DI	260.00	280.00	0.715	0.626	29000.	0.0000117
DI	240.00	260.00	0.902	0.626	29000.	0.0000117
DI	200.00	240.00	1.090	0.626	29000.	0.0000117
DI	180.00	200.00	1.438	0.626	29000.	0.0000117
DI	140.00	180.00	1.688	0.626	29000.	0.0000117
DI	120.00	140.00	1.938	0.626	29000.	0.0000117
DI	100.00	120.00	1.688	0.626	29000.	0.0000117
DI	80.00	100.00	1.812	0.626	29000.	0.0000117
DI	60.00	80.00	2.062	0.626	29000.	0.0000117
DI	40.00	60.00	1.812	0.626	29000.	0.0000117
DI	20.00	40.00	2.062	0.626	29000.	0.0000117
DI	0.00	20.00	3.609	0.626	29000.	0.0000117
HO	355.00	360.00	0.484	0.626	29000.	0.0000117
HO	335.00	340.00	0.484	0.626	29000.	0.0000117
HO	315.00	320.00	0.484	0.626	29000.	0.0000117

HO	100.00	110.00	1.777	0.626	29000. 0.0000117
HO	80.00	90.00	1.688	0.626	29000. 0.0000117
HO	60.00	70.00	1.688	0.626	29000. 0.0000117
HO	40.00	50.00	1.938	0.626	29000. 0.0000117
HO	20.00	30.00	1.938	0.626	29000. 0.0000117
HO	0.00	10.00	2.402	0.626	29000. 0.0000117
BR	100.00	110.00	1.090	0.000	29000. 0.0000117
BR	80.00	90.00	1.090	0.000	29000. 0.0000117
BR	60.00	70.00	1.438	0.000	29000. 0.0000117
BR	40.00	50.00	1.438	0.000	29000. 0.0000117
BR	20.00	30.00	1.438	0.000	29000. 0.0000117
BR	0.00	10.00	1.438	0.000	29000. 0.0000117

FACTORED MEMBER RESISTANCES
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BOTTOM ELEV ft	TOP ELEV ft	LEGS COMP kip	LEGS TENS kip	DIAGONALS COMP kip	DIAGONALS TENS kip	HORIZONTALS COMP kip	HORIZONTALS TENS kip	INT BRACING COMP kip	INT BRACING TENS kip
355.0	360.0	28.89	108.24	7.62	7.62	7.37	7.37	0.00	0.00
340.0	355.0	28.89	108.24	7.62	7.62	0.00	0.00	0.00	0.00
335.0	340.0	28.89	108.24	7.62	7.62	7.37	7.37	0.00	0.00
320.0	335.0	28.89	108.24	7.62	7.62	0.00	0.00	0.00	0.00
315.0	320.0	77.87	120.41	7.62	7.62	7.37	7.37	0.00	0.00
300.0	315.0	77.87	120.41	7.62	7.62	0.00	0.00	0.00	0.00
280.0	300.0	112.60	220.89	7.62	7.62	0.00	0.00	0.00	0.00
260.0	280.0	153.15	267.28	8.27	8.27	0.00	0.00	0.00	0.00
240.0	260.0	199.21	318.09	11.86	11.86	0.00	0.00	0.00	0.00
220.0	240.0	291.83	497.01	13.94	13.94	0.00	0.00	0.00	0.00
200.0	220.0	354.16	523.32	12.11	12.11	0.00	0.00	0.00	0.00
180.0	200.0	354.16	523.32	13.20	13.20	0.00	0.00	0.00	0.00
160.0	180.0	421.75	638.38	17.95	17.95	0.00	0.00	0.00	0.00
140.0	160.0	494.48	715.69	15.39	15.39	0.00	0.00	0.00	0.00
120.0	140.0	572.23	758.83	19.32	19.32	0.00	0.00	0.00	0.00
110.0	120.0	661.64	758.83	22.93	22.93	0.00	0.00	0.00	0.00
100.0	110.0	661.64	758.83	20.80	20.80	16.05	16.05	9.39	9.39
90.0	100.0	661.64	758.83	30.16	30.16	0.00	0.00	0.00	0.00
80.0	90.0	661.64	758.83	27.45	27.45	17.43	17.43	8.35	8.35
70.0	80.0	661.64	758.83	36.56	36.56	0.00	0.00	0.00	0.00
60.0	70.0	661.64	758.83	36.56	36.56	15.73	15.73	9.84	9.84
50.0	60.0	746.59	758.83	25.32	25.32	0.00	0.00	0.00	0.00
40.0	50.0	746.59	758.83	23.14	23.14	19.54	19.54	8.86	8.86
30.0	40.0	746.59	883.57	36.56	36.56	0.00	0.00	0.00	0.00
20.0	30.0	746.59	883.57	35.61	35.61	17.79	17.79	8.02	8.02
10.0	20.0	836.10	974.14	49.70	49.70	0.00	0.00	0.00	0.00
0.0	10.0	836.10	974.14	49.70	49.70	17.16	17.16	0.00	0.00

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* Only 5 condition(s) shown in full

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LOADING CONDITION A ==========

114 mph wind with no ice. Wind Azimuth: 0• (1.2 D + 1.0 Wo)

MAST LOADING
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LOAD TYPE	ELEV ft	APPLY..LOAD..AT RADIUS ft	AZI	LOAD AZI	.....FORCES..... HORIZ kip	DOWN kip	.....MOMENTS..... VERTICAL ft-kip	TORSNAL ft-kip
C	360.0	0.00	0.0	0.0	0.03	0.12	0.00	0.00
C	360.0	0.00	0.0	0.0	0.09	0.12	0.00	0.00
C	348.4	0.00	0.0	0.0	0.16	0.06	0.00	0.00
C	345.7	0.00	0.0	0.0	0.14	0.07	0.00	0.00
C	345.4	0.00	0.0	0.0	0.08	0.01	0.00	0.00
C	340.0	0.00	0.0	0.0	0.41	0.36	0.00	0.00
C	340.0	0.00	0.0	0.0	0.09	0.10	0.00	0.00
C	340.0	0.00	0.0	0.0	0.42	0.36	0.00	0.00
C	340.0	0.00	0.0	0.0	0.41	0.36	0.00	0.00
C	340.0	0.00	0.0	0.0	0.01	0.01	0.00	0.00
C	335.0	0.00	0.0	0.0	0.60	0.78	0.00	0.00
C	318.4	0.00	0.0	0.0	0.15	0.06	0.00	0.00
C	315.7	0.00	0.0	0.0	0.14	0.07	0.00	0.00
C	315.4	0.00	0.0	0.0	0.08	0.01	0.00	0.00

C	310.0	0.00	0.0	0.0	0.40	0.36	0.00	0.00
C	310.0	0.00	0.0	0.0	0.08	0.10	0.00	0.00
C	310.0	0.00	0.0	0.0	0.41	0.36	0.00	0.00
C	310.0	0.00	0.0	0.0	0.40	0.36	0.00	0.00
C	290.0	0.00	0.0	0.0	5.78	4.80	0.00	0.00
C	275.0	0.00	0.0	0.0	5.71	4.80	0.00	0.00
C	260.0	0.00	0.0	0.0	5.65	4.80	0.00	0.00
C	245.0	0.00	0.0	0.0	5.57	4.80	0.00	0.00
C	175.0	0.00	0.0	0.0	0.07	0.24	0.00	0.00
C	160.6	0.00	0.0	0.0	0.15	0.04	0.00	0.00
C	150.0	0.00	0.0	0.0	0.34	0.36	0.00	0.00
D	360.0	0.00	8.4	0.0	0.09	0.06	0.01	0.03
D	355.0	0.00	8.4	0.0	0.09	0.06	0.01	0.03
D	355.0	0.00	8.4	0.0	0.08	0.05	0.01	0.03
D	340.0	0.00	8.4	0.0	0.08	0.05	0.01	0.03
D	340.0	0.00	19.2	0.0	0.10	0.06	0.01	0.04
D	320.0	0.00	20.1	0.0	0.09	0.06	0.02	0.04
D	320.0	0.00	19.0	0.0	0.11	0.08	0.02	0.04
D	310.0	0.00	17.9	0.0	0.10	0.08	0.02	0.04
D	310.0	0.00	19.2	0.0	0.11	0.08	0.03	0.05
D	300.0	0.00	20.5	0.0	0.11	0.08	0.02	0.05
D	300.0	0.00	17.1	0.0	0.12	0.10	0.03	0.05
D	290.0	0.00	18.1	0.0	0.12	0.10	0.03	0.05
D	290.0	0.00	36.4	0.0	0.15	0.10	0.02	0.08
D	280.0	0.00	37.6	0.0	0.15	0.10	0.02	0.08
D	280.0	0.00	35.3	0.0	0.16	0.13	0.02	0.08
D	275.0	0.00	35.3	0.0	0.16	0.13	0.02	0.08
D	275.0	0.00	70.1	0.0	0.16	0.13	0.02	0.09
D	260.0	0.00	74.3	0.0	0.16	0.14	0.02	0.09
D	260.0	0.00	27.4	0.0	0.20	0.17	0.02	-0.03
D	245.0	0.00	26.0	0.0	0.21	0.17	0.01	-0.03
D	245.0	0.00	328.0	0.0	0.21	0.18	0.02	-0.04
D	240.0	0.00	328.0	0.0	0.21	0.18	0.02	-0.04
D	240.0	0.00	330.1	0.0	0.22	0.22	0.03	-0.03
D	233.3	0.00	330.1	0.0	0.22	0.22	0.03	-0.03
D	233.3	0.00	332.1	0.0	0.25	0.23	0.04	-0.01
D	220.0	0.00	331.4	0.0	0.25	0.23	0.03	-0.01
D	220.0	0.00	334.3	0.0	0.25	0.25	0.04	-0.01
D	200.0	0.00	333.0	0.0	0.26	0.26	0.04	-0.01
D	200.0	0.00	335.3	0.0	0.26	0.28	0.04	-0.01
D	180.0	0.00	338.8	0.0	0.27	0.29	0.04	-0.01
D	180.0	0.00	340.0	0.0	0.28	0.33	0.05	-0.01
D	160.0	0.00	340.1	0.0	0.29	0.33	0.05	-0.01
D	160.0	0.00	341.2	0.0	0.29	0.36	0.05	-0.01
D	140.0	0.00	343.6	0.0	0.29	0.36	0.05	-0.01
D	140.0	0.00	344.8	0.0	0.30	0.41	0.06	-0.01
D	120.0	0.00	344.1	0.0	0.31	0.42	0.05	-0.01
D	120.0	0.00	345.6	0.0	0.26	0.35	0.06	-0.01
D	110.0	0.00	345.6	0.0	0.26	0.35	0.06	-0.01
D	110.0	0.00	345.2	0.0	0.31	0.43	0.06	-0.01
D	100.0	0.00	345.2	0.0	0.31	0.43	0.06	-0.01
D	100.0	0.00	346.5	0.0	0.25	0.36	0.06	-0.01
D	90.0	0.00	346.5	0.0	0.25	0.36	0.06	-0.01
D	90.0	0.00	346.1	0.0	0.31	0.45	0.06	-0.01
D	80.0	0.00	346.1	0.0	0.31	0.45	0.06	-0.01
D	80.0	0.00	349.7	0.0	0.25	0.38	0.08	0.00
D	70.0	0.00	349.7	0.0	0.25	0.38	0.08	0.00
D	70.0	0.00	351.7	0.0	0.31	0.49	0.08	0.01
D	60.0	0.00	351.7	0.0	0.31	0.49	0.08	0.01
D	60.0	0.00	352.2	0.0	0.25	0.41	0.09	0.01
D	50.0	0.00	352.2	0.0	0.25	0.41	0.09	0.01
D	50.0	0.00	352.0	0.0	0.31	0.53	0.09	0.01
D	40.0	0.00	352.0	0.0	0.31	0.53	0.09	0.01
D	40.0	0.00	352.7	0.0	0.23	0.42	0.09	0.00
D	30.0	0.00	352.7	0.0	0.23	0.42	0.09	0.00
D	30.0	0.00	352.5	0.0	0.29	0.55	0.09	0.00
D	20.0	0.00	352.5	0.0	0.29	0.55	0.09	0.00
D	20.0	0.00	353.0	0.0	0.21	0.53	0.10	0.00
D	10.0	0.00	353.0	0.0	0.21	0.53	0.10	0.00
D	10.0	0.00	352.8	0.0	0.27	0.69	0.10	0.00
D	0.0	0.00	352.8	0.0	0.27	0.69	0.10	0.00

ANTENNA LOADING
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.....ANTENNA.....			ATTACHMENT		.....ANTENNA FORCES.....			
TYPE	ELEV	AZI	RAD	AZI	AXIAL	SHEAR	GRAVITY	TORSION
	ft		ft		kip	kip	kip	ft-kip
STD+R	235.0	120.0	8.7	120.0	-0.19	-0.39	0.24	-1.17

STD+R	235.0	0.0	8.7	0.0	0.97	0.00	0.24	0.00
HP	235.0	240.0	8.7	240.0	-0.32	0.19	0.20	0.19
HP	190.0	125.0	10.9	120.0	-0.70	-0.34	0.34	-0.53
STD+R	75.0	78.0	16.8	120.0	0.22	-0.39	0.24	-0.55
STD+R	75.0	137.0	16.8	240.0	-0.33	-0.27	0.24	-0.61

LOADING CONDITION M

114 mph wind with no ice. Wind Azimuth: 0• (0.9 D + 1.0 Wo)

MAST LOADING

LOAD TYPE	ELEV	APPLY..LOAD..AT RADIUS	AZI	LOAD AZI	.....FORCES..... HORIZ	DOWN	.....MOMENTS..... VERTICAL	TORSNAL
	ft	ft			kip	kip	ft-kip	ft-kip
C	360.0	0.00	0.0	0.0	0.03	0.09	0.00	0.00
C	360.0	0.00	0.0	0.0	0.09	0.09	0.00	0.00
C	348.4	0.00	0.0	0.0	0.16	0.04	0.00	0.00
C	345.7	0.00	0.0	0.0	0.14	0.05	0.00	0.00
C	345.4	0.00	0.0	0.0	0.08	0.01	0.00	0.00
C	340.0	0.00	0.0	0.0	0.41	0.27	0.00	0.00
C	340.0	0.00	0.0	0.0	0.09	0.07	0.00	0.00
C	340.0	0.00	0.0	0.0	0.42	0.27	0.00	0.00
C	340.0	0.00	0.0	0.0	0.41	0.27	0.00	0.00
C	340.0	0.00	0.0	0.0	0.01	0.01	0.00	0.00
C	335.0	0.00	0.0	0.0	0.60	0.59	0.00	0.00
C	318.4	0.00	0.0	0.0	0.15	0.04	0.00	0.00
C	315.7	0.00	0.0	0.0	0.14	0.05	0.00	0.00
C	315.4	0.00	0.0	0.0	0.08	0.01	0.00	0.00
C	310.0	0.00	0.0	0.0	0.40	0.27	0.00	0.00
C	310.0	0.00	0.0	0.0	0.08	0.07	0.00	0.00
C	310.0	0.00	0.0	0.0	0.41	0.27	0.00	0.00
C	310.0	0.00	0.0	0.0	0.40	0.27	0.00	0.00
C	290.0	0.00	0.0	0.0	5.78	3.60	0.00	0.00
C	275.0	0.00	0.0	0.0	5.71	3.60	0.00	0.00
C	260.0	0.00	0.0	0.0	5.65	3.60	0.00	0.00
C	245.0	0.00	0.0	0.0	5.57	3.60	0.00	0.00
C	175.0	0.00	0.0	0.0	0.07	0.18	0.00	0.00
C	160.6	0.00	0.0	0.0	0.15	0.03	0.00	0.00
C	150.0	0.00	0.0	0.0	0.34	0.27	0.00	0.00
D	360.0	0.00	8.4	0.0	0.09	0.05	0.01	0.03
D	355.0	0.00	8.4	0.0	0.09	0.05	0.01	0.03
D	355.0	0.00	8.4	0.0	0.08	0.04	0.01	0.03
D	340.0	0.00	8.4	0.0	0.08	0.04	0.01	0.03
D	340.0	0.00	19.2	0.0	0.10	0.05	0.01	0.04
D	320.0	0.00	20.1	0.0	0.09	0.04	0.01	0.04
D	320.0	0.00	19.0	0.0	0.11	0.06	0.01	0.04
D	310.0	0.00	17.9	0.0	0.10	0.06	0.01	0.04
D	310.0	0.00	19.2	0.0	0.11	0.06	0.02	0.05
D	290.0	0.00	18.1	0.0	0.12	0.07	0.02	0.05
D	290.0	0.00	36.4	0.0	0.15	0.08	0.02	0.08
D	280.0	0.00	37.6	0.0	0.15	0.08	0.01	0.08
D	280.0	0.00	45.4	0.0	0.16	0.10	0.02	0.08
D	260.0	0.00	78.9	0.0	0.16	0.10	0.02	0.09
D	260.0	0.00	27.4	0.0	0.20	0.12	0.01	-0.03
D	245.0	0.00	26.0	0.0	0.21	0.13	0.01	-0.03
D	245.0	0.00	328.0	0.0	0.21	0.13	0.02	-0.04
D	240.0	0.00	328.0	0.0	0.21	0.13	0.02	-0.04
D	240.0	0.00	330.1	0.0	0.22	0.17	0.02	-0.03
D	233.3	0.00	330.1	0.0	0.22	0.17	0.02	-0.03
D	233.3	0.00	332.1	0.0	0.25	0.17	0.03	-0.01
D	220.0	0.00	331.4	0.0	0.25	0.17	0.03	-0.01
D	220.0	0.00	334.3	0.0	0.25	0.19	0.03	-0.01
D	200.0	0.00	333.0	0.0	0.26	0.19	0.03	-0.01
D	200.0	0.00	335.3	0.0	0.26	0.21	0.03	-0.01
D	180.0	0.00	338.8	0.0	0.27	0.21	0.03	-0.01
D	180.0	0.00	340.0	0.0	0.28	0.24	0.03	-0.01
D	160.0	0.00	340.1	0.0	0.29	0.25	0.03	-0.01
D	160.0	0.00	341.2	0.0	0.29	0.27	0.04	-0.01
D	140.0	0.00	343.6	0.0	0.29	0.27	0.04	-0.01
D	140.0	0.00	344.8	0.0	0.30	0.31	0.04	-0.01
D	120.0	0.00	344.1	0.0	0.31	0.31	0.04	-0.01
D	120.0	0.00	345.6	0.0	0.26	0.26	0.05	-0.01
D	110.0	0.00	345.6	0.0	0.26	0.26	0.05	-0.01
D	110.0	0.00	345.2	0.0	0.31	0.32	0.04	-0.01

D	100.0	0.00	345.2	0.0	0.31	0.32	0.04	-0.01
D	100.0	0.00	346.5	0.0	0.25	0.27	0.05	-0.01
D	90.0	0.00	346.5	0.0	0.25	0.27	0.05	-0.01
D	90.0	0.00	346.1	0.0	0.31	0.34	0.05	-0.01
D	80.0	0.00	346.1	0.0	0.31	0.34	0.05	-0.01
D	80.0	0.00	349.7	0.0	0.25	0.29	0.06	0.00
D	70.0	0.00	349.7	0.0	0.25	0.29	0.06	0.00
D	70.0	0.00	351.7	0.0	0.31	0.37	0.06	0.01
D	60.0	0.00	351.7	0.0	0.31	0.37	0.06	0.01
D	60.0	0.00	352.2	0.0	0.25	0.31	0.07	0.01
D	50.0	0.00	352.2	0.0	0.25	0.31	0.07	0.01
D	50.0	0.00	352.0	0.0	0.31	0.40	0.07	0.01
D	40.0	0.00	352.0	0.0	0.31	0.40	0.07	0.01
D	40.0	0.00	352.7	0.0	0.23	0.32	0.07	0.00
D	30.0	0.00	352.7	0.0	0.23	0.32	0.07	0.00
D	30.0	0.00	352.5	0.0	0.29	0.41	0.07	0.00
D	20.0	0.00	352.5	0.0	0.29	0.41	0.07	0.00
D	20.0	0.00	353.0	0.0	0.21	0.40	0.07	0.00
D	10.0	0.00	353.0	0.0	0.21	0.40	0.07	0.00
D	10.0	0.00	352.8	0.0	0.27	0.52	0.07	0.00
D	0.0	0.00	352.8	0.0	0.27	0.52	0.07	0.00

ANTENNA LOADING
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.....ANTENNA.....			ATTACHMENT		.....ANTENNA FORCES.....			
TYPE	ELEV	AZI	RAD	AZI	AXIAL	SHEAR	GRAVITY	TORSION
	ft		ft		kip	kip	kip	ft-kip
STD+R	235.0	120.0	8.7	120.0	-0.19	-0.39	0.18	-1.17
STD+R	235.0	0.0	8.7	0.0	0.97	0.00	0.18	0.00
HP	235.0	240.0	8.7	240.0	-0.32	0.19	0.15	0.19
HP	190.0	125.0	10.9	120.0	-0.70	-0.34	0.25	-0.53
STD+R	75.0	78.0	16.8	120.0	0.22	-0.39	0.18	-0.55
STD+R	75.0	137.0	16.8	240.0	-0.33	-0.27	0.18	-0.61

LOADING CONDITION Y

30 mph wind with 1.5 ice. Wind Azimuth: 0• (1.2 D + 1.0 Di + 1.0 Wi)

MAST LOADING
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LOAD	ELEV	APPLY..LOAD..AT		LOAD	......FORCES......		......MOMENTS......	
TYPE		RADIUS	AZI	AZI	HORIZ	DOWN	VERTICAL	TORSNAL
	ft	ft			kip	kip	ft-kip	ft-kip
C	360.0	0.00	0.0	0.0	0.01	0.34	0.00	0.00
C	360.0	0.00	0.0	0.0	0.01	0.56	0.00	0.00
C	348.4	0.00	0.0	0.0	0.03	0.19	0.00	0.00
C	345.7	0.00	0.0	0.0	0.03	0.19	0.00	0.00
C	345.4	0.00	0.0	0.0	0.02	0.08	0.00	0.00
C	340.0	0.00	0.0	0.0	0.06	0.80	0.00	0.00
C	340.0	0.00	0.0	0.0	0.02	0.27	0.00	0.00
C	340.0	0.00	0.0	0.0	0.06	0.80	0.00	0.00
C	340.0	0.00	0.0	0.0	0.06	0.80	0.00	0.00
C	340.0	0.00	0.0	0.0	0.00	0.03	0.00	0.00
C	335.0	0.00	0.0	0.0	0.09	1.77	0.00	0.00
C	318.4	0.00	0.0	0.0	0.03	0.19	0.00	0.00
C	315.7	0.00	0.0	0.0	0.03	0.19	0.00	0.00
C	315.4	0.00	0.0	0.0	0.02	0.08	0.00	0.00
C	310.0	0.00	0.0	0.0	0.06	0.79	0.00	0.00
C	310.0	0.00	0.0	0.0	0.02	0.27	0.00	0.00
C	310.0	0.00	0.0	0.0	0.06	0.79	0.00	0.00
C	310.0	0.00	0.0	0.0	0.06	0.79	0.00	0.00
C	290.0	0.00	0.0	0.0	0.74	13.38	0.00	0.00
C	275.0	0.00	0.0	0.0	0.73	13.33	0.00	0.00
C	260.0	0.00	0.0	0.0	0.72	13.28	0.00	0.00
C	245.0	0.00	0.0	0.0	0.71	13.23	0.00	0.00
C	175.0	0.00	0.0	0.0	0.01	0.24	0.00	0.00
C	160.6	0.00	0.0	0.0	0.05	0.25	0.00	0.00
C	150.0	0.00	0.0	0.0	0.05	0.76	0.00	0.00
D	360.0	0.00	20.6	0.0	0.02	0.28	0.07	0.01
D	355.0	0.00	20.6	0.0	0.02	0.28	0.07	0.01
D	355.0	0.00	20.6	0.0	0.01	0.23	0.07	0.01
D	340.0	0.00	20.6	0.0	0.01	0.23	0.07	0.01
D	340.0	0.00	26.2	0.0	0.02	0.30	0.11	0.01

D	335.0	0.00	26.2	0.0	0.02	0.30	0.11	0.01
D	335.0	0.00	27.9	0.0	0.01	0.27	0.14	0.01
D	320.0	0.00	27.9	0.0	0.01	0.27	0.14	0.01
D	320.0	0.00	26.8	0.0	0.02	0.33	0.14	0.01
D	315.0	0.00	26.8	0.0	0.02	0.33	0.14	0.01
D	315.0	0.00	25.3	0.0	0.02	0.30	0.15	0.01
D	310.0	0.00	25.3	0.0	0.02	0.30	0.15	0.01
D	310.0	0.00	23.6	0.0	0.02	0.32	0.22	0.01
D	305.0	0.00	23.6	0.0	0.02	0.32	0.22	0.01
D	305.0	0.00	25.1	0.0	0.02	0.33	0.20	0.01
D	300.0	0.00	25.1	0.0	0.02	0.33	0.20	0.01
D	300.0	0.00	21.2	0.0	0.02	0.35	0.24	0.01
D	295.0	0.00	21.2	0.0	0.02	0.35	0.24	0.01
D	295.0	0.00	22.3	0.0	0.02	0.35	0.23	0.01
D	290.0	0.00	22.3	0.0	0.02	0.35	0.23	0.01
D	290.0	0.00	47.1	0.0	0.02	0.40	0.17	0.01
D	285.0	0.00	47.1	0.0	0.02	0.40	0.17	0.01
D	285.0	0.00	48.8	0.0	0.02	0.40	0.16	0.01
D	280.0	0.00	48.8	0.0	0.02	0.40	0.16	0.01
D	280.0	0.00	45.6	0.0	0.02	0.44	0.18	0.01
D	275.0	0.00	45.6	0.0	0.02	0.44	0.18	0.01
D	275.0	0.00	80.0	0.0	0.02	0.48	0.19	0.01
D	260.0	0.00	84.3	0.0	0.02	0.49	0.17	0.01
D	260.0	0.00	31.7	0.0	0.02	0.58	0.10	0.00
D	245.0	0.00	30.0	0.0	0.02	0.60	0.09	0.00
D	245.0	0.00	323.8	0.0	0.02	0.64	0.18	0.00
D	240.0	0.00	323.8	0.0	0.02	0.64	0.18	0.00
D	240.0	0.00	328.1	0.0	0.03	0.69	0.21	0.00
D	233.3	0.00	328.1	0.0	0.03	0.69	0.21	0.00
D	233.3	0.00	333.6	0.0	0.03	0.72	0.30	0.00
D	220.0	0.00	333.0	0.0	0.03	0.73	0.30	0.00
D	220.0	0.00	335.5	0.0	0.03	0.76	0.32	0.00
D	200.0	0.00	334.4	0.0	0.03	0.78	0.31	0.00
D	200.0	0.00	336.2	0.0	0.03	0.81	0.33	0.00
D	193.3	0.00	336.2	0.0	0.03	0.81	0.33	0.00
D	193.3	0.00	338.6	0.0	0.03	0.82	0.35	0.00
D	186.7	0.00	338.6	0.0	0.03	0.82	0.35	0.00
D	186.7	0.00	340.7	0.0	0.03	0.83	0.38	0.01
D	180.0	0.00	340.7	0.0	0.03	0.83	0.38	0.01
D	180.0	0.00	341.7	0.0	0.03	0.91	0.39	0.01
D	160.0	0.00	341.8	0.0	0.03	0.93	0.40	0.01
D	160.0	0.00	342.6	0.0	0.03	0.96	0.41	0.00
D	153.3	0.00	342.6	0.0	0.03	0.96	0.41	0.00
D	153.3	0.00	345.0	0.0	0.03	0.97	0.45	0.00
D	140.0	0.00	345.6	0.0	0.03	0.98	0.46	0.00
D	140.0	0.00	348.3	0.0	0.03	1.07	0.53	0.00
D	120.0	0.00	347.9	0.0	0.03	1.09	0.51	0.00
D	120.0	0.00	348.8	0.0	0.03	0.91	0.55	0.00
D	110.0	0.00	348.8	0.0	0.03	0.91	0.55	0.00
D	110.0	0.00	348.5	0.0	0.04	1.19	0.54	0.00
D	100.0	0.00	348.5	0.0	0.04	1.19	0.54	0.00
D	100.0	0.00	350.2	0.0	0.03	0.93	0.60	0.00
D	90.0	0.00	350.2	0.0	0.03	0.93	0.60	0.00
D	90.0	0.00	349.3	0.0	0.03	1.24	0.57	0.00
D	80.0	0.00	349.3	0.0	0.03	1.24	0.57	0.00
D	80.0	0.00	352.6	0.0	0.03	0.98	0.69	0.00
D	70.0	0.00	352.6	0.0	0.03	0.98	0.69	0.00
D	70.0	0.00	354.1	0.0	0.03	1.32	0.76	0.00
D	60.0	0.00	354.1	0.0	0.03	1.32	0.76	0.00
D	60.0	0.00	354.5	0.0	0.03	1.00	0.79	0.00
D	50.0	0.00	354.5	0.0	0.03	1.00	0.79	0.00
D	50.0	0.00	354.3	0.0	0.03	1.36	0.78	0.00
D	40.0	0.00	354.3	0.0	0.03	1.36	0.78	0.00
D	40.0	0.00	354.6	0.0	0.03	1.01	0.78	0.00
D	30.0	0.00	354.6	0.0	0.03	1.01	0.78	0.00
D	30.0	0.00	354.6	0.0	0.03	1.37	0.79	0.00
D	20.0	0.00	354.6	0.0	0.03	1.37	0.79	0.00
D	20.0	0.00	354.3	0.0	0.02	0.94	0.28	0.00
D	10.0	0.00	354.3	0.0	0.02	0.94	0.28	0.00
D	10.0	0.00	354.5	0.0	0.03	1.38	0.61	0.00
D	0.0	0.00	354.5	0.0	0.03	1.38	0.61	0.00

ANTENNA LOADING
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.....ANTENNA.....			ATTACHMENT		.....ANTENNA FORCES.....			
TYPE	ELEV	AZI	RAD	AZI	AXIAL	SHEAR	GRAVITY	TORSION
	ft		ft		kip	kip	kip	ft-kip
STD+R	235.0	120.0	8.7	120.0	-0.01	-0.03	0.91	-0.09
STD+R	235.0	0.0	8.7	0.0	0.08	0.00	0.91	0.00

HP	235.0	240.0	8.7	240.0	-0.03	0.02	0.88	0.02
HP	190.0	125.0	10.9	120.0	-0.05	-0.03	1.24	-0.04
STD+R	75.0	78.0	16.8	120.0	0.02	-0.03	0.84	-0.04
STD+R	75.0	137.0	16.8	240.0	-0.03	-0.02	0.84	-0.05

LOADING CONDITION k

Seismic - Azimuth: 0• (1.2 D + 1.0 Ev + 1.0 Eh)

MAST LOADING

LOAD TYPE	ELEV ft	APPLY..LOAD..AT RADIUS ft	AZI	LOAD AZI	.....FORCES..... HORIZ kip	DOWN kip	.....MOMENTS..... VERTICAL ft-kip	TORSNAL ft-kip
C	360.0	0.00	0.0	0.0	0.02	0.13	0.00	0.00
C	360.0	0.00	0.0	0.0	0.02	0.13	0.00	0.00
C	354.2	0.00	0.0	0.0	0.01	0.06	0.00	0.00
C	354.2	0.00	0.0	0.0	0.00	0.01	0.00	0.00
C	350.0	0.00	0.0	0.0	0.23	1.28	0.00	0.00
C	348.4	0.00	0.0	0.0	0.01	0.06	0.00	0.00
C	347.0	0.00	0.0	0.0	0.00	0.01	0.00	0.00
C	347.0	0.00	0.0	0.0	0.00	0.00	0.00	0.00
C	345.7	0.00	0.0	0.0	0.01	0.07	0.00	0.00
C	345.5	0.00	0.0	0.0	0.00	0.00	0.00	0.00
C	345.5	0.00	0.0	0.0	0.00	0.00	0.00	0.00
C	345.4	0.00	0.0	0.0	0.00	0.01	0.00	0.00
C	342.7	0.00	0.0	0.0	0.00	0.03	0.00	0.00
C	342.7	0.00	0.0	0.0	0.00	0.01	0.00	0.00
C	340.0	0.00	0.0	0.0	0.00	0.01	0.00	0.00
C	340.0	0.00	0.0	0.0	0.02	0.10	0.00	0.00
C	340.0	0.00	0.0	0.0	0.07	0.39	0.00	0.00
C	340.0	0.00	0.0	0.0	0.07	0.39	0.00	0.00
C	340.0	0.00	0.0	0.0	0.07	0.39	0.00	0.00
C	337.5	0.00	0.0	0.0	0.00	0.03	0.00	0.00
C	337.5	0.00	0.0	0.0	0.00	0.02	0.00	0.00
C	335.0	0.00	0.0	0.0	0.14	0.85	0.00	0.00
C	330.0	0.00	0.0	0.0	0.21	1.28	0.00	0.00
C	327.5	0.00	0.0	0.0	0.01	0.08	0.00	0.00
C	327.5	0.00	0.0	0.0	0.01	0.08	0.00	0.00
C	319.2	0.00	0.0	0.0	0.00	0.01	0.00	0.00
C	319.2	0.00	0.0	0.0	0.00	0.01	0.00	0.00
C	318.4	0.00	0.0	0.0	0.01	0.06	0.00	0.00
C	317.0	0.00	0.0	0.0	0.00	0.01	0.00	0.00
C	317.0	0.00	0.0	0.0	0.00	0.01	0.00	0.00
C	315.7	0.00	0.0	0.0	0.01	0.07	0.00	0.00
C	315.5	0.00	0.0	0.0	0.00	0.00	0.00	0.00
C	315.5	0.00	0.0	0.0	0.00	0.00	0.00	0.00
C	315.4	0.00	0.0	0.0	0.00	0.01	0.00	0.00
C	312.7	0.00	0.0	0.0	0.00	0.03	0.00	0.00
C	312.7	0.00	0.0	0.0	0.00	0.03	0.00	0.00
C	310.0	0.00	0.0	0.0	0.06	0.39	0.00	0.00
C	310.0	0.00	0.0	0.0	0.06	0.39	0.00	0.00
C	310.0	0.00	0.0	0.0	0.06	0.39	0.00	0.00
C	310.0	0.00	0.0	0.0	0.27	1.79	0.00	0.00
C	310.0	0.00	0.0	0.0	0.02	0.10	0.00	0.00
C	305.0	0.00	0.0	0.0	0.01	0.09	0.00	0.00
C	305.0	0.00	0.0	0.0	0.01	0.05	0.00	0.00
C	295.0	0.00	0.0	0.0	0.01	0.05	0.00	0.00
C	295.0	0.00	0.0	0.0	0.01	0.09	0.00	0.00
C	290.0	0.00	0.0	0.0	0.71	5.22	0.00	0.00
C	290.0	0.00	0.0	0.0	0.28	2.07	0.00	0.00
C	285.0	0.00	0.0	0.0	0.01	0.05	0.00	0.00
C	285.0	0.00	0.0	0.0	0.01	0.05	0.00	0.00
C	285.0	0.00	0.0	0.0	0.01	0.09	0.00	0.00
C	277.5	0.00	0.0	0.0	0.00	0.03	0.00	0.00
C	277.5	0.00	0.0	0.0	0.00	0.02	0.00	0.00
C	277.5	0.00	0.0	0.0	0.01	0.04	0.00	0.00
C	275.0	0.00	0.0	0.0	0.65	5.22	0.00	0.00
C	270.0	0.00	0.0	0.0	0.33	2.76	0.00	0.00
C	267.5	0.00	0.0	0.0	0.01	0.08	0.00	0.00
C	267.5	0.00	0.0	0.0	0.02	0.13	0.00	0.00
C	267.5	0.00	0.0	0.0	0.02	0.14	0.00	0.00
C	260.0	0.00	0.0	0.0	0.59	5.22	0.00	0.00
C	252.5	0.00	0.0	0.0	0.01	0.08	0.00	0.00
C	252.5	0.00	0.0	0.0	0.02	0.15	0.00	0.00
C	252.5	0.00	0.0	0.0	0.01	0.06	0.00	0.00

C	252.5	0.00	0.0	0.0	0.01	0.13	0.00	0.00
C	250.0	0.00	0.0	0.0	0.38	3.51	0.00	0.00
C	245.0	0.00	0.0	0.0	0.54	5.22	0.00	0.00
C	242.5	0.00	0.0	0.0	0.00	0.03	0.00	0.00
C	242.5	0.00	0.0	0.0	0.00	0.05	0.00	0.00
C	242.5	0.00	0.0	0.0	0.00	0.04	0.00	0.00
C	242.5	0.00	0.0	0.0	0.00	0.04	0.00	0.00
C	237.5	0.00	0.0	0.0	0.00	0.04	0.00	0.00
C	237.5	0.00	0.0	0.0	0.00	0.05	0.00	0.00
C	237.5	0.00	0.0	0.0	0.00	0.04	0.00	0.00
C	237.5	0.00	0.0	0.0	0.00	0.03	0.00	0.00
C	235.0	0.00	0.0	0.0	0.02	0.17	0.00	0.00
C	235.0	0.00	0.0	0.0	0.02	0.25	0.00	0.00
C	235.0	0.00	0.0	0.0	0.02	0.25	0.00	0.00
C	230.0	0.00	0.0	0.0	0.46	4.86	0.00	0.00
C	227.5	0.00	0.0	0.0	0.01	0.08	0.00	0.00
C	227.5	0.00	0.0	0.0	0.01	0.15	0.00	0.00
C	227.5	0.00	0.0	0.0	0.00	0.03	0.00	0.00
C	227.5	0.00	0.0	0.0	0.01	0.15	0.00	0.00
C	227.5	0.00	0.0	0.0	0.01	0.13	0.00	0.00
C	210.0	0.00	0.0	0.0	0.01	0.10	0.00	0.00
C	210.0	0.00	0.0	0.0	0.01	0.17	0.00	0.00
C	210.0	0.00	0.0	0.0	0.00	0.04	0.00	0.00
C	210.0	0.00	0.0	0.0	0.02	0.20	0.00	0.00
C	210.0	0.00	0.0	0.0	0.02	0.20	0.00	0.00
C	210.0	0.00	0.0	0.0	0.44	5.41	0.00	0.00
C	195.0	0.00	0.0	0.0	0.01	0.10	0.00	0.00
C	195.0	0.00	0.0	0.0	0.00	0.02	0.00	0.00
C	195.0	0.00	0.0	0.0	0.00	0.05	0.00	0.00
C	195.0	0.00	0.0	0.0	0.01	0.09	0.00	0.00
C	195.0	0.00	0.0	0.0	0.01	0.10	0.00	0.00
C	190.0	0.00	0.0	0.0	0.01	0.18	0.00	0.00
C	190.0	0.00	0.0	0.0	0.42	6.05	0.00	0.00
C	185.0	0.00	0.0	0.0	0.00	0.05	0.00	0.00
C	185.0	0.00	0.0	0.0	0.00	0.03	0.00	0.00
C	185.0	0.00	0.0	0.0	0.01	0.09	0.00	0.00
C	185.0	0.00	0.0	0.0	0.01	0.10	0.00	0.00
C	185.0	0.00	0.0	0.0	0.01	0.10	0.00	0.00
C	177.5	0.00	0.0	0.0	0.00	0.03	0.00	0.00
C	177.5	0.00	0.0	0.0	0.00	0.01	0.00	0.00
C	177.5	0.00	0.0	0.0	0.00	0.05	0.00	0.00
C	177.5	0.00	0.0	0.0	0.00	0.05	0.00	0.00
C	177.5	0.00	0.0	0.0	0.00	0.04	0.00	0.00
C	175.0	0.00	0.0	0.0	0.02	0.26	0.00	0.00
C	170.0	0.00	0.0	0.0	0.42	7.20	0.00	0.00
C	167.8	0.00	0.0	0.0	0.00	0.08	0.00	0.00
C	167.8	0.00	0.0	0.0	0.01	0.12	0.00	0.00
C	167.8	0.00	0.0	0.0	0.01	0.14	0.00	0.00
C	167.8	0.00	0.0	0.0	0.00	0.04	0.00	0.00
C	167.8	0.00	0.0	0.0	0.01	0.14	0.00	0.00
C	160.6	0.00	0.0	0.0	0.00	0.05	0.00	0.00
C	160.3	0.00	0.0	0.0	0.00	0.00	0.00	0.00
C	160.3	0.00	0.0	0.0	0.00	0.01	0.00	0.00
C	160.3	0.00	0.0	0.0	0.00	0.01	0.00	0.00
C	160.3	0.00	0.0	0.0	0.00	0.00	0.00	0.00
C	160.3	0.00	0.0	0.0	0.00	0.01	0.00	0.00
C	155.0	0.00	0.0	0.0	0.00	0.09	0.00	0.00
C	155.0	0.00	0.0	0.0	0.00	0.03	0.00	0.00
C	155.0	0.00	0.0	0.0	0.00	0.10	0.00	0.00
C	155.0	0.00	0.0	0.0	0.00	0.05	0.00	0.00
C	155.0	0.00	0.0	0.0	0.00	0.10	0.00	0.00
C	150.0	0.00	0.0	0.0	0.02	0.39	0.00	0.00
C	150.0	0.00	0.0	0.0	0.38	8.02	0.00	0.00
C	145.0	0.00	0.0	0.0	0.00	0.05	0.00	0.00
C	145.0	0.00	0.0	0.0	0.00	0.04	0.00	0.00
C	145.0	0.00	0.0	0.0	0.00	0.09	0.00	0.00
C	145.0	0.00	0.0	0.0	0.00	0.10	0.00	0.00
C	145.0	0.00	0.0	0.0	0.00	0.10	0.00	0.00
C	130.0	0.00	0.0	0.0	0.00	0.10	0.00	0.00
C	130.0	0.00	0.0	0.0	0.01	0.17	0.00	0.00
C	130.0	0.00	0.0	0.0	0.00	0.07	0.00	0.00
C	130.0	0.00	0.0	0.0	0.35	9.16	0.00	0.00
C	130.0	0.00	0.0	0.0	0.01	0.20	0.00	0.00
C	130.0	0.00	0.0	0.0	0.01	0.20	0.00	0.00
C	110.0	0.00	0.0	0.0	0.01	0.20	0.00	0.00
C	110.0	0.00	0.0	0.0	0.00	0.07	0.00	0.00
C	110.0	0.00	0.0	0.0	0.01	0.20	0.00	0.00
C	110.0	0.00	0.0	0.0	0.27	9.30	0.00	0.00
C	110.0	0.00	0.0	0.0	0.00	0.10	0.00	0.00
C	110.0	0.00	0.0	0.0	0.00	0.17	0.00	0.00
C	90.0	0.00	0.0	0.0	0.00	0.20	0.00	0.00

C	90.0	0.00	0.0	0.0	0.00	0.20	0.00	0.00
C	90.0	0.00	0.0	0.0	0.00	0.17	0.00	0.00
C	90.0	0.00	0.0	0.0	0.21	9.64	0.00	0.00
C	90.0	0.00	0.0	0.0	0.00	0.10	0.00	0.00
C	90.0	0.00	0.0	0.0	0.00	0.07	0.00	0.00
C	77.5	0.00	0.0	0.0	0.00	0.03	0.00	0.00
C	77.5	0.00	0.0	0.0	0.00	0.02	0.00	0.00
C	77.5	0.00	0.0	0.0	0.00	0.04	0.00	0.00
C	77.5	0.00	0.0	0.0	0.00	0.05	0.00	0.00
C	77.5	0.00	0.0	0.0	0.00	0.05	0.00	0.00
C	75.0	0.00	0.0	0.0	0.00	0.25	0.00	0.00
C	75.0	0.00	0.0	0.0	0.00	0.25	0.00	0.00
C	70.0	0.00	0.0	0.0	0.15	10.20	0.00	0.00
C	67.5	0.00	0.0	0.0	0.00	0.13	0.00	0.00
C	67.5	0.00	0.0	0.0	0.00	0.10	0.00	0.00
C	67.5	0.00	0.0	0.0	0.00	0.08	0.00	0.00
C	67.5	0.00	0.0	0.0	0.00	0.15	0.00	0.00
C	67.5	0.00	0.0	0.0	0.00	0.15	0.00	0.00
C	50.0	0.00	0.0	0.0	0.00	0.17	0.00	0.00
C	50.0	0.00	0.0	0.0	0.00	0.20	0.00	0.00
C	50.0	0.00	0.0	0.0	0.00	0.20	0.00	0.00
C	50.0	0.00	0.0	0.0	0.09	10.81	0.00	0.00
C	50.0	0.00	0.0	0.0	0.00	0.10	0.00	0.00
C	50.0	0.00	0.0	0.0	0.00	0.13	0.00	0.00
C	30.0	0.00	0.0	0.0	0.00	0.20	0.00	0.00
C	30.0	0.00	0.0	0.0	0.00	0.20	0.00	0.00
C	30.0	0.00	0.0	0.0	0.04	11.37	0.00	0.00
C	30.0	0.00	0.0	0.0	0.00	0.10	0.00	0.00
C	30.0	0.00	0.0	0.0	0.00	0.13	0.00	0.00
C	30.0	0.00	0.0	0.0	0.00	0.17	0.00	0.00
C	10.0	0.00	0.0	0.0	0.00	0.20	0.00	0.00
C	10.0	0.00	0.0	0.0	0.00	0.13	0.00	0.00
C	10.0	0.00	0.0	0.0	0.00	0.17	0.00	0.00
C	10.0	0.00	0.0	0.0	0.00	0.10	0.00	0.00
C	10.0	0.00	0.0	0.0	0.01	14.84	0.00	0.00
C	10.0	0.00	0.0	0.0	0.00	0.20	0.00	0.00
D	360.0	0.00	180.0	180.0	0.00	0.00	0.00	0.00
D	0.0	0.00	180.0	180.0	0.00	0.00	0.00	0.00

ANTENNA LOADING
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.....ANTENNA.....			ATTACHMENT		.....ANTENNA FORCES.....			
TYPE	ELEV	AZI	RAD	AZI	AXIAL	SHEAR	GRAVITY	TORSION
	ft		ft		kip	kip	kip	ft-kip
STD+R	235.0	120.0	8.7	120.0	0.00	0.00	0.00	0.00
STD+R	235.0	0.0	8.7	0.0	0.00	0.00	0.00	0.00
HP	235.0	240.0	8.7	240.0	0.00	0.00	0.00	0.00
HP	190.0	125.0	10.9	120.0	0.00	0.00	0.00	0.00
STD+R	75.0	78.0	16.8	120.0	0.00	0.00	0.00	0.00
STD+R	75.0	137.0	16.8	240.0	0.00	0.00	0.00	0.00

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LOADING CONDITION w ==========

Seismic - Azimuth: 0• (0.9 D - 1.0 Ev + 1.0 Eh)

MAST LOADING
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LOAD	ELEV	APPLY..LOAD..AT		LOAD	......FORCES......		......MOMENTS......	
TYPE		RADIUS	AZI	AZI	HORIZ	DOWN	VERTICAL	TORSNAL
	ft	ft			kip	kip	ft-kip	ft-kip
C	360.0	0.00	0.0	0.0	0.02	0.08	0.00	0.00
C	360.0	0.00	0.0	0.0	0.02	0.08	0.00	0.00
C	354.2	0.00	0.0	0.0	0.01	0.04	0.00	0.00
C	354.2	0.00	0.0	0.0	0.00	0.01	0.00	0.00
C	350.0	0.00	0.0	0.0	0.23	0.78	0.00	0.00
C	348.4	0.00	0.0	0.0	0.01	0.04	0.00	0.00
C	347.0	0.00	0.0	0.0	0.00	0.01	0.00	0.00
C	347.0	0.00	0.0	0.0	0.00	0.00	0.00	0.00
C	345.7	0.00	0.0	0.0	0.01	0.05	0.00	0.00
C	345.5	0.00	0.0	0.0	0.00	0.00	0.00	0.00
C	345.5	0.00	0.0	0.0	0.00	0.00	0.00	0.00
C	345.4	0.00	0.0	0.0	0.00	0.01	0.00	0.00
C	342.7	0.00	0.0	0.0	0.00	0.02	0.00	0.00

C	342.7	0.00	0.0	0.0	0.00	0.00	0.00	0.00
C	340.0	0.00	0.0	0.0	0.00	0.01	0.00	0.00
C	340.0	0.00	0.0	0.0	0.02	0.06	0.00	0.00
C	340.0	0.00	0.0	0.0	0.07	0.24	0.00	0.00
C	340.0	0.00	0.0	0.0	0.07	0.24	0.00	0.00
C	340.0	0.00	0.0	0.0	0.07	0.24	0.00	0.00
C	337.5	0.00	0.0	0.0	0.00	0.02	0.00	0.00
C	337.5	0.00	0.0	0.0	0.00	0.01	0.00	0.00
C	335.0	0.00	0.0	0.0	0.14	0.52	0.00	0.00
C	330.0	0.00	0.0	0.0	0.21	0.78	0.00	0.00
C	327.5	0.00	0.0	0.0	0.01	0.05	0.00	0.00
C	327.5	0.00	0.0	0.0	0.01	0.05	0.00	0.00
C	319.2	0.00	0.0	0.0	0.00	0.01	0.00	0.00
C	319.2	0.00	0.0	0.0	0.00	0.00	0.00	0.00
C	318.4	0.00	0.0	0.0	0.01	0.04	0.00	0.00
C	317.0	0.00	0.0	0.0	0.00	0.01	0.00	0.00
C	317.0	0.00	0.0	0.0	0.00	0.01	0.00	0.00
C	315.7	0.00	0.0	0.0	0.01	0.05	0.00	0.00
C	315.5	0.00	0.0	0.0	0.00	0.00	0.00	0.00
C	315.5	0.00	0.0	0.0	0.00	0.00	0.00	0.00
C	315.4	0.00	0.0	0.0	0.00	0.01	0.00	0.00
C	312.7	0.00	0.0	0.0	0.00	0.02	0.00	0.00
C	312.7	0.00	0.0	0.0	0.00	0.02	0.00	0.00
C	310.0	0.00	0.0	0.0	0.06	0.24	0.00	0.00
C	310.0	0.00	0.0	0.0	0.06	0.24	0.00	0.00
C	310.0	0.00	0.0	0.0	0.06	0.24	0.00	0.00
C	310.0	0.00	0.0	0.0	0.27	1.09	0.00	0.00
C	310.0	0.00	0.0	0.0	0.02	0.06	0.00	0.00
C	305.0	0.00	0.0	0.0	0.01	0.05	0.00	0.00
C	305.0	0.00	0.0	0.0	0.01	0.03	0.00	0.00
C	295.0	0.00	0.0	0.0	0.01	0.03	0.00	0.00
C	295.0	0.00	0.0	0.0	0.01	0.05	0.00	0.00
C	290.0	0.00	0.0	0.0	0.71	3.18	0.00	0.00
C	290.0	0.00	0.0	0.0	0.28	1.26	0.00	0.00
C	285.0	0.00	0.0	0.0	0.01	0.03	0.00	0.00
C	285.0	0.00	0.0	0.0	0.01	0.03	0.00	0.00
C	285.0	0.00	0.0	0.0	0.01	0.05	0.00	0.00
C	277.5	0.00	0.0	0.0	0.00	0.02	0.00	0.00
C	277.5	0.00	0.0	0.0	0.00	0.01	0.00	0.00
C	277.5	0.00	0.0	0.0	0.01	0.03	0.00	0.00
C	275.0	0.00	0.0	0.0	0.65	3.18	0.00	0.00
C	270.0	0.00	0.0	0.0	0.33	1.68	0.00	0.00
C	267.5	0.00	0.0	0.0	0.01	0.05	0.00	0.00
C	267.5	0.00	0.0	0.0	0.02	0.08	0.00	0.00
C	267.5	0.00	0.0	0.0	0.02	0.08	0.00	0.00
C	260.0	0.00	0.0	0.0	0.59	3.18	0.00	0.00
C	252.5	0.00	0.0	0.0	0.01	0.05	0.00	0.00
C	252.5	0.00	0.0	0.0	0.02	0.09	0.00	0.00
C	252.5	0.00	0.0	0.0	0.01	0.04	0.00	0.00
C	252.5	0.00	0.0	0.0	0.01	0.08	0.00	0.00
C	250.0	0.00	0.0	0.0	0.38	2.14	0.00	0.00
C	245.0	0.00	0.0	0.0	0.54	3.18	0.00	0.00
C	242.5	0.00	0.0	0.0	0.00	0.02	0.00	0.00
C	242.5	0.00	0.0	0.0	0.00	0.03	0.00	0.00
C	242.5	0.00	0.0	0.0	0.00	0.03	0.00	0.00
C	242.5	0.00	0.0	0.0	0.00	0.03	0.00	0.00
C	237.5	0.00	0.0	0.0	0.00	0.03	0.00	0.00
C	237.5	0.00	0.0	0.0	0.00	0.03	0.00	0.00
C	237.5	0.00	0.0	0.0	0.00	0.03	0.00	0.00
C	237.5	0.00	0.0	0.0	0.00	0.02	0.00	0.00
C	235.0	0.00	0.0	0.0	0.02	0.10	0.00	0.00
C	235.0	0.00	0.0	0.0	0.02	0.15	0.00	0.00
C	235.0	0.00	0.0	0.0	0.02	0.15	0.00	0.00
C	230.0	0.00	0.0	0.0	0.46	2.96	0.00	0.00
C	227.5	0.00	0.0	0.0	0.01	0.05	0.00	0.00
C	227.5	0.00	0.0	0.0	0.01	0.09	0.00	0.00
C	227.5	0.00	0.0	0.0	0.00	0.02	0.00	0.00
C	227.5	0.00	0.0	0.0	0.01	0.09	0.00	0.00
C	227.5	0.00	0.0	0.0	0.01	0.08	0.00	0.00
C	210.0	0.00	0.0	0.0	0.01	0.06	0.00	0.00
C	210.0	0.00	0.0	0.0	0.01	0.10	0.00	0.00
C	210.0	0.00	0.0	0.0	0.00	0.03	0.00	0.00
C	210.0	0.00	0.0	0.0	0.02	0.12	0.00	0.00
C	210.0	0.00	0.0	0.0	0.02	0.12	0.00	0.00
C	210.0	0.00	0.0	0.0	0.44	3.30	0.00	0.00
C	195.0	0.00	0.0	0.0	0.01	0.06	0.00	0.00
C	195.0	0.00	0.0	0.0	0.00	0.01	0.00	0.00
C	195.0	0.00	0.0	0.0	0.00	0.03	0.00	0.00
C	195.0	0.00	0.0	0.0	0.01	0.05	0.00	0.00
C	195.0	0.00	0.0	0.0	0.01	0.06	0.00	0.00
C	190.0	0.00	0.0	0.0	0.01	0.11	0.00	0.00

C	190.0	0.00	0.0	0.0	0.42	3.69	0.00	0.00
C	185.0	0.00	0.0	0.0	0.00	0.03	0.00	0.00
C	185.0	0.00	0.0	0.0	0.00	0.02	0.00	0.00
C	185.0	0.00	0.0	0.0	0.01	0.05	0.00	0.00
C	185.0	0.00	0.0	0.0	0.01	0.06	0.00	0.00
C	185.0	0.00	0.0	0.0	0.01	0.06	0.00	0.00
C	177.5	0.00	0.0	0.0	0.00	0.02	0.00	0.00
C	177.5	0.00	0.0	0.0	0.00	0.01	0.00	0.00
C	177.5	0.00	0.0	0.0	0.00	0.03	0.00	0.00
C	177.5	0.00	0.0	0.0	0.00	0.03	0.00	0.00
C	177.5	0.00	0.0	0.0	0.00	0.03	0.00	0.00
C	175.0	0.00	0.0	0.0	0.02	0.16	0.00	0.00
C	170.0	0.00	0.0	0.0	0.42	4.39	0.00	0.00
C	167.8	0.00	0.0	0.0	0.00	0.05	0.00	0.00
C	167.8	0.00	0.0	0.0	0.01	0.07	0.00	0.00
C	167.8	0.00	0.0	0.0	0.01	0.09	0.00	0.00
C	167.8	0.00	0.0	0.0	0.00	0.03	0.00	0.00
C	167.8	0.00	0.0	0.0	0.01	0.09	0.00	0.00
C	160.6	0.00	0.0	0.0	0.00	0.03	0.00	0.00
C	160.3	0.00	0.0	0.0	0.00	0.00	0.00	0.00
C	160.3	0.00	0.0	0.0	0.00	0.00	0.00	0.00
C	160.3	0.00	0.0	0.0	0.00	0.00	0.00	0.00
C	160.3	0.00	0.0	0.0	0.00	0.00	0.00	0.00
C	160.3	0.00	0.0	0.0	0.00	0.00	0.00	0.00
C	155.0	0.00	0.0	0.0	0.00	0.05	0.00	0.00
C	155.0	0.00	0.0	0.0	0.00	0.02	0.00	0.00
C	155.0	0.00	0.0	0.0	0.00	0.06	0.00	0.00
C	155.0	0.00	0.0	0.0	0.00	0.03	0.00	0.00
C	155.0	0.00	0.0	0.0	0.00	0.06	0.00	0.00
C	150.0	0.00	0.0	0.0	0.02	0.24	0.00	0.00
C	150.0	0.00	0.0	0.0	0.38	4.89	0.00	0.00
C	145.0	0.00	0.0	0.0	0.00	0.03	0.00	0.00
C	145.0	0.00	0.0	0.0	0.00	0.02	0.00	0.00
C	145.0	0.00	0.0	0.0	0.00	0.05	0.00	0.00
C	145.0	0.00	0.0	0.0	0.00	0.06	0.00	0.00
C	145.0	0.00	0.0	0.0	0.00	0.06	0.00	0.00
C	130.0	0.00	0.0	0.0	0.00	0.06	0.00	0.00
C	130.0	0.00	0.0	0.0	0.01	0.10	0.00	0.00
C	130.0	0.00	0.0	0.0	0.00	0.05	0.00	0.00
C	130.0	0.00	0.0	0.0	0.35	5.59	0.00	0.00
C	130.0	0.00	0.0	0.0	0.01	0.12	0.00	0.00
C	130.0	0.00	0.0	0.0	0.01	0.12	0.00	0.00
C	110.0	0.00	0.0	0.0	0.01	0.12	0.00	0.00
C	110.0	0.00	0.0	0.0	0.00	0.05	0.00	0.00
C	110.0	0.00	0.0	0.0	0.01	0.12	0.00	0.00
C	110.0	0.00	0.0	0.0	0.27	5.67	0.00	0.00
C	110.0	0.00	0.0	0.0	0.00	0.06	0.00	0.00
C	110.0	0.00	0.0	0.0	0.00	0.10	0.00	0.00
C	90.0	0.00	0.0	0.0	0.00	0.12	0.00	0.00
C	90.0	0.00	0.0	0.0	0.00	0.12	0.00	0.00
C	90.0	0.00	0.0	0.0	0.00	0.10	0.00	0.00
C	90.0	0.00	0.0	0.0	0.21	5.88	0.00	0.00
C	90.0	0.00	0.0	0.0	0.00	0.06	0.00	0.00
C	90.0	0.00	0.0	0.0	0.00	0.05	0.00	0.00
C	77.5	0.00	0.0	0.0	0.00	0.02	0.00	0.00
C	77.5	0.00	0.0	0.0	0.00	0.01	0.00	0.00
C	77.5	0.00	0.0	0.0	0.00	0.03	0.00	0.00
C	77.5	0.00	0.0	0.0	0.00	0.03	0.00	0.00
C	77.5	0.00	0.0	0.0	0.00	0.03	0.00	0.00
C	75.0	0.00	0.0	0.0	0.00	0.15	0.00	0.00
C	75.0	0.00	0.0	0.0	0.00	0.15	0.00	0.00
C	70.0	0.00	0.0	0.0	0.15	6.22	0.00	0.00
C	67.5	0.00	0.0	0.0	0.00	0.08	0.00	0.00
C	67.5	0.00	0.0	0.0	0.00	0.06	0.00	0.00
C	67.5	0.00	0.0	0.0	0.00	0.05	0.00	0.00
C	67.5	0.00	0.0	0.0	0.00	0.09	0.00	0.00
C	67.5	0.00	0.0	0.0	0.00	0.09	0.00	0.00
C	50.0	0.00	0.0	0.0	0.00	0.10	0.00	0.00
C	50.0	0.00	0.0	0.0	0.00	0.12	0.00	0.00
C	50.0	0.00	0.0	0.0	0.00	0.12	0.00	0.00
C	50.0	0.00	0.0	0.0	0.09	6.59	0.00	0.00
C	50.0	0.00	0.0	0.0	0.00	0.06	0.00	0.00
C	50.0	0.00	0.0	0.0	0.00	0.08	0.00	0.00
C	30.0	0.00	0.0	0.0	0.00	0.12	0.00	0.00
C	30.0	0.00	0.0	0.0	0.00	0.12	0.00	0.00
C	30.0	0.00	0.0	0.0	0.04	6.94	0.00	0.00
C	30.0	0.00	0.0	0.0	0.00	0.06	0.00	0.00
C	30.0	0.00	0.0	0.0	0.00	0.08	0.00	0.00
C	30.0	0.00	0.0	0.0	0.00	0.10	0.00	0.00
C	10.0	0.00	0.0	0.0	0.00	0.12	0.00	0.00
C	10.0	0.00	0.0	0.0	0.00	0.08	0.00	0.00

C	10.0	0.00	0.0	0.0	0.00	0.10	0.00	0.00
C	10.0	0.00	0.0	0.0	0.00	0.06	0.00	0.00
C	10.0	0.00	0.0	0.0	0.01	9.06	0.00	0.00
C	10.0	0.00	0.0	0.0	0.00	0.12	0.00	0.00
D	360.0	0.00	180.0	180.0	0.00	0.00	0.00	0.00
D	0.0	0.00	180.0	180.0	0.00	0.00	0.00	0.00

ANTENNA LOADING
==========

.....ANTENNA.....			ATTACHMENT		.....ANTENNA FORCES.....			
TYPE	ELEV ft	AZI	RAD ft	AZI	AXIAL kip	SHEAR kip	GRAVITY kip	TORSION ft-kip
STD+R	235.0	120.0	8.7	120.0	0.00	0.00	0.00	0.00
STD+R	235.0	0.0	8.7	0.0	0.00	0.00	0.00	0.00
HP	235.0	240.0	8.7	240.0	0.00	0.00	0.00	0.00
HP	190.0	125.0	10.9	120.0	0.00	0.00	0.00	0.00
STD+R	75.0	78.0	16.8	120.0	0.00	0.00	0.00	0.00
STD+R	75.0	137.0	16.8	240.0	0.00	0.00	0.00	0.00

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MAXIMUM ANTENNA AND REFLECTOR ROTATIONS:
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ELEV ft	AZI deg	TYPE *	.....BEAM DEFLECTIONS (deg)..... ROLL	YAW	PITCH	TOTAL
235.0	120.0	STD+R	-0.960 C	0.149 B	-0.957 F	0.962 F
235.0	0.0	STD+R	-0.986 G	0.152 H	0.887 D	0.887 D
235.0	240.0	HP	-0.970 K	0.149 H	-0.936 B	0.947 B
190.0	125.0	HP	-0.753 C	0.123 B	-0.750 F	0.754 F
75.0	78.0	STD+R	0.268 K	0.039 B	-0.279 G	0.279 G
75.0	137.0	STD+R	-0.267 C	0.039 B	0.274 K	0.275 K

MAXIMUM TENSION IN MAST MEMBERS (kip)
==========

ELEV ft	LEGS	DIAG	HORIZ	BRACE
360.0	----------	----------	0.04 G	0.00 A
	0.08 M	0.18 M		
355.0	----------	----------	0.01 Y	0.00 A
	0.65 M	0.40 E		
350.0	----------	----------	0.01 AG	0.00 A
	1.80 M	0.65 E		
345.0	----------	----------	0.02 Y	0.00 A
	3.59 M	0.97 E		
340.0	----------	----------	0.08 Y	0.00 A
	6.43 M	1.82 Q		
335.0	----------	----------	0.08 A	0.00 A
	11.33 M	2.34 B		
330.0	----------	----------	0.01 S	0.00 A
	17.16 M	2.55 T		
325.0	----------	----------	0.10 A	0.00 A
	23.45 M	2.78 N		
320.0	----------	----------	0.13 S	0.00 A
	28.96 M	2.09 Q		
315.0	----------	----------	0.12 A	0.00 A
	33.64 M	2.18 K		
310.0	----------	----------	0.01 D	0.00 A
	38.20 M	2.71 Q		
305.0	----------	----------	0.10 A	0.00 A
	43.97 M	2.72 K		
300.0	----------	----------	0.04 K	0.00 A
	49.03 M	2.61 N		
295.0	----------	----------	0.17 A	0.00 A
	54.11 M	2.65 H		
290.0	----------	----------	0.11 W	0.00 A
	59.39 M	5.07 M		
285.0	----------	----------	0.13 A	0.00 A
	69.19 M	5.10 G		
280.0	----------	----------	0.04 A	0.00 A
	76.76 M	4.94 M		
275.0	----------	----------	0.02 o	0.00 A
	85.60 M	6.89 T		
270.0	----------	----------	0.04 A	0.00 A
	97.08 M	6.79 H		

265.0	----------		0.08 A	0.00 A
	107.38 M	6.67 T		
260.0	----------		0.02 D	0.00 A
	117.72 M	8.65 N		
255.0	----------		0.07 A	0.00 A
	131.06 M	8.59 H		
250.0	----------		0.05 A	0.00 A
	142.81 M	8.47 N		
245.0	----------		0.02 b	0.00 A
	154.90 M	10.45 X		
240.0	----------		0.08 I	0.00 A
	171.64 M	11.13 R		
233.3	----------		0.03 a	0.00 A
	189.61 M	11.75 F		
226.7	----------		0.07 I	0.00 A
	208.14 M	11.77 R		
220.0	----------		0.02 Y	0.00 A
	225.40 M	11.70 F		
213.3	----------		0.06 I	0.00 A
	242.64 M	11.77 R		
206.7	----------		0.02 A	0.00 A
	258.95 M	11.77 F		
200.0	----------		0.05 I	0.00 A
	275.22 M	11.89 X		
193.3	----------		0.02 E	0.00 A
	290.76 M	12.28 X		
186.7	----------		0.05 I	0.00 A
	306.57 M	12.58 F		
180.0	----------		0.03 E	0.00 A
	321.83 M	12.65 R		
173.3	----------		0.04 I	0.00 A
	337.00 M	12.89 F		
166.7	----------		0.03 E	0.00 A
	351.86 M	13.02 R		
160.0	----------		0.03 I	0.00 A
	366.68 M	13.30 F		
153.3	----------		0.02 E	0.00 A
	381.22 M	13.51 R		
146.7	----------		0.03 I	0.00 A
	395.79 M	13.83 F		
140.0	----------		0.02 E	0.00 A
	410.18 M	14.02 R		
133.3	----------		0.05 S	0.00 A
	424.54 M	14.31 F		
126.7	----------		0.17 S	0.00 A
	438.73 M	14.56 F		
120.0	----------		0.26 I	0.00 A
	467.11 M	18.65 R		
110.0	----------		1.12 U	0.00 N
	466.13 M	19.22 R		
100.0	----------		0.49 A	0.00 A
	508.61 M	18.98 X		
90.0	----------		1.11 U	0.00 L
	507.59 M	19.61 O		
80.0	----------		0.28 I	0.00 A
	549.40 M	19.91 O		
70.0	----------		1.51 Q	0.00 X
	548.31 M	20.98 O		
60.0	----------		0.34 A	0.00 A
	590.00 M	20.89 O		
50.0	----------		1.06 M	0.00 X
	588.83 M	21.58 O		
40.0	----------		0.27 A	0.00 A
	629.72 M	21.36 O		
30.0	----------		0.97 M	0.00 S
	628.50 M	21.98 O		
20.0	----------		0.14 A	0.00 S
	668.52 M	21.86 O		
10.0	----------		0.89 M	0.00 N
	666.99 M	22.45 O		
0.0	----------		0.00 A	0.00 A

MAXIMUM COMPRESSION IN MAST MEMBERS (kip)
==========

ELEV	LEGS	DIAG	HORIZ	BRACE

ft						
360.0				-0.03	M	0.00 A
	-0.56	e	-0.21 K			
355.0				0.00	AG	0.00 A
	-1.23	e	-0.43 K			
350.0				-0.01	o	0.00 A
	-2.58	G	-0.71 K			
345.0				-0.01	S	0.00 A
	-4.76	G	-1.05 K			
340.0				-0.01	w	0.00 A
	-8.63	G	-1.98 K			
335.0				-0.06	S	0.00 A
	-14.58	G	-2.32 T			
330.0				-0.01	A	0.00 A
	-20.88	G	-2.57 K			
325.0				-0.09	S	0.00 A
	-27.74	G	-2.88 K			
320.0				-0.14	A	0.00 A
	-33.76	G	-2.28 K			
315.0				-0.10	S	0.00 A
	-39.20	G	-2.15 W			
310.0				-0.01	Q	0.00 A
	-44.86	G	-2.90 K			
305.0				-0.09	S	0.00 A
	-51.30	G	-2.60 N			
300.0				-0.04	Q	0.00 A
	-56.85	G	-2.77 K			
295.0				-0.16	S	0.00 A
	-62.58	G	-2.73 G			
290.0				-0.11	E	0.00 A
	-71.16	G	-5.33 G			
285.0				-0.11	S	0.00 A
	-81.77	G	-4.87 M			
280.0				-0.03	S	0.00 A
	-89.86	G	-5.20 G			
275.0				0.00	y	0.00 A
	-102.29	G	-6.92 H			
270.0				-0.03	S	0.00 A
	-114.55	G	-6.78 N			
265.0				-0.07	S	0.00 A
	-125.57	G	-6.71 H			
260.0				-0.02	Q	0.00 A
	-139.50	G	-8.72 H			
255.0				-0.06	S	0.00 A
	-153.81	G	-8.55 T			
250.0				-0.04	S	0.00 A
	-166.37	G	-8.57 G			
245.0				0.00	AC	0.00 A
	-182.20	G	-10.50 F			
240.0				-0.07	O	0.00 A
	-200.23	G	-11.25 L			
233.3				0.00	P	0.00 A
	-220.10	G	-11.84 R			
226.7				-0.07	O	0.00 A
	-240.23	G	-11.73 F			
220.0				-0.01	S	0.00 A
	-259.14	G	-11.77 R			
213.3				-0.06	O	0.00 A
	-278.10	G	-11.74 F			
206.7				-0.02	S	0.00 A
	-296.14	G	-11.83 X			
200.0				-0.05	O	0.00 A
	-314.22	G	-11.87 F			
193.3				-0.02	S	0.00 A
	-331.64	G	-12.51 F			
186.7				-0.04	O	0.00 A
	-349.45	G	-12.53 F			
180.0				-0.02	S	0.00 A
	-366.75	G	-12.74 F			
173.3				-0.03	O	0.00 A
	-384.23	G	-12.86 F			
166.7				-0.02	S	0.00 A
	-401.24	G	-13.10 F			
160.0				-0.03	O	0.00 A
	-418.40	G	-13.28 F			
153.3				-0.02	S	0.00 A
	-435.36	G	-13.64 C			
146.7				-0.03	O	0.00 A
	-452.46	G	-13.81 F			
140.0				-0.02	S	0.00 A

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          -469.33 G     -14.22 C
   133.3  ----------------------          -0.05 E       0.00 A
          -486.35 G     -14.32 C
   126.7  ----------------------          -0.19 A       0.00 A
          -503.21 G     -14.76 C
   120.0  ----------------------          -0.24 O       0.00 A
          -535.44 G     -19.23 C
   110.0  ----------------------          -1.30 C       0.00 S
          -536.74 G     -19.90 C
   100.0  ----------------------          -0.43 S       0.00 A
          -584.86 G     -19.73 C
    90.0  ----------------------          -1.29 C       0.00 S
          -586.22 G     -20.43 C
    80.0  ----------------------          -0.26 W       0.00 A
          -633.95 G     -20.64 C
    70.0  ----------------------          -1.71 C       0.00 R
          -635.41 G     -21.75 C
    60.0  ----------------------          -0.31 S       0.00 A
          -683.41 G     -21.43 C
    50.0  ----------------------          -1.26 G       0.00 J
          -684.96 G     -22.14 C
    40.0  ----------------------          -0.24 S       0.00 A
          -732.31 G     -21.95 C
    30.0  ----------------------          -1.17 G       0.00 G
          -733.94 G     -22.59 C
    20.0  ----------------------          -0.12 S       0.00 G
          -780.92 G     -22.18 C
    10.0  ----------------------          -1.11 G       0.00 I
          -782.96 G     -22.79 C
     0.0  ----------------------           0.00 A       0.00 A
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FORCE/RESISTANCE RATIO IN LEGS
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MAST ELEV ft	-- LEG COMPRESSION - MAX COMP	COMP RESIST	FORCE/ RESIST RATIO	---- LEG TENSION --- MAX TENS	TENS RESIST	FORCE/ RESIST RATIO
360.00						
	0.56	28.89	0.02	0.08	108.24	0.00
355.00						
	1.23	28.89	0.04	0.65	108.24	0.01
350.00						
	2.58	28.89	0.09	1.80	108.24	0.02
345.00						
	4.76	28.89	0.16	3.59	108.24	0.03
340.00						
	8.63	28.89	0.30	6.43	108.24	0.06
335.00						
	14.58	28.89	0.50	11.33	108.24	0.10
330.00						
	20.88	28.89	0.72	17.16	108.24	0.16
325.00						
	27.74	28.89	0.96	23.45	108.24	0.22
320.00						
	33.76	77.87	0.43	28.96	120.41	0.24
315.00						
	39.20	77.87	0.50	33.64	120.41	0.28
310.00						
	44.86	77.87	0.58	38.20	120.41	0.32
305.00						
	51.30	77.87	0.66	43.97	120.41	0.37
300.00						
	56.85	112.60	0.50	49.03	220.89	0.22
295.00						
	62.58	112.60	0.56	54.11	220.89	0.24
290.00						
	71.16	112.60	0.63	59.39	220.89	0.27
285.00						
	81.77	112.60	0.73	69.19	220.89	0.31
280.00						
	89.86	153.15	0.59	76.76	267.28	0.29
275.00						
	102.29	153.15	0.67	85.60	267.28	0.32
270.00						
	114.55	153.15	0.75	97.08	267.28	0.36
265.00						
	125.57	153.15	0.82	107.38	267.28	0.40
260.00						

	139.50	199.21	0.70	117.72	318.09	0.37
255.00						
	153.81	199.21	0.77	131.06	318.09	0.41
250.00						
	166.37	199.21	0.84	142.81	318.09	0.45
245.00						
	182.20	199.21	0.91	154.90	318.09	0.49
240.00						
	200.23	291.83	0.69	171.64	497.01	0.35
233.33						
	220.10	291.83	0.75	189.61	497.01	0.38
226.67						
	240.23	291.83	0.82	208.14	497.01	0.42
220.00						
	259.14	354.16	0.73	225.40	523.32	0.43
213.33						
	278.10	354.16	0.79	242.64	523.32	0.46
206.67						
	296.14	354.16	0.84	258.95	523.32	0.49
200.00						
	314.22	354.16	0.89	275.22	523.32	0.53
193.33						
	331.64	354.16	0.94	290.76	523.32	0.56
186.67						
	349.45	354.16	0.99	306.57	523.32	0.59
180.00						
	366.75	421.75	0.87	321.83	638.38	0.50
173.33						
	384.23	421.75	0.91	337.00	638.38	0.53
166.67						
	401.24	421.75	0.95	351.86	638.38	0.55
160.00						
	418.40	494.48	0.85	366.68	715.69	0.51
153.33						
	435.36	494.48	0.88	381.22	715.69	0.53
146.67						
	452.46	494.48	0.92	395.79	715.69	0.55
140.00						
	469.33	572.23	0.82	410.18	758.83	0.54
133.33						
	486.35	572.23	0.85	424.54	758.83	0.56
126.67						
	503.21	572.23	0.88	438.73	758.83	0.58
120.00						
	535.44	661.64	0.81	467.11	758.83	0.62
110.00						
	536.74	661.64	0.81	466.13	758.83	0.61
100.00						
	584.86	661.64	0.88	508.61	758.83	0.67
90.00						
	586.22	661.64	0.89	507.59	758.83	0.67
80.00						
	633.95	661.64	0.96	549.40	758.83	0.72
70.00						
	635.41	661.64	0.96	548.31	758.83	0.72
60.00						
	683.41	746.59	0.92	590.00	758.83	0.78
50.00						
	684.96	746.59	0.92	588.83	758.83	0.78
40.00						
	732.31	746.59	0.98	629.72	883.57	0.71
30.00						
	733.94	746.59	0.98	628.50	883.57	0.71
20.00						
	780.92	836.10	0.93	668.52	974.14	0.69
10.00						
	782.96	836.10	0.94	666.99	974.14	0.68
0.00						

FORCE/RESISTANCE RATIO IN DIAGONALS
==========

	- DIAG COMPRESSION -			--- DIAG TENSION --		
MAST ELEV ft	MAX COMP	COMP RESIST	FORCE/ RESIST RATIO	MAX TENS	TENS RESIST	FORCE/ RESIST RATIO
360.00						
	0.21	7.62	0.03	0.18	7.62	0.02
355.00						
	0.43	7.62	0.06	0.40	7.62	0.05

350.00						
	0.71	7.62	0.09	0.65	7.62	0.09
345.00						
	1.05	7.62	0.14	0.97	7.62	0.13
340.00						
	1.98	7.62	0.26	1.82	7.62	0.24
335.00						
	2.32	7.62	0.30	2.34	7.62	0.31
330.00						
	2.57	7.62	0.34	2.55	7.62	0.33
325.00						
	2.88	7.62	0.38	2.78	7.62	0.36
320.00						
	2.28	7.62	0.30	2.09	7.62	0.27
315.00						
	2.15	7.62	0.28	2.18	7.62	0.29
310.00						
	2.90	7.62	0.38	2.71	7.62	0.36
305.00						
	2.60	7.62	0.34	2.72	7.62	0.36
300.00						
	2.77	7.62	0.36	2.61	7.62	0.34
295.00						
	2.73	7.62	0.36	2.65	7.62	0.35
290.00						
	5.33	7.62	0.70	5.07	7.62	0.67
285.00						
	4.87	7.62	0.64	5.10	7.62	0.67
280.00						
	5.20	8.27	0.63	4.94	8.27	0.60
275.00						
	6.92	8.27	0.84	6.89	8.27	0.83
270.00						
	6.78	8.27	0.82	6.79	8.27	0.82
265.00						
	6.71	8.27	0.81	6.67	8.27	0.81
260.00						
	8.72	11.86	0.74	8.65	11.86	0.73
255.00						
	8.55	11.86	0.72	8.59	11.86	0.72
250.00						
	8.57	11.86	0.72	8.47	11.86	0.71
245.00						
	10.50	11.86	0.89	10.45	11.86	0.88
240.00						
	11.25	13.94	0.81	11.13	13.94	0.80
233.33						
	11.84	13.94	0.85	11.75	13.94	0.84
226.67						
	11.73	13.94	0.84	11.77	13.94	0.84
220.00						
	11.77	12.11	0.97	11.70	12.11	0.97
213.33						
	11.74	12.11	0.97	11.77	12.11	0.97
206.67						
	11.83	12.11	0.98	11.77	12.11	0.97
200.00						
	11.87	13.20	0.90	11.89	13.20	0.90
193.33						
	12.51	13.20	0.95	12.28	13.20	0.93
186.67						
	12.53	13.20	0.95	12.58	13.20	0.95
180.00						
	12.74	17.95	0.71	12.65	17.95	0.70
173.33						
	12.86	17.95	0.72	12.89	17.95	0.72
166.67						
	13.10	17.95	0.73	13.02	17.95	0.73
160.00						
	13.28	15.39	0.86	13.30	15.39	0.86
153.33						
	13.64	15.39	0.89	13.51	15.39	0.88
146.67						
	13.81	15.39	0.90	13.83	15.39	0.90
140.00						
	14.22	19.32	0.74	14.02	19.32	0.73
133.33						
	14.32	19.32	0.74	14.31	19.32	0.74
126.67						
	14.76	19.32	0.76	14.56	19.32	0.75
120.00						

	19.23	22.93	0.84	18.65	22.93	0.81
110.00						
	19.90	20.80	0.96	19.22	20.80	0.92
100.00						
	19.73	30.16	0.65	18.98	30.16	0.63
90.00						
	20.43	27.45	0.74	19.61	27.45	0.71
80.00						
	20.64	36.56	0.56	19.91	36.56	0.54
70.00						
	21.75	36.56	0.59	20.98	36.56	0.57
60.00						
	21.43	25.32	0.85	20.89	25.32	0.83
50.00						
	22.14	23.14	0.96	21.58	23.14	0.93
40.00						
	21.95	36.56	0.60	21.36	36.56	0.58
30.00						
	22.59	35.61	0.63	21.98	35.61	0.62
20.00						
	22.18	49.70	0.45	21.86	49.70	0.44
10.00						
	22.79	49.70	0.46	22.45	49.70	0.45
0.00						

MAXIMUM INDIVIDUAL FOUNDATION LOADS: (kip)

LOAD---COMPONENTS				TOTAL
NORTH	EAST	DOWN	UPLIFT	SHEAR
72.14 G	-61.89 C	805.42 G	-685.65 M	72.14 G

MAXIMUM TOTAL LOADS ON FOUNDATION : (kip & kip-ft)

HORIZONTAL			DOWN	OVERTURNING			TORSION
NORTH	EAST	TOTAL @ 359.7		NORTH	EAST	TOTAL @ 359.8	
120.7 G	-107.8 D	120.7 G	356.3 Y	21776.1 G	-19627.6 D	21776.2 G	-114.7 B

Latticed Tower Analysis (Unguyed) (c)2017 Guymast Inc. 416-736-7453
Processed under license at:

Sabre Towers and Poles on: 22 dec 2021 at: 8:05:29

********** Service Load Condition **********

* Only 1 condition(s) shown in full

LOADING CONDITION A

60 mph wind with no ice. Wind Azimuth: 0• (1.0 D + 1.0 Wo)

MAST LOADING

LOAD TYPE	ELEV	APPLY..LOAD..AT RADIUS	AZI	LOAD AZI	.....FORCES..... HORIZ	DOWN	.....MOMENTS..... VERTICAL	TORSNAL
	ft	ft			kip	kip	ft-kip	ft-kip

C	360.0	0.00	0.0	0.0	0.01	0.10	0.00	0.00
C	360.0	0.00	0.0	0.0	0.02	0.10	0.00	0.00
C	348.4	0.00	0.0	0.0	0.04	0.05	0.00	0.00
C	345.7	0.00	0.0	0.0	0.06	0.06	0.00	0.00
C	345.4	0.00	0.0	0.0	0.02	0.01	0.00	0.00
C	340.0	0.00	0.0	0.0	0.11	0.30	0.00	0.00
C	340.0	0.00	0.0	0.0	0.02	0.08	0.00	0.00
C	340.0	0.00	0.0	0.0	0.12	0.30	0.00	0.00
C	340.0	0.00	0.0	0.0	0.11	0.30	0.00	0.00
C	340.0	0.00	0.0	0.0	0.00	0.01	0.00	0.00
C	335.0	0.00	0.0	0.0	0.17	0.65	0.00	0.00
C	318.4	0.00	0.0	0.0	0.04	0.05	0.00	0.00
C	315.7	0.00	0.0	0.0	0.06	0.06	0.00	0.00
C	315.4	0.00	0.0	0.0	0.02	0.01	0.00	0.00
C	310.0	0.00	0.0	0.0	0.11	0.30	0.00	0.00
C	310.0	0.00	0.0	0.0	0.02	0.08	0.00	0.00
C	310.0	0.00	0.0	0.0	0.11	0.30	0.00	0.00
C	310.0	0.00	0.0	0.0	0.11	0.30	0.00	0.00
C	290.0	0.00	0.0	0.0	1.60	4.00	0.00	0.00
C	275.0	0.00	0.0	0.0	1.58	4.00	0.00	0.00
C	260.0	0.00	0.0	0.0	1.56	4.00	0.00	0.00
C	245.0	0.00	0.0	0.0	1.54	4.00	0.00	0.00
C	175.0	0.00	0.0	0.0	0.02	0.20	0.00	0.00
C	160.6	0.00	0.0	0.0	0.04	0.04	0.00	0.00
C	150.0	0.00	0.0	0.0	0.10	0.30	0.00	0.00
D	360.0	0.00	8.4	0.0	0.03	0.05	0.01	0.01
D	340.0	0.00	8.4	0.0	0.02	0.04	0.01	0.01
D	340.0	0.00	19.2	0.0	0.03	0.05	0.01	0.01
D	320.0	0.00	20.1	0.0	0.03	0.05	0.01	0.01
D	320.0	0.00	18.7	0.0	0.03	0.07	0.01	0.01
D	305.0	0.00	18.9	0.0	0.03	0.07	0.02	0.01
D	305.0	0.00	20.5	0.0	0.03	0.07	0.02	0.01
D	300.0	0.00	20.5	0.0	0.03	0.07	0.02	0.01
D	300.0	0.00	15.3	0.0	0.03	0.08	0.03	0.01
D	285.0	0.00	33.2	0.0	0.04	0.08	0.02	0.02
D	285.0	0.00	37.6	0.0	0.04	0.09	0.02	0.02
D	280.0	0.00	37.6	0.0	0.04	0.09	0.02	0.02
D	280.0	0.00	45.4	0.0	0.04	0.11	0.02	0.02
D	260.0	0.00	78.9	0.0	0.04	0.11	0.02	0.02
D	260.0	0.00	27.4	0.0	0.06	0.14	0.01	-0.01
D	245.0	0.00	26.0	0.0	0.06	0.14	0.01	-0.01
D	245.0	0.00	328.0	0.0	0.06	0.15	0.02	-0.01
D	240.0	0.00	328.0	0.0	0.06	0.15	0.02	-0.01
D	240.0	0.00	330.6	0.0	0.06	0.19	0.02	-0.01
D	220.0	0.00	331.9	0.0	0.07	0.19	0.03	0.00
D	220.0	0.00	334.3	0.0	0.07	0.21	0.03	0.00
D	200.0	0.00	333.0	0.0	0.07	0.21	0.03	0.00
D	200.0	0.00	335.3	0.0	0.07	0.23	0.03	0.00
D	180.0	0.00	338.8	0.0	0.07	0.24	0.04	0.00
D	180.0	0.00	340.0	0.0	0.08	0.27	0.04	0.00
D	160.0	0.00	340.1	0.0	0.08	0.28	0.04	0.00
D	160.0	0.00	341.2	0.0	0.08	0.30	0.04	0.00
D	140.0	0.00	343.6	0.0	0.08	0.30	0.04	0.00
D	140.0	0.00	344.8	0.0	0.09	0.34	0.05	0.00
D	120.0	0.00	344.1	0.0	0.09	0.35	0.05	0.00
D	120.0	0.00	345.6	0.0	0.07	0.29	0.05	0.00
D	110.0	0.00	345.6	0.0	0.07	0.29	0.05	0.00
D	110.0	0.00	345.2	0.0	0.09	0.36	0.05	0.00
D	100.0	0.00	345.2	0.0	0.09	0.36	0.05	0.00
D	100.0	0.00	346.5	0.0	0.07	0.30	0.05	0.00
D	90.0	0.00	346.5	0.0	0.07	0.30	0.05	0.00
D	90.0	0.00	346.1	0.0	0.09	0.38	0.05	0.00
D	80.0	0.00	346.1	0.0	0.09	0.38	0.05	0.00
D	80.0	0.00	349.7	0.0	0.07	0.32	0.06	0.00
D	70.0	0.00	349.7	0.0	0.07	0.32	0.06	0.00
D	70.0	0.00	351.7	0.0	0.09	0.41	0.07	0.00
D	60.0	0.00	351.7	0.0	0.09	0.41	0.07	0.00
D	60.0	0.00	352.2	0.0	0.07	0.34	0.07	0.00
D	50.0	0.00	352.2	0.0	0.07	0.34	0.07	0.00
D	50.0	0.00	352.0	0.0	0.09	0.44	0.07	0.00
D	40.0	0.00	352.0	0.0	0.09	0.44	0.07	0.00
D	40.0	0.00	352.7	0.0	0.06	0.35	0.08	0.00
D	30.0	0.00	352.7	0.0	0.06	0.35	0.08	0.00
D	30.0	0.00	352.5	0.0	0.08	0.46	0.08	0.00
D	20.0	0.00	352.5	0.0	0.08	0.46	0.08	0.00
D	20.0	0.00	353.0	0.0	0.06	0.44	0.08	0.00
D	10.0	0.00	353.0	0.0	0.06	0.44	0.08	0.00
D	10.0	0.00	352.8	0.0	0.08	0.57	0.08	0.00
D	0.0	0.00	352.8	0.0	0.08	0.57	0.08	0.00

ANTENNA LOADING
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.....ANTENNA.....			ATTACHMENT		.....ANTENNA FORCES.....			
TYPE	ELEV ft	AZI	RAD ft	AZI	AXIAL kip	SHEAR kip	GRAVITY kip	TORSION ft-kip
STD+R	235.0	120.0	8.7	120.0	-0.05	-0.11	0.20	-0.32
STD+R	235.0	0.0	8.7	0.0	0.27	0.00	0.20	0.00
HP	235.0	240.0	8.7	240.0	-0.09	0.05	0.17	0.05
HP	190.0	125.0	10.9	120.0	-0.19	-0.09	0.28	-0.15
STD+R	75.0	78.0	16.8	120.0	0.06	-0.11	0.20	-0.15
STD+R	75.0	137.0	16.8	240.0	-0.09	-0.08	0.20	-0.17

MAXIMUM MAST DISPLACEMENTS:
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ELEV	------DEFLECTIONS (ft)-----			--TILTS (DEG)---		TWIST
ft	NORTH	EAST	DOWN	NORTH	EAST	DEG
360.0	1.415 G	-1.266 D	0.016 G	0.439 G	-0.386 D	-0.065 F
355.0	1.377 G	-1.232 D	0.016 G	0.439 G	-0.386 D	-0.065 F
350.0	1.339 G	-1.198 D	0.016 G	0.439 G	-0.386 D	-0.065 F
345.0	1.300 G	-1.164 D	0.016 G	0.438 G	-0.385 D	-0.064 F
340.0	1.262 G	-1.131 D	0.015 G	0.436 G	-0.384 D	-0.063 F
335.0	1.224 G	-1.097 D	0.015 G	0.433 G	-0.381 D	-0.062 F
330.0	1.186 G	-1.064 D	0.015 G	0.428 G	-0.377 D	-0.060 F
325.0	1.148 G	-1.031 D	0.015 G	0.420 G	-0.370 D	-0.058 F
320.0	1.111 G	-0.998 D	0.015 G	0.409 G	-0.361 D	-0.055 F
315.0	1.075 G	-0.967 D	0.014 G	0.402 G	-0.355 D	-0.053 F
310.0	1.041 G	-0.936 D	0.014 G	0.395 G	-0.349 D	-0.050 F
305.0	1.006 G	-0.905 D	0.014 G	0.387 G	-0.342 D	-0.048 F
300.0	0.972 G	-0.875 D	0.014 G	0.378 G	-0.335 D	-0.045 F
295.0	0.939 G	-0.846 D	0.014 G	0.371 G	-0.329 D	-0.043 F
290.0	0.907 G	-0.817 D	0.013 G	0.363 G	-0.323 D	-0.042 B
285.0	0.874 G	-0.788 D	0.013 G	0.356 G	-0.316 D	-0.042 B
280.0	0.842 G	-0.760 D	0.013 G	0.347 G	-0.309 D	-0.042 B
275.0	0.812 G	-0.733 D	0.013 G	0.340 G	-0.303 D	-0.042 B
270.0	0.781 G	-0.705 D	0.013 G	0.332 G	-0.297 D	-0.042 B
265.0	0.751 G	-0.679 D	0.012 G	0.324 G	-0.289 D	-0.043 B
260.0	0.723 G	-0.653 D	0.012 G	0.315 G	-0.282 D	-0.043 B
255.0	0.694 G	-0.628 D	0.012 G	0.307 G	-0.275 D	-0.043 B
250.0	0.667 G	-0.603 D	0.012 G	0.298 G	-0.268 D	-0.042 B
245.0	0.640 G	-0.579 D	0.011 G	0.290 G	-0.260 D	-0.042 B
240.0	0.613 G	-0.555 D	0.011 G	0.281 G	-0.252 D	-0.042 B
233.3	0.580 G	-0.525 D	0.011 G	0.273 G	-0.245 D	-0.041 B
226.7	0.547 G	-0.495 D	0.010 G	0.264 G	-0.238 D	-0.041 B
220.0	0.515 G	-0.466 D	0.010 G	0.255 G	-0.230 D	-0.040 B
213.3	0.484 G	-0.438 D	0.010 G	0.247 G	-0.223 D	-0.039 B
206.7	0.454 G	-0.411 D	0.010 G	0.238 G	-0.215 D	-0.037 B
200.0	0.425 G	-0.385 D	0.009 K	0.230 G	-0.207 D	-0.036 B
193.3	0.397 G	-0.360 D	0.009 G	0.221 G	-0.199 D	-0.035 B
186.7	0.371 G	-0.336 D	0.009 K	0.211 G	-0.191 D	-0.034 B
180.0	0.345 G	-0.313 D	0.008 K	0.202 G	-0.183 D	-0.032 B
173.3	0.321 G	-0.291 D	0.008 K	0.193 G	-0.175 D	-0.031 B
166.7	0.297 G	-0.269 D	0.008 K	0.185 G	-0.167 D	-0.029 B
160.0	0.275 G	-0.249 D	0.008 K	0.176 G	-0.159 D	-0.028 B
153.3	0.253 G	-0.229 D	0.007 K	0.168 G	-0.152 D	-0.026 B
146.7	0.232 G	-0.210 D	0.007 K	0.161 G	-0.145 D	-0.024 B
140.0	0.212 G	-0.192 D	0.007 K	0.153 G	-0.138 D	-0.023 B
133.3	0.193 G	-0.175 D	0.007 K	0.145 G	-0.132 D	-0.021 B
126.7	0.174 G	-0.158 D	0.006 K	0.138 G	-0.125 D	-0.020 B
120.0	0.154 G	-0.140 D	0.006 K	0.130 G	-0.118 D	-0.018 B
110.0	0.130 G	-0.118 D	0.006 L	0.119 G	-0.108 D	-0.017 B
100.0	0.108 G	-0.098 D	0.005 L	0.108 G	-0.097 D	-0.015 B
90.0	0.090 G	-0.081 D	0.005 G	0.097 G	-0.088 D	-0.013 B
80.0	0.071 G	-0.064 D	0.004 G	0.085 G	-0.077 D	-0.012 B
70.0	0.056 G	-0.051 D	0.004 L	0.074 G	-0.067 D	-0.010 B
60.0	0.042 G	-0.038 D	0.003 L	0.062 G	-0.056 D	-0.008 B
50.0	0.031 G	-0.028 D	0.003 G	0.052 G	-0.047 D	-0.007 B
40.0	0.020 G	-0.018 D	0.002 G	0.041 G	-0.037 D	-0.005 B
30.0	0.012 G	-0.011 D	0.002 G	0.031 G	-0.028 D	-0.003 B
20.0	0.005 G	-0.005 D	0.001 G	0.020 G	-0.018 D	-0.002 B
10.0	0.002 G	-0.001 D	0.001 G	0.010 G	-0.009 D	-0.001 B
0.0	0.000 A	0.000 A	0.000 A	0.000 A	0.000 A	0.000 A

MAXIMUM ANTENNA AND REFLECTOR ROTATIONS:
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ELEV ft	AZI deg	TYPE *	.....BEAM DEFLECTIONS (deg)..... ROLL	YAW	PITCH	TOTAL
235.0	120.0	STD+R	-0.267 C	0.041 B	-0.267 F	0.268 F
235.0	0.0	STD+R	-0.275 G	0.041 H	0.247 D	0.247 D
235.0	240.0	HP	-0.270 K	0.041 B	-0.261 B	0.264 B
190.0	125.0	HP	-0.210 C	0.034 B	-0.209 F	0.210 F
75.0	78.0	STD+R	0.075 K	0.011 B	-0.078 G	0.078 G
75.0	137.0	STD+R	-0.074 C	0.011 B	0.076 K	0.077 K

MAXIMUM TENSION IN MAST MEMBERS (kip)

ELEV ft	LEGS	DIAG	HORIZ	BRACE
360.0	----------	----------	0.01 G	0.00 A
	0.00 A	0.05 E		
355.0	----------	----------	0.00 A	0.00 A
	0.04 A	0.11 E		
350.0	----------	----------	0.00 G	0.00 A
	0.30 A	0.18 E		
345.0	----------	----------	0.01 A	0.00 A
	0.74 A	0.28 E		
340.0	----------	----------	0.02 J	0.00 A
	1.27 A	0.50 E		
335.0	----------	----------	0.03 A	0.00 A
	2.40 A	0.66 H		
330.0	----------	----------	0.00 G	0.00 A
	4.00 A	0.71 H		
325.0	----------	----------	0.04 A	0.00 A
	5.70 A	0.77 B		
320.0	----------	----------	0.03 G	0.00 A
	7.19 A	0.56 E		
315.0	----------	----------	0.04 A	0.00 A
	8.37 A	0.62 K		
310.0	----------	----------	0.00 D	0.00 A
	9.37 A	0.74 E		
305.0	----------	----------	0.03 A	0.00 A
	10.87 A	0.77 K		
300.0	----------	----------	0.01 K	0.00 A
	12.23 A	0.72 B		
295.0	----------	----------	0.05 A	0.00 A
	13.54 A	0.75 B		
290.0	----------	----------	0.03 K	0.00 A
	13.97 A	1.38 A		
285.0	----------	----------	0.04 A	0.00 A
	16.53 A	1.44 G		
280.0	----------	----------	0.01 A	0.00 A
	18.57 A	1.35 A		
275.0	----------	----------	0.00 A	0.00 A
	19.88 A	1.90 H		
270.0	----------	----------	0.02 A	0.00 A
	22.91 A	1.89 B		
265.0	----------	----------	0.03 A	0.00 A
	25.65 A	1.84 H		
260.0	----------	----------	0.01 D	0.00 A
	27.37 A	2.37 B		
255.0	----------	----------	0.02 A	0.00 A
	30.86 A	2.40 B		
250.0	----------	----------	0.02 A	0.00 A
	33.98 A	2.33 B		
245.0	----------	----------	0.01 A	0.00 A
	36.15 A	2.88 L		
240.0	----------	----------	0.02 I	0.00 A
	40.51 A	3.08 F		
233.3	----------	----------	0.01 G	0.00 A
	45.06 A	3.28 L		
226.7	----------	----------	0.02 I	0.00 A
	49.92 A	3.24 L		
220.0	----------	----------	0.01 A	0.00 A
	54.35 A	3.26 F		
213.3	----------	----------	0.02 I	0.00 A
	58.82 A	3.25 L		
206.7	----------	----------	0.01 E	0.00 A
	62.97 A	3.28 F		
200.0	----------	----------	0.02 I	0.00 A
	67.14 A	3.28 L		
193.3	----------	----------	0.01 E	0.00 A
	71.05 A	3.39 L		

186.7	----------		0.02 I	0.00 A
	75.05 A	3.50 F		
180.0	----------		0.01 E	0.00 A
	78.85 A	3.50 F		
173.3	----------		0.01 I	0.00 A
	82.58 A	3.59 F		
166.7	----------		0.01 E	0.00 A
	86.25 A	3.60 F		
160.0	----------		0.01 I	0.00 A
	89.88 A	3.70 F		
153.3	----------		0.01 E	0.00 A
	93.39 A	3.74 F		
146.7	----------		0.01 I	0.00 A
	96.90 A	3.85 F		
140.0	----------		0.01 E	0.00 A
	100.37 A	3.89 F		
133.3	----------		0.01 G	0.00 A
	103.79 A	3.99 F		
126.7	----------		0.04 G	0.00 A
	107.16 A	4.05 F		
120.0	----------		0.08 I	0.00 A
	114.46 A	5.17 F		
110.0	----------		0.29 I	0.00 G
	113.37 A	5.33 F		
100.0	----------		0.16 A	0.00 A
	124.37 A	5.26 L		
90.0	----------		0.28 I	0.00 K
	123.24 A	5.44 L		
80.0	----------		0.09 I	0.00 A
	134.03 A	5.52 C		
70.0	----------		0.41 E	0.00 L
	132.81 A	5.82 C		
60.0	----------		0.11 A	0.00 A
	143.50 A	5.80 C		
50.0	----------		0.27 A	0.00 A
	142.20 A	5.99 C		
40.0	----------		0.09 A	0.00 A
	152.62 A	5.93 C		
30.0	----------		0.24 A	0.00 A
	151.27 A	6.10 C		
20.0	----------		0.05 A	0.00 A
	161.29 A	6.08 C		
10.0	----------		0.21 A	0.00 I
	159.60 A	6.24 C		
0.0	----------		0.00 A	0.00 A

MAXIMUM COMPRESSION IN MAST MEMBERS (kip)
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ELEV ft	LEGS	DIAG	HORIZ	BRACE
360.0	----------		-0.01 A	0.00 A
	-0.15 G	-0.06 K		
355.0	----------		0.00 A	0.00 A
	-0.44 G	-0.12 K		
350.0	----------		0.00 A	0.00 A
	-0.91 G	-0.20 K		
345.0	----------		0.00 G	0.00 A
	-1.60 G	-0.30 K		
340.0	----------		0.00 A	0.00 A
	-2.95 G	-0.57 K		
335.0	----------		-0.01 G	0.00 A
	-4.85 G	-0.64 H		
330.0	----------		0.00 A	0.00 A
	-6.66 G	-0.73 K		
325.0	----------		-0.02 G	0.00 A
	-8.65 G	-0.81 K		
320.0	----------		-0.05 A	0.00 A
	-10.39 G	-0.66 K		
315.0	----------		-0.02 G	0.00 A
	-12.05 G	-0.60 K		
310.0	----------		0.00 I	0.00 A
	-13.91 G	-0.83 K		
305.0	----------		-0.02 G	0.00 A
	-15.83 G	-0.72 B		

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300.0  ---------------------        -0.01 E       0.00 A
         -17.45 G      -0.79 K
295.0  ---------------------        -0.04 G       0.00 A
         -19.17 G      -0.77 G
290.0  ---------------------        -0.03 E       0.00 A
         -22.52 G      -1.52 G
285.0  ---------------------        -0.02 G       0.00 A
         -25.63 G      -1.33 A
280.0  ---------------------        -0.01 G       0.00 A
         -27.94 G      -1.47 G
275.0  ---------------------         0.00 A       0.00 A
         -32.42 G      -1.94 B
270.0  ---------------------        -0.01 G       0.00 A
         -35.97 G      -1.88 B
265.0  ---------------------        -0.01 G       0.00 A
         -39.14 G      -1.88 B
260.0  ---------------------         0.00 E       0.00 A
         -44.03 G      -2.44 H
255.0  ---------------------        -0.01 G       0.00 A
         -48.19 G      -2.36 B
250.0  ---------------------        -0.01 G       0.00 A
         -51.80 G      -2.40 G
245.0  ---------------------         0.00 A       0.00 A
         -57.25 G      -2.93 F
240.0  ---------------------        -0.02 C       0.00 A
         -62.51 G      -3.14 L
233.3  ---------------------         0.00 A       0.00 A
         -68.44 G      -3.27 F
226.7  ---------------------        -0.02 C       0.00 A
         -74.27 G      -3.28 L
220.0  ---------------------         0.00 A       0.00 A
         -79.85 G      -3.26 L
213.3  ---------------------        -0.01 C       0.00 A
         -85.41 G      -3.28 F
206.7  ---------------------         0.00 G       0.00 A
         -90.75 G      -3.28 L
200.0  ---------------------        -0.01 K       0.00 A
         -96.09 G      -3.32 F
193.3  ---------------------         0.00 G       0.00 A
        -101.29 G      -3.50 F
186.7  ---------------------        -0.01 K       0.00 A
        -106.60 G      -3.48 F
180.0  ---------------------         0.00 G       0.00 A
        -111.79 G      -3.56 F
173.3  ---------------------        -0.01 K       0.00 A
        -117.09 G      -3.57 F
166.7  ---------------------         0.00 G       0.00 A
        -122.23 G      -3.66 F
160.0  ---------------------        -0.01 K       0.00 A
        -127.44 G      -3.70 F
153.3  ---------------------         0.00 G       0.00 A
        -132.63 G      -3.81 C
146.7  ---------------------        -0.01 K       0.00 A
        -137.87 G      -3.85 F
140.0  ---------------------         0.00 G       0.00 A
        -143.05 G      -3.98 C
133.3  ---------------------        -0.02 E       0.00 A
        -148.30 G      -3.99 C
126.7  ---------------------        -0.06 A       0.00 A
        -153.51 G      -4.11 C
120.0  ---------------------        -0.06 K       0.00 A
        -163.02 G      -5.39 C
110.0  ---------------------        -0.38 C       0.00 H
        -164.11 G      -5.58 C
100.0  ---------------------        -0.09 G       0.00 A
        -178.26 G      -5.53 C
 90.0  ---------------------        -0.38 C       0.00 F
        -179.40 G      -5.73 C
 80.0  ---------------------        -0.06 K       0.00 A
        -193.48 G      -5.78 C
 70.0  ---------------------        -0.49 C       0.00 B
        -194.70 G      -6.10 C
 60.0  ---------------------        -0.07 G       0.00 A
        -208.93 G      -6.00 C
 50.0  ---------------------        -0.38 G       0.00 E
        -210.23 G      -6.20 C
 40.0  ---------------------        -0.05 G       0.00 A
        -224.32 G      -6.15 C
 30.0  ---------------------        -0.35 G       0.00 H
        -225.67 G      -6.33 C
 20.0  ---------------------        -0.02 G       0.00 H
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            -239.80 G      -6.20 C
     10.0  ----------------------         -0.34 G       0.00 I
            -241.49 G      -6.37 C
      0.0  ----------------------          0.00 A       0.00 A
```

MAXIMUM INDIVIDUAL FOUNDATION LOADS: (kip)

LOAD---COMPONENTS				TOTAL
NORTH	EAST	DOWN	UPLIFT	SHEAR
21.30 G	-18.28 C	248.38 G	-164.10 A	21.30 G

MAXIMUM TOTAL LOADS ON FOUNDATION : (kip & kip-ft)

HORIZONTAL			DOWN	OVERTURNING			TORSION
NORTH	EAST	TOTAL @ 359.7		NORTH	EAST	TOTAL @ 359.8	
33.6 G	-30.0 D	33.6 G	108.6 D	6063.8 G	-5469.8 D	6063.8 G	-31.8 B

Seismic Load Effects
Equivalent Lateral Force Procedure
ANSI/TIA-222-H

Parameters	
Risk Category	III
R	3.000
S_S	0.389
S_1	0.104
Site Class	E
T_L (sec)	12.000
F_a	2.011
F_v	4.164
S_{MS}	0.782
S_{M1}	0.433
S_{DS}	0.521
S_{D1}	0.289
T_s	0.555
I_e	1.250
Ω	1.500
C_S	0.073
h (ft)	360.00
K_f	4,540
W_a (ft)	17.44
W_o (ft)	33.00
W (kips)	120.613
W_1 (kips)	51.779
W_2 (kips)	1.364
f_1 (Hertz)	0.603
T (sec)	1.658
k_e	1.5790
V_s (kips)	8.805
Seismic Design Category	D

Vertical Distribution of Seismic Forces

Description	h_i (ft.)	w_i (kips)	W_2 (kips)	$w_i h_i^{ke}$	F_{sz} or E_h (kips)	E_V (kips)	1.2 D + 1.0 E_V (kips)	0.9 D - 1.0 E_V (kips)
Antenna Load	360.00	0.1000	0.1000	1,087.4308	0.0248	0.0104	0.1304	0.0796
Antenna Load	360.00	0.1000	0.1000	1,087.4308	0.0248	0.0104	0.1304	0.0796
Ladder	354.20	0.0464	0.0720	491.7920	0.0112	0.0048	0.0605	0.0370
Ladder/Line	354.20	0.0115	0.0178	121.8881	0.0028	0.0012	0.0150	0.0092
Structure - Section 1	350.00	0.9820	0.8838	10,213.9783	0.2334	0.1023	1.2807	0.7815
Antenna Load	348.40	0.0480	0.0480	495.6586	0.0113	0.0050	0.0626	0.0382
Ladder	347.04	0.0109	0.0256	111.8628	0.0026	0.0011	0.0142	0.0087
Ladder/Line	347.04	0.0027	0.0063	27.7091	0.0006	0.0003	0.0035	0.0021
Antenna Load	345.67	0.0570	0.0570	581.3286	0.0133	0.0059	0.0743	0.0454
Ladder	345.52	0.0012	0.0142	12.2301	0.0003	0.0001	0.0015	0.0010
Ladder/Line	345.52	0.0003	0.0036	3.0575	0.0001	0.0000	0.0004	0.0003
Antenna Load	345.36	0.0089	0.0089	90.6403	0.0021	0.0009	0.0116	0.0071
Ladder	342.68	0.0214	0.0214	215.2797	0.0049	0.0022	0.0279	0.0171
Ladder/Line	342.68	0.0053	0.0053	53.3169	0.0012	0.0006	0.0070	0.0042
Antenna Load	340.00	0.0100	0.0000	99.3585	0.0023	0.0010	0.0130	0.0080
Antenna Load	340.00	0.0800	0.0000	794.8683	0.0182	0.0083	0.1043	0.0637
Mount Load	340.00	0.3000	0.0000	2,980.7563	0.0681	0.0313	0.3913	0.2387
Mount Load	340.00	0.3000	0.0000	2,980.7563	0.0681	0.0313	0.3913	0.2387
Mount Load	340.00	0.3000	0.0000	2,980.7563	0.0681	0.0313	0.3913	0.2387
Ladder	337.50	0.0200	0.0000	196.4148	0.0045	0.0021	0.0261	0.0159
Ladder/Line	337.50	0.0176	0.0000	172.8451	0.0039	0.0018	0.0229	0.0140
Mount/Antenna Load	335.00	0.6520	0.0000	6,328.3916	0.1446	0.0679	0.8503	0.5189
Structure - Section 2	330.00	0.9820	0.0000	9,307.7562	0.2127	0.1023	1.2807	0.7815
Ladder	327.50	0.0600	0.0000	561.9141	0.0128	0.0063	0.0783	0.0477
Ladder/Line	327.50	0.0587	0.0000	549.7393	0.0126	0.0061	0.0765	0.0467
Ladder	319.20	0.0064	0.0000	57.5566	0.0013	0.0007	0.0084	0.0051
Ladder/Line	319.20	0.0063	0.0000	56.6573	0.0013	0.0007	0.0083	0.0050
Antenna Load	318.40	0.0480	0.0000	429.9676	0.0098	0.0050	0.0626	0.0382
Ladder	317.03	0.0109	0.0000	96.9759	0.0022	0.0011	0.0142	0.0087
Ladder/Line	317.03	0.0107	0.0000	95.1966	0.0022	0.0011	0.0139	0.0085
Antenna Load	315.67	0.0570	0.0000	503.6911	0.0115	0.0059	0.0743	0.0454
Ladder	315.52	0.0012	0.0000	10.5961	0.0002	0.0001	0.0015	0.0010
Ladder/Line	315.52	0.0012	0.0000	10.5961	0.0002	0.0001	0.0015	0.0010
Antenna Load	315.36	0.0089	0.0000	78.5246	0.0018	0.0009	0.0116	0.0071
Ladder	312.68	0.0214	0.0000	186.2845	0.0043	0.0022	0.0279	0.0171

Seismic Load Effects
Equivalent Lateral Force Procedure
ANSI/TIA-222-H

Vertical Distribution of Seismic Forces

Description	h_i (ft.)	w_i (kips)	W_2 (kips)	$w_i h_i^{ke}$	F_{sz} or E_h (kips)	E_V (kips)	1.2 D + 1.0 E_V (kips)	0.9 D - 1.0 E_V (kips)
Ladder/Line	312.68	0.0210	0.0000	182.8026	0.0042	0.0022	0.0274	0.0167
Antenna Load	310.00	0.0800	0.0000	686.9895	0.0157	0.0083	0.1043	0.0637
Mount Load	310.00	0.3000	0.0000	2,576.2106	0.0589	0.0313	0.3913	0.2387
Mount Load	310.00	0.3000	0.0000	2,576.2106	0.0589	0.0313	0.3913	0.2387
Mount Load	310.00	0.3000	0.0000	2,576.2106	0.0589	0.0313	0.3913	0.2387
Structure - Section 3	310.00	1.3730	0.0000	11,790.4574	0.2694	0.1431	1.7907	1.0926
Ladder	305.00	0.0400	0.0000	334.7877	0.0076	0.0042	0.0522	0.0318
Ladder/Line	305.00	0.0653	0.0000	546.5408	0.0125	0.0068	0.0852	0.0520
Ladder	295.00	0.0400	0.0000	317.6208	0.0073	0.0042	0.0522	0.0318
Ladder/Line	295.00	0.0653	0.0000	518.5160	0.0118	0.0068	0.0852	0.0520
Antenna Load	290.00	4.0000	0.0000	30,916.2229	0.7063	0.4168	5.2168	3.1832
Structure - Section 4	290.00	1.5880	0.0000	12,273.7405	0.2804	0.1655	2.0711	1.2637
Ladder	285.00	0.0400	0.0000	300.7877	0.0069	0.0042	0.0522	0.0318
Ladder/Line	285.00	0.0653	0.0000	491.0359	0.0112	0.0068	0.0852	0.0520
Ladder/Line	285.00	0.0350	0.0000	263.1892	0.0060	0.0036	0.0456	0.0279
Ladder	277.50	0.0200	0.0000	144.1924	0.0033	0.0021	0.0261	0.0159
Ladder/Line	277.50	0.0175	0.0000	126.1683	0.0029	0.0018	0.0228	0.0140
Ladder/Line	277.50	0.0327	0.0000	235.7545	0.0054	0.0034	0.0426	0.0260
Antenna Load	275.00	4.0000	0.0000	28,429.3097	0.6495	0.4168	5.2168	3.1832
Structure - Section 5	270.00	2.1170	0.0000	14,616.5286	0.3339	0.2206	2.7610	1.6847
Ladder	267.50	0.0600	0.0000	408.2212	0.0093	0.0063	0.0783	0.0477
Ladder/Line	267.50	0.0980	0.0000	666.7612	0.0152	0.0102	0.1278	0.0780
Ladder/Line	267.50	0.1050	0.0000	714.3870	0.0163	0.0109	0.1369	0.0836
Antenna Load	260.00	4.0000	0.0000	26,019.7373	0.5945	0.4168	5.2168	3.1832
Ladder	252.50	0.0600	0.0000	372.6679	0.0085	0.0063	0.0783	0.0477
Ladder/Line	252.50	0.1131	0.0000	702.4790	0.0160	0.0118	0.1475	0.0900
Ladder/Line	252.50	0.0444	0.0000	275.7742	0.0063	0.0046	0.0579	0.0354
Ladder/Line	252.50	0.0980	0.0000	608.6909	0.0139	0.0102	0.1278	0.0780
Structure - Section 6	250.00	2.6880	0.0000	16,435.2585	0.3755	0.2801	3.5057	2.1391
Antenna Load	245.00	4.0000	0.0000	23,689.3551	0.5412	0.4168	5.2168	3.1832
Ladder	242.50	0.0200	0.0000	116.5440	0.0027	0.0021	0.0261	0.0159
Ladder/Line	242.50	0.0377	0.0000	219.6854	0.0050	0.0039	0.0491	0.0300
Ladder/Line	242.50	0.0327	0.0000	190.5494	0.0044	0.0034	0.0426	0.0260
Ladder/Line	242.50	0.0323	0.0000	188.2185	0.0043	0.0034	0.0422	0.0257
Ladder	237.50	0.0200	0.0000	112.7724	0.0026	0.0021	0.0261	0.0159
Ladder/Line	237.50	0.0327	0.0000	184.3829	0.0042	0.0034	0.0426	0.0260
Ladder/Line	237.50	0.0323	0.0000	182.1274	0.0042	0.0034	0.0422	0.0257
Ladder/Line	237.50	0.0377	0.0000	212.5760	0.0049	0.0039	0.0491	0.0300
Mount/Antenna Load	235.00	0.1270	0.0000	704.2387	0.0161	0.0132	0.1656	0.1011
Mount/Antenna Load	235.00	0.1910	0.0000	1,059.1306	0.0242	0.0199	0.2491	0.1520

Seismic Load Effects
Equivalent Lateral Force Procedure
ANSI/TIA-222-H

Vertical Distribution of Seismic Forces

Description	h_i (ft.)	w_i (kips)	W_2 (kips)	$w_i h_i^{ke}$	F_{sz} or E_h (kips)	E_V (kips)	1.2 D + 1.0 E_V (kips)	0.9 D - 1.0 E_V (kips)
Mount/Antenna Load	235.00	0.1910	0.0000	1,059.1306	0.0242	0.0199	0.2491	0.1520
Structure - Section 7	230.00	3.7240	0.0000	19,960.7992	0.4560	0.3880	4.8568	2.9636
Ladder	227.50	0.0600	0.0000	316.1003	0.0072	0.0063	0.0783	0.0477
Ladder/Line	227.50	0.0980	0.0000	516.2971	0.0118	0.0102	0.1278	0.0780
Ladder/Line	227.50	0.1122	0.0000	591.1075	0.0135	0.0117	0.1463	0.0893
Ladder/Line	227.50	0.0249	0.0000	131.1816	0.0030	0.0026	0.0325	0.0198
Ladder/Line	227.50	0.1131	0.0000	595.8490	0.0136	0.0118	0.1475	0.0900
Ladder	210.00	0.0800	0.0000	371.4277	0.0085	0.0083	0.1043	0.0637
Ladder/Line	210.00	0.1306	0.0000	606.3557	0.0139	0.0136	0.1703	0.1039
Ladder/Line	210.00	0.0332	0.0000	154.1425	0.0035	0.0035	0.0433	0.0264
Ladder/Line	210.00	0.1508	0.0000	700.1412	0.0160	0.0157	0.1967	0.1200
Ladder/Line	210.00	0.1496	0.0000	694.5697	0.0159	0.0156	0.1951	0.1190
Structure - Section 8	210.00	4.1500	0.0000	19,267.8104	0.4402	0.4324	5.4124	3.3026
Ladder	195.00	0.0400	0.0000	165.2056	0.0038	0.0042	0.0522	0.0318
Ladder/Line	195.00	0.0166	0.0000	68.5603	0.0016	0.0017	0.0216	0.0132
Ladder/Line	195.00	0.0754	0.0000	311.4125	0.0071	0.0079	0.0984	0.0600
Ladder/Line	195.00	0.0748	0.0000	308.9344	0.0071	0.0078	0.0976	0.0595
Ladder/Line	195.00	0.0653	0.0000	269.6981	0.0062	0.0068	0.0852	0.0520
Mount/Antenna Load	190.00	0.1400	0.0000	554.9834	0.0127	0.0146	0.1826	0.1114
Structure - Section 9	190.00	4.6420	0.0000	18,401.6630	0.4204	0.4837	6.0541	3.6941
Ladder	185.00	0.0400	0.0000	152.0282	0.0035	0.0042	0.0522	0.0318
Ladder/Line	185.00	0.0230	0.0000	87.4162	0.0020	0.0024	0.0300	0.0183
Ladder/Line	185.00	0.0653	0.0000	248.1860	0.0057	0.0068	0.0852	0.0520
Ladder/Line	185.00	0.0754	0.0000	286.5732	0.0065	0.0079	0.0984	0.0600
Ladder/Line	185.00	0.0748	0.0000	284.2927	0.0065	0.0078	0.0976	0.0595
Ladder	177.50	0.0200	0.0000	71.2056	0.0016	0.0021	0.0261	0.0159
Ladder/Line	177.50	0.0115	0.0000	40.9432	0.0009	0.0012	0.0150	0.0092
Ladder/Line	177.50	0.0377	0.0000	134.2226	0.0031	0.0039	0.0491	0.0300
Ladder/Line	177.50	0.0374	0.0000	133.1545	0.0030	0.0039	0.0488	0.0298
Ladder/Line	177.50	0.0327	0.0000	116.4212	0.0027	0.0034	0.0426	0.0260
Antenna Load	175.00	0.2000	0.0000	696.2851	0.0159	0.0208	0.2608	0.1592
Structure - Section 10	170.00	5.5220	0.0000	18,364.3368	0.4196	0.5754	7.2018	4.3944
Ladder	167.82	0.0575	0.0000	187.3683	0.0043	0.0060	0.0750	0.0458
Ladder/Line	167.82	0.0938	0.0000	305.6547	0.0070	0.0098	0.1224	0.0746
Ladder/Line	167.82	0.1075	0.0000	350.2972	0.0080	0.0112	0.1402	0.0856
Ladder/Line	167.82	0.0331	0.0000	107.8590	0.0025	0.0034	0.0431	0.0264
Ladder/Line	167.82	0.1083	0.0000	352.9041	0.0081	0.0113	0.1413	0.0862
Antenna Load	160.63	0.0350	0.0000	106.4310	0.0024	0.0036	0.0456	0.0279
Ladder	160.32	0.0025	0.0000	7.5791	0.0002	0.0003	0.0033	0.0020
Ladder/Line	160.32	0.0041	0.0000	12.4297	0.0003	0.0004	0.0053	0.0033

Seismic Load Effects
Equivalent Lateral Force Procedure
ANSI/TIA-222-H

Vertical Distribution of Seismic Forces

Description	h_i (ft.)	w_i (kips)	W_2 (kips)	$w_i h_i^{ke}$	F_{sz} or E_h (kips)	E_V (kips)	1.2 D + 1.0 E_V (kips)	0.9 D - 1.0 E_V (kips)
Ladder/Line	160.32	0.0014	0.0000	4.2443	0.0001	0.0001	0.0018	0.0012
Ladder/Line	160.32	0.0048	0.0000	14.5518	0.0003	0.0005	0.0063	0.0038
Ladder/Line	160.32	0.0047	0.0000	14.2486	0.0003	0.0005	0.0061	0.0037
Ladder	155.00	0.0400	0.0000	114.9724	0.0026	0.0042	0.0522	0.0318
Ladder/Line	155.00	0.0754	0.0000	216.7230	0.0050	0.0079	0.0984	0.0600
Ladder/Line	155.00	0.0653	0.0000	187.6925	0.0043	0.0068	0.0852	0.0520
Ladder/Line	155.00	0.0230	0.0000	66.1092	0.0015	0.0024	0.0300	0.0183
Ladder/Line	155.00	0.0748	0.0000	214.9985	0.0049	0.0078	0.0976	0.0595
Mount Load	150.00	0.3000	0.0000	818.7840	0.0187	0.0313	0.3913	0.2387
Structure - Section 11	150.00	6.1470	0.0000	16,776.8844	0.3833	0.6405	8.0169	4.8918
Ladder	145.00	0.0400	0.0000	103.4809	0.0024	0.0042	0.0522	0.0318
Ladder/Line	145.00	0.0284	0.0000	73.4714	0.0017	0.0030	0.0371	0.0226
Ladder/Line	145.00	0.0754	0.0000	195.0614	0.0045	0.0079	0.0984	0.0600
Ladder/Line	145.00	0.0653	0.0000	168.9325	0.0039	0.0068	0.0852	0.0520
Ladder/Line	145.00	0.0748	0.0000	193.5092	0.0044	0.0078	0.0976	0.0595
Ladder	130.00	0.0800	0.0000	174.1833	0.0040	0.0083	0.1043	0.0637
Ladder/Line	130.00	0.1306	0.0000	284.3543	0.0065	0.0136	0.1703	0.1039
Ladder/Line	130.00	0.1508	0.0000	328.3355	0.0075	0.0157	0.1967	0.1200
Ladder/Line	130.00	0.0568	0.0000	123.6702	0.0028	0.0059	0.0741	0.0452
Ladder/Line	130.00	0.1496	0.0000	325.7228	0.0074	0.0156	0.1951	0.1190
Structure - Section 12	130.00	7.0220	0.0000	15,288.9401	0.3493	0.7317	9.1581	5.5881
Ladder	110.00	0.0800	0.0000	133.7978	0.0031	0.0083	0.1043	0.0637
Ladder/Line	110.00	0.1306	0.0000	218.4249	0.0050	0.0136	0.1703	0.1039
Ladder/Line	110.00	0.1508	0.0000	252.2089	0.0058	0.0157	0.1967	0.1200
Ladder/Line	110.00	0.0568	0.0000	94.9965	0.0022	0.0059	0.0741	0.0452
Ladder/Line	110.00	0.1496	0.0000	250.2019	0.0057	0.0156	0.1951	0.1190
Structure - Section 13	110.00	7.1310	0.0000	11,926.4032	0.2725	0.7431	9.3003	5.6748
Ladder	90.00	0.0800	0.0000	97.4628	0.0022	0.0083	0.1043	0.0637
Ladder/Line	90.00	0.0568	0.0000	69.1986	0.0016	0.0059	0.0741	0.0452
Ladder/Line	90.00	0.1496	0.0000	182.2554	0.0042	0.0156	0.1951	0.1190
Ladder/Line	90.00	0.1508	0.0000	183.7174	0.0042	0.0157	0.1967	0.1200
Ladder/Line	90.00	0.1306	0.0000	159.1080	0.0036	0.0136	0.1703	0.1039
Structure - Section 14	90.00	7.3950	0.0000	9,009.2181	0.2058	0.7706	9.6446	5.8849
Ladder	77.50	0.0200	0.0000	19.2414	0.0004	0.0021	0.0261	0.0159
Ladder/Line	77.50	0.0142	0.0000	13.6614	0.0003	0.0015	0.0185	0.0113
Ladder/Line	77.50	0.0327	0.0000	31.4597	0.0007	0.0034	0.0426	0.0260
Ladder/Line	77.50	0.0374	0.0000	35.9815	0.0008	0.0039	0.0488	0.0298
Ladder/Line	77.50	0.0377	0.0000	36.2701	0.0008	0.0039	0.0491	0.0300
Mount/Antenna Load	75.00	0.1910	0.0000	174.4838	0.0040	0.0199	0.2491	0.1520
Mount/Antenna Load	75.00	0.1910	0.0000	174.4838	0.0040	0.0199	0.2491	0.1520

Seismic Load Effects
Equivalent Lateral Force Procedure
ANSI/TIA-222-H

Vertical Distribution of Seismic Forces

Description	h_i (ft.)	w_i (kips)	W_2 (kips)	$w_i h_i^{ke}$	F_{sz} or E_h (kips)	E_V (kips)	1.2 D + 1.0 E_V (kips)	0.9 D - 1.0 E_V (kips)
Structure - Section 15	70.00	7.8220	0.0000	6,408.0755	0.1464	0.8151	10.2015	6.2247
Ladder	67.50	0.0600	0.0000	46.4111	0.0011	0.0063	0.0783	0.0477
Ladder/Line	67.50	0.0980	0.0000	75.8048	0.0017	0.0102	0.1278	0.0780
Ladder/Line	67.50	0.0732	0.0000	56.6215	0.0013	0.0076	0.0954	0.0583
Ladder/Line	67.50	0.1122	0.0000	86.7888	0.0020	0.0117	0.1463	0.0893
Ladder/Line	67.50	0.1131	0.0000	87.4849	0.0020	0.0118	0.1475	0.0900
Ladder	50.00	0.0800	0.0000	38.5269	0.0009	0.0083	0.1043	0.0637
Ladder/Line	50.00	0.0976	0.0000	47.0028	0.0011	0.0102	0.1273	0.0776
Ladder/Line	50.00	0.1306	0.0000	62.8951	0.0014	0.0136	0.1703	0.1039
Ladder/Line	50.00	0.1496	0.0000	72.0452	0.0016	0.0156	0.1951	0.1190
Ladder/Line	50.00	0.1508	0.0000	72.6231	0.0017	0.0157	0.1967	0.1200
Structure - Section 16	50.00	8.2860	0.0000	3,990.4196	0.0912	0.8634	10.8066	6.5940
Ladder	30.00	0.0800	0.0000	17.1975	0.0004	0.0083	0.1043	0.0637
Ladder/Line	30.00	0.0976	0.0000	20.9809	0.0005	0.0102	0.1273	0.0776
Ladder/Line	30.00	0.1496	0.0000	32.1593	0.0007	0.0156	0.1951	0.1190
Ladder/Line	30.00	0.1306	0.0000	28.0749	0.0006	0.0136	0.1703	0.1039
Ladder/Line	30.00	0.1508	0.0000	32.4172	0.0007	0.0157	0.1967	0.1200
Structure - Section 17	30.00	8.7160	0.0000	1,873.6639	0.0428	0.9082	11.3674	6.9362
Ladder	10.00	0.0800	0.0000	3.0345	0.0001	0.0083	0.1043	0.0637
Ladder/Line	10.00	0.1306	0.0000	4.9539	0.0001	0.0136	0.1703	0.1039
Ladder/Line	10.00	0.0976	0.0000	3.7021	0.0001	0.0102	0.1273	0.0776
Ladder/Line	10.00	0.1496	0.0000	5.6746	0.0001	0.0156	0.1951	0.1190
Ladder/Line	10.00	0.1508	0.0000	5.7201	0.0001	0.0157	0.1967	0.1200
Structure - Section 18	10.00	11.3800	0.0000	431.6605	0.0099	1.1858	14.8418	9.0562
	Σ	120.61	1.3639	385,386.38	8.81	12.57	157.30	95.98

Leg Connection Details												
Bottom Elevation (ft)	Top Elevation (ft)	Solid Dimensions	Top Splice					Bottom Splice/Base				
			Bolt Qty.	Bolt Dia. (in)	Bolt Circle (in)	Plate Thickness (in)	Plate Dia. (in)	Bolt Qty.	Bolt Dia. (in)	Bolt Circle (in)	Plate Thickness (in)	Plate Dia. (in)
340	360	1.75 S.R.						4	0.75	5.50	0.75	7.50
320	340	1.75 S.R.	4	0.75	5.50	0.75	7.50	4	0.75	5.50	0.75	7.50
300	320	2.25 S.R.	4	0.75	5.50	1.00	7.50	4	0.75	5.50	1.00	7.50
280	300	2.5 S.R.	4	0.75	5.50	1.00	7.50	6	1.00	7.25	1.00	9.75
260	280	2.75 S.R.	6	1.00	7.25	1.25	9.75	6	1.00	7.25	1.25	9.75
240	260	3.0 S.R.	6	1.00	7.25	1.25	9.75	6	1.25	8.75	1.50	12.00
220	240	3.75 S.R.	6	1.25	8.75	1.75	12.00	6	1.25	8.75	1.75	12.00
200	220	4.0 S.R.	6	1.25	8.75	1.75	12.00	6	1.25	8.75	1.75	12.00
180	200	4.0 S.R.	6	1.25	8.75	1.75	12.00	6	1.25	8.75	1.75	12.00
160	180	4.25 S.R.	6	1.25	8.75	1.75	12.00	6	1.50	10.25	2.00	14.00
140	160	4.5 S.R.	6	1.50	10.25	2.00	14.00	6	1.50	10.25	2.00	14.00
120	140	4.75 S.R.	6	1.50	10.25	2.00	14.00	6	1.50	10.25	2.00	14.00
100	120	4.75 S.R.	6	1.50	10.25	2.00	14.00	6	1.50	10.25	2.00	14.00
80	100	4.75 S.R.	6	1.50	10.25	2.00	14.00	6	1.50	10.25	2.00	14.00
60	80	4.75 S.R.	6	1.50	10.25	2.00	14.00	6	1.50	10.25	2.00	14.00
40	60	5.0 S.R.	6	1.50	10.25	2.00	14.00	6	1.50	10.25	2.00	14.00
20	40	5.0 S.R.	6	1.50	10.25	2.00	14.00	8	1.50	11.25	2.50	15.00
0	20	5.25 S.R.	8	1.50	11.25	2.50	15.00	6	1.75	12.00	2.25	16.50

Diagonal Bracing Connection Details								
Bottom Elevation (ft)	Top Elevation (ft)	Angle Shape	Bolt Qty.	Bolt Dia. (in)	Bolt End Distance (in)	Bolt Spacing (in)	Gage Distance From Heel (in)	Gusset Plate Thickness (in)
340	360	L 2 X 2 X 1/8	1	0.625	1.625		1.125	0.375
320	340	L 2 X 2 X 1/8	1	0.625	1.625		1.125	0.375
300	320	L 2 X 2 X 1/8	1	0.625	1.625		1.125	0.375
280	300	L 2 X 2 X 1/8	1	0.625	1.625		1.125	0.375
260	280	L 2 X 2 X 3/16	1	0.625	1.625		1.125	0.375
240	260	L 2 1/2 X 2 1/2 X 3/16	1	0.625	1.625		1.375	0.375
220	240	L 3 X 3 X 3/16	1	0.750	1.625		1.750	0.500
200	220	L 3 X 3 X 3/16	1	0.750	1.625		1.750	0.500
180	200	L 3 X 3 X 1/4	1	0.750	1.625		1.750	0.500
160	180	L 3 1/2 X 3 1/2 X 1/4	1	0.750	1.625		1.750	0.500
140	160	L 3 1/2 X 3 1/2 X 1/4	1	0.750	1.625		1.750	0.500
120	140	L 4 X 4 X 1/4	1	0.750	1.625		2.000	0.500
110	120	L 3 1/2 X 3 1/2 X 1/4	2	0.750	1.625	2.5000	1.750	0.500
100	110	L 3 1/2 X 3 1/2 X 1/4	2	0.750	1.625	2.5000	1.750	0.500
90	100	L 4 X 3 1/2 X 1/4	2	0.750	1.625	2.5000	1.750	0.500
80	90	L 4 X 3 1/2 X 1/4	2	0.750	1.625	2.5000	1.750	0.500
70	80	L 5 X 3 1/2 X 1/4	2	0.750	1.625	2.5000	1.750	0.500
60	70	L 5 X 3 1/2 X 1/4	2	0.750	1.625	2.5000	1.750	0.500
50	60	L 4 X 3 1/2 X 1/4	2	0.750	1.625	2.5000	1.750	0.500
40	50	L 4 X 3 1/2 X 1/4	2	0.750	1.625	2.5000	1.750	0.500
30	40	L 5 X 3 1/2 X 1/4	2	0.750	1.625	2.5000	1.750	0.500
20	30	L 5 X 3 1/2 X 1/4	2	0.750	1.625	2.5000	1.750	0.500
10	20	L 6 X 4 X 3/8	2	0.750	1.625	2.5000	2.000	0.500
0	10	L 6 X 4 X 3/8	2	0.750	1.625	2.5000	2.000	0.500

DRILLED STRAIGHT PIER DESIGN BY SABRE INDUSTRIES

360' S3R Series SD DUKE ENERGY CORPORATION Bad Creek (BDC), SC (22-0885-JDS-R1) 2021-12-22 I

Factored Uplift (kips)	686
Factored Download (kips)	805
Factored Shear (kips)	72
Ultimate Bearing Pressure	37.5
Bearing ϕ_s	0.75
Bearing Design Strength (ksf)	28.125
Water Table Below Grade (ft)	37
Bolt Circle Diameter (in)	12
Effective Anchor Bolt Embedment	72.625
Pier Diameter (ft)	7
Ht. Above Ground (ft)	0.5
Pier Length Below Ground (ft)	46
Quantity of Bars	22
Bar Diameter (in)	1.27
Area of Bars (in^2)	27.87
Spacing of Bars (in)	10.74
Tie Bar Diameter (in)	0.625
Spacing of Ties (in)	12
f'_c (ksi)	4.5
f_y (ksi)	60
Unit Wt. of Concrete (kcf)	0.15
Volume of Concrete (yd^3)	66.28

Minimum Pier Diameter (ft): 2.33

Minimum Area of Steel (in^2): 27.71

Length to ignore download (ft): 0

Ignore bottom length in download? ☐

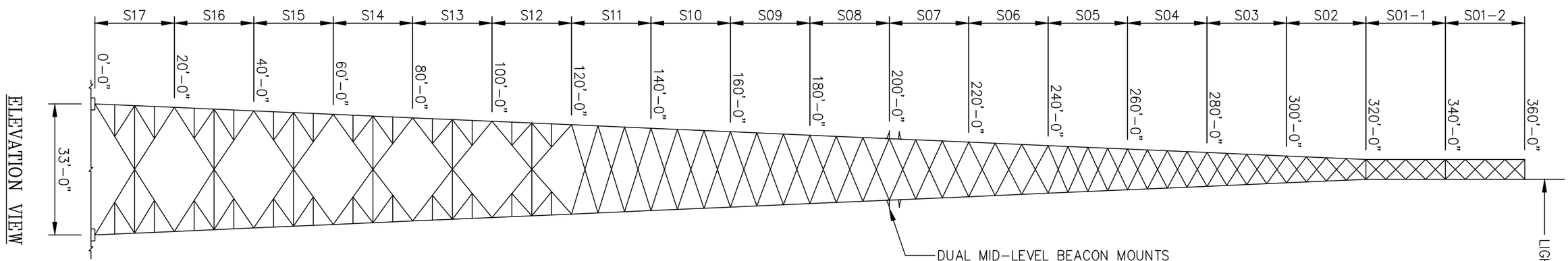
Depth at Bottom of Layer (ft)	Ult. Skin Friction (ksf)	(Ult. Skin Friction)*(Uplift Factor)	γ (kcf)
6	0.00	0.00	0.11
13.5	0.24	0.24	0.11
18.5	0.42	0.42	0.11
33.5	0.71	0.71	0.11
38.5	0.96	0.96	0.11
50	1.17	1.17	0.11

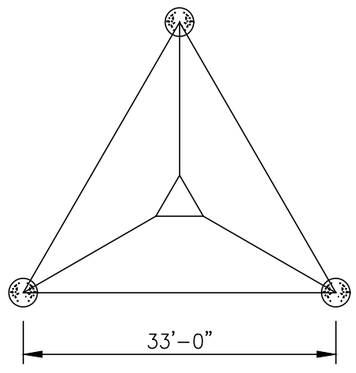
DRILLED STRAIGHT PIER DESIGN BY SABRE INDUSTRIES (CONTINUED)

Download:			
Φ_s, Download Friction	0.75		
Q_f, Skin Friction (kips)	619.6	W_s (kips)	194.7
Q_b, End Bearing Strength (kips)	1443.2	W_c (kips)	268.4
Download Design Strength (kips)	1547.1	Factored Net Download (kips)	893.4
Uplift (skin friction):			
Φ_s, Uplift (friction)	0.75		
Q_f, Skin Friction (kips)	619.6		
W_c (kips)	268.4		
W_w (kips)	21.6		
Uplift Design Strength (kips)	686.8	Factored Uplift (kips)	686.0
Uplift (cone):			
Φ_s, Uplift (cone)	0.75		
$W_{s,cone}$ (kips)	5215.1		
$W_{w,cone}$ (kips)	48.0		
W_c (kips)	268.4		
$W_{w,cyl}$ (kips)	21.6		
Uplift Design Strength (kips)	4097.5	Factored Uplift (kips)	686.0
Tension:			
Design Tensile Strength (kips)	1504.9	T_u (kips)	686.0
Shear:			
ϕ	0.75		
V_c (kips)	569.8		
V_s (kips)	206.2	$V_{s,max}$ (kips)	3029.3
ϕV_n (kips)	582.0	V_u (kips)	72.0
Anchor Bolt Pull-Out:			
$N_{ua} / \phi N_n$	0.78	$V_{ua} / \phi V_n$	0.16
Rebar Development Length (in)	47.40	Required Length of Development (in)	34.08

Condition	1 is OK, 0 Fails
Download	1
Uplift	1
Area of Steel	1
Shear	1
Anchor Bolt Pull-Out	1
Interaction Diagram	1

LEGS	5.25 S.R.	5.0 S.R.		4.75 S.R.			4.5 S.R.	4.25 S.R.	4.0 S.R.		3.75 S.R.	3.0 S.R.	2.75 S.R.	2.5 S.R.	2.25 S.R.	1.75 S.R.	
DIAGONALS	A	B	C	B	C	D	L 4 X 4 X 1/4	L 3 1/2 X 3 1/2 X 1/4	L 3 X 3 X 1/4	L 3 X 3 X 3/16		E	L 2 X 2 X 3/16	L 2 X 2 X 1/8			
HORIZONTALS	L 4 X 4 X 5/16	L 4 X 4 X 1/4		L 3 1/2 X 3 1/2 X 1/4		L 3 X 3 X 5/16	NONE								L 2 X 2 X 1/8		
SUB-DIAGONALS	L 3 X 3 X 1/4	L 3 X 3 X 3/16		L 2 1/2 X 2 1/2 X 1/4		E	NONE										
SUB-HORIZONTALS	L 3 X 3 X 1/4			F	L 2 1/2 X 2 1/2 X 3/16		NONE										
INTERNAL BRACE	L 3 X 3 X 1/4				L 3 X 3 X 3/16		NONE										
BAYS/SECTION	4 BAYS						3 BAYS					4 BAYS					
SECTION WEIGHT	10994 LBS.	8649 LBS.	8238 LBS.	7753 LBS.	7303 LBS.	7027 LBS.	7174 LBS.	6299 LBS.	5627 LBS.	4748 LBS.	4253 LBS.	3828 LBS.	2773 LBS.	2200 LBS.	1643 LBS.	1414 LBS.	1042 LBS.	1031 LBS.





PLAN VIEW

MATERIAL LIST	
A	L 6 X 4 X 3/8 (SLV)
B	L 5 X 3 1/2 X 1/4 (SLV)
C	L 4 X 3 1/2 X 1/4 (SLV)
D	L 3 1/2 X 3 1/2 X 1/4
E	L 2 1/2 X 2 1/2 X 3/16
F	L 2 1/2 X 2 1/2 X 1/4

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE
FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION
1	2/10/22	DRL	ZAK	REVISED MASTER DRAWING LIST & ADDED BOM-2, PER STRUCTURAL ANALYSIS (REV. A) & CHANGE ORDER "A".

Sabre Industries™
INNOVATION DELIVERED

MASTER: 360 FT. MODEL S3R-SD
SITE: BAD CREEK (BDC), SC #(BDC)
CUSTOMER: DUKE ENERGY CORPORATION

JOB NO. 495518		SIZE	DRAWING NO.	REV
DATE	1/14/22	B	495518-MS	1
DRAWN BY	DRL			
CHECKED BY	ZAK		SCALE NONE	PAGE 1 OF 3

DRAWING LIST

495518-F1 (REV. 1)	CAISSON FOUNDATION
C30400280	LEG TO LEG TEMPLATE
906195	TOWER BASE INSTALLATION
495518-S17	SECTION 0 FT. – 20 FT.
495518-S16	SECTION 20 FT. – 40 FT.
495518-S15	SECTION 40 FT. – 60 FT.
495518-S14	SECTION 60 FT. – 80 FT.
495518-S13	SECTION 80 FT. – 100 FT.
495518-S12	SECTION 100 FT. – 120 FT.
495518-S11	SECTION 120 FT. – 140 FT.
495518-S10	SECTION 140 FT. – 160 FT.
495518-S09	SECTION 160 FT. – 180 FT.
495518-S08	SECTION 180 FT. – 200 FT.
495518-S07	SECTION 200 FT. – 220 FT.
495518-S06	SECTION 220 FT. – 240 FT.
495518-S05	SECTION 240 FT. – 260 FT.
495518-S04	SECTION 260 FT. – 280 FT.
495518-S03	SECTION 280 FT. – 300 FT.
495518-S02	SECTION 300 FT. – 320 FT.
495518-S01-1	SECTION 320 FT. – 340 FT.
495518-S01-2	SECTION 340 FT. – 360 FT.
495518-CL1	12" INSIDE CLIMBING LADDER INSTALLATION
9026217	12" INSIDE CLIMBING LADDER (0'–320')
907812	12" INSIDE CLIMBING LADDER (320'–360')
9031527	LADDER BASE
9031764	STEP/CONSTRUCTION BOLT INSTALLATION
C30011-1	SAFETY CLIMB BOTTOM MOUNTING BRACKET
C30011-2	SAFETY CLIMB TOP MOUNTING BRACKET
C30003001	SAFETY CLIMB INTERMEDIATE BRACKET
SEE MANUAL W/KIT	CABLE SAFETY CLIMB DEVICE
495518-WG1	WAVEGUIDE LADDER INSTALLATION (0'–360')
495518-WG2	WAVEGUIDE LADDER INSTALLATION (0'–360')
495518-WG3	WAVEGUIDE LADDER INSTALLATION (0'–360')
9029107	WAVEGUIDE LADDER (15 HOLE)
9030199	TOP BEACON MOUNT
C30083001	MID-LEVEL BEACON MOUNTS @ 201'±
C30084001	MID-LEVEL BEACON ICE SHIELDS
902816	TEMPORARY TOWER LIGHTING
BY OTHERS	TOWER LIGHTING
495518-SA1	6' SIDEARMS @ 340'
495518-SA2	6' SIDEARM @ 340' (HEAVY DUTY)
495518-ST1	SWIVEL KNUCKLE TIEBACK KITS FOR SIDEARMS @ 340'
495518-SA3	6' SIDEARMS @ 310'
495518-SA4	6' SIDEARM @ 310' (HEAVY DUTY)
495518-PM1	4 1/2" O.D. PIPE MOUNT KITS FOR SIDEARMS @ 310'
495518-ST2	SWIVEL KNUCKLE TIEBACK KITS FOR SIDEARMS @ 310'
495518-PM2	4 1/2" O.D. PIPE MOUNT KIT @ 190'
495518-DT1	STIFFARM MOUNT KITS FOR PIPE MOUNT @ 190'
495518-SA5	6' SIDEARM @ 150'
495518-PM3	4 1/2" O.D. PIPE MOUNT KIT FOR SIDEARM @ 150'
9030707	STIFFARM ATTACHMENT W/(2) TIEBACKS FOR SIDEARM @ 150'
C30986	LIGHTNING ROD W/STIFFENER
9014671	BOLT INSTALLATION
906956	TOWER NAME PLATE
907901	INVENTORY REQUIREMENT SHEET
BOM-1	BILL OF MATERIAL
BOM-2	BILL OF MATERIAL

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE
FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION
1	2/10/22	DRL	ZAK	REVISED MASTER DRAWING LIST & ADDED BOM-2, PER STRUCTURAL ANALYSIS (REV. A) & CHANGE ORDER "A".

Sabre Industries™
INNOVATION DELIVERED

MASTER: 360 FT. MODEL S3R-SD

SITE: BAD CREEK (BDC), SC #(BDC)

CUSTOMER: DUKE ENERGY CORPORATION

JOB NO. 495518		SIZE	DRAWING NO.	REV
DATE	1/14/22	B	495518-MS	1
DRAWN BY	DRL			
CHECKED BY	ZAK		SCALE NONE	PAGE 2 OF 3

TOWER DESIGNED ANTENNA LOADING

ELEV.	ANTENNAS
360'	LIGHTNING ROD
360'	LIGHTS
348.4'	(1) DS8A10F36U-D
345.67'	(1) SC251-HF3LDF (D00-G3)
345.36'	(1) SC329-HF2LDF (D00-G06)
340'	6FT SIDEARM
340'	6FT SIDEARM
340'	6FT SIDEARM
340'	ADDER FOR HD SIDE ARM
340'	(1) DS7TMA17C COMPACT TTA
335'	(4) 3FT SIDEARMS
335'	(4) PMP 450
318.4'	(1) DS8A10F36U-D
315.67'	(1) SC251-HF3LDF(D00-G3)
315.36'	(1) SC329-HF2LDF(D00-G06)
310'	6FT SIDEARM
310'	6FT SIDEARM
310'	6FT SIDEARM
310'	ADDER FOR HD SIDE ARM
290'	(1) 30,000 SQ. IN. ANTENNA LOADING (BELOW TOP)
275'	(1) 30,000 SQ. IN. ANTENNA LOADING (BELOW TOP)
260'	(1) 30,000 SQ. IN. ANTENNA LOADING (BELOW TOP)
245'	(1) 30,000 SQ. IN. ANTENNA LOADING (BELOW TOP)
235'	(2) LEG DISH MOUNT
235'	LEG DISH MOUNT
235'	(1) SB4-W100AB
235'	(2) PADX6-W57AC W/RADOME
190'	LEG DISH MOUNT
190'	(1) SB6-W100AD2
175'	MID-LIGHTS
160.63'	(1) DB224A
150'	6FT SIDEARM
75'	(2) LEG DISH MOUNT
75'	(2) PADX6-W57AC W/RADOME

TOWER DESIGN INFORMATION

THIS ERECTION DRAWING PACKAGE IS BASED ON THE STRUCTURAL ANALYSIS NO. 22-0885-JDS-R1 (REV. A).

THIS TOWER DESIGN ALSO MEETS OR EXCEEDS THE REQUIREMENTS OF THE 2018 INTERNATIONAL BUILDING CODE.

DESIGN CRITERIA - ANSI/TIA-222-H	
WIND SPEED (NO ICE)	114 MPH
WIND SPEED (ICE)	30 MPH
DESIGN ICE THICKNESS	1.50 IN
RISK CATEGORY	III
EXPOSURE CATEGORY	C
TOPOGRAPHIC FACTOR PROCEDURE	METHOD 1 (SIMPLIFIED)
TOPOGRAPHIC CATEGORY	1
GROUND ELEVATION	2591 FT
SEISMIC IMPORTANCE FACTOR, Ie	1.25
0.2-SEC SPECTRAL RESPONSE, Ss	0.389 g
1-SEC SPECTRAL RESPONSE, S1	0.104 g
SITE CLASS	E
SEISMIC DESIGN CATEGORY	D
BASIC SEISMIC FORCE-RESISTING SYSTEM	TELECOMMUNICATION TOWER (TRUSS: STEEL)

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION
1	2/10/22	DRL	ZAK	REVISED MASTER DRAWING LIST & ADDED BOM-2, PER STRUCTURAL ANALYSIS (REV. A) & CHANGE ORDER "A".

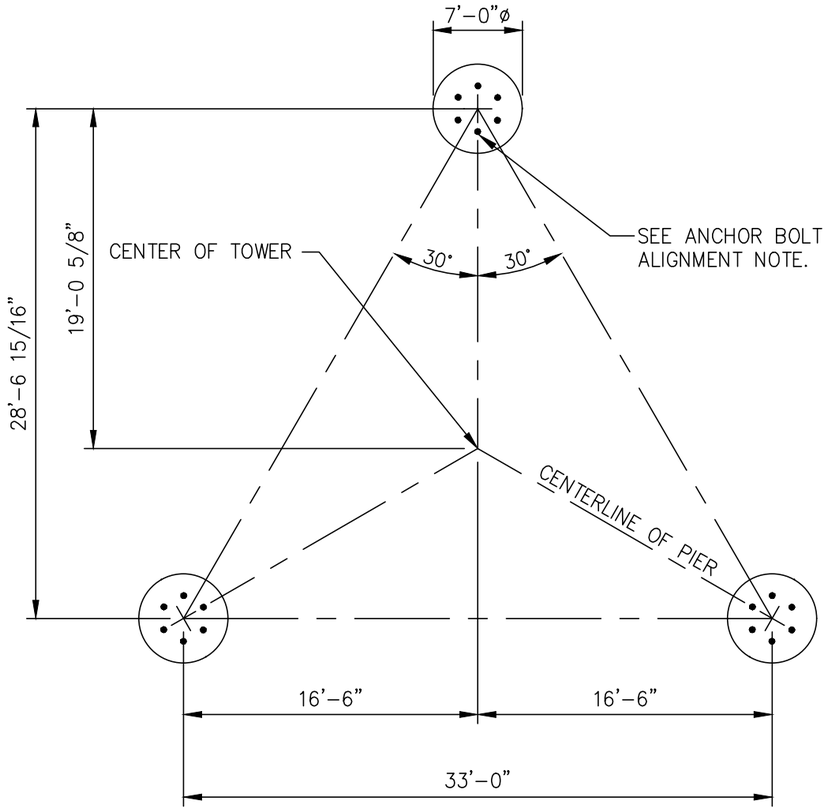
Sabre Industries™ INNOVATION DELIVERED

MASTER: 360 FT. MODEL S3R-SD

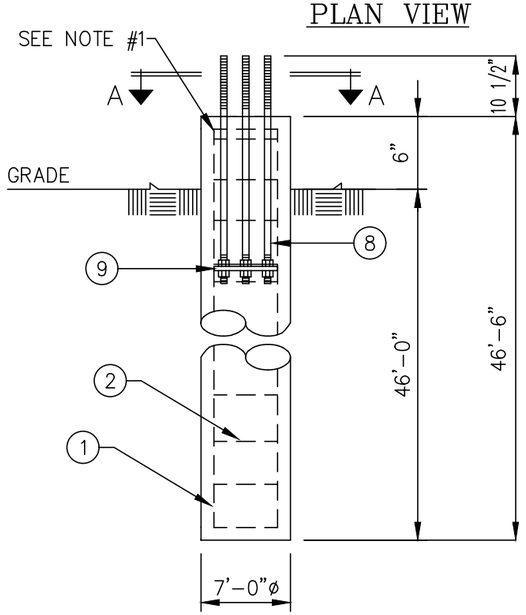
SITE: BAD CREEK (BDC), SC #(BDC)

CUSTOMER: DUKE ENERGY CORPORATION

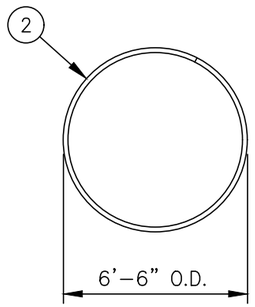
JOB NO. 495518		SIZE	DRAWING NO.	REV
DATE	1/14/22	B	495518-MS	1
DRAWN BY	DRL			
CHECKED BY	ZAK		SCALE NONE	PAGE 3 OF 3



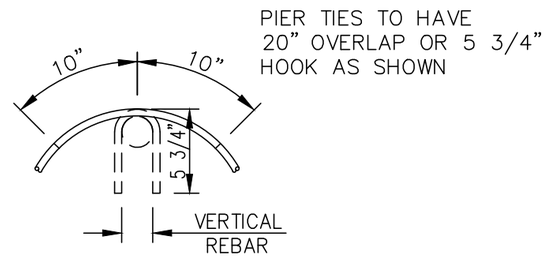
PLAN VIEW



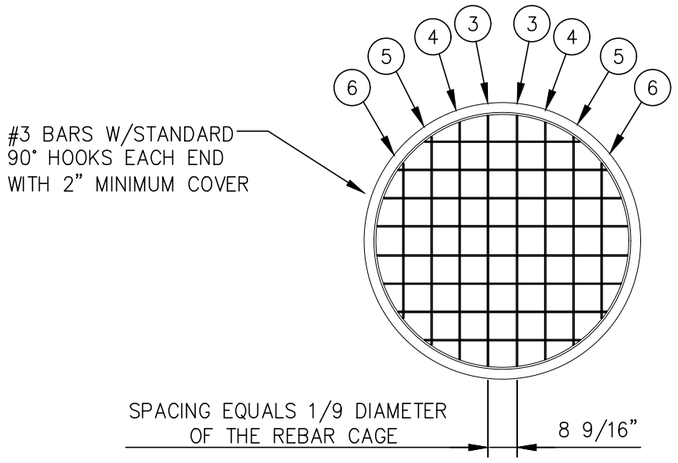
ELEVATION VIEW



REBAR DETAIL
(PIER TIES)



PIER TIE HOOK DETAIL



SECTION A-A

SEE PAGE 2 FOR MATERIAL SCHEDULES AND GENERAL NOTES

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE
FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION
1	1/14/22	DRL	LRD	ADDED SEISMIC BASE REACIONS & REVISED GENERAL NOTE #5, PER STRUCTURAL ANALYSIS (REV. A)

Sabre Industries™
INNOVATION DELIVERED

FOUNDATION: 360 FT. MODEL S3R-SD

SITE: BAD CREEK (BDC), SC #(BDC)

CUSTOMER: DUKE ENERGY CORPORATION

JOB NO. 495518		SIZE	DRAWING NO.	REV
DATE	12/29/21	B	495518-F1	1
DRAWN BY	CK			
CHECKED BY	KC		SCALE NONE	PAGE 1 OF 2

REINFORCING STEEL SCHEDULE								
ITEM	LOCATION	NO. REQ'D.	BAR SPC'G.	SIZE	CUT LGTH.	TOTAL LGTH.	TOTAL WT.	SHAPE
①	PIER VERTICAL REINFORCING	66	EQUALLY SPACED	#10	46'–0"	3036'–0"	13064 LBS.	STRAIGHT
②	PIER TIES	144	SPACED 12" C/C	#5	22'–0"	3168'–0"	3304 LBS.	◯
③	TIE BARS	12	TOP OF CAGE ONLY	#3	7'–4 1/16"	88'–0 3/4"	33 LBS.	⌐¬
④	TIE BARS	12	TOP OF CAGE ONLY	#3	7'–0"	84'–0"	32 LBS.	⌐¬
⑤	TIE BARS	12	TOP OF CAGE ONLY	#3	6'–3 1/4"	75'–3"	28 LBS.	⌐¬
⑥	TIE BARS	12	TOP OF CAGE ONLY	#3	4'–11 1/4"	59'–3"	22 LBS.	⌐¬
						TOTAL REBAR WT.	16483 LBS.	

ANCHOR BOLT SCHEDULE				
ITEM	PART NO.	NO. REQ'D.	ANCHOR BOLT SIZE	SPACING
⑧	C40041061	18	1 3/4"ø X 7'–3"	EQUALLY SPACED

TEMPLATE SCHEDULE			
ITEM	PART NO.	NO. REQ'D.	BOLT CIRCLE
⑨	C30139669	6	12"

CONCRETE REQ'D	
PER PIER	66.28 CU. YDS.
TOTAL	198.84 CU. YDS.

BASE REACTIONS – ANSI/TIA–222–H (WIND/ICE)

TOTAL FOUNDATION		INDIVIDUAL FOOTING	
SHEAR (KIPS)	120.74	SHEAR (KIPS)	72.14
AXIAL (KIPS)	356.26	COMPRESSION (KIPS)	805
MOMENT (FT–KIPS)	21776	UPLIFT (KIPS)	686

BASE REACTIONS – ANSI/TIA–222–H (SEISMIC)

TOTAL FOUNDATION		INDIVIDUAL FOOTING	
SHEAR (KIPS)	8.59	SHEAR (KIPS)	7.86
AXIAL (KIPS)	157.29	COMPRESSION (KIPS)	123
MOMENT (FT–KIPS)	2019	UPLIFT (KIPS)	39

GENERAL NOTES

1. CONCRETE SHALL HAVE A MINIMUM 28–DAY COMPRESSIVE STRENGTH OF 4,500 PSI, IN ACCORDANCE WITH ACI 318–14. (2 REBAR TIES REQ'D IN THE TOP 5")
2. REBAR TO CONFORM TO ASTM SPECIFICATION A615 GRADE 60.
3. ALL REBAR TO HAVE A MINIMUM OF 3" CONCRETE COVER.
4. ALL EXPOSED CONCRETE CORNERS TO BE CHAMFERED 3/4".
5. THE FOUNDATION DESIGN IS BASED ON THE GEOTECHNICAL REPORT BY: ENVIRONMENTAL CORPORATION OF AMERICA, PROJECT NO. X2481, DATED: 12/16/21.
6. SEE THE GEOTECHNICAL REPORT FOR DRILLED PIER INSTALLATION REQUIREMENTS, IF SPECIFIED.
7. THE BOTTOM ANCHOR BOLT TEMPLATE SHALL BE POSITIONED AS CLOSELY AS POSSIBLE TO THE BOTTOM OF THE ANCHOR BOLTS.
8. DISTANCE BETWEEN CENTER OF ANCHOR BOLT CAGE AND THE CENTER OF THE PIER NOT TO EXCEED 1/2" WITHOUT APPROVAL FROM ENGINEER OF RECORD.
9. ONE ANCHOR BOLT MUST BE ALIGNED DIRECTLY WITH THE CENTER OF THE TOWER (TYPICAL).

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION
1	1/14/22	DRL	LRD	ADDED SEISMIC BASE REACIONS & REVISED GENERAL NOTE #5, PER STRUCTURAL ANALYSIS (REV. A)

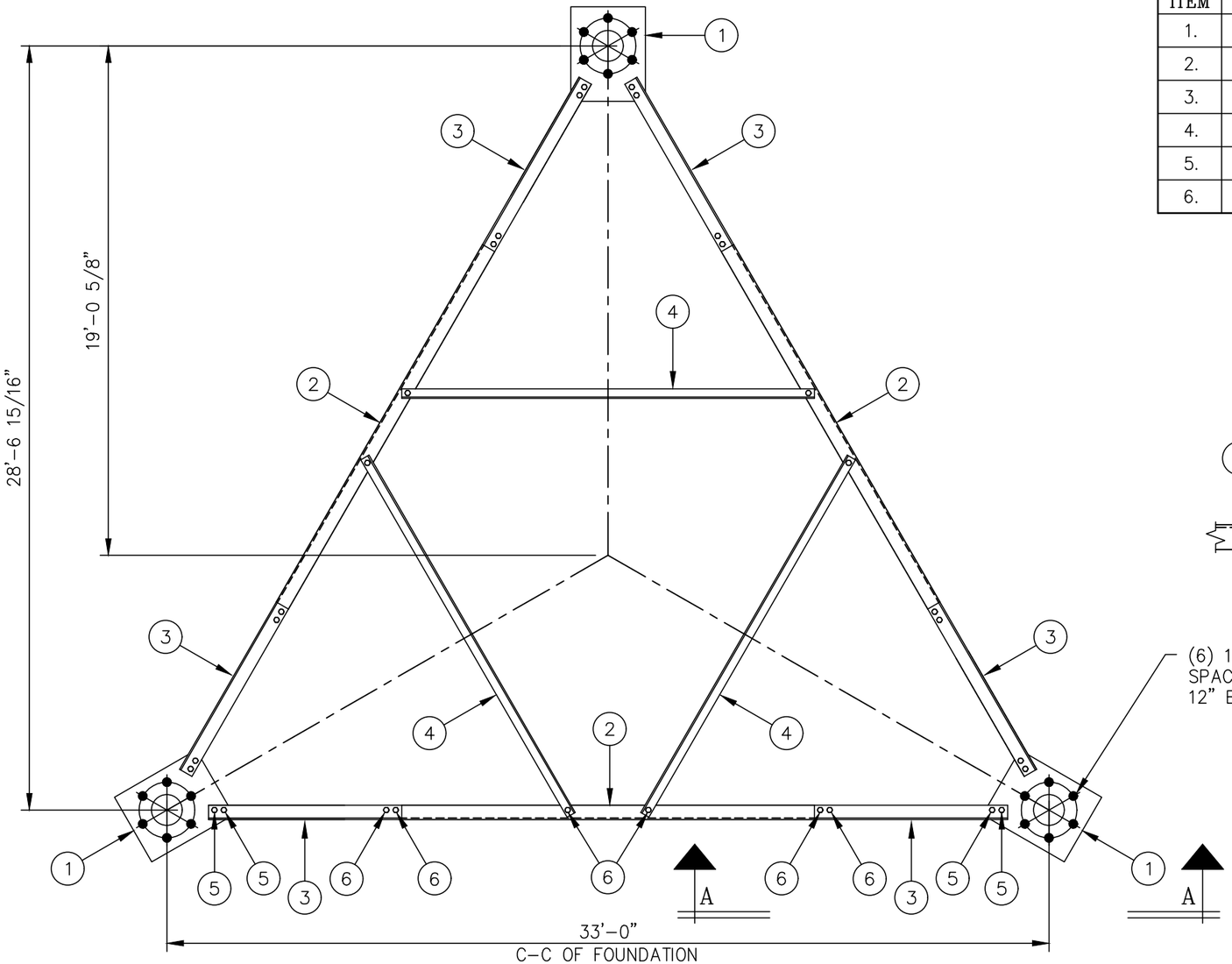
Sabre Industries™ INNOVATION DELIVERED

FOUNDATION: 360 FT. MODEL S3R–SD

SITE: BAD CREEK (BDC), SC #(BDC)

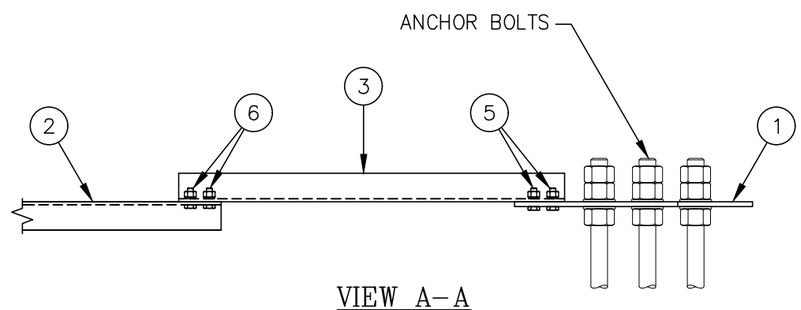
CUSTOMER: DUKE ENERGY CORPORATION

JOB NO. 495518		SIZE	DRAWING NO.	REV
DATE	12/29/21	B	495518–F1	1
DRAWN BY	CK			
CHECKED BY	KC		SCALE NONE	PAGE 2 OF 2



PLAN VIEW

C30400280 LEG TO LEG TEMPLATE				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT
1.	3	C30139673	PLATE, ANCHOR BOLT TEMPLATE, 1 1/2"ø A.B. ON A 12"ø B.C.	99
2.	3	C30139413	ANGLE, TEMPLATE SUPPORT, 3 X 3 X 3/16 X 10'-0	111
3.	6	C30139422	ANGLE, TEMPLATE SUPPORT, 3 X 3 X 3/16 X 11'-1 3/4	247
4.	3	C30139439	ANGLE, TEMPLATE SUPPORT, 2 1/2 X 2 1/2 X 3/16 X 16'-0	147
5.	12	C40026023	BOLT ASSEMBLY, 5/8 ø X 2 A325	6
6.	18	C40026022	BOLT ASSEMBLY, 5/8 ø X 1 3/4 A325	8
			TOTAL WEIGHT IN LBS.	618



VIEW A-A

NOTE:

1. ALWAYS COMPARE THE DIMENSIONS SHOWN ON THIS DRAWING WITH THE PROPER CONCRETE FOUNDATION DRAWING, PRIOR TO PLACING CONCRETE.
2. ONE ANCHOR BOLT MUST BE ALIGNED DIRECTLY WITH THE CENTER OF THE TOWER (TYPICAL AT ALL (3) LEGS).
3. VERIFY ANCHOR BOLT CIRCLE CENTER-TO-CENTER SPACING ON ALL (3) FACES AND ALIGNMENT OF ANCHOR BOLTS WITH THE CENTER OF THE TOWER AT ALL (3) LEGS PRIOR TO PLACING CONCRETE.
4. PROVIDE NECESSARY SUPPORT TO ELIMINATE ANY MOVEMENT DURING CONCRETE PLACEMENT AND CURING.

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE
FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

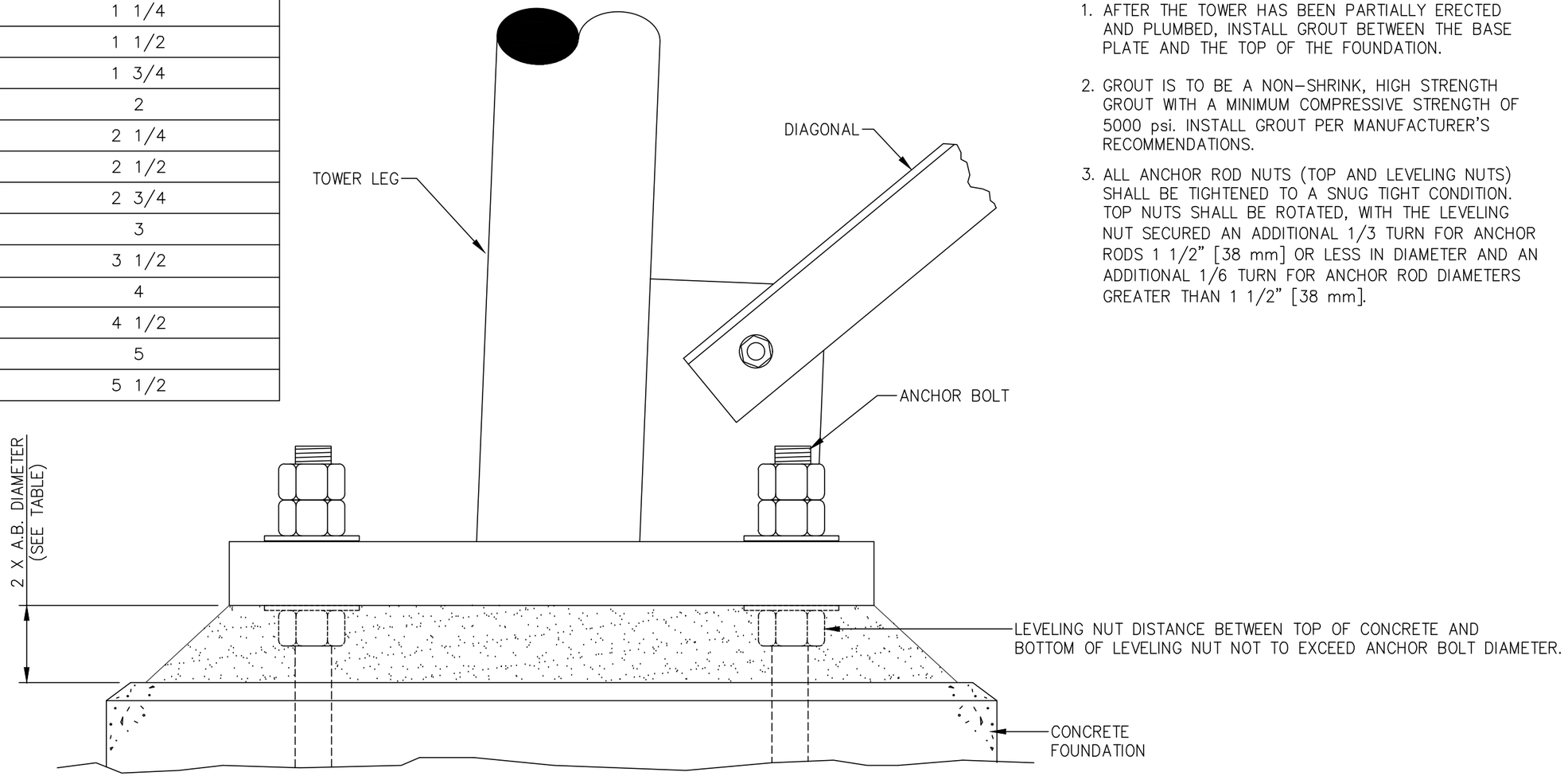
REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

LEG TO LEG TEMPLATE INSTALLATION FOR MODEL S3R-SD SECTION 17 BASE SPREAD 33'-0" C-C OF FOUNDATION (6) 1 3/4"ø A.B. ON AN 12"ø B.C.

REV. H		SIZE	DRAWING NO.	REV
DATE	04/23/18	B	C30400280	0
DRAWN BY	KLE			
CHECKED BY	EK		SCALE None	PAGE 1 OF 1

TABLE	
ANCHOR BOLT DIAMETER (in)	MAXIMUM SPACE (in)
1/2	1
5/8	1 1/4
3/4	1 1/2
7/8	1 3/4
1	2
1 1/8	2 1/4
1 1/4	2 1/2
1 3/8	2 3/4
1 1/2	3
1 3/4	3 1/2
2	4
2 1/4	4 1/2
2 1/2	5
2 3/4	5 1/2



ELEVATION VIEW

NOTES:

1. AFTER THE TOWER HAS BEEN PARTIALLY ERECTED AND PLUMBED, INSTALL GROUT BETWEEN THE BASE PLATE AND THE TOP OF THE FOUNDATION.
2. GROUT IS TO BE A NON-SHRINK, HIGH STRENGTH GROUT WITH A MINIMUM COMPRESSIVE STRENGTH OF 5000 psi. INSTALL GROUT PER MANUFACTURER'S RECOMMENDATIONS.
3. ALL ANCHOR ROD NUTS (TOP AND LEVELING NUTS) SHALL BE TIGHTENED TO A SNUG TIGHT CONDITION. TOP NUTS SHALL BE ROTATED, WITH THE LEVELING NUT SECURED AN ADDITIONAL 1/3 TURN FOR ANCHOR RODS 1 1/2" [38 mm] OR LESS IN DIAMETER AND AN ADDITIONAL 1/6 TURN FOR ANCHOR ROD DIAMETERS GREATER THAN 1 1/2" [38 mm].

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION
8	10/13/17	RWM	MWR	ADDED ANCHOR BOLT TABLE, REVISED LEVELING NUT CALL OUT AND ADDED TIGHTENING NOTE #3.
7	1/6/12	DSN	RWM	REVISED BASE PLATE TO FND. GAP
6	1/26/07	MLC	MC	ADDED GROUT NOTE.
5	3/30/05	KMM	ZAK	CHG'D TITLE BLOCK DESCRIPTION TO INCLUDE S4R
4	6/11/04	CE	ZAK	REDRAWN ONTO "B" SIZE TITLE BLOCK
3	03/12/01	JKW	PSB	REDRAWN IN AUTOCAD 2000i
2	06/29/99	MLC		REDRAWN IN AUTOCAD
1	04/11/97	MLC		ADDED NEW TITLEBLOCK

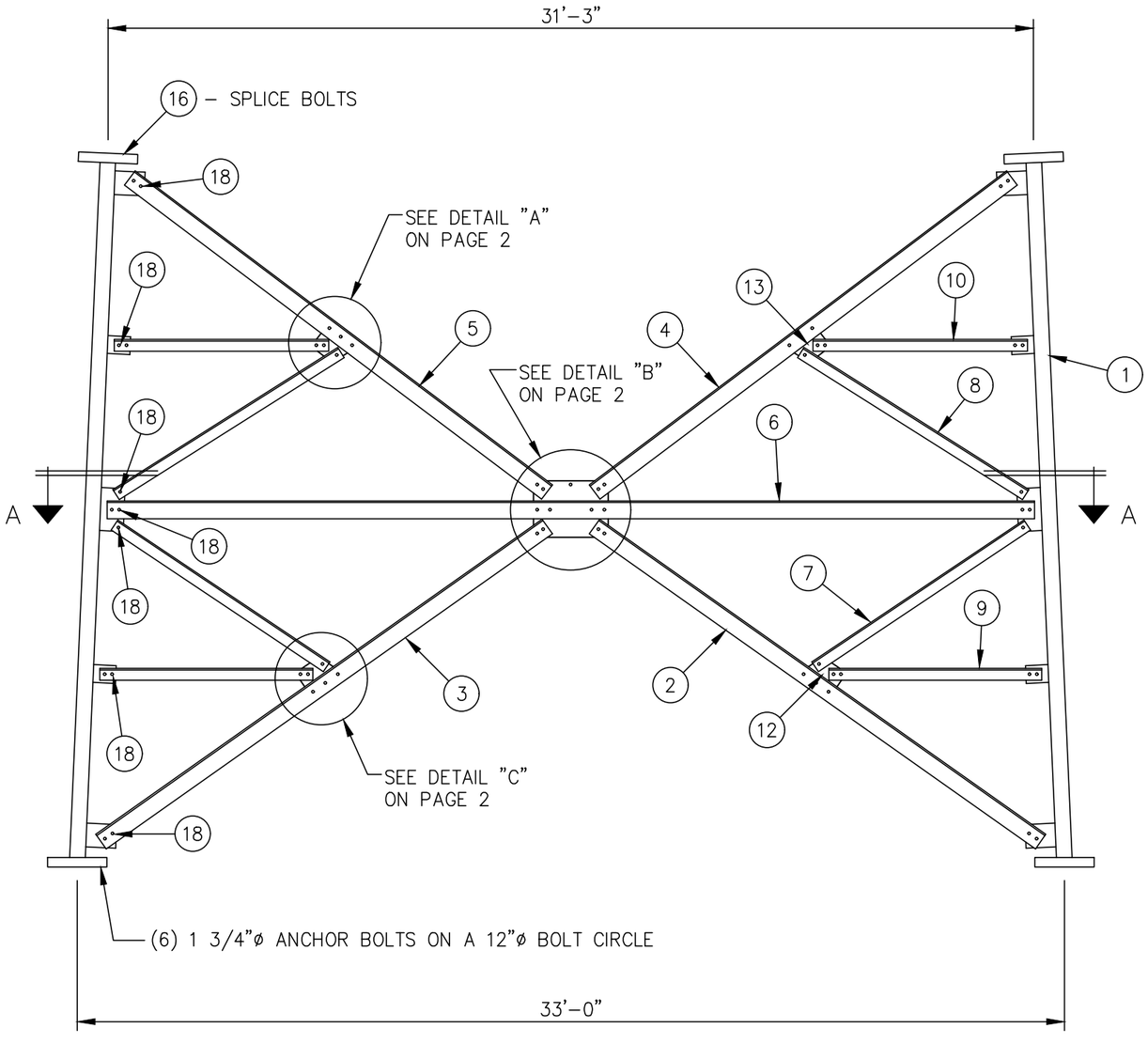
Sabre Industries™
INNOVATION DELIVERED

TOWER BASE INSTALLATION (S3R & S4R)

DATE	05/20/97
DRAWN BY	MLC
CHECKED BY	DLW

SIZE	DRAWING NO.	REV
B	906195	8

SCALE	PAGE
None	1 OF 1



ELEVATION VIEW

LIST OF MATERIAL

17-LEGS

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	3	17-T1186321	SECT. 17 LEG 5 1/4 ø X 20'-0 5/16 W/STEP BOLTS	5564
			TOTAL WEIGHT LBS	5564

17-T8302067 BRACING KIT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
2	3	3818015	ANGLE, DIAGONAL 6 X 4 X 3/8 X 17'-5	668
3	3	3818016	ANGLE, DIAGONAL 6 X 4 X 3/8 X 17'-5	668
4	3	3818017	ANGLE, DIAGONAL 6 X 4 X 3/8 X 16'-8 1/2	641
5	3	3818018	ANGLE, DIAGONAL 6 X 4 X 3/8 X 16'-8 1/2	641
6	3	3816723	ANGLE, HORIZONTAL 4 X 4 X 5/16 X 31'-3 3/4	801
7	6	3815442	ANGLE, SUB-DIAGONAL 3 X 3 X 1/4 X 8'-2 3/4	251
8	6	3815443	ANGLE, SUB-DIAGONAL 3 X 3 X 1/4 X 8'-6 5/8	262
9	6	3815716	ANGLE, SUB-HORIZONTAL 3 X 3 X 1/4 X 7'-1 13/16	218
10	6	3815717	ANGLE, SUB-HORIZONTAL 3 X 3 X 1/4 X 7'-2 3/8	220
11	3	3815446	PLATE, CENTER TIE 1/2 X 18 11/16 X 2'-5 1/4	239
12	6	3815447	PLATE, BOTTOM TIE 1/2 X 10 X 1'-3 7/8	112
13	6	3815448	PLATE, TOP TIE 1/2 X 10 X 1'-3 3/16	106
14	3	TS00397	ANGLE, SUPPORT 6 X 4 X 3/8 X 1'-3 1/4	49
15	3	3815449	ANGLE, INTERNAL 3 X 3 X 1/4 X 15'-8	240
			TOTAL WEIGHT LBS	5116

SPLICE BOLTS

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
16	25	C40026167	BOLT ASSEMBLY, 1 1/2 ø X 7 1/2 A325	165
			TOTAL WEIGHT LBS	165

TK00341 HARDWARE KIT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
17	7	C40026045	BOLT ASSEMBLY, 3/4 ø X 2 1/2 A325	5
18	183	C40026044	BOLT ASSEMBLY, 3/4 ø X 2 1/4 A325	135
19	13	C40026043	BOLT ASSEMBLY, 3/4 ø X 2 A325	9
			TOTAL WEIGHT LBS	149

TOTAL SECTION WEIGHT - INCLUDES 3 LEGS, BRACING AND HARDWARE KIT	10994

FIELD NOTES

1. THE PART NUMBERS FOR ALL LEGS ARE LOCATED AT THE TOP OF EACH PART.
2. STEP BOLTS PROVIDED FOR (3) LEGS.

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

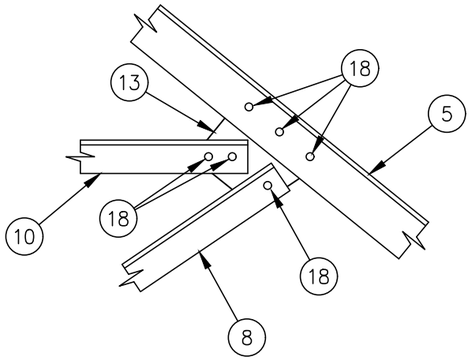
Sabre Industries™ INNOVATION DELIVERED

SECTION ERECTION: 17 17-T8302067

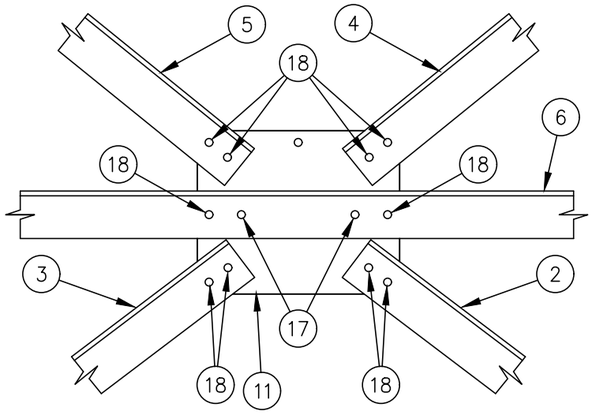
SITE: BAD CREEK (BDC), SC #(BDC)

CUSTOMER: DUKE ENERGY CORPORATION

JOB NO. 495518		SIZE	DRAWING NO.	REV
DATE	1/12/22	B	495518-S17	0
DRAWN BY	DRL			
CHECKED BY	LRD		SCALE NONE	PAGE 1 OF 2



DETAIL "A"



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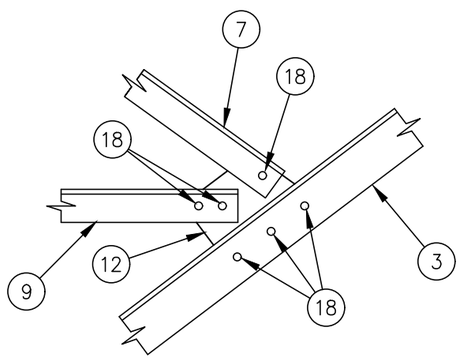
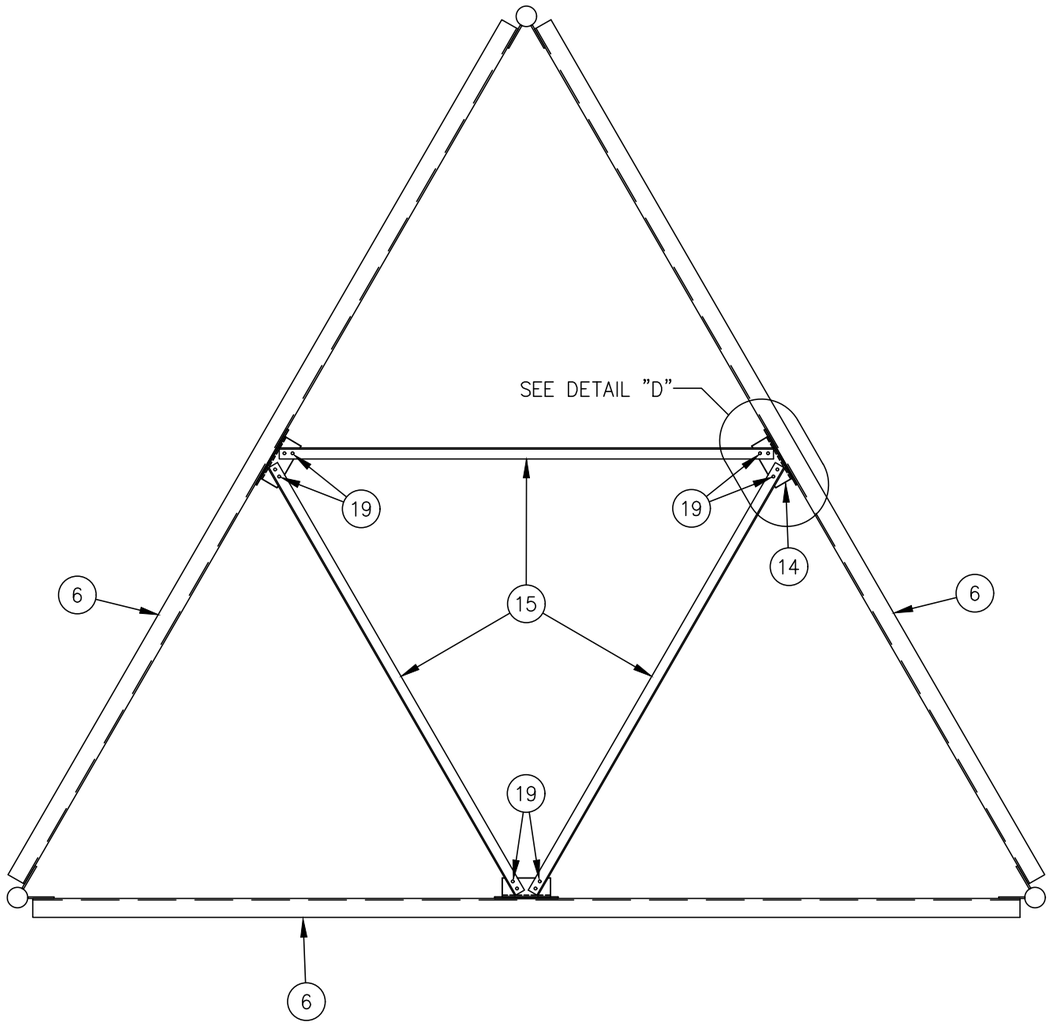
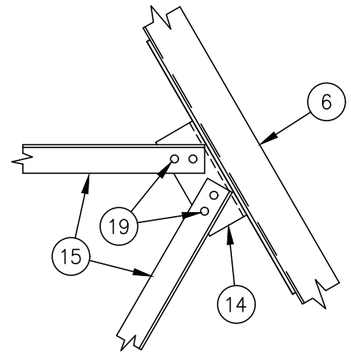


DETAIL "C"



SECTION A–A



DETAIL "D"

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"	MATERIAL: TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

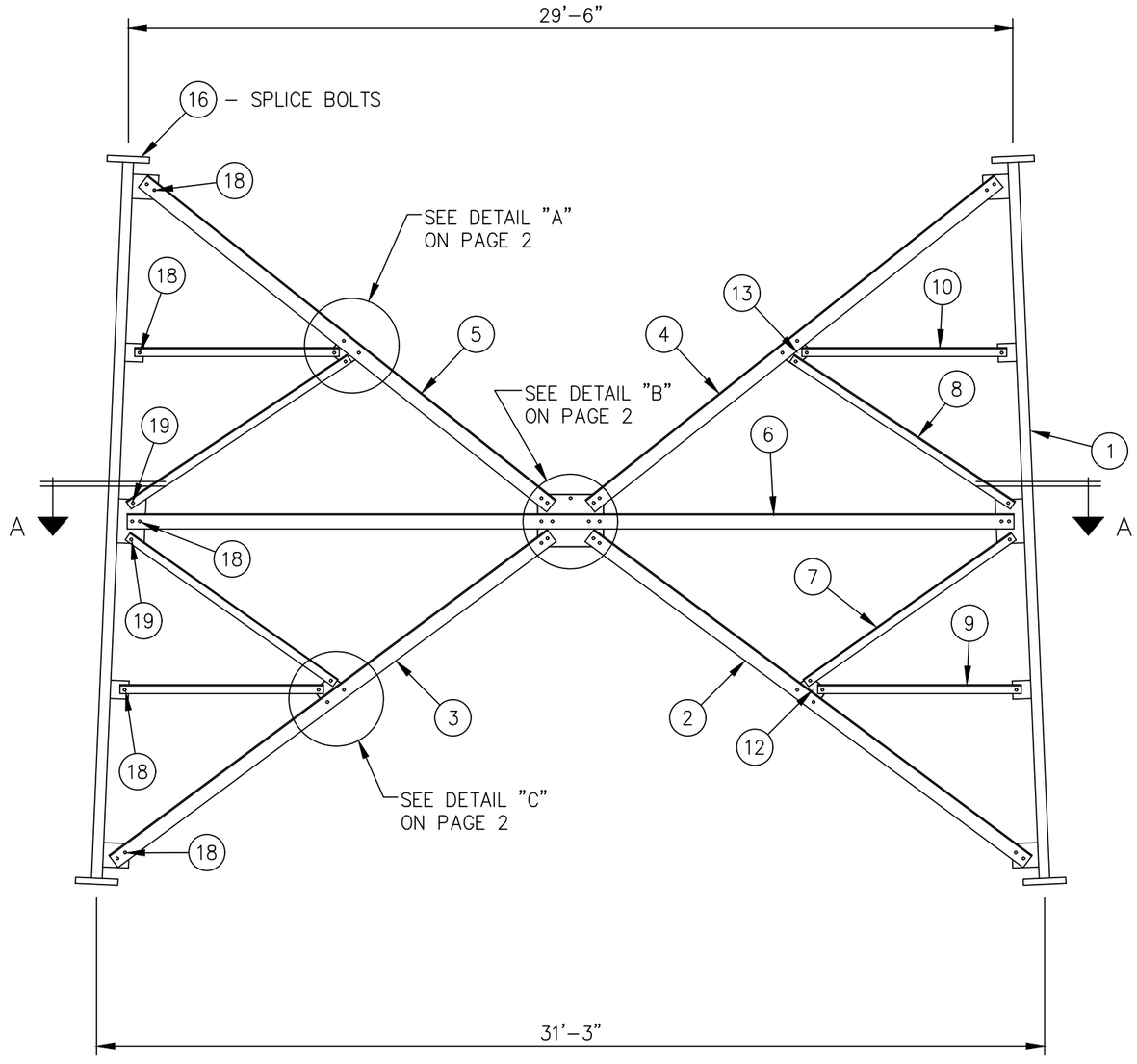
CONFIDENTIAL

SECTION ERECTION: 17 17–T8302067

SITE: BAD CREEK (BDC), SC #(BDC)

CUSTOMER: DUKE ENERGY CORPORATION

JOB NO. 495518		SIZE	DRAWING NO.	REV
DATE	1/12/22	B	495518–S17	0
DRAWN BY	DRL			
CHECKED BY	LRD		SCALE NONE	PAGE 2 OF 2



ELEVATION VIEW

LIST OF MATERIAL

16 LEGS

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	3	16-T1181933	SECT. 16 LEG 5 ø X 20'-0 5/16 W/STEP BOLTS	4948
			TOTAL WEIGHT LBS	4948

16-T8301051 BRACING KIT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
2	3	3815521	ANGLE, DIAGONAL 5 X 3 1/2 X 1/4 X 16'-11 9/16	370
3	3	3815522	ANGLE, DIAGONAL 5 X 3 1/2 X 1/4 X 16'-11 9/16	370
4	3	3815523	ANGLE, DIAGONAL 5 X 3 1/2 X 1/4 X 16'-3 3/16	356
5	3	3815524	ANGLE, DIAGONAL 5 X 3 1/2 X 1/4 X 16'-3 3/16	356
6	3	3815650	ANGLE, HORIZONTAL 4 X 4 X 1/4 X 29'-6 3/4	609
7	6	3815658	ANGLE, SUB-DIAGONAL 3 X 3 X 3/16 X 7'-11 15/16	185
8	6	3815659	ANGLE, SUB-DIAGONAL 3 X 3 X 3/16 X 8'-3 3/4	192
9	6	3815660	ANGLE, SUB-HORIZONTAL 3 X 3 X 1/4 X 6'-8 5/8	205
10	6	3815661	ANGLE, SUB-HORIZONTAL 3 X 3 X 1/4 X 6'-9	206
11	3	3815530	PLATE, CENTER TIE 1/2 X 17 11/16 X 2'-2 1/2	204
12	6	3815531	PLATE, BOTTOM TIE 1/2 X 8 X 1'-0 5/16	70
13	6	3815532	PLATE, TOP TIE 1/2 X 8 X 11 3/16	67
14	3	TS00397	ANGLE, SUPPORT 6 X 4 X 3/8 X 1'-3 1/4	49
15	3	3815464	ANGLE, INTERNAL 3 X 3 X 1/4 X 14'-9 1/2	226
			TOTAL WEIGHT LBS	3465

SPLICE BOLTS

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
16	19	C40026115	BOLT ASSEMBLY, 1 1/2 ø X 6 1/2 A325	115
			TOTAL WEIGHT LBS	115

TK00323 HARDWARE KIT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
17	7	C40026045	BOLT ASSEMBLY, 3/4 ø X 2 1/2 A325	5
18	120	C40026044	BOLT ASSEMBLY, 3/4 ø X 2 1/4 A325	89
19	38	C40026043	BOLT ASSEMBLY, 3/4 ø X 2 A325	27
			TOTAL WEIGHT LBS	121

TOTAL SECTION WEIGHT - INCLUDES 3 LEGS, BRACING AND HARDWARE KIT	8649

FIELD NOTES

1. THE PART NUMBERS FOR ALL LEGS ARE LOCATED AT THE TOP OF EACH PART.
2. STEP BOLTS PROVIDED FOR (3) LEGS.

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

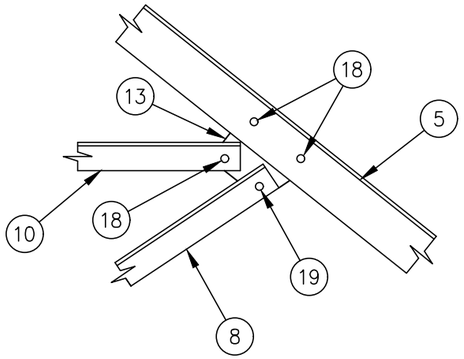
Sabre Industries™ INNOVATION DELIVERED

SECTION ERECTION: 16 16-T8301051

SITE: BAD CREEK (BDC), SC #(BDC)

CUSTOMER: DUKE ENERGY CORPORATION

JOB NO. 495518		SIZE	DRAWING NO.	REV
DATE	1/12/22	B	495518-S16	0
DRAWN BY	DRL			
CHECKED BY	LRD		SCALE NONE	PAGE 1 OF 2



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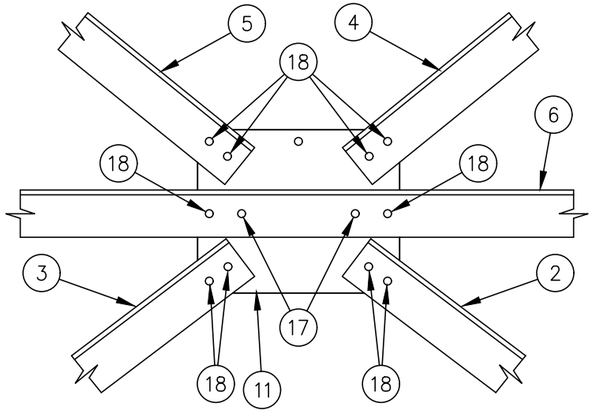
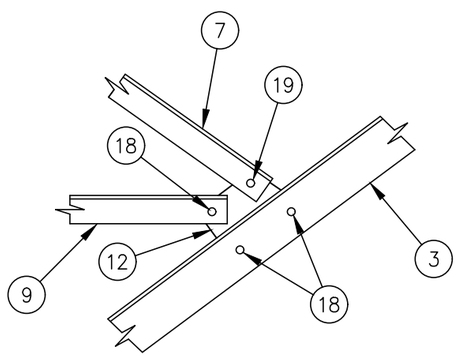
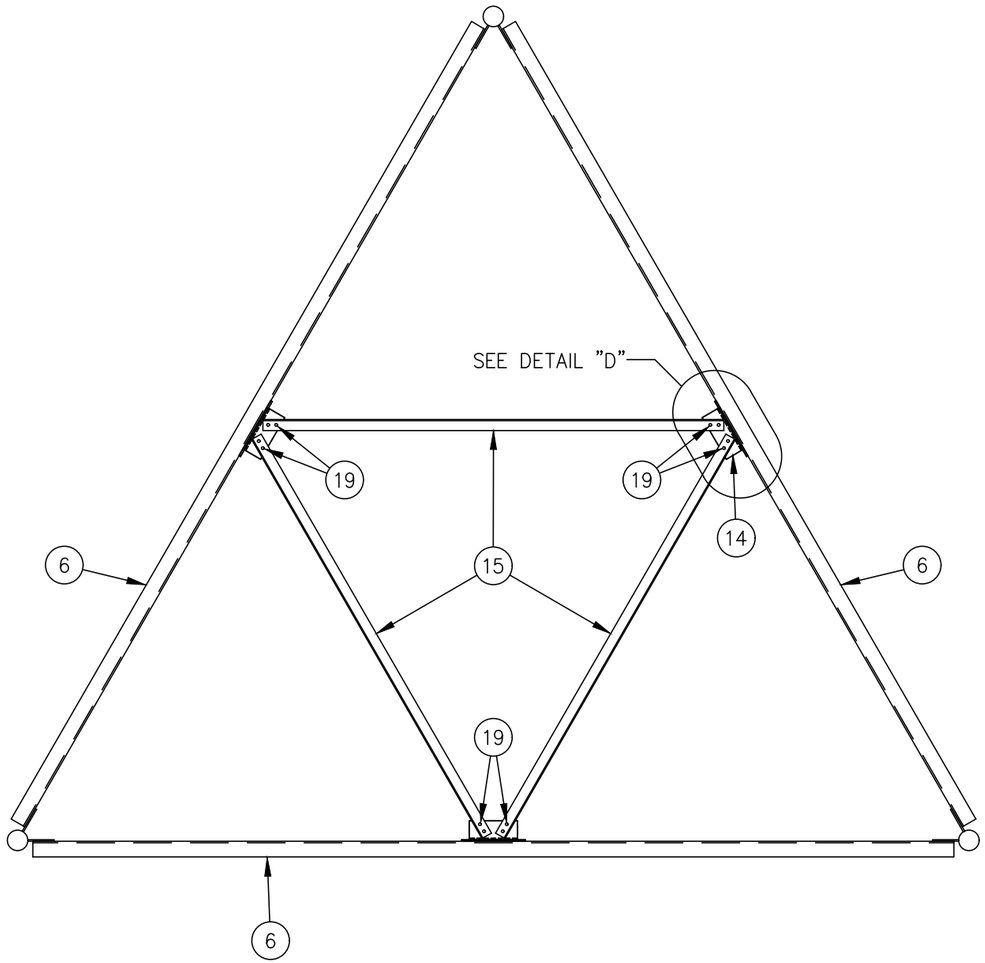


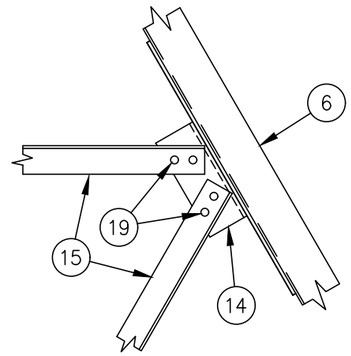
DETAIL "B"



DETAIL "C"



SECTION A–A



DETAIL "D"

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"	MATERIAL: TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

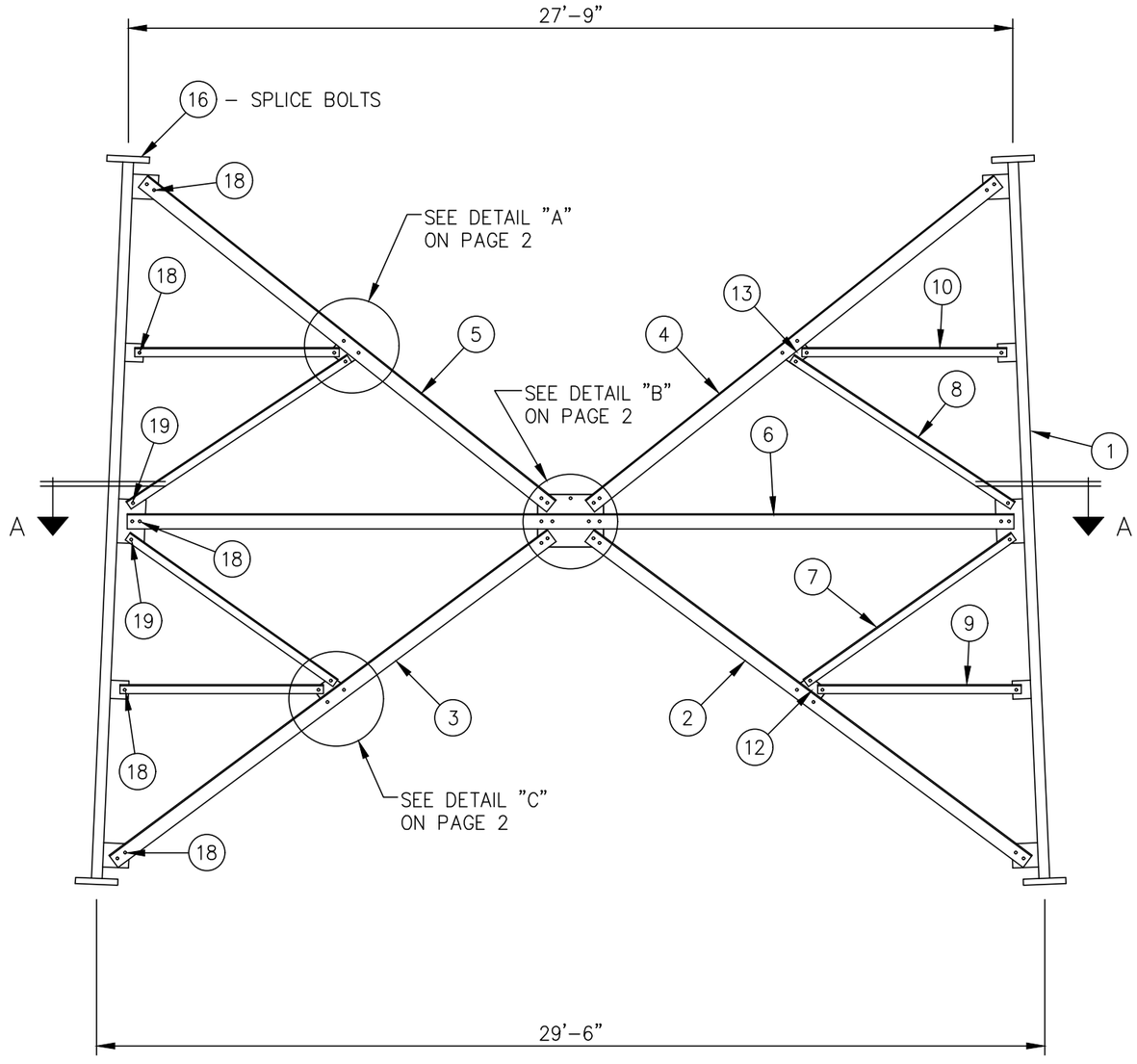
Sabre Industries™
INNOVATION DELIVERED

SECTION ERECTION: 16 16–T8301051

SITE: BAD CREEK (BDC), SC #(BDC)

CUSTOMER: DUKE ENERGY CORPORATION

JOB NO. 495518		SIZE	DRAWING NO.	REV
DATE	1/12/22	B	495518–S16	0
DRAWN BY	DRL			
CHECKED BY	LRD		SCALE NONE	PAGE 2 OF 2



ELEVATION VIEW

LIST OF MATERIAL

15-LEGS

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	3	15-T1181837	SECT. 15 LEG 5 ø X 20'-0 5/16 W/STEP BOLTS	4852
			TOTAL WEIGHT LBS	4852

15-T8301134 BRACING KIT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
2	3	3815146	ANGLE, DIAGONAL 4 X 3 1/2 X 1/4 X 16'-3 1/16	314
3	3	3815147	ANGLE, DIAGONAL 4 X 3 1/2 X 1/4 X 16'-3 1/16	314
4	3	3815148	ANGLE, DIAGONAL 4 X 3 1/2 X 1/4 X 15'-6 3/4	301
5	3	3815149	ANGLE, DIAGONAL 4 X 3 1/2 X 1/4 X 15'-6 3/4	301
6	3	3815150	ANGLE, HORIZONTAL 4 X 4 X 1/4 X 27'-9 3/4	573
7	6	3815151	ANGLE, SUB-DIAGONAL 3 X 3 X 3/16 X 7'-7 5/8	176
8	6	3815152	ANGLE, SUB-DIAGONAL 3 X 3 X 3/16 X 7'-11 5/16	184
9	6	3815153	ANGLE, SUB-HORIZONTAL 3 X 3 X 1/4 X 6'-3 13/16	193
10	6	3815154	ANGLE, SUB-HORIZONTAL 3 X 3 X 1/4 X 6'-4 3/16	194
11	3	3815155	PLATE, CENTER TIE 1/2 X 17 15/16 X 2'-1 1/2	203
12	6	3815156	PLATE, BOTTOM TIE 1/2 X 8 X 0'-11 11/16	69
13	6	3815157	PLATE, TOP TIE 1/2 X 8 X 0'-11 3/16	66
14	3	TS00397	ANGLE, SUPPORT 6 X 4 X 3/8 X 1'-3 1/4	49
15	3	3815386	ANGLE, INTERNAL 3 X 3 X 1/4 X 13'-11	213
			TOTAL WEIGHT LBS	3150

SPLICE BOLTS

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
16	19	C40026115	BOLT ASSEMBLY, 1 1/2 ø X 6 1/2 A325	115
			TOTAL WEIGHT LBS	115

TK00323 HARDWARE KIT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
17	7	C40026045	BOLT ASSEMBLY, 3/4 ø X 2 1/2 A325	5
18	120	C40026044	BOLT ASSEMBLY, 3/4 ø X 2 1/4 A325	89
19	38	C40026043	BOLT ASSEMBLY, 3/4 ø X 2 A325	27
			TOTAL WEIGHT LBS	121

TOTAL SECTION WEIGHT - INCLUDES 3 LEGS, BRACING AND HARDWARE KIT	8238

FIELD NOTES

1. THE PART NUMBERS FOR ALL LEGS ARE LOCATED AT THE TOP OF EACH PART.
2. STEP BOLTS PROVIDED FOR (3) LEGS.

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

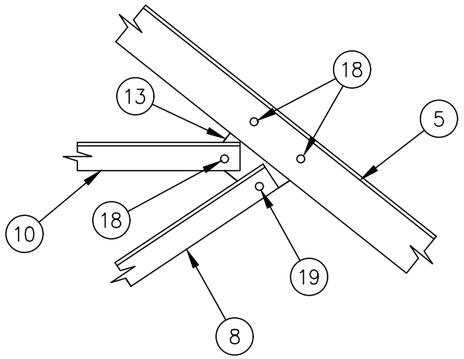
Sabre Industries™ INNOVATION DELIVERED

SECTION ERECTION: 15 15-T8301134

SITE: BAD CREEK (BDC), SC #(BDC)

CUSTOMER: DUKE ENERGY CORPORATION

JOB NO. 495518		SIZE	DRAWING NO.	REV
DATE	1/12/22	B	495518-S15	0
DRAWN BY	DRL			
CHECKED BY	LRD		SCALE None	PAGE 1 OF 2



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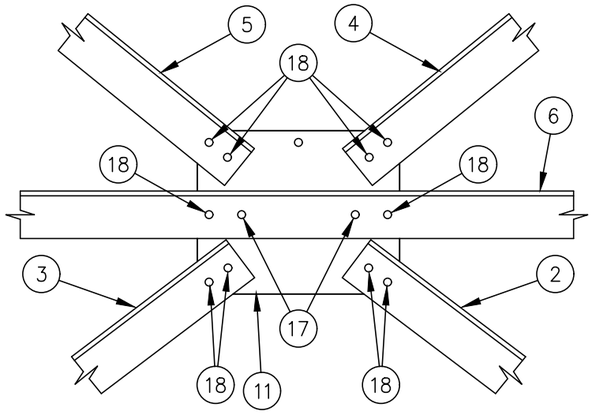

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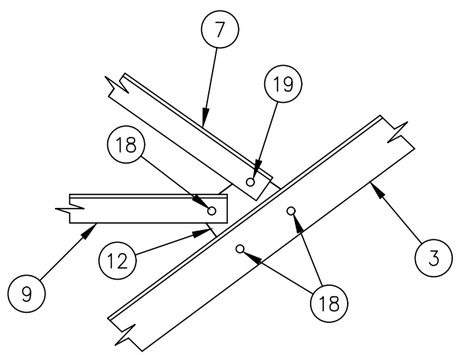
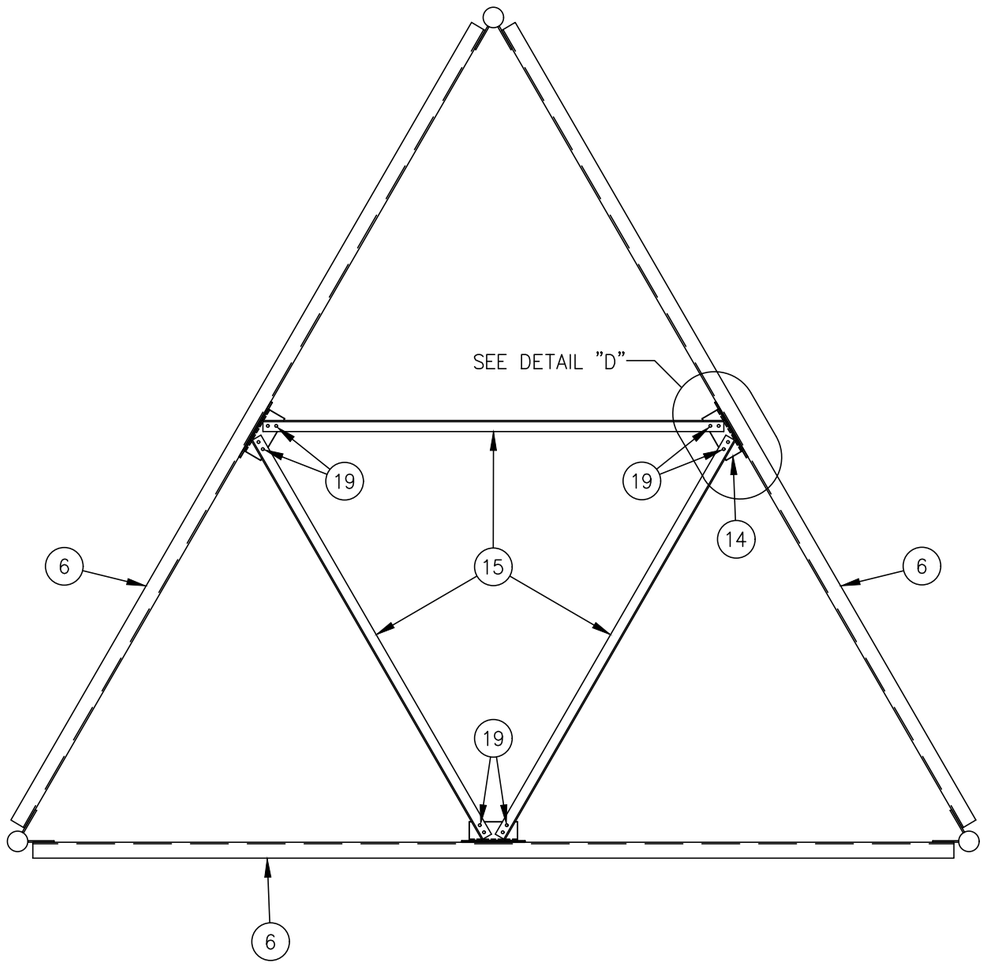
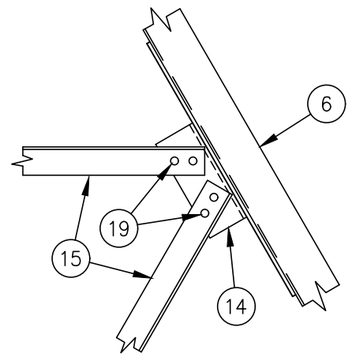


DETAIL "C"



SECTION A–A



DETAIL "D"

REV	DATE	DRW	CHK	DESCRIPTION

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

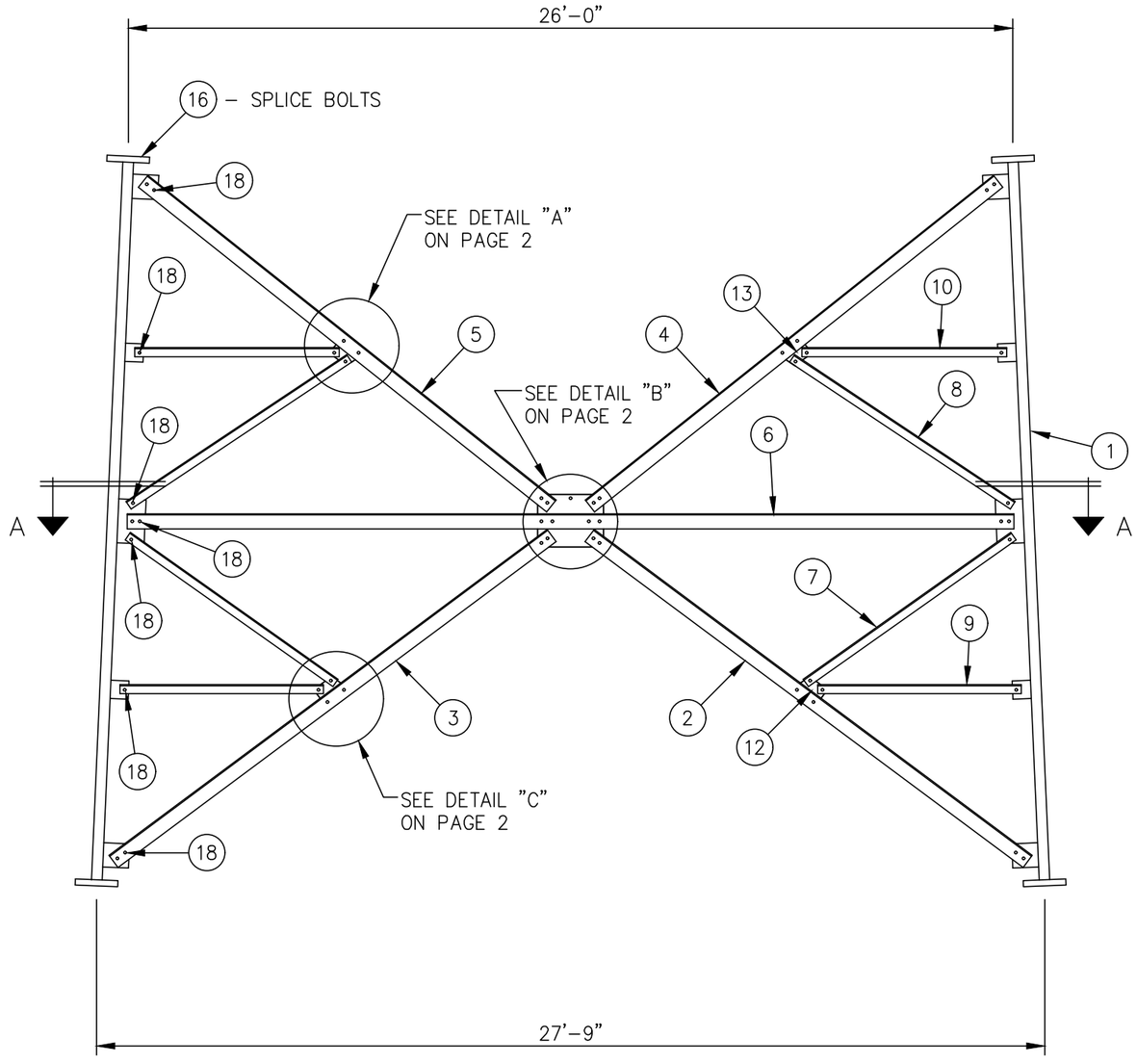
Sabre Industries™
INNOVATION DELIVERED

SECTION ERECTION: 15 15–T8301134

SITE: BAD CREEK (BDC), SC #(BDC)

CUSTOMER: DUKE ENERGY CORPORATION

JOB NO. 495518		SIZE	DRAWING NO.	REV
DATE	1/12/22	B	495518–S15	0
DRAWN BY	DRL			
CHECKED BY	LRD		SCALE None	PAGE 2 OF 2



ELEVATION VIEW

LIST OF MATERIAL

14 LEGS

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	3	14–T1181731	SECT. 14 LEG 4 3/4 ø X 20'–0 5/16 W/STEP BOLTS	4458
			TOTAL WEIGHT LBS	4458

14–T8300710 BRACING KIT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
2	3	3815509	ANGLE, DIAGONAL 5 X 3 1/2 X 1/4 X 15'–6 15/16	340
3	3	3815510	ANGLE, DIAGONAL 5 X 3 1/2 X 1/4 X 15'–6 15/16	340
4	3	3815511	ANGLE, DIAGONAL 5 X 3 1/2 X 1/4 X 14'–10 13/16	326
5	3	3815512	ANGLE, DIAGONAL 5 X 3 1/2 X 1/4 X 14'–10 13/16	326
6	3	3815513	ANGLE, HORIZONTAL 3 1/2 X 3 1/2 X 1/4 X 26'–0 3/4	472
7	6	3815514	ANGLE, SUB–DIAGONAL 2 1/2 X 2 1/2 X 1/4 X 7'–3 5/16	186
8	6	3815515	ANGLE, SUB–DIAGONAL 2 1/2 X 2 1/2 X 1/4 X 7'–7	194
9	6	3815516	ANGLE, SUB–HORIZONTAL 2 1/2 X 2 1/2 X 1/4 X 5'–11	152
10	6	3815517	ANGLE, SUB–HORIZONTAL 2 1/2 X 2 1/2 X 1/4 X 5'–11 3/8	152
11	3	3815142	PLATE, CENTER TIE 1/2 X 18 X 2'–0 1/8	192
12	6	3815143	PLATE, BOTTOM TIE 1/2 X 8 X 0'–11	67
13	6	3815144	PLATE, TOP TIE 1/2 X 8 X 0'–10 1/2	63
14	3	TS00397	ANGLE, SUPPORT 6 X 4 X 3/8 X 1'–3 1/4	49
15	3	3815282	ANGLE, INTERNAL 3 X 3 X 1/4 X 13'–0 1/2	200
			TOTAL WEIGHT LBS	3059

SPLICE BOLTS

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
16	19	C40026115	BOLT ASSEMBLY, 1 1/2 ø X 6 1/2 A325	115
			TOTAL WEIGHT LBS	115

TK00324 HARDWARE KIT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
17	7	C40026045	BOLT ASSEMBLY, 3/4 ø X 2 1/2 A325	5
18	145	C40026044	BOLT ASSEMBLY, 3/4 ø X 2 1/4 A325	107
19	13	C40026043	BOLT ASSEMBLY, 3/4 ø X 2 A325	9
			TOTAL WEIGHT LBS	121

TOTAL SECTION WEIGHT – INCLUDES 3 LEGS, BRACING AND HARDWARE KIT	7753

FIELD NOTES

1. THE PART NUMBERS FOR ALL LEGS ARE LOCATED AT THE TOP OF EACH PART.
2. STEP BOLTS PROVIDED FOR (3) LEGS.

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE
FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY
TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

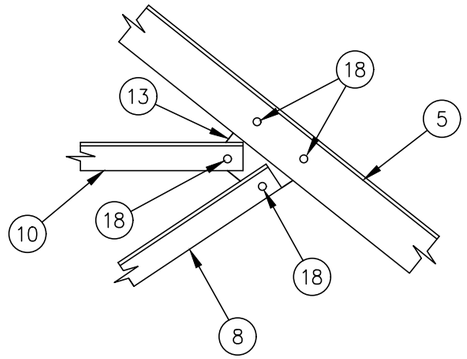
Sabre Industries™
INNOVATION DELIVERED

SECTION ERECTION: 14 14–T8300710

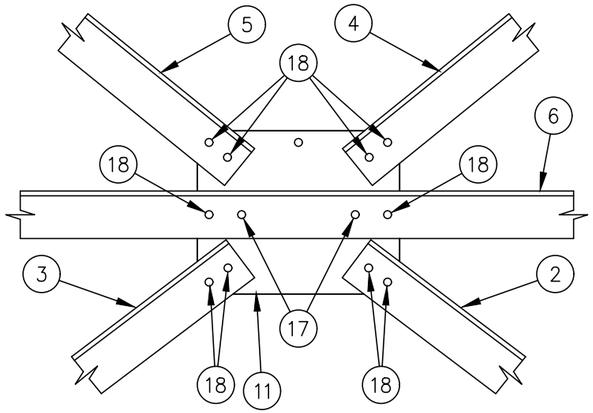
SITE: BAD CREEK (BDC), SC #(BDC)

CUSTOMER: DUKE ENERGY CORPORATION

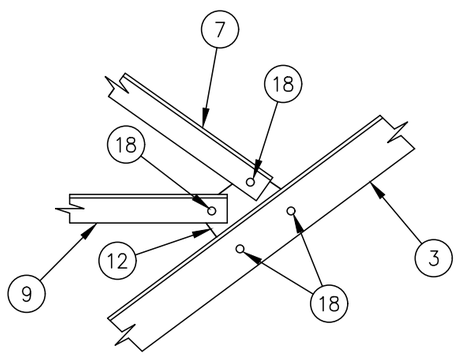
JOB NO. 495518		SIZE	DRAWING NO.	REV
DATE	1/12/22	B	495518–S14	0
DRAWN BY	DRL			
CHECKED BY	LRD		SCALE NONE	PAGE 1 OF 2



DETAIL "A"



DETAIL "B"



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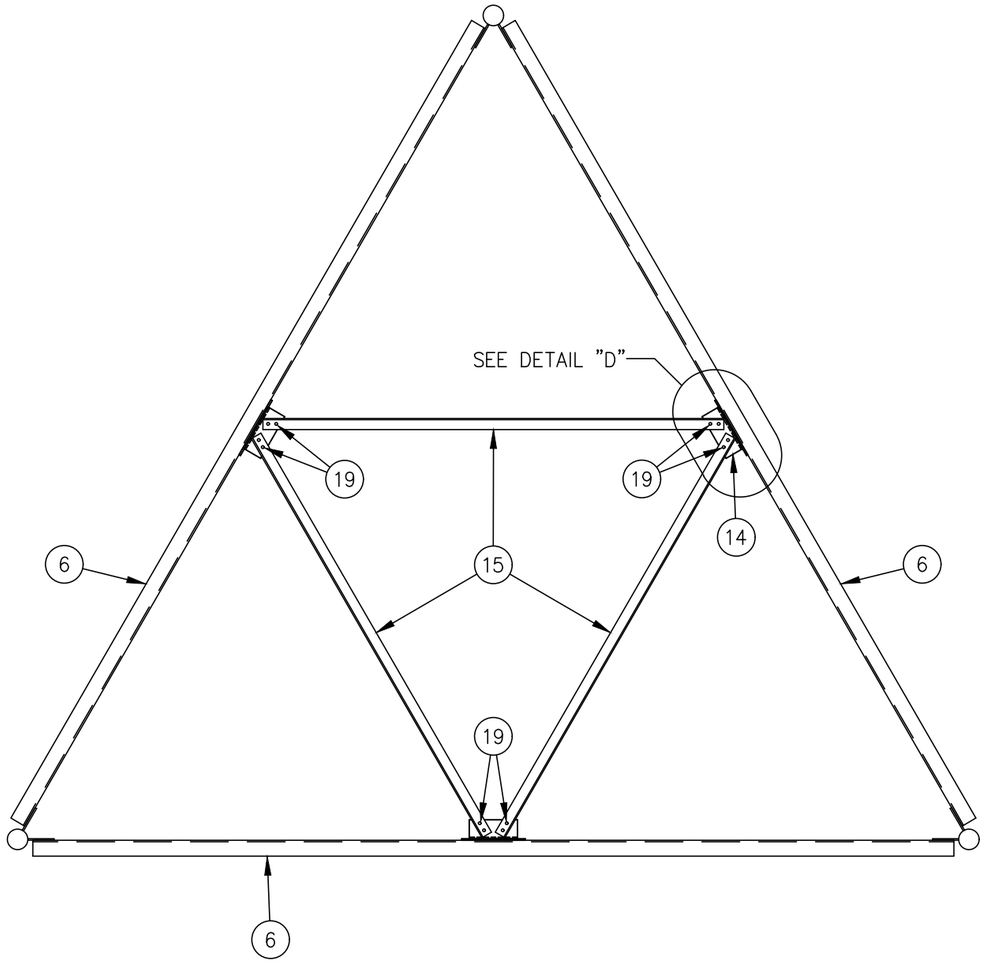
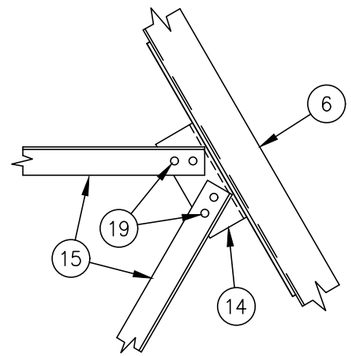


SECTION A–A



DETAIL "D"

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"	MATERIAL: TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

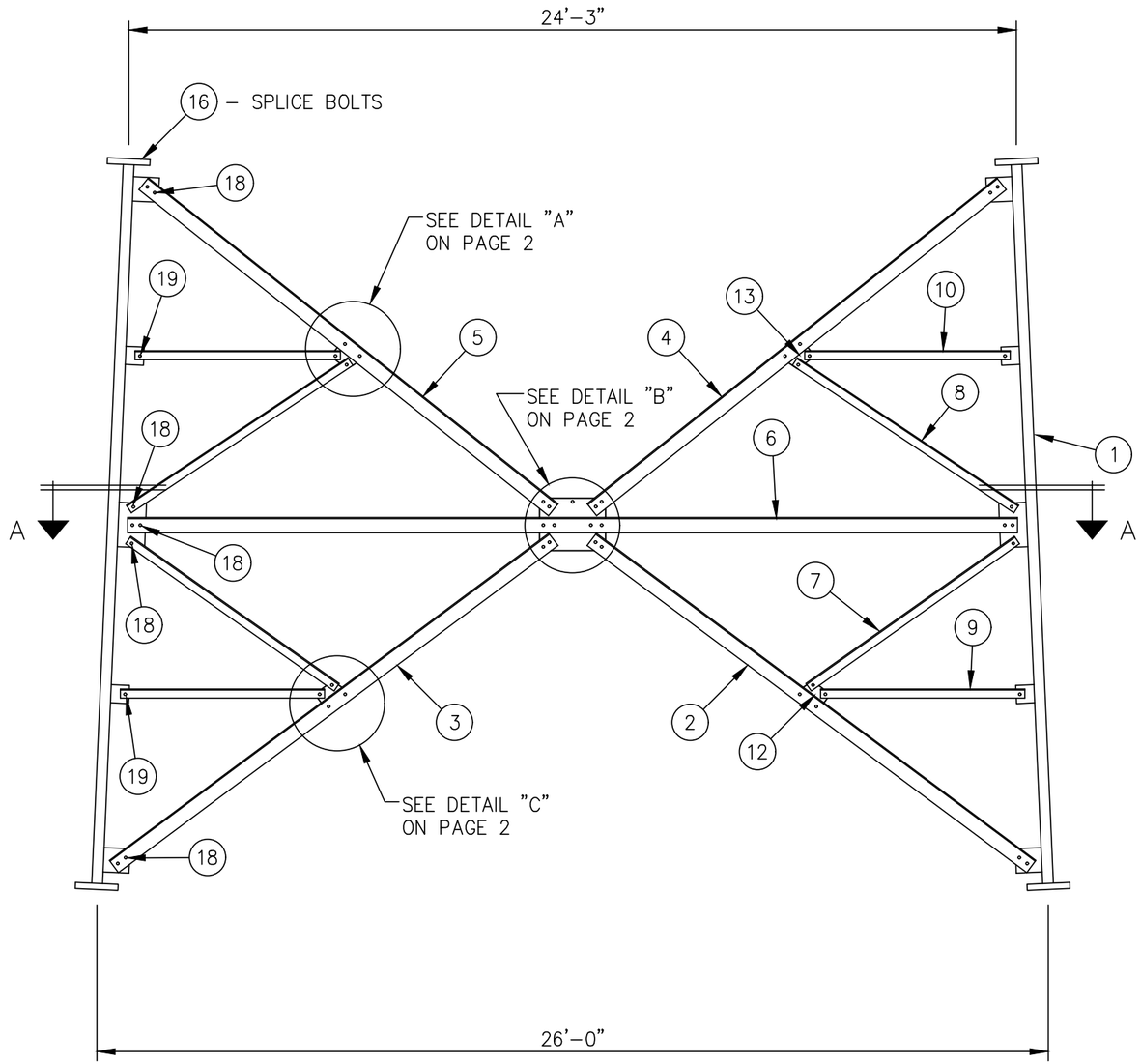
CONFIDENTIAL

SECTION ERECTION: 14 14–T8300710

SITE: BAD CREEK (BDC), SC #(BDC)

CUSTOMER: DUKE ENERGY CORPORATION

JOB NO. 495518		SIZE	DRAWING NO.	REV
DATE	1/12/22	B	495518–S14	0
DRAWN BY	DRL			
CHECKED BY	LRD		SCALE NONE	PAGE 2 OF 2



ELEVATION VIEW

LIST OF MATERIAL

13–LEGS

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	3	13–T1181631	SECT. 13 LEG 4 3/4 ø X 20'–0 5/16 W/STEP BOLTS	4458
			TOTAL WEIGHT LBS	4458

13–T8300214 BRACING KIT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
2	3	3815121	ANGLE, DIAGONAL 4 X 3 1/2 X 1/4 X 14'–11 5/8	290
3	3	3815122	ANGLE, DIAGONAL 4 X 3 1/2 X 1/4 X 14'–11 5/8	290
4	3	3815123	ANGLE, DIAGONAL 4 X 3 1/2 X 1/4 X 14'–3 5/8	277
5	3	3815124	ANGLE, DIAGONAL 4 X 3 1/2 X 1/4 X 14'–3 5/8	277
6	3	3815159	ANGLE, HORIZONTAL 3 1/2 X 3 1/2 X 1/4 X 24'–3 3/4	440
7	6	3815518	ANGLE, SUB–DIAGONAL 2 1/2 X 2 1/2 X 1/4 X 6'–11 11/16	178
8	6	3815519	ANGLE, SUB–DIAGONAL 2 1/2 X 2 1/2 X 1/4 X 7'–3 1/4	186
9	6	3815495	ANGLE, SUB–HORIZONTAL 2 1/2 X 2 1/2 X 3/16 X 5'–7	107
10	6	3815496	ANGLE, SUB–HORIZONTAL 2 1/2 X 2 1/2 X 3/16 X 5'–7 5/16	107
11	3	3815105	PLATE, CENTER TIE 1/2 X 17 1/4 X 1'–9 5/8	165
12	6	3815106	PLATE, BOTTOM TIE 1/2 X 7 X 0'–9 5/8	52
13	6	3815107	PLATE, TOP TIE 1/2 X 7 X 0'–9 3/16	50
14	3	TS00397	ANGLE, SUPPORT 6 X 4 X 3/8 X 1'–3 1/4	49
15	3	3815108	ANGLE, INTERNAL 3 X 3 X 3/16 X 12'–2	141
			TOTAL WEIGHT LBS	2609

SPLICE BOLTS

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
16	19	C40026115	BOLT ASSEMBLY, 1 1/2 ø X 6 1/2 A325	115
			TOTAL WEIGHT LBS	115

TK00323 HARDWARE KIT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
17	7	C40026045	BOLT ASSEMBLY, 3/4 ø X 2 1/2 A325	5
18	120	C40026044	BOLT ASSEMBLY, 3/4 ø X 2 1/4 A325	89
19	38	C40026043	BOLT ASSEMBLY, 3/4 ø X 2 A325	27
			TOTAL WEIGHT LBS	121

TOTAL SECTION WEIGHT – INCLUDES 3 LEGS, BRACING AND HARDWARE KIT	7303

FIELD NOTES

1. THE PART NUMBERS FOR ALL LEGS ARE LOCATED AT THE TOP OF EACH PART.
2. STEP BOLTS PROVIDED FOR (3) LEGS.

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE
FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY
TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

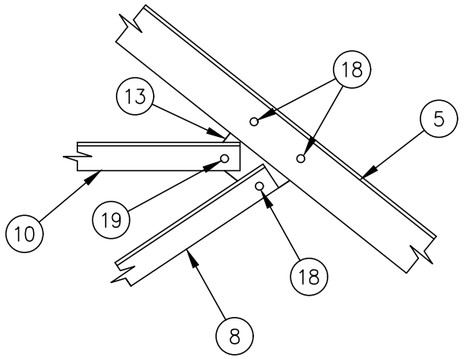
Sabre Industries™
INNOVATION DELIVERED

SECTION ERECTION: 13 13–T8300214

SITE: BAD CREEK (BDC), SC #(BDC)

CUSTOMER: DUKE ENERGY CORPORATION

JOB NO. 495518		SIZE	DRAWING NO.	REV
DATE	1/12/22	B	495518–S13	0
DRAWN BY	DRL			
CHECKED BY	LRD		SCALE NONE	PAGE 1 OF 2



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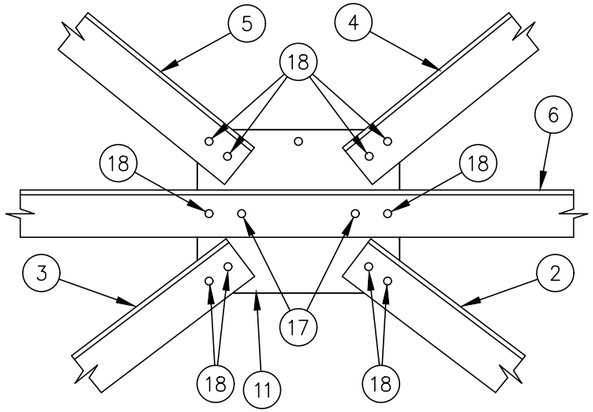

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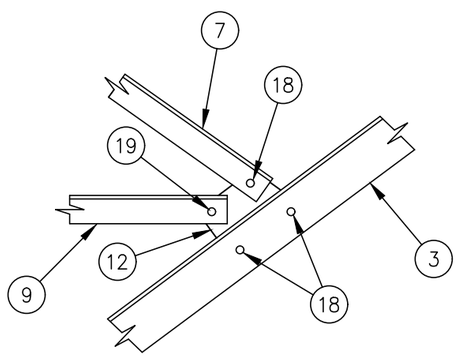

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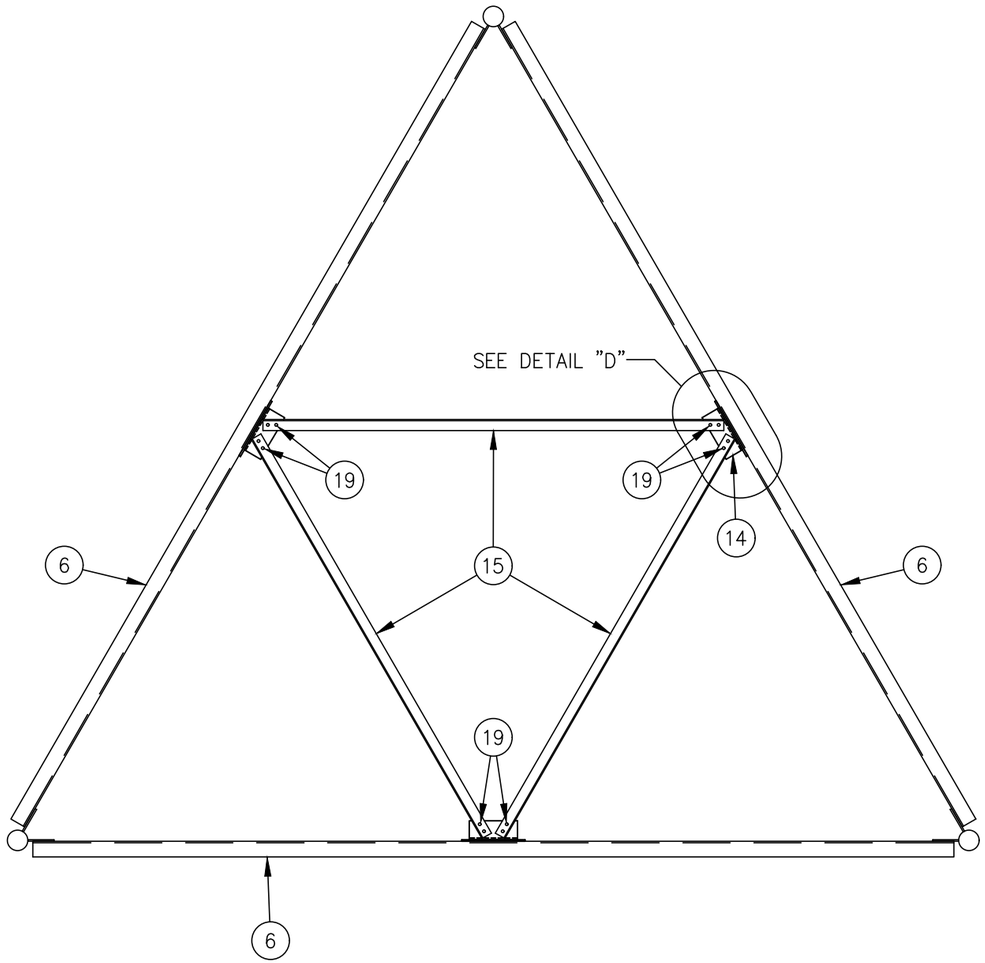
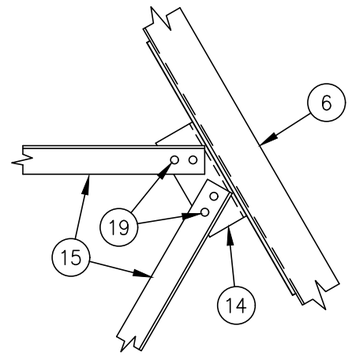


SECTION A–A



DETAIL "D"

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"	MATERIAL: TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

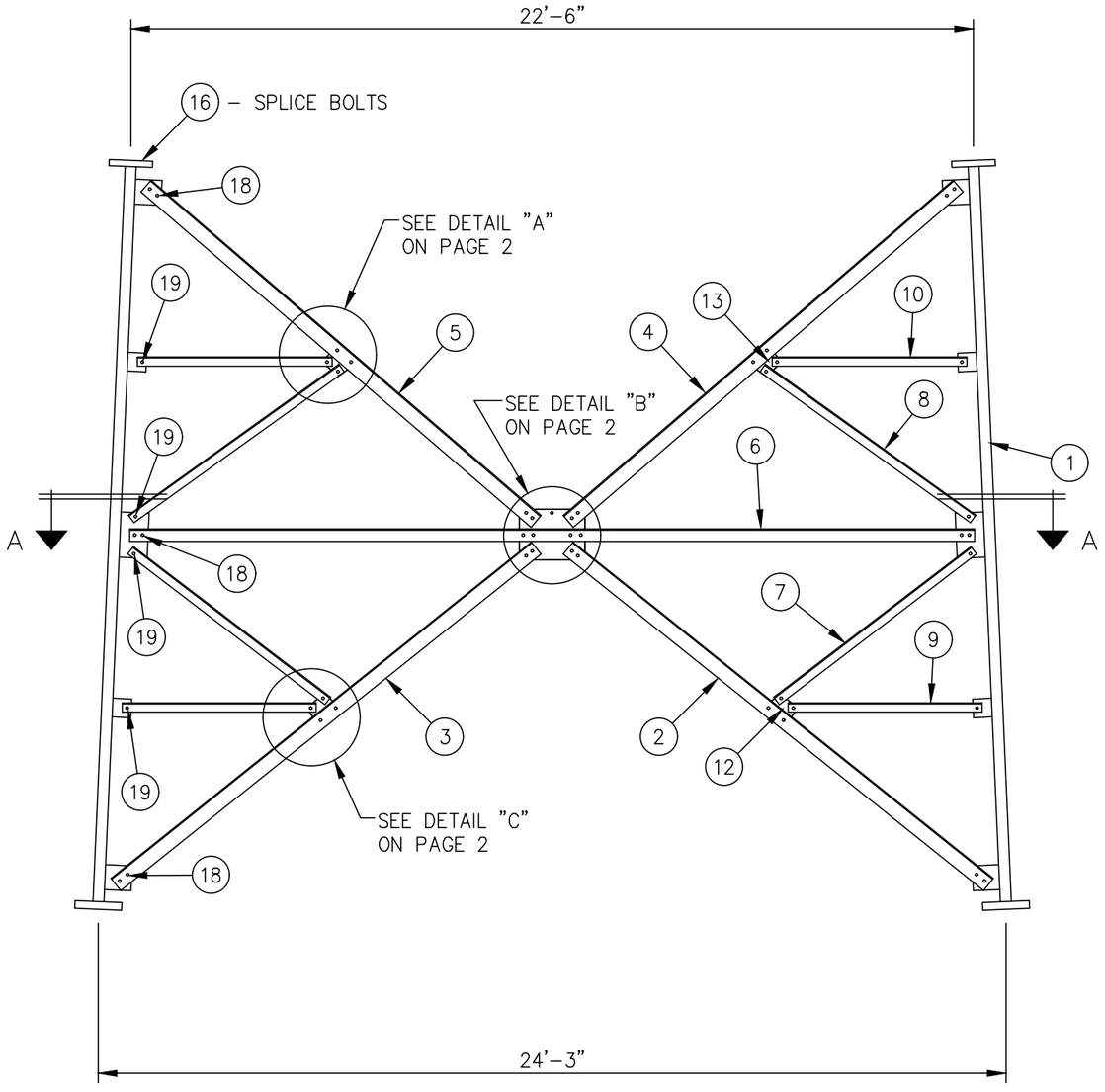
Sabre Industries™
INNOVATION DELIVERED

SECTION ERECTION: 13 13–T8300214

SITE: BAD CREEK (BDC), SC #(BDC)

CUSTOMER: DUKE ENERGY CORPORATION

JOB NO. 495518		SIZE	DRAWING NO.	REV
DATE	1/12/22	B	495518–S13	0
DRAWN BY	DRL			
CHECKED BY	LRD		SCALE NONE	PAGE 2 OF 2



ELEVATION VIEW

LIST OF MATERIAL

12-LEGS

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	3	12-T1181531	SECT. 12 LEG 4 3/4 ø X 20'-0 5/16 W/STEP BOLTS	4458
			TOTAL WEIGHT LBS	4458

12-T8300192 BRACING KIT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
2	3	3815397	ANGLE, DIAGONAL 3 1/2 X 3 1/2 X 1/4 X 14'-4 5/8	260
3	3	3815398	ANGLE, DIAGONAL 3 1/2 X 3 1/2 X 1/4 X 14'-4 5/8	260
4	3	3815399	ANGLE, DIAGONAL 3 1/2 X 3 1/2 X 1/4 X 13'-8 7/8	249
5	3	3815400	ANGLE, DIAGONAL 3 1/2 X 3 1/2 X 1/4 X 13'-8 7/8	249
6	3	3815520	ANGLE, HORIZONTAL 3 X 3 X 5/16 X 22'-6 3/4	429
7	6	3815450	ANGLE, SUB-DIAGONAL 2 1/2 X 2 1/2 X 3/16 X 6'-7 9/16	127
8	6	3815451	ANGLE, SUB-DIAGONAL 2 1/2 X 2 1/2 X 3/16 X 6'-11	132
9	6	3815329	ANGLE, SUB-HORIZONTAL 2 1/2 X 2 1/2 X 3/16 X 5'-2 1/8	99
10	6	3815330	ANGLE, SUB-HORIZONTAL 2 1/2 X 2 1/2 X 3/16 X 5'-2 7/16	100
11	3	3815118	PLATE, CENTER TIE 1/2 X 16 1/4 X 1'-9	151
12	6	3815119	PLATE, BOTTOM TIE 1/2 X 7 X 0'-9 1/16	50
13	6	3815120	PLATE, TOP TIE 1/2 X 7 X 0'-8 9/16	48
14	3	TS00397	ANGLE, SUPPORT 6 X 4 X 3/8 X 1'-3 1/4	49
15	3	3815128	ANGLE, INTERNAL 3 X 3 X 3/16 X 11'-3 1/2	131
			TOTAL WEIGHT LBS	2334

SPLICE BOLTS

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
16	19	C40026115	BOLT ASSEMBLY, 1 1/2 ø X 6 1/2 A325	115
			TOTAL WEIGHT LBS	115

TK00321 HARDWARE KIT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
17	7	C40026045	BOLT ASSEMBLY, 3/4 ø X 2 1/2 A325	5
18	95	C40026044	BOLT ASSEMBLY, 3/4 ø X 2 1/4 A325	70
19	63	C40026043	BOLT ASSEMBLY, 3/4 ø X 2 A325	45
			TOTAL WEIGHT LBS	120

TOTAL SECTION WEIGHT - INCLUDES 3 LEGS, BRACING AND HARDWARE KIT	7027

FIELD NOTES

1. THE PART NUMBERS FOR ALL LEGS ARE LOCATED AT THE TOP OF EACH PART.
2. STEP BOLTS PROVIDED FOR (3) LEGS.

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE
FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

SECTION ERECTION: 12 12-T8300192

SITE: BAD CREEK (BDC), SC #(BDC)

CUSTOMER: DUKE ENERGY CORPORATION

JOB NO. 495518		SIZE	DRAWING NO.	REV
DATE	1/12/22	B	495518-S12	0
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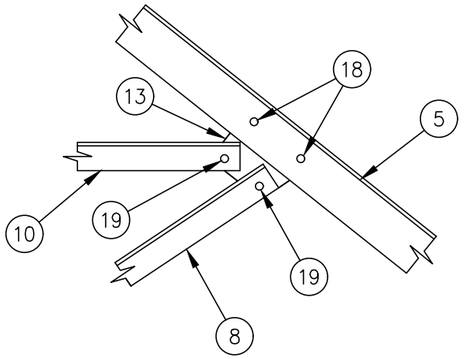
CHECKED BY	LRD		SCALE None	PAGE 1 OF 2



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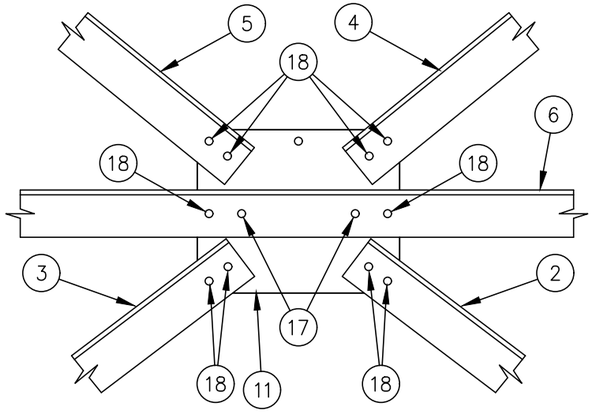

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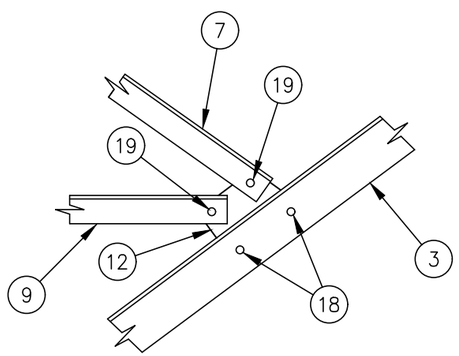

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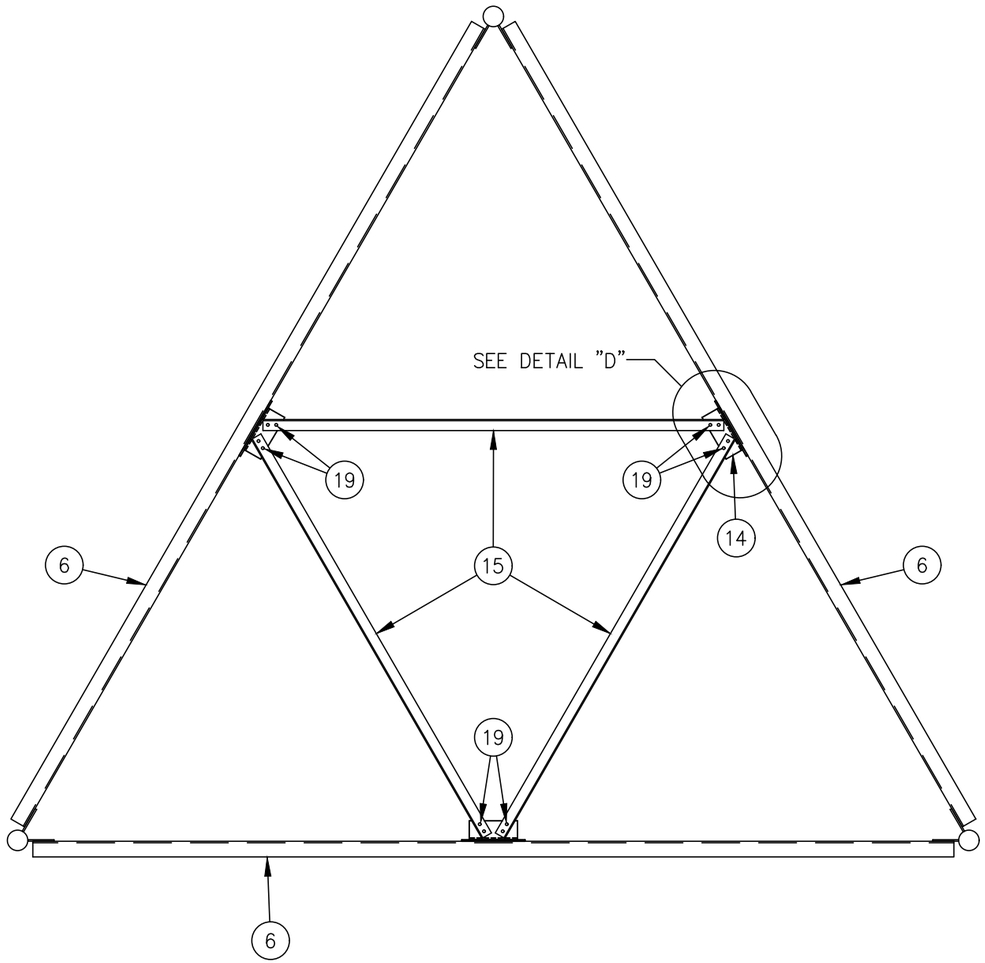
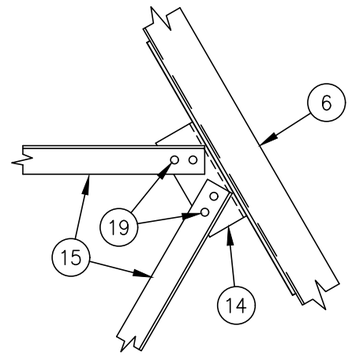


SECTION A–A



DETAIL "D"

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"	MATERIAL: TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

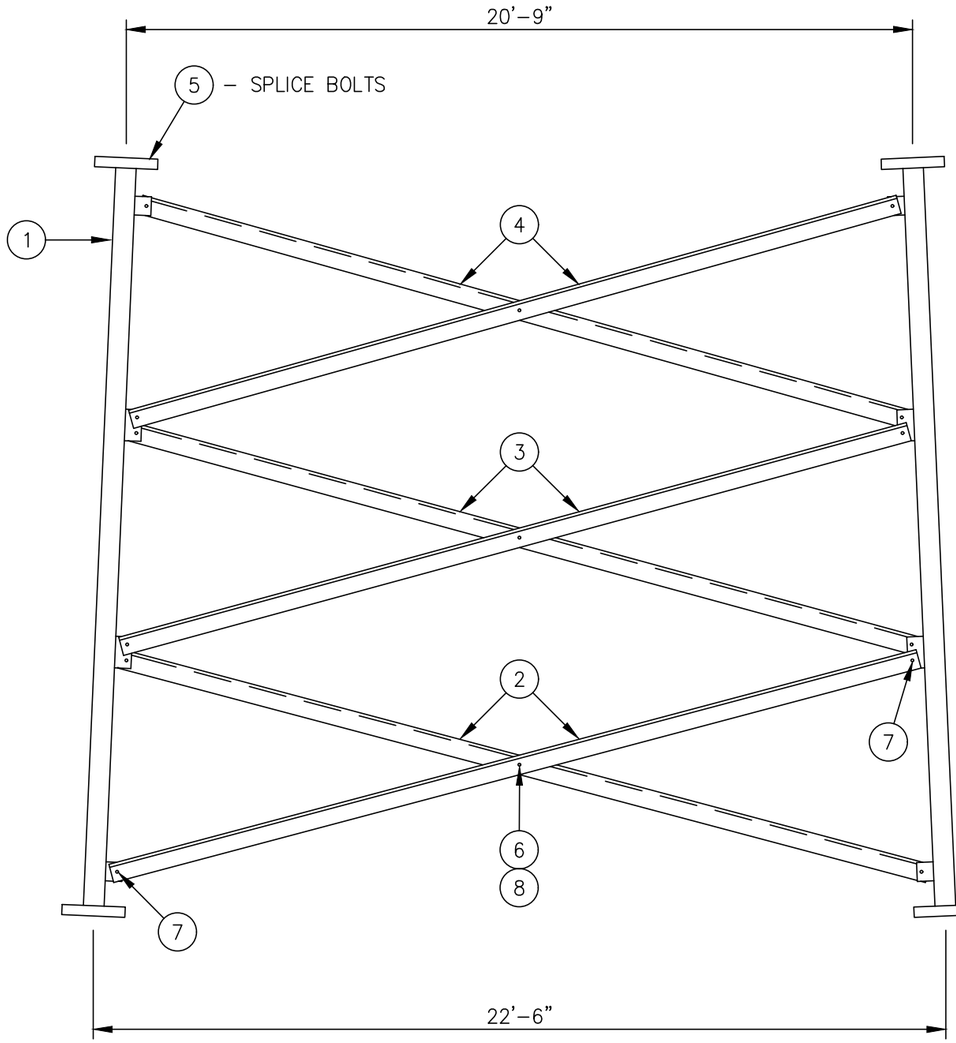
CONFIDENTIAL

SECTION ERECTION: 12 12–T8300192

SITE: BAD CREEK (BDC), SC #(BDC)

CUSTOMER: DUKE ENERGY CORPORATION

JOB NO. 495518		SIZE	DRAWING NO.	REV
DATE	1/12/22	B	495518–S12	0
DRAWN BY	DRL			
CHECKED BY	LRD		SCALE None	PAGE 2 OF 2



ELEVATION VIEW

LIST OF MATERIAL

11–LEGS

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	3	11–T1181437	SECT. 11 LEG 4 3/4 ø X 20'–0 5/16 W/STEP BOLTS	4361
			TOTAL WEIGHT LBS	4361

11–T8300119 BRACING KIT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
2	6	TS02728	ANGLE, DIAGONAL 4 X 4 X 1/4 X 22'–0 13/16	908
3	6	TS02729	ANGLE, DIAGONAL 4 X 4 X 1/4 X 21'–6 9/16	887
4	6	TS02730	ANGLE, DIAGONAL 4 X 4 X 1/4 X 21'–0 1/4	865
			TOTAL WEIGHT LBS	2660

SPLICE BOLTS

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
5	19	C40026115	BOLT ASSEMBLY, 1 1/2 ø X 6 1/2 A325	115
			TOTAL WEIGHT LBS	115

TK00261 HARDWARE KIT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
6	10	C40026045	BOLT ASSEMBLY, 3/4 ø X 2 1/2 A325	8
7	38	C40026044	BOLT ASSEMBLY, 3/4 ø X 2 1/4 A325	28
8	10	C40047009	RINGFILL, 1/2 THICK – 3/4 ø BOLT	2
			TOTAL WEIGHT LBS	38

TOTAL SECTION WEIGHT – INCLUDES 3 LEGS, BRACING AND HARDWARE KIT	7174

FIELD NOTES

1. THE PART NUMBERS FOR ALL LEGS ARE LOCATED AT THE TOP OF EACH PART.
2. STEP BOLTS PROVIDED FOR (3) LEGS.

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™ INNOVATION DELIVERED

SECTION ERECTION: 11 11–T8300119

SITE: BAD CREEK (BDC), SC #(BDC)

CUSTOMER: DUKE ENERGY CORPORATION

JOB NO. 495518		SIZE	DRAWING NO.	REV
DATE	1/11/22	B	495518–S11	0
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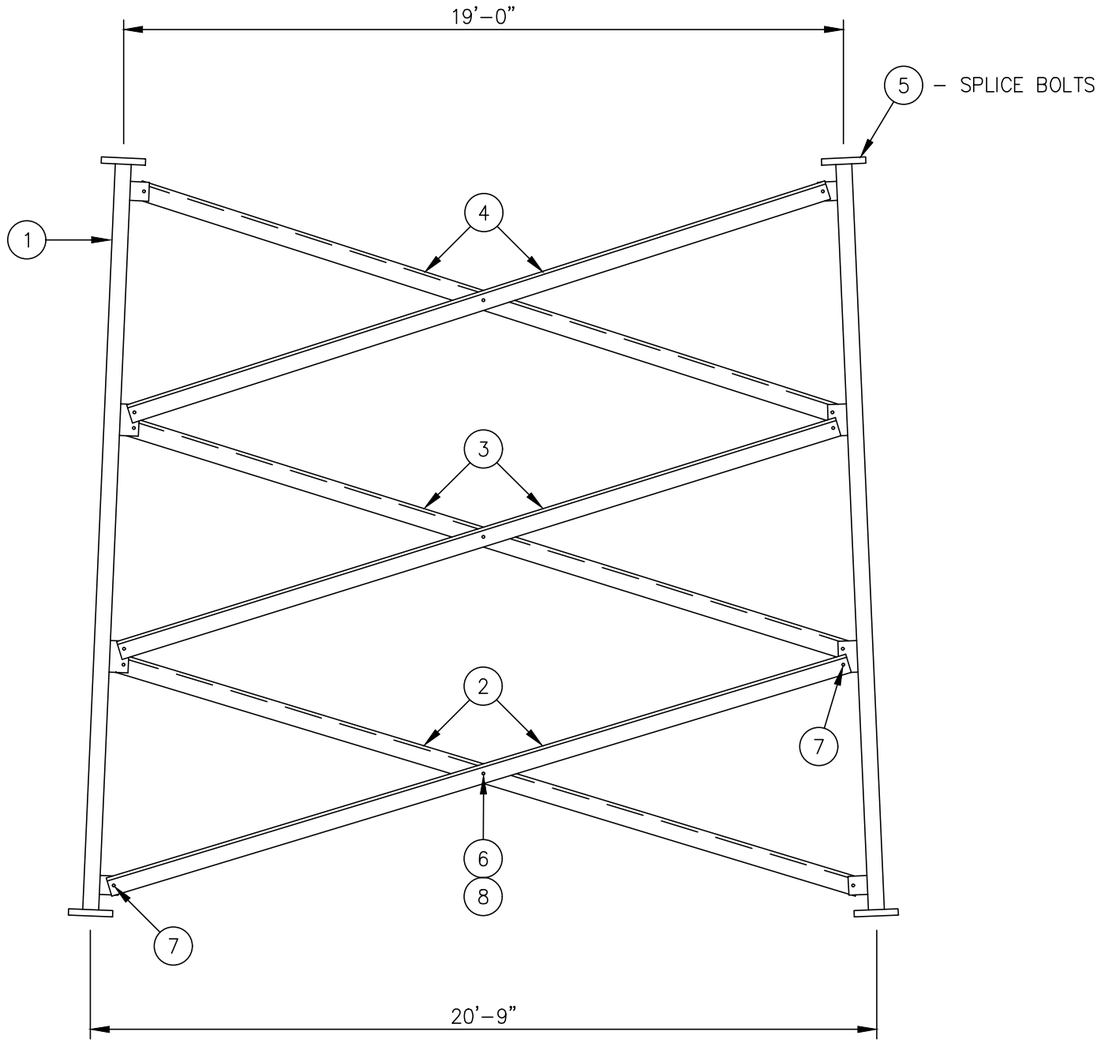
CHECKED BY	LRD		SCALE NONE	PAGE 1 OF 1



ELEVATION VIEW

LIST OF MATERIAL

10–LEGS

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	3	10–T1181431	SECT. 10 LEG 4 1/2 ø X 20'–0 5/16 W/STEP BOLTS	3989
			TOTAL WEIGHT LBS	3989

10–T8300104 BRACING KIT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
2	6	TS02683	ANGLE, DIAGONAL 3 1/2 X 3 1/2 X 1/4 X 20'–4 11/16	738
3	6	TS02684	ANGLE, DIAGONAL 3 1/2 X 3 1/2 X 1/4 X 19'–10 7/16	719
4	6	TS02685	ANGLE, DIAGONAL 3 1/2 X 3 1/2 X 1/4 X 19'–4 3/16	700
			TOTAL WEIGHT LBS	2157

SPLICE BOLTS

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
5	19	C40026115	BOLT ASSEMBLY, 1 1/2 ø X 6 1/2 A325	115
			TOTAL WEIGHT LBS	115

TK00261 HARDWARE KIT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
6	10	C40026045	BOLT ASSEMBLY, 3/4 ø X 2 1/2 A325	8
7	38	C40026044	BOLT ASSEMBLY, 3/4 ø X 2 1/4 A325	28
8	10	C40047009	RINGFILL, 1/2 THICK – 3/4 ø BOLT	2
			TOTAL WEIGHT LBS	38

TOTAL SECTION WEIGHT – INCLUDES 3 LEGS, BRACING AND HARDWARE KIT	6299

FIELD NOTES

1. THE PART NUMBERS FOR ALL LEGS ARE LOCATED AT THE TOP OF EACH PART.
2. STEP BOLTS PROVIDED FOR (3) LEGS.

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™ INNOVATION DELIVERED

SECTION ERECTION: 10 10–T8300104

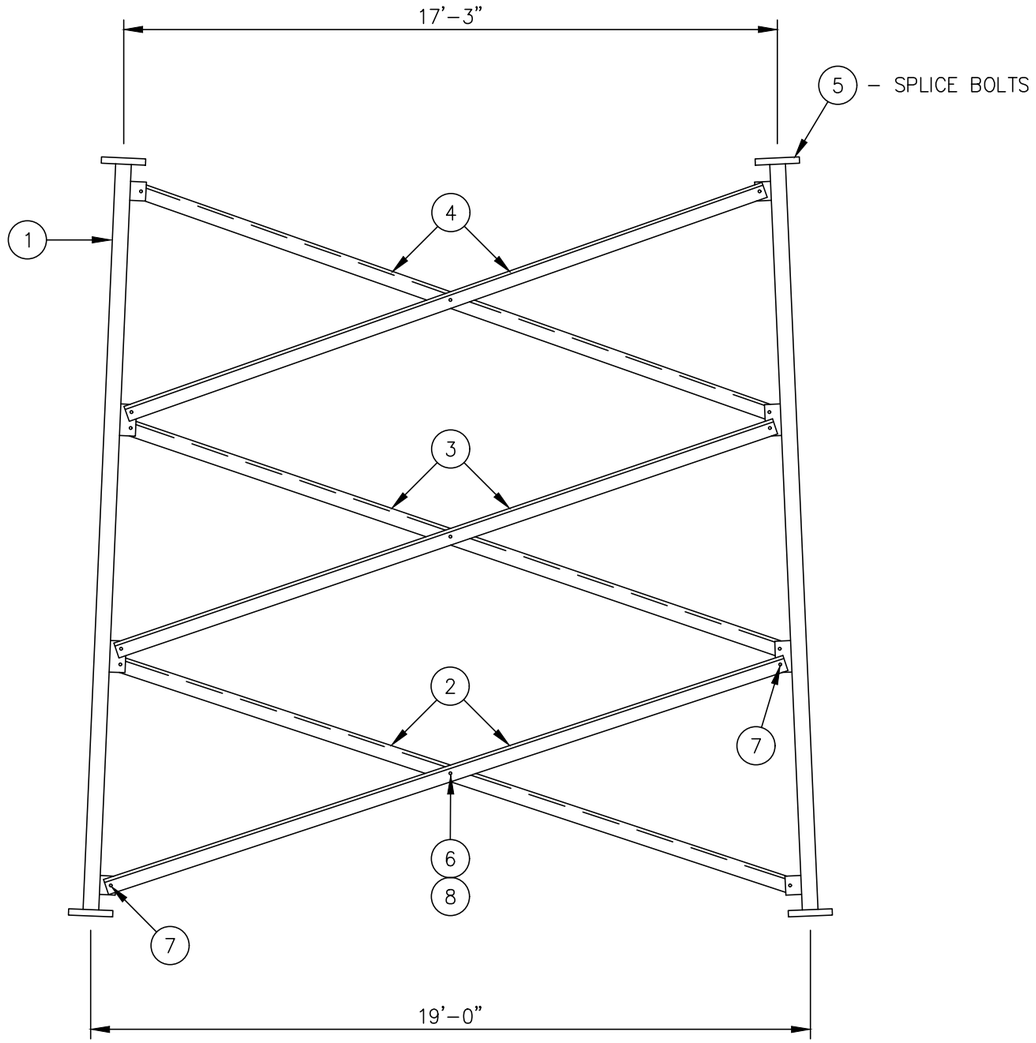
SITE: BAD CREEK (BDC), SC #(BDC)

CUSTOMER: DUKE ENERGY CORPORATION

JOB NO.	495518
DATE	1/11/22
DRAWN BY	DRL
CHECKED BY	LRD

SIZE	DRAWING NO.	REV
B	495518–S10	0

SCALE	PAGE
NONE	1 OF 1



ELEVATION VIEW

LIST OF MATERIAL

09-LEGS

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	3	09-T1181233	SECT. 9 LEG 4 1/4 ø X 20'-0 5/16 W/STEP BOLTS	3526
			TOTAL WEIGHT LBS	3526

09-T8300093 BRACING KIT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
2	6	TS02650	ANGLE, DIAGONAL 3 1/2 X 3 1/2 X 1/4 X 18'-10 9/16	683
3	6	TS02651	ANGLE, DIAGONAL 3 1/2 X 3 1/2 X 1/4 X 18'-4 3/8	665
4	6	TS02652	ANGLE, DIAGONAL 3 1/2 X 3 1/2 X 1/4 X 17'-10 1/8	646
			TOTAL WEIGHT LBS	1994

SPLICE BOLTS

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
5	19	C40026094	BOLT ASSEMBLY, 1 1/4 ø X 5 1/2 A325	69
			TOTAL WEIGHT LBS	69

TK00261 HARDWARE KIT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
6	10	C40026045	BOLT ASSEMBLY, 3/4 ø X 2 1/2 A325	8
7	38	C40026044	BOLT ASSEMBLY, 3/4 ø X 2 1/4 A325	28
8	10	C40047009	RINGFILL, 1/2 THICK - 3/4 ø BOLT	2
			TOTAL WEIGHT LBS	38

TOTAL SECTION WEIGHT - INCLUDES 3 LEGS, BRACING AND HARDWARE KIT	5627

FIELD NOTES

1. THE PART NUMBERS FOR ALL LEGS ARE LOCATED AT THE TOP OF EACH PART.
2. STEP BOLTS PROVIDED FOR (3) LEGS.

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE
FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY
TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

SECTION ERECTION: 09 09-T8300093

SITE: BAD CREEK (BDC), SC #(BDC)

CUSTOMER: DUKE ENERGY CORPORATION

JOB NO.	495518
DATE	1/11/22
DRAWN BY	DRL
CHECKED BY	LRD

SIZE	DRAWING NO.	REV
B	495518-S09	0

SCALE	PAGE
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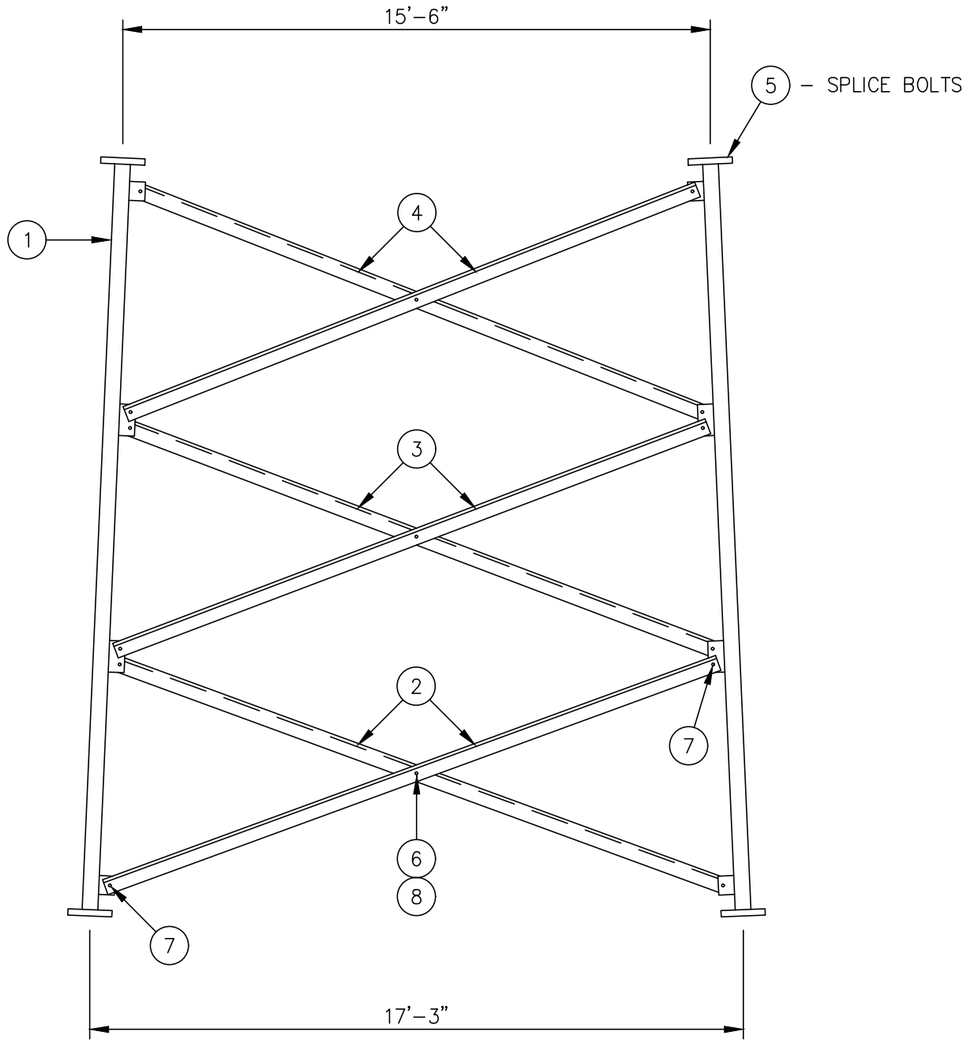

ELEVATION VIEW

LIST OF MATERIAL

08-LEGS

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	3	08-T1181225	SECT. 8 LEG 4 ø X 20'-0 5/16 W/STEP BOLTS	3107
			TOTAL WEIGHT LBS	3107

08-T8300081 BRACING KIT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
2	6	TS02614	ANGLE, DIAGONAL 3 X 3 X 1/4 X 17'-2 3/4	527
3	6	TS02615	ANGLE, DIAGONAL 3 X 3 X 1/4 X 16'-8 9/16	511
4	6	TS02616	ANGLE, DIAGONAL 3 X 3 X 1/4 X 16'-2 1/2	496
			TOTAL WEIGHT LBS	1534

SPLICE BOLTS

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
5	19	C40026094	BOLT ASSEMBLY, 1 1/4 ø X 5 1/2 A325	69
			TOTAL WEIGHT LBS	69

TK00261 HARDWARE KIT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
6	10	C40026045	BOLT ASSEMBLY, 3/4 ø X 2 1/2 A325	8
7	38	C40026044	BOLT ASSEMBLY, 3/4 ø X 2 1/4 A325	28
8	10	C40047009	RINGFILL, 1/2 THICK - 3/4 ø BOLT	2
			TOTAL WEIGHT LBS	38

TOTAL SECTION WEIGHT - INCLUDES 3 LEGS, BRACING AND HARDWARE KIT	4748

FIELD NOTES

1. THE PART NUMBERS FOR ALL LEGS ARE LOCATED AT THE TOP OF EACH PART.
2. STEP BOLTS PROVIDED FOR (3) LEGS.

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™ INNOVATION DELIVERED

SECTION ERECTION: 08 08-T8300081

SITE: BAD CREEK (BDC), SC #(BDC)

CUSTOMER: DUKE ENERGY CORPORATION

JOB NO. 495518		SIZE	DRAWING NO.	REV
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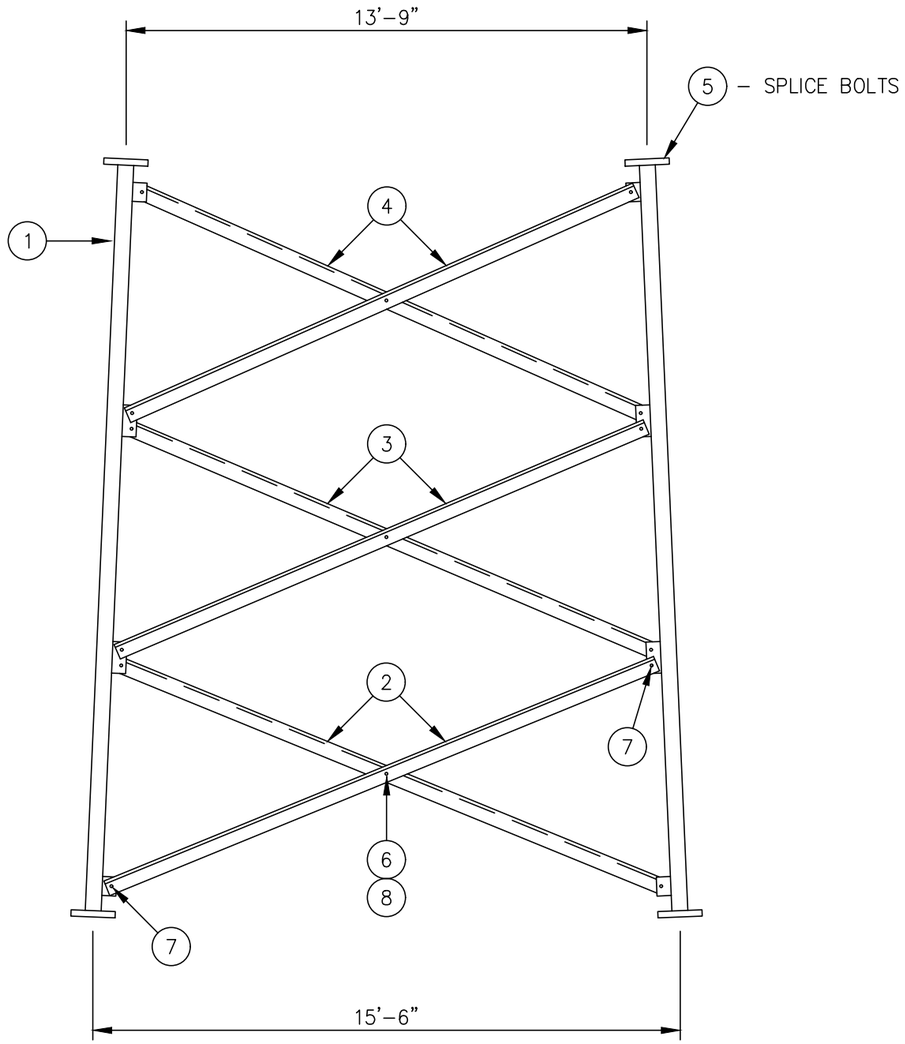
CHECKED BY	LRD		SCALE NONE	PAGE 1 OF 1



ELEVATION VIEW

LIST OF MATERIAL

07-LEGS

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	3	07-T1181031	SECT. 7 LEG 4 ø X 20'-0 5/16 W/STEP BOLTS	3094
			TOTAL WEIGHT LBS	3094

07-T8300070 BRACING KIT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
2	6	TS02581	ANGLE, DIAGONAL 3 X 3 X 3/16 X 15'-8 1/16	362
3	6	TS02582	ANGLE, DIAGONAL 3 X 3 X 3/16 X 15'-2 1/16	352
4	6	TS02583	ANGLE, DIAGONAL 3 X 3 X 3/16 X 14'-8	340
			TOTAL WEIGHT LBS	1054

SPLICE BOLTS

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
5	19	C40026094	BOLT ASSEMBLY, 1 1/4 ø X 5 1/2 A325	69
			TOTAL WEIGHT LBS	69

TK00260 HARDWARE KIT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
6	10	C40026044	BOLT ASSEMBLY, 3/4 ø X 2 1/4 A325	7
7	38	C40026043	BOLT ASSEMBLY, 3/4 ø X 2 A325	27
8	10	C40047009	RINGFILL, 1/2 THICK - 3/4 ø BOLT	2
			TOTAL WEIGHT LBS	36

TOTAL SECTION WEIGHT - INCLUDES 3 LEGS, BRACING AND HARDWARE KIT	4253

FIELD NOTES

1. THE PART NUMBERS FOR ALL LEGS ARE LOCATED AT THE TOP OF EACH PART.
2. STEP BOLTS PROVIDED FOR (3) LEGS.

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE
FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

SECTION ERECTION: 07 07-T8300070

SITE: BAD CREEK (BDC), SC #(BDC)

CUSTOMER: DUKE ENERGY CORPORATION

JOB NO. 495518		SIZE	DRAWING NO.	REV
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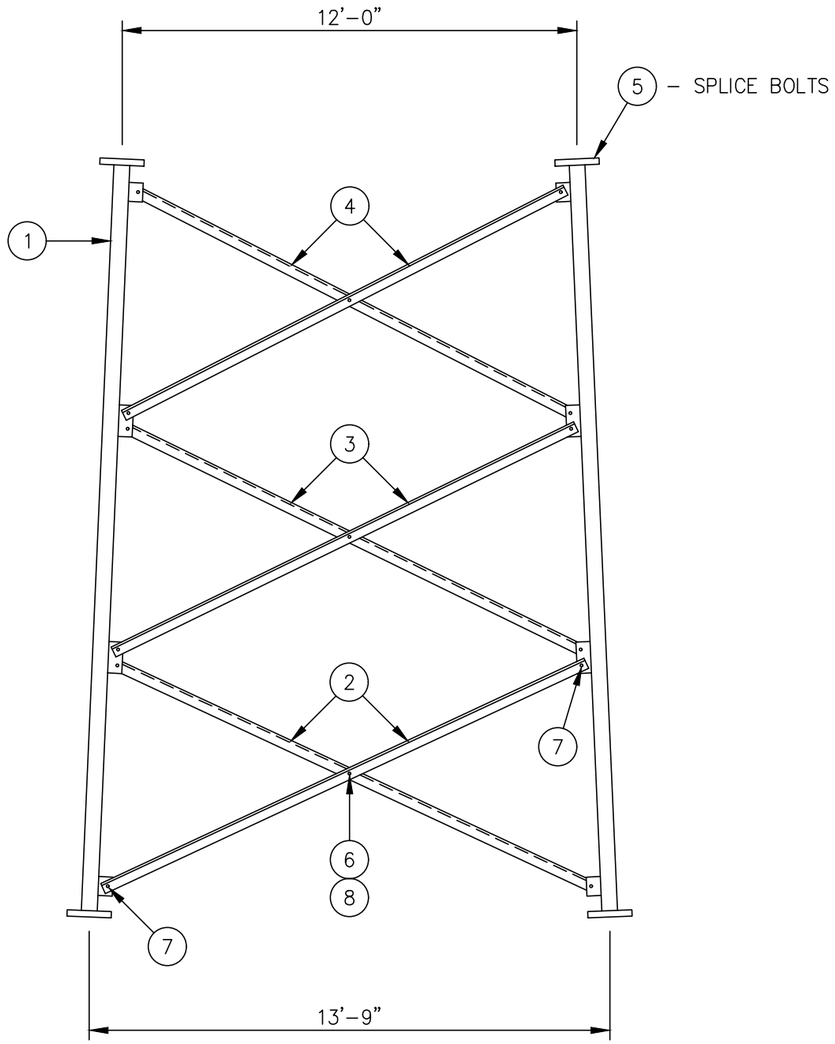


ELEVATION VIEW

LIST OF MATERIAL

06-LEGS

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	3	06-T1181025	SECT. 6 LEG 3 3/4 ø X 20'-0 5/16 W/STEP BOLTS	2780
			TOTAL WEIGHT LBS	2780

06-T8300064 BRACING KIT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
2	6	TS02563	ANGLE, DIAGONAL 3 X 3 X 3/16 X 14'-0 7/8	326
3	6	TS02564	ANGLE, DIAGONAL 3 X 3 X 3/16 X 13'-6 15/16	314
4	6	TS02565	ANGLE, DIAGONAL 3 X 3 X 3/16 X 13'-1 1/16	303
			TOTAL WEIGHT LBS	943

SPLICE BOLTS

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
5	19	C40026094	BOLT ASSEMBLY, 1 1/4 ø X 5 1/2 A325	69
			TOTAL WEIGHT LBS	69

TK00260 HARDWARE KIT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
6	10	C40026044	BOLT ASSEMBLY, 3/4 ø X 2 1/4 A325	7
7	38	C40026043	BOLT ASSEMBLY, 3/4 ø X 2 A325	27
8	10	C40047009	RINGFILL, 1/2 THICK - 3/4 ø BOLT	2
			TOTAL WEIGHT LBS	36

TOTAL SECTION WEIGHT - INCLUDES 3 LEGS, BRACING AND HARDWARE KIT	3828

FIELD NOTES

1. THE PART NUMBERS FOR ALL LEGS ARE LOCATED AT THE TOP OF EACH PART.
2. STEP BOLTS PROVIDED FOR (3) LEGS.

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

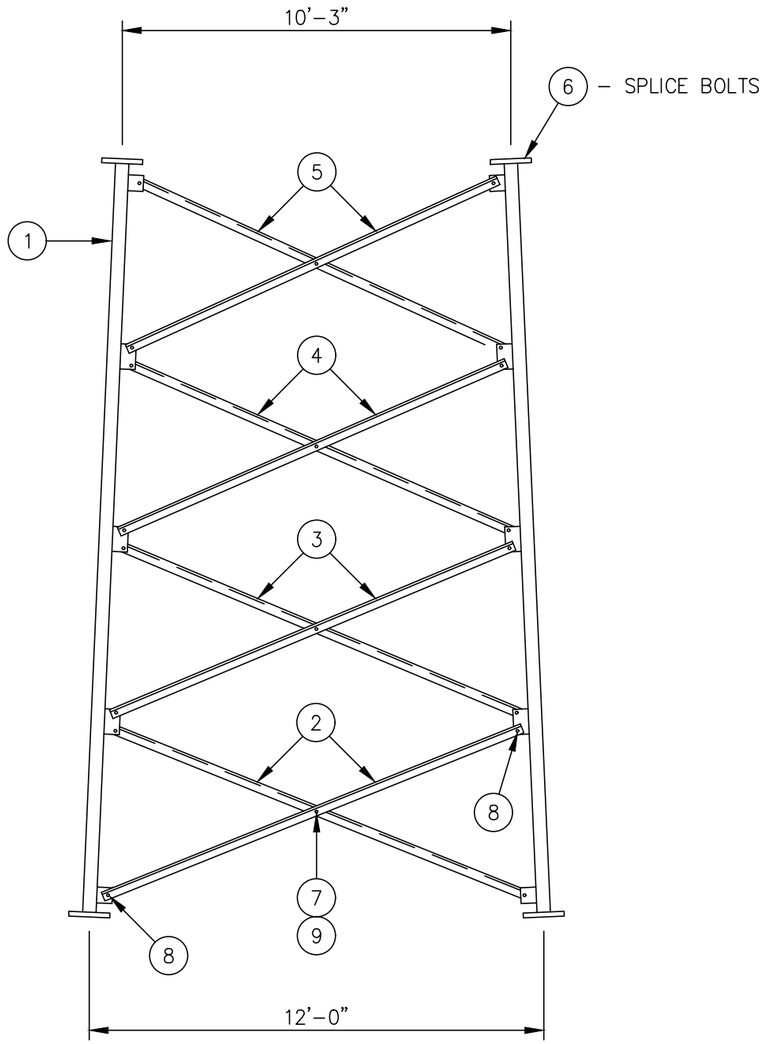
Sabre Industries™ INNOVATION DELIVERED

SECTION ERECTION: 06 06-T8300064

SITE: BAD CREEK (BDC), SC #(BDC)

CUSTOMER: DUKE ENERGY CORPORATION

JOB NO. 495518		SIZE	DRAWING NO.	REV
DATE	1/11/22	B	495518-S06	0
DRAWN BY	DRL			
CHECKED BY	LRD		SCALE NONE	PAGE 1 OF 1



ELEVATION VIEW

LIST OF MATERIAL

05-LEGS

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	3	05-T1180927	SECT. 5 LEG 3 ø X 20'-0 5/16 W/STEP BOLTS	1832
			TOTAL WEIGHT LBS	1832

05-T8300059 BRACING KIT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
2	6	TS02545	ANGLE, DIAGONAL 2 1/2 X 2 1/2 X 3/16 X 11'-10 15/16	229
3	6	TS02546	ANGLE, DIAGONAL 2 1/2 X 2 1/2 X 3/16 X 11'-6 1/4	221
4	6	TS02547	ANGLE, DIAGONAL 2 1/2 X 2 1/2 X 3/16 X 11'-1 5/8	214
5	6	TS02548	ANGLE, DIAGONAL 2 1/2 X 2 1/2 X 3/16 X 10'-9	206
			TOTAL WEIGHT LBS	870

SPLICE BOLTS

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
6	19	C40026078	BOLT ASSEMBLY, 1 ø X 4 1/4 A325	41
			TOTAL WEIGHT LBS	41

TK00194 HARDWARE KIT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
7	13	C40026023	BOLT ASSEMBLY, 5/8 ø X 2 A325	6
8	50	C40026022	BOLT ASSEMBLY, 5/8 ø X 1 3/4 A325	22
9	13	C40047003	RINGFILL, 3/8 THICK - 5/8 ø BOLT	2
			TOTAL WEIGHT LBS	30

TOTAL SECTION WEIGHT - INCLUDES 3 LEGS, BRACING AND HARDWARE KIT	2773

FIELD NOTES

1. THE PART NUMBERS FOR ALL LEGS ARE LOCATED AT THE TOP OF EACH PART.
2. STEP BOLTS PROVIDED FOR (3) LEGS.

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE
FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

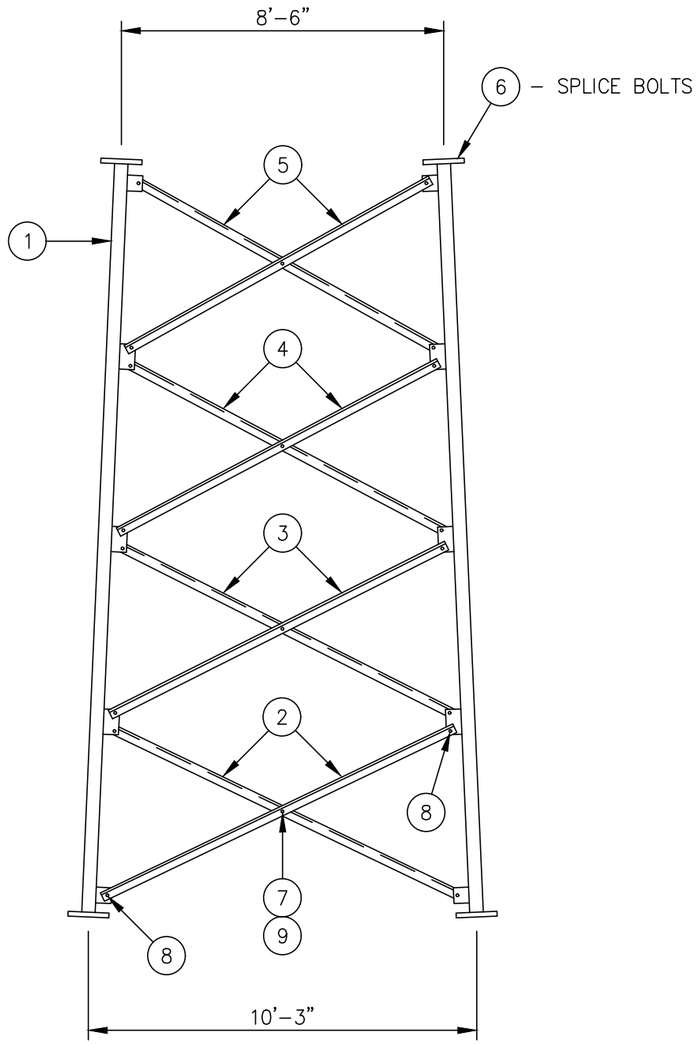
Sabre Industries™
INNOVATION DELIVERED

SECTION ERECTION: 05 05-T8300059

SITE: BAD CREEK (BDC), SC #(BDC)

CUSTOMER: DUKE ENERGY CORPORATION

JOB NO. 495518		SIZE	DRAWING NO.	REV
DATE	1/11/22	B	495518-S05	0
DRAWN BY	DRL			
CHECKED BY	LRD		SCALE NONE	PAGE 1 OF 1



ELEVATION VIEW

LIST OF MATERIAL

04-LEGS

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	3	04-T1180919	SECT. 4 LEG 2 3/4 ø X 20'-0 5/16 W/STEP BOLTS	1538
			TOTAL WEIGHT LBS	1538

04-T8300051 BRACING KIT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
2	6	TS02513	ANGLE, DIAGONAL 2 X 2 X 3/16 X 10'-3 11/16	157
3	6	TS02514	ANGLE, DIAGONAL 2 X 2 X 3/16 X 9'-11 3/16	151
4	6	TS02515	ANGLE, DIAGONAL 2 X 2 X 3/16 X 9'-6 11/16	145
5	6	TS02516	ANGLE, DIAGONAL 2 X 2 X 3/16 X 9'-2 1/4	140
			TOTAL WEIGHT LBS	593

SPLICE BOLTS

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
6	19	C40026077	BOLT ASSEMBLY, 1 ø X 4 A325	39
			TOTAL WEIGHT LBS	39

TK00194 HARDWARE KIT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
7	13	C40026023	BOLT ASSEMBLY, 5/8 ø X 2 A325	6
8	50	C40026022	BOLT ASSEMBLY, 5/8 ø X 1 3/4 A325	22
9	13	C40047003	RINGFILL, 3/8 THICK - 5/8 ø BOLT	2
			TOTAL WEIGHT LBS	30

TOTAL SECTION WEIGHT - INCLUDES 3 LEGS, BRACING AND HARDWARE KIT	2200

FIELD NOTES

1. THE PART NUMBERS FOR ALL LEGS ARE LOCATED AT THE TOP OF EACH PART.
2. STEP BOLTS PROVIDED FOR (3) LEGS.

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE
FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

SECTION ERECTION: 04 04-T8300051

SITE: BAD CREEK (BDC), SC #(BDC)

CUSTOMER: DUKE ENERGY CORPORATION

JOB NO. 495518		SIZE	DRAWING NO.	REV
DATE	1/11/22	B	495518-S04	0
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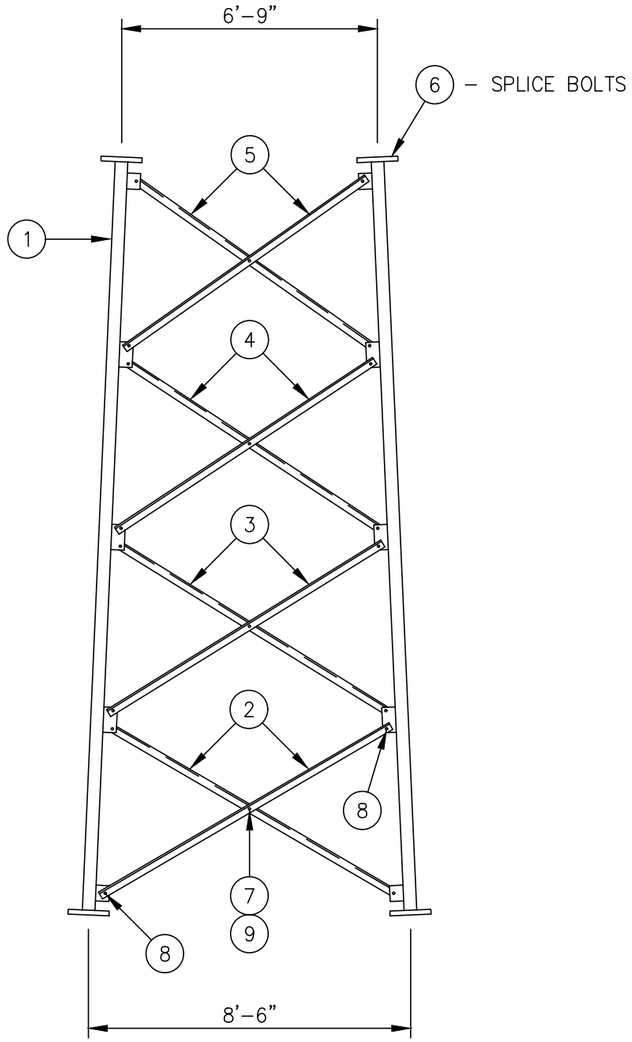
CHECKED BY	LRD		SCALE NONE	PAGE 1 OF 1



ELEVATION VIEW

LIST OF MATERIAL

03-LEGS

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	3	03-T1180821	SECT. 3 LEG 2 1/2 ø X 20'-0 5/16 W/STEP BOLTS	1258
			TOTAL WEIGHT LBS	1258

03-T8300045 BRACING KIT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
2	6	TS02489	ANGLE, DIAGONAL 2 X 2 X 1/8 X 8'-10 1/2	91
3	6	TS02490	ANGLE, DIAGONAL 2 X 2 X 1/8 X 8'-6 1/8	88
4	6	TS02491	ANGLE, DIAGONAL 2 X 2 X 1/8 X 8'-1 7/8	84
5	6	TS02492	ANGLE, DIAGONAL 2 X 2 X 1/8 X 7'-9 11/16	80
			TOTAL WEIGHT LBS	343

SPLICE BOLTS

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
6	13	C40026049	BOLT ASSEMBLY, 3/4 ø X 3 1/2 A325	12
			TOTAL WEIGHT LBS	12

TK00194 HARDWARE KIT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
7	13	C40026023	BOLT ASSEMBLY, 5/8 ø X 2 A325	6
8	50	C40026022	BOLT ASSEMBLY, 5/8 ø X 1 3/4 A325	22
9	13	C40047003	RINGFILL, 3/8 THICK - 5/8 ø BOLT	2
			TOTAL WEIGHT LBS	30

TOTAL SECTION WEIGHT - INCLUDES 3 LEGS, BRACING AND HARDWARE KIT	1643

FIELD NOTES

1. THE PART NUMBERS FOR ALL LEGS ARE LOCATED AT THE TOP OF EACH PART.
2. STEP BOLTS PROVIDED FOR (3) LEGS.

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE
FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

SECTION ERECTION: 03 03-T8300045

SITE: BAD CREEK (BDC), SC #(BDC)

CUSTOMER: DUKE ENERGY CORPORATION

JOB NO. 495518		SIZE	DRAWING NO.	REV
DATE	1/11/22	B	495518-S03	0
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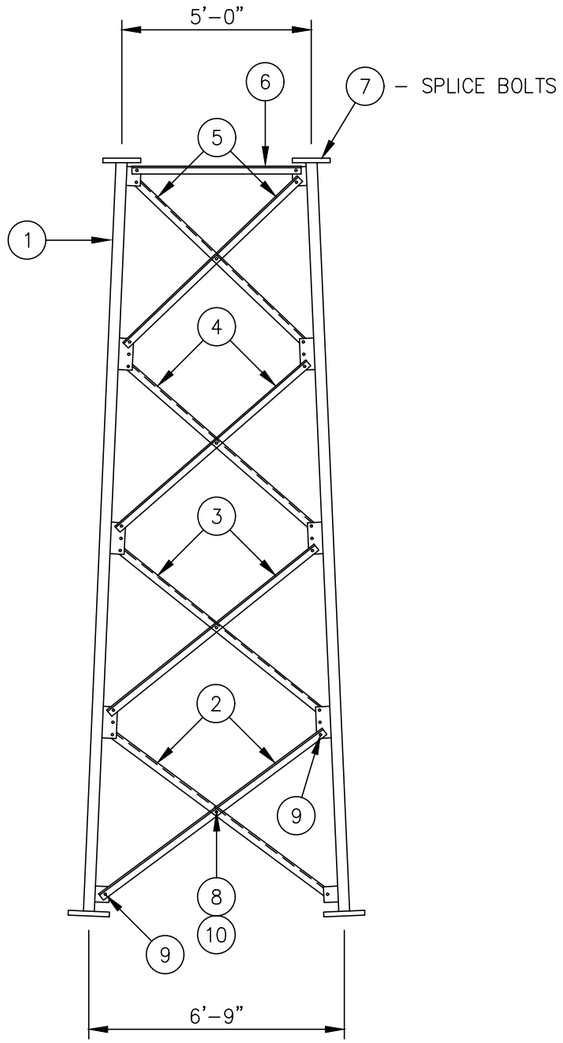
CHECKED BY	LRD		SCALE NONE	PAGE 1 OF 1



ELEVATION VIEW

LIST OF MATERIAL

02-LEGS

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	3	02-T1180713	SECT. 2 LEG 2 1/4 ø X 20'-0 5/16 W/STEP BOLTS	1065
			TOTAL WEIGHT LBS	1065

02-T8300037 BRACING KIT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
2	6	TS02457	ANGLE, DIAGONAL 2 X 2 X 1/8 X 7'-4 1/8	76
3	6	TS02458	ANGLE, DIAGONAL 2 X 2 X 1/8 X 7'-0 1/8	73
4	6	TS02459	ANGLE, DIAGONAL 2 X 2 X 1/8 X 6'-8 3/16	68
5	6	TS02460	ANGLE, DIAGONAL 2 X 2 X 1/8 X 6'-4 7/16	65
6	3	TS02449	ANGLE, HORIZONTAL 2 X 2 X 1/8 X 4'-5 5/8	23
			TOTAL WEIGHT LBS	305

SPLICE BOLTS

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
7	13	C40026048	BOLT ASSEMBLY, 3/4 ø X 3 1/4 A325	11
			TOTAL WEIGHT LBS	11

TK00134 HARDWARE KIT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
8	13	C40026023	BOLT ASSEMBLY, 5/8 ø X 2 A325	6
9	57	C40026022	BOLT ASSEMBLY, 5/8 ø X 1 3/4 A325	25
10	13	C40047003	RINGFILL, 3/8 THICK – 5/8 ø BOLT	2
			TOTAL WEIGHT LBS	33

TOTAL SECTION WEIGHT – INCLUDES 3 LEGS, BRACING AND HARDWARE KIT	1414

FIELD NOTES

1. THE PART NUMBERS FOR ALL LEGS ARE LOCATED AT THE TOP OF EACH PART.
2. STEP BOLTS PROVIDED FOR (3) LEGS.

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

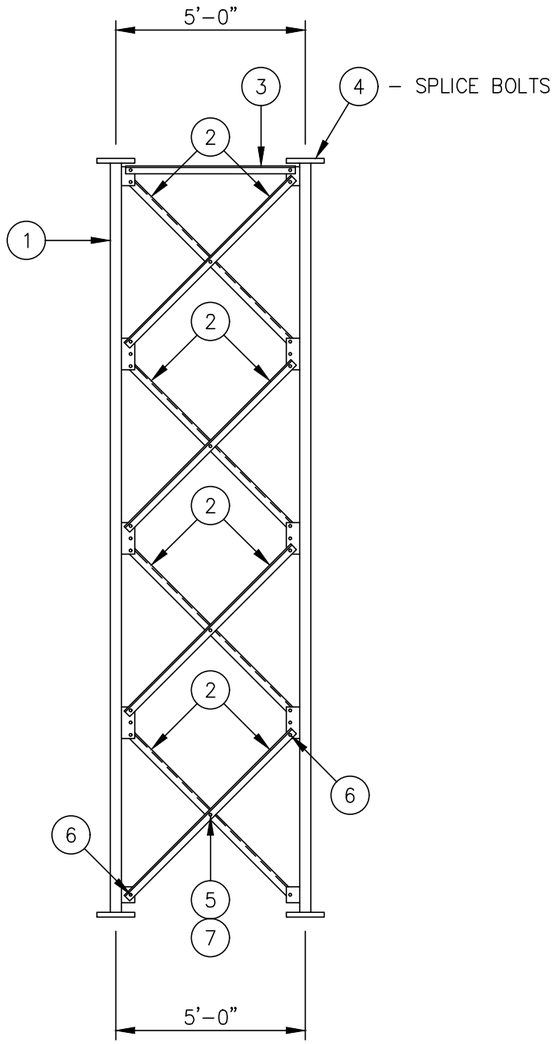
Sabre Industries™
INNOVATION DELIVERED

SECTION ERECTION: 02 02-T8300037

SITE: BAD CREEK (BDC), SC #(BDC)

CUSTOMER: DUKE ENERGY CORPORATION

JOB NO. 495518		SIZE	DRAWING NO.	REV
DATE	1/11/22	B	495518-S02	0
DRAWN BY	DRL			
CHECKED BY	LRD		SCALE NONE	PAGE 1 OF 1



ELEVATION VIEW

LIST OF MATERIAL

01-20-LEGS

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	3	01-T1180601	SECT. 1 LEG 1 3/4 ø X 20'-0 5/16 W/STEP BOLTS	718
			TOTAL WEIGHT LBS	718

01-T8300029 BRACING KIT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
2	24	TS02441	ANGLE, DIAGONAL 2 X 2 X 1/8 X 6'-2 3/4	257
3	3	TS02409	ANGLE, HORIZONTAL 2 X 2 X 1/8 X 4'-5 3/4	23
			TOTAL WEIGHT LBS	280

SPLICE BOLTS

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
4	13	C40026047	BOLT ASSEMBLY, 3/4 ø X 3 A325	11
			TOTAL WEIGHT LBS	11

TK00134 HARDWARE KIT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
5	13	C40026023	BOLT ASSEMBLY, 5/8 ø X 2 A325	6
6	57	C40026022	BOLT ASSEMBLY, 5/8 ø X 1 3/4 A325	25
7	13	C40047003	RINGFILL, 3/8 THICK – 5/8 ø BOLT	2
			TOTAL WEIGHT LBS	33

TOTAL SECTION WEIGHT – INCLUDES 3 LEGS, BRACING AND HARDWARE KIT	1042

FIELD NOTES

1. THE PART NUMBERS FOR ALL LEGS ARE LOCATED AT THE TOP OF EACH PART.
2. STEP BOLTS PROVIDED FOR (3) LEGS.

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE
FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

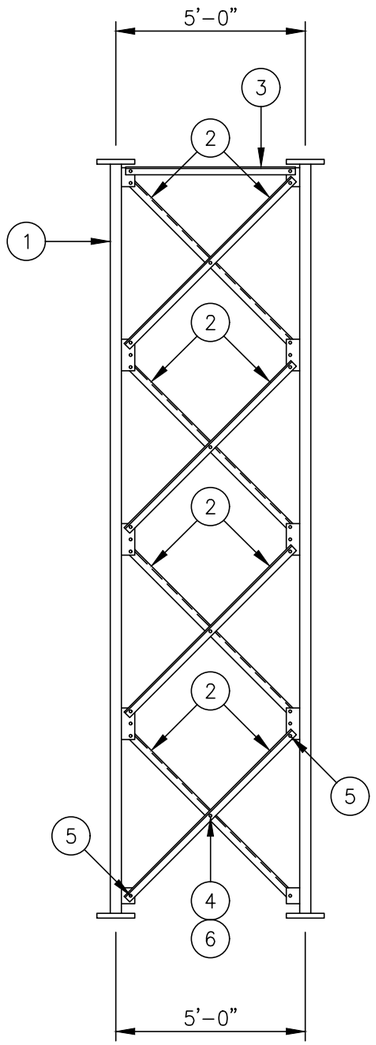
Sabre Industries™
INNOVATION DELIVERED

SECTION ERECTION: 01-20 01-T8300029

SITE: BAD CREEK (BDC), SC #(BDC)

CUSTOMER: DUKE ENERGY CORPORATION

JOB NO. 495518		SIZE	DRAWING NO.	REV
DATE	1/11/22	B	495518-S01-1	0
DRAWN BY	DRL			
CHECKED BY	LRD		SCALE NONE	PAGE 1 OF 1



ELEVATION VIEW

LIST OF MATERIAL

01-20-LEGS

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	3	01-T1180601	SECT. 1 LEG 1 3/4 ø X 20'-0 5/16 W/STEP BOLTS	718
			TOTAL WEIGHT LBS	718

01-T8300029 BRACING KIT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
2	24	TS02441	ANGLE, DIAGONAL 2 X 2 X 1/8 X 6'-2 3/4	257
3	3	TS02409	ANGLE, HORIZONTAL 2 X 2 X 1/8 X 4'-5 3/4	23
			TOTAL WEIGHT LBS	280

TK00134 HARDWARE KIT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
4	13	C40026023	BOLT ASSEMBLY, 5/8 ø X 2 A325	6
5	57	C40026022	BOLT ASSEMBLY, 5/8 ø X 1 3/4 A325	25
6	13	C40047003	RINGFILL, 3/8 THICK - 5/8 ø BOLT	2
			TOTAL WEIGHT LBS	33

TOTAL SECTION WEIGHT - INCLUDES 3 LEGS, BRACING AND HARDWARE KIT	1031

FIELD NOTES

1. THE PART NUMBERS FOR ALL LEGS ARE LOCATED AT THE TOP OF EACH PART.
2. STEP BOLTS PROVIDED FOR (3) LEGS.

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

SECTION ERECTION: 01-20 01-T8300029

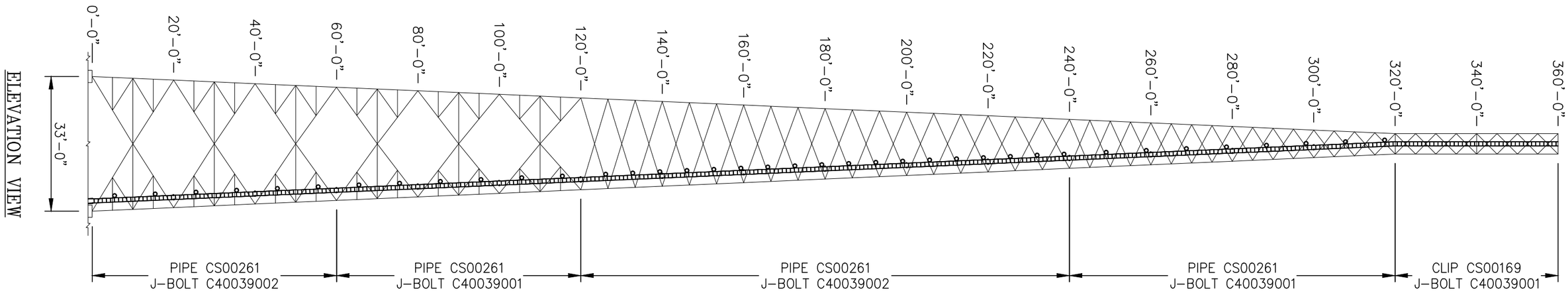
SITE: BAD CREEK (BDC), SC #(BDC)

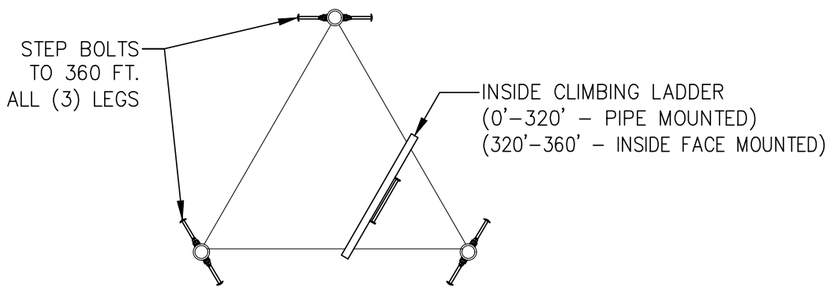
CUSTOMER: DUKE ENERGY CORPORATION

JOB NO. 495518		SIZE	DRAWING NO.	REV
DATE	1/11/22	B	495518-S01-2	0
DRAWN BY	DRL			
CHECKED BY	LRD		SCALE NONE	PAGE 1 OF 1

CLIMBING LADDER				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	18	CW00031	WELDMENT, 20 FT. CLIMBING LADDER 12" WIDE	1345
2	34	CS00037	PLATE, LADDER SPLICE	14
3	2	CS00242	ANGLE, LADDER BASE SUPPORT	15
4	38	CS00261	PIPE, LADDER MOUNT	828
5	76	CS00241	CLIP, LADDER ATTACHMENT	50
6	8	CS00169	CLIP, LADDER ATTACHMENT	4
			TOTAL WEIGHT LBS	2256

LADDER HARDWARE				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
7	48	C40039002	J-BOLT ASSEMBLY, 3/8 ø X 7 1/4 I.L.	17
8	188	C40039001	J-BOLT ASSEMBLY, 3/8 ø X 5 3/4 I.L.	56
9	70	C40024004	BOLT ASSEMBLY, 3/8 ø X 1 1/2 GRD 5	7
10	864	C40044017	STEP BOLT ASSEMBLY, 5/8 ø X 7 H.D.G.	864
			TOTAL WEIGHT LBS	944





PLAN VIEW

FIELD NOTES

1. FROM ELEVATION 0'-0" TO 120'-0" ATTACH LADDER TO EACH SUB-HORIZONTAL.
   FROM ELEVATION 120'-0" TO 240'-0" ATTACH LADDER TO EACH DIAGONAL.
   FROM ELEVATION 240'-0" TO 360'-0" ATTACH LADDER TO EVERY OTHER DIAGONAL.
2. SEE REFERENCE DWG. 9026217 FOR INSIDE CLIMBING LADDER INSTALLATION FROM ELEVATION 0'-0" TO 320'-0".
3. SEE REFERENCE DWG. 907812 FOR CLIMBING LADDER INSTALLATION FROM ELEVATION 320'-0" TO 360'-0".
4. SEE REFERENCE DWG. 9031527 FOR CLIMBING LADDER BASE INSTALLATION.
5. SEE REFERENCE DWG. 9031764 FOR CONSTRUCTION/CLIMBING STEP BOLT INSTALLATION FROM ELEVATION 0'-0" TO 360'-0".
6. SEE CUSTOMER REQUESTS FOR PROPER FACE POSITIONING OF ALL LADDERS.

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE
FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

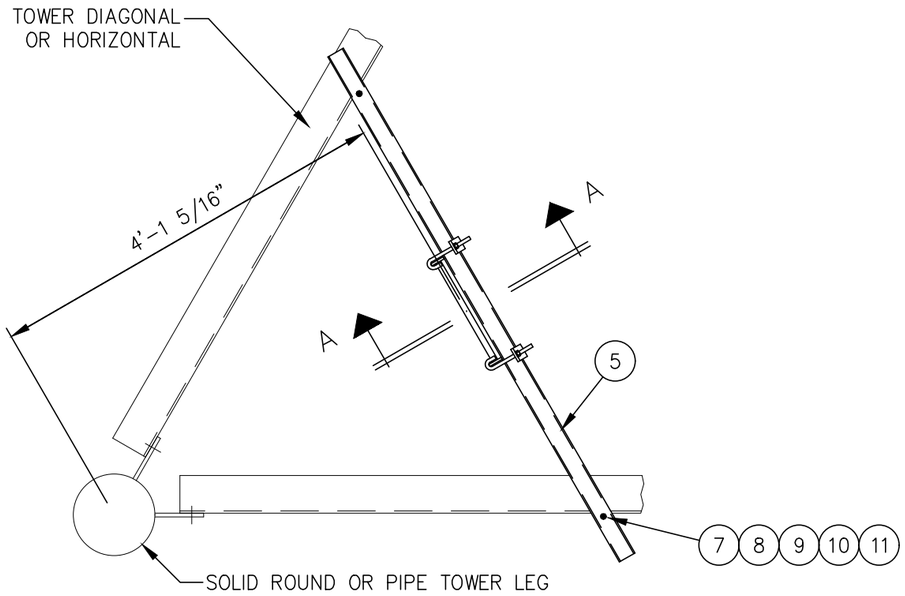
Sabre Industries™
INNOVATION DELIVERED

CLIMBING LADDER: 360 FT. MODEL S3R-SD

SITE: BAD CREEK (BDC), SC #(BDC)

CUSTOMER: DUKE ENERGY CORPORATION

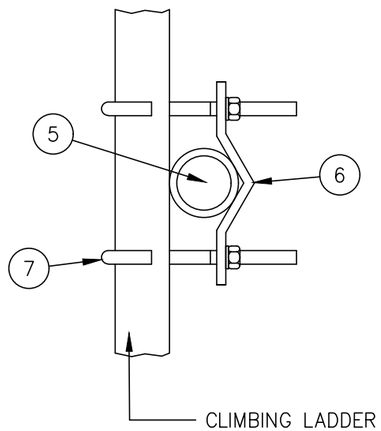
JOB NO. 495518		SIZE	DRAWING NO.	REV
DATE	1/14/22	B	495518-CL1	0
DRAWN BY	DRL			
CHECKED BY	ZAK		SCALE NONE	PAGE 1 OF 1



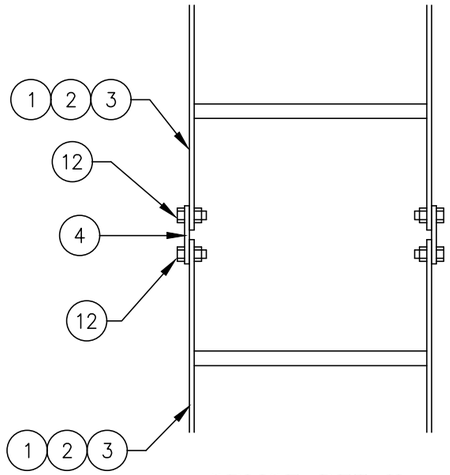
PARTIAL SECTION CUT TYPICAL

LIST OF MATERIAL				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT
1.	A/R	CW00031	WELDMENT, 20 FT CLIMBING LADDER	
2.	A/R	CW00029	WELDMENT, 10 FT CLIMBING LADDER	
3.	A/R	CW00028	WELDMENT, 5 FT CLIMBING LADDER	
4.	A/R	CS00037	PLATE, LADDER SPLICE	
5.	A/R	CS00261	PIPE, LADDER MOUNT	
6.	A/R	CS00241	CLIP, LADDER ATTACHMENT	
7.	A/R	C40039001	J-BOLT ASSY., 3/8 (1 1/2" - 2 1/2" ANGLES: 3/8" THK & UNDER)	
8.	A/R	C40039002	J-BOLT ASSY., 3/8 (3" - 4" ANGLES: 3/8" THK & UNDER)	
9.	A/R	C40039003	J-BOLT ASSY., 3/8 (5" - 6" ANGLES: 3/8" THK. & UNDER)	
10.	A/R	C40039009	J-BOLT ASSY., 3/8 (3" - 6" ANGLES: 1/2" THK. TO 3/4" THK.)	
11.	A/R	C40039012	J-BOLT ASSY., 3/8 (8" ANGLES: 1/2" THK. TO 3/4" THK.)	
12.	A/R	C40024004	BOLT ASSEMBLY, 3/8 X 1 1/2 GR5	
			TOTAL WEIGHT	

"SEE JOB SPECIFIC BILL OF MATERIAL FOR QTY'S."



SECTION A-A



SPLICE DETAIL

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE
FINISHES AND ARE IN INCHES
TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

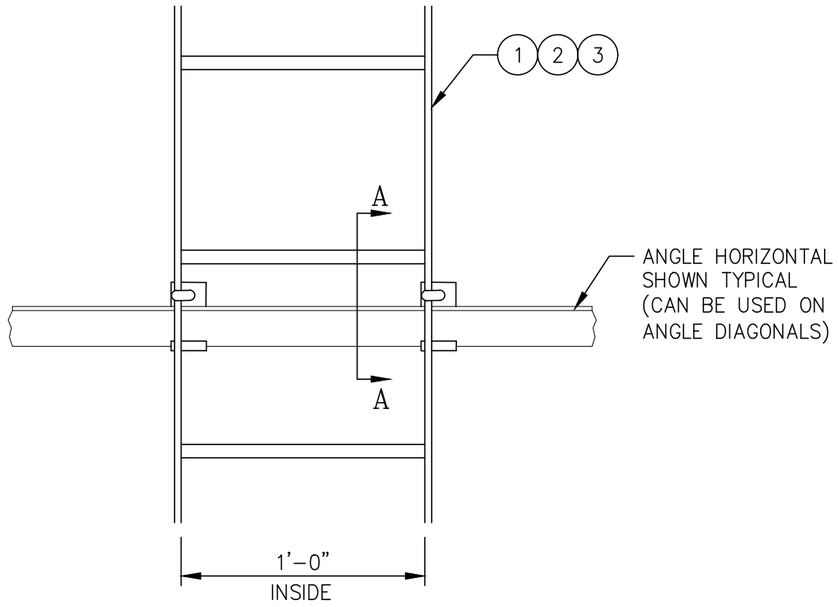
MATERIAL:
TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION
4	12/03/05	KMM	ZAK	ADDED J-BOLT FOR 6" & 8" ANGLES
3	3/8/04	CHH	ZAK	REDRAWN ON "B" SIZE
2	5/8/03	CHH	HHC	ADDED LEADING ZERO IN PART NO'S.
1	11/25/02	RWM	MWR	CHG'D HARDWARE & REMAINING MAT'L TO CATALOG

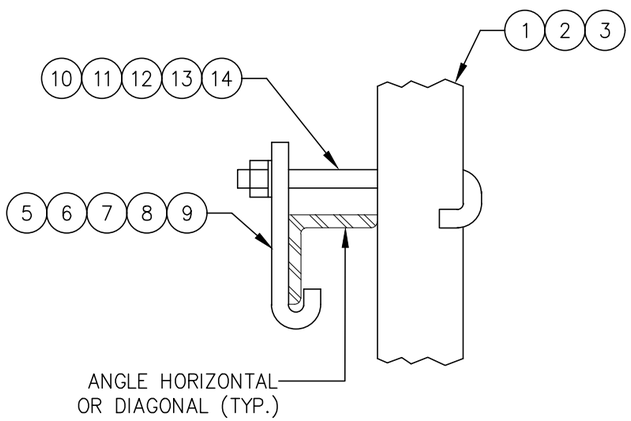
Sabre Industries™
INNOVATION DELIVERED

INSIDE CLIMBING LADDER INSTALLATION (12" WIDE LADDER)

		SIZE	DRAWING NO.	REV
DATE	3/8/02	B	9026217	4
DRAWN BY	DKY			
CHECKED BY	CE	SCALE None	PAGE 1 OF 1	



ELEVATION
(TYPICAL MOUNTING DETAIL)

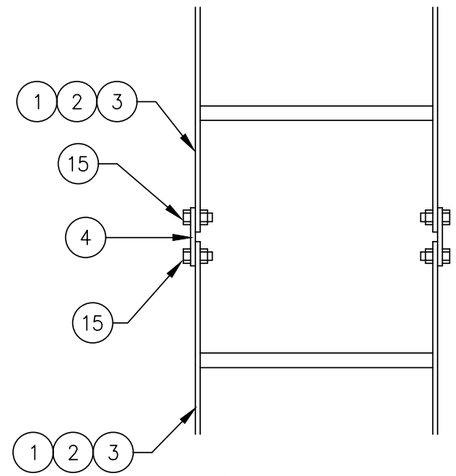


SECTION A–A

LIST OF MATERIAL				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT
1	A/R	CW00031	WELDMENT, 20 FT CLIMBING LADDER	
2	A/R	CW00029	WELDMENT, 10 FT CLIMBING LADDER	
3	A/R	CW00028	WELDMENT, 5 FT CLIMBING LADDER	
4	A/R	CS00037	PLATE, LADDER SPLICE	
5	A/R	CS00169	CLIP, LADDER ATTACHMENT (1 1/2" – 4" ANGLES)	
6	A/R	CS00170	CLIP, LADDER ATTACHMENT (5" – 6" ANGLES: 3/8" THK. & UNDER)	
7	A/R	CS00171	CLIP, LADDER ATTACHMENT (1 1/2" – 6" ANGLES)	
8	A/R	CS00808	CLIP, LADDER ATTACHMENT (4" – 6" ANGLES: 1/2" TO 3/4" THK.)	
9	A/R	CS01212	CLIP, LADDER ATTACHMENT (8" ANGLES)	
10	A/R	C40039001	J–BOLT ASSY., 3/8 (1 1/2" – 2 1/2" ANGLES)	
11	A/R	C40039002	J–BOLT ASSY., 3/8 (3" – 4" ANGLES)	
12	A/R	C40039003	J–BOLT ASSY., 3/8 (5" – 6" ANGLES)	
13	A/R	C40039009	J–BOLT ASSY., 3/8 (3" – 6" ANGLES, 1/2" & 3/4" THK)	
14	A/R	C40039012	J–BOLT ASSY., 3/8 (8" ANGLES, 1/2" & 3/4" THK)	
15	A/R	C40024004	BOLT ASSEMBLY, 3/8 X 1 1/2 GR5	

"SEE JOB SPECIFIC BILL OF MATERIAL FOR QTY'S."

NOTE:
MAXIMUM SPACING OF LADDER CLIPS
UP THE TOWER TO BE ±10'–0".



SPLICE DETAIL

REV	DATE	DRW	CHK	DESCRIPTION
10	8/2/07	KLE	EK	CORRECTED NUMBERS IN BUBBLES
9	7/13/07	DPJ	KLE	ADDED UNIVERSAL J-CLIP CS00171 FOR 1 1/2" TO 6" ANGLES
8	12/05/05	KMM	ZAK	ADDED J-BOLTS FOR 6" & 8" ANGLES.
7	3/3/04	CHH	RWM	REDRAWN ON "B" SIZE & ADDED NEW MATERIAL LIST
6	4/21/03	RWM	MWR	ADDED CLIMBING LADDER INSIDE WIDTH DIMENSION
5	3/27/03	CHH	HHC	ADDED LEADING ZERO TO PART NO'S.
4	02/26/02	TLH	PSB	CHG'D HARDWARE & REMAINING MAT'L TO CATALOG
3	12/12/01	TLH	RWM	CHG'D LADDERS TO CATALOG & DELETED 15' LADDER
2	3/13/01	JKW	PSB	REDRAWN IN AUTOCAD 2000i
1	4/25/00	ZAK	MJM	ADDED LADDER CLIP 388076 & J-BOLT 540359 FOR 5" – 6" ANGLES.

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE
FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY
TO RAW MATERIAL

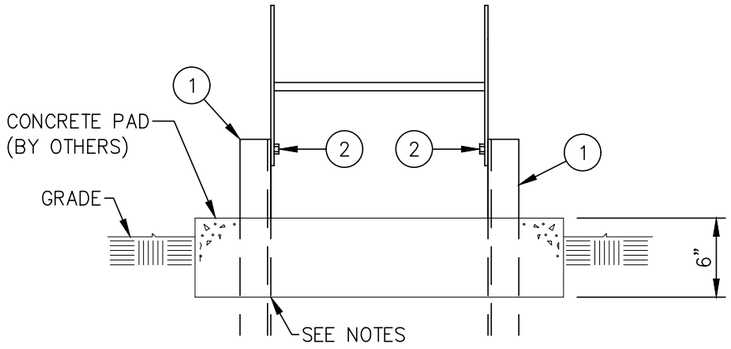
Sabre Industries™
INNOVATION DELIVERED

TYPICAL CLIMBING LADDER INSTALLATION (STANDARD 12" WIDE LADDER)

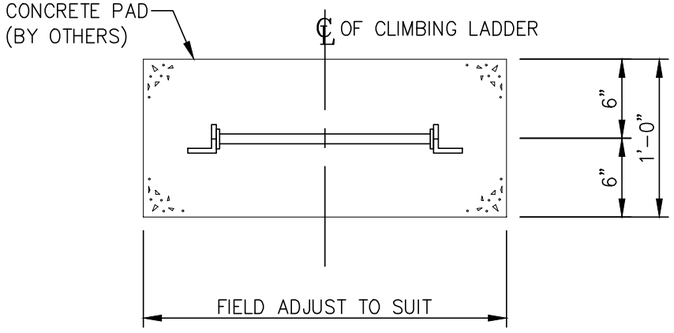
DATE	4/18/97
DRAWN BY	ZAK
CHECKED BY	DLW

SIZE	DRAWING NO.	REV
B	907812	10

SCALE	PAGE
None	1 OF 1



ELEVATION VIEW
(LADDER BASE ELEVATION)



PLAN VIEW
(LADDER BASE PLAN)

LIST OF MATERIAL				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT
1	A/R	CS00242	ANGLE, LADDER BASE SUPPORT	
2	A/R	C40024004	BOLT ASSEMBLY, 3/8 X 1 1/2 GR5	
			TOTAL WEIGHT	

NOTE:

1. SUPPORT ANGLES MAY BE CUT IN FIELD TO PREVENT PROTRUDING THROUGH THE BOTTOM OF THE CONCRETE BLOCK.
2. THE BEARING MATERIAL BENEATH THE CONCRETE SHALL CONSIST OF NON-EXPANSIVE AND NON-FROST SUSCEPTIBLE (NFS) MATERIAL.

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES
TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

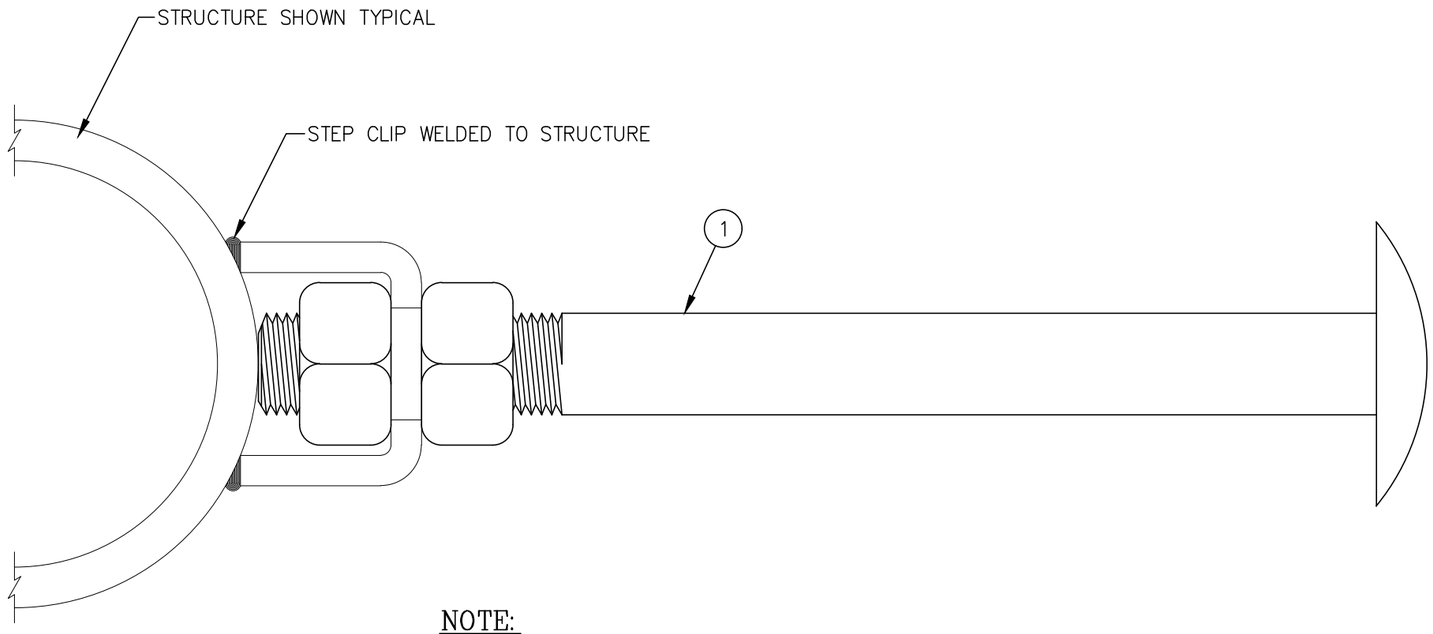
LADDER BASE INSTALLATION FOR SELF-SUPPORTING TOWERS

DATE	03/02/16
DRAWN BY	LRS
CHECKED BY	KLE

SIZE	DRAWING NO.	REV
B	9031527	0

SCALE	PAGE
None	1 OF 1

LIST OF MATERIAL				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT
1	A/R	C40044017	STEP BOLT ASSEMBLY, 5/8 X 7	1.0#



NOTE:

STEP BOLTS PROVIDED FOR CONSTRUCTION PURPOSES ARE FOR EXPERIENCED TOWER ERECTORS ONLY AND SHOULD NEVER BE USED WITHOUT PROPER SAFETY EQUIPMENT. FOR STEP BOLTS SUPPLIED AS A FORM OF CLIMBING IN TYPICAL COMMUNICATION ACTIVITY, SABRE INDUSTRIES RECOMMENDS A FALL PROTECTION PLAN BE COMPLETED BY A COMPETENT PERSON AND FOLLOWED FOR EACH CLIMB.

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

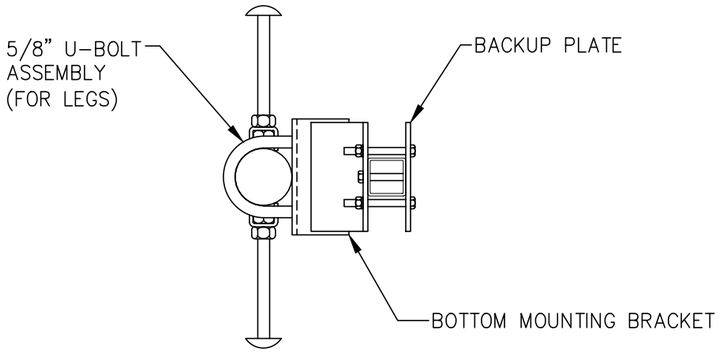
CONFIDENTIAL

STEP BOLT ATTACHMENT INSTALLATION

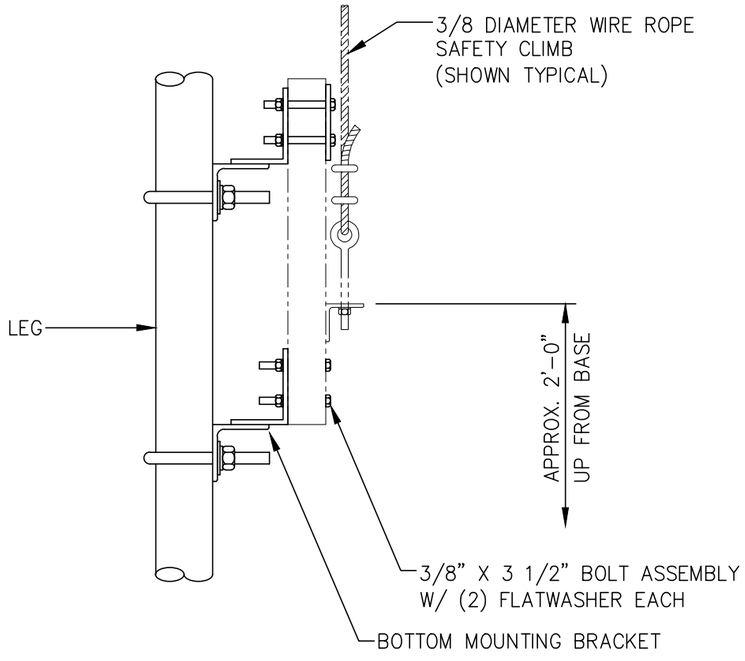
DATE	7/27/18
DRAWN BY	DPJ
CHECKED BY	ZAK

SIZE	DRAWING NO.	REV
B	9031764	0

SCALE	PAGE
None	1 OF 1



PLAN



ELEVATION

EACH KIT CONSISTS OF:

(2) BOTTOM MOUNTING BRACKET
(1) BACKUP PLATE
(2) 5/8" U-BOLT ASSEMBLY FOR MOUNTING TO LEG
(6) 3/8"ø X 3 1/2" BOLT ASSEMBLY
(12) 3/8"ø FLATWASHER

BOTTOM MOUNTING BRACKET KITS

KIT NUMBER	LEG DIAMETER	5/8" U-BOLT ASSEMBLY	3/8" BOLT ASSEMBLY	3/8"ø FLATWASHER	BOTTOM MOUNTING BRACKET	BACKUP PLATE	KIT WEIGHT
C30011054	1 1/4"	C40034041	C40024012	C40031001	CW00346	CS00167	16.2#
C30011055	1 1/2"	C40034020	C40024012	C40031001	CW00346	CS00167	16.4#
C30011056	1 3/4"	C40034021	C40024012	C40031001	CW00346	CS00167	16.5#
C30011031	2"	C40034022	C40024012	C40031001	CW00049	CS00167	17.0#
C30011032	2 1/4" OR 2 3/8"	C40034023	C40024012	C40031001	CW00049	CS00167	17.1#
C30011033	2 1/2"	C40034024	C40024012	C40031001	CW00049	CS00167	17.2#
C30011034	2 3/4" OR 2 7/8"	C40034025	C40024012	C40031001	CW00049	CS00167	17.3#
C30011035	3"	C40034026	C40024012	C40031001	CW00049	CS00167	17.4#
C30011036	3 1/4"	C40034027	C40024012	C40031001	CW00050	CS00167	18.5#
C30011037	3 1/2"	C40034028	C40024012	C40031001	CW00050	CS00167	18.6#
C30011038	3 3/4"	C40034029	C40024012	C40031001	CW00050	CS00167	18.8#
C30011039	4"	C40034030	C40024012	C40031001	CW00050	CS00167	18.9#
C30011040	4 1/4"	C40034031	C40024012	C40031001	CW00050	CS00167	19.0#
C30011041	4 1/2"	C40034032	C40024012	C40031001	CW00051	CS00167	20.3#
C30011042	4 3/4"	C40034033	C40024012	C40031001	CW00051	CS00167	20.4#
C30011043	5"	C40034034	C40024012	C40031001	CW00051	CS00167	20.5#
C30011044	5 1/4" - 5 9/16"	C40034035	C40024012	C40031001	CW00052	CS00167	21.9#
C30011057	5 3/4"	C40034044	C40024012	C40031001	CW00052	CS00167	22.0#
C30011058	6"	C40034064	C40024012	C40031001	CW00052	CS00167	22.0#
C30011053	6 1/4"	C40034068	C40024012	C40031001	CW00052	CS00167	22.1#
C30011045	6 5/8"	C40034036	C40024012	C40031001	CW00052	CS00167	22.3#
C30011059	6 3/4"	C40034093	C40024012	C40031001	CW00204	CS00167	23.2#
C30011050	7 OR 7 1/4"	C40034065	C40024012	C40031001	CW00204	CS00167	25.0#
C30011060	7 1/2"	C40034127	C40024012	C40031001	CW00204	CS00167	23.7#
C30011104	7 3/4"	C40034099	C40024012	C40031001	CW00204	CS00167	23.8#
C30011046	8 5/8"	C40034037	C40024012	C40031001	CW00053	CS00167	33.0#
C30011062	8 3/4"	C40034152	C40024012	C40031001	CW01346	CS00167	30.9#
C30011063	9"	C40034200	C40024012	C40031001	CW01362	CS00167	31.5#
C30011061	9 1/2" OR 9 5/8"	C40034130	C40024012	C40031001	CW01242	CS00167	29.3#
C30011047	10 3/4"	C40034038	C40024012	C40031001	CW00054	CS00167	35.4#
C30011048	12 3/4"	C40034039	C40024012	C40031001	CW00053	CS00167	34.9#
C30011049	14"	C40034040	C40024012	C40031001	CW00054	CS00167	36.9#
C30011051	16"	C40034042	C40024012	C40031001	CW00208	CS00167	42.6#
C30011052	18"	C40034043	C40024012	C40031001	CW00208	CS00167	43.5#

REV	DATE	DRW	CHK	DESCRIPTION
14	10/13/17	RWM	MWR	REVISED 3/8 DIAMETER WIRE ROPE VERBIAGE
13	8/14/17	DPJ	ZAK	ADDED KIT FOR 9" O.D. LEG.
12	4/24/17	DPJ	ZAK	ADDED KIT FOR 8 3/4" O.D. LEG.
11	9/30/14	DPJ	ZAK	ADDED KIT FOR 9 1/2" & 9 5/8" O.D. LEGS.
10	5/22/14	KLE	EK	ADDED KIT FOR 7 1/2" O.D. LEG.
9	10/10/11	DPJ	CE	ADDED KIT FOR 7 3/4" O.D. LEG.
8	7/26/11	DPJ	CHH	ADDED KIT FOR 6 3/4" O.D. LEG.
7	5/29/08	DPJ	ZAK	ADDED KIT FOR 6" O.D. LEG.
6	4/29/08	LRS	CE	ADDED KIT FOR 5 3/4" O.D. LEG.
5	3/03/08	LRS	ZAK	ADDED KIT FOR 6 1/4" O.D. LEG
4	1/10/08	LRS	CE	CHANGED LEG DIAMETER FOR C30011044 KIT (WAS 5 1/2" OR 5 9/16")
3	12/27/04	DLW	DEL	ADDED KITS FOR 1 1/4" TO 1 3/4" O.D. LEGS.
2	3/3/04	KLE	DLW	ADDED KITS FOR 16" O.D. & 18" O.D. LEGS.
1	2/19/04	KLE	DLW	ADDED C30011050 & ADDED LEADING ZERO.

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES
TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

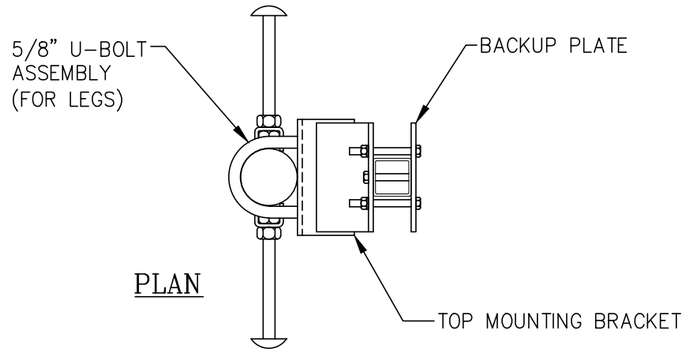
MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

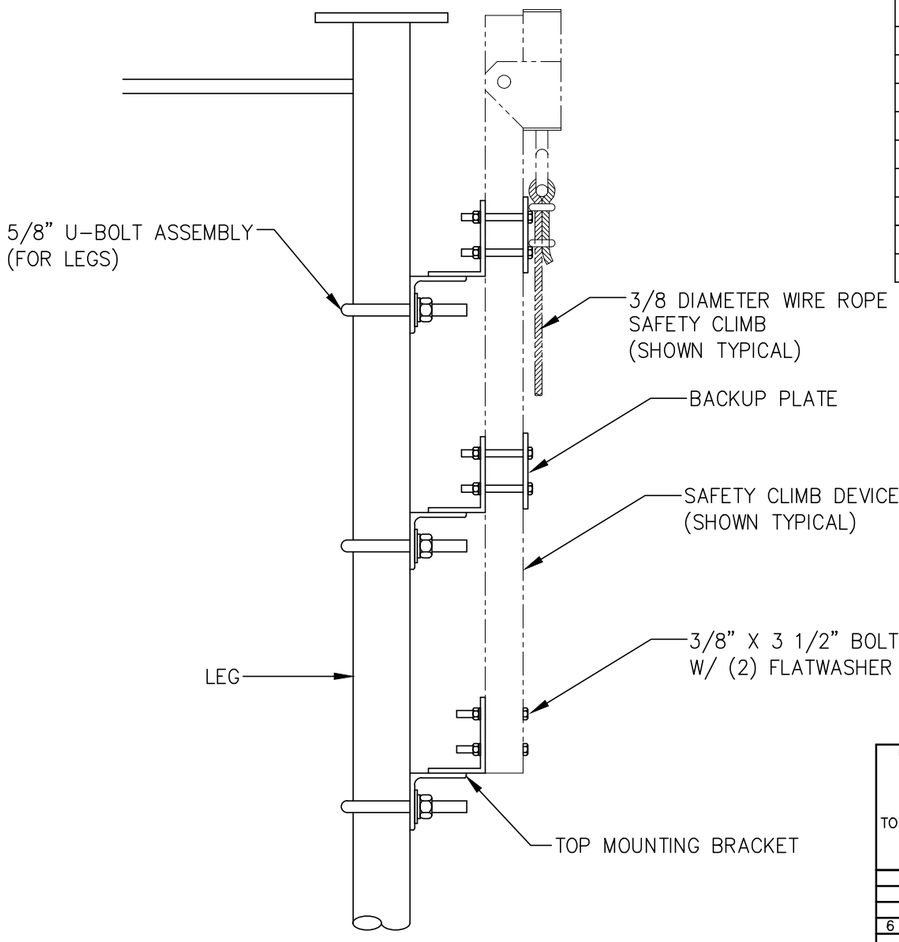
Sabre Industries™
INNOVATION DELIVERED

3/8 DIAMETER WIRE ROPE SAFETY CLIMB BOTTOM MOUNTING BRACKET

		SIZE	DRAWING NO.	REV
DATE	4/11/02	B	C30011-1	14
DRAWN BY	KLE		SCALE	PAGE
CHECKED BY	DWL		None	1 OF 1



PLAN



ELEVATION

TOP MOUNTING BRACKET KITS

KIT NUMBER	LEG DIAMETER	5/8" U-BOLT ASSEMBLY	3/8" BOLT ASSEMBLY	3/8"ø FLATWASHER	TOP MOUNTING BRACKET	BACKUP PLATE	KIT WEIGHT
C30011017	1 1/4"	C40034041	C40024012	C40031001	CW00346	CS00167	25.3#
C30011018	1 1/2"	C40034020	C40024012	C40031001	CW00346	CS00167	25.6#
C30011019	1 3/4"	C40034021	C40024012	C40031001	CW00346	CS00167	25.8#
C30011001	2"	C40034022	C40024012	C40031001	CW00049	CS00167	26.5#
C30011002	2 1/4" OR 2 3/8"	C40034023	C40024012	C40031001	CW00049	CS00167	26.8#
C30011003	2 1/2"	C40034024	C40024012	C40031001	CW00049	CS00167	26.9#
C30011004	2 3/4" OR 2 7/8"	C40034025	C40024012	C40031001	CW00049	CS00167	27.1#
C30011005	3"	C40034026	C40024012	C40031001	CW00049	CS00167	27.2#
C30011006	3 1/4"	C40034027	C40024012	C40031001	CW00050	CS00167	28.9#
C30011007	3 1/2"	C40034028	C40024012	C40031001	CW00050	CS00167	29.1#
C30011008	3 3/4"	C40034029	C40024012	C40031001	CW00050	CS00167	29.2#
C30011009	4"	C40034030	C40024012	C40031001	CW00050	CS00167	29.4#
C30011010	4 1/4"	C40034031	C40024012	C40031001	CW00050	CS00167	29.6#
C30011011	4 1/2"	C40034032	C40024012	C40031001	CW00051	CS00167	31.6#
C30011012	4 3/4"	C40034033	C40024012	C40031001	CW00051	CS00167	31.8#
C30011013	5"	C40034034	C40024012	C40031001	CW00051	CS00167	31.9#
C30011014	5 1/2" OR 5 9/16"	C40034035	C40024012	C40031001	CW00052	CS00167	34.0#
C30011015	6 5/8"	C40034036	C40024012	C40031001	CW00052	CS00167	34.6#
C30011020	8 5/8"	C40034037	C40024012	C40031001	CW00053	CS00167	50.5#
C30011021	12 3/4"	C40034039	C40024012	C40031001	CW00053	CS00167	53.4#

NOTES:

1. MOUNTING BRACKET SHOULD BE INSTALLED IN A MANNER THAT WILL ENSURE THE WIRE ROPE WILL NOT BE DAMAGED.
2. IF THERE IS A MOUNT AT THE TOP OF THE TOWER THAT WOULD INTERFERE WITH THE BRACKET OR SAFETY CLIMB, THE TOP MOUNTING BRACKET SHOULD BE INSTALLED JUST BELOW THE MOUNT.

EACH KIT CONSISTS OF

(3) TOP MOUNTING BRACKET
(2) BACKUP PLATE
(3) 5/8" U-BOLT ASSEMBLY FOR MOUNTING TO LEG
(10) 3/8"ø X 3 1/2" BOLT ASSEMBLY
(20) 3/8"ø FLATWASHER

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE
FINISHES AND ARE IN INCHES
TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

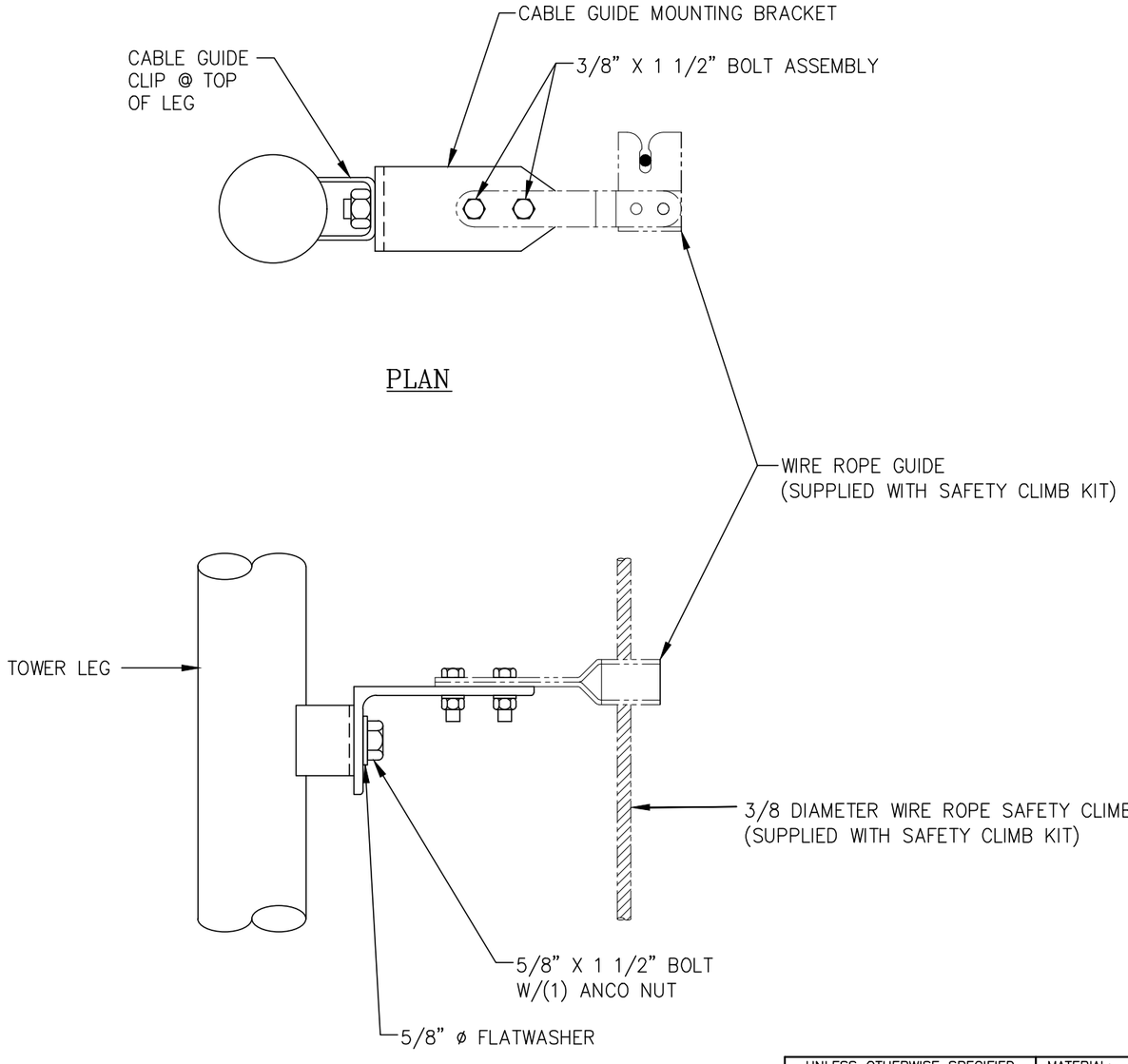
MATERIAL:
TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION
6	10/13/17	RWM	MWR	REVISED 3/8 DIAMETER WIRE ROPE VERBIAGE AND REVISED/ADDED NOTES.
5	7/2/10	CHH	HHC	ADDED KIT FOR 12 3/4" O.D. LEG.
4	11/2/09	DPJ	ZAK	ADDED KIT FOR 8 5/8" O.D. LEG.
3	12/27/04	DLW	DEL	ADDED KITS FOR 1 1/4" TO 1 3/4" O.D. LEGS
2	3/4/04	KLE	KLE	REMOVED DASHES
1	2/19/04	KLE	DLW	ADDED LEADING ZERO

Sabre Industries™
INNOVATION DELIVERED

3/8 DIAMETER WIRE ROPE SAFETY CLIMB TOP MOUNTING BRACKET

		SIZE	DRAWING NO.	REV
DATE	4/12/02	B	C30011-2	6
DRAWN BY	KLE			
CHECKED BY	DLW	SCALE None	PAGE 1 OF 1	



C30003001 SAFETY CLIMB CABLE GUIDE MOUNTING BRACKET				
ITEM	QTY.	PART. NO.	DESCRIPTION	WEIGHT
1	1	CS00795	ANGLE, SAFETY CLIMB CABLE GUIDE SUPPORT	1.4#
2	1	C40126021	BOLT, 5/8 X 1 1/2 A325	0.3#
3	1	C40028003	NUT, ANCO 5/8" ø	0.1#
4	1	C40031003	FLATWASHER, 5/8" ø	0.1#
5	2	C40024004	BOLT ASSEMBLY, 3/8 X 1 1/2 GR. 5	0.2#
			TOTAL WEIGHT	2.1#

EACH KIT CONSISTS OF

(1) CABLE GUIDE MOUNTING BRACKET
(1) 5/8" X 1 1/2" BOLT FOR MOUNTING TO LEG
(1) 5/8" ANCO NUT FOR 5/8" BOLT
(1) 5/8" FLATWASHER
(2) 3/8"ø X 1 1/2" BOLT ASSEMBLY

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION
4	10/13/17	RWM	MWR	REVISED 3/8 DIAMETER WIRE ROPE VERBIAGE
3	10/6/11	CHH	RWM	REVISED MOUNTING BOLT WAS C40126019 & ADDED FLATWASHER C40031003
2	4/12/06	CHH	HHC	CHANGED PART NO. ITEM 2 (WAS C40998050).
1	2/17/06	MJM	ZAK	CORRECTED ITEM 3 PART NO. (WAS C40028004).

Sabre Industries™ INNOVATION DELIVERED

3/8 DIAMETER WIRE ROPE SAFETY CLIMB CABLE GUIDE MOUNTING BRACKET

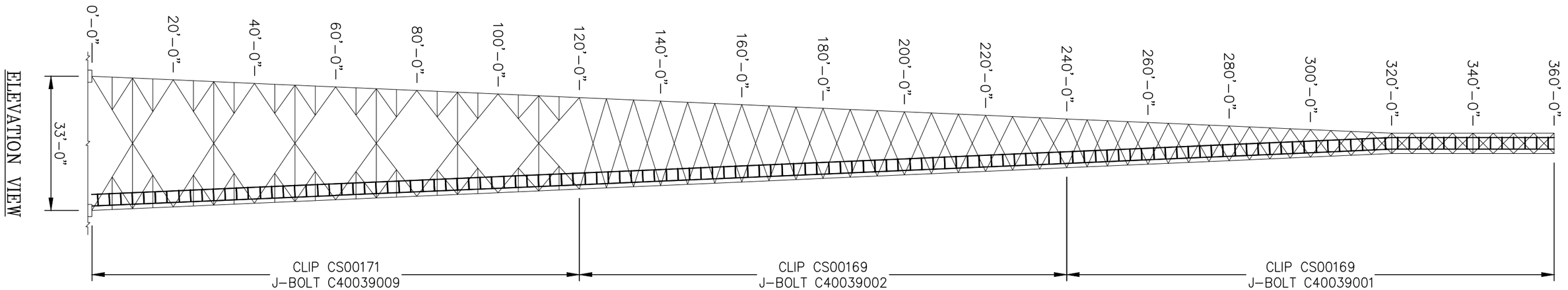
DATE	8/4/04
DRAWN BY	CHH
CHECKED BY	ZAK

SIZE	DRAWING NO.	REV
B	C30003001	4

SCALE	PAGE
None	1 OF 1

CLIMBING LADDER				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	36	CS00331	ANGLE, WAVEGUIDE LADDER RAIL 20 FT. W/3 FT. RUNG SPC	1080
2	126	CS00413	ANGLE, WAVEGUIDE SUPPORT (15 HOLE)	580
3	34	CS00037	PLATE, LADDER SPLICE	14
4	36	CS00171	CLIP, LADDER ATTACHMENT	24
5	60	CS00169	CLIP, LADDER ATTACHMENT	33
			TOTAL WEIGHT LBS	1731

LADDER HARDWARE				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
6	36	C40039009	J-BOLT ASSEMBLY, 3/8 ø X 9 I.L.	11
7	36	C40039002	J-BOLT ASSEMBLY, 3/8 ø X 7 1/4 I.L.	13
8	24	C40039001	J-BOLT ASSEMBLY, 3/8 ø X 5 3/4 I.L.	7
9	320	C40024004	BOLT ASSEMBLY, 3/8 ø X 1 1/2 GRD 5	32
			TOTAL WEIGHT LBS	63



FIELD NOTES

1. FROM ELEVATION 0'-0" TO 120'-0" ATTACH WAVEGUIDE LADDER TO EACH MAIN DIAGONAL & EACH MAIN HORIZONTAL.
   FROM ELEVATION 120'-0" TO 240'-0" ATTACH WAVEGUIDE LADDER TO EACH TOWER DIAGONAL.
   FROM ELEVATION 240'-0" TO 360'-0" ATTACH WAVEGUIDE LADDER TO EVERY OTHER TOWER DIAGONAL.
2. SEE REFERENCE DWG. 9029107 FOR WAVEGUIDE LADDER INSTALLATION AND ATTACHMENT DETAIL.
3. SEE CUSTOMER REQUESTS FOR PROPER FACE POSITIONING OF ALL LADDERS.
4. WAVEGUIDE LADDERS SHOULD NEVER BE USED AS A CLIMBING OR RIGGING DEVICE.

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE
FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY
TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

W/G LADDER: 360 FT. MODEL S3R-SD

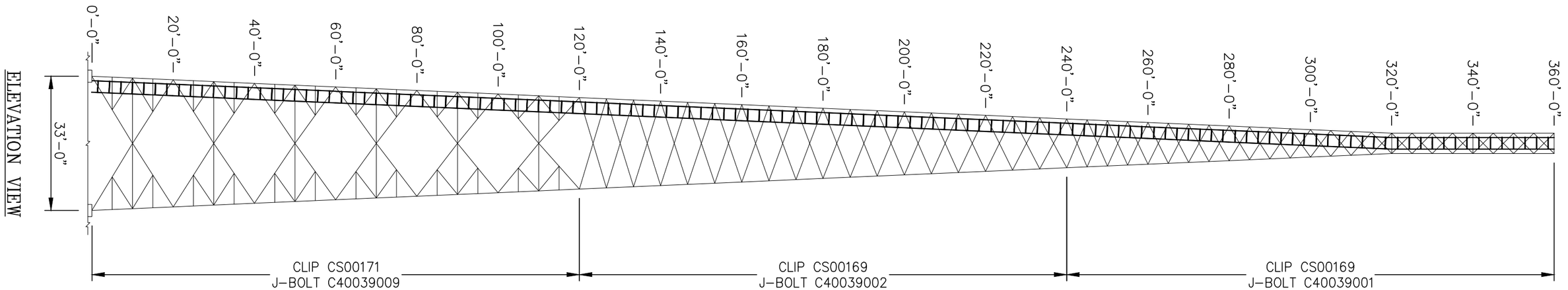
SITE: BAD CREEK (BDC), SC #(BDC)

CUSTOMER: DUKE ENERGY CORPORATION

JOB NO. 495518		SIZE	DRAWING NO.	REV
DATE	1/14/22	B	495518-WG1	0
DRAWN BY	DRL			
CHECKED BY	ZAK		SCALE NONE	PAGE 1 OF 1

CLIMBING LADDER				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	36	CS00331	ANGLE, WAVEGUIDE LADDER RAIL 20 FT. W/3 FT. RUNG SPC	1080
2	126	CS00413	ANGLE, WAVEGUIDE SUPPORT (15 HOLE)	580
3	34	CS00037	PLATE, LADDER SPLICE	14
4	36	CS00171	CLIP, LADDER ATTACHMENT	24
5	60	CS00169	CLIP, LADDER ATTACHMENT	33
			TOTAL WEIGHT LBS	1731

LADDER HARDWARE				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
6	36	C40039009	J-BOLT ASSEMBLY, 3/8 ø X 9 I.L.	11
7	36	C40039002	J-BOLT ASSEMBLY, 3/8 ø X 7 1/4 I.L.	13
8	24	C40039001	J-BOLT ASSEMBLY, 3/8 ø X 5 3/4 I.L.	7
9	320	C40024004	BOLT ASSEMBLY, 3/8 ø X 1 1/2 GRD 5	32
			TOTAL WEIGHT LBS	63



FIELD NOTES

1. FROM ELEVATION 0'-0" TO 120'-0" ATTACH WAVEGUIDE LADDER TO EACH MAIN DIAGONAL & EACH MAIN HORIZONTAL.
   FROM ELEVATION 120'-0" TO 240'-0" ATTACH WAVEGUIDE LADDER TO EACH TOWER DIAGONAL.
   FROM ELEVATION 240'-0" TO 360'-0" ATTACH WAVEGUIDE LADDER TO EVERY OTHER TOWER DIAGONAL.
2. SEE REFERENCE DWG. 9029107 FOR WAVEGUIDE LADDER INSTALLATION AND ATTACHMENT DETAIL.
3. SEE CUSTOMER REQUESTS FOR PROPER FACE POSITIONING OF ALL LADDERS.
4. WAVEGUIDE LADDERS SHOULD NEVER BE USED AS A CLIMBING OR RIGGING DEVICE.

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE
FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY
TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

W/G LADDER: 360 FT. MODEL S3R-SD

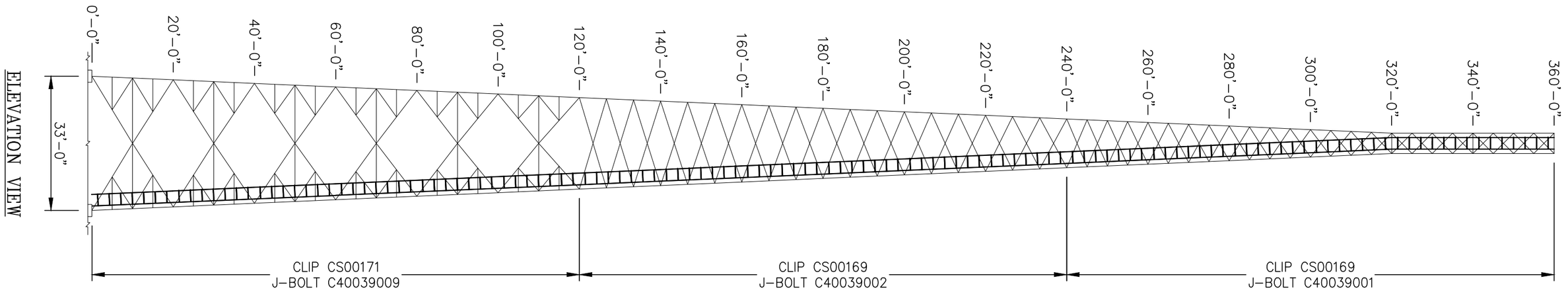
SITE: BAD CREEK (BDC), SC #(BDC)

CUSTOMER: DUKE ENERGY CORPORATION

JOB NO. 495518		SIZE	DRAWING NO.	REV
DATE	1/14/22	B	495518-WG2	0
DRAWN BY	DRL			
CHECKED BY	ZAK		SCALE NONE	PAGE 1 OF 1

CLIMBING LADDER				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	36	CS00331	ANGLE, WAVEGUIDE LADDER RAIL 20 FT. W/3 FT. RUNG SPC	1080
2	126	CS00413	ANGLE, WAVEGUIDE SUPPORT (15 HOLE)	580
3	34	CS00037	PLATE, LADDER SPLICE	14
4	36	CS00171	CLIP, LADDER ATTACHMENT	24
5	60	CS00169	CLIP, LADDER ATTACHMENT	33
			TOTAL WEIGHT LBS	1731

LADDER HARDWARE				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
6	36	C40039009	J-BOLT ASSEMBLY, 3/8 ø X 9 I.L.	11
7	36	C40039002	J-BOLT ASSEMBLY, 3/8 ø X 7 1/4 I.L.	13
8	24	C40039001	J-BOLT ASSEMBLY, 3/8 ø X 5 3/4 I.L.	7
9	320	C40024004	BOLT ASSEMBLY, 3/8 ø X 1 1/2 GRD 5	32
			TOTAL WEIGHT LBS	63



FIELD NOTES

1. FROM ELEVATION 0'-0" TO 120'-0" ATTACH WAVEGUIDE LADDER TO EACH MAIN DIAGONAL & EACH MAIN HORIZONTAL.
   FROM ELEVATION 120'-0" TO 240'-0" ATTACH WAVEGUIDE LADDER TO EACH TOWER DIAGONAL.
   FROM ELEVATION 240'-0" TO 360'-0" ATTACH WAVEGUIDE LADDER TO EVERY OTHER TOWER DIAGONAL.
2. SEE REFERENCE DWG. 9029107 FOR WAVEGUIDE LADDER INSTALLATION AND ATTACHMENT DETAIL.
3. SEE CUSTOMER REQUESTS FOR PROPER FACE POSITIONING OF ALL LADDERS.
4. WAVEGUIDE LADDERS SHOULD NEVER BE USED AS A CLIMBING OR RIGGING DEVICE.

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE
FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY
TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

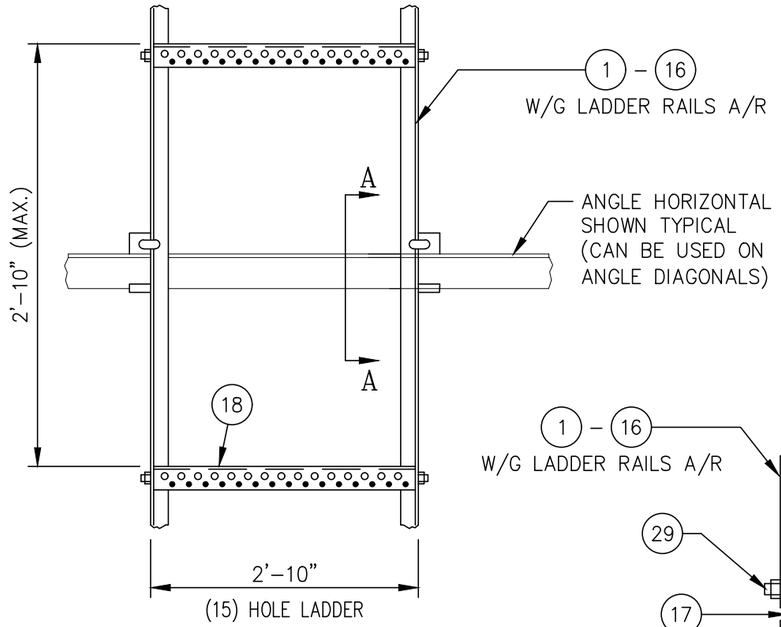
Sabre Industries™
INNOVATION DELIVERED

W/G LADDER: 360 FT. MODEL S3R-SD

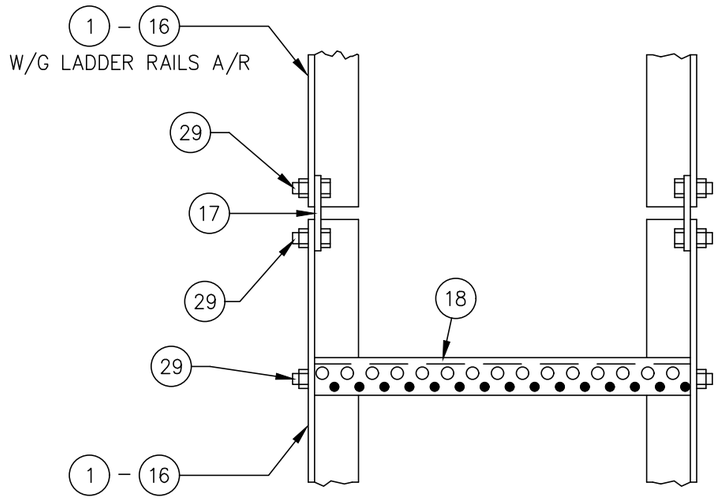
SITE: BAD CREEK (BDC), SC #(BDC)

CUSTOMER: DUKE ENERGY CORPORATION

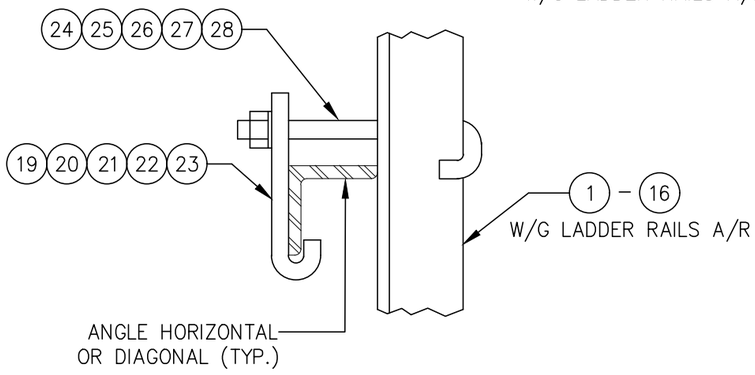
JOB NO. 495518		SIZE	DRAWING NO.	REV
DATE	1/14/22	B	495518-WG3	0
DRAWN BY	DRL			
CHECKED BY	ZAK		SCALE NONE	PAGE 1 OF 1



ELEVATION
(TYPICAL MOUNTING DETAIL)



SPLICE DETAIL



SECTION A–A

LIST OF MATERIAL

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	A/R	CS00331	ANGLE, WAVEGUIDE LADDER RAIL 20 FT.	
2	N/R	CS03706	ANGLE, WAVEGUIDE LADDER RAIL 19 FT.	
3	N/R			
4	N/R			
5	A/R			
6	N/R			
7	N/R			
8	N/R			
9	N/R			
10	A/R			
11	A/R	CS00332	ANGLE, WAVEGUIDE LADDER RAIL 10 FT.	
12	N/R			
13	A/R			
14	A/R			
15	N/R			
16	A/R	CS00149	ANGLE, WAVEGUIDE LADDER RAIL 5 FT.	
17	A/R	CS00037	PLATE, LADDER SPLICE	
18	A/R	CS00413	ANGLE WAVEGUIDE SUPPORT (15 HOLE)	
19	A/R	CS00169	CLIP, LADDER ATTACHMENT (1 1/2" – 4" ANGLES)	
20	A/R	CS00170	CLIP, LADDER ATTACHMENT (5" – 6" ANGLES: 3/8" THK. & UNDER)	
21	A/R	CS00171	CLIP, LADDER ATTACHMENT (1 1/2" – 6" ANGLES: 1/2" THK. & UNDER)	
22	A/R	CS00808	CLIP, LADDER ATTACHMENT (4" – 6" ANGLES: 1/2" TO 3/4" THK.)	
23	A/R	CS01212	CLIP, LADDER ATTACHMENT (8" ANGLES)	
24	A/R	C40039001	J–BOLT ASSY., 3/8 (1 1/2" – 2 1/2" ANGLES)	
25	A/R	C40039002	J–BOLT ASSY., 3/8 (3" – 4" ANGLES)	
26	A/R	C40039003	J–BOLT ASSY., 3/8 (5" – 6" ANGLES)	
27	A/R	C40039009	J–BOLT ASSY., 3/8 (3" – 6" ANGLES, 1/2" & 3/4" THK)	
28	A/R	C40039012	J–BOLT ASSY., 3/8 (8" ANGLES, 1/2" & 3/4" THK)	
29	A/R	C40024004	BOLT ASSEMBLY, 3/8 X 1 1/2 GR5	

"SEE JOB SPECIFIC BILL OF MATERIAL FOR QTY'S."

NOTE:
MAXIMUM SPACING OF LADDER CLIPS
UP THE TOWER TO BE ±10'–0".

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE
FINISHES AND ARE IN INCHES
TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:
TOLERANCES DO NOT APPLY
TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION
2	11/18/19	KLE	EK	REVISED FOR CUSTOM LENGHTS
1	10/16/07	DPJ	ZAK	REDRAWN ON B SIZE, UPDATED CONFIDENTIALITY STATEMENT. ADDED LADDER RAIL CS00149, CLIPS: CS00171, CS00808, CS01212 & J–BOLTS: C40039009 & C40039012.

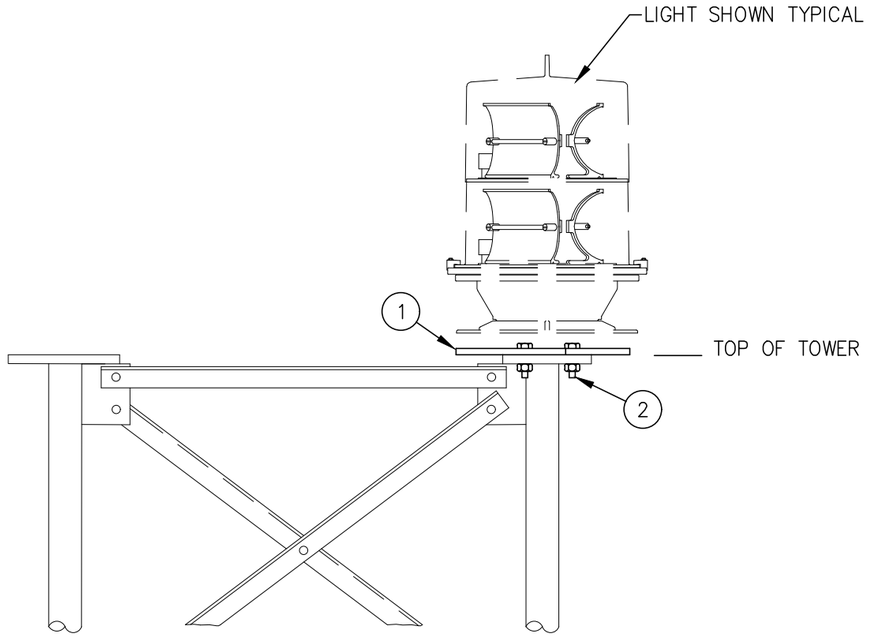
Sabre Industries™
INNOVATION DELIVERED

TYPICAL WAVEGUIDE LADDER INSTALLATION 15 HOLE RUNG – 7/16"ø & 3/4"ø & SPECIAL 2'–10 C–C MAX. RUNG SPACING

DATE	2/20/04
DRAWN BY	CE
CHECKED BY	ZAK

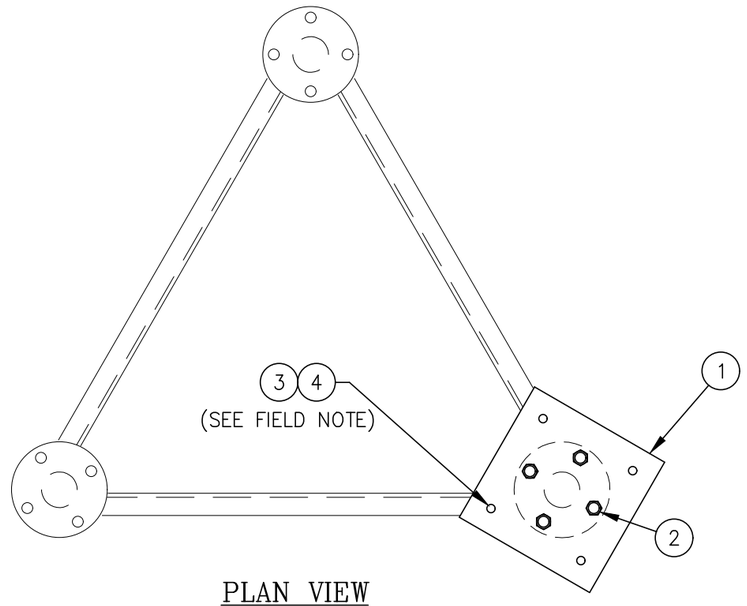
SIZE	DRAWING NO.	REV
B	9029107	2

SCALE	PAGE
None	1 OF 1



ELEVATION VIEW

LIST OF MATERIAL				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT
1	1	CS01622	PLATE, BEACON MOUNT	10.6#
2	4	C40026045	BOLT ASSEMBLY, 3/4 ø X 2 1/2 A325	3.0#
3	4	C40026025	BOLT ASSEMBLY, 5/8 ø X 2 1/2 A325	2.0#
4	8	C40047003	RINGFILL, 3/8 THICK – 5/8 ø BOLT	1.1#
			TOTAL WEIGHT	16.7#



PLAN VIEW

FIELD NOTE:

1. (4) 5/8" X 2 1/2" BOLTS HAVE BEEN PROVIDED TO MOUNT BEACON TO MOUNTING PLATE #CS01622.
2. (8) RINGFILLS, 3/8" THICK, HAVE BEEN PROVIDED TO SHIM THE BEACON ABOVE HEAD OF SPLICE BOLT, USE TWO (2) PER BOLT.

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"

MATERIAL:
FITS (4) 13/16"ø HOLES SPACED 90° APART ON A 5 1/2" BOLT CIRCLE.

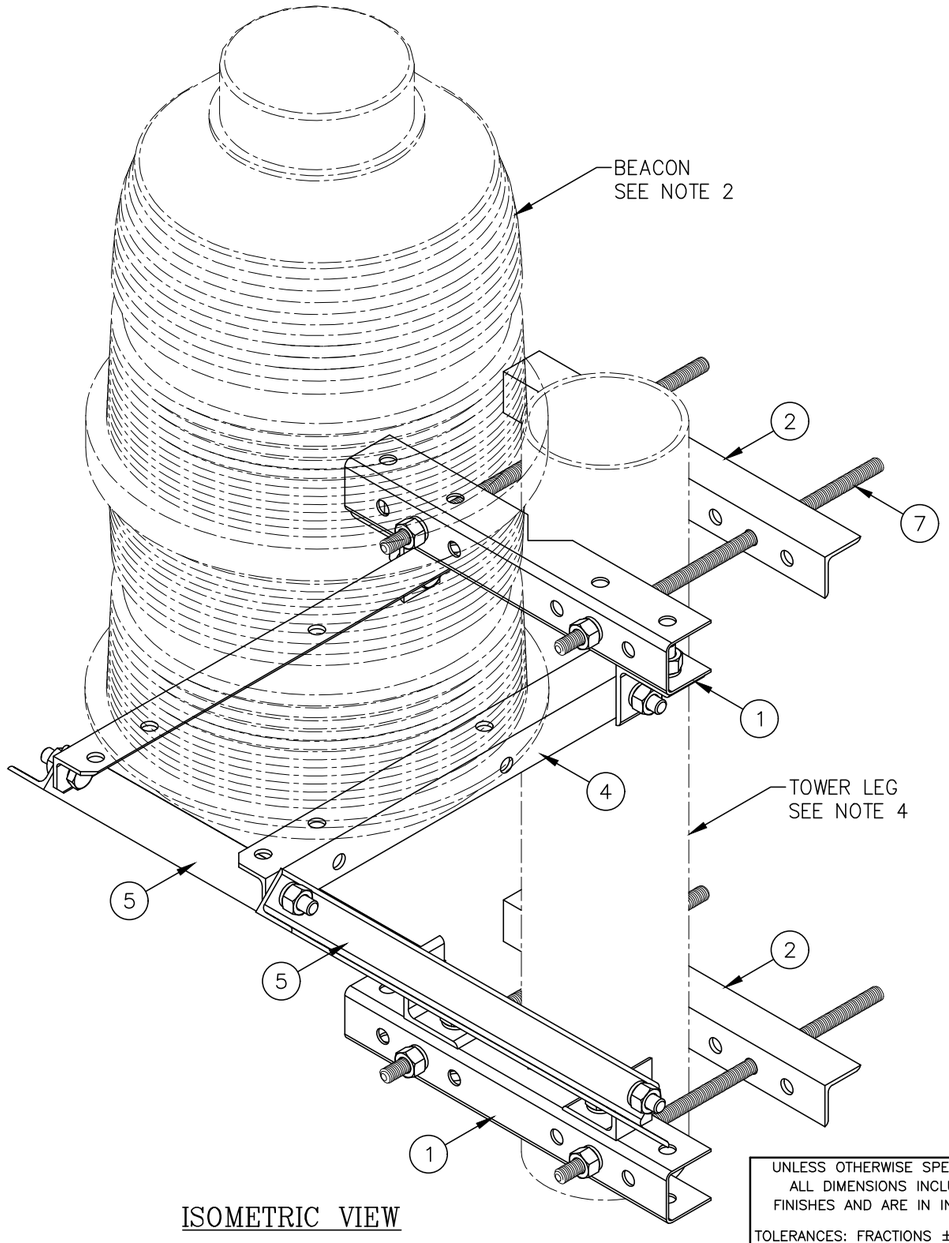
TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

TOP BEACON MOUNT INSTALLATION

		SIZE	DRAWING NO.	REV
DATE	1/11/08	B	9030199	0
DRAWN BY	DPJ			
CHECKED BY	ZAK	SCALE None	PAGE 1 OF 1	



ISOMETRIC VIEW

C30083001 BEACON MOUNT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT
1.	2	CS00083	PLATE, FORMED CHANNEL	9
2.	2	CS00084	ANGLE, 2 X 2 X 3/16 X 1'-6	8
3.	4	CS00085	ANGLE, 3 X 3 X 1/4 X 0'-2	3
4.	2	CS00086	ANGLE, 2 X 2 X 3/16 X 1'-9 3/4	9
5.	2	CS00087	ANGLE, 2 X 2 X 3/16 X 2'-5 3/4	13
6.	10	C40026022	BOLT ASSEMBLY, 5/8 ø X 1 3/4 A325	4
7.	4	C40099003	THD ROD ASS'Y, 5/8 ø X 1'-6" ASTM A193 GR. B7	8
			TOTAL WEIGHT	54

NOTES:

1. ALL BOLTS ARE 5/8 ø X 1 3/4 UNLESS OTHERWISE NOTED.
2. BEACON AND BEACON HARDWARE MUST BE ORDERED SEPARATELY OR SUPPLIED BY OTHERS.
3. THIS BEACON MOUNT CAN BE USED ON TOWER LEGS WITH A SLOPE OF UP TO 30°.
4. THIS BEACON MOUNT FITS ANGLE LEGS FROM 2 1/2 X 2 1/2 TO 8 X 8 AND PIPE OR SOLID ROUND LEGS FROM 1 1/2 O.D. TO 12 3/4 O.D.

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

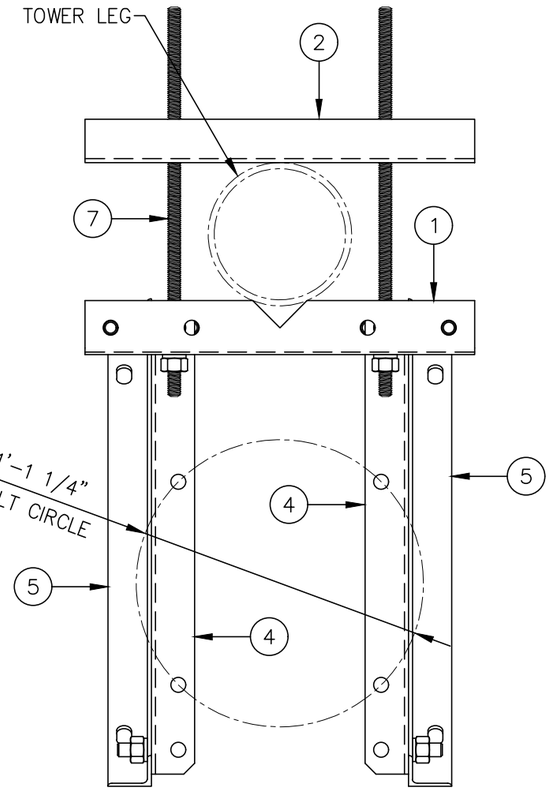
TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION
3	6/15/10	CHH	HHC	CHANGED ITEM 7 (WAS C40998003)
2	06/19/06	WRF	WMN	ADDED ISOMETRIC VIEW
1	4/7/03	CE	DLW	UPDATED PART NO'S

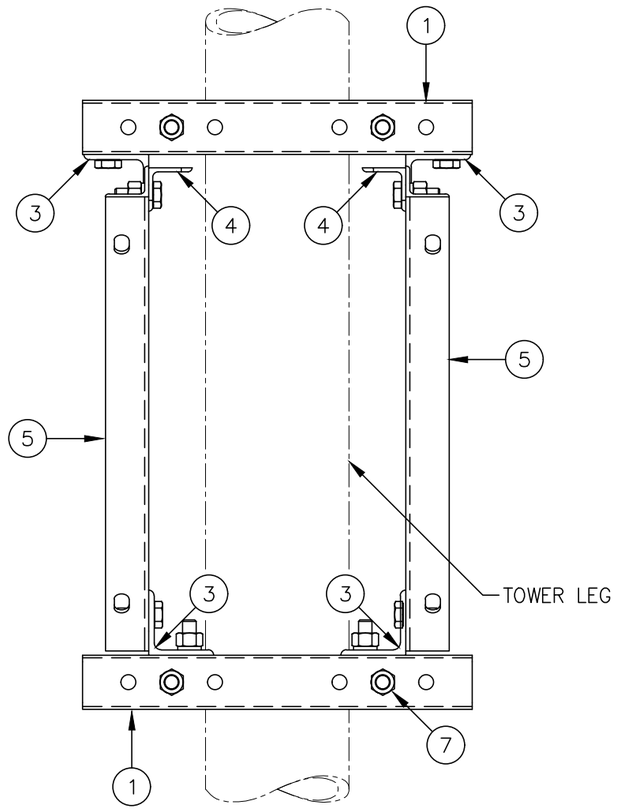
Sabre Industries™
INNOVATION DELIVERED

BEACON MOUNT
FOR ANGLE AND ROUND LEG TOWERS
(3 OR 4 LEG TOWERS)

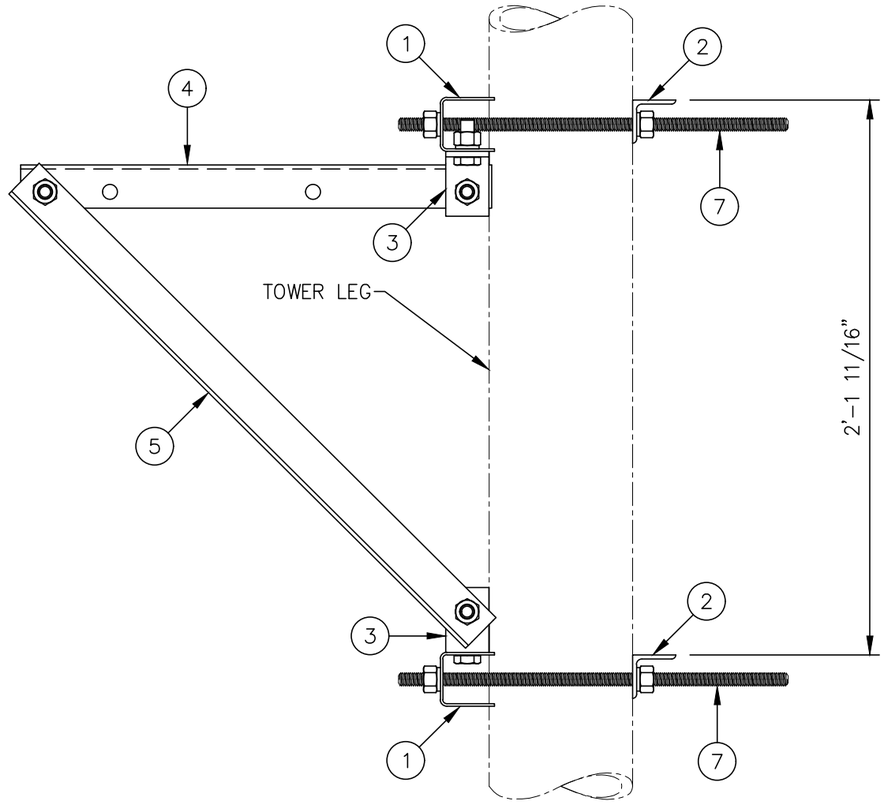
		SIZE	DRAWING NO.	REV
DATE	07/14/00	B	C30083001	3
DRAWN BY	KLE			
CHECKED BY	BCT	SCALE None	PAGE 1 OF 2	



TOP VIEW



FRONT VIEW



SIDE VIEW

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"	MATERIAL: TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION
3	6/15/10	CHH	HHC	CHANGED ITEM 7 (WAS C40998003)
2	06/19/06	WRF	WMN	ADDED ISOMETRIC VIEW
1	4/7/03	CE	DLW	UPDATED PART NO'S

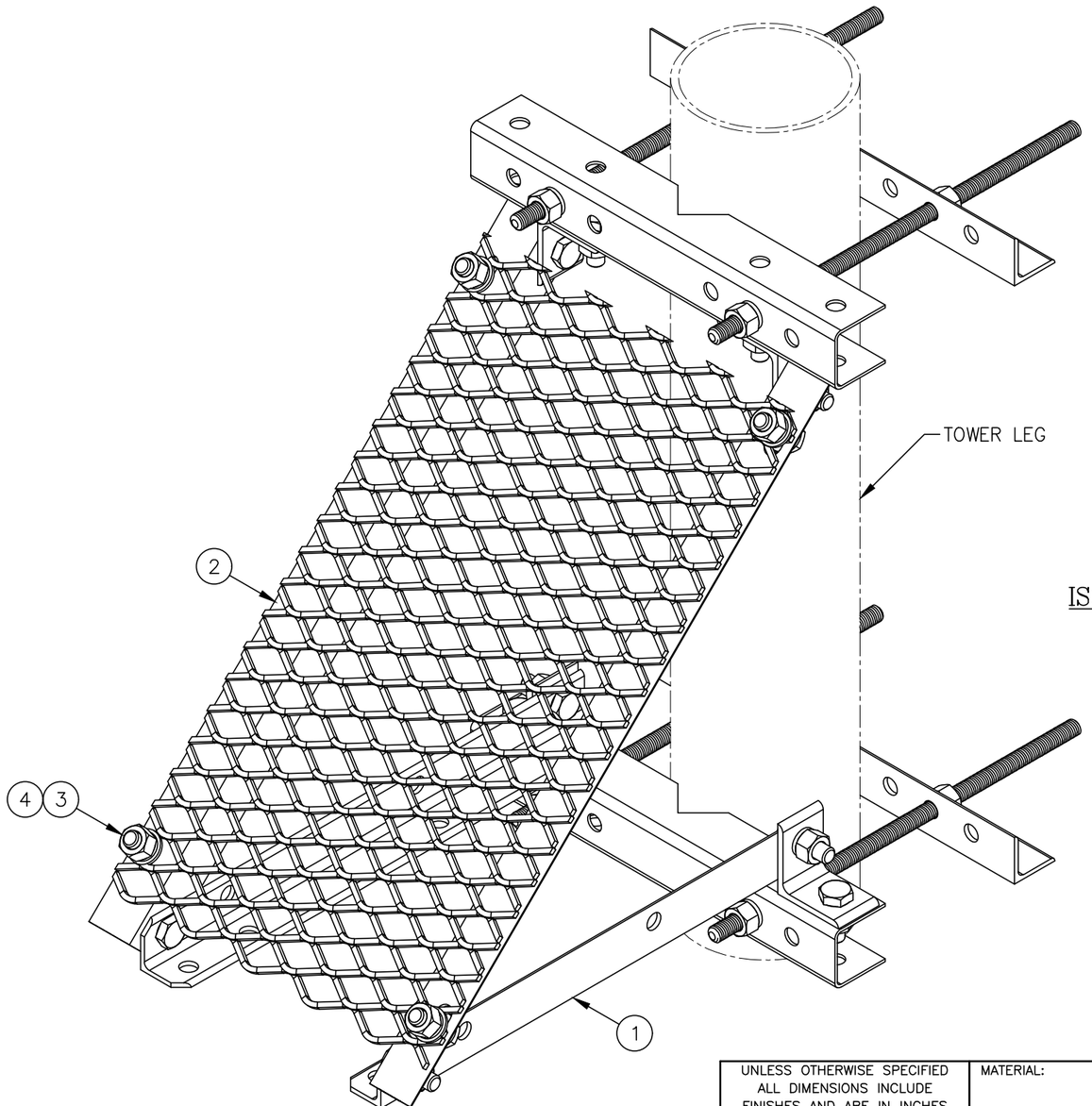
Sabre Industries™
INNOVATION DELIVERED

BEACON MOUNT FOR ANGLE AND ROUND LEG TOWERS (3 OR 4 LEG TOWERS)

DATE	07/14/00
DRAWN BY	KLE
CHECKED BY	BCT

SIZE	DRAWING NO.	REV
B	C30083001	3

SCALE	PAGE
None	2 OF 2



ISOMETRIC VIEW

C30084001 BEACON ICE SHIELD

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT
1.	1	C30083001	BEACON MOUNTING KIT	54
2.	1	CS00088	EXP. METAL GRATING, 3# X 15 7/8 X 2'-2 1/2	9
3.	4	C40026023	BOLT ASSEMBLY, 5/8 ø X 2 A325	2
4.	8	C40031003	FLATWASHER, 5/8 ø	1
			TOTAL WEIGHT	66

NOTES:

1. THIS ICE SHIELD CAN BE USED ON TOWER LEGS WITH A SLOPE OF UP TO 30°.
2. THIS ICE SHIELD FITS ANGLE LEGS FROM 2 1/2 X 2 1/2 TO 8 X 8 AND PIPE OR SOLID ROUND LEGS FROM 1 1/2 O.D. TO 12 3/4 O.D.

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE
FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION
1	06/20/06	WRF	WMN	ADDED ISOMETRIC VIEW

Sabre Industries™
INNOVATION DELIVERED

BEACON ICE SHIELD FOR ANGLE AND ROUND LEG TOWERS (3 OR 4 LEG TOWERS)

		SIZE	DRAWING NO.	REV
DATE	07/14/00	B	C30084001	1
DRAWN BY	KLE			
CHECKED BY	BCT	SCALE None	PAGE 1 OF 1	

FEDERAL AVIATION ADMINISTRATION
SPECIFICATIONS: AC 70/7460-1L
EFFECTIVE DATE: DECEMBER 4, 2015

CHAPTER 4. LIGHTING GUIDELINE
PARAGRAPH 4.3 LIGHTING SYSTEMS
SECTION 5. OBSTRUCTION LIGHTS DURING CONSTRUCTION

AS THE HEIGHT OF THE STRUCTURE EXCEEDS EACH LEVEL AT WHICH PERMANENT OBSTRUCTION LIGHTS WOULD BE RECOMMENDED, TWO OR MORE LIGHTS OF THE TYPE SPECIFIED IN THE DETERMINATION SHOULD BE INSTALLED AT THAT LEVEL. TEMPORARY HIGH OR MEDIUM INTENSITY FLASHING WHITE LIGHTS, AS RECOMMENDED IN THE DETERMINATION, SHOULD BE OPERATED 24 HOURS A DAY UNTIL ALL PERMANENT LIGHTS ARE IN OPERATION. IN EITHER CASE, TWO OR MORE LIGHTS SHOULD BE INSTALLED ON THE UPPERMOST PART OF THE STRUCTURE ANY TIME IT EXCEEDS THE HEIGHT OF THE TEMPORARY CONSTRUCTION EQUIPMENT. THEY MAY BE TURNED OFF FOR PERIODS WHEN THEY COULD INTERFERE WITH CONSTRUCTION PERSONNEL. IF PRACTICAL, PERMANENT OBSTRUCTION LIGHTS SHOULD BE INSTALLED AND OPERATED AT EACH LEVEL AS CONSTRUCTION PROGRESSES. THE LIGHTS SHOULD BE POSITIONED TO ENSURE THAT A PILOT HAS AN UNOBSTRUCTED VIEW OF AT LEAST ONE LIGHT AT EACH LEVEL.

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES
TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:
TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION
8	8/18/16	ZAK	DLW	UPDATED TO CURRENT SPECS. (WAS AC 70/7460/1K).
7	11/30/10	PSB	ZAK	CHANGED FAA EFFECTIVE DATE.
6	03/02/04	PSB	RGF	REDRAWN ONTO "B" SIZE PAPER.
5	03/05/01	JKW	PSB	REDRAWN INTO AUTOCAD 2000i.
4	11/15/00	DEM	--	UPDATED TO CURRENT SPECS. (WAS AC 70/7460/1J).
3	01/13/00	MLC	--	UPDATED TO CURRENT SPECS.
2	06/02/97	DEM	--	REDRAWN ONTO NEW TITLEBLOCK.
1	11/21/96	PSB	--	REDRAWN.

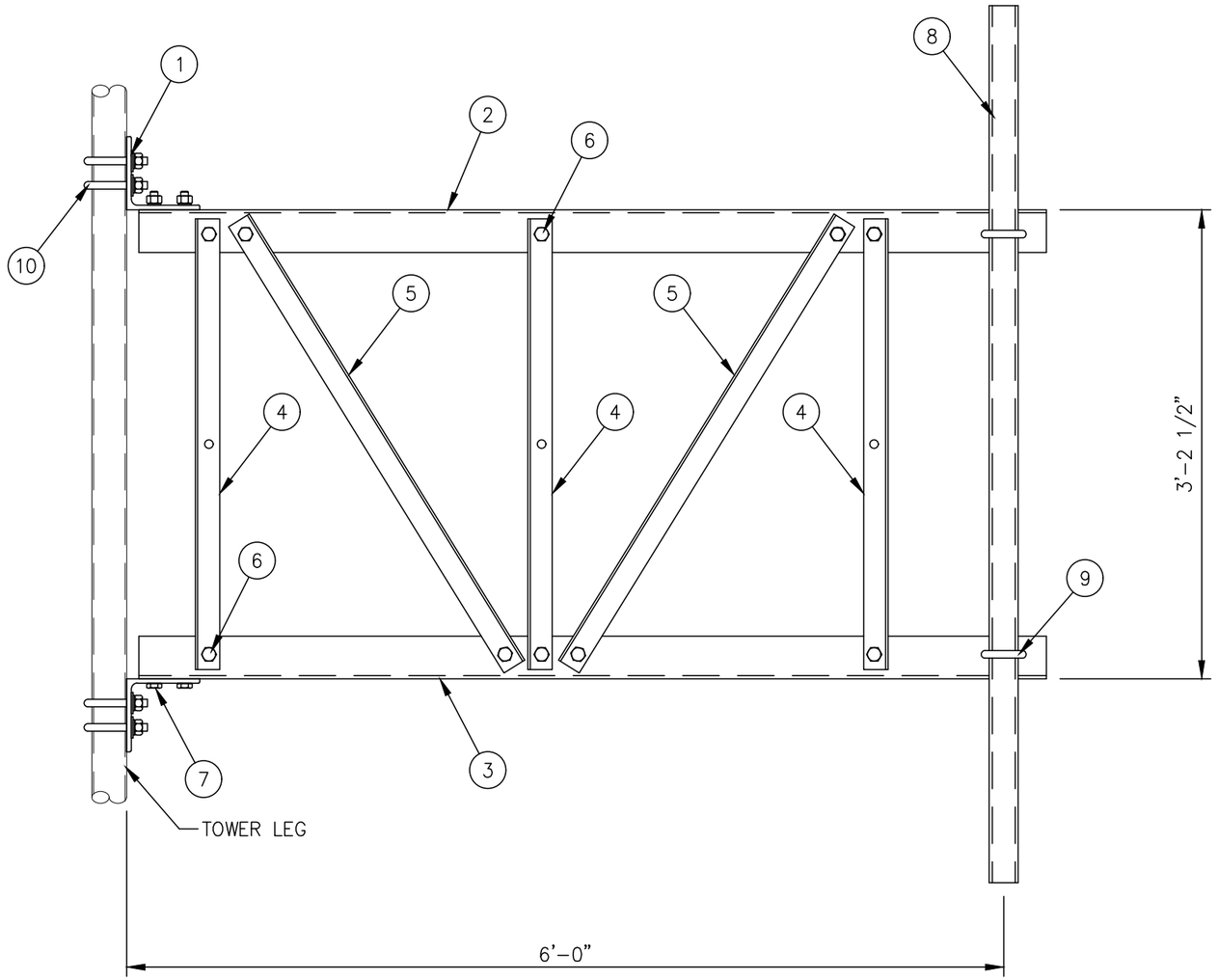
Sabre Industries™
INNOVATION DELIVERED

TEMPORARY LIGHTING OF TOWER DURING ERECTION

DATE	08/01/91
DRAWN BY	RGF
CHECKED BY	DLW

SIZE	DRAWING NO.	REV
B	902816	8

SCALE	PAGE
None	1 OF 1



C10151106 6 FT. SIDEARM ASSEMBLY			
1	CK00061	SIDEARM ANGLE KIT	138
1	– – –	MISC HARDWARE (FRAMING)	6
1	C10900105	PIPE ANTENNA MOUNTING KIT 2 3/8" ø X 5'–0	19
4	C40034021	U–BOLT ASSEMBLY 5/8" ø X 2 7/16 C–C	5
		TOTAL WEIGHT LBS	168

CK00061 KIT LIST OF MATERIAL				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	2	CS00067	ANGLE, BOOM SUPPORT	23
2	1	CS01225	ANGLE, TOP CHORD	37
3	1	CS01226	ANGLE, BOTTOM CHORD	37
4	3	CS00065	ANGLE, VERTICAL	23
5	2	CS01228	ANGLE, DIAGONAL	18
			TOTAL WEIGHT LBS	138

MISC HARDWARE (FRAMING)				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
6	10	C40026022	BOLT ASSEMBLY, 5/8 ø X 1 3/4 A325	4
7	4	C40026023	BOLT ASSEMBLY, 5/8 ø X 2 A325	2
			TOTAL WEIGHT LBS	6

C10900105 ANTENNA PIPE MOUNTING KIT				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
8	1	C10981223	ANTENNA MTG. PIPE 2 3/8" ø X 5'–0	16
9	2	C40034023	U–BOLT ASSEMBLY 5/8" ø X 3 1/16 C–C	3
			TOTAL WEIGHT LBS	19

MISC HARDWARE (TOWER LEG)				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
10	4	C40034021	U–BOLT ASSEMBLY 5/8" ø X 2 7/16 C–C	5
			TOTAL WEIGHT LBS	5

NOTES:

1. IF THE MOUNT IS NOT ON THE STRAIGHT PORTION OF THE TOWER SEE SITE SPECIFIC PIPE MOUNT.
2. QUANTITIES SHOWN IN LIST OF MATERIALS ARE FOR ONE (1) SIDEARM ASSEMBLY ONLY.

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE
FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY
TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

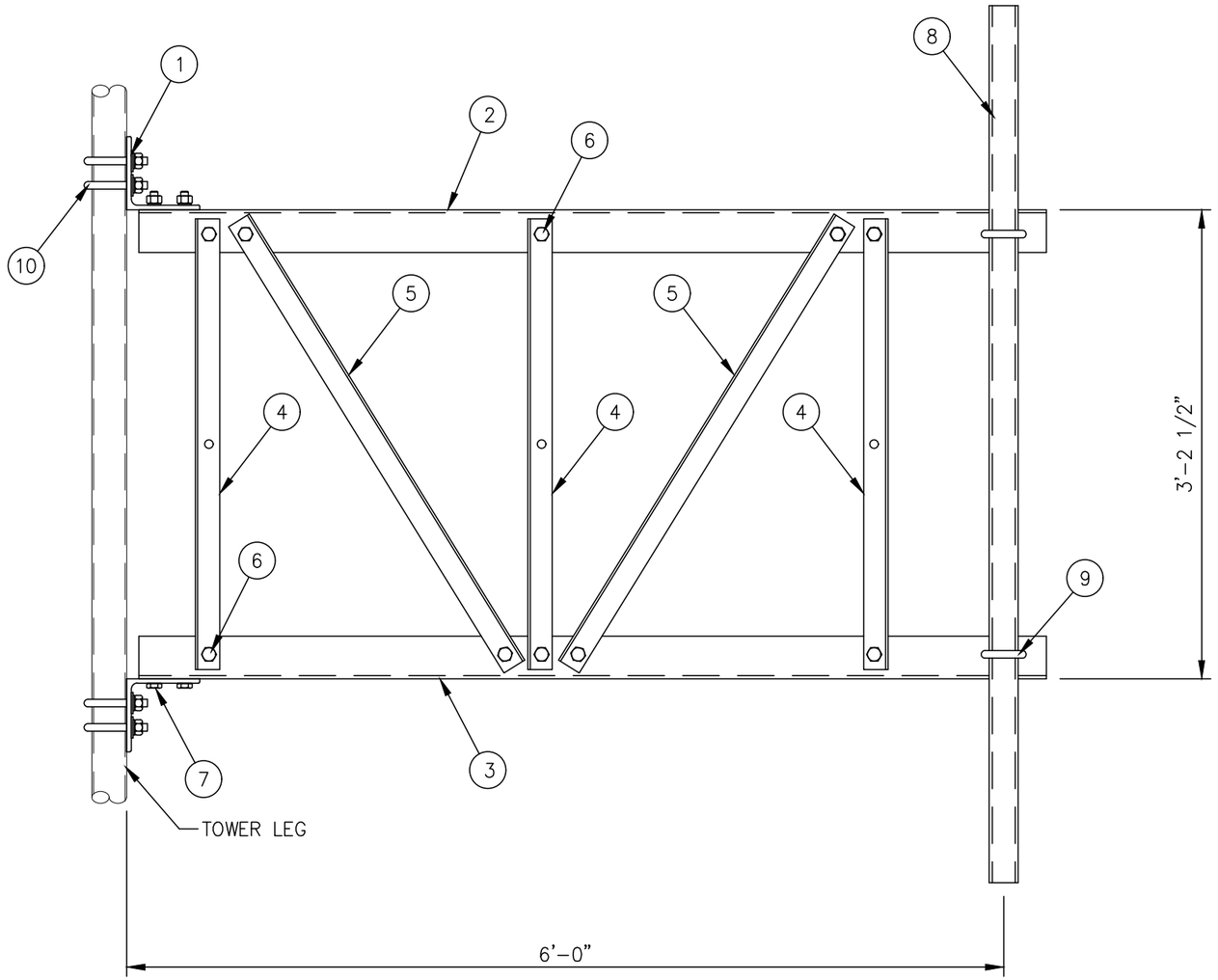
Sabre Industries™
INNOVATION DELIVERED

6 FT. SIDEARMS: 340' ELEVATION

SITE: BAD CREEK (BDC), SC #(BDC)

CUSTOMER: DUKE ENERGY CORPORATION

JOB NO. 495518		SIZE	DRAWING NO.	REV
DATE	2/10/22	B	495518–SA1	0
DRAWN BY	DRL			
CHECKED BY	ZAK		SCALE NONE	PAGE 1 OF 1



C10151106 6 FT. SIDEARM ASSEMBLY			
1	CK00061	SIDEARM ANGLE KIT	138
1	– – –	MISC HARDWARE (FRAMING)	6
1	C10900405	PIPE ANTENNA MOUNTING KIT 4" ø X 5'–0	51
4	C40034021	U–BOLT ASSEMBLY 5/8" ø X 2 7/16 C–C	5
		TOTAL WEIGHT LBS	200

CK00061 KIT LIST OF MATERIAL				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	2	CS00067	ANGLE, BOOM SUPPORT	23
2	1	CS01225	ANGLE, TOP CHORD	37
3	1	CS01226	ANGLE, BOTTOM CHORD	37
4	3	CS00065	ANGLE, VERTICAL	23
5	2	CS01228	ANGLE, DIAGONAL	18
			TOTAL WEIGHT LBS	138

MISC HARDWARE (FRAMING)				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
6	10	C40026022	BOLT ASSEMBLY, 5/8 ø X 1 3/4 A325	4
7	4	C40026023	BOLT ASSEMBLY, 5/8 ø X 2 A325	2
			TOTAL WEIGHT LBS	6

C10900405 ANTENNA PIPE MOUNTING KIT				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
8	1	C10901105	ANTENNA MTG. PIPE 4" ø X 5'–0"	47
9	2	C40034030	U–BOLT ASSEMBLY 5/8" ø X 4 11/16 C–C	4
			TOTAL WEIGHT LBS	51

MISC HARDWARE (TOWER LEG)				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
10	4	C40034021	U–BOLT ASSEMBLY 5/8" ø X 2 7/16 C–C	5
			TOTAL WEIGHT LBS	5

NOTES:

1. IF THE MOUNT IS NOT ON THE STRAIGHT PORTION OF THE TOWER SEE SITE SPECIFIC PIPE MOUNT.
2. QUANTITIES SHOWN IN LIST OF MATERIALS ARE FOR ONE (1) SIDEARM ASSEMBLY ONLY.

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE
FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

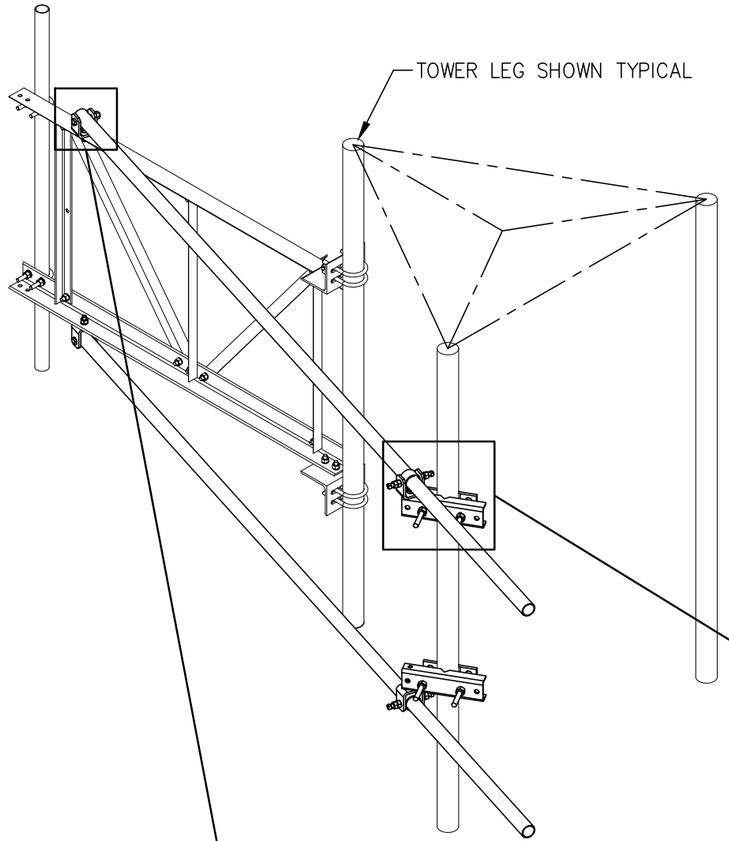
Sabre Industries™
INNOVATION DELIVERED

6 FT. SIDEARM: 340' ELEVATION (HEAVY DUTY)

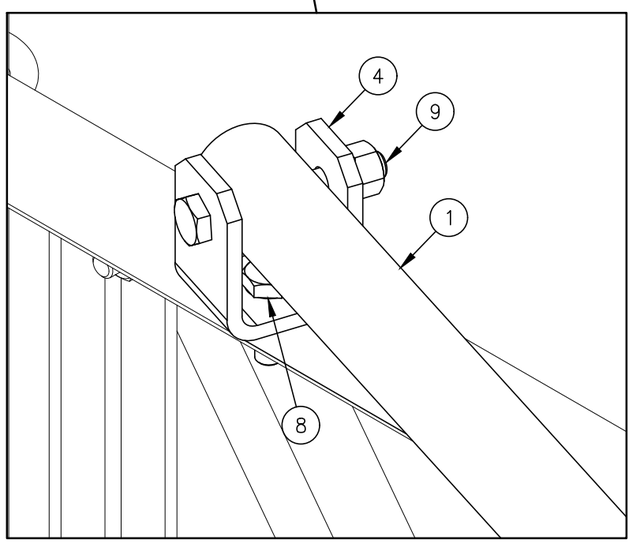
SITE: BAD CREEK (BDC), SC #(BDC)

CUSTOMER: DUKE ENERGY CORPORATION

JOB NO. 495518		SIZE	DRAWING NO.	REV
DATE	2/10/22	B	495518–SA2	0
DRAWN BY	DRL			
CHECKED BY	ZAK		SCALE NONE	PAGE 1 OF 1



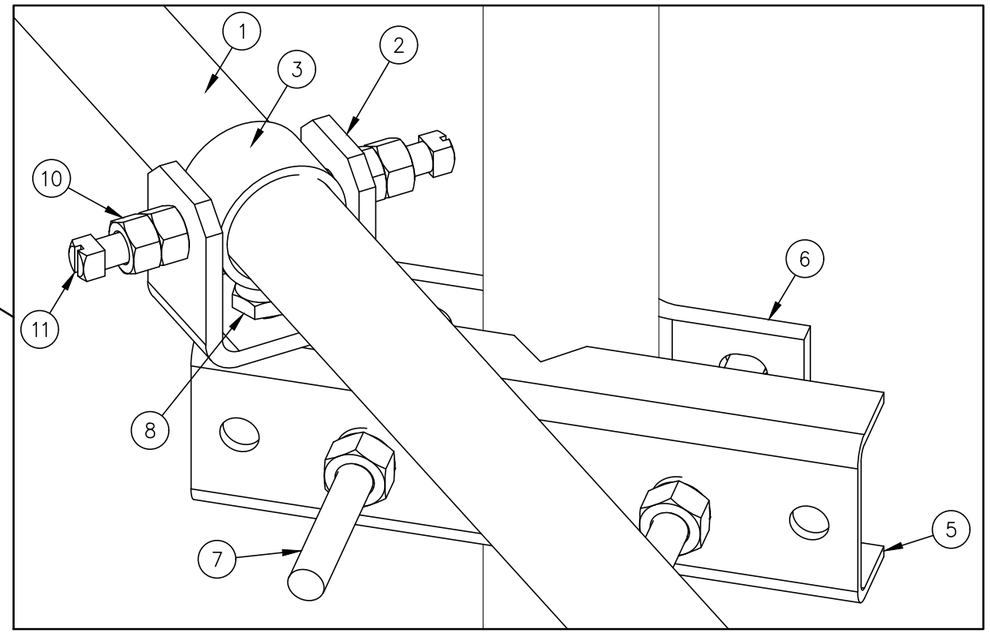
ISOMETRIC VIEW



C10179002 SWIVEL KNUCKLE TIEBACK

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	1	CS02089	TIEBACK 2 3/8 X .134 X 13'-3"	43
2	1	CW00013	SWIVEL PLATE WELDMENT	3
3	1	CS00097	PIPE, SLEEVE 2 7/8 O.D. X W/0.203 X 0'-1 3/4	1
4	1	CS00098	BENT SWIVEL PLATE	3
5	1	CS01360	PLATE, MOUNTING BRACKET (FORMED CHANNEL)	9
6	1	CS01361	PLATE, 2 HOLE ADAPTER CLAMP	3
7	2	C40140001	BOLT ASSEMBLY, 3/4 X 10 A307 W/NUT, LKW, FLW	4
8	2	C40026023	BOLT ASSEMBLY, 5/8 ø X 2 A325	1
9	1	C40026033	BOLT ASSEMBLY, 5/8 ø X 4 1/2 A325	1
10	2	C40042007	HEX NUT, 5/8 A194 GRADE 2H	1
11	2	C40998007	SQ. HEAD SET SCREW, 5/8 X 2 1/2	1
			TOTAL WEIGHT LBS	70

QUANTITIES SHOWN ABOVE ARE FOR (1) SWIVEL KNUCKLE TIEBACK KIT ONLY.
(2) KITS ARE REQUIRED FOR THIS SIDEARM ASSEMBLY



UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE
FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

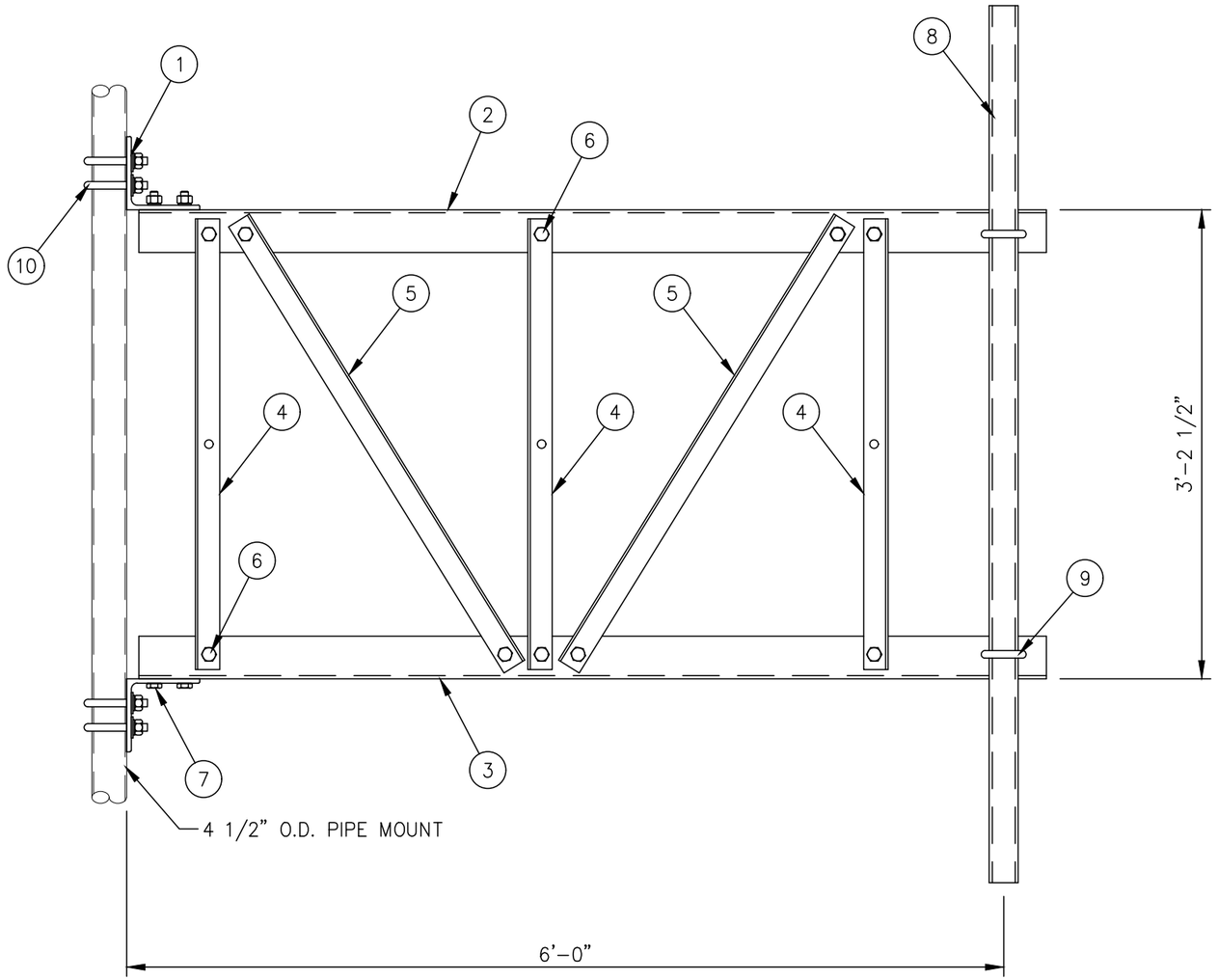
Sabre Industries™
INNOVATION DELIVERED

SWIVEL KNUCKLE TIEBACKS: 340' ELEVATION

SITE: BAD CREEK (BDC), SC #(BDC)

CUSTOMER: DUKE ENERGY CORPORATION

JOB NO. 495518		SIZE	DRAWING NO.	REV
DATE	2/10/22	B	495518-ST1	0
DRAWN BY	DRL			
CHECKED BY	ZAK		SCALE NONE	PAGE 1 OF 1



C10151106 6 FT. SIDEARM ASSEMBLY			
1	CK00061	SIDEARM ANGLE KIT	138
1	– – –	MISC HARDWARE (FRAMING)	6
1	C10900105	PIPE ANTENNA MOUNTING KIT 2 3/8" ø X 5'–0	19
4	C40034032	U–BOLT ASSEMBLY 5/8" ø X 5 3/16 C–C	9
		TOTAL WEIGHT LBS	172

CK00061 KIT LIST OF MATERIAL				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	2	CS00067	ANGLE, BOOM SUPPORT	23
2	1	CS01225	ANGLE, TOP CHORD	37
3	1	CS01226	ANGLE, BOTTOM CHORD	37
4	3	CS00065	ANGLE, VERTICAL	23
5	2	CS01228	ANGLE, DIAGONAL	18
			TOTAL WEIGHT LBS	138

MISC HARDWARE (FRAMING)				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
6	10	C40026022	BOLT ASSEMBLY, 5/8 ø X 1 3/4 A325	4
7	4	C40026023	BOLT ASSEMBLY, 5/8 ø X 2 A325	2
			TOTAL WEIGHT LBS	6

C10900105 ANTENNA PIPE MOUNTING KIT				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
8	1	C10981223	ANTENNA MTG. PIPE 2 3/8" ø X 5'–0	16
9	2	C40034023	U–BOLT ASSEMBLY 5/8" ø X 3 1/16 C–C	3
			TOTAL WEIGHT LBS	19

MISC HARDWARE				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
10	4	C40034032	U–BOLT ASSEMBLY 5/8" ø X 5 3/16 C–C	9
			TOTAL WEIGHT LBS	9

NOTES:

1. IF THE MOUNT IS NOT ON THE STRAIGHT PORTION OF THE TOWER SEE SITE SPECIFIC PIPE MOUNT.
2. QUANTITIES SHOWN IN LIST OF MATERIALS ARE FOR ONE (1) SIDEARM ASSEMBLY ONLY.

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

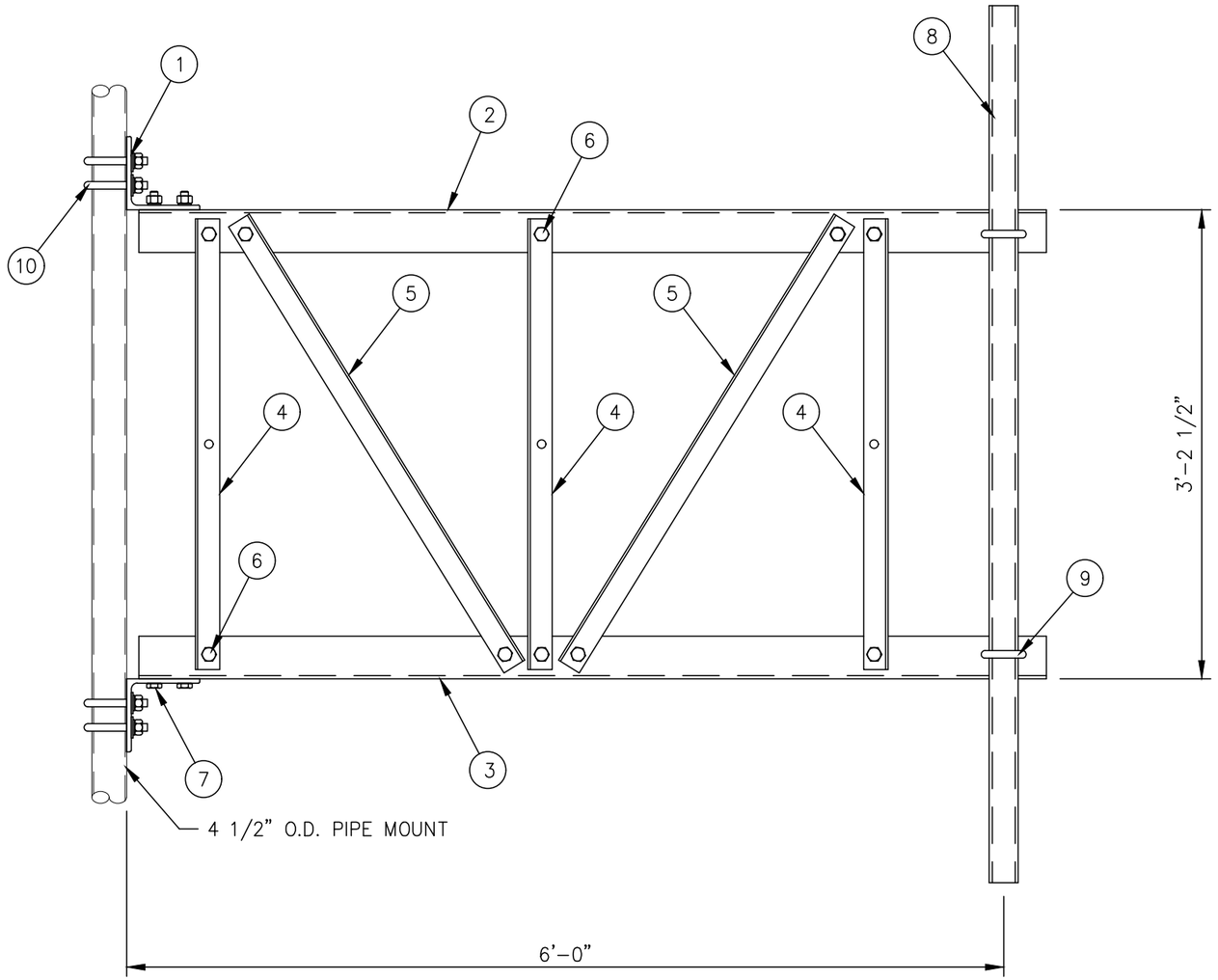
Sabre Industries™ INNOVATION DELIVERED

6 FT. SIDEARMS: 310' ELEVATION

SITE: BAD CREEK (BDC), SC #(BDC)

CUSTOMER: DUKE ENERGY CORPORATION

JOB NO. 495518		SIZE	DRAWING NO.	REV
DATE	2/10/22	B	495518–SA3	0
DRAWN BY	DRL		SCALE NONE	PAGE 1 OF 1
CHECKED BY	ZAK			



C10151106 6 FT. SIDEARM ASSEMBLY			
1	CK00061	SIDEARM ANGLE KIT	138
1	– – –	MISC HARDWARE (FRAMING)	6
1	C10900405	PIPE ANTENNA MOUNTING KIT 4" ø X 5'–0	51
4	C40034032	U–BOLT ASSEMBLY 5/8" ø X 5 3/16 C–C	9
		TOTAL WEIGHT LBS	204

CK00061 KIT LIST OF MATERIAL				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	2	CS00067	ANGLE, BOOM SUPPORT	23
2	1	CS01225	ANGLE, TOP CHORD	37
3	1	CS01226	ANGLE, BOTTOM CHORD	37
4	3	CS00065	ANGLE, VERTICAL	23
5	2	CS01228	ANGLE, DIAGONAL	18
			TOTAL WEIGHT LBS	138

MISC HARDWARE (FRAMING)				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
6	10	C40026022	BOLT ASSEMBLY, 5/8 ø X 1 3/4 A325	4
7	4	C40026023	BOLT ASSEMBLY, 5/8 ø X 2 A325	2
			TOTAL WEIGHT LBS	6

C10900405 ANTENNA PIPE MOUNTING KIT				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
8	1	C10901105	ANTENNA MTG. PIPE 4" ø X 5'–0"	47
9	2	C40034030	U–BOLT ASSEMBLY 5/8" ø X 4 11/16 C–C	4
			TOTAL WEIGHT LBS	51

MISC HARDWARE (TOWER LEG)				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
10	4	C40034032	U–BOLT ASSEMBLY 5/8" ø X 5 3/16 C–C	9
			TOTAL WEIGHT LBS	9

NOTES:

1. IF THE MOUNT IS NOT ON THE STRAIGHT PORTION OF THE TOWER SEE SITE SPECIFIC PIPE MOUNT.
2. QUANTITIES SHOWN IN LIST OF MATERIALS ARE FOR ONE (1) SIDEARM ASSEMBLY ONLY.

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™ INNOVATION DELIVERED

6 FT. SIDEARM: 310' ELEVATION (HEAVY DUTY)

SITE: BAD CREEK (BDC), SC #(BDC)

CUSTOMER: DUKE ENERGY CORPORATION

JOB NO. 495518		SIZE	DRAWING NO.	REV
DATE	2/10/22	B	495518–SA4	0
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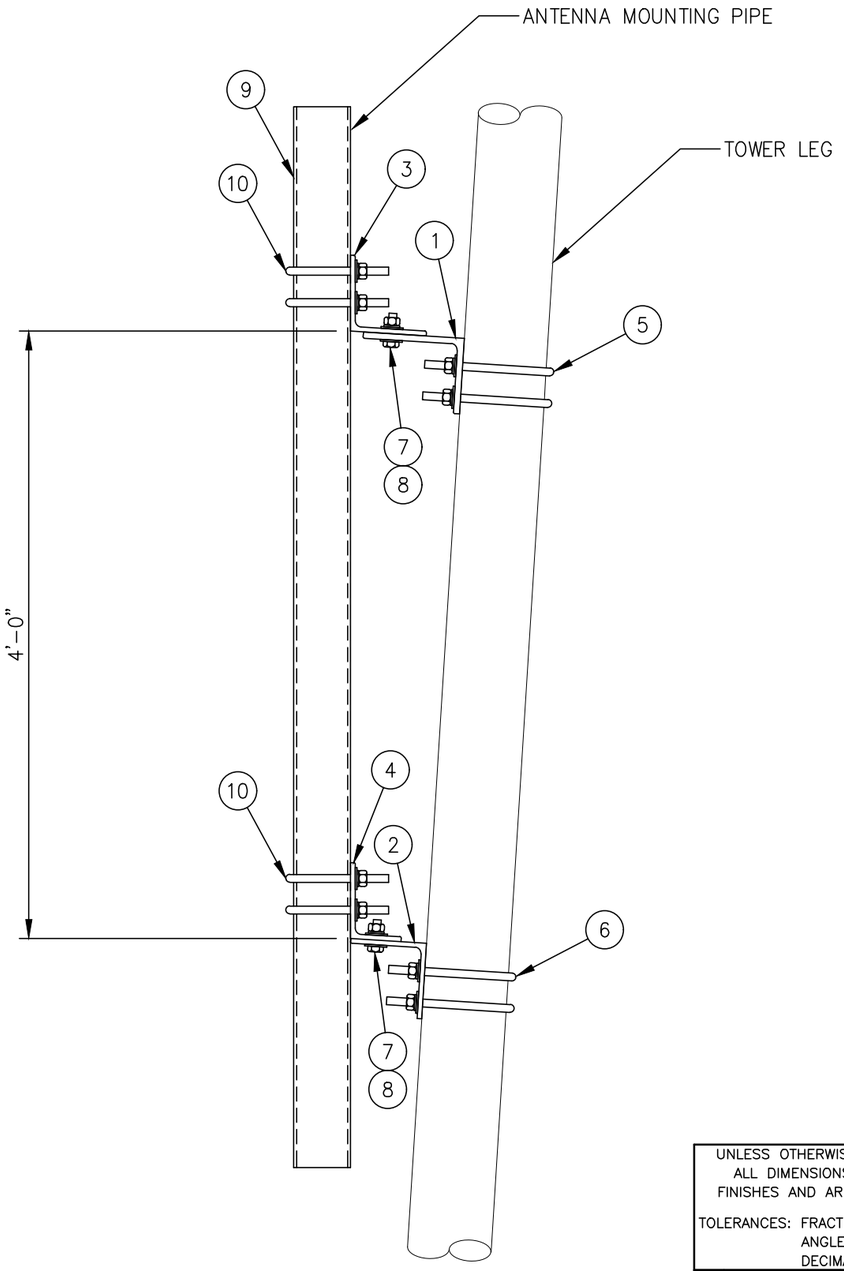
CHECKED BY	ZAK		SCALE NONE	PAGE 1 OF 1



ELEVATION VIEW

LIST OF MATERIALS FOR TAPERED LEG PIPE MOUNT KIT C10174009

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1.	1	CS00216	TOP LEG MOUNT FOR 2 1/4"ø LEG	15
2.	1	CS00215	BOTTOM LEG MOUNT FOR 2 1/4"ø LEG	12
3.	1	CS00214	TOP PIPE MOUNT FOR 4 1/2"ø PIPE	15
4.	1	CS00215	BOTTOM PIPE MOUNT FOR 4 1/2"ø PIPE	12
5.	2	C40034023	U-BOLT ASSEMBLY 5/8" ø X 3 1/16 C-C (TOP LEG MOUNT)	3
6.	2	C40034023	U-BOLT ASSEMBLY 5/8" ø X 3 1/16 C-C (BOTTOM LEG MOUNT)	3
7.	4	C40026024	BOLT ASSEMBLY, 5/8"ø X 2 1/4" A325	2
8.	8	C40031003	FLATWASHER, 5/8"ø (F436)	1
			KIT WEIGHT LBS	63

LIST OF ADDITIONAL MATERIALS

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
9.	1	C10981407	ANTENNA MTG. PIPE 4 1/2" X 7'-0"	58
10.	4	C40034032	U-BOLT ASSEMBLY 5/8" ø X 5 3/16 C-C (PIPE MOUNTS)	9
			ADDITIONAL WEIGHT LBS	67

TOTAL WEIGHT LBS	130

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES
TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

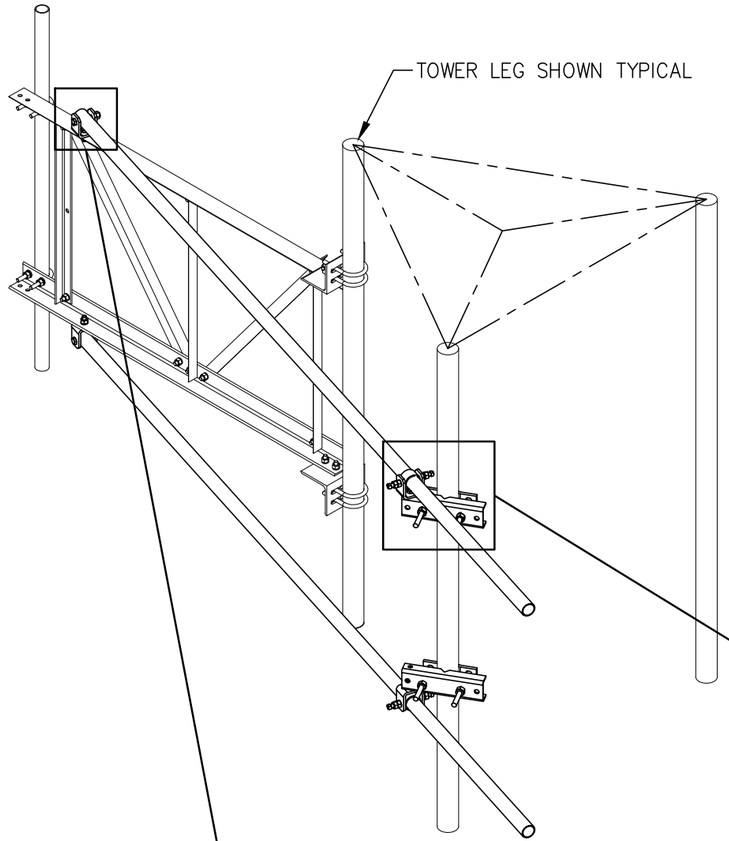
MATERIAL:
TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

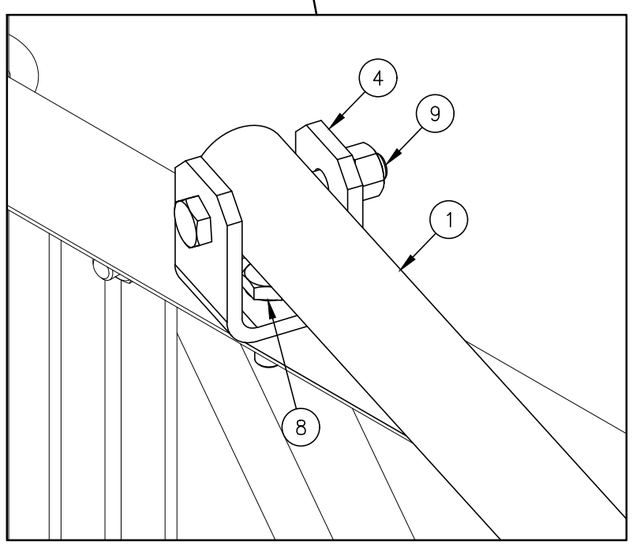
Sabre Industries™
INNOVATION DELIVERED

PIPE MOUNTS FOR SIDEARMS: 310' ELEVATION
SITE: BAD CREEK (BDC), SC #(BDC)
CUSTOMER: DUKE ENERGY CORPORATION

JOB NO. 495518		SIZE	DRAWING NO.	REV
DATE	2/10/22	B	495518-PM1	0
DRAWN BY	DRL			
CHECKED BY	ZAK		SCALE NONE	PAGE 1 OF 1



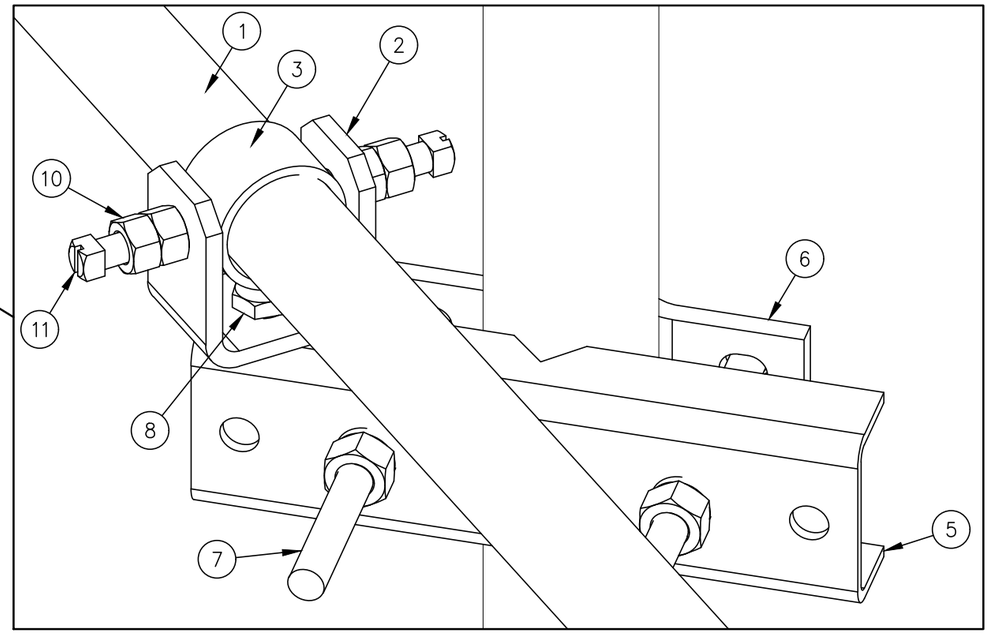
ISOMETRIC VIEW



C10179002 SWIVEL KNUCKLE TIEBACK

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	1	CS02089	TIEBACK 2 3/8 X .134 X 13'-3"	43
2	1	CW00013	SWIVEL PLATE WELDMENT	3
3	1	CS00097	PIPE, SLEEVE 2 7/8 O.D. X W/0.203 X 0'-1 3/4	1
4	1	CS00098	BENT SWIVEL PLATE	3
5	1	CS01360	PLATE, MOUNTING BRACKET (FORMED CHANNEL)	9
6	1	CS01361	PLATE, 2 HOLE ADAPTER CLAMP	3
7	2	C40140001	BOLT ASSEMBLY, 3/4 X 10 A307 W/NUT, LKW, FLW	4
8	2	C40026023	BOLT ASSEMBLY, 5/8 ø X 2 A325	1
9	1	C40026033	BOLT ASSEMBLY, 5/8 ø X 4 1/2 A325	1
10	2	C40042007	HEX NUT, 5/8 A194 GRADE 2H	1
11	2	C40998007	SQ. HEAD SET SCREW, 5/8 X 2 1/2	1
			TOTAL WEIGHT LBS	70

QUANTITIES SHOWN ABOVE ARE FOR (1) SWIVEL KNUCKLE TIEBACK KIT ONLY.
(2) KITS ARE REQUIRED FOR THIS SIDEARM ASSEMBLY



UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE
FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

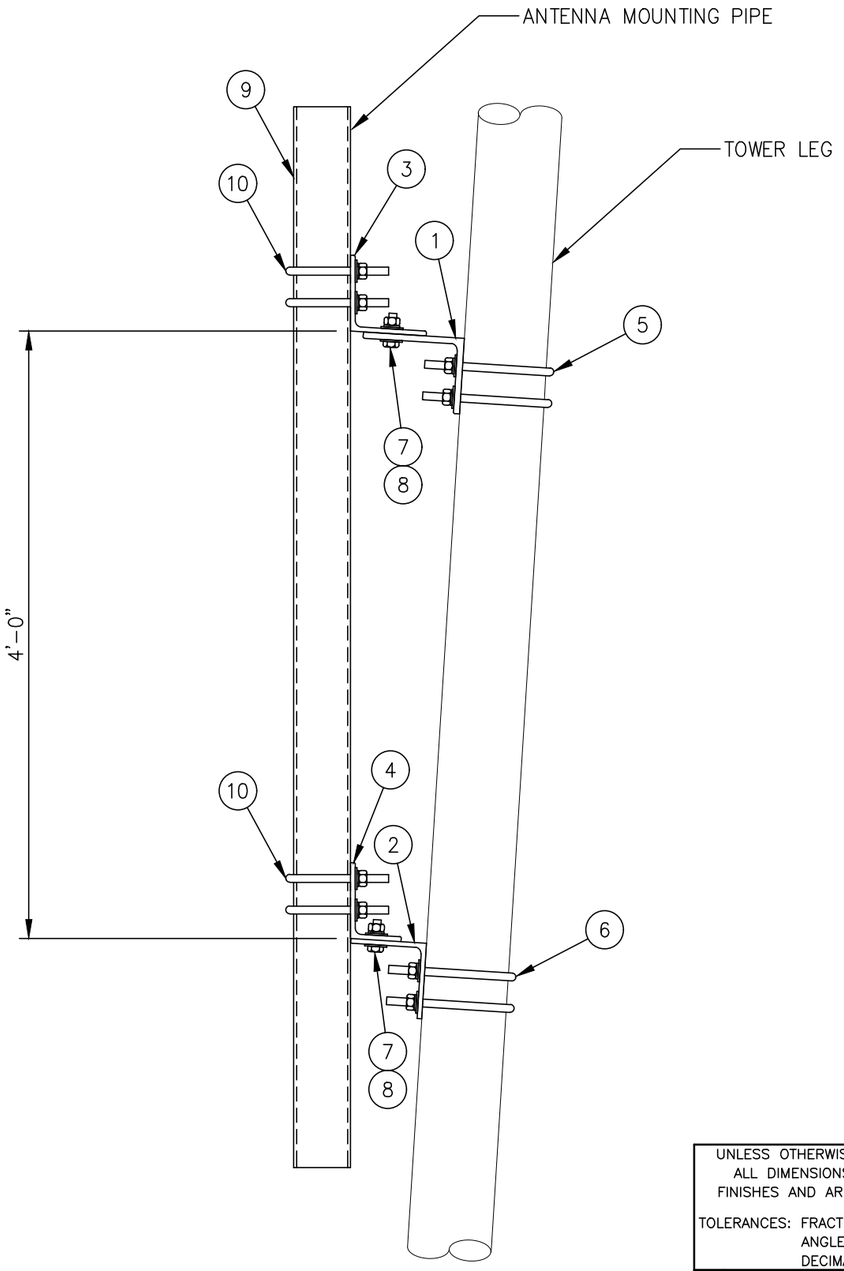
Sabre Industries™
INNOVATION DELIVERED

SWIVEL KNUCKLE TIEBACKS: 310' ELEVATION

SITE: BAD CREEK (BDC), SC #(BDC)

CUSTOMER: DUKE ENERGY CORPORATION

JOB NO. 495518		SIZE	DRAWING NO.	REV
DATE	2/10/22	B	495518-ST2	0
DRAWN BY	DRL			
CHECKED BY	ZAK		SCALE NONE	PAGE 1 OF 1



ELEVATION VIEW

LIST OF MATERIALS FOR TAPERED LEG PIPE MOUNT KIT C10174036

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1.	1	CS00216	TOP LEG MOUNT FOR 4"ø LEG	15
2.	1	CS00215	BOTTOM LEG MOUNT FOR 4"ø LEG	12
3.	1	CS00214	TOP PIPE MOUNT FOR 4 1/2"ø PIPE	15
4.	1	CS00215	BOTTOM PIPE MOUNT FOR 4 1/2"ø PIPE	12
5.	2	C40034030	U-BOLT ASSEMBLY 5/8" ø X 4 11/16 C-C (TOP LEG MOUNT)	4
6.	2	C40034030	U-BOLT ASSEMBLY 5/8" ø X 4 11/16 C-C (BOTTOM LEG MOUNT)	4
7.	4	C40026024	BOLT ASSEMBLY, 5/8"ø X 2 1/4" A325	2
8.	8	C40031003	FLATWASHER, 5/8"ø (F436)	1
			KIT WEIGHT LBS	65

LIST OF ADDITIONAL MATERIALS

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
9.	1	C10981407	ANTENNA MTG. PIPE 4 1/2" X 7'-0"	58
10.	4	C40034032	U-BOLT ASSEMBLY 5/8" ø X 5 3/16 C-C (PIPE MOUNTS)	9
			ADDITIONAL WEIGHT LBS	67

TOTAL WEIGHT LBS	132

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES
TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

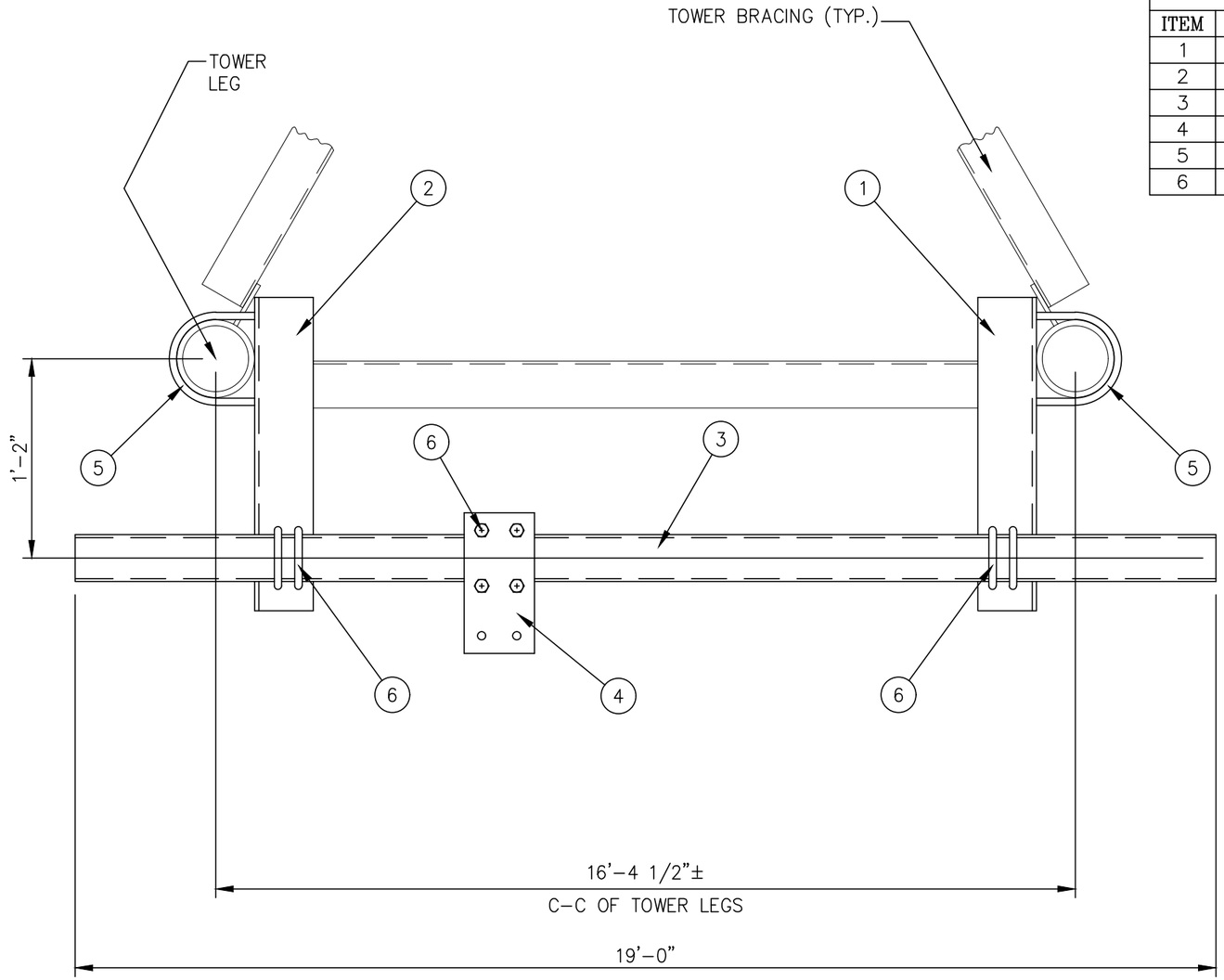
MATERIAL:
TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

PIPE MOUNT: 190' ELEVATION
SITE: BAD CREEK (BDC), SC #(BDC)
CUSTOMER: DUKE ENERGY CORPORATION

JOB NO. 495518		SIZE	DRAWING NO.	REV
DATE	2/10/22	B	495518-PM2	0
DRAWN BY	DRL			
CHECKED BY	ZAK		SCALE NONE	PAGE 1 OF 1



PLAN VIEW

C10105102 STIFFARM MOUNT FOR PIPE MOUNT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	1	CS00680	ANGLE, STIFFARM MOUNT, 1 1/4" ø THRU 5" ø LEG	24
2	1	CS00681	ANGLE, STIFFARM MOUNT, 1 1/4" ø THRU 5" ø LEG	24
3	1	CS00519	TUBE, STIFFARM 4 X 4 X 1/4 X 19'-0"	241
4	1	CS00502	PLATE, STIFFARM	8
5	4	C40034030	U-BOLT ASSEMBLY 5/8" ø X 4 11/16 C-C	8
6	6	C40035004	U-BOLT ASSEMBLY 5/8" ø X 4 3/4 C-C	12
			TOTAL WEIGHT LBS	317

NOTE: DISH MOUNT TIEBACK MAY BE MOUNTED ON THE INSIDE OF THE TOWER.

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

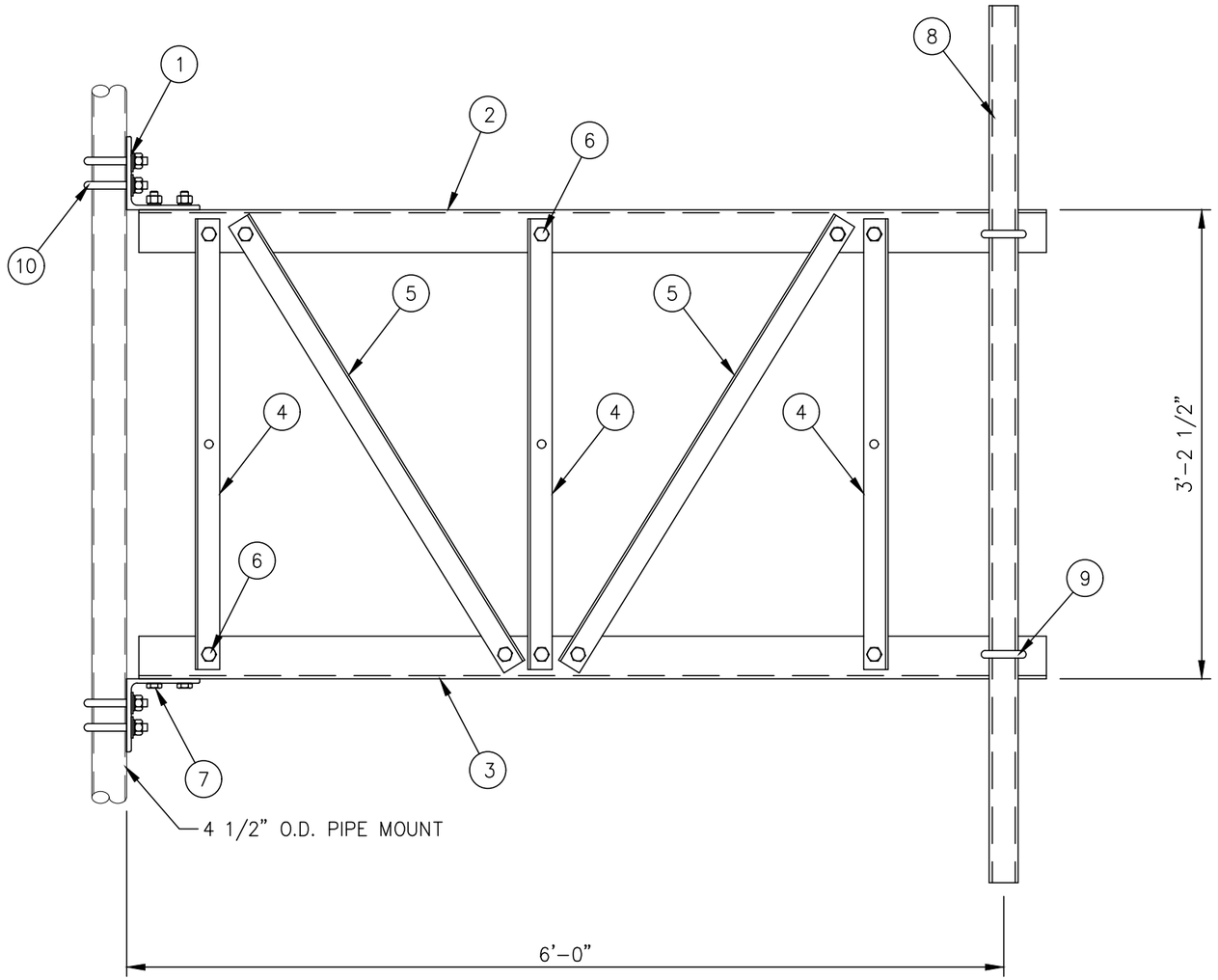
Sabre Industries™ INNOVATION DELIVERED

STIFFARM MOUNTS: 190' ELEVATION

SITE: BAD CREEK (BDC), SC #(BDC)

CUSTOMER: DUKE ENERGY CORPORATION

JOB NO. 495518		SIZE	DRAWING NO.	REV
DATE	2/10/22	B	495518-DT1	0
DRAWN BY	DRL			
CHECKED BY	ZAK		SCALE NONE	PAGE 1 OF 1



C10151106 6 FT. SIDEARM ASSEMBLY			
1	CK00061	SIDEARM ANGLE KIT	138
1	– – –	MISC HARDWARE (FRAMING)	6
1	C10900105	PIPE ANTENNA MOUNTING KIT 2 3/8" ø X 5'–0	19
4	C40034032	U–BOLT ASSEMBLY 5/8" ø X 5 3/16 C–C	9
		TOTAL WEIGHT LBS	172

CK00061 KIT LIST OF MATERIAL				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	2	CS00067	ANGLE, BOOM SUPPORT	23
2	1	CS01225	ANGLE, TOP CHORD	37
3	1	CS01226	ANGLE, BOTTOM CHORD	37
4	3	CS00065	ANGLE, VERTICAL	23
5	2	CS01228	ANGLE, DIAGONAL	18
			TOTAL WEIGHT LBS	138

MISC HARDWARE (FRAMING)				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
6	10	C40026022	BOLT ASSEMBLY, 5/8 ø X 1 3/4 A325	4
7	4	C40026023	BOLT ASSEMBLY, 5/8 ø X 2 A325	2
			TOTAL WEIGHT LBS	6

C10900105 ANTENNA PIPE MOUNTING KIT				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
8	1	C10981223	ANTENNA MTG. PIPE 2 3/8" ø X 5'–0	16
9	2	C40034023	U–BOLT ASSEMBLY 5/8" ø X 3 1/16 C–C	3
			TOTAL WEIGHT LBS	19

MISC HARDWARE				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
10	4	C40034032	U–BOLT ASSEMBLY 5/8" ø X 5 3/16 C–C	9
			TOTAL WEIGHT LBS	9

NOTES:

1. IF THE MOUNT IS NOT ON THE STRAIGHT PORTION OF THE TOWER SEE SITE SPECIFIC PIPE MOUNT.
2. QUANTITIES SHOWN IN LIST OF MATERIALS ARE FOR ONE (1) SIDEARM ASSEMBLY ONLY.

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

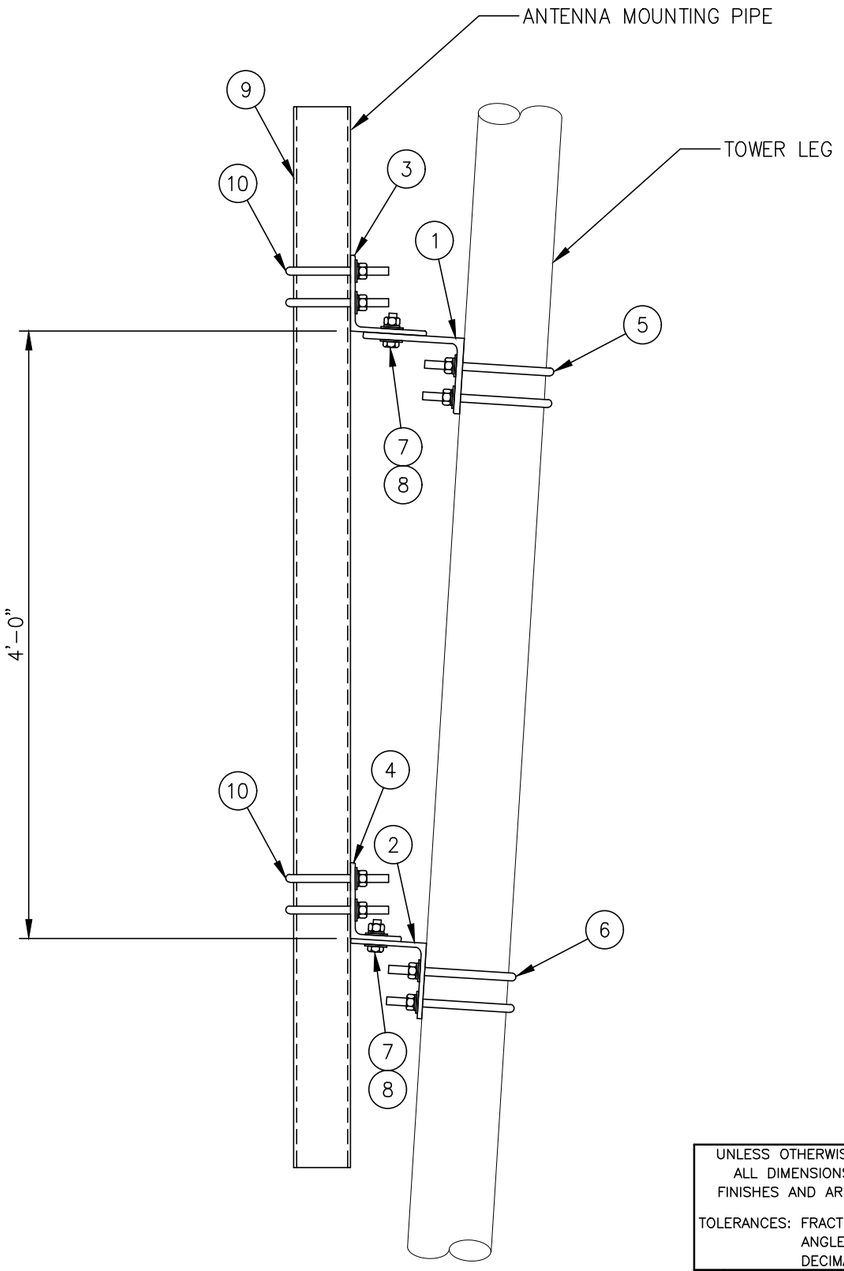
Sabre Industries™ INNOVATION DELIVERED

6 FT. SIDEARM: 150' ELEVATION

SITE: BAD CREEK (BDC), SC #(BDC)

CUSTOMER: DUKE ENERGY CORPORATION

JOB NO. 495518		SIZE	DRAWING NO.	REV
DATE	2/10/22	B	495518–SA5	0
DRAWN BY	DRL		SCALE NONE	PAGE 1 OF 1
CHECKED BY	ZAK			



ELEVATION VIEW

LIST OF MATERIALS FOR TAPERED LEG PIPE MOUNT KIT C10174044

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1.	1	CS00216	TOP LEG MOUNT FOR 4 1/2"ø LEG	15
2.	1	CS00215	BOTTOM LEG MOUNT FOR 4 1/2"ø LEG	12
3.	1	CS00214	TOP PIPE MOUNT FOR 4 1/2"ø PIPE	15
4.	1	CS00215	BOTTOM PIPE MOUNT FOR 4 1/2"ø PIPE	12
5.	2	C40034032	U-BOLT ASSEMBLY 5/8" ø X 5 3/16 C-C (TOP LEG MOUNT)	4
6.	2	C40034032	U-BOLT ASSEMBLY 5/8" ø X 5 3/16 C-C (BOTTOM LEG MOUNT)	4
7.	4	C40026024	BOLT ASSEMBLY, 5/8"ø X 2 1/4" A325	2
8.	8	C40031003	FLATWASHER, 5/8"ø (F436)	1
			KIT WEIGHT LBS	65

LIST OF ADDITIONAL MATERIALS

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
9.	1	C10981407	ANTENNA MTG. PIPE 4 1/2" X 7'-0"	58
10.	4	C40034032	U-BOLT ASSEMBLY 5/8" ø X 5 3/16 C-C (PIPE MOUNTS)	9
			ADDITIONAL WEIGHT LBS	67

TOTAL WEIGHT LBS	132

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES
TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

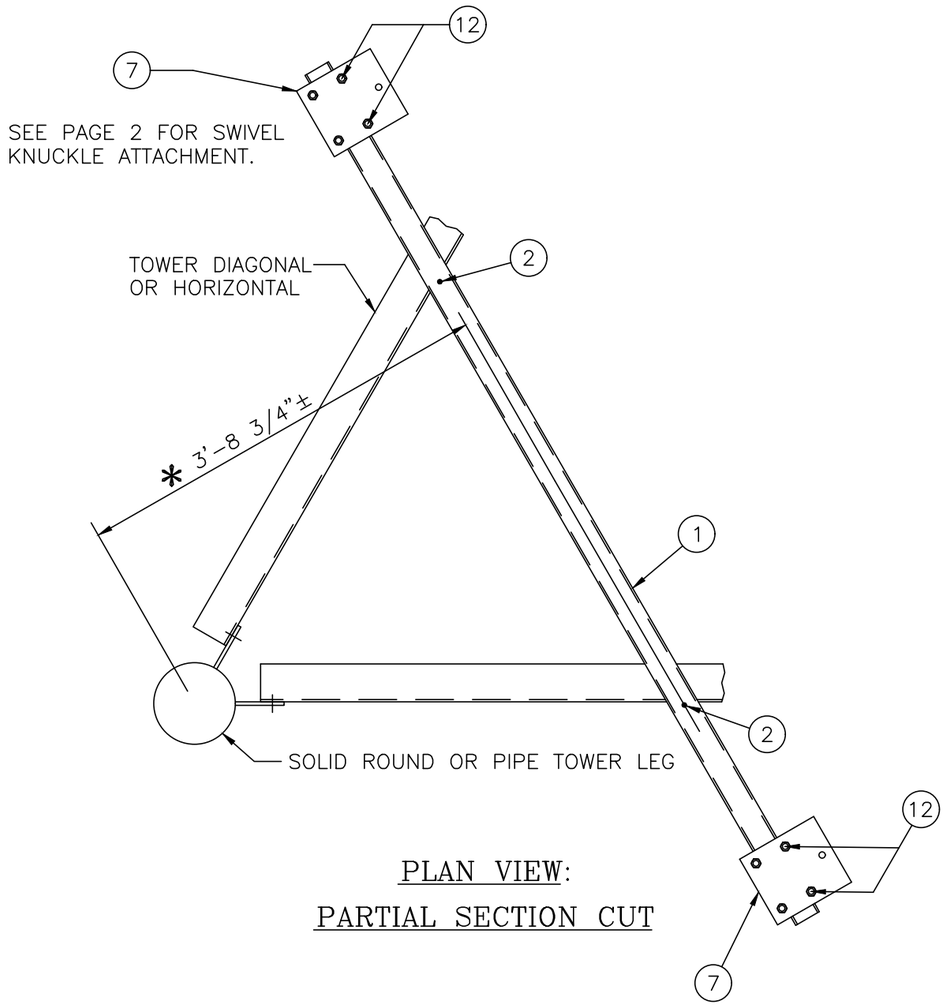
Sabre Industries™
INNOVATION DELIVERED

PIPE MOUNT FOR SIDEARM: 150' ELEVATION

SITE: BAD CREEK (BDC), SC #(BDC)

CUSTOMER: DUKE ENERGY CORPORATION

JOB NO. 495518		SIZE	DRAWING NO.	REV
DATE	2/10/22	B	495518-PM3	0
DRAWN BY	DRL			
CHECKED BY	ZAK		SCALE NONE	PAGE 1 OF 1



PLAN VIEW:
PARTIAL SECTION CUT

LIST OF MATERIAL				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT
1.	1	CS01227	PIPE, STIFFARM TIEBACK (2 7/8 O.D.)	51.2#
2.	2	* * *	J-BOLT ASSEMBLY, 3/8 ø	
3.	2	CS02089	PIPE, 2 3/8" O.D. X 0.154 X 13'-3	42.8#
4.	2	CW00013	SWIVEL PLATE WELDMENT	2.9#
5.	2	CS00097	PIPE, 2 7/8" O.D. X 0.203 X 0'-1 3/4	0.9#
6.	2	CS00098	BENT SWIVEL PLATE	2.7#
7.	2	CS01230	PLATE, TIE-BACK (2 7/8" O.D.)	8.0#
8.	4	C40026023	BOLT ASSEMBLY, 5/8 X 2 A325	0.9#
9.	2	C40026033	BOLT ASSEMBLY, 5/8 ø X 4 1/2 A325	0.8#
10.	4	C40042007	HEX NUT, 5/8 A194 2H	0.2#
11.	4	C40998007	SQ. HEAD SET SCREW, 5/8 X 2 1/2	0.7#
12.	4	C40034025	U-BOLT ASSEMBLY 5/8 ø X 3 9/16 C-C	3.5#

* * * J-BOLT SIZE CHART * * *	
PART NO.	DESCRIPTION
C40039001	J-BOLT, 3/8" (1 1/2" - 2 1/2" ANGLES)
C40039002	J-BOLT, 3/8" (3" - 4" ANGLES)
C40039003	J-BOLT, 3/8" (5" - 6" ANGLES)

* NOTE:
THE DIMENSION SHOWN IS FOR A 3-LEG TOWER. FOR A 4-LEG TOWER, THIS DIMENSION IS 2'-1 7/8" ±.

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"

MATERIAL:

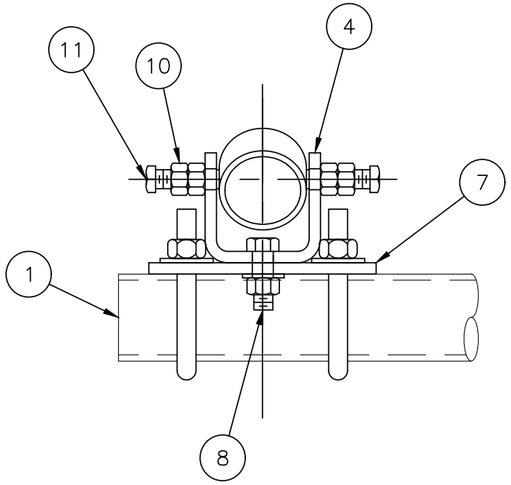
TOLERANCES DO NOT APPLY TO RAW MATERIAL

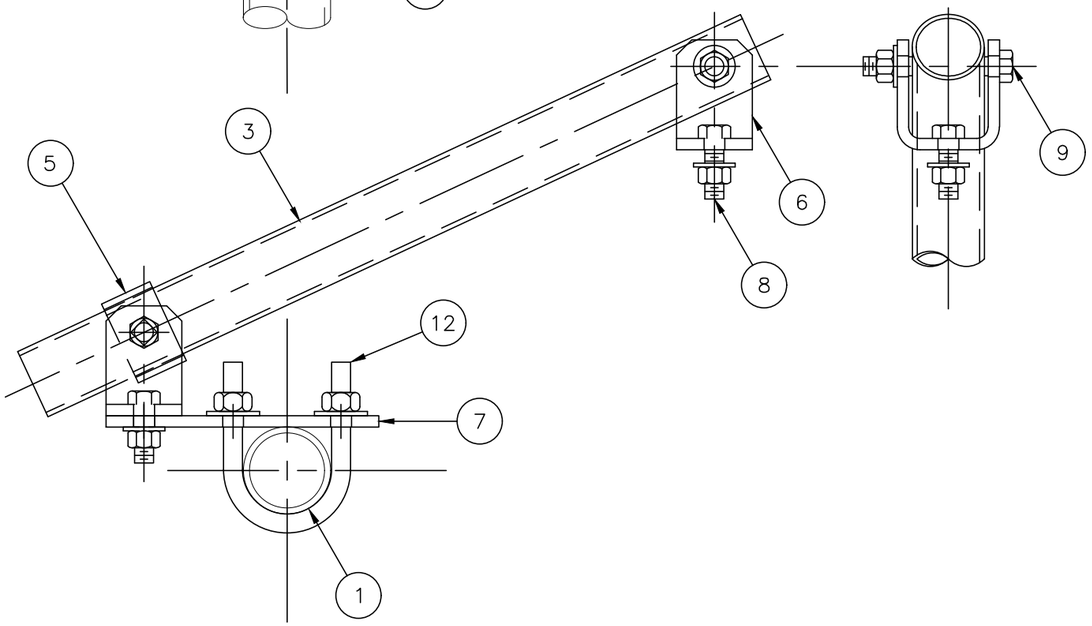
REV	DATE	DRW	CHK	DESCRIPTION

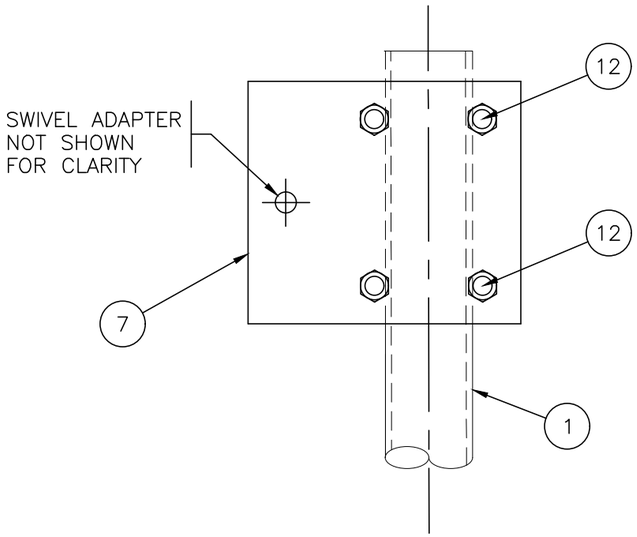
Sabre Industries™ INNOVATION DELIVERED

STIFFARM ATTACHMENT ASSEMBLY W/(2) SWIVEL KNUCKLE TIEBACKS (2 3/8 O.D. PIPE X 13'-3")

		SIZE	DRAWING NO.	REV
DATE	10/26/09	B	9030707	0
DRAWN BY	DLK			
CHECKED BY	ZAK	SCALE None	PAGE 1 OF 2	







UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE
FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY
TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

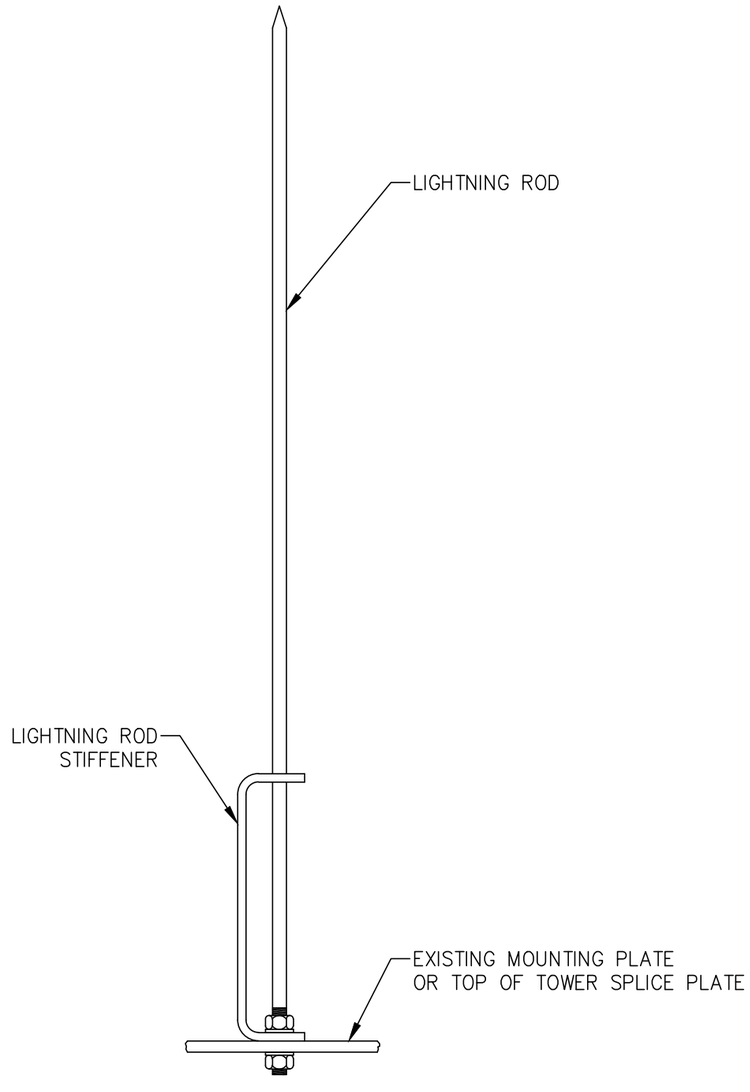
CONFIDENTIAL

STIFFARM ATTACHMENT ASSEMBLY W/(2) SWIVEL KNUCKLE TIEBACKS (2 3/8 O.D. PIPE X 13'-3")

DATE	10/26/09
DRAWN BY	DLK
CHECKED BY	ZAK

SIZE	DRAWING NO.	REV
B	9030707	0

SCALE	PAGE
None	2 OF 2



ELEVATION

LIGHTNING ROD/STIFFENER KITS				
KIT NUMBER	LIGHTNING ROD	LIGHTNING ROD DIMENSIONS	STIFFENER	KIT WEIGHT LBS.
C30986010	C30086010	5/8" x 2'-0"	CS00675	8
C30986011	C30086011	5/8" x 3'-0"	CS00675	10
C30986001	C30086001	5/8" x 4'-0"	CS00675	10
C30986008	C30086008*	5/8" x 4'-0"	CS00675	10
C30986005	C30086005	5/8" x 5'-0"	CS00675	11
C30986006	C30086006	5/8" x 6'-0"	CS00675	11
C30986017	C30086017**	5/8" x 6'-0"	CS00675	12
C30986028	C30086028*	5/8" x 6'-0"	CS00675	12
C30986002	C30086002	5/8" x 8'-0"	CS00675	13
C30986027	C30086027*	5/8" x 8'-0"	CS00675	14
C30986016	C30086016	5/8" x 10'-0"	CS00675	16
C30986007	C30086007	3/4" x 6'-0"	CS00676	12
C30986003	C30086003	3/4" x 8'-0"	CS00676	19
C30986030	C30086030*	3/4" x 8'-0"	CS00676	18
C30986004	C30086004	3/4" x 10'-0"	CS00676	22

* THIS LIGHTNING ROD IS STAINLESS STEEL.
** THIS LIGHTNING ROD IS GALVANIZED.

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE
FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION
7	07/09/21	PSB	KTW	ADDED 3/4" X 8' STAINLESS STEEL LIGHTNING ROD
6	12/5/17	DRL	ZAK	ADDED 5/8" X 6' STAINLESS STEEL LIGHTNING ROD
5	1/20/16	DLK	KD	ADDED 5/8" X 8' STAINLESS STEEL LIGHTNING ROD
4	12/21/15	RWM	MWR	REMOVED 5/8" X 12' L/R C30986009, 3/4" X 13' L/R C30986012 AND 3/4" X 15' L/R C30986013.
3	12/9/15	RWM	MWR	REMOVED 3/4" X 20' L/R C30986014.
2	6/15/07	DLK	PSB	ADDED 5/8" X 6' GALVANIZED LIGHTNING ROD
1	12/06/06	KTW	PSB	ADDED 5/8" X 10' LIGHTNING ROD TO LIST.

Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL

LIGHTNING ROD/STIFFENER KITS

DATE	7/11/06
DRAWN BY	DLK
CHECKED BY	RWM

SIZE	DRAWING NO.	REV
B	C30986	7

SCALE	PAGE
None	1 OF 1

BOLT INSTALLATION DETAILS:

1. INSTALLATION OF BOLTS: BOLTS FOR TOWERS AND ANTENNAS SHALL BE INSTALLED WITH THE NUTS FACING TO THE OUTSIDE AND/OR TO THE TOP OF THE TOWER, UNLESS PROHIBITED BY LACK OF CLEARANCE.

2. TIGHTENING OF BOLTS: ALL HIGH STRENGTH BOLTS SHALL BE TIGHTENED TO A SNUG-TIGHT CONDITION, AS DEFINED BY AISC.

3. NUT LOCKING DEVICE: ALL NUTS SHALL BE EQUIPPED WITH SOME TYPE OF NUT LOCKING DEVICE. SEE THE INDIVIDUAL DRAWINGS FOR THE TYPE OF NUT LOCKING DEVICE TO BE USED FOR EACH INDIVIDUAL APPLICATION.

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE
FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION
3	02/15/08	KLE	DLW	REVISED PER KEITH TINDALL
2	03/04/04	PSB	ZAK	REDRAWN ONTO 'B' SIZE TITLEBLOCK.
1	03/06/01	JKW	PSB	REDRAWN IN AUTOCAD 2000i.

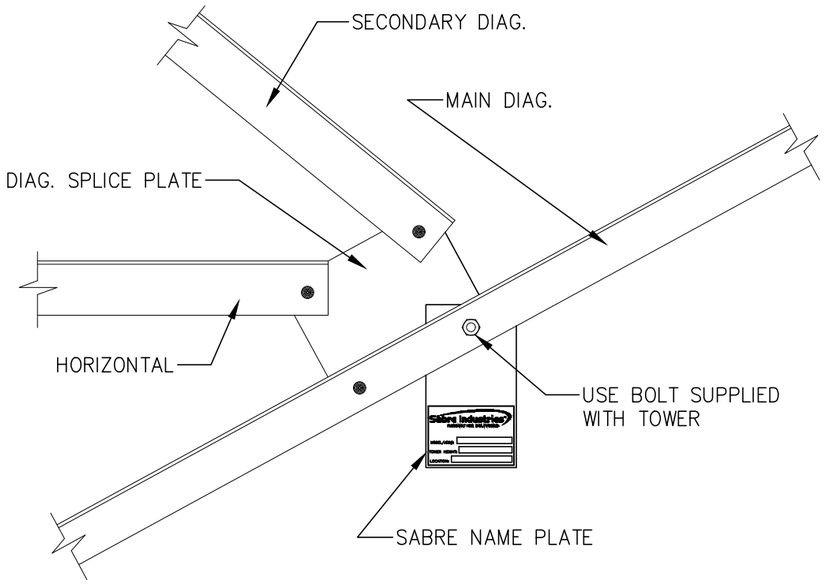
Sabre Industries™
INNOVATION DELIVERED

BOLT INSTALLATION DETAILS

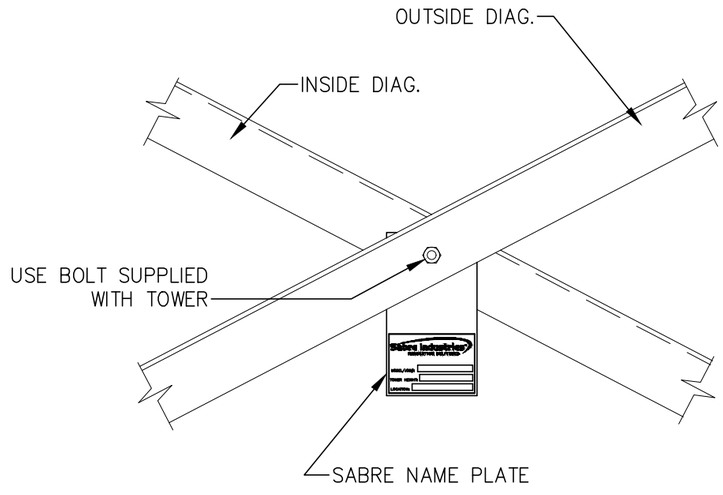
DATE	01/28/00
DRAWN BY	MJM
CHECKED BY	KJT/DLW

SIZE	DRAWING NO.	REV
B	9014671	3

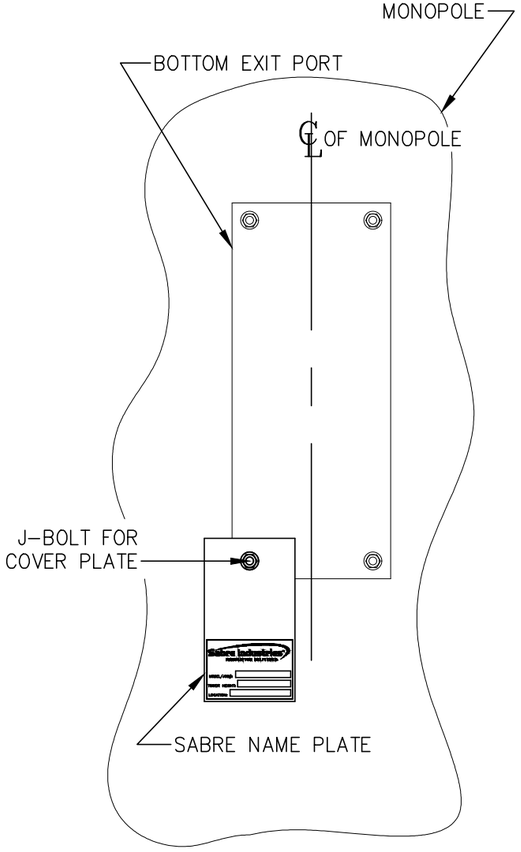
SCALE	PAGE
None	1 OF 1



TYPICAL FOR MODEL S3TL, S4TL, S3R & S4R
SELF-SUPPORTING TOWER
(K-BRACE)

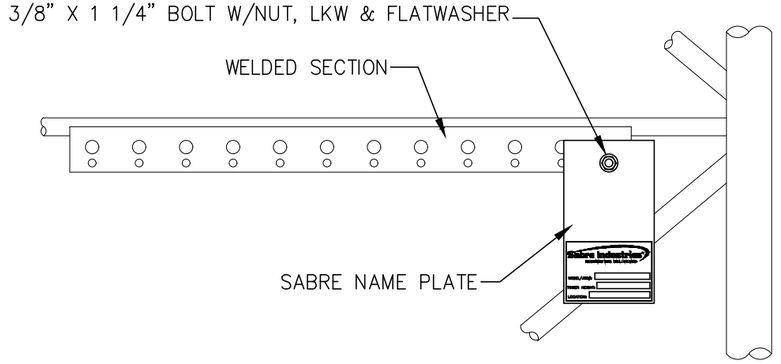


TYPICAL FOR MODEL S3TL, S4TL, S3R & S4R
SELF-SUPPORTING TOWER
(X-BRACE)

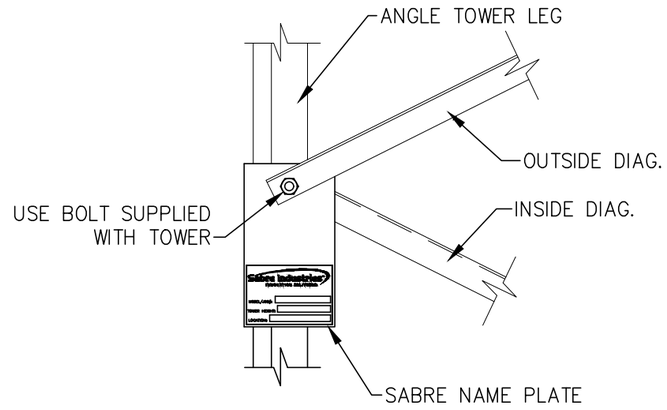


TYPICAL FOR MONOPOLE
STRUCTURE

NOTE:
NAME PLATE SHOULD BE MOUNTED AT
APPROXIMATELY EYE LEVEL WHEN POSSIBLE.



TYPICAL FOR MODEL 2400 / 3600 / 4400 / 4800 / 6000
WELDED GUYED TOWER



TYPICAL FOR MODEL 3000 / 3600 / 4800
ANGLE GUYED TOWER

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE
FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY
TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION
7	05/25/21	FJM	DLW	UPDATED SABRE NAME PLATE LOGO
6	8/18/11	DSN	KTW	ADDED 4800 & 6000 WELDED GUYED TOWER.
5	3/30/04	MJM	ZAK	ADDED S4TL & S4R TO S.S. TOWER.
4	11/11/02	PSB	RGF	ADDED 2400 WELDED GUYED TOWER.
3	08/23/01	SMC	PSB	REVISED BOLT ON GUYED TOWER WAS 3/8 X 1"
				REVISED MONOPOLE INSTALLATION.
2	02/16/01	DEM	RGF	REDRAWN IN AUTOCAD 2000i
1	04/16/97	DEM	RGF	REDRAWN WITH NEW TITLE BLOCK

Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL

OPTIONAL MOUNTING INSTALLATION
SABRE NAME PLATE

DATE	10/15/96
DRAWN BY	DEM
CHECKED BY	RGF

SIZE	DRAWING NO.	REV
B	906956	7

SCALE	PAGE
None	1 OF 1

NOTICE

ALL PARTS ARE TO BE INVENTORIED AND ANY
SHORTAGES REPORTED WITHIN 48 HOURS OF DELIVERY
TO THE CONTRACTING ERECTOR.

SHORTAGES REPORTED AFTER THIS TIME PERIOD WILL
BE CHARGED TO THE CONTRACTOR.

CALL 712-258-6690

TO REACH THE SABRE CONTRACTS DEPARTMENT.

AVISO

Todas las partes serán inventariadas y los faltantes reportados
por el contratista dentro de las 48 horas a partir de la entrega.

Los faltantes reportados después de 48 horas serán cargados al contratista.

Para aclaraciones llame a:

Sabre-Departamento de Contrataciones

(001) 712 258-6690

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE
FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY
TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION
3	03/04/04	PSB	ZAK	REDRAWN ONTO "B" SIZE TITLEBLOCK.
2	02/25/02	CHH	RWM	ADDED SPANISH TEXT.
1	02/27/01	CHH	CE	REDRAWN IN AUTOCAD 2000i & UPDATED VERBAGE.

Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL

INVENTORY REQUIREMENT SHEET

DATE	05/12/97
DRAWN BY	ZAK
CHECKED BY	JD

SIZE	DRAWING NO.	REV
B	907901	3

SCALE	PAGE
None	1 OF 1

CUSTOMER : DUKE ENERGY CORPORATION

SITE : BAD CREEK (BDC), SC #(BDC)

B.O.M. 360 FT. MODEL S3R-SD SELF-SUPPORTING TOWER

PC=PIECE	OR=ORANGE
PLT=PALLET	WH=WHITE
BDL=BUNDLE	O/W=OR & WH
CRT=CRATE	N/R=NOT REQ'D
D=DRUM	SP=SPECIAL
BX=BOX	

ITEM NO.	NO. REQ'D.	DRAWING NUMBER	DRAWING REV	PART NO.	DESCRIPTION	TOTAL WEIGHT LBS.	PAINT	PACKING KIT	PACKING QTY OF PKG'S	PACKING PKG. NO.
1					**ANCHOR BOLTS AND TEMPLATES**					
2	18	C40041061	0	C40041061	ANCHOR BOLT ASSEMBLY, 1 3/4 Ø X 7'-3 (F1554 GR 105)	1305				
3					W/(5) NUTS 1 3/4 HEAVY HEX (A563 DH)					
4					(2) FLATWASHERS 1 3/4 (F436)					
5	6	C30139669	0	C30139669	PLATE, A.B. TEMPLATE 1 3/4"Ø A.B. ON 12"Ø B.C.	98				
6					**LEG TO LEG TEMPLATE MATERIAL**					
7	1 KIT			C30400280	LEG TO LEG TEMPLATE KIT, 33'-0 BASE SPREAD	618				
8					(6) 1 3/4"Ø A.B. ON A 12"Ø B.C.					
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										

REV	DATE	DRW	CHK	DESCRIPTION

DATE	12/28/21	**JOB NO.**	495518
DRAWN BY	GCK	**PRINT NO.**	BOM-1
CHECKED BY	KCG	**PAGE**	1 OF 32

CUSTOMER : DUKE ENERGY CORPORATION

SITE : BAD CREEK (BDC), SC #(BDC)

B.O.M. 360 FT. MODEL S3R-SD SELF-SUPPORTING TOWER

PC=PIECE	OR=ORANGE
PLT=PALLET	WH=WHITE
BDL=BUNDLE	O/W=OR & WH
CRT=CRATE	N/R=NOT REQ'D
D=DRUM	SP=SPECIAL
BX=BOX	

ITEM NO.	NO. REQ'D.	DRAWING NUMBER	DRAWING REV	PART NO.	DESCRIPTION	TOTAL WEIGHT LBS.	PAINT	PACKING KIT	PACKING QTY OF PKG'S	PACKING PKG. NO.
1					**TOWER LEGS**					
2	3	17-T1186321	0	17-T1186321	SECT. 17 LEG 5 1/4 Ø X 20'-0 5/16 W/STEP BOLTS	5564				
3	3	16-T1181933	0	16-T1181933	SECT. 16 LEG 5 Ø X 20'-0 5/16 W/STEP BOLTS	4948				
4	3	15-T1181837	0	15-T1181837	SECT. 15 LEG 5 Ø X 20'-0 5/16 W/STEP BOLTS	4852				
5	3	14-T1181731	0	14-T1181731	SECT. 14 LEG 4 3/4 Ø X 20'-0 5/16 W/STEP BOLTS	4458				
6	3	13-T1181631	0	13-T1181631	SECT. 13 LEG 4 3/4 Ø X 20'-0 5/16 W/STEP BOLTS	4458				
7	3	12-T1181531	0	12-T1181531	SECT. 12 LEG 4 3/4 Ø X 20'-0 5/16 W/STEP BOLTS	4458				
8	3	11-T1181437	0	11-T1181437	SECT. 11 LEG 4 3/4 Ø X 20'-0 5/16 W/STEP BOLTS	4361				
9	3	10-T1181431	0	10-T1181431	SECT. 10 LEG 4 1/2 Ø X 20'-0 5/16 W/STEP BOLTS	3989				
10	3	09-T1181233	0	09-T1181233	SECT. 9 LEG 4 1/4 Ø X 20'-0 5/16 W/STEP BOLTS	3526				
11	3	08-T1181225	0	08-T1181225	SECT. 8 LEG 4 Ø X 20'-0 5/16 W/STEP BOLTS	3107				
12	3	07-T1181031	0	07-T1181031	SECT. 7 LEG 4 Ø X 20'-0 5/16 W/STEP BOLTS	3094				
13	3	06-T1181025	0	06-T1181025	SECT. 6 LEG 3 3/4 Ø X 20'-0 5/16 W/STEP BOLTS	2780				
14	3	05-T1180927	0	05-T1180927	SECT. 5 LEG 3 Ø X 20'-0 5/16 W/STEP BOLTS	1832				
15	3	04-T1180919	0	04-T1180919	SECT. 4 LEG 2 3/4 Ø X 20'-0 5/16 W/STEP BOLTS	1538				
16	3	03-T1180821	0	03-T1180821	SECT. 3 LEG 2 1/2 Ø X 20'-0 5/16 W/STEP BOLTS	1258				
17	3	02-T1180713	0	02-T1180713	SECT. 2 LEG 2 1/4 Ø X 20'-0 5/16 W/STEP BOLTS	1065				
18	3	01-T1180601	0	01-T1180601	SECT. 1 LEG 1 3/4 Ø X 20'-0 5/16 W/STEP BOLTS	718				
19	3	01-T1180601	0	01-T1180601	SECT. 1 LEG 1 3/4 Ø X 20'-0 5/16 W/STEP BOLTS	718				
20										

REV	DATE	DRW	CHK	DESCRIPTION

DATE	1/11/22	**JOB NO.**	495518
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Sabre Industries
INNOVATION DELIVERED

CUSTOMER : DUKE ENERGY CORPORATION

SITE : BAD CREEK (BDC), SC #(BDC)

B.O.M. 360 FT. MODEL S3R-SD SELF-SUPPORTING TOWER

PC=PIECE	OR=ORANGE
PLT=PALLET	WH=WHITE
BDL=BUNDLE	O/W=OR & WH
CRT=CRATE	N/R=NOT REQ'D
D=DRUM	SP=SPECIAL
BX=BOX	

ITEM NO.	NO. REQ'D.	DRAWING NUMBER	DRAWING REV	PART NO.	DESCRIPTION	TOTAL WEIGHT LBS.	PAINT	PACKING KIT	PACKING QTY OF PKG'S	PACKING PKG. NO.
1					**TOWER BRACING**					
2	1 KIT				**BRACING #17-T8302067 SECTION 17**	5115				
3					**CONSISTING OF THE MATERIAL LISTED BELOW**					
4	3	3818015	1	3818015	ANGLE, DIAGONAL 6 X 4 X 3/8 X 17'-5	668				
5	3	3818016	1	3818016	ANGLE, DIAGONAL 6 X 4 X 3/8 X 17'-5	668				
6	3	3818017	1	3818017	ANGLE, DIAGONAL 6 X 4 X 3/8 X 16'-8 1/2	641				
7	3	3818018	1	3818018	ANGLE, DIAGONAL 6 X 4 X 3/8 X 16'-8 1/2	641				
8	3	3816723	1	3816723	ANGLE, HORIZONTAL 4 X 4 X 5/16 X 31'-3 3/4	801				
9	6	3815442	1	3815442	ANGLE, SUB-DIAGONAL 3 X 3 X 1/4 X 8'-2 3/4	250				
10	6	3815443	1	3815443	ANGLE, SUB-DIAGONAL 3 X 3 X 1/4 X 8'-6 5/8	262				
11	6	3815716	1	3815716	ANGLE, SUB-HORIZONTAL 3 X 3 X 1/4 X 7'-1 13/16	218				
12	6	3815717	1	3815717	ANGLE, SUB-HORIZONTAL 3 X 3 X 1/4 X 7'-2 3/8	220				
13	3	3815446	0	3815446	PLATE, CENTER TIE 1/2 X 18 11/16 X 2'-5 1/2	239				
14	6	3815447	0	3815447	PLATE, BOTTOM TIE 1/2 X 10 X 1'-3 7/8	112				
15	6	3815448	0	3815448	PLATE, TOP TIE 1/2 X 10 X 1'-3 3/16	106				
16	3	TS00397	1	TS00397	ANGLE, SUPPORT 6 X 4 X 3/8 X 1'-3 1/4	49				
17	3	3815449	1	3815449	ANGLE, INTERNAL BRACE 3 X 3 X 1/4 X 15'-8	240				
18					**SPLICE BOLTS TOP OF SECTION 17**					
19	25			C40026167	BOLT ASSEMBLY, 1 1/2 Ø X 7 1/2 A325	165				
20										

REV	DATE	DRW	CHK	DESCRIPTION

DATE	1/11/22	**JOB NO.**	495518
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CUSTOMER : DUKE ENERGY CORPORATION

SITE : BAD CREEK (BDC), SC #(BDC)

B.O.M. 360 FT. MODEL S3R-SD SELF-SUPPORTING TOWER

PC=PIECE	OR=ORANGE
PLT=PALLET	WH=WHITE
BDL=BUNDLE	O/W=OR & WH
CRT=CRATE	N/R=NOT REQ'D
D=DRUM	SP=SPECIAL
BX=BOX	

ITEM NO.	NO. REQ'D.	DRAWING NUMBER	DRAWING REV	PART NO.	DESCRIPTION	TOTAL WEIGHT LBS.	PAINT	PACKING KIT	PACKING QTY OF PKG'S	PACKING PKG. NO.
1					**TOWER BRACING CONT'D**					
2	1 KIT				**HARDWARE #TK00341 SECTION 17**	149				
3					**CONSISTING OF THE MATERIAL LISTED BELOW**					
4	7			C40026045	BOLT ASSEMBLY, 3/4 Ø X 2 1/2 A325	5				
5	183			C40026044	BOLT ASSEMBLY, 3/4 Ø X 2 1/4 A325	135				
6	13			C40026043	BOLT ASSEMBLY, 3/4 Ø X 2 A325	9				
7										
8										
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REV	DATE	DRW	CHK	DESCRIPTION

DATE	1/11/22	**JOB NO.**	495518
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CUSTOMER : DUKE ENERGY CORPORATION

SITE : BAD CREEK (BDC), SC #(BDC)

B.O.M. 360 FT. MODEL S3R-SD SELF-SUPPORTING TOWER

PC=PIECE	OR=ORANGE
PLT=PALLET	WH=WHITE
BDL=BUNDLE	O/W=OR & WH
CRT=CRATE	N/R=NOT REQ'D
D=DRUM	SP=SPECIAL
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ITEM NO.	NO. REQ'D.	DRAWING NUMBER	DRAWING REV	PART NO.	DESCRIPTION	TOTAL WEIGHT LBS.	PAINT	PACKING KIT	PACKING QTY OF PKG'S	PACKING PKG. NO.
1					**TOWER BRACING CONT'D**					
2	1 KIT				**BRACING #16-T8301051 SECTION 16**	3465				
3					**CONSISTING OF THE MATERIAL LISTED BELOW**					
4	3	3815521	1	3815521	ANGLE, DIAGONAL 5 X 3 1/2 X 1/4 X 16'-11 9/16	370				
5	3	3815522	1	3815522	ANGLE, DIAGONAL 5 X 3 1/2 X 1/4 X 16'-11 9/16	370				
6	3	3815523	1	3815523	ANGLE, DIAGONAL 5 X 3 1/2 X 1/4 X 16'-3 3/16	356				
7	3	3815524	1	3815524	ANGLE, DIAGONAL 5 X 3 1/2 X 1/4 X 16'-3 3/16	356				
8	3	3815650	1	3815650	ANGLE, HORIZONTAL 4 X 4 X 1/4 X 29'-6 3/4	609				
9	6	3815658	1	3815658	ANGLE, SUB-DIAGONAL 3 X 3 X 3/16 X 7'-11 15/16	185				
10	6	3815659	1	3815659	ANGLE, SUB-DIAGONAL 3 X 3 X 3/16 X 8'-3 3/4	192				
11	6	3815660	1	3815660	ANGLE, SUB-HORIZONTAL 3 X 3 X 1/4 X 6'-8 5/8	205				
12	6	3815661	1	3815661	ANGLE, SUB-HORIZONTAL 3 X 3 X 1/4 X 6'-9	206				
13	3	3815530	0	3815530	PLATE, CENTER TIE 1/2 X 17 11/16 X 2'-2 1/2	204				
14	6	3815531	0	3815531	PLATE, BOTTOM TIE 1/2 X 8 X 1'-0 5/16	70				
15	6	3815532	0	3815532	PLATE, TOP TIE 1/2 X 8 X 0'-11 13/16	67				
16	3	TS00397	1	TS00397	ANGLE, SUPPORT 6 X 4 X 3/8 X 1'-3 1/4	49				
17	3	3815464	1	3815464	ANGLE, INTERNAL BRACE 3 X 3 X 1/4 X 14'-9 1/2	226				
18					**SPLICE BOLTS TOP OF SECTION 16**					
19	19			C40026115	BOLT ASSEMBLY, 1 1/2 Ø X 6 1/2 A325	115				
20										

REV	DATE	DRW	CHK	DESCRIPTION

DATE	1/11/22	**JOB NO.**	495518
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CUSTOMER : DUKE ENERGY CORPORATION

SITE : BAD CREEK (BDC), SC #(BDC)

B.O.M. 360 FT. MODEL S3R-SD SELF-SUPPORTING TOWER

PC=PIECE	OR=ORANGE
PLT=PALLET	WH=WHITE
BDL=BUNDLE	O/W=OR & WH
CRT=CRATE	N/R=NOT REQ'D
D=DRUM	SP=SPECIAL
BX=BOX	

ITEM NO.	NO. REQ'D.	DRAWING NUMBER	DRAWING REV	PART NO.	DESCRIPTION	TOTAL WEIGHT LBS.	PAINT	PACKING KIT	PACKING QTY OF PKG'S	PACKING PKG. NO.
1					**TOWER BRACING CONT'D**					
2	1 KIT				**HARDWARE #TK00323 SECTION 16**	121				
3					**CONSISTING OF THE MATERIAL LISTED BELOW**					
4	7			C40026045	BOLT ASSEMBLY, 3/4 Ø X 2 1/2 A325	5				
5	120			C40026044	BOLT ASSEMBLY, 3/4 Ø X 2 1/4 A325	89				
6	38			C40026043	BOLT ASSEMBLY, 3/4 Ø X 2 A325	27				
7										
8										
9										
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REV	DATE	DRW	CHK	DESCRIPTION

DATE	1/11/22	**JOB NO.**	495518
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Sabre Industries
INNOVATION DELIVERED

CUSTOMER : DUKE ENERGY CORPORATION

SITE : BAD CREEK (BDC), SC #(BDC)

B.O.M. 360 FT. MODEL S3R-SD SELF-SUPPORTING TOWER

PC=PIECE	OR=ORANGE
PLT=PALLET	WH=WHITE
BDL=BUNDLE	O/W=OR & WH
CRT=CRATE	N/R=NOT REQ'D
D=DRUM	SP=SPECIAL
BX=BOX	

ITEM NO.	NO. REQ'D.	DRAWING NUMBER	DRAWING REV	PART NO.	DESCRIPTION	TOTAL WEIGHT LBS.	PAINT	PACKING KIT	PACKING QTY OF PKG'S	PACKING PKG. NO.
1					**TOWER BRACING CONT'D**					
2	1 KIT				**BRACING #15-T8301134 SECTION 15**	3150				
3					**CONSISTING OF THE MATERIAL LISTED BELOW**					
4	3	3815146	1	3815146	ANGLE, DIAGONAL 4 X 3 1/2 X 1/4 X 16'-3 1/16	314				
5	3	3815147	1	3815147	ANGLE, DIAGONAL 4 X 3 1/2 X 1/4 X 16'-3 1/16	314				
6	3	3815148	1	3815148	ANGLE, DIAGONAL 4 X 3 1/2 X 1/4 X 15'-6 3/4	301				
7	3	3815149	1	3815149	ANGLE, DIAGONAL 4 X 3 1/4 X 1/4 X 15'-6 3/4	301				
8	3	3815150	1	3815150	ANGLE, HORIZONTAL 4 X 4 X 1/4 X 27'-9 3/4	573				
9	6	3815151	1	3815151	ANGLE, SUB-DIAGONAL 3 X 3 X 3/16 X 7'-7 5/8	176				
10	6	3815152	1	3815152	ANGLE, SUB-DIAGONAL 3 X 3 X 3/16 X 7'-11 5/16	184				
11	6	3815153	1	3815153	ANGLE, SUB-HORIZONTAL 3 X 3 X 1/4 X 6'-3 13/16	193				
12	6	3815154	1	3815154	ANGLE, SUB-HORIZONTAL 3 X 3 X 1/4 X 6'-4 3/16	194				
13	3	3815155	0	3815155	PLATE, CENTER TIE 1/2 X 17 15/16 X 2'-1 1/2	203				
14	6	3815156	0	3815156	PLATE, BOTTOM TIE 1/2 X 8 X 0'-11 11/16	69				
15	6	3815157	0	3815157	PLATE, TOP TIE 1/2 X 8 X 0'-11 3/16	66				
16	3	TS00397	1	TS00397	ANGLE, SUPPORT 6 X 4 X 3/8 X 1'-3 1/4	49				
17	3	3815386	1	3815386	ANGLE, INTERNAL BRACE 3 X 3 X 1/4 X 13'-11	213				
18					**SPLICE BOLTS TOP OF SECTION 15**					
19	19			C40026115	BOLT ASSEMBLY, 1 1/2 Ø X 6 1/2 A325	115				
20										

REV	DATE	DRW	CHK	DESCRIPTION

DATE	1/11/22	**JOB NO.**	495518
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CUSTOMER : DUKE ENERGY CORPORATION

SITE : BAD CREEK (BDC), SC #(BDC)

B.O.M. 360 FT. MODEL S3R-SD SELF-SUPPORTING TOWER

PC=PIECE	OR=ORANGE
PLT=PALLET	WH=WHITE
BDL=BUNDLE	O/W=OR & WH
CRT=CRATE	N/R=NOT REQ'D
D=DRUM	SP=SPECIAL
BX=BOX	

ITEM NO.	NO. REQ'D.	DRAWING NUMBER	DRAWING REV	PART NO.	DESCRIPTION	TOTAL WEIGHT LBS.	PAINT	PACKING KIT	PACKING QTY OF PKG'S	PACKING PKG. NO.
1					**TOWER BRACING CONT'D**					
2	1 KIT				**HARDWARE #TK00323 SECTION 15**	121				
3					**CONSISTING OF THE MATERIAL LISTED BELOW**					
4	7			C40026045	BOLT ASSEMBLY, 3/4 Ø X 2 1/2 A325	5				
5	120			C40026044	BOLT ASSEMBLY, 3/4 Ø X 2 1/4 A325	89				
6	38			C40026043	BOLT ASSEMBLY, 3/4 Ø X 2 A325	27				
7										
8										
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REV	DATE	DRW	CHK	DESCRIPTION

DATE	1/11/22	**JOB NO.**	495518
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Sabre Industries
INNOVATION DELIVERED

CUSTOMER : DUKE ENERGY CORPORATION

SITE : BAD CREEK (BDC), SC #(BDC)

B.O.M. 360 FT. MODEL S3R-SD SELF-SUPPORTING TOWER

PC=PIECE	OR=ORANGE
PLT=PALLET	WH=WHITE
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CRT=CRATE	N/R=NOT REQ'D
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ITEM NO.	NO. REQ'D.	DRAWING NUMBER	DRAWING REV	PART NO.	DESCRIPTION	TOTAL WEIGHT LBS.	PAINT	PACKING KIT	PACKING QTY OF PKG'S	PACKING PKG. NO.
1					**TOWER BRACING CONT'D**					
2	1 KIT				**BRACING #14-T8300710 SECTION 14**	3059				
3					**CONSISTING OF THE MATERIAL LISTED BELOW**					
4	3	3815509	1	3815509	ANGLE, DIAGONAL 5 X 3 1/2 X 1/4 X 15'-6 15/16	340				
5	3	3815510	1	3815510	ANGLE, DIAGONAL 5 X 3 1/2 X 1/4 X 15'-6 15/16	340				
6	3	3815511	1	3815511	ANGLE, DIAGONAL 5 X 3 1/2 X 1/4 X 14'-10 13/16	326				
7	3	3815512	1	3815512	ANGLE, DIAGONAL 5 X 3 1/2 X 1/4 X 14'-10 13/16	326				
8	3	3815513	1	3815513	ANGLE, HORIZONTAL 3 1/2 X 3 1/2 X 1/4 X 26'-0 3/4	472				
9	6	3815514	1	3815514	ANGLE, SUB-DIAGONAL 2 1/2 X 2 1/2 X 1/4 X 7'-3 5/16	186				
10	6	3815515	1	3815515	ANGLE, SUB-DIAGONAL 2 1/2 X 2 1/2 X 1/4 X 7'-7	194				
11	6	3815516	1	3815516	ANGLE, SUB-HORIZONTAL 2 1/2 X 2 1/2 X 1/4 X 5'-11	152				
12	6	3815517	1	3815517	ANGLE, SUB-HORIZONTAL 2 1/2 X 2 1/2 X 1/4 X 5'-11 3/8	152				
13	3	3815142	0	3815142	PLATE, CENTER TIE 1/2 X 18 X 2'-0 1/8	192				
14	6	3815143	0	3815143	PLATE, BOTTOM TIE 1/2 X 8 X 0'-11	67				
15	6	3815144	0	3815144	PLATE, TOP TIE 1/2 X 8 X 0'-10 1/2	63				
16	3	TS00397	1	TS00397	ANGLE, SUPPORT 6 X 4 X 3/8 X 1'-3 1/4	49				
17	3	3815282	1	3815282	ANGLE, INTERNAL 3 X 3 X 1/4 X 13'-0 1/2	200				
18					**SPLICE BOLTS TOP OF SECTION 14**					
19	19			C40026115	BOLT ASSEMBLY, 1 1/2 Ø X 6 1/2 A325	115				
20										

REV	DATE	DRW	CHK	DESCRIPTION

DATE	1/11/22	**JOB NO.**	495518
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CUSTOMER : DUKE ENERGY CORPORATION

SITE : BAD CREEK (BDC), SC #(BDC)

B.O.M. 360 FT. MODEL S3R-SD SELF-SUPPORTING TOWER

PC=PIECE	OR=ORANGE
PLT=PALLET	WH=WHITE
BDL=BUNDLE	O/W=OR & WH
CRT=CRATE	N/R=NOT REQ'D
D=DRUM	SP=SPECIAL
BX=BOX	

ITEM NO.	NO. REQ'D.	DRAWING NUMBER	DRAWING REV	PART NO.	DESCRIPTION	TOTAL WEIGHT LBS.	PAINT	PACKING KIT	PACKING QTY OF PKG'S	PACKING PKG. NO.
1					**TOWER BRACING CONT'D**					
2	1 KIT				**HARDWARE #TK00324 SECTION 14**	121				
3					**CONSISTING OF THE MATERIAL LISTED BELOW**					
4	7			C40026045	BOLT ASSEMBLY, 3/4 Ø X 2 1/2 A325	5				
5	145			C40026044	BOLT ASSEMBLY, 3/4 Ø X 2 1/4 A325	107				
6	13			C40026043	BOLT ASSEMBLY, 3/4 Ø X 2 A325	9				
7										
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REV	DATE	DRW	CHK	DESCRIPTION

DATE	1/11/22	**JOB NO.**	495518
DRAWN BY	DRL	**PRINT NO.**	BOM-1
CHECKED BY	LRD	**PAGE**	10 OF 32

Sabre Industries
INNOVATION DELIVERED

CUSTOMER : DUKE ENERGY CORPORATION

SITE : BAD CREEK (BDC), SC #(BDC)

B.O.M. 360 FT. MODEL S3R-SD SELF-SUPPORTING TOWER

PC=PIECE	OR=ORANGE
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ITEM NO.	NO. REQ'D.	DRAWING NUMBER	DRAWING REV	PART NO.	DESCRIPTION	TOTAL WEIGHT LBS.	PAINT	PACKING KIT	PACKING QTY OF PKG'S	PACKING PKG. NO.
1					**TOWER BRACING CONT'D**					
2	1 KIT				**BRACING #13-T8300214 SECTION 13**	2609				
3					**CONSISTING OF THE MATERIAL LISTED BELOW**					
4	3	3815121	1	3815121	ANGLE, DIAGONAL 4 X 3 1/2 X 1/4 X 14'-11 5/8	290				
5	3	3815122	1	3815122	ANGLE, DIAGONAL 4 X 3 1/2 X 1/4 X 14'-11 5/8	290				
6	3	3815123	1	3815123	ANGLE, DIAGONAL 4 X 3 1/2 X 1/4 X 14'-3 5/8	277				
7	3	3815124	1	3815124	ANGLE, DIAGONAL 4 X 3 1/2 X 1/4 X 14'-3 5/8	277				
8	3	3815159	1	3815159	ANGLE, HORIZONTAL 3 1/2 X 3 1/2 X 1/4 X 24'-3 3/4	440				
9	6	3815518	1	3815518	ANGLE, SUB-DIAGONAL 2 1/2 X 2 1/2 X 1/4 X 6'-11 11/16	178				
10	6	3815519	1	3815519	ANGLE, SUB-DIAGONAL 2 1/2 X 2 1/2 X 1/4 X 7'-3 1/4	186				
11	6	3815495	1	3815495	ANGLE, SUB-HORIZONTAL 2 1/2 X 2 1/2 X 3/16 X 5'-7	107				
12	6	3815496	1	3815496	ANGLE, SUB-HORIZONTAL 2 1/2 X 2 1/2 X 3/16 X 5'-7 5/16	107				
13	3	3815105	0	3815105	PLATE, CENTER TIE 1/2 X 17 1/4 X 1'-9 5/8	165				
14	6	3815106	0	3815106	PLATE, BOTTOM TIE 1/2 X 7 X 0'-9 5/8	52				
15	6	3815107	0	3815107	PLATE, TOP TIE 1/2 X 7 X 0'-9 3/16	50				
16	3	TS00397	1	TS00397	ANGLE, SUPPORT 6 X 4 X 3/8 X 1'-3 1/4	49				
17	3	3815108	1	3815108	ANGLE, INTERNAL 3 X 3 X 3/16 X 12'-2	141				
18					**SPLICE BOLTS TOP OF SECTION 13**					
19	19			C40026115	BOLT ASSEMBLY, 1 1/2 Ø X 6 1/2 A325	115				
20										

REV	DATE	DRW	CHK	DESCRIPTION

DATE	1/11/22	**JOB NO.**	495518
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CUSTOMER : DUKE ENERGY CORPORATION

SITE : BAD CREEK (BDC), SC #(BDC)

B.O.M. 360 FT. MODEL S3R-SD SELF-SUPPORTING TOWER

PC=PIECE	OR=ORANGE
PLT=PALLET	WH=WHITE
BDL=BUNDLE	O/W=OR & WH
CRT=CRATE	N/R=NOT REQ'D
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BX=BOX	

ITEM NO.	NO. REQ'D.	DRAWING NUMBER	DRAWING REV	PART NO.	DESCRIPTION	TOTAL WEIGHT LBS.	PAINT	PACKING KIT	PACKING QTY OF PKG'S	PACKING PKG. NO.
1					**TOWER BRACING CONT'D**					
2	1 KIT				**HARDWARE #TK00323 SECTION 13**	121				
3					**CONSISTING OF THE MATERIAL LISTED BELOW**					
4	7			C40026045	BOLT ASSEMBLY, 3/4 Ø X 2 1/2 A325	5				
5	120			C40026044	BOLT ASSEMBLY, 3/4 Ø X 2 1/4 A325	89				
6	38			C40026043	BOLT ASSEMBLY, 3/4 Ø X 2 A325	27				
7										
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REV	DATE	DRW	CHK	DESCRIPTION

DATE	1/11/22	**JOB NO.**	495518
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Sabre Industries
INNOVATION DELIVERED

CUSTOMER : DUKE ENERGY CORPORATION

SITE : BAD CREEK (BDC), SC #(BDC)

B.O.M. 360 FT. MODEL S3R-SD SELF-SUPPORTING TOWER

PC=PIECE	OR=ORANGE
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ITEM NO.	NO. REQ'D.	DRAWING NUMBER	DRAWING REV	PART NO.	DESCRIPTION	TOTAL WEIGHT LBS.	PAINT	PACKING KIT	PACKING QTY OF PKG'S	PACKING PKG. NO.
1					**TOWER BRACING CONT'D**					
2	1 KIT				**BRACING #12-T8300192 SECTION 12**	2334				
3					**CONSISTING OF THE MATERIAL LISTED BELOW**					
4	3	3815397	1	3815397	ANGLE, DIAGONAL 3 1/2 X 3 1/2 X 1/4 X 14'-4 5/8	260				
5	3	3815398	1	3815398	ANGLE, DIAGONAL 3 1/2 X 3 1/2 X 1/4 X 14'-4 5/8	260				
6	3	3815399	1	3815399	ANGLE, DIAGONAL 3 1/2 X 3 1/2 X 1/4 X 13'-8 7/8	249				
7	3	3815400	2	3815400	ANGLE, DIAGONAL 3 1/2 X 3 1/2 X 1/4 X 13'-8 7/8	249				
8	3	3815520	1	3815520	ANGLE, HORIZONTAL 3 X 3 X 5/16 X 22'-6 3/4	429				
9	6	3815450	1	3815450	ANGLE, SUB-DIAGONAL 2 1/2 X 2 1/2 X 3/16 X 6'-7 9/16	127				
10	6	3815451	1	3815451	ANGLE, SUB-DIAGONAL 2 1/2 X 2 1/2 X 3/16 X 6'-11	132				
11	6	3815329	1	3815329	ANGLE, SUB-HORIZONTAL 2 1/2 X 2 1/2 X 3/16 X 5'-2 1/8	99				
12	6	3815330	1	3815330	ANGLE, SUB-HORIZONTAL 2 1/2 X 2 1/2 X 3/16 X 5'-2 7/16	100				
13	3	3815118	0	3815118	PLATE, CENTER TIE 1/2 X 16 1/4 X 1'-9	151				
14	6	3815119	0	3815119	PLATE, BOTTOM TIE 1/2 X 7 X 0'-9 1/16	50				
15	6	3815120	0	3815120	PLATE, TOP TIE 1/2 X 7 X 0'-8 9/16	48				
16	3	TS00397	1	TS00397	ANGLE, SUPPORT 6 X 4 X 3/8 X 1'-3 1/4	49				
17	3	3815128	1	3815128	ANGLE, INTERNAL 3 X 3 X 3/16 X 11'-3 1/2	131				
18					**SPLICE BOLTS TOP OF SECTION 12**					
19	19			C40026115	BOLT ASSEMBLY, 1 1/2 Ø X 6 1/2 A325	115				
20										

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CUSTOMER : DUKE ENERGY CORPORATION

SITE : BAD CREEK (BDC), SC #(BDC)

B.O.M. 360 FT. MODEL S3R-SD SELF-SUPPORTING TOWER

PC=PIECE	OR=ORANGE
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ITEM NO.	NO. REQ'D.	DRAWING NUMBER	DRAWING REV	PART NO.	DESCRIPTION	TOTAL WEIGHT LBS.	PAINT	PACKING KIT	PACKING QTY OF PKG'S	PACKING PKG. NO.
1					**TOWER BRACING CONT'D**					
2	1 KIT				**HARDWARE #TK00321 SECTION 12**	120				
3					**CONSISTING OF THE MATERIAL LISTED BELOW**					
4	7			C40026045	BOLT ASSEMBLY, 3/4 Ø X 2 1/2 A325	5				
5	95			C40026044	BOLT ASSEMBLY, 3/4 Ø X 2 1/4 A325	70				
6	63			C40026043	BOLT ASSEMBLY, 3/4 Ø X 2 A325	45				
7										
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1					**TOWER BRACING CONT'D**					
2	1 KIT				**BRACING #11-T8300119 SECTION 11**	2660				
3					**CONSISTING OF THE MATERIAL LISTED BELOW**					
4	6	TS02728	1	TS02728	ANGLE, DIAGONAL 4 X 4 X 1/4 X 22'-0 13/16	908				
5	6	TS02729	1	TS02729	ANGLE, DIAGONAL 4 X 4 X 1/4 X 21'-6 9/16	887				
6	6	TS02730	1	TS02730	ANGLE, DIAGONAL 4 X 4 X 1/4 X 21'-0 1/4	865				
7					**SPLICE BOLTS TOP OF SECTION 11**					
8	19			C40026115	BOLT ASSEMBLY, 1 1/2 Ø X 6 1/2 A325	115				
9	1 KIT				**HARDWARE #TK00261 SECTION 11**	38				
10					**CONSISTING OF THE MATERIAL LISTED BELOW**					
11	10			C40026045	BOLT ASSEMBLY, 3/4 Ø X 2 1/2 A325	8				
12	38			C40026044	BOLT ASSEMBLY, 3/4 Ø X 2 1/4 A325	28				
13	10			C40047009	RINGFILL, 1/2 THICK - 3/4 Ø BOLT	2				
14										
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20										

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1					**TOWER BRACING CONT'D**					
2	1 KIT				**BRACING #10-T8300104 SECTION 10**	2157				
3					**CONSISTING OF THE MATERIAL LISTED BELOW**					
4	6	TS02683	1	TS02683	ANGLE, DIAGONAL 3 1/2 X 3 1/2 X 1/4 X 20'-4 11/16	738				
5	6	TS02684	1	TS02684	ANGLE, DIAGONAL 3 1/2 X 3 1/2 X 1/4 X 19'-10 7/16	719				
6	6	TS02685	1	TS02685	ANGLE, DIAGONAL 3 1/2 X 3 1/2 X 1/4 X 19'-4 3/16	700				
7					**SPLICE BOLTS TOP OF SECTION 10**					
8	19			C40026115	BOLT ASSEMBLY, 1 1/2 Ø X 6 1/2 A325	115				
9	1 KIT				**HARDWARE #TK00261 SECTION 10**	38				
10					**CONSISTING OF THE MATERIAL LISTED BELOW**					
11	10			C40026045	BOLT ASSEMBLY, 3/4 Ø X 2 1/2 A325	8				
12	38			C40026044	BOLT ASSEMBLY, 3/4 Ø X 2 1/4 A325	28				
13	10			C40047009	RINGFILL, 1/2 THICK - 3/4 Ø BOLT	2				
14										
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20										

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1					**TOWER BRACING CONT'D**					
2	1 KIT				**BRACING #09-T8300093 SECTION 09**	1994				
3					**CONSISTING OF THE MATERIAL LISTED BELOW**					
4	6	TS02650	1	TS02650	ANGLE, DIAGONAL 3 1/2 X 3 1/2 X 1/4 X 18'-10 9/16	683				
5	6	TS02651	1	TS02651	ANGLE, DIAGONAL 3 1/2 X 3 1/2 X 1/4 X 18'-4 3/8	665				
6	6	TS02652	1	TS02652	ANGLE, DIAGONAL 3 1/2 X 3 1/2 X 1/4 X 17'-10 1/8	646				
7					**SPLICE BOLTS TOP OF SECTION 09**					
8	19			C40026094	BOLT ASSEMBLY, 1 1/4 Ø X 5 1/2 A325	69				
9	1 KIT				**HARDWARE #TK00261 SECTION 09**	38				
10					**CONSISTING OF THE MATERIAL LISTED BELOW**					
11	10			C40026045	BOLT ASSEMBLY, 3/4 Ø X 2 1/2 A325	8				
12	38			C40026044	BOLT ASSEMBLY, 3/4 Ø X 2 1/4 A325	28				
13	10			C40047009	RINGFILL, 1/2 THICK - 3/4 Ø BOLT	2				
14										
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1					**TOWER BRACING CONT'D**					
2	1 KIT				**BRACING #08-T8300081 SECTION 08**	1534				
3					**CONSISTING OF THE MATERIAL LISTED BELOW**					
4	6	TS02614	1	TS02614	ANGLE, DIAGONAL 3 X 3 X 1/4 X 17'-2 3/4	527				
5	6	TS02615	1	TS02615	ANGLE, DIAGONAL 3 X 3 X 1/4 X 16'-8 9/16	511				
6	6	TS02616	1	TS02616	ANGLE, DIAGONAL 3 X 3 X 1/4 X 16'-2 1/2	496				
7					**SPLICE BOLTS TOP OF SECTION 08**					
8	19			C40026094	BOLT ASSEMBLY, 1 1/4 Ø X 5 1/2 A325	69				
9	1 KIT				**HARDWARE #TK00261 SECTION 08**	38				
10					**CONSISTING OF THE MATERIAL LISTED BELOW**					
11	10			C40026045	BOLT ASSEMBLY, 3/4 Ø X 2 1/2 A325	8				
12	38			C40026044	BOLT ASSEMBLY, 3/4 Ø X 2 1/4 A325	28				
13	10			C40047009	RINGFILL, 1/2 THICK - 3/4 Ø BOLT	2				
14										
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1					**TOWER BRACING CONT'D**					
2	1 KIT				**BRACING #07-T8300070 SECTION 07**	1054				
3					**CONSISTING OF THE MATERIAL LISTED BELOW**					
4	6	TS02581	1	TS02581	ANGLE, DIAGONAL 3 X 3 X 3/16 X 15'-8 1/16	362				
5	6	TS02582	1	TS02582	ANGLE, DIAGONAL 3 X 3 X 3/16 X 15'-2 1/16	352				
6	6	TS02583	1	TS02583	ANGLE, DIAGONAL 3 X 3 X 3/16 X 14'-8	340				
7					**SPLICE BOLTS TOP OF SECTION 07**					
8	19			C40026094	BOLT ASSEMBLY, 1 1/4 Ø X 5 1/2 A325	69				
9	1 KIT				**HARDWARE #TK00260 SECTION 07**	36				
10					**CONSISTING OF THE MATERIAL LISTED BELOW**					
11	10			C40026044	BOLT ASSEMBLY, 3/4 Ø X 2 1/4 A325	7				
12	38			C40026043	BOLT ASSEMBLY, 3/4 Ø X 2 A325	27				
13	10			C40047009	RINGFILL, 1/2 THICK - 3/4 Ø BOLT	2				
14										
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1					**TOWER BRACING CONT'D**					
2	1 KIT				**BRACING #06-T8300064 SECTION 06**	943				
3					**CONSISTING OF THE MATERIAL LISTED BELOW**					
4	6	TS02563	1	TS02563	ANGLE, DIAGONAL 3 X 3 X 3/16 X 14'-0 7/8	326				
5	6	TS02564	1	TS02564	ANGLE, DIAGONAL 3 X 3 X 3/16 X 13'-6 15/16	314				
6	6	TS02565	1	TS02565	ANGLE, DIAGONAL 3 X 3 X 3/16 X 13'-1 1/16	303				
7					**SPLICE BOLTS TOP OF SECTION 06**					
8	19			C40026094	BOLT ASSEMBLY, 1 1/4 Ø X 5 1/2 A325	69				
9	1 KIT				**HARDWARE #TK00260 SECTION 06**	36				
10					**CONSISTING OF THE MATERIAL LISTED BELOW**					
11	10			C40026044	BOLT ASSEMBLY, 3/4 Ø X 2 1/4 A325	7				
12	38			C40026043	BOLT ASSEMBLY, 3/4 Ø X 2 A325	27				
13	10			C40047009	RINGFILL, 1/2 THICK - 3/4 Ø BOLT	2				
14										
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1					**TOWER BRACING CONT'D**					
2	1 KIT				**BRACING #05-T8300059 SECTION 05**	870				
3					**CONSISTING OF THE MATERIAL LISTED BELOW**					
4	6	TS02545	1	TS02545	ANGLE, DIAGONAL 2 1/2 X 2 1/2 X 3/16 X 11'-10 15/16	229				
5	6	TS02546	1	TS02546	ANGLE, DIAGONAL 2 1/2 X 2 1/2 X 3/16 X 11'-6 1/4	221				
6	6	TS02547	1	TS02547	ANGLE, DIAGONAL 2 1/2 X 2 1/2 X 3/16 X 11'-1 5/8	214				
7	6	TS02548	1	TS02548	ANGLE, DIAGONAL 2 1/2 X 2 1/2 X 3/16 X 10'-9	206				
8					**SPLICE BOLTS TOP OF SECTION 05**					
9	19			C40026078	BOLT ASSEMBLY, 1 Ø X 4 1/4 A325	41				
10	1 KIT				**HARDWARE #TK00194 SECTION 05**	30				
11					**CONSISTING OF THE MATERIAL LISTED BELOW**					
12	13			C40026023	BOLT ASSEMBLY, 5/8 Ø X 2 A325	6				
13	50			C40026022	BOLT ASSEMBLY, 5/8 Ø X 1 3/4 A325	22				
14	13			C40047003	RINGFILL, 3/8 THICK - 5/8 Ø BOLT	2				
15										
16										
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18										
19										
20										

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1					**TOWER BRACING CONT'D**					
2	1 KIT				**BRACING #04-T8300051 SECTION 04**	593				
3					**CONSISTING OF THE MATERIAL LISTED BELOW**					
4	6	TS02513	1	TS02513	ANGLE, DIAGONAL 2 X 2 X 3/16 X 10'-3 11/16	157				
5	6	TS02514	1	TS02514	ANGLE, DIAGONAL 2 X 2 X 3/16 X 9'-11 3/16	151				
6	6	TS02515	1	TS02515	ANGLE, DIAGONAL 2 X 2 X 3/16 X 9'-6 11/16	145				
7	6	TS02516	1	TS02516	ANGLE, DIAGONAL 2 X 2 X 3/16 X 9'-2 1/4	140				
8					**SPLICE BOLTS TOP OF SECTION 04**					
9	19			C40026077	BOLT ASSEMBLY, 1 Ø X 4 A325	39				
10	1 KIT				**HARDWARE #TK00194 SECTION 04**	30				
11					**CONSISTING OF THE MATERIAL LISTED BELOW**					
12	13			C40026023	BOLT ASSEMBLY, 5/8 Ø X 2 A325	6				
13	50			C40026022	BOLT ASSEMBLY, 5/8 Ø X 1 3/4 A325	22				
14	13			C40047003	RINGFILL, 3/8 THICK - 5/8 Ø BOLT	2				
15										
16										
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20										

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1					**TOWER BRACING CONT'D**					
2	1 KIT				**BRACING #03-T8300045 SECTION 03**	343				
3					**CONSISTING OF THE MATERIAL LISTED BELOW**					
4	6	TS02489	1	TS02489	ANGLE, DIAGONAL 2 X 2 X 1/8 X 8'-10 1/2	91				
5	6	TS02490	1	TS02490	ANGLE, DIAGONAL 2 X 2 X 1/8 X 8'-6 1/8	88				
6	6	TS02491	1	TS02491	ANGLE, DIAGONAL 2 X 2 X 1/8 X 8'-1 7/8	84				
7	6	TS02492	1	TS02492	ANGLE, DIAGONAL 2 X 2 X 1/8 X 7'-9 11/16	80				
8					**SPLICE BOLTS TOP OF SECTION 03**					
9	13			C40026049	BOLT ASSEMBLY, 3/4 Ø X 3 1/2 A325	12				
10	1 KIT				**HARDWARE #TK00194 SECTION 03**	30				
11					**CONSISTING OF THE MATERIAL LISTED BELOW**					
12	13			C40026023	BOLT ASSEMBLY, 5/8 Ø X 2 A325	6				
13	50			C40026022	BOLT ASSEMBLY, 5/8 Ø X 1 3/4 A325	22				
14	13			C40047003	RINGFILL, 3/8 THICK - 5/8 Ø BOLT	2				
15										
16										
17										
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1					**TOWER BRACING CONT'D**					
2	1 KIT				**BRACING #02-T8300037 SECTION 02**	305				
3					**CONSISTING OF THE MATERIAL LISTED BELOW**					
4	6	TS02457	1	TS02457	ANGLE, DIAGONAL 2 X 2 X 1/8 X 7'-4 1/8	76				
5	6	TS02458	1	TS02458	ANGLE, DIAGONAL 2 X 2 X 1/8 X 7'-0 1/8	73				
6	6	TS02459	1	TS02459	ANGLE, DIAGONAL 2 X 2 X 1/8 X 6'-8 3/16	68				
7	6	TS02460	1	TS02460	ANGLE, DIAGONAL 2 X 2 X 1/8 X 6'-4 7/16	65				
8	3	TS02449	1	TS02449	ANGLE, HORIZONTAL 2 X 2 X 1/8 X 4'-5 5/8	23				
9					**SPLICE BOLTS TOP OF SECTION 02**					
10	13			C40026048	BOLT ASSEMBLY, 3/4 Ø X 3 1/4 A325	11				
11	1 KIT				**HARDWARE #TK00134 SECTION 02**	33				
12					**CONSISTING OF THE MATERIAL LISTED BELOW**					
13	13			C40026023	BOLT ASSEMBLY, 5/8 Ø X 2 A325	6				
14	57			C40026022	BOLT ASSEMBLY, 5/8 Ø X 1 3/4 A325	25				
15	13			C40047003	RINGFILL, 3/8 THICK - 5/8 Ø BOLT	2				
16										
17										
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REV	DATE	DRW	CHK	DESCRIPTION

DATE	1/11/22	**JOB NO.**	495518
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Sabre Industries
INNOVATION DELIVERED

CUSTOMER : DUKE ENERGY CORPORATION

SITE : BAD CREEK (BDC), SC #(BDC)

B.O.M. 360 FT. MODEL S3R-SD SELF-SUPPORTING TOWER

PC=PIECE	OR=ORANGE
PLT=PALLET	WH=WHITE
BDL=BUNDLE	O/W=OR & WH
CRT=CRATE	N/R=NOT REQ'D
D=DRUM	SP=SPECIAL
BX=BOX	

ITEM NO.	NO. REQ'D.	DRAWING NUMBER	DRAWING REV	PART NO.	DESCRIPTION	TOTAL WEIGHT LBS.	PAINT	PACKING KIT	PACKING QTY OF PKG'S	PACKING PKG. NO.
1					**TOWER BRACING CONT'D**					
2	1 KIT				**BRACING #01-T8300029 SECTION 01-20**	280				
3					**CONSISTING OF THE MATERIAL LISTED BELOW**					
4	24	TS02441	1	TS02441	ANGLE, DIAGONAL 2 X 2 X 1/8 X 6'-2 3/4	257				
5	3	TS02409	1	TS02409	ANGLE, HORIZONTAL 2 X 2 X 1/8 X 4'-5 3/4	23				
6					**SPLICE BOLTS TOP OF SECTION 01-20**					
7	13			C40026047	BOLT ASSEMBLY, 3/4 Ø X 3 A325	11				
8	1 KIT				**HARDWARE #TK00134 SECTION 01-20**	33				
9					**CONSISTING OF THE MATERIAL LISTED BELOW**					
10	13			C40026023	BOLT ASSEMBLY, 5/8 Ø X 2 A325	6				
11	57			C40026022	BOLT ASSEMBLY, 5/8 Ø X 1 3/4 A325	25				
12	13			C40047003	RINGFILL, 3/8 THICK - 5/8 Ø BOLT	2				
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REV	DATE	DRW	CHK	DESCRIPTION

DATE	1/11/22	**JOB NO.**	495518
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CUSTOMER : DUKE ENERGY CORPORATION

SITE : BAD CREEK (BDC), SC #(BDC)

B.O.M. 360 FT. MODEL S3R-SD SELF-SUPPORTING TOWER

PC=PIECE	OR=ORANGE
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CRT=CRATE	N/R=NOT REQ'D
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ITEM NO.	NO. REQ'D.	DRAWING NUMBER	DRAWING REV	PART NO.	DESCRIPTION	TOTAL WEIGHT LBS.	PAINT	PACKING KIT	PACKING QTY OF PKG'S	PACKING PKG. NO.
1					**TOWER BRACING CONT'D**					
2	1 KIT				**BRACING #01-T8300029 SECTION 01-20**	280				
3					**CONSISTING OF THE MATERIAL LISTED BELOW**					
4	24	TS02441	1	TS02441	ANGLE, DIAGONAL 2 X 2 X 1/8 X 6'-2 3/4	257				
5	3	TS02409	1	TS02409	ANGLE, HORIZONTAL 2 X 2 X 1/8 X 4'-5 3/4	23				
6	1 KIT				**HARDWARE #TK00134 SECTION 01-20**	33				
7					**CONSISTING OF THE MATERIAL LISTED BELOW**					
8	13			C40026023	BOLT ASSEMBLY, 5/8 Ø X 2 A325	6				
9	57			C40026022	BOLT ASSEMBLY, 5/8 Ø X 1 3/4 A325	25				
10	13			C40047003	RINGFILL, 3/8 THICK - 5/8 Ø BOLT	2				
11										
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REV	DATE	DRW	CHK	DESCRIPTION

DATE	1/11/22	**JOB NO.**	495518
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CUSTOMER : DUKE ENERGY CORPORATION

SITE : BAD CREEK (BDC), SC #(BDC)

B.O.M. 360 FT. MODEL S3R-SD SELF-SUPPORTING TOWER

PC=PIECE	OR=ORANGE
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BDL=BUNDLE	O/W=OR & WH
CRT=CRATE	N/R=NOT REQ'D
D=DRUM	SP=SPECIAL
BX=BOX	

ITEM NO.	NO. REQ'D.	DRAWING NUMBER	DRAWING REV	PART NO.	DESCRIPTION	TOTAL WEIGHT LBS.	PAINT	PACKING KIT	PACKING QTY OF PKG'S	PACKING PKG. NO.
1					**SAFETY CLIMB**					
2	4 KITS			C30012058	400' TUF-TUG SAFETY CLIMB MATERIAL	599				
3										
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DATE	1/11/22	**JOB NO.**	495518
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Sabre Industries
INNOVATION DELIVERED

CUSTOMER : DUKE ENERGY CORPORATION

SITE : BAD CREEK (BDC), SC #(BDC)

B.O.M. 360 FT. MODEL S3R-SD SELF-SUPPORTING TOWER

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ITEM NO.	NO. REQ'D.	DRAWING NUMBER	DRAWING REV	PART NO.	DESCRIPTION	TOTAL WEIGHT LBS.	PAINT	PACKING KIT	PACKING QTY OF PKG'S	PACKING PKG. NO.
1					**CLIMBING LADDER**					
2	18	CW00031	2	CW00031	WELDMENT, 20 FT. CLIMBING LADDER 12" WIDE	1345				
3	36	CS00037	2	CS00037	PLATE, LADDER SPLICE	14				
4	2	CS00242	1	CS00242	ANGLE, LADDER BASE SUPPORT	15				
5	38	CS00261	1	CS00261	PIPE, LADDER MOUNT	828				
6	78	CS00241	1	CS00241	CLIP, LADDER ATTACHMENT	51				
7	10	CS00169	2	CS00169	CLIP, LADDER ATTACHMENT	6				
8					**CLIMBING LADDER HARDWARE**					
9	52			C40039002	J-BOLT ASSEMBLY, 3/8 Ø X 7 1/4 I.L.	19				
10	196			C40039001	J-BOLT ASSEMBLY, 3/8 Ø X 5 3/4 I.L.	59				
11	75			C40024004	BOLT ASSEMBLY, 3/8 Ø X 1 1/2 GRD 5	8				
12	869			C40044017	STEP BOLT ASSEMBLY, 5/8 Ø X 7 H.D.G.	869				
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REV	DATE	DRW	CHK	DESCRIPTION

DATE	1/14/22	**JOB NO.**	495518
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CUSTOMER : DUKE ENERGY CORPORATION

SITE : BAD CREEK (BDC), SC #(BDC)

B.O.M. 360 FT. MODEL S3R-SD SELF-SUPPORTING TOWER

PC=PIECE	OR=ORANGE
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CRT=CRATE	N/R=NOT REQ'D
D=DRUM	SP=SPECIAL
BX=BOX	

ITEM NO.	NO. REQ'D.	DRAWING NUMBER	DRAWING REV	PART NO.	DESCRIPTION	TOTAL WEIGHT LBS.	PAINT	PACKING KIT	PACKING QTY OF PKG'S	PACKING PKG. NO.
1					**WAVEGUIDE LADDER (WG1)**					
2	36	CS00331	0	CS00331	ANGLE, WAVEGUIDE LADDER RAIL 20 FT. W/3 FT. RUNG SPC	1080				
3	126	CS00413	0	CS00413	ANGLE, WAVEGUIDE SUPPORT (15 HOLE)	580				
4	36	CS00037	2	CS00037	PLATE, LADDER SPLICE	14				
5	38	CS00171	2	CS00171	CLIP, LADDER ATTACHMENT	27				
6	64	CS00169	2	CS00169	CLIP, LADDER ATTACHMENT	35				
7					**WAVEGUIDE LADDER HARDWARE (WG1)**					
8	38			C40039009	J-BOLT ASSEMBLY, 3/8 Ø X 9 I.L.	16				
9	38			C40039002	J-BOLT ASSEMBLY, 3/8 Ø X 7 1/4 I.L.	14				
10	26			C40039001	J-BOLT ASSEMBLY, 3/8 Ø X 5 3/4 I.L.	8				
11	340			C40024004	BOLT ASSEMBLY, 3/8 Ø X 1 1/2 GRD 5	34				
12										
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REV	DATE	DRW	CHK	DESCRIPTION

DATE	1/14/22	**JOB NO.**	495518
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CUSTOMER : DUKE ENERGY CORPORATION

SITE : BAD CREEK (BDC), SC #(BDC)

B.O.M. 360 FT. MODEL S3R-SD SELF-SUPPORTING TOWER

PC=PIECE	OR=ORANGE
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BDL=BUNDLE	O/W=OR & WH
CRT=CRATE	N/R=NOT REQ'D
D=DRUM	SP=SPECIAL
BX=BOX	

ITEM NO.	NO. REQ'D.	DRAWING NUMBER	DRAWING REV	PART NO.	DESCRIPTION	TOTAL WEIGHT LBS.	PAINT	PACKING KIT	PACKING QTY OF PKG'S	PACKING PKG. NO.
1					**WAVEGUIDE LADDER (WG2)**					
2	36	CS00331	0	CS00331	ANGLE, WAVEGUIDE LADDER RAIL 20 FT. W/3 FT. RUNG SPC	1080				
3	126	CS00413	0	CS00413	ANGLE, WAVEGUIDE SUPPORT (15 HOLE)	580				
4	36	CS00037	2	CS00037	PLATE, LADDER SPLICE	14				
5	38	CS00171	2	CS00171	CLIP, LADDER ATTACHMENT	27				
6	64	CS00169	2	CS00169	CLIP, LADDER ATTACHMENT	35				
7					**WAVEGUIDE LADDER HARDWARE (WG2)**					
8	38			C40039009	J-BOLT ASSEMBLY, 3/8 Ø X 9 I.L.	16				
9	38			C40039002	J-BOLT ASSEMBLY, 3/8 Ø X 7 1/4 I.L.	14				
10	26			C40039001	J-BOLT ASSEMBLY, 3/8 Ø X 5 3/4 I.L.	8				
11	340			C40024004	BOLT ASSEMBLY, 3/8 Ø X 1 1/2 GRD 5	34				
12										
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REV	DATE	DRW	CHK	DESCRIPTION

DATE	1/14/22	**JOB NO.**	495518
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CUSTOMER : DUKE ENERGY CORPORATION

SITE : BAD CREEK (BDC), SC #(BDC)

B.O.M. 360 FT. MODEL S3R-SD SELF-SUPPORTING TOWER

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ITEM NO.	NO. REQ'D.	DRAWING NUMBER	DRAWING REV	PART NO.	DESCRIPTION	TOTAL WEIGHT LBS.	PAINT	PACKING KIT	PACKING QTY OF PKG'S	PACKING PKG. NO.
1					**WAVEGUIDE LADDER (WG3)**					
2	36	CS00331	0	CS00331	ANGLE, WAVEGUIDE LADDER RAIL 20 FT. W/3 FT. RUNG SPC	1080				
3	126	CS00413	0	CS00413	ANGLE, WAVEGUIDE SUPPORT (15 HOLE)	580				
4	36	CS00037	2	CS00037	PLATE, LADDER SPLICE	14				
5	38	CS00171	2	CS00171	CLIP, LADDER ATTACHMENT	27				
6	64	CS00169	2	CS00169	CLIP, LADDER ATTACHMENT	35				
7					**WAVEGUIDE LADDER HARDWARE (WG3)**					
8	38			C40039009	J-BOLT ASSEMBLY, 3/8 Ø X 9 I.L.	16				
9	38			C40039002	J-BOLT ASSEMBLY, 3/8 Ø X 7 1/4 I.L.	14				
10	26			C40039001	J-BOLT ASSEMBLY, 3/8 Ø X 5 3/4 I.L.	8				
11	340			C40024004	BOLT ASSEMBLY, 3/8 Ø X 1 1/2 GRD 5	34				
12										
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REV	DATE	DRW	CHK	DESCRIPTION

DATE	1/14/22	**JOB NO.**	495518
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Sabre Industries
INNOVATION DELIVERED

CUSTOMER : DUKE ENERGY CORPORATION

SITE : BAD CREEK (BDC), SC #(BDC)

B.O.M. 360 FT. MODEL S3R-SD SELF-SUPPORTING TOWER

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D=DRUM	SP=SPECIAL
BX=BOX	

ITEM NO.	NO. REQ'D.	DRAWING NUMBER	DRAWING REV	PART NO.	DESCRIPTION	TOTAL WEIGHT LBS.	PAINT	PACKING KIT	PACKING QTY OF PKG'S	PACKING PKG. NO.
1					**BEACON MOUNT**					
2	1	CS01622	0	CS01622	PLATE, BEACON MOUNT	11				
3					**MID-LEVEL BEACON MOUNTS & ICE SHIELDS @ 201'±**					
4	2 KITS			C30083001	UNIVERSAL BEACON MOUNT	107				
5	2 KITS			C30084001	UNIVERSAL BEACON ICE SHIELD	129				
6					**LIGHTNING ROD**					
7	1 KIT			C30986004	LIGHTNING ROD ASSY 3/4"Ø X 10'-0" W/STIFFENER	22				
8					**HARDWARE**					
9	5			C40026045	BOLT ASSEMBLY, 3/4 Ø X 2 1/2 A325	4				
10	5			C40026025	BOLT ASSEMBLY, 5/8 Ø X 2 1/2 A325	3				
11	10			C40047003	RINGFILL, 3/8 THICK - 5/8 Ø BOLT	1				
12					**MISCELLANEOUS**					
13	1			C40068001	COLD GALVANIZING SPRAY	1				
14	1	CS00500	2	CS00500	TOWER NAME PLATE	1				
15										
16										
17										
18										
19										
20										

REV	DATE	DRW	CHK	DESCRIPTION

DATE	1/14/22	**JOB NO.**	495518
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Sabre Industries
INNOVATION DELIVERED

CUSTOMER : DUKE ENERGY CORPORATION

SITE : BAD CREEK (BDC), SC #(BDC)

B.O.M. 360 FT. MODEL S3R-SD SELF-SUPPORTING TOWER

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ITEM NO.	NO. REQ'D.	DRAWING NUMBER	DRAWING REV	PART NO.	DESCRIPTION	TOTAL WEIGHT LBS.	PAINT	PACKING KIT	PACKING QTY OF PKG'S	PACKING PKG. NO.
1					**SAFETY CLIMB MATERIAL**					
2	3 KITS			C30011044	SAFETY CLIMB BOTTOM MOUNT (5 1/4"Ø - 5 9/16"Ø)	66				
3	3 KITS			C30011019	SAFETY CLIMB TOP MOUNT (1 3/4"Ø)	77				
4	51 KITS			C30003001	SAFETY CLIMB INTERMEDIATE MOUNT	107				
5					**6' SIDEARM MOUNTS @ 340'**					
6	2 KITS			C10151106	6 FT. SIDEARM ASSEMBLY	288				
7	2 KITS			C10900105	PIPE ANTENNA MOUNTING KIT 2 3/8 Ø X 5'-0	45				
8	8			C40034021	U-BOLT ASSEMBLY 5/8" Ø X 2 7/16 C-C	11				
9					**6' SIDEARM MOUNT @ 340' (HEAVY DUTY)**					
10	1 KIT			C10151106	6 FT. SIDEARM ASSEMBLY	144				
11	1 KIT			C10900405	PIPE ANTENNA MOUNTING KIT 4 Ø X 5'-0	52				
12	4			C40034021	U-BOLT ASSEMBLY 5/8" Ø X 2 7/16 C-C	5				
13					**SWIVEL KNUCKLE TIEBACKS @ 340'**					
14	6 KITS			C10179002	SWIVEL KNUCKLE TIEBACK KIT 2 3/8"Ø PIPE X 13'-3"	420				
15					**6' SIDEARM MOUNTS @ 310'**					
16	2 KITS			C10151106	6 FT. SIDEARM ASSEMBLY	288				
17	2 KITS			C10900105	PIPE ANTENNA MOUNTING KIT 2 3/8 Ø X 5'-0	45				
18	8			C40034032	U-BOLT ASSEMBLY 5/8" Ø X 5 3/16 C-C	17				
19										
20										

REV	DATE	DRW	CHK	DESCRIPTION

DATE	2/10/22	**JOB NO.**	495518
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Sabre Industries
INNOVATION DELIVERED

CUSTOMER : DUKE ENERGY CORPORATION

SITE : BAD CREEK (BDC), SC #(BDC)

B.O.M. 360 FT. MODEL S3R-SD SELF-SUPPORTING TOWER

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ITEM NO.	NO. REQ'D.	DRAWING NUMBER	DRAWING REV	PART NO.	DESCRIPTION	TOTAL WEIGHT LBS.	PAINT	PACKING KIT	PACKING QTY OF PKG'S	PACKING PKG. NO.
1					**6' SIDEARM MOUNT @ 310' (HEAVY DUTY)**					
2	1 KIT			C10151106	6 FT. SIDEARM ASSEMBLY	144				
3	1 KIT			C10900405	PIPE ANTENNA MOUNTING KIT 4 Ø X 5'-0	52				
4	4			C40034032	U-BOLT ASSEMBLY 5/8" Ø X 5 3/16 C-C	9				
5					**Z-BRACKET PIPE MOUNTS FOR SIDEARMS @ 310'**					
6	3 KITS			C10174009	TAPERED LEG PIPE MOUNT KIT	189				
7	3			C10981407	ANTENNA MTG. PIPE 4 1/2" X 7'-0"	175				
8	12			C40034032	U-BOLT ASSEMBLY 5/8" Ø X 5 3/16 C-C	26				
9					**SWIVEL KNUCKLE TIEBACKS @ 310'**					
10	6 KITS			C10179002	SWIVEL KNUCKLE TIEBACK KIT 2 3/8"Ø PIPE X 13'-3"	420				
11					**Z-BRACKET PIPE MOUNT @ 190'**					
12	1 KIT			C10174036	TAPERED LEG PIPE MOUNT KIT	65				
13	1			C10981407	ANTENNA MTG. PIPE 4 1/2" X 7'-0"	58				
14	4			C40034032	U-BOLT ASSEMBLY 5/8" Ø X 5 3/16 C-C	9				
15					**STIFFARM MOUNTS FOR PIPE MOUNT @ 190'**					
16	2 KITS			C10105102	DISH MOUNT TIEBACK ASSEMBLY	633				
17					**6' SIDEARM MOUNT @ 150'**					
18	1 KIT			C10151106	6 FT. SIDEARM ASSEMBLY	144				
19	1 KIT			C10900105	PIPE ANTENNA MOUNTING KIT 2 3/8 Ø X 5'-0	22				
20	4			C40034032	U-BOLT ASSEMBLY 5/8" Ø X 5 3/16 C-C	9				

REV	DATE	DRW	CHK	DESCRIPTION

DATE	2/10/22	**JOB NO.**	495518
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CUSTOMER : DUKE ENERGY CORPORATION

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B.O.M. 360 FT. MODEL S3R-SD SELF-SUPPORTING TOWER

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CRT=CRATE	N/R=NOT REQ'D
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ITEM NO.	NO. REQ'D.	DRAWING NUMBER	DRAWING REV	PART NO.	DESCRIPTION	TOTAL WEIGHT LBS.	PAINT	PACKING KIT	PACKING QTY OF PKG'S	PACKING PKG. NO.
1					**Z-BRACKET PIPE MOUNT FOR SIDEARM @ 150'**					
2	1 KIT			C10174044	TAPERED LEG PIPE MOUNT KIT	65				
3	1			C10981407	ANTENNA MTG. PIPE 4 1/2" X 7'-0"	58				
4	4			C40034032	U-BOLT ASSEMBLY 5/8" Ø X 5 3/16 C-C	9				
5					**SWIVEL KNUCKLE TIEBACK FOR SIDEARM @ 150'**					
6	1	CS01227	0	CS01227	PIPE, STIFFARM TIEBACK (2 7/8"Ø X 8'-6")	51				
7	2	CS02089	1	CS02089	TIEBACK STIFFARM PIPE, 2 3/8"Ø X .154 X 13'-3	86				
8	2	CW00013	3	CW00013	SWIVEL PLATE WELDMENT	6				
9	2	CS00097	3	CS00097	PIPE, 2 7/8" O.D. X (.203 WALL) X 0'-1 3/4	2				
10	2	CS00098	4	CS00098	BENT SWIVEL PLATE	5				
11	2	CS01230	0	CS01230	PLATE, TIE-BACK (2 7/8"Ø)	16				
12					**HARDWARE FOR SWIVEL KNUCKLE TIEBACK @ 150'**					
13	5			C40026033	BOLT ASSEMBLY, 5/8" Ø X 4 1/2 A325	4				
14	5			C40026023	BOLT ASSEMBLY, 5/8 Ø X 2 A325	2				
15	5			C40034025	U-BOLT ASSEMBLY 5/8" Ø X 3 9/16 C-C	9				
16	3			C40039002	J-BOLT ASSEMBLY, 3/8" Ø X 7 1/4 I.L.	1				
17	5			C40042007	HEX NUT, 5/8 A194 GRADE 2H	1				
18	5			C40998007	SQ. HEAD SET SCREW, 5/8 Ø X 2 1/2	2				
19										
20										

REV	DATE	DRW	CHK	DESCRIPTION

DATE	2/10/22	**JOB NO.**	495518
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Owner	System	Size (ft)	Type	Manufacturer	Model #	Elevation (ft)	Location	Azimuth	Frequency (MHz)
Duke	Opensky	16.8	RX Antenna	DBSpectra	DS8A10P36U-D	340	A	N/A	806-869
Duke	Opensky	2	TTA	DBSpectra	DS7TMD17C	340	A	N/A	799-816
Duke	Nantahala LMR		RX Antenna	SINCLAIR	SC251-HF3LDF-D06	340	C	N/A	153/158
Duke	Plant Radio		RX Antenna	SINCLAIR	SC329 HF2LDF-D06-G06	340	B	N/A	450-470
Duke	Opensky	16.8	TX Antenna	DBSpectra	DS8A10P36U-D	310	A	N/A	806-869
Duke	Nantahala LMR		TX Antenna	SINCLAIR	SC251-HF3LDF-D06	310	C	N/A	153/158
Duke	Plant Radio		TX Antenna	SINCLAIR	SC329 HF2LDF-D06-G06	310	B	N/A	450-470
Duke	Microwave to Jocassee	6	Dish	RFS	SBX6-W100	190	B	125	11 HGz
Duke	VHF Paging	21.25	Omni	CommScope	DB224-A	150	A	360	150-160

Exhibit 3

SiteSafe
A Quattier Company

8618 Westwood Center Drive, Suite 315, Vienna, VA 22182
703.276.1100 • 703.276.1169 fax
info@sitesafe.com • www.sitesafe.com

Gulf Services on behalf of Duke Energy
Site ID – LA-SC-617
Site Name – Bad Creek Hydro Station
Site Compliance Report

100 Bad Creek Road
Salem, SC 29676

Latitude: N35-01-21.91
Longitude: W83-01-15.28
Structure Type: Self-Support Lattice Tower

Report generated date: May 31, 2022
Report by: Benjamin Schnable
Customer Contact: Liz Van Egmond

Duke Energy is compliant with the FCC Rules and Regulations in all publicly accessible areas. Duke Energy will be compliant in occupational areas upon completion of the remediation detailed in Section 2.2.

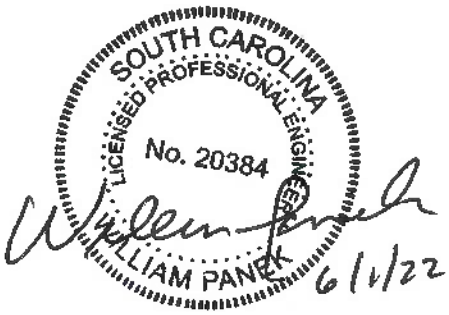

Exhibit 4

Gulf Services on behalf of Duke Energy
Bad Creek Hydro Station - LA-SC-617
Radio Frequency (RF) Site Compliance Report

100 Bad Creek Road, Salem, SC 29676

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Table of Contents

1 Executive Summary

Gulf Services on behalf of Duke Energy has contracted with Site Safe, LLC (Sitesafe), an independent Radio Frequency (RF) regulatory and engineering consulting firm, to determine whether the proposed communications site, LA-SC-617 - Bad Creek Hydro Station, located at 100 Bad Creek Road, Salem, SC, is in compliance with the Federal Communications Commission (FCC) Rules and Regulations for RF exposure.

This report contains a detailed summary of the RF environment at the site including:

- Diagram of the site
- Inventory of the make / model of all antennas
- Theoretical MPE based on modeling

This report addresses exposure to radio frequency electromagnetic fields in accordance with the FCC Rules and Regulations for all individuals, classified in two groups, "Occupational or Controlled" and "General Public or Uncontrolled."

Duke Energy is compliant with the FCC Rules and Regulations in all publicly accessible areas. Duke Energy will be compliant in occupational areas upon completion of the remediation detailed in Section 2.2.

Gulf Services proposes to build a new wireless site. The proposed antennas are noted as "Proposed" in the antenna table under Section 4.

This document and the conclusions herein are based on the information provided by Gulf Services.

If you have any questions regarding RF safety and regulatory compliance, please do not hesitate to contact Sitesafe's Customer Support Department at (703) 276-1100.

2 Site Compliance

2.1 Site Compliance Statement

Upon evaluation of the cumulative RF exposure levels from all operators at this site, Sitesafe has determined that:

Duke Energy is compliant with the FCC Rules and Regulations in all publicly accessible areas. Duke Energy will be compliant in occupational areas upon completion of the remediation detailed in Section 2.2.

The compliance determination is based on theoretical modeling, RF signage placement recommendations, proposed antenna inventory and/or the level of restricted access to the antennas at the site. Any deviation from the proposed Gulf Services deployment plan could result in the site being rendered non-compliant upon further evaluation.

2.2 Actions for Site Compliance

Based on common industry practice and our understanding of FCC and OSHA requirements, this section provides a statement of recommendations for site compliance. If required, RF alert signage recommendations have been proposed based on theoretical analysis of MPE levels.

Duke Energy will be compliant in occupational areas upon implementation of the following remediation items:

Base of Self-Support Lattice Tower

(1) Caution sign required at all climbing points at the base of the self-support structure.

Note: The compound or self-support lattice tower access/climbing point(s) must be locked/restricted for site compliance.

3 Analysis

3.1 RF Exposure Diagram

The RF diagram(s) below display theoretical percentage of the Maximum Permissible Exposure for all systems at the site. These diagrams use modeling as prescribed in OET Bulletin 65 and assumptions detailed in Appendix B.

The key at the bottom of each diagram indicates if percentages displayed are referenced to FCC **General Public** Maximum Permissible Exposure (MPE) limits. Color coding on the diagram is as follows:

This table displays the maximum theoretical percentage of the FCC's General Public MPE limits:

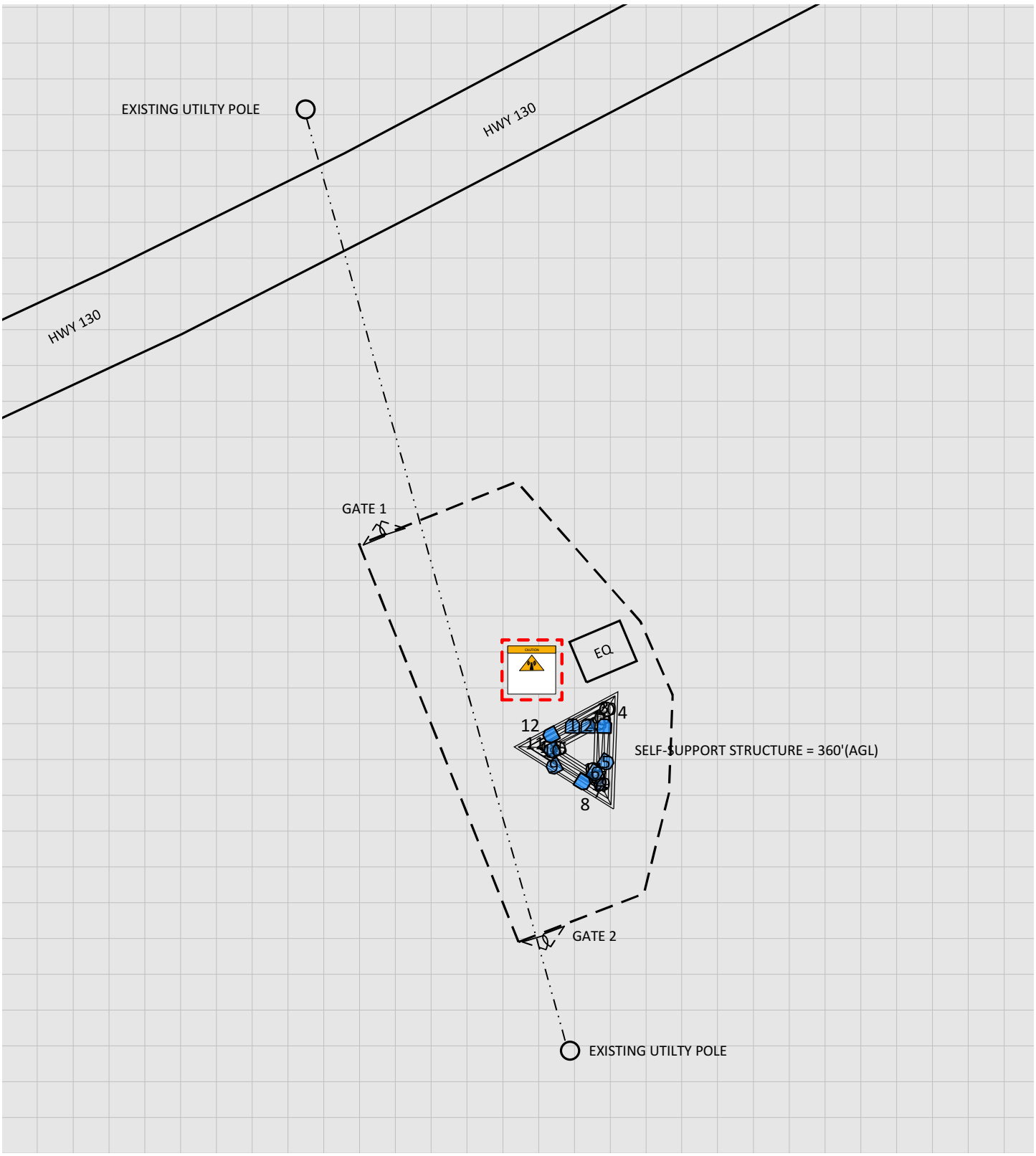
	General Public Levels:	
Exposure Type:	**Maximum**	**Spatial Average**
Reference Level:	**Antenna**	**Ground**
AT&T Mobility, LLC	30,132.1%	<1.0%
Composite:	30,132.1%	<1.0%

Note: On the diagrams shown below, each level is marked with a height. For all diagrams that are marked as *Spatially Averaged*, the modeling program will spatially average the exposure within the area six feet above each set level. This provides an accurate spatial average of the percentage of the FCC's MPE limits within an accessible area.

In the RF exposure simulations below, all heights are reflected with respect to ground level. Each different area, rooftop, or platform level is labeled with its height relative to the main site level. Exposure is calculated appropriately based on the relative height and location of that area to all antennas. The analyzed elevations in the RF exposure simulations are as follows:

- GROUND LEVEL = 0'

RF Exposure Simulation For: Bad Creek Hydro Station
Composite View



% of FCC Public Exposure Limit

0-5	5-100	100-500	500-5000	5000+

AT&T MOBILITY LLC | VERIZON WIRELESS | T-MOBILE | SPRINT | DISH | UNKNOWN CARRIER

Barrier Signage Legend

No-sign | Notice | Caution | Warning | Notice 2 | Caution 2 | Warning 2

Existing Barrier ——— Proposed Barrier/Sign — — — Remove Barrier/Sign - - - /X

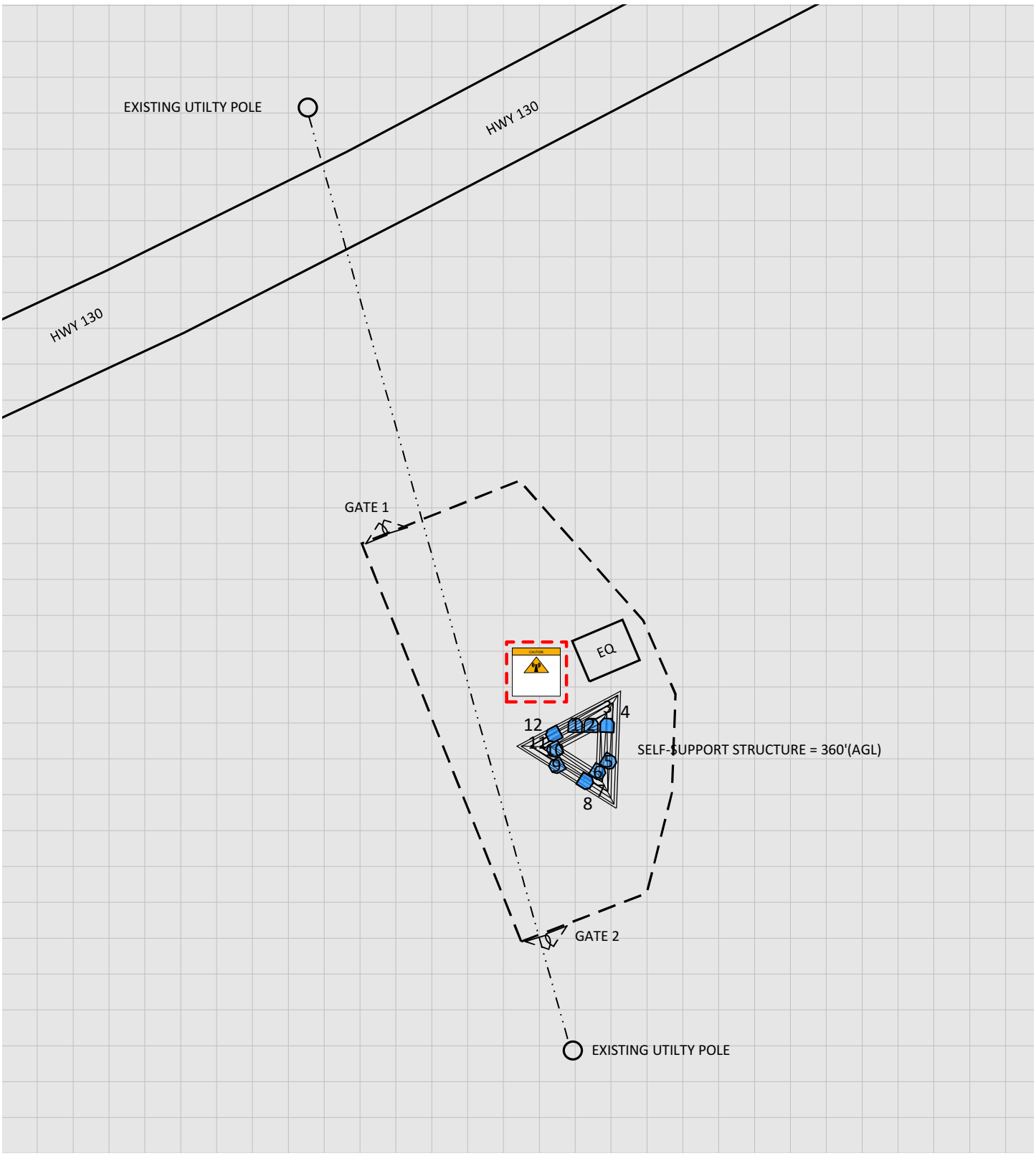
(Feet)

0 19.2 38.4

www.sitesafe.com
5/31/2022 10:46:24 AM

Sitesafe OET-65 Model
Near Field Boundary:
1.5 * Aperture
Reflection Factor: 1
Spatially Averaged

RF Exposure Simulation For: Bad Creek Hydro Station
AT&T Mobility, LLC Contribution



% of FCC Public Exposure Limit

0-5	5-100	100-500	500-5000	5000+

AT&T MOBILITY LLC | VERIZON WIRELESS | T-MOBILE | SPRINT | DISH | UNKNOWN CARRIER

Barrier Signage Legend

No-sign | Notice | Caution | Warning | Notice 2 | Caution 2 | Warning 2

Existing Barrier ——— Proposed Barrier/Sign — — — Remove Barrier/Sign - - - /X

(Feet)

0 19.2 38.4

www.sitesafe.com
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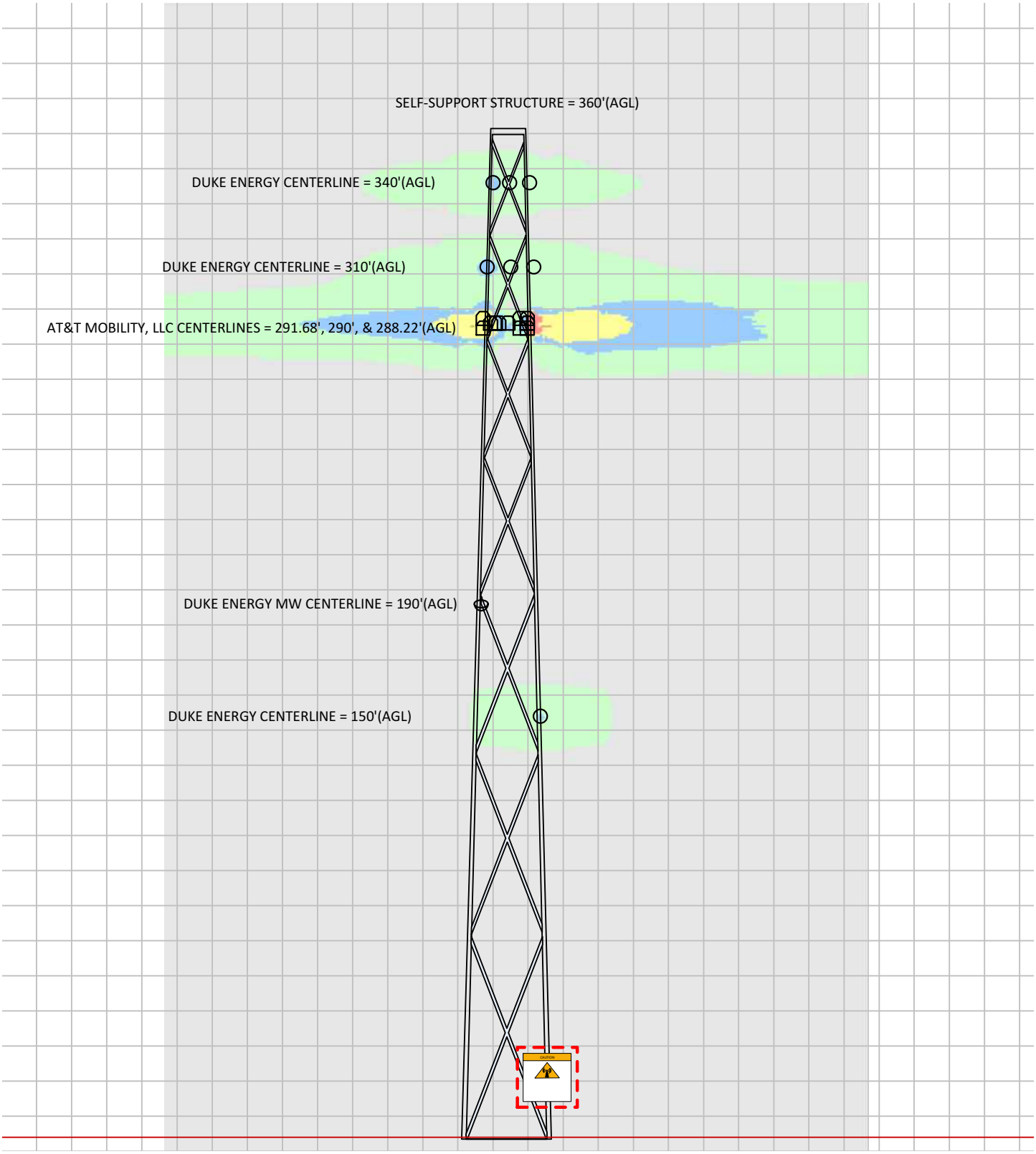
Sitesafe OET-65 Model
Near Field Boundary:
1.5 * Aperture
Reflection Factor: 1
Spatially Averaged

RF Exposure Simulation For: Bad Creek Hydro Station
Elevation View



% of FCC Public Exposure Limit

0-5	5-100	100-500	500-5000	5000+

AT&T MOBILITY LLC | VERIZON WIRELESS | T-MOBILE | SPRINT | DISH | UNKNOWN CARRIER

Barrier Signage Legend

No-sign | Notice | Caution | Warning | Notice 2 | Caution 2 | Warning 2

Existing Barrier ——— Proposed Barrier/Sign — — — Remove Barrier/Sign - - - /X

(Feet)

0 24.5 49

www.sitesafe.com
5/31/2022 10:54:32 AM

Sitesafe OET-65 Model
Near Field Boundary:
1.5 * Aperture
Reflection Factor: 1
Single Level (0)

4 Antenna Inventory

The Antenna Inventory shows all transmitting antennas at the site. This inventory was provided by the customer and was utilized by Sitesafe to perform theoretical modeling of RF exposure. The inventory coincides with the site diagrams in this report, identifying each antenna's location at LA-SC-617 - Bad Creek Hydro Station. The antenna information collected includes the following information:

- Licensee or wireless operator name
- Frequency or frequency band
- Transmitter power – Transmitter Power Output ("TPO"), Effective Radiated Power ("ERP"), or Equivalent Isotropic Radiated Power ("EIRP")
- Antenna manufacturer make, model, and gain

Equipment, antenna models and nominal transmit power were used for modeling, based on past experience with radio service providers or data provided by the Client.

The following antenna inventory was provided by the customer and was utilized to create the site model diagrams:

Ant ID	Operator	Antenna Make and Model	Type	TX Freq (MHz)	Technology	Az (Deg)	Hor BW (Deg)	Ant Len (ft)	Ant Gain (dBd)	Power	Power Type	Power Units	TX Count	Misc Loss	Total ERP (Watts)	Z (ft)	MDT (Deg)	EDT (Deg)
1	AT&T MOBILITY LLC (Proposed)	Commscope NNH4-65B-R6H4	Panel	737	LTE	2	68.0	6	11.51	160.00	TPO	Watt	1	1.25	1698.71	290	0	4
2	AT&T MOBILITY LLC (Proposed)	Commscope NNH4-65B-R6H4	Panel	763	LTE	2	68.0	6	11.51	160.00	TPO	Watt	1	1.25	1698.71	290	0	4
2	AT&T MOBILITY LLC (Proposed)	Commscope NNH4-65B-R6H4	Panel	1900	LTE	2	67.0	6	14.50	160.00	TPO	Watt	1	1.25	3381.58	290	0	2
3	AT&T MOBILITY LLC (Proposed)	Ericsson AIR6419	Panel	3450	5G	2	11.0	2.6	23.50	108.48	TPO	Watt	1	0.00	24285.65	291.68	0	2
4	AT&T MOBILITY LLC (Proposed)	Ericsson AIR6449	Panel	3700	5G	2	11.0	2.6	23.50	108.48	TPO	Watt	1	0.00	24285.65	288.22	0	2
5	AT&T MOBILITY LLC (Proposed)	Commscope NNH4-65B-R6H4	Panel	737	LTE	122	68.0	6	11.51	160.00	TPO	Watt	1	1.25	1698.71	290	0	4
6	AT&T MOBILITY LLC (Proposed)	Commscope NNH4-65B-R6H4	Panel	763	LTE	122	68.0	6	11.51	160.00	TPO	Watt	1	1.25	1698.71	290	0	4
6	AT&T MOBILITY LLC (Proposed)	Commscope NNH4-65B-R6H4	Panel	1900	LTE	122	67.0	6	14.50	160.00	TPO	Watt	1	1.25	3381.58	290	0	2
7	AT&T MOBILITY LLC (Proposed)	Ericsson AIR6419	Panel	3450	5G	122	11.0	2.6	23.50	108.48	TPO	Watt	1	0.00	24285.65	291.68	0	2
8	AT&T MOBILITY LLC (Proposed)	Ericsson AIR6449	Panel	3700	5G	122	11.0	2.6	23.50	108.48	TPO	Watt	1	0.00	24285.65	288.22	0	2
9	AT&T MOBILITY LLC (Proposed)	Commscope NNH4-65B-R6H4	Panel	737	LTE	242	68.0	6	11.51	160.00	TPO	Watt	1	1.25	1698.71	290	0	4
10	AT&T MOBILITY LLC (Proposed)	Commscope NNH4-65B-R6H4	Panel	763	LTE	242	68.0	6	11.51	160.00	TPO	Watt	1	1.25	1698.71	290	0	4
10	AT&T MOBILITY LLC (Proposed)	Commscope NNH4-65B-R6H4	Panel	1900	LTE	242	67.0	6	14.50	160.00	TPO	Watt	1	1.25	3381.58	290	0	2
11	AT&T MOBILITY LLC (Proposed)	Ericsson AIR6419	Panel	3450	5G	242	11.0	2.6	23.50	108.48	TPO	Watt	1	0.00	24285.65	291.68	0	2
12	AT&T MOBILITY LLC (Proposed)	Ericsson AIR6449	Panel	3700	5G	242	11.0	2.6	23.50	108.48	TPO	Watt	1	0.00	24285.65	288.22	0	2
13	DUKE ENERGY (Proposed)	DBSpectra DS8A10P36U-D	Omni	850		0	360.0	14	9.97	100.00	ERP	Watt	1	0.00	100	340	0	0
14	DUKE ENERGY (Proposed)	Sinclair SC251-HF3LDF-D06	Omni	150		0	360.0	12.5	2.87	100.00	ERP	Watt	1	0.00	100	340	0	0
15	DUKE ENERGY (Proposed)	Sinclair SC329 HF2LDF-D06-G06	Omni	460		0	360.0	9.5	5.97	100.00	ERP	Watt	1	0.00	100	340	0	0

Ant ID	Operator	Antenna Make and Model	Type	TX Freq (MHz)	Technology	Az (Deg)	Hor BW (Deg)	Ant Len (ft)	Ant Gain (dBd)	Power	Power Type	Power Units	TX Count	Misc Loss	Total ERP (Watts)	Z (ft)	MDT (Deg)	EDT (Deg)
16	DUKE ENERGY (Proposed)	DBSpectra DS8A10P36U-D	Omni	850		0	360.0	14	9.97	100.00	ERP	Watt	1	0.00	100	310	0	0
17	DUKE ENERGY (Proposed)	Sinclair SC251-HF3LDF-D06	Omni	150		0	360.0	12.5	2.87	100.00	ERP	Watt	1	0.00	100	310	0	0
18	DUKE ENERGY (Proposed)	Sinclair SC329 HF2LDF-D06-G06	Omni	460		0	360.0	9.5	5.97	100.00	ERP	Watt	1	0.00	100	310	0	0
19	DUKE ENERGY (Proposed)	RFS SBX6-W100	Aperture	11000		120	61.0	6	41.86	0.01	TPO	Watt	1	0.00	153.46	190	0	0
20	DUKE ENERGY (Proposed)	Commscope DB224-A	Omni	150		0	360.0	19.3	5.47	100.00	ERP	Watt	1	0.00	100	150	0	0

Note: The Z reference indicates antenna height above ground level (AGL). ERP values provided by the client and used in the modeling may be greater than are currently deployed. For additional modeling information, refer to Appendix B. Proposed equipment is tagged as *(Proposed)* under *Operator* or *Antenna Make and Model*.

5 Engineer Certification

The professional engineer whose seal appears on the cover of this document hereby certifies and affirms:

That I am registered as a Professional Engineer in the jurisdiction indicated in the professional engineering stamp on the cover of this document; and

That I am an employee of QualTek Wireless, LLC, sister company to Site Safe, LLC (both under the parent company QualTek), in Vienna, Virginia, at which place the staff provides RF compliance services to clients in the wireless communications industry; and

That I am thoroughly familiar with the Rules and Regulations of the Federal Communications Commission (FCC) as well as the regulations of the Occupational Safety and Health Administration (OSHA), both in general and specifically as they apply to the FCC Guidelines for Human Exposure to Radio Frequency Electromagnetic Fields; and

That I have thoroughly reviewed this Site Compliance Report and believe it to be true and accurate to the best of my knowledge as assembled by and attested to by Benjamin Schnable.

May 31, 2022

Appendix A – Statement of Limiting Conditions

Sitesafe will not be responsible for matters of a legal nature that affect the site or property.

Due to the complexity of some wireless sites, Sitesafe performed this analysis and created this report utilizing best industry practices and due diligence. Sitesafe cannot be held accountable or responsible for anomalies or discrepancies due to actual site conditions (i.e. mislabeling of antennas or equipment, inaccessible cable runs, inaccessible antennas or equipment, etc.) or information or data supplied by Gulf Services, the site manager, or their affiliates, subcontractors or assigns.

Sitesafe has provided computer generated model(s) in this Site Compliance Report to show approximate dimensions of the site, and the model is included to assist the reader of the compliance report to visualize the site area, and to provide supporting documentation for Sitesafe's recommendations.

Sitesafe may note in the Site Compliance Report any adverse physical conditions, such as needed repairs, observed during the survey of the subject property or that Sitesafe became aware of during the normal research involved in performing this survey. Sitesafe will not be responsible for any such conditions that do exist or for any engineering or testing that might be required to discover whether such conditions exist. Because Sitesafe is not an expert in the field of mechanical engineering or building maintenance, the Site Compliance Report must not be considered a structural or physical engineering report.

Sitesafe obtained information used in this Site Compliance Report from sources that Sitesafe considers reliable and believes them to be true and correct. Sitesafe does not assume any responsibility for the accuracy of such items that were furnished by other parties. When conflicts in information occur between data provided by a second party and physical data collected by Sitesafe, the physical data will be used.

Appendix B – Assumptions and Definitions

General Model Assumptions

In this site compliance report, it is assumed that all antennas are operating at **full power at all times.** Software modeling was performed for all transmitting antennas located on the site. Sitesafe has further assumed a 100% duty cycle and maximum radiated power.

The site has been modeled with these assumptions to show the maximum RF energy density. Sitesafe believes this to be a *worst-case* analysis, based on best available data. Areas modeled to predict exposure exposure greater than 100% of the applicable MPE level may not actually occur but are shown as a *worst-case* prediction that could be realized real time. Sitesafe believes these areas to be safe for entry by occupationally trained personnel utilizing appropriate personal protective equipment (in most cases, a personal monitor).

Thus, at any time, if power density measurements were made, we believe the real-time measurements would indicate levels below those depicted in the RF exposure diagram(s) in this report. By modeling in this way, Sitesafe has conservatively shown exclusion areas – areas that should not be entered without the use of a personal monitor, carriers reducing power, or performing real-time measurements to indicate real-time exposure levels.

Definitions

5% Rule – The rules adopted by the FCC specify that, in general, at multiple transmitter sites actions necessary to bring the area into compliance with the guidelines are the shared responsibility of all licensees whose transmitters produce field strengths or power density levels at the area in question in excess of 5% of the exposure limits. In other words, any wireless operator that contributes 5% or greater of the MPE limit in an area that is identified to be greater than 100% of the MPE limit is responsible for taking corrective actions to bring the site into compliance.

Compliance – The determination of whether a site complies with FCC standards with regards to Human Exposure to Radio Frequency Electromagnetic Fields from transmitting antennas.

Decibel (dB) – A unit for measuring power or strength of a signal.

Duty Cycle – The percent of pulse duration to the pulse period of a periodic pulse train. Also, may be a measure of the temporal transmission characteristic of an intermittently transmitting RF source such as a paging antenna by dividing average transmission duration by the average period for transmission. A duty cycle of 100% corresponds to continuous operation.

Effective (or Equivalent) Isotropic Radiated Power (EIRP) – The product of the power supplied to the antenna and the antenna gain in a given direction relative to an isotropic antenna.

Effective Radiated Power (ERP) – The product of the power supplied to the antenna and the antenna gain in a given direction relative to a half-wave dipole antenna.

Gain (of an antenna) – The ratio, usually expressed in decibels, of the power required at the input of a loss-free reference antenna to the power supplied to the input of the given antenna to produce, in a given direction, the same field strength or the same power density at the same distance. When not specified otherwise, the gain refers to the direction of maximum radiation. Gain may be considered for a specified polarization. Gain may be referenced to an isotropic antenna (dBi) or a half-wave dipole (dBd) antenna.

General Population/Uncontrolled Environment – Defined by the FCC as an area where RF exposure may occur to persons who are *unaware* of the potential for exposure and who have no control over their exposure. General Population is also referenced as General Public.

Generic Antenna – For the purposes of this report, the use of "Generic" as an antenna model means the antenna information was not provided and could not be obtained while on site. In the event of unknown information, Sitesafe will use its industry specific knowledge of antenna models to select a worst-case scenario antenna to model the site.

Isotropic Antenna – An antenna that is completely non-directional. In other words, an antenna that radiates energy equally in all directions.

Maximum Measurement – This measurement represents the single largest measurement recorded when performing a spatial average measurement.

Maximum Permissible Exposure (MPE) – The rms and peak electric and magnetic field strength, their squares, or the plane-wave equivalent power densities associated with these fields to which a person may be exposed without harmful effect and with acceptable safety factor.

Occupational/Controlled Environment – Defined by the FCC as an area where RF exposure may occur to persons who are **aware** of the potential for exposure as a condition of employment or specific activity and can exercise control over their exposure.

OET Bulletin 65 – Technical guideline developed by the FCC's Office of Engineering and Technology to determine the impact of RF exposure on humans. The guideline was published in August 1997.

OSHA (Occupational Safety and Health Administration) – Under the Occupational Safety and Health Act of 1970, employers are responsible for providing a safe and healthy workplace for their employees. OSHA's role is to promote the safety and health of America's working men and women by setting and enforcing standards; providing training, outreach and education; establishing partnerships; and encouraging continual process improvement in workplace safety and health. For more information, visit www.osha.gov.

Radio Frequency Exposure or Electromagnetic Fields – Electromagnetic waves that are propagated from antennas through space.

Spatial Average Measurement – A technique used to average a minimum of ten (10) measurements taken in a ten (10) second interval from zero (0) to six (6) feet. This measurement is intended to model the average energy a 6-foot tall human body will absorb while present in an electromagnetic field of energy.

Transmitter Power Output (TPO) – The radio frequency output power of a transmitter's final radio frequency stage as measured at the output terminal while connected to a load.

Appendix C – Rules & Regulations

Explanation of Applicable Rules and Regulations

The FCC has set forth guidelines in OET Bulletin 65 for human exposure to radio frequency electromagnetic fields. Specific regulations regarding this topic are listed in Part 1, Subpart I, of Title 47 in the Code of Federal Regulations. Currently, there are two different levels of MPE - General Public MPE and Occupational MPE. An individual classified as Occupational can be defined as an individual who has received appropriate RF training and meets the conditions outlined below. General Public is defined as anyone who does not meet the conditions of being Occupational. FCC and OSHA Rules and Regulations define compliance in terms of total exposure to total RF energy, regardless of location of or proximity to the sources of energy.

It is the responsibility of all licensees to ensure these guidelines are maintained at all times. It is the ongoing responsibility of all licensees composing the site to maintain ongoing compliance with FCC rules and regulations. Individual licensees that contribute less than 5% MPE to any total area out of compliance are not responsible for corrective actions.

OSHA has adopted and enforces the FCC's exposure guidelines. A building owner or site manager can use this report as part of an overall RF Health and Safety Policy. It is important for building owners/site managers to identify areas in excess of the General Population MPE and ensure that only persons qualified as Occupational are granted access to those areas.

Occupational Environment Explained

The FCC definition of Occupational exposure limits apply to persons who:

- are exposed to RF energy as a consequence of their employment;
- have been made aware of the possibility of exposure; and
- can exercise control over their exposure.

OSHA guidelines go further to state that persons must complete RF Safety Awareness training and must be trained in the use of appropriate personal protective equipment.

In order to consider this site an Occupational Environment, the site must be controlled to prevent access by any individuals classified as the General Public. Compliance is also maintained when any non-occupational individuals (the General Public) are prevented from accessing areas indicated as Red or Yellow in the attached RF exposure diagram. In addition, a person must be aware of the RF environment into which they are entering. This can be accomplished by an RF Safety Awareness class, and by appropriate written documentation such as this Site Compliance Report.

All Gulf Services employees who require access to this site must complete RF Safety Awareness training and must be trained in the use of appropriate personal protective equipment.

Appendix D – General Safety Recommendations

The following are *general recommendations* appropriate for any site with accessible areas in excess of 100% General Public MPE. These recommendations are not specific to this site. These are safety recommendations appropriate for typical site management, building management, and other tenant operations.

1. All individuals needing access to the main site (or the area indicated to be in excess of General Public MPE) should wear a personal protective monitor (PPM), successfully complete proper RF Safety Awareness training, and have and be trained in the use of appropriate personal protective equipment.

2. All individuals needing access to the main site should be instructed to read and obey all posted placards and signs.

3. The site should be routinely inspected and this or similar report updated with the addition of any antennas or upon any changes to the RF environment including:

- adding new antennas that may have been located on the site
- removing of any existing antennas
- changes in the radiating power or number of RF emitters

4. Post the appropriate **NOTICE**, **CAUTION,** or **WARNING** sign at the main site access point(s) and other locations as required. Note: Please refer to RF Exposure Diagrams in Section 3.1 to inform <u>everyone</u> who has access to this site that beyond posted signs there may be levels in excess of the limits prescribed by the FCC. In addition to RF Advisory Signage, a RF Guideline Signage is recommended to be posted at the main site access point(s). The signs below are examples of signs meeting FCC guidelines.

5. Ensure that the site door remains locked (or appropriately controlled) to deny access to the general public if deemed as policy by the building/site owner.

6. For a General Public environment the five color levels identified in this analysis can be interpreted in the following manner:

- Gray represents areas predicted to be at 5% or less of the General Public MPE limits. *The General Public can access these areas with no restrictions.*

- Green represents areas predicted to be between 5% and 100% of the General Public MPE limits. *The General Public can access these areas with no restrictions.*
- Blue represents areas predicted to be between 100% and 500% of the General Public MPE limits. *The General Public should be restricted from accessing these areas.*
- Yellow represents areas predicted to be between 500% and 5000% of the General Public MPE limits. *The General Public should be restricted from accessing these areas.*
- Red represents areas predicted to be greater than 5000% of the General Public MPE limits. *The General Public should be restricted from accessing these areas.*

7. For an Occupational environment the five color levels identified in this analysis can be interpreted in the following manner:

- Gray represents areas predicted to be at 1% or less of the Occupational MPE limits. *Workers can access these areas with no restrictions.*
- Green represents areas predicted to be between 1% and 20% of the Occupational MPE limits. *Workers can access these areas with no restrictions.*
- Blue represents areas predicted to be between 20% and 100% of the Occupational MPE limits. Workers can access these areas assuming they have basic understanding of EME awareness and RF safety procedures and understand how to limit their exposure.
- Yellow represents areas predicted to be between 100% and 1000% of the Occupational MPE limits. Workers can access these areas assuming they have basic understanding of EME awareness and RF safety procedures and understand how to limit their exposure. Transmitter power reduction and/or time-averaging may be required.
- Red represents areas predicted to be greater than 1000% of the Occupational MPE limits. These areas are not safe for workers to be in for prolonged periods of time. Special procedures must be adhered to, such as lockout/tagout or transmitter power reduction, to minimize worker exposure to EME.

8. Use of a Personal Protective Monitor (PPM): When working around antennas, Sitesafe strongly recommends the use of a PPM. Wearing a PPM will properly forewarn the individual prior to entering an RF exposure area.

Keep a copy of this report available for all persons who must access the site. They should read this report and be aware of the potential hazards with regards to RF and MPE limits.

Additional Information

Additional RF information is available at the following sites:
https://www.fcc.gov/general/radio-frequency-safety-0
https://www.fcc.gov/engineering-technology/electromagnetic-compatibility-division/radio-frequency-safety/faq/rf-safety

OSHA has additional information available at:
https://www.osha.gov/SLTC/radiofrequencyradiation/index.html

Appendix E – Regulatory Basis

FCC Rules and Regulations

In 1996, the Federal Communications Commission (FCC) adopted regulations for evaluating the effects of RF exposure in 47 CFR § 1.1307 and 1.1310. The guideline from the FCC Office of Engineering and Technology is Bulletin 65 ("OET Bulletin 65"), *Evaluating Compliance with FCC Guidelines for Human Exposure to Radio Frequency Electromagnetic Fields*, Edition 97-01, published August 1997. Since 1996 the FCC periodically reviews these rules and regulations as per their congressional mandate.

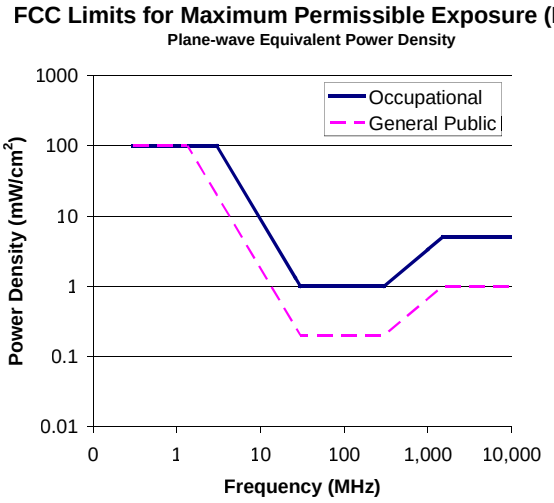
FCC regulations define two separate tiers of exposure limits: Occupational or "Controlled environment" and General Public or "Uncontrolled environment". The General Public limits are generally five times more conservative or restrictive than the Occupational limits. The General Public limits apply to *accessible* areas where workers or the general public may be exposed to Radio Frequency (RF) electromagnetic fields.

Occupational or Controlled limits apply in situations in which persons are exposed as a consequence of their employment and where those persons exposed have been made fully aware of the potential for exposure and can exercise control over their exposure.

An area is considered a Controlled environment when access is limited to these aware personnel. Typical criteria are restricted access (i.e. locked or alarmed doors, barriers, etc.) to the areas where antennas are located coupled with proper RF hazard signage. A site with Controlled environments is evaluated with Occupational limits.

All other areas are considered Uncontrolled environments. If a site has no access controls or no RF hazard signage it is evaluated with General Public limits.

The theoretical modeling of the RF electromagnetic fields has been performed in accordance with OET Bulletin 65. The Maximum Permissible Exposure (MPE) limits utilized in this analysis are outlined in the following diagram:



Limits for Occupational/Controlled Exposure (MPE)

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm^2)	Averaging Time $\|E\|^2$, $\|H\|^2$ or S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842/f	4.89/f	($900/f^2$)*	6
30-300	61.4	0.163	1.0	6
300-1500	--	--	f/300	6
1500-100,000	--	--	5	6

Limits for General Population/Uncontrolled Exposure (MPE)

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm^2)	Averaging Time $\|E\|^2$, $\|H\|^2$ or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	($180/f^2$)*	30
30-300	27.5	0.073	0.2	30
300-1500	--	--	f/1500	30
1500-100,000	--	--	1.0	30

f = frequency in MHz *Plane-wave equivalent power density

Appendix F – Safety Plan and Procedures

The following items are general safety recommendations that should be administered on a site by site basis as needed by the carrier.

General Maintenance Work: Any maintenance personnel required to work immediately in front of antennas and / or in areas indicated as above 100% of the Occupational MPE limits should coordinate with the wireless operators to disable transmitters during their work activities.

Training and Qualification Verification: All personnel accessing areas indicated as exceeding the General Population MPE limits should have a basic understanding of EME awareness and RF Safety procedures when working around transmitting antennas. Awareness training increases a worker's understanding to potential RF exposure scenarios. Awareness can be achieved in a number of ways (e.g. videos, formal classroom lecture or internet-based courses).

Physical Access Control: Access restrictions to transmitting antennas locations is the primary element in a site safety plan. Examples of access restrictions are as follows:

- Locked door or gate
- Alarmed door
- Locked ladder access
- Restrictive Barrier at antenna (e.g. Chain link with posted RF Sign)

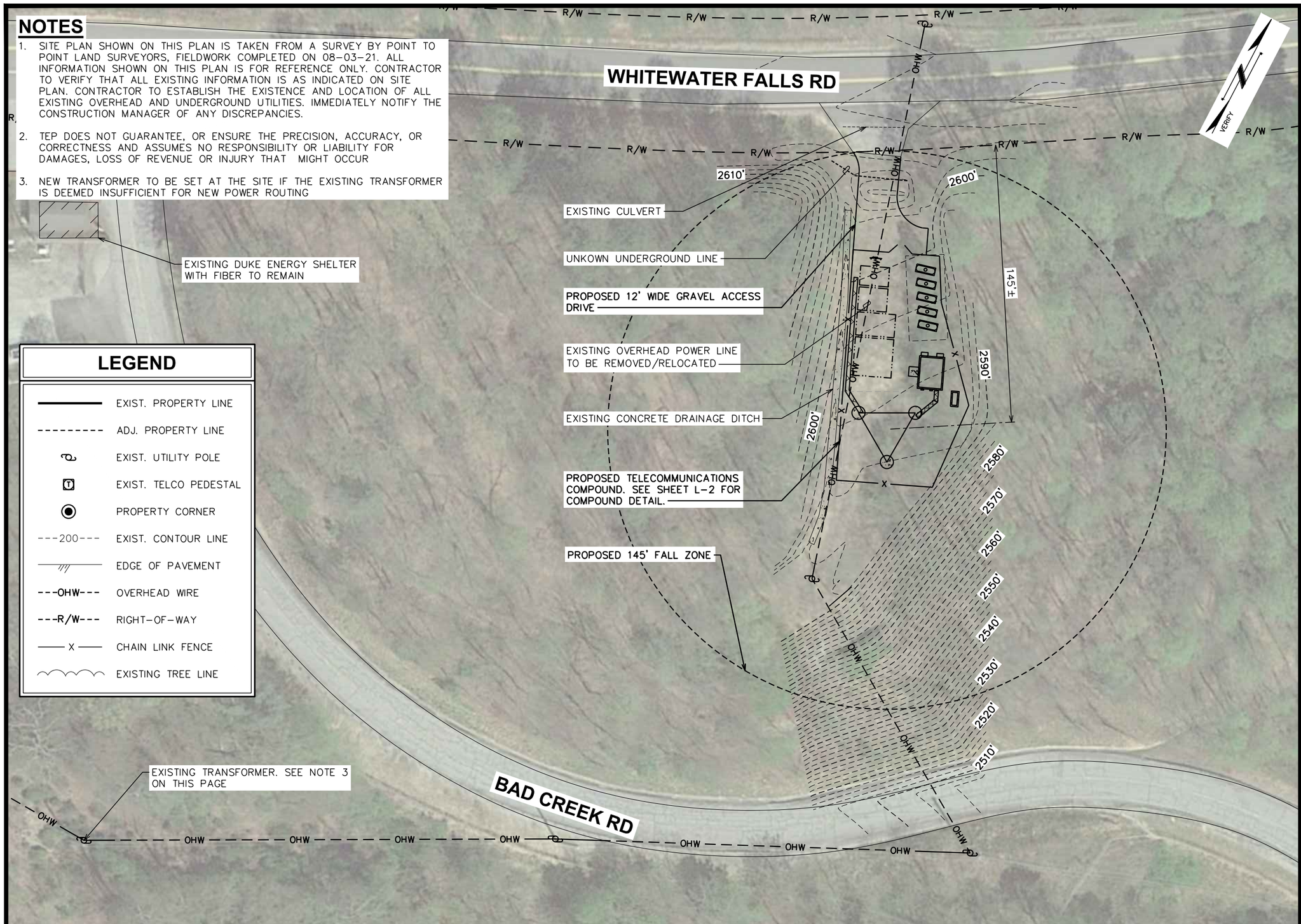
RF Signage: Everyone should obey all posted signs at all times. RF signs play an important role in properly warning a worker prior to entering into a potential RF Exposure area.

Assume all antennas are active: Due to the nature of telecommunications transmissions, an antenna transmits intermittently. Always assume an antenna is transmitting. Never stop in front of an antenna. If you have to pass by an antenna, move through as quickly and safely as possible thereby reducing any exposure to a minimum.

Site RF Exposure Diagram(s): Section 3 of this report contains RF Diagram(s) that outline various theoretical Maximum Permissible Exposure (MPE) areas at the site. The modeling is a worst-case scenario assuming a duty cycle of 100% for each transmitting antenna at full power. This analysis is based on one of two access control criteria: General Public criteria means the access to the site is uncontrolled and anyone can gain access. Occupational criteria means the access is restricted and only properly trained individuals can gain access to the antenna locations.

NOTES

1. SITE PLAN SHOWN ON THIS PLAN IS TAKEN FROM A SURVEY BY POINT TO POINT LAND SURVEYORS, FIELDWORK COMPLETED ON 08-03-21. ALL INFORMATION SHOWN ON THIS PLAN IS FOR REFERENCE ONLY. CONTRACTOR TO VERIFY THAT ALL EXISTING INFORMATION IS AS INDICATED ON SITE PLAN. CONTRACTOR TO ESTABLISH THE EXISTENCE AND LOCATION OF ALL EXISTING OVERHEAD AND UNDERGROUND UTILITIES. IMMEDIATELY NOTIFY THE CONSTRUCTION MANAGER OF ANY DISCREPANCIES.
2. TEP DOES NOT GUARANTEE, OR ENSURE THE PRECISION, ACCURACY, OR CORRECTNESS AND ASSUMES NO RESPONSIBILITY OR LIABILITY FOR DAMAGES, LOSS OF REVENUE OR INJURY THAT MIGHT OCCUR
3. NEW TRANSFORMER TO BE SET AT THE SITE IF THE EXISTING TRANSFORMER IS DEEMED INSUFFICIENT FOR NEW POWER ROUTING



LEGEND

- EXIST. PROPERTY LINE
- ADJ. PROPERTY LINE
- EXIST. UTILITY POLE
- EXIST. TELCO PEDESTAL
- PROPERTY CORNER
- ---200--- EXIST. CONTOUR LINE
- EDGE OF PAVEMENT
- ---OHW--- OVERHEAD WIRE
- ---R/W--- RIGHT-OF-WAY
- —— X —— CHAIN LINK FENCE
- EXISTING TREE LINE

SITE PLAN
SCALE: 1" = 50'

0 50 100
SCALE IN FEET

PLANS PREPARED FOR:
DUKE ENERGY®
401 SOUTH WILMINGTON STREET
RALEIGH, NC 27601
Office: (800) 452-2777

PROJECT INFORMATION:
BAD CREEK
100 BAD CREEK ROAD
SALEM, SC 29676
(OCONEE COUNTY)

PLANS PREPARED BY:
SOUTH CAROLINA
TEP OPCO, LLC
5399
CERTIFICATE OF AUTHORIZATION
TOWER ENGINEERING PROFESSIONALS
326 TRYON ROAD
RALEIGH, NC 27603-3530
OFFICE: (919) 661-6351
www.tepgroup.net

SEAL:
PRELIMINARY
DO NOT USE FOR CONSTRUCTION

REV	DATE	ISSUED FOR:
3	10-15-21	CLIENT LE COMMENT
2	08-25-21	CLIENT LE COMMENT
1	06-28-21	CLIENT LE COMMENT
0	06-03-21	PRELIMINARY

DRAWN BY: GSB | CHECKED BY: JBG

SHEET TITLE:
SITE PLAN

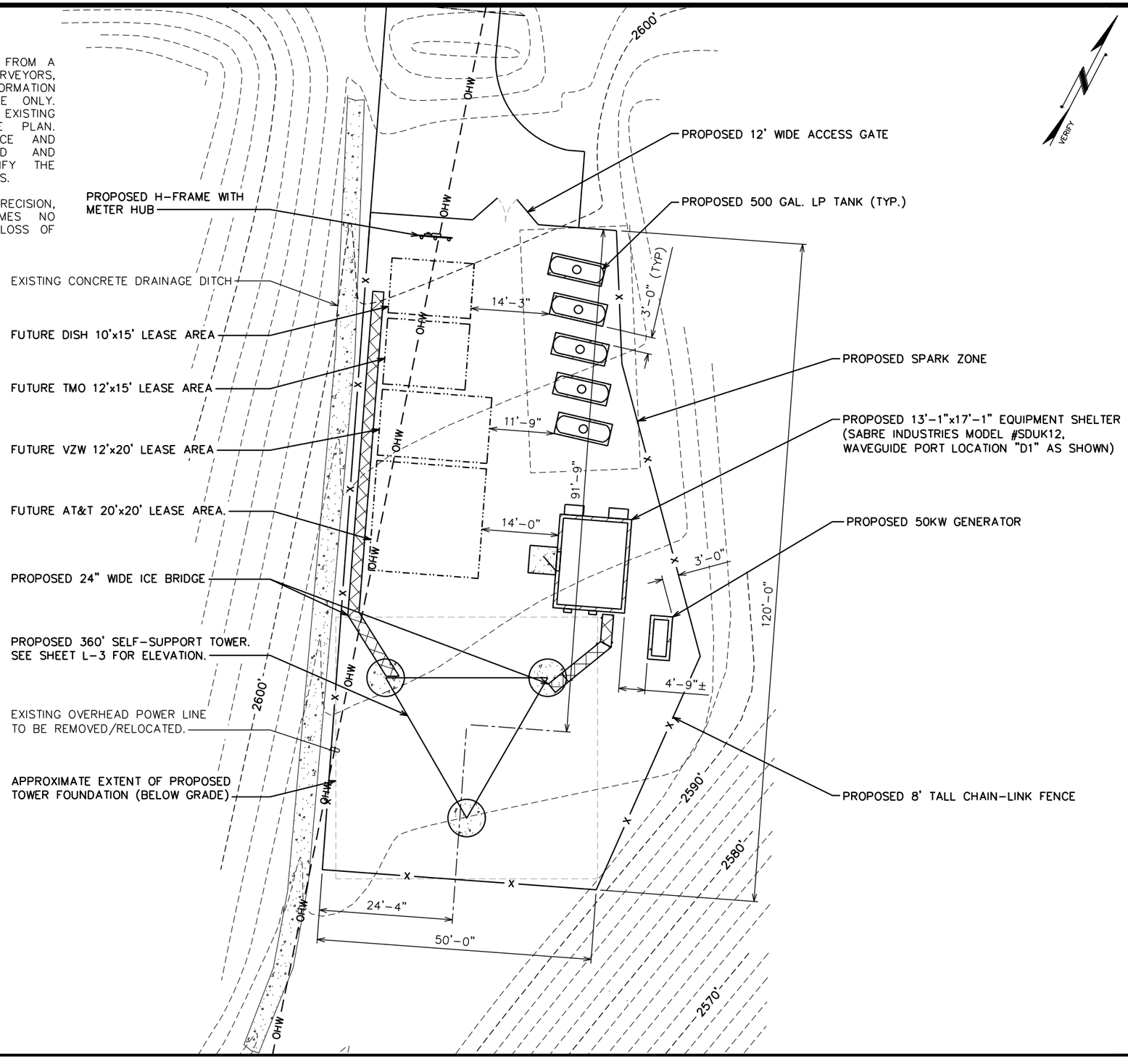
SHEET NUMBER: **L-1**
REVISION: 3
TEP#:266535.546646

Exhibit 5

NOTES:

1. SITE PLAN SHOWN ON THIS PLAN IS TAKEN FROM A SURVEY BY POINT TO POINT LAND SURVEYORS, FIELDWORK COMPLETED ON 08-03-21. ALL INFORMATION SHOWN ON THIS PLAN IS FOR REFERENCE ONLY. CONTRACTOR TO VERIFY THAT ALL EXISTING INFORMATION IS AS INDICATED ON SITE PLAN. CONTRACTOR TO ESTABLISH THE EXISTENCE AND LOCATION OF ALL EXISTING OVERHEAD AND UNDERGROUND UTILITIES. IMMEDIATELY NOTIFY THE CONSTRUCTION MANAGER OF ANY DISCREPANCIES.

2. TEP DOES NOT GUARANTEE, OR ENSURE THE PRECISION, ACCURACY, OR CORRECTNESS AND ASSUMES NO RESPONSIBILITY OR LIABILITY FOR DAMAGES, LOSS OF REVENUE OR INJURY THAT MIGHT OCCUR



LEGEND

- EXIST. PROPERTY LINE
- ADJ. PROPERTY LINE
- EXIST. UTILITY POLE
- EXIST. TELCO PEDESTAL
- PROPERTY CORNER
- ---200--- EXIST. CONTOUR LINE
- EDGE OF PAVEMENT
- ---OHW--- OVERHEAD WIRE
- ---R/W--- RIGHT-OF-WAY
- —— X —— CHAIN LINK FENCE
- EXISTING TREE LINE

COMPOUND PLAN

SCALE: 1" = 20'

0 20 40

SCALE IN FEET

PLANS PREPARED FOR:

DUKE ENERGY.

401 SOUTH WILMINGTON STREET
RALEIGH, NC 27601
Office: (800) 452-2777

PROJECT INFORMATION:

BAD CREEK

100 BAD CREEK ROAD
SALEM, SC 29676
(OCONEE COUNTY)

PLANS PREPARED BY:

SOUTH CAROLINA
TEP OPCO, LLC
5399
CERTIFICATE OF AUTHORIZATION

TOWER ENGINEERING PROFESSIONALS
326 TRYON ROAD
RALEIGH, NC 27603-3530
OFFICE: (919) 661-6351
www.tepgroup.net

SEAL:

PRELIMINARY
DO NOT USE FOR CONSTRUCTION

REV	DATE	ISSUED FOR:
3	10-15-21	CLIENT LE COMMENT
2	08-25-21	CLIENT LE COMMENT
1	06-28-21	CLIENT LE COMMENT
0	06-03-21	PRELIMINARY

DRAWN BY: GSB CHECKED BY: JBG

SHEET TITLE:

COMPOUND PLAN

SHEET NUMBER: **L-2**

REVISION: 3

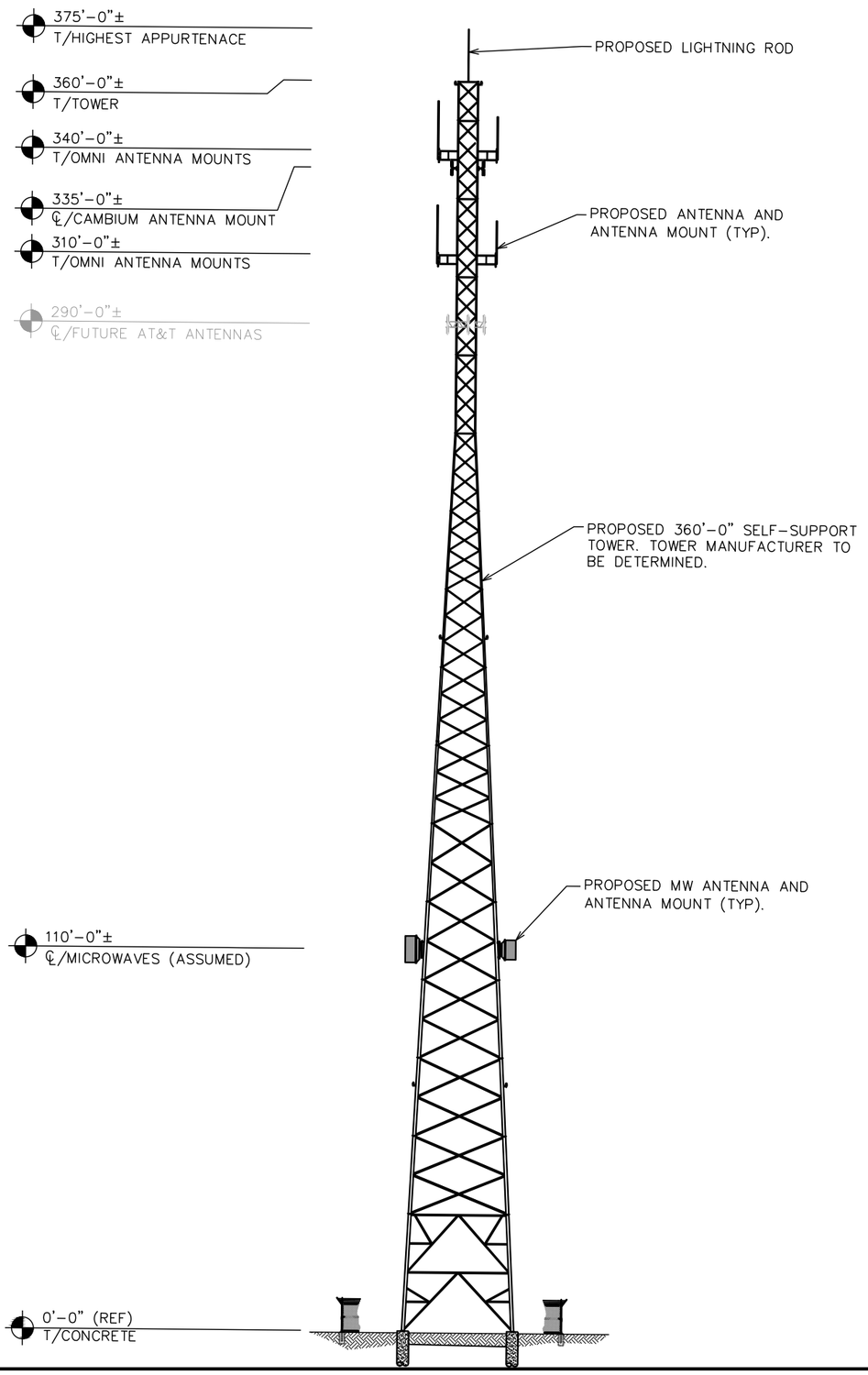
TEP#:266535.546646

NOTE:

1. TOWER TO REMAIN A GALVANIZED COLOR.
2. TOWER SHALL BE LIT ONLY IF REQUIRED BY THE FEDERAL AVIATION ADMINISTRATION.
3. PROPOSED COAX MOUNTED TO WAVEGUIDE LADDER (PROVIDED BY TOWER MANUFACTURER). CONTRACTOR TO COORDINATE WAVEGUIDE LOCATION WITH EQUIPMENT LOCATION

LIGHTING NOTE:

STRUCTURE IS TO BE MARKED/LIGHTED IN ACCORDANCE WITH FAA ADVISORY CIRCULAR 70/7460-1 L CHANGE 2, OBSTRUCTION MARKING AND LIGHTING, A MED-DUAL SYSTEM – CHAPTERS 4,8 (M-DUAL), AND 12.



TOWER ELEVATION

SCALE: 1" = 40'

0 40 80

SCALE IN FEET

PLANS PREPARED FOR:

DUKE ENERGY®

401 SOUTH WILMINGTON STREET
RALEIGH, NC 27601
Office: (800) 452-2777

PROJECT INFORMATION:

BAD CREEK

100 BAD CREEK ROAD
SALEM, SC 29676
(OCONEE COUNTY)

PLANS PREPARED BY:

TOWER ENGINEERING PROFESSIONALS
326 TRYON ROAD
RALEIGH, NC 27603-3530
OFFICE: (919) 661-6351
www.tepgroup.net

CERTIFICATE OF AUTHORIZATION
SOUTH CAROLINA
TEP OPCO, LLC
5339

SEAL:

PRELIMINARY
DO NOT USE FOR CONSTRUCTION

REV	DATE	ISSUED FOR:
0	06-03-21	PRELIMINARY
1	06-28-21	CLIENT LE COMMENT
2	08-25-21	CLIENT LE COMMENT
3	10-15-21	CLIENT LE COMMENT

DRAWN BY: GSB
CHECKED BY: JBG

SHEET TITLE:

TOWER ELEVATION

SHEET NUMBER: **L-3**

REVISION: **3**

TEP#:266535.546646

SITE NAME: BAD CREEK
TEP SITE ID: 266535
PROPOSED 360' SELF-SUPPORT
TOWER, SHELTER AND COMPOUND

100 BAD CREEK ROAD
SALEM, SC 29676
(OCONEE COUNTY)

Exhibit 6

EXISTING: LOCATION 1

DUKE ENERGY®

SITE NAME: BAD CREEK
100 BAD CREEK ROAD
SALEM, SC 29676
(OCONEE COUNTY)

PHOTO RENDERING BY TOWER ENGINEERING PROFESSIONALS, INC.

PROPOSED: LOCATION 1

DUKE ENERGY®

SITE NAME: BAD CREEK
100 BAD CREEK ROAD
SALEM, SC 29676
(OCONEE COUNTY)

PHOTO RENDERING BY TOWER ENGINEERING PROFESSIONALS, INC.

AFFIDAVIT

STATE OF NORTH CAROLINA
COUNTY OF WAKE

BEFORE ME, the undersigned, on this day personally appeared George T. Swearingen, III ("Affiant"), as Vice President, Environmental Resources Group Manager with Tower Engineering Professionals ("TEP"), who is to me well known, and having been duly sworn and under oath, deposes and states:

1. My name is George T. Swearingen, III. I am over the age of twenty-one (21) years of age and have personal knowledge of the facts contained herein.

2. I am Vice President, Environmental Resources Group Manager with TEP.

3. On May 11, 2022 from 2:12p.m. to 8:12p.m., May 12, 2022 from 6:42a.m. to 12:42p.m. and May 17, 2022 from 6:30a.m. to 6:30p.m., I conducted a balloon test on certain property in Oconee County, SC located generally near the intersection of Bad Creek Road and SC HWY 130 (~Latitude N35.023006 & ~Longitude W83.020878) and identified by Parcel ID# 016-00-01-001.

4. On each of the above balloon test dates, I utilized a yellow balloon of no less than four (4) feet in diameter and flew the balloon at a height of 360-ft above ground level (AGL).

FURTHER AFFIANT SAYETH NAUGHT.

DATED this 26 day of May, 2022

AFFIANT

George T. Swearingen, III

STATE OF NORTH CAROLINA
COUNTY OF WAKE

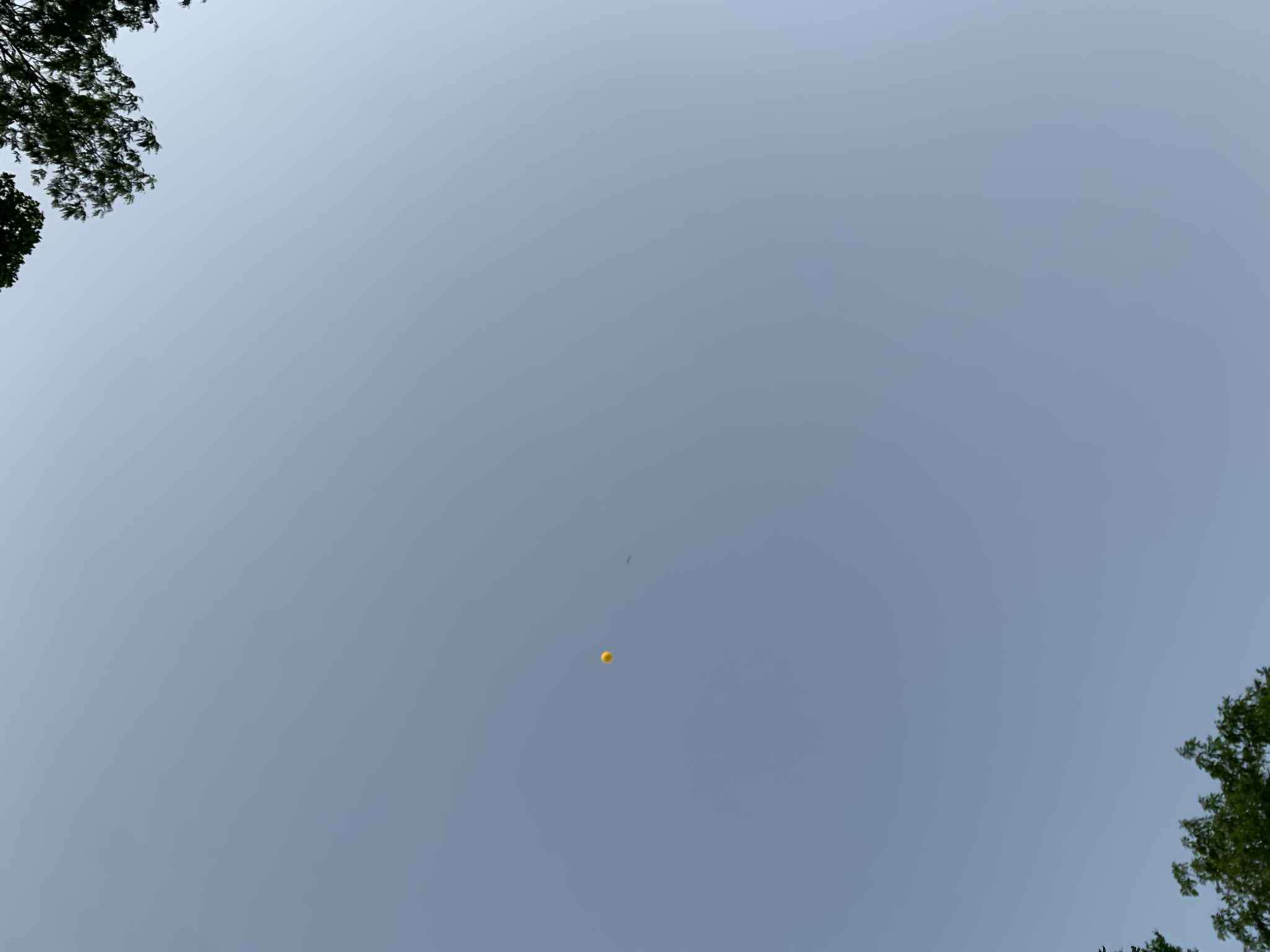
The foregoing instrument was sworn to, subscribed and acknowledged before me this 26 day of May, 2022 by George T. Swearingen, III as Vice President, Environmental Resources Group Manager with TEP. He appeared before me by means of: [ ] online notarization, or [✓] physical presence and is [✓] personally known to me, or [ ] has produced _____ as identification.

ANTONIO D DANUSSI
NOTARY
PUBLIC
WAKE COUNTY, NC

(Signature of Notary Public)
Print Name: ANTONIO D. DANUSSI
Notary Public, State of North Carolina
Commission No.: 202135400181
My Commission Expires: 01/05/2027

Exhibit 7


Foothills Trail
Conference
Heyward Douglass
Executive Director
info@foothillstrail.org
heyward69@gmail.com
Cell: (864) 888-7483
Home: (864) 888-8866
P.O. Box 3041
Greenville, SC 29602



SMW ENGINEERING GROUP, INC.
158 BUSINESS CENTER DRIVE
BIRMINGHAM, AL 35244
TELEPHONE: (205) 397-6781

May 18, 2022

ATTN: Oconee County

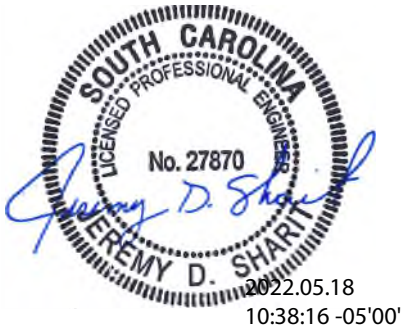
Subject:	**FCC Compliance Letter**
Duke Power Site No./Name:	**LA-SC-617 / Bad Creek Hydro Station**
Site Address:	**100 Bad Creek Rd** **Salem, SC 29676**
SMW Project:	**21-2705**

FCC Compliance Comment:

The proposed tower located at 100 Bad Creek Rd, Salem, SC 29676 will only contain equipment that meets current FCC (Federal Communications Commission) requirements per the provided information given to SMW Engineering Group, Inc.

Should you have any questions or wish to discuss any aspect of this letter, please do not hesitate to contact the undersigned.

Sincerely,



SMW Engineering Group, Inc.
Jeremy D. Sharit, PE
Director of Telecommunications
205-453-1892

Exhibit 8

Duke Energy Corporation
Land Estate Services
Charlotte, NC 28201-1007

Duke Energy Carolinas, LLC ("Duke Energy"), plans to build and operate a communications tower located at 100 Bad Creek Road, Salem, South Carolina 29676 (TMS 016-00-01-001) (the "Tower"). To the extent permitted by law, Duke Energy shall indemnify and hold the County of Oconee ("Oconee") harmless from all liabilities, costs, damages, expenses, claims, demands, or judgments, including without limitation, court costs and reasonable attorneys' fees, incurred by Oconee in defense of any claim or action brought against Oconee by an unrelated third party for injury to persons or property resulting directly from Duke Energy's negligence or intentional misconduct while constructing or operating the Tower.

In witness hereof, Duke Energy has caused this Indemnification Letter to be duly executed by the authorized signature below.

By: _____
Name: Ronald Howell
Title: Manager - Land Services

Exhibit 9

CERTIFICATE OF LIABILITY INSURANCE

DATE(MM/DD/YYYY)
09/01/2021

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER
Aon Risk Services South, Inc.
Charlotte NC Office
1111 Metropolitan Avenue, Suite 400
Charlotte NC 28204 USA

CONTACT NAME:
PHONE (A/C. No. Ext): (866) 283-7122 **FAX (A/C. No.):** (800) 363-0105
E-MAIL ADDRESS:

INSURER(S) AFFORDING COVERAGE		NAIC #
INSURER A:	Liberty Mutual Fire Ins Co	23035
INSURER B:	The First Liberty Insurance Corporation	33588
INSURER C:		
INSURER D:		
INSURER E:		
INSURER F:		

INSURED
Duke Energy Corporation
Incl. Piedmont Natural Gas Company, Inc.
550 S. Tryon Street
DEC 41Q
Charlotte NC 28202 USA

COVERAGES **CERTIFICATE NUMBER:** 570083743872 **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

Limits shown are as requested

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
	COMMERCIAL GENERAL LIABILITY						EACH OCCURRENCE	
	☐ CLAIMS-MADE ☐ OCCUR						DAMAGE TO RENTED PREMISES (Ea occurrence)	
							MED EXP (Any one person)	
							PERSONAL & ADV INJURY	
	GEN'L AGGREGATE LIMIT APPLIES PER:						GENERAL AGGREGATE	
	☐ POLICY ☐ PRO-JECT ☐ LOC						PRODUCTS - COMP/OP AGG	
	☐ OTHER:							
A	**AUTOMOBILE LIABILITY**			AS2-641-443955-031 (AOS) Self-Insured	09/01/2021	09/01/2022	COMBINED SINGLE LIMIT (Ea accident)	$1,000,000
A	X ANY AUTO			NC,SC,OH,IN,FL,TN & KY	09/01/2021	09/01/2022	BODILY INJURY (Per person)	
	☐ OWNED AUTOS ONLY ☐ SCHEDULED AUTOS						BODILY INJURY (Per accident)	
	☐ HIRED AUTOS ONLY ☐ NON-OWNED AUTOS ONLY						PROPERTY DAMAGE (Per accident)	
	☐ **UMBRELLA LIAB** ☐ OCCUR						EACH OCCURRENCE	
	☐ **EXCESS LIAB** ☐ CLAIMS-MADE						AGGREGATE	
	☐ DED ☐ RETENTION							
B	**WORKERS COMPENSATION AND EMPLOYERS' LIABILITY** Y / N			WC2-641-443955-021 (AOS) Self-Insured	09/01/2021	09/01/2022	X PER STATUTE ☐ OTH-ER	
B	ANY PROPRIETOR / PARTNER / EXECUTIVE OFFICER/MEMBER EXCLUDED? ☐ N **(Mandatory in NH)**	N / A		NC,SC,OH,IN,FL,TN & KY	09/01/2021	09/01/2022	E.L. EACH ACCIDENT	$2,000,000
	If yes, describe under DESCRIPTION OF OPERATIONS below						E.L. DISEASE-EA EMPLOYEE	$2,000,000
							E.L. DISEASE-POLICY LIMIT	$2,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

See Attached Addendum for Self-Insured Limits. Workers Compensation and Auto Liability policies listed above exclude coverage for Self-Insured states identified above in the description.

Where delineated to provide additional insured and/or waiver of subrogation for coverages, the self-insured programs respond in accordance with written contract. Insurance policies include certificate holder as additional insured and waiver of subrogation where required by written contract, subject to the terms and conditions of the policy.

CERTIFICATE HOLDER

Duke Energy Corporation
including Piedmont Natural Gas
550 South Tryon Street, DEC 41-Q
Charlotte NC 28202 USA

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

Aon Risk Services South Inc.

Holder Identifier :

Certificate No : 570083743871

ADDITIONAL REMARKS SCHEDULE

AGENCY		NAMED INSURED
Aon Risk Services South, Inc.		Duke Energy Corporation
POLICY NUMBER		
See Certificate Number: 570083743872		
CARRIER	NAIC CODE	EFFECTIVE DATE:
See Certificate Number: 570083743872		

ADDITIONAL REMARKS

THIS ADDITIONAL REMARKS FORM IS A SCHEDULE TO ACORD FORM,
FORM NUMBER: ACORD 25 **FORM TITLE:** Certificate of Liability Insurance

Addendum:

See below for Self-Insured Limits:

General Liability: The Insured is Self-Insured for $1,000,000 Each Occurrence/$1,000,000 Personal & Advertising Injury/$2,000,000 General Aggregate/$2,000,000 Products Completed Operations.

Automobile Liability: The Insured is Self-Insured for $1,000,000 Each Occurrence/$1,000,000 Aggregate in the following States: NC, SC, OH, IN, FL, TN and KY.

Workers Compensation/Employers Liability: The Insured is Self-Insured in the following States: NC, SC, OH, IN, FL, TN and KY with EL Limit of $1,000,000 Each Accident, $1,000,000 Disease - Each Employee, $1,000,000 Disease - Policy Limit.

Excess Liability: The Insured is Self-Insured for $1,000,000 Each Occurrence/$1,000,000 Aggregate.

FIRSTNET

WHAT

The First Responder Network Authority

Build, operate and maintain the first high-speed, nationwide wireless broadband network dedicated to public safety

WHY

Born from recommendations by the 9/11 Commission

End the history of public safety communications challenges to help keep our communities and emergency responders safer

First Responder Communications Challenges

10,000+ individual radio networks

No dedicated broadband network to unify communications across agencies, devices or jurisdictions

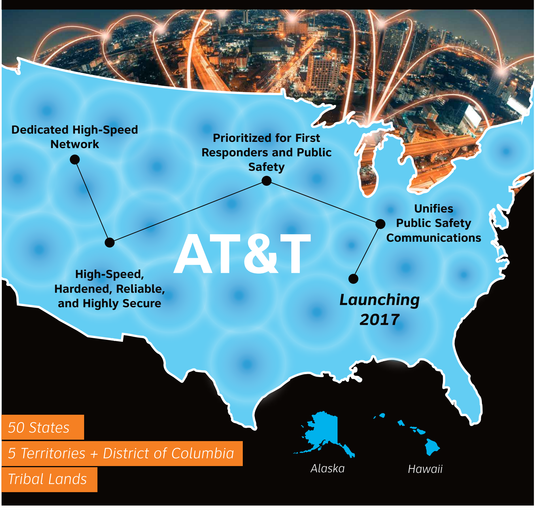
Commercial networks congested during crises

70k+
Public Safety Agencies

3,100+
Counties

550+
Recognized Tribes

FIRST NATIONWIDE PUBLIC SAFETY BROADBAND NETWORK



FirstNet & AT&T will help bring 21st Century communications tools to America's first responders and public safety community.

WHY AT&T?

- ***Nearly 140 years*** – supporting public safety, delivering networking services
- ***$135 billion investment*** – AT&T's investment in its U.S. wireless and wireline networks over the past 5 years (2012-2016)
- ***99.99%*** network reliability
- ***99%+*** – U.S. population covered by AT&T
- ***130,000+ hours*** – experience conducting network disaster recovery exercises
- ***30+ million*** – connected devices on our network
- ***500+*** – relationships with OEMs to bring latest devices to market

HELPING CREATE THE FUTURE OF U.S. PUBLIC SAFETY

TOP 10 FREQUENTLY ASKED QUESTIONS

1. What is the First Responder Network Authority?

The First Responder Network Authority is the independent authority established by Congress to deliver a nationwide broadband network dedicated to public safety. The Network will strengthen public safety users' communications capabilities, enabling them to respond more quickly and effectively to accidents, disasters, and emergencies.

The First Responder Network Authority is led by a Board of leaders and executives from the public safety community; federal, state, and local governments; and the technology, finance, and wireless sectors. It has a staff of about 200 employees with expertise in public safety, telecommunications, customer service, technology, procurement, and other areas needed to develop the Network. It is headquartered in Reston, VA, and has a technology center and lab in Boulder, CO.

2. What led to the creation of the First Responder Network Authority?

The 9/11 terrorist attacks brought to the forefront the many communications challenges that first responders face during emergencies and disasters. These issues were captured in the *9/11 Commission Report*, which identified gaps in emergency communications and recommended a nationwide network for law enforcement, fire, and emergency medical personnel communications.

The public safety community united to fulfill the 9/11 Commission's recommendation. Public safety organizations and associations advocated before Congress for a dedicated, reliable wireless network for first responders. Their advocacy efforts led to the passage of legislation in 2012 to create the agency to deploy the Network in all U.S. states and territories, including rural communities and tribal nations.

3. How has public safety been involved in the vision for the Network?

Public safety officials have worked closely with the First Responder Network Authority since its inception in 2012 to ensure the Network meets first responders' needs – today and in the future. The agency's outreach and consultation efforts have connected the organization to more than 1.8 million first responders and state public safety and technology executives across the country.

Specifically, the First Responder Network Authority has consulted extensively with state single points of contact (SPOCs) in each of the 50 U.S. states, 5 territories, and the District of Columbia, as well as local/municipal, tribal and federal public safety leaders. It also coordinates with public safety through the Public Safety Advisory Committee (PSAC), which provides guidance and subject matter expertise from a first responder perspective. Public safety leaders at the national, state and local levels continue to advocate for FirstNet and support deployment of the Network.

4. How was AT&T selected to build, operate, and maintain the Network?

The First Responder Network Authority and the Department of Interior made the 25-year award based on the determination of the overall best value solution for FirstNet and public safety. The buildup to the award included a fair, competitive procurement process that began in January 2016 with release of the Network RFP.

The procurement process followed the Federal Acquisition Regulation (FAR) and encouraged offerors to provide innovative solutions that could meet or exceed the needs of public safety.

The procurement was open to all entities, whether traditional wireless companies or new entrants, provided their proposal could meet the RFP's statement of objectives. AT&T was selected on a best value award that considered financial sustainability and was based on more than just a technically acceptable solution at the lowest cost. The evaluation of proposals assessed the offerors' ability to submit a cost-effective and innovative model, and to meet or exceed the 16 objectives and evaluation factors outlined in the FirstNet RFP.

5. Why is the Network being built and operated through a public-private partnership?

The First Responder Network Authority and AT&T are modernizing and improving public safety communications by leveraging private sector resources, infrastructure, and cost-saving synergies to deploy and operate the Network. This public-private model also helps keep costs down for American taxpayers. To do this, Congress used the sale of communications airwaves (or spectrum) to fund FirstNet's initial operations and help start network deployment; the $7 billion FirstNet received in initial funding came from FCC spectrum auction revenue, not taxpayer funds.

If the federal government were to build, maintain and operate this Network, the estimated cost would be tens of billions of dollars over 25 years. The Government Accountability Office has estimated it could cost up to $47 billion over 10 years to construct and operate the Network.

With this partnership approach, FirstNet and AT&T do not need any additional federal funding to build and operate the Network – it is a fully funded, self-sustaining Network. In return, America's first responders get services far above and beyond what they have today over a first-class broadband network dedicated to their communications needs.

6. What are the key terms this public-private partnership?

Congress intended for the Network to be built and operated as a public-private partnership that brings together the best of the private sector, including commercial best practices, infrastructure, and resources – with the First Responder Network Authority's public safety expertise. This approach will lead to a fully-funded, self-sustaining Network that will serve public safety for years to come. This business model is built upon the efficient use of resources, infrastructure, cost-saving synergies, and incentives, including:

- 20 MHz of federally owned spectrum and $6.5 billion in initial funding to the partnership; in return AT&T will deploy and operate a nation- wide high-speed broadband network for public safety over 25 years.
- AT&T will spend about $40 billion over the life of the contract to build, operate, deploy, and maintain the Network, and together with the First Responder Network Authority will help ensure the Network evolves with the needs of public safety.
- AT&T can use FirstNet's spectrum when it is not being used by public safety for other, commercial purposes. The company will prioritize first responders over any other com- mercial users.
- First Responder Network Authority will oversee the contract to ensure it delivers innovation, technology and customer care to public safety through various mechanisms, including subscriber adoption targets, milestone buildouts, disincentive fees and other mechanisms outlined in the contract.

7. What will the FirstNet Network provide first responders that they don't have today?

Today, in emergencies and at large events, heavy public use can lead to wireless communications networks becoming overloaded and inaccessible. In those instances, public safety users are treated the same as any other commercial or enterprise user, and communications can be limited due to congestion and capacity issues.

With the FirstNet Network, public safety will get a dedicated 'fast lane' that provides highly secure communications every day and for every emergency. It will deliver specialized features to public safety that are not available on wireless networks today – such as priority access; more network capacity; and a resilient, hardened connection. The Network will deliver more than just a public-safety-dedicated wireless connection – it is also creating devices and apps ecosystems that will connect first responders to innovative, life-saving technologies.

8. How will the Network benefit first responders and help them do their jobs better?

FirstNet will improve communications, response times and outcomes for first responders from coast-to-coast, in rural and urban areas, inland and on boarders – leading to safer, and more secure communities. The Network will provide first responders with innovation and robust capacity so they can take advantage of advanced technologies, tools and services during emergencies, such as:

- Applications that allow first responders to reliably share videos, text messages, photos and other information during incidents in near real-time;
- Advanced capabilities, like camera-equipped connected drones and robots, to deliver images of wildfires, floods or other events;
- Improved location services to help with mapping capabilities during rescue and recovery operations; and
- Wearables that could relay biometric data of a patient to the hospital or alert when a fire fighter is in distress.

Network technology will also be tested and validated through the FirstNet Innovation and Test Lab, located in Boulder, CO, so first responders will have the proven tools they need in disasters and emergencies.

9. What's next for FirstNet and when is it available?

All 50 states, three U.S. territories and Washington, D.C., have "opted in," to FirstNet, meaning each has accepted its individual State Plan detailing how the network will be deployed in their state/territory. (Two other territories have until March 12, 2018, to make their determinations.)

The First Responder Network Authority's public-private partnership with AT&T provides first responders with immediate access to mission-critical capabilities over the FirstNet network. This includes priority and preemption features that give first responders their own 'fast lane' on the public safety network to communicate and share information during emergencies, large events, or other situations when commercial networks could become congested. FirstNet is the only broadband network to provide ruthless preemption for public safety.

Key FirstNet milestones and activities planned for 2018 include:

Expanding the Network and Building Out Band 14: The First Responder Network Authority will issue work orders to deploy the RANs early 2018. This will give AT&T the green light to expand FirstNet's footprint and deploy Band 14 capacity and coverage throughout the nation, providing first responders with the bandwidth and mission critical connections they need to communicate, share information, and use innovative technologies every day and in every emergency.

Driving public safety innovation: FirstNet is also unlocking a new technology marketplace for public safety, enabling first responders to benefit from advancements in innovation. The FirstNet App store will be filling up with FirstNet-approved mobile apps that are optimized for public safety use over the Network.

Securing emergency communications: FirstNet's first-of-its-kind core infrastructure will give first responders the dedicated, highly secure, non-commercial network they deserve. On schedule to be operational in March, the FirstNet public safety core will provide full encryption of public safety data over FirstNet and provide end-to-end cyber security. FirstNet subscribers will also have access to a dedicated Security Operations Center, offering 24/7/365 support.

Engaging with public safety: The First Responder Network Authority will continue to engage with public safety in the states, territories, federal agencies, and tribal nations to ensure the network meets their needs and incorporate their feedback in the design of future FirstNet products and services.

10. How can I learn more?

Stay up-to-date on the First Responder Network Authority activities and the building and deployment of FirstNet at www.firstnet.gov. Follow us on Twitter, Facebook and YouTube.

HENRY MCMASTER
GOVERNOR

October 24, 2017

Mr. Mike Poth
Chief Executive Officer
First Responder Network Authority
12201 Sunrise Valley Drive M/S 243
Reston, VA 20192

Dear Mr. Poth:

The State of South Carolina has participated in FirstNet consultation and outreach activities throughout the planning of the Nationwide Public Safety Broadband Network. South Carolina's public safety community has extensively and thoroughly reviewed the details of the FirstNet State Plan, a copy of their official recommendation has been included.

South Carolina public safety personnel have noted the following specific concerns about the proposed network: 1) generators should be installed at all sites in South Carolina, 2) a minimum of 12 hours battery backup should be available at all sites, and 3) network coverage should be extended to the territorial sea (twelve nautical miles from shore) to support South Carolina maritime public safety operations.

Additionally, South Carolina has concerns about the lack of redundancy in the network, whereby a single fiber-cut can result in a network outage. The State is encouraged, however, that these issues, which were all raised by the State during the consultation process, will be addressed by FirstNet and AT&T in due course.

Please note that while the State feels it important to include in this letter several issues of concern regarding the proposed network, the inclusion of these issues in this correspondence is not to be construed in any manner as conditions, stipulations, or contingencies to the State's decision to hereby opt-in.

In the hope that FirstNet can offer solutions that meet South Carolina public safety's needs, this letter serves as notice under 47 U.S.C. § 1442(e)(2)(A) that I have determined that it is in the best interest of South Carolina to participate in the deployment of the nationwide, interoperable broadband network as proposed in the FirstNet State Plan.

Yours very truly,

Henry McMaster

HDM/tw
Attachment

STATE HOUSE • 1100 GERVAIS STREET • COLUMBIA, SOUTH CAROLINA 29201 • TELEPHONE: 803-734-2100

7. Variance application #VA22-0010 – HSB, PA – Sarah Spruill is requesting a 185’ height variance (175’ maximum) and 215’ fall zone variance from the required 360’ requirement. TMS# 016-00-001-001 with an address of 100 Bad Creek Road, Salem, SC 92676.

Variances

"A variance is a waiver of the dimensional terms of the zoning chapter where such variance will not be contrary to the public interest and where, owing to conditions peculiar to the property and not the result of actions of the applicant, a literal enforcement of the chapter would result in unnecessary and undue hardship; and does not involve a change in the use of the property." Chapter 38-212 of the Oconee County Code of Ordinances.

Requesting a variance requires a public hearing through the Board of Zoning Appeals. These hearings are generally held once per month on the fourth Monday. During this hearing the applicant or their assignee may speak to the Board regarding their request. Neighbors and citizens are given an opportunity to speak in-favor, or against, the request during the meeting. The public is notified about the request in following ways:

1.Signs or signage on , adjacent and near the property that the variance is being requested for.

2. A direct mailing to all property owners within a 250' radius of the property that the variance is being requested for.

3. An advertisement in a newspaper at least 21 calendar days before the meeting.

The language from the Code of Ordinances is as follows:

Sec. 38-7.1. - Variances. The board of zoning appeals may grant a variance in an individual case of unnecessary hardship if the board of zoning appeals makes and explains in writing the following findings:

(1) There are extraordinary and exceptional conditions pertaining to the particular piece of property;

(2) These conditions do not generally apply to other property in the vicinity;

(3) Because of these conditions, the application of this chapter to the particular piece of property would effectively prohibit or unreasonably restrict the utilization of the property; and

(4) The authorization of a variance will not be of substantial detriment to adjacent uses or to the public good, and the character of the district will not be harmed by the granting of the variance.

a. The board of zoning appeals may not grant a variance the effect of which would be to allow the establishment of a use not otherwise permitted. The fact that the property may be utilized more profitably, should a variance be granted, may not be considered grounds for a variance.

b. The board of zoning appeals may grant a variance to extend physically an existing nonconforming use provided that the expansion does not adversely affect the character of the community and is designed so as to minimize any negative secondary impacts.

c. In granting a variance, the board of zoning appeals may attach to it such conditions regarding the location, character, or other features of the proposed building, structure, or use as the board of zoning appeals may consider advisable to protect established property values in the surrounding area, or to promote the public health, safety, or general welfare.

The developer shall have the burden of providing evidence to the county of compliance with the general requirements of this chapter and the specific requirements of the applicable section. The board of zoning appeals may impose whatever reasonable conditions it deems necessary to ensure that any proposed development will comply substantially with the objectives in this chapter.

This document is for informational purposes only and does not supersede or supplant any information within the current code of ordinances. Speak with the Planning & Zoning department for the most accurate information.

Printed August 2018

OCONEE COUNTY BOARD OF ZONING APPEALS

415 South Pine Street –Walhalla, SC **Tel: (864)638-4218 FAX (864) 638-4168**

APPLICATION FOR VARIANCE

OCONEE COUNTY, SC

APPLICANT: Ronald Howell, Manager Land - Services Duke Energy Carolinas, LLC

Name Title/Organization

PROPERY OWNER: (If different from applicant)

_____

MAILING ADDRESS: 4720 Piedmont Row Drive, Charlotte, NC 28210

PHONE: cell: (205) 915-9765 email: Ronald.howell@duke-energy.com

land line: (205) 915-9765

PROPERTY INFORMATION

STREET ADDRESS: 100 Bad Creek Road, Salem, SC 29676

TAX PARCEL # 016-00-01-001 DEED BOOK/PAGE: 14-L/221

ZONING DESIGNATION: CFD ACREAGE: 1859

REQUEST

CODE SECTION FROM WHICH A VARIANCE IS REQUESTED: 32-133

DESCRIPTION OF REQUEST:

Applicant seeks a special exemption to construct a new tower on the above parcel as shown in the attached plans. In addition to the special exception, Applicant also seeks a variance with respect to the height of the tower and the proposed fall zone.

Instructions:

1. The applicant/owner must respond to the "findings" questions on page 3 of this application (you must answer "why" you believe the application meets the tests for the granting of a variance). See also Section 38-7.1 for additional information. You may attach a separate sheet addressing these questions.

2 . You must attach a scaled drawing of the property that reflects, at a minimum, the following:

   (a) property lines, existing buildings, and other relevant site improvements; (b) the nature (and dimensions) of the requested variance; (c) existing buildings and other relevant improvements on adjacent properties; and, (d) topographic, natural features, etc. relevant to the requested variance.

3. The Zoning Administrator will review the application for sufficiency prior to placing the application on the BZA agenda. If the application does not provide sufficient information, the administrator will contact the applicant to request that the applicant provide the required information. You are encouraged to schedule an application conference with a planner, who will review your application at the time it is submitted to insure the necessary materials is provided.

4. The applicant and/or property owner affirms that the applicant or someone acting on the applicant's behalf has made a reasonable effort to determine whether a deed or other document places one or more restrictions on the property that preclude or impede the intended use and has found no record of such a restriction.

   If the Community Development office by separate inquiry determines that such a restriction exists, it shall notify the applicant. If the applicant does not withdraw or modify the application in a timely manner, or at to have the restriction terminated or waived, then the Community Development office will indicate in its report to the Board of Zoning Appeals that granting the requested change would not likely result in the benefit the applicant seeks.

   To that end, the applicant hereby affirms that the tract or parcel of land which is subject of the attached application is [ ] is not [X] restricted by any recorded covenant that is contrary to, conflicts with, or prohibits the requested activity.

Ronny Howell _____ Applicant Signature

6-22-2022 _____ Date

Ronny Howell _____ Property Owner Signature

6-22-2022 _____ Date

APPLICANT RESPONSES TO
SECTION 38-7.1
(You may attach a separate sheet)

1. Describe the extraordinary and exceptional condition (such as size, shape, and topography) that pertains to the subject property that does not generally apply to other land or structures in the vicinity.

See attached.

2. Are the circumstances affecting the subject property the result of actions by the applicant/owner? Explain.

See attached.

3. Describe the ways in which application of the requirement(s) of the ordinance effectively prohibit or unreasonably restrict the utilization of the subject property.

See attached.

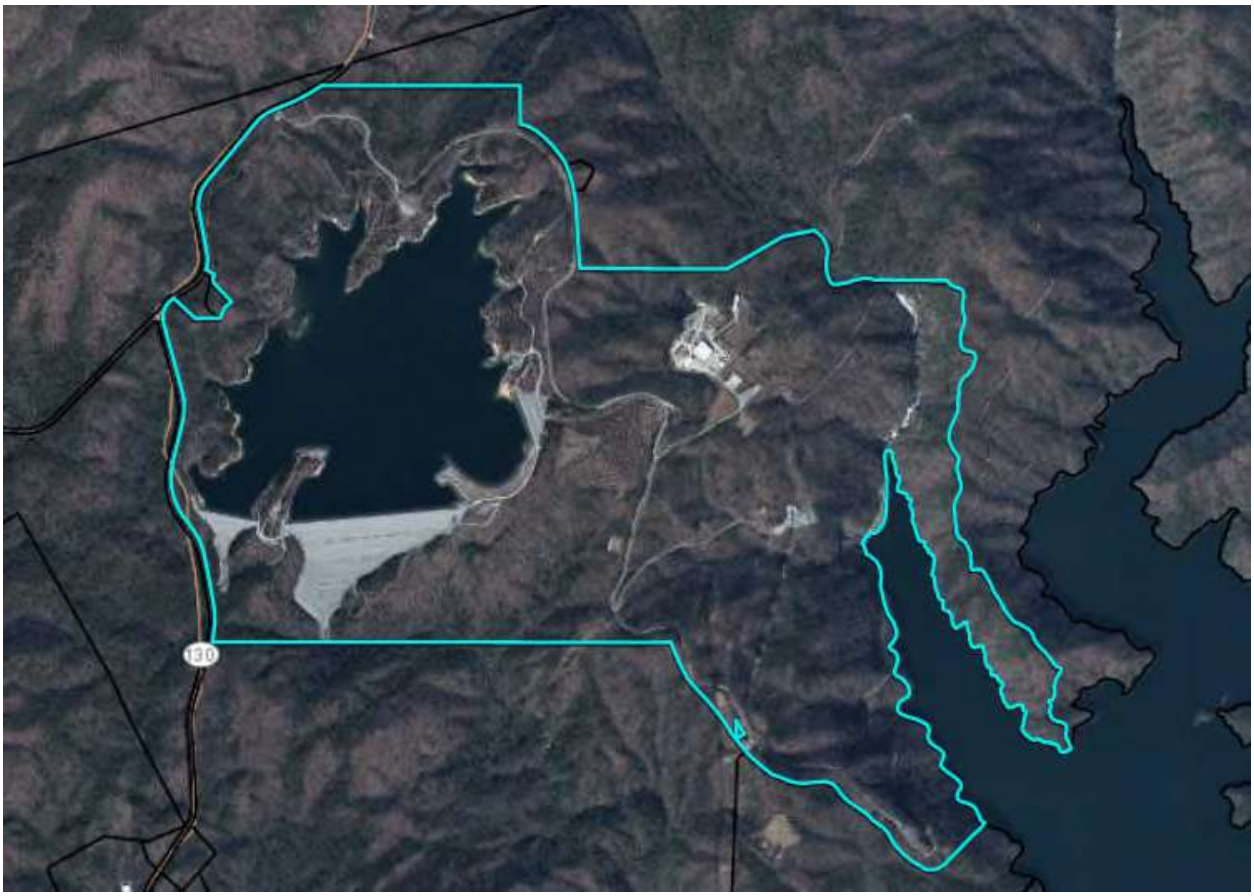
4. Will the proposed variance result in an activity that will not be of substantial detriment to adjacent uses or to the public good, and the character of the district will not be harmed by the granting of the variance. Explain.

See attached.

Response to Section 38-7.1

1. Describe the extraordinary and exceptional condition (such as size, shape, and topography) that pertains to the subject property that does not generally apply to other land or structures in the vicinity.

The parcel is shown in the below snip from the County's GIS maps:



Although the parcel is large, it is mountainous, contains a water body, and much of it is subject to conservation easements. The requested tower location is the only site on the property that will allow for a tower that can handle all of Duke Energy's needs. The height is necessary to reach above the surrounding ridgeline and allow full function of the tower equipment. It is this combination of topography and owner use that makes this property unique as opposed to other land or structures in the vicinity.

2. Are the circumstances affecting the subject property the result of actions by the applicant/owner? Explain.

No. The site and height of the proposed tower were selected as a result of the topography of the parcel.

3. Describe the ways in which application of the requirement(s) of the ordinance effectively prohibit or unreasonably restrict the utilization of the subject property.

Applicant seeks a special exception and a variance as to the maximum height requirements in order to construct the proposed tower. Applicant reattaches the exhibits to the Special Exception Application here for ease of reference.

This is consistent with and in furtherance of the longstanding use of the parcel incident to the provision of electric power. The Applicant's existing tower is functionally and structurally deficient and cannot be modified in strength or height to meet the Applicant's needs. At this time, it is the only tower located in the service area providing a critical connection to the Bad Creek Hydro Power Plant.

Other commercially available towers are too far from the Applicant's existing network infrastructure and too short to allow for the connection of a commercial site to the Applicant's other sites in the area. Stealth towers, typically modified mono-poles, are limited in their height, load carrying capacity, and the technology that can be mounted on them and still be stealthy. The Applicant needs a tower that is able to carry heavy loading and exceeding the height of a stealth tower. In addition, the tower will include microwave antennas that cannot be behind stealth cladding or features. For all of these reasons, the proposed tower is the best solution to address the Applicant's needs in a prudent and cost-effective manner. There is not a technically feasible or cost-effective alternative.

In addition, the new tower will be designed, in the unlikely event of failure, to fall on the Applicant's property and not any public road, per the accompanying "fall letter" included with the Special Exception Application as Exhibit 1. As such, there will be no discernable effect on highway traffic, parking, or safety.

For these reasons, Duke Energy believes a variance is appropriate as to the height and minimum setback requirements.

4. Will the proposed variance result in an activity that will not be of substantial detriment to adjacent uses or to the public good, and the character of the district will not be harmed by the granting of the variance. Explain.

The proposed tower is located on an 1800+ acre parcel in the far northern part of the County that is zoned a control free district (CFD). With respect to the County's Comprehensive Plan, the parcel is shown as "Utility" on the Existing Land Use Map (Map 11-1), and as "Rural/Agricultural" on the Future Land Use Map (Map 11-2). The Future Land Use Map does not include a separate utility category.

The parcel is also the site of the Bad Creek Reservoir and the Bad Creek Hydro Station. The adjoining Oconee County parcels in the area of the proposed tower are owned by the U.S. Forest Service (TMS 009-00-01-001) and Duke Ventures Real Estate, LLC (TMS 016-00-01-013).

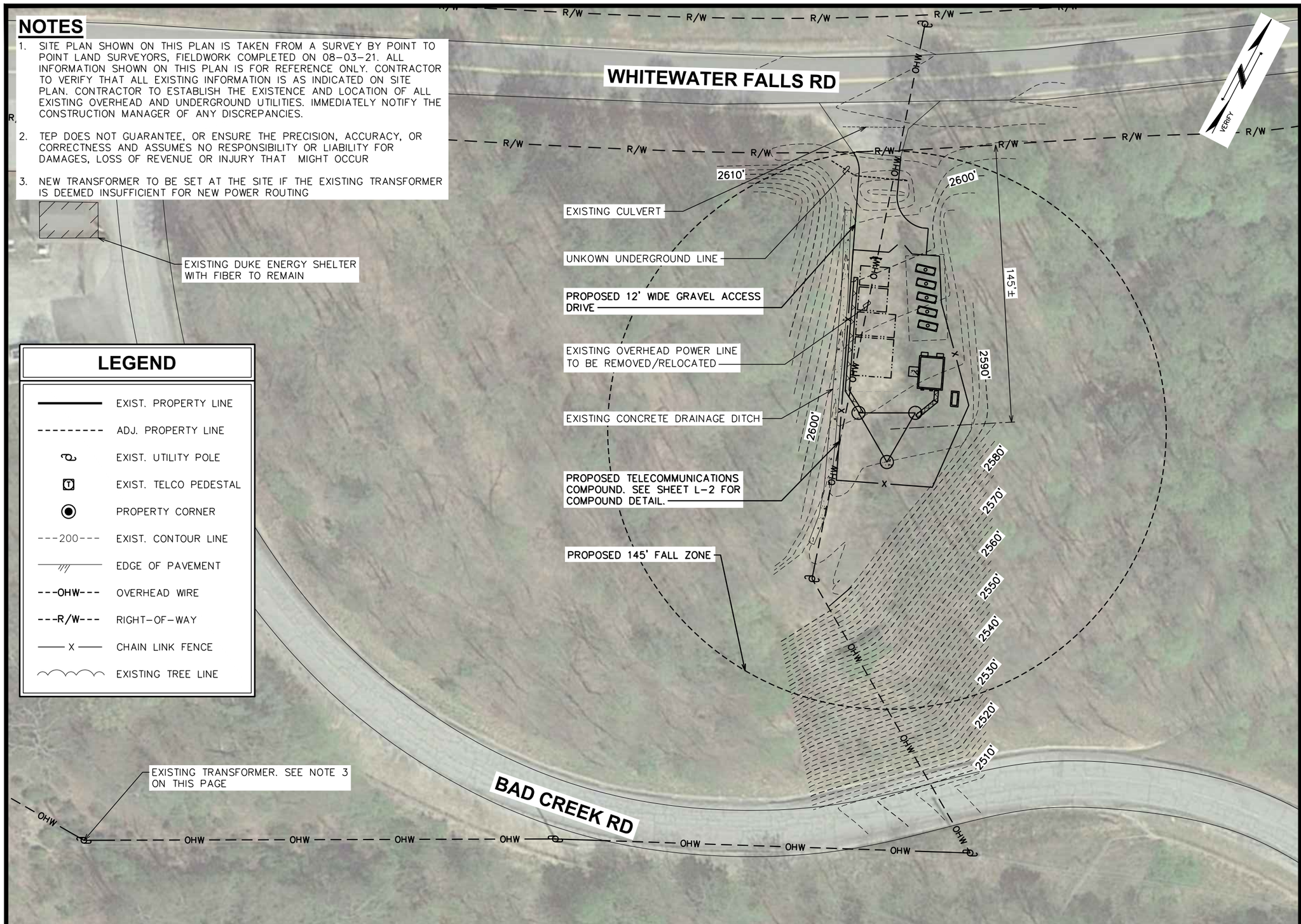
Per Section 38-10.2 of the Oconee County Zoning Ordinance, "[t]he control free district is intended to be the initial zoning district for all parcels within the jurisdiction at the time of initial adoption of zoning in Oconee County, only; any parcel subsequently rezoned to any other district shall not be a part of the control free district at any future date." This district does not impose any use restrictions and includes only limited setback and height requirements. The proposed tower does not change the use of the property, but rather is in furtherance of the long-term existing use. As such, the Applicant believes this proposal is consistent with the spirit of the zoning ordinance and comprehensive plan.

The proposed tower is in an undeveloped area. The Applicant has worked diligently to make sure that the proposed tower is suitable for the property in question, that it is designed, constructed, operated, and maintained so as to be in harmony with and appropriate in appearance to the existing or intended character of the general vicinity, and that the tower is positioned to maximize function while minimizing any burden or disruption to Oconee County and its residents. The Applicant has a long history in Oconee County and looks forward to extending that partnership for generations to come. The proposed tower is crucial to continuing that relationship and to Duke Energy's commitment to providing electric power safely and efficiently in Oconee County and across its system.

For all of these reasons and as further explained in its application for a Special Exception, Duke Energy believes the proposed variance will not be of substantial detriment to adjacent uses or to the public good, and the character of the district will not be harmed by the granting of the variance.

NOTES

1. SITE PLAN SHOWN ON THIS PLAN IS TAKEN FROM A SURVEY BY POINT TO POINT LAND SURVEYORS, FIELDWORK COMPLETED ON 08-03-21. ALL INFORMATION SHOWN ON THIS PLAN IS FOR REFERENCE ONLY. CONTRACTOR TO VERIFY THAT ALL EXISTING INFORMATION IS AS INDICATED ON SITE PLAN. CONTRACTOR TO ESTABLISH THE EXISTENCE AND LOCATION OF ALL EXISTING OVERHEAD AND UNDERGROUND UTILITIES. IMMEDIATELY NOTIFY THE CONSTRUCTION MANAGER OF ANY DISCREPANCIES.
2. TEP DOES NOT GUARANTEE, OR ENSURE THE PRECISION, ACCURACY, OR CORRECTNESS AND ASSUMES NO RESPONSIBILITY OR LIABILITY FOR DAMAGES, LOSS OF REVENUE OR INJURY THAT MIGHT OCCUR
3. NEW TRANSFORMER TO BE SET AT THE SITE IF THE EXISTING TRANSFORMER IS DEEMED INSUFFICIENT FOR NEW POWER ROUTING



LEGEND

- EXIST. PROPERTY LINE
- ADJ. PROPERTY LINE
- EXIST. UTILITY POLE
- EXIST. TELCO PEDESTAL
- PROPERTY CORNER
- ---200--- EXIST. CONTOUR LINE
- EDGE OF PAVEMENT
- ---OHW--- OVERHEAD WIRE
- ---R/W--- RIGHT-OF-WAY
- —— X —— CHAIN LINK FENCE
- EXISTING TREE LINE

SITE PLAN
SCALE: 1" = 50'

0 50 100
SCALE IN FEET

PLANS PREPARED FOR:
DUKE ENERGY®
401 SOUTH WILMINGTON STREET
RALEIGH, NC 27601
Office: (800) 452-2777

PROJECT INFORMATION:
BAD CREEK
100 BAD CREEK ROAD
SALEM, SC 29676
(OCONEE COUNTY)

PLANS PREPARED BY:
SOUTH CAROLINA
TEP OPCO, LLC
5399
CERTIFICATE OF AUTHORIZATION
TOWER ENGINEERING PROFESSIONALS
326 TRYON ROAD
RALEIGH, NC 27603-3530
OFFICE: (919) 661-6351
www.tepgroup.net

SEAL:
PRELIMINARY
DO NOT USE FOR CONSTRUCTION

REV	DATE	ISSUED FOR:
3	10-15-21	CLIENT LE COMMENT
2	08-25-21	CLIENT LE COMMENT
1	06-28-21	CLIENT LE COMMENT
0	06-03-21	PRELIMINARY

DRAWN BY: GSB | CHECKED BY: JBG

SHEET TITLE:
SITE PLAN

SHEET NUMBER: **L-1**
REVISION: 3
TEP#:266535.546646

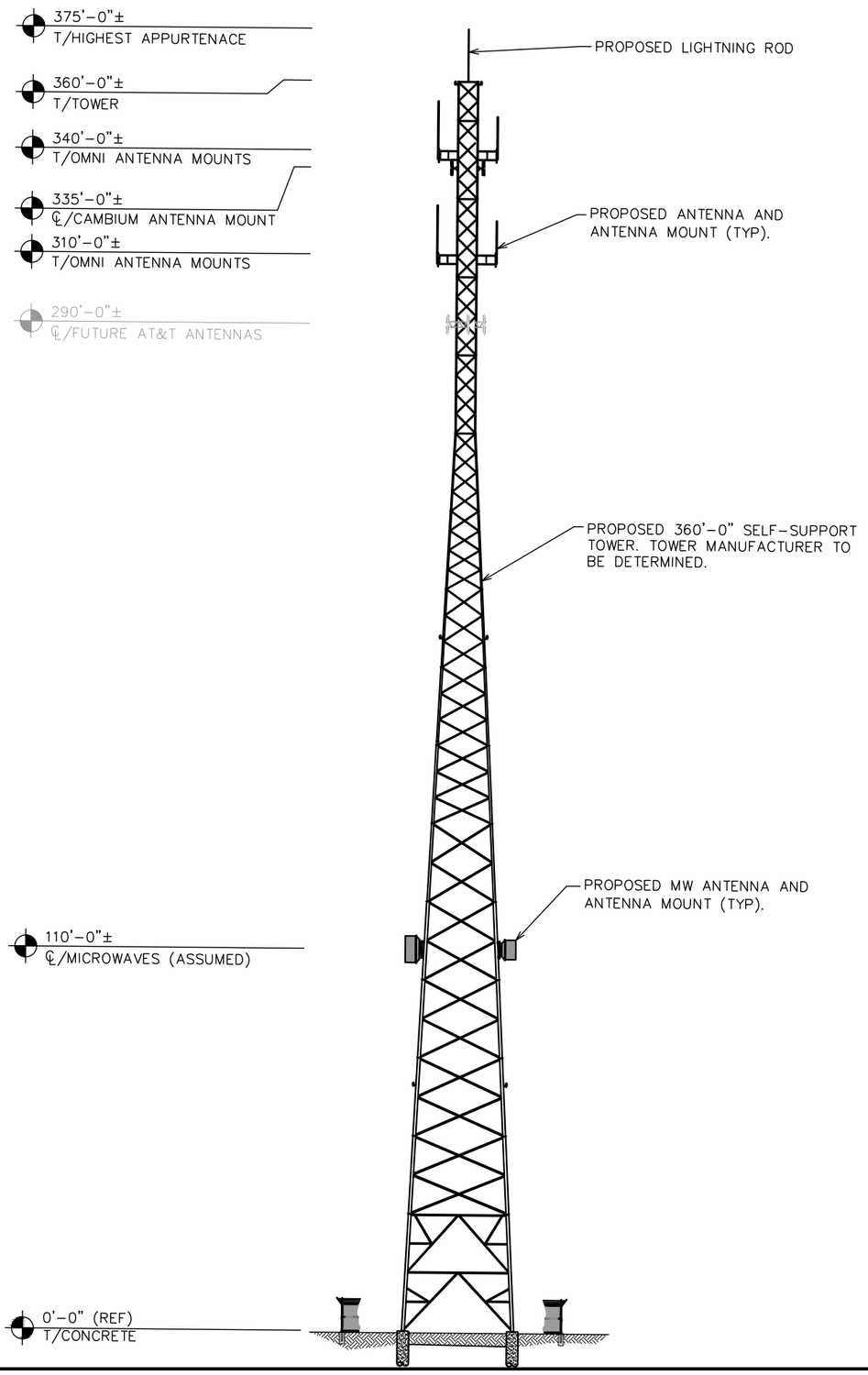
Exhibit 5

NOTE:

1. TOWER TO REMAIN A GALVANIZED COLOR.
2. TOWER SHALL BE LIT ONLY IF REQUIRED BY THE FEDERAL AVIATION ADMINISTRATION.
3. PROPOSED COAX MOUNTED TO WAVEGUIDE LADDER (PROVIDED BY TOWER MANUFACTURER). CONTRACTOR TO COORDINATE WAVEGUIDE LOCATION WITH EQUIPMENT LOCATION

LIGHTING NOTE:

STRUCTURE IS TO BE MARKED/LIGHTED IN ACCORDANCE WITH FAA ADVISORY CIRCULAR 70/7460-1 L CHANGE 2, OBSTRUCTION MARKING AND LIGHTING, A MED-DUAL SYSTEM – CHAPTERS 4,8 (M-DUAL), AND 12.



TOWER ELEVATION

SCALE: 1" = 40'

0 40 80

SCALE IN FEET

PLANS PREPARED FOR:

DUKE ENERGY®

401 SOUTH WILMINGTON STREET
RALEIGH, NC 27601
Office: (800) 452-2777

PROJECT INFORMATION:

BAD CREEK

100 BAD CREEK ROAD
SALEM, SC 29676
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PLANS PREPARED BY:

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OFFICE: (919) 661-6351
www.tepgroup.net

CERTIFICATE OF AUTHORIZATION
SOUTH CAROLINA
TEP OPCO, LLC
5339

SEAL:

PRELIMINARY
DO NOT USE FOR CONSTRUCTION

REV	DATE	ISSUED FOR:
0	06-03-21	PRELIMINARY
1	06-28-21	CLIENT LE COMMENT
2	08-25-21	CLIENT LE COMMENT
3	10-15-21	CLIENT LE COMMENT

DRAWN BY: GSB
CHECKED BY: JBG

SHEET TITLE:

TOWER ELEVATION

SHEET NUMBER: **L-3**

REVISION: **3**

TEP#:266535.546646

PROPOSED: LOCATION 1

DUKE ENERGY®

SITE NAME: BAD CREEK
100 BAD CREEK ROAD
SALEM, SC 29676
(OCONEE COUNTY)

PHOTO RENDERING BY TOWER ENGINEERING PROFESSIONALS, INC.