

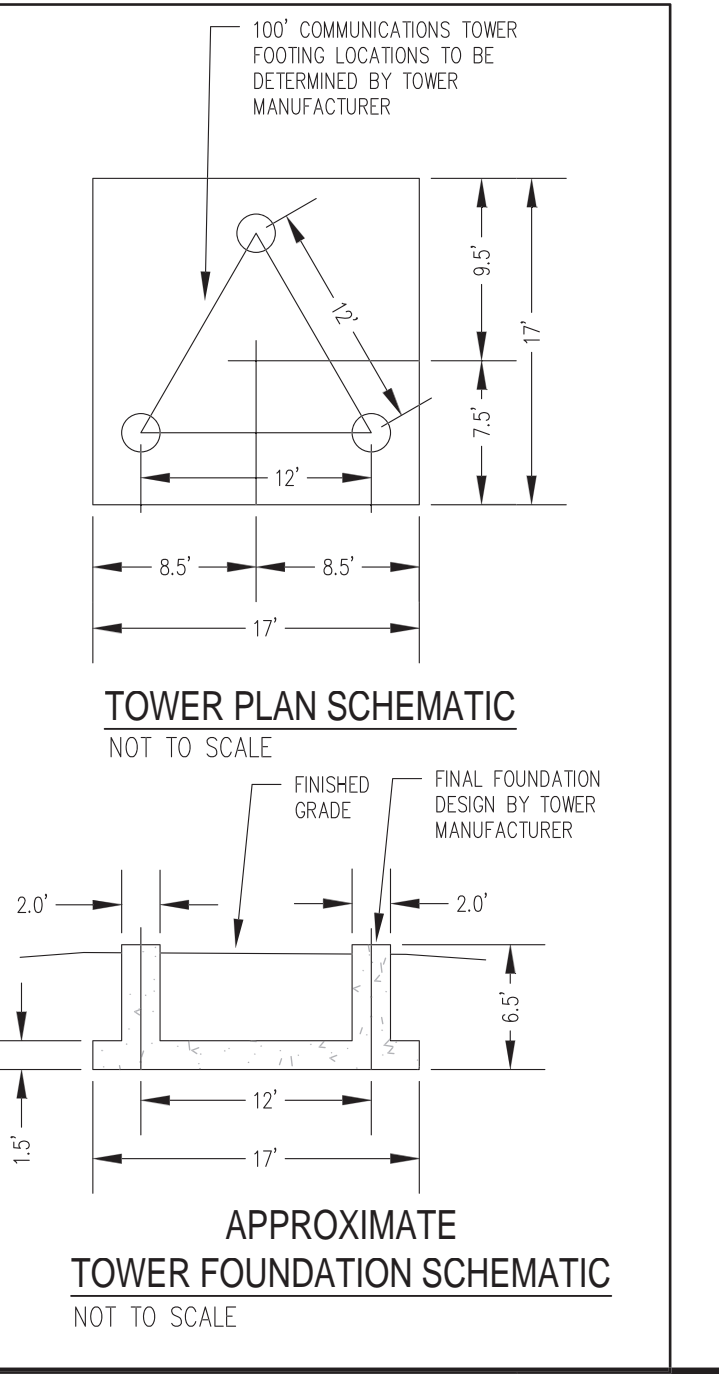
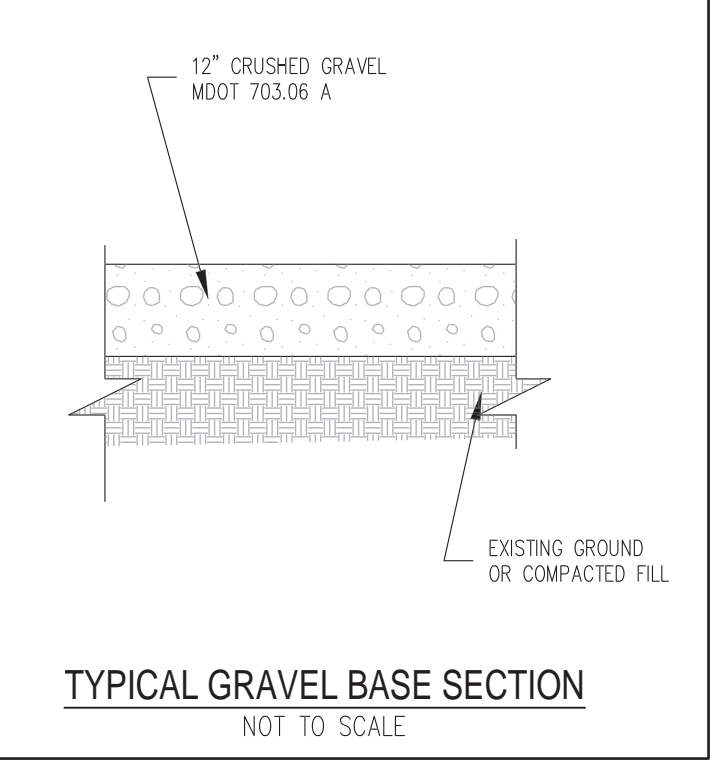
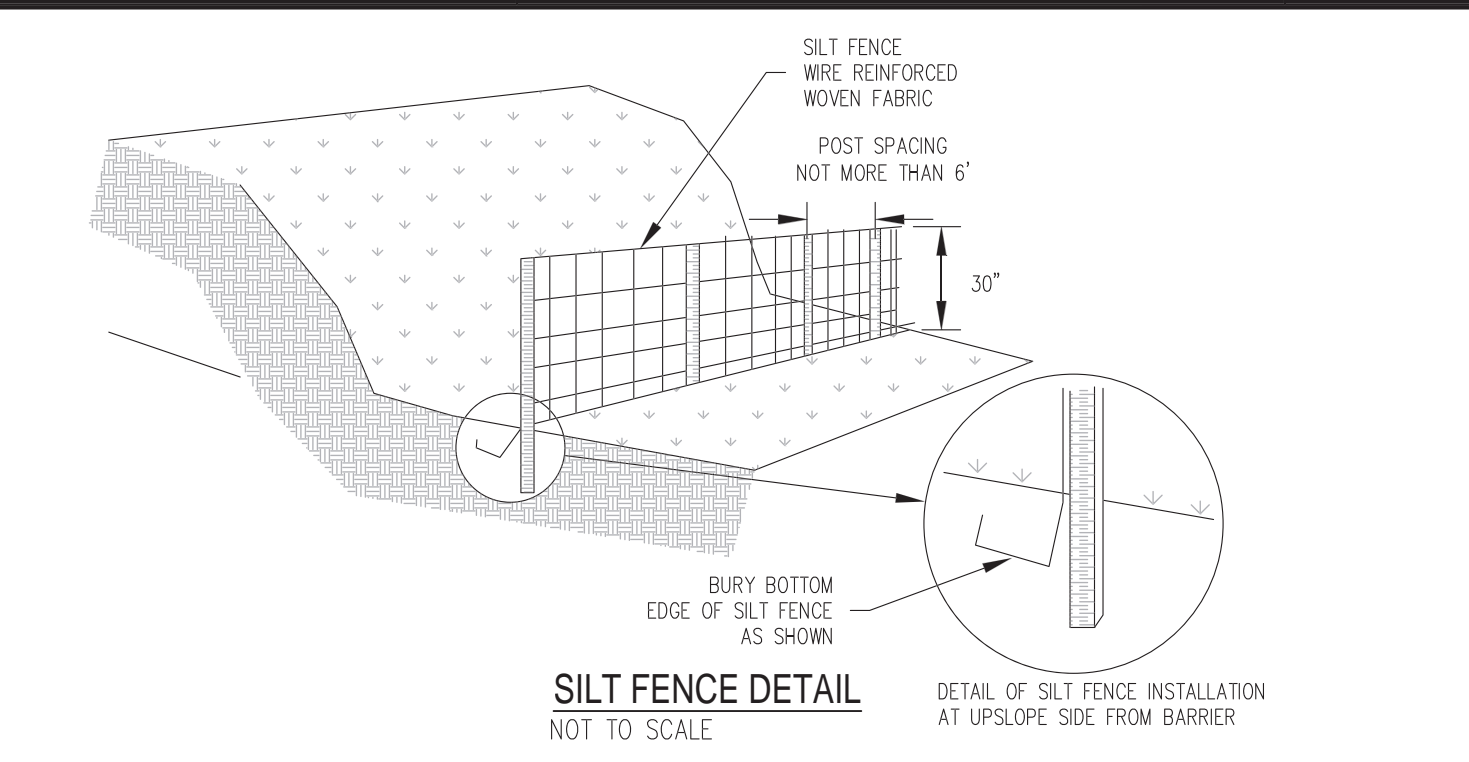
- NOTES:**
- ASSESSOR'S INFORMATION:
TOWN OF NORTH BERWICK ASSESSOR'S MAP 4, LOT 22-3
 - RECORD OWNER:
TOWN OF NORTH BERWICK
PO BOX 422
NORTH BERWICK, MAINE 03906
 - DEED REFERENCE:
Y.C.R.D. 7151/221
 - ZONING INFORMATION:
VILLAGE "B" ZONE
MINIMUM LOT SIZE: 30,000 S.F.
MINIMUM FRONTAGE: 125'
MINIMUM SETBACKS:
FRONT YARD: 50'
SIDE YARD: 25'
REAR YARD: 30'
MAXIMUM BUILDING HEIGHT: 35'
MAXIMUM LOT COVERAGE: 35%
 - LAND USE IF FOR EMERGENCY PUBLIC HEALTH AND SAFETY FACILITY AS INDICATED IN TOWN OF NORTH BERWICK ZONING ORDINANCE SECTION 5.2.19.
 - THE PARCEL IS LOCATED IN FLOOD HAZARD ZONE C AS SHOWN ON THE FLOOD INSURANCE RATE MAP FOR THE TOWN OF NORTH BERWICK, COMMUNITY PANEL NO. 230197.0011 C, EFFECTIVE DATE FEBRUARY 1, 1985. ZONE "C" IS DEFINED AS AREAS OF MINIMAL FLOODING.
 - NORTH AS DEPICTED HEREON IS REFERENCED TO GRID NORTH, NAD83, MAINE STATE PLANE COORDINATE SYSTEM WEST ZONE. COORDINATE VALUES AND ORIENTATION ARE DERIVED FROM A GPS SURVEY COMPUTED UTILIZING THE NGS OPUS ON-LINE PROCESSING SERVICE. REFERENCE FRAME IS NAD83 (2011) CORS96 EPOCH 2010.0000. THE SURVEY IS TIED TO CORS STATIONS BOSTON WMAAS 1 CORS (ZBWI), BARTLETT CORS (BARN) AND BRUNSWICK 1 CORS (BRU1). DISTANCES DEPICTED HEREON ARE GRID. TO CONVERT GRID DISTANCES TO GROUND DISTANCES, MULTIPLY THE GRID DISTANCE BY 1.0000124 (AVERAGE COMBINED SCALE FACTOR FOR SITE). ELEVATIONS SHOWN HEREON ARE REFERENCED TO NAVD83 AND ARE BASED ON THE ABOVE REFERENCED GPS SURVEY. TO CONVERT NAVD83 ELEVATIONS TO NGVD29 ELEVATIONS ADD 0.70'.
 - THE LOCUS PARCEL BENEFITS FROM AN ACCESS, EGRESS & UTILITY EASEMENT DESCRIBED AT A DEED RECORDED AT YORK COUNTY REGISTRY OF DEEDS BOOK 7151, PAGE 221.
 - THE LOCUS PARCEL CONTAINS 44,065 S.F.
 - UNDERGROUND UTILITIES SHOWN HEREON ARE APPROXIMATE AND ARE BASED ON MARKINGS PROVIDED BY CENTERLINE UTILITY SERVICES, MADE ON MAY 31, 2022. PRIOR TO CONSTRUCTION, CONTRACTORS SHALL CONTACT DIGSAFE (1-888-344-7233) FOR LOCATION OF ALL EXISTING UTILITIES.

- REFERENCE PLANS:**
- "MORNING GLORY ESTATES, A SUBDIVISION AND STANDARD BOUNDARY SURVEY FOR EDWIN N. LESLIE, JR. HEIRS, LEBANON ROAD, TOWN OF NORTH BERWICK, COUNTY OF YORK, STATE OF MAINE", BY MIDDLE BRANCH SURVEYORS & BOUNDARY CONSULTANTS, DATED AUGUST 2, 1993, LAST REVISED APRIL 6, 1994, RECORDED AT THE YORK COUNTY REGISTRY OF DEEDS IN PLAN BOOK 218, PAGE 37.
 - "PLAN OF LOTS FROM A STANDARD BOUNDARY SURVEY, LEBANON ROAD, NORTH BERWICK, MAINE", BY NORWAY PLAINS ASSOCIATES, DATED SEPTEMBER 1999, RECORDED AT THE YORK COUNTY REGISTRY OF DEEDS IN PLAN BOOK 254, PAGE 29.
 - "BOUNDARY SURVEY, PHEASANT HILL CONDOMINIUMS, LEBANON ROAD, NORTH BERWICK, MAINE", BY CIVIL CONSULTANTS, DATED MARCH 26, 1986, RECORDED AT THE YORK COUNTY REGISTRY OF DEEDS IN CONDO FILE # 232/1.

LEGEND:

UGE	UNDERGROUND ELECTRIC
6897/327	DEED VOLUME / PAGE NUMBER
DIA.	DIAMETER
N/F	NOW OR FORMERLY
REF.	REFERENCE
S.F.	SQUARE FEET
Y.C.R.D.	YORK COUNTY REGISTRY OF DEEDS
CONC.	CONCRETE
C.S.	CRUSHED STONE
U	UTILITY POLE
SB	SURVEY BENCHMARK
OW	OVERHEAD WIRES
SW	STONE WALL
VP	4" VENT PIPE
CS	3" DIAMETER STEEL SUPPORT POST (WIRE RACK)
CV	COMMUNICATIONS VAULT
IR	FOUND IRON ROD OR REBAR (AS NOTED)
EV	FOUND GRADE STAKE
EV	ELECTRIC VAULT
TP	ELECTRIC TRANSFORMER ON CONC. PAD
EM	ELECTRIC MANHOLE
EM	ELECTRIC METER
CC	CONC. PAD W/ COMMUNICATIONS CABINETS
---	LOCUS BOUNDARY LINE
---	APPROXIMATE ADJOINING BOUNDARY LINE
---	EASEMENT BOUNDARY LINE
---	EDGE OF GRAVEL
---	UNDERGROUND COMMUNICATION LINE
---	UNDERGROUND ELECTRIC LINE
---	CHAINLINK FENCE W/ BARBED WIRE
---	MAINE STATE PLANE COORDINATES

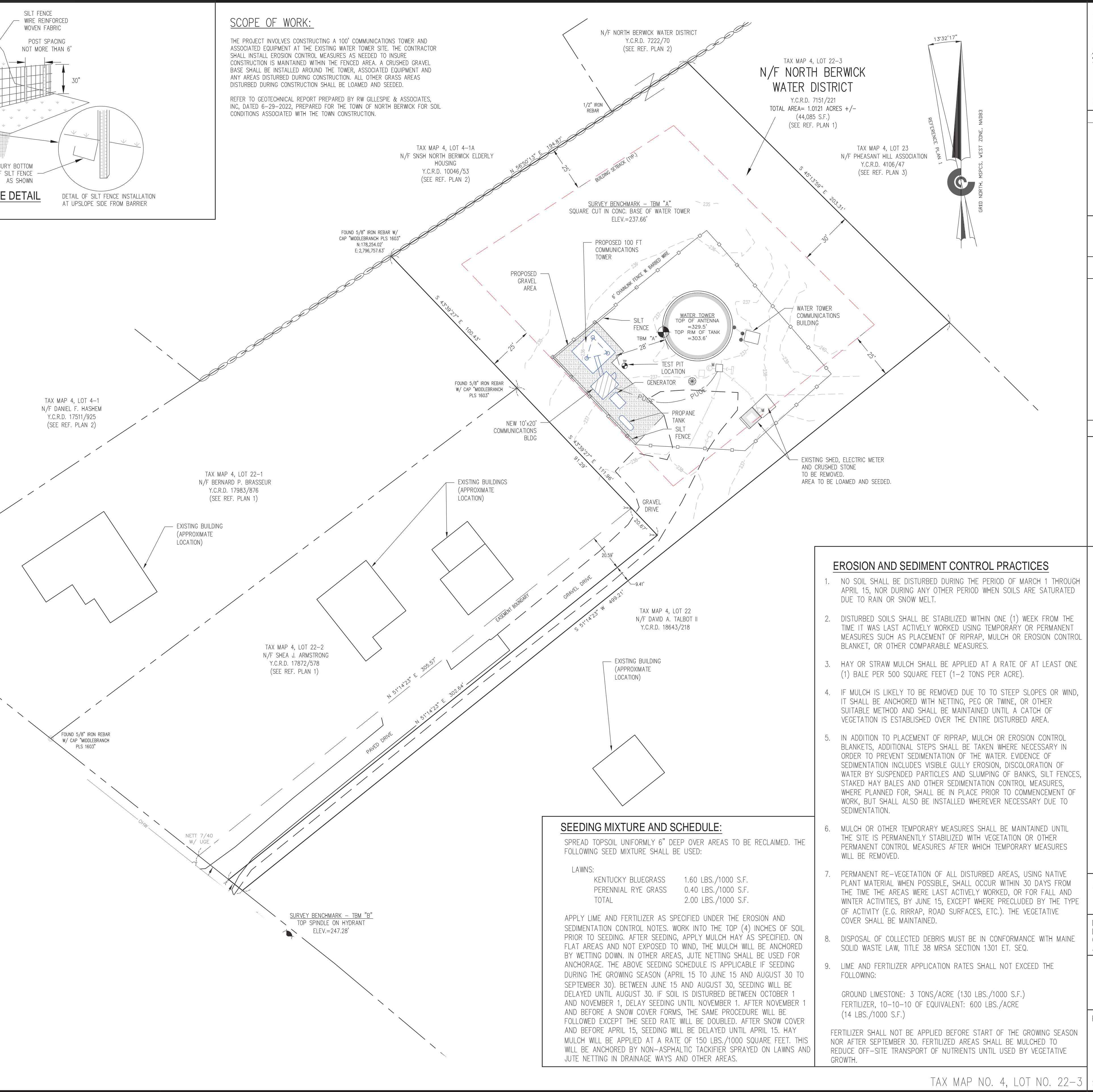
1/8"=32.81 FT.
1/8"=259.42 FT.



SCOPE OF WORK:

THE PROJECT INVOLVES CONSTRUCTING A 100' COMMUNICATIONS TOWER AND ASSOCIATED EQUIPMENT AT THE EXISTING WATER TOWER SITE. THE CONTRACTOR SHALL INSTALL EROSION CONTROL MEASURES AS NEEDED TO INSURE CONSTRUCTION IS MAINTAINED WITHIN THE FENCED AREA. A CRUSHED GRAVEL BASE SHALL BE INSTALLED AROUND THE TOWER. ASSOCIATED EQUIPMENT AND ANY AREAS DISTURBED DURING CONSTRUCTION, ALL OTHER GRASS AREAS DISTURBED DURING CONSTRUCTION SHALL BE LOAMED AND SEEDED.

REFER TO GEOTECHNICAL REPORT PREPARED BY RW GILLESPIE & ASSOCIATES, INC. DATED 6-29-2022, PREPARED FOR THE TOWN OF NORTH BERWICK FOR SOIL CONDITIONS ASSOCIATED WITH THE TOWN CONSTRUCTION.



EROSION AND SEDIMENT CONTROL PRACTICES

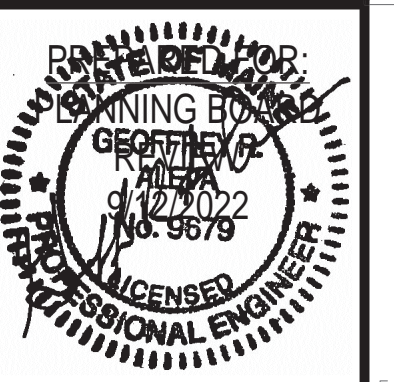
- NO SOIL SHALL BE DISTURBED DURING THE PERIOD OF MARCH 1 THROUGH APRIL 15, NOR DURING ANY OTHER PERIOD WHEN SOILS ARE SATURATED DUE TO RAIN OR SNOW MELT.
- DISTURBED SOILS SHALL BE STABILIZED WITHIN ONE (1) WEEK FROM THE TIME IT WAS LAST ACTIVELY WORKED USING TEMPORARY OR PERMANENT MEASURES SUCH AS PLACEMENT OF RIPRAP, MULCH OR EROSION CONTROL BLANKET, OR OTHER COMPARABLE MEASURES.
- HAY OR STRAW MULCH SHALL BE APPLIED AT A RATE OF AT LEAST ONE (1) BALE PER 500 SQUARE FEET (1-2 TONS PER ACRE).
- IF MULCH IS LIKELY TO BE REMOVED DUE TO STEEP SLOPES OR WIND, IT SHALL BE ANCHORED WITH NETTING, PEG OR TWINE, OR OTHER SUITABLE METHOD AND SHALL BE MAINTAINED UNTIL A CATCH OF VEGETATION IS ESTABLISHED OVER THE ENTIRE DISTURBED AREA.
- IN ADDITION TO PLACEMENT OF RIPRAP, MULCH OR EROSION CONTROL BLANKETS, ADDITIONAL STEPS SHALL BE TAKEN WHERE NECESSARY IN ORDER TO PREVENT SEDIMENTATION OF THE WATER. EVIDENCE OF SEDIMENTATION INCLUDES VISIBLE GULLY EROSION, DISCOLORATION OF WATER BY SUSPENDED PARTICLES AND SLUMPING OF BANKS, SILT FENCES, STAKED HAY BALES AND OTHER SEDIMENTATION CONTROL MEASURES, WHERE PLANNED FOR, SHALL BE IN PLACE PRIOR TO COMMENCEMENT OF WORK, BUT SHALL ALSO BE INSTALLED WHEREVER NECESSARY DUE TO SEDIMENTATION.
- MULCH OR OTHER TEMPORARY MEASURES SHALL BE MAINTAINED UNTIL THE SITE IS PERMANENTLY STABILIZED WITH VEGETATION OR OTHER PERMANENT CONTROL MEASURES AFTER WHICH TEMPORARY MEASURES WILL BE REMOVED.
- PERMANENT RE-VEGETATION OF ALL DISTURBED AREAS, USING NATIVE PLANT MATERIAL WHEN POSSIBLE, SHALL OCCUR WITHIN 30 DAYS FROM THE TIME THE AREAS WERE LAST ACTIVELY WORKED, OR FOR FALL AND WINTER ACTIVITIES, BY JUNE 15, EXCEPT WHERE PRECLUDED BY THE TYPE OF ACTIVITY (E.G. RIPRAP, ROAD SURFACES, ETC.). THE VEGETATIVE COVER SHALL BE MAINTAINED.
- DISPOSAL OF COLLECTED DEBRIS MUST BE IN CONFORMANCE WITH MAINE SOLID WASTE LAW, TITLE 38 MRSA SECTION 1301 ET. SEQ.
- LIME AND FERTILIZER APPLICATION RATES SHALL NOT EXCEED THE FOLLOWING:
GROUND LIMESTONE: 3 TONS/ACRE (130 LBS./1000 S.F.)
FERTILIZER, 10-10-10 OF EQUIVALENT: 600 LBS./ACRE (14 LBS./1000 S.F.)
FERTILIZER SHALL NOT BE APPLIED BEFORE START OF THE GROWING SEASON NOR AFTER SEPTEMBER 30. FERTILIZED AREAS SHALL BE MULCHED TO REDUCE OFF-SITE TRANSPORT OF NUTRIENTS UNTIL USED BY VEGETATIVE GROWTH.

SEEDING MIXTURE AND SCHEDULE:

SPREAD TOPSOIL UNIFORMLY 6" DEEP OVER AREAS TO BE RECLAIMED. THE FOLLOWING SEED MIXTURE SHALL BE USED:

LAWNS:	
KENTUCKY BLUEGRASS	1.60 LBS./1000 S.F.
PERENNIAL RYE GRASS	0.40 LBS./1000 S.F.
TOTAL	2.00 LBS./1000 S.F.

APPLY LIME AND FERTILIZER AS SPECIFIED UNDER THE EROSION AND SEDIMENTATION CONTROL NOTES. WORK INTO THE TOP (4) INCHES OF SOIL PRIOR TO SEEDING. AFTER SEEDING, APPLY MULCH HAY AS SPECIFIED. ON FLAT AREAS AND NOT EXPOSED TO WIND, THE MULCH WILL BE ANCHORED BY NETTING DOWN. IN OTHER AREAS, JUTE NETTING SHALL BE USED FOR ANCHORAGE. THE ABOVE SEEDING SCHEDULE IS APPLICABLE IF SEEDING DURING THE GROWING SEASON (APRIL 15 TO JUNE 15 AND AUGUST 30 TO SEPTEMBER 30). BETWEEN JUNE 15 AND AUGUST 30, SEEDING WILL BE DELAYED UNTIL AUGUST 30. IF SOIL IS DISTURBED BETWEEN OCTOBER 1 AND NOVEMBER 1, DELAY SEEDING UNTIL NOVEMBER 1. AFTER NOVEMBER 1 AND BEFORE A SNOW COVER FORMS, THE SAME PROCEDURE WILL BE FOLLOWED EXCEPT THE SEED RATE WILL BE DOUBLED. AFTER SNOW COVER AND BEFORE APRIL 15, SEEDING WILL BE DELAYED UNTIL APRIL 15. HAY MULCH WILL BE APPLIED AT A RATE OF 150 LBS./1000 SQUARE FEET. THIS WILL BE ANCHORED BY NON-ASPHALTIC TACKIFIER SPRAYED ON LAWNS AND JUTE NETTING IN DRAINAGE WAYS AND OTHER AREAS.



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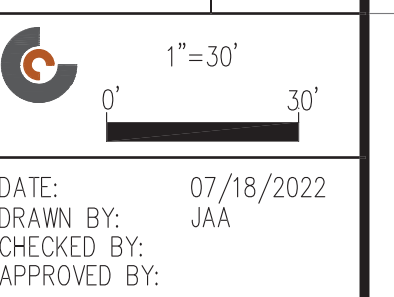
NO.	REVISIONS	INT.	DATE
1	UPDATE SITE PLAN	JAA	09/12/22

RECORD OWNER:
TOWN OF NORTH BERWICK
OWNER ADDRESS:
PO BOX 422
NORTH BERWICK, ME 03906

PROPOSED COMMUNICATION TOWER
LAND OF THE TOWN OF NORTH BERWICK
TAX MAP 4, LOT 22-3, LEBANON ROAD
NORTH BERWICK, YORK COUNTY, MAINE

PREPARED FOR:
TOWN OF NORTH BERWICK
PO BOX 422, NORTH BERWICK, MAINE 03906

CLIENT ADDRESS:



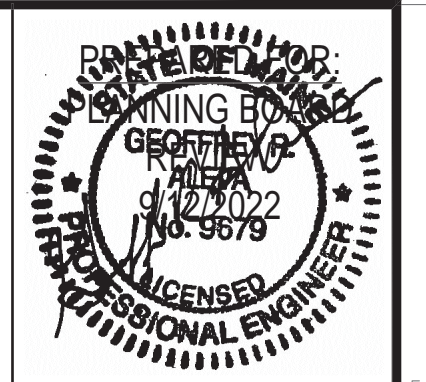
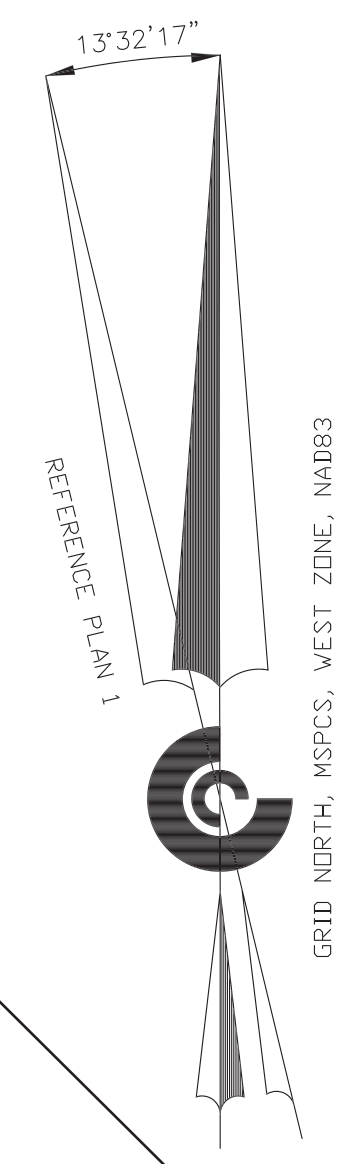
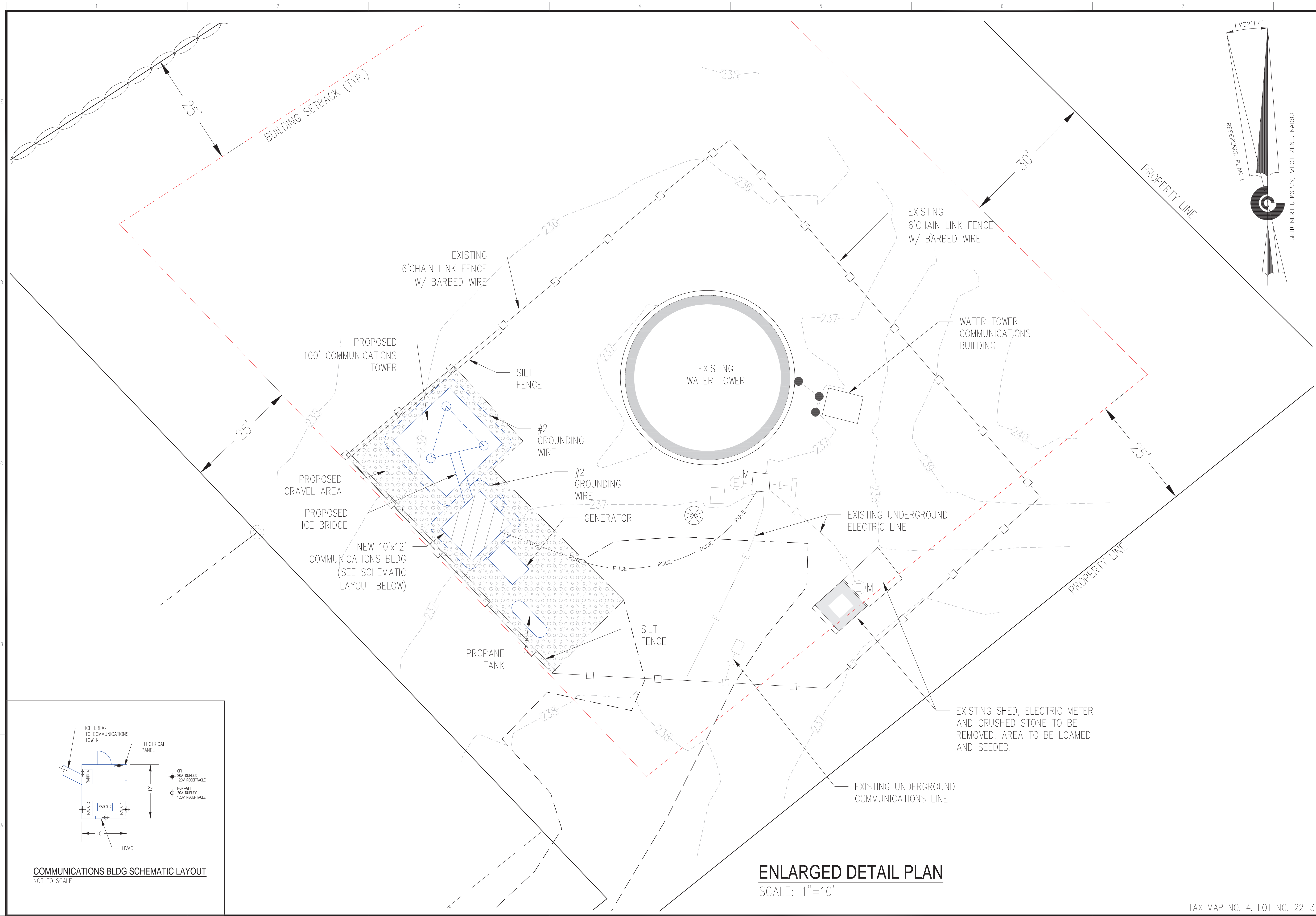
DATE: 07/18/2022
DRAWN BY: JAA
CHECKED BY:
APPROVED BY:

PROPOSED SITE PLAN

PROJECT NO: 22-177.00

L1

SHEET: 1 OF 3



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 03908
 207-384-2550
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NO.	REVISIONS	INT.	DATE
1	UPDATE SITE PLAN	JAA	09/12/22

RECORD OWNER:
 TOWN OF NORTH BERWICK
 OWNER ADDRESS:
 PO BOX 422
 NORTH BERWICK, ME 03906

PREPARED FOR:
 TOWN OF NORTH BERWICK
 PO BOX 422, NORTH BERWICK, MAINE 03906

**PROPOSED COMMUNICATION TOWER
 LAND OF THE TOWN OF NORTH BERWICK
 TAX MAP 4, LOT 22-3, LEBANON ROAD
 NORTH BERWICK, YORK COUNTY, MAINE**

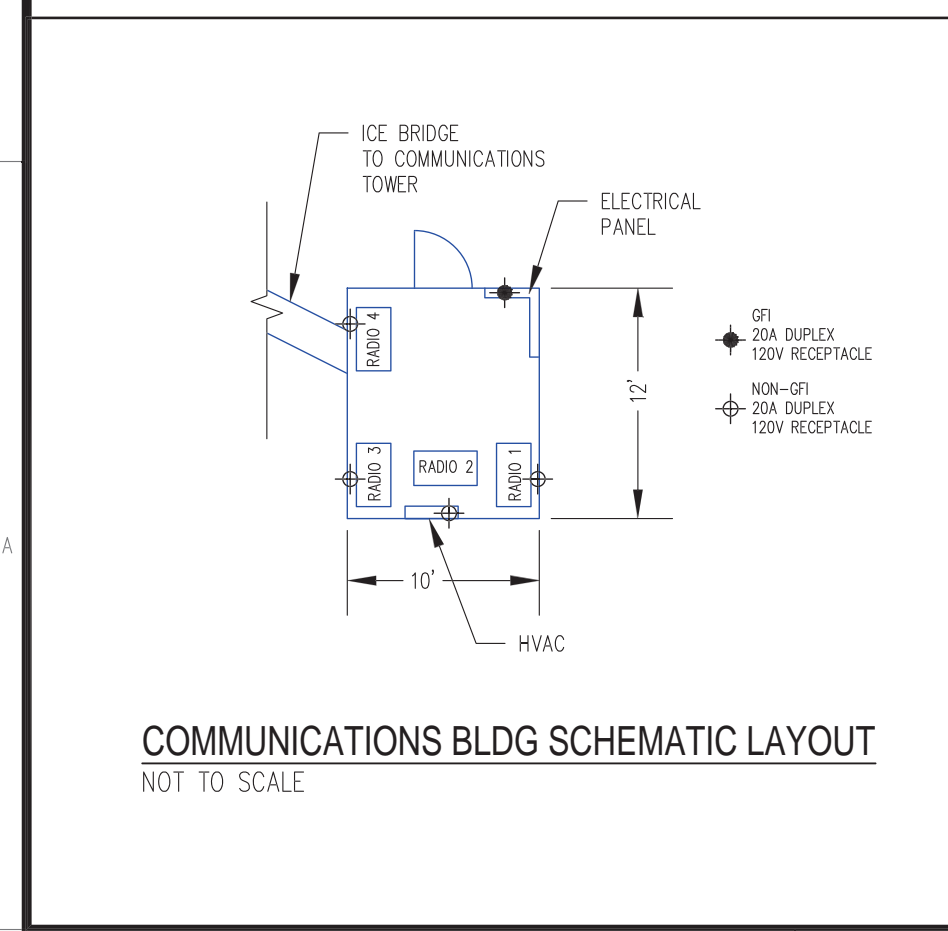
DATE: 07/18/2022
 DRAWN BY: JAA
 CHECKED BY:
 APPROVED BY:

**ENLARGED
 SITE PLAN**

PROJECT NO: 22-177.00

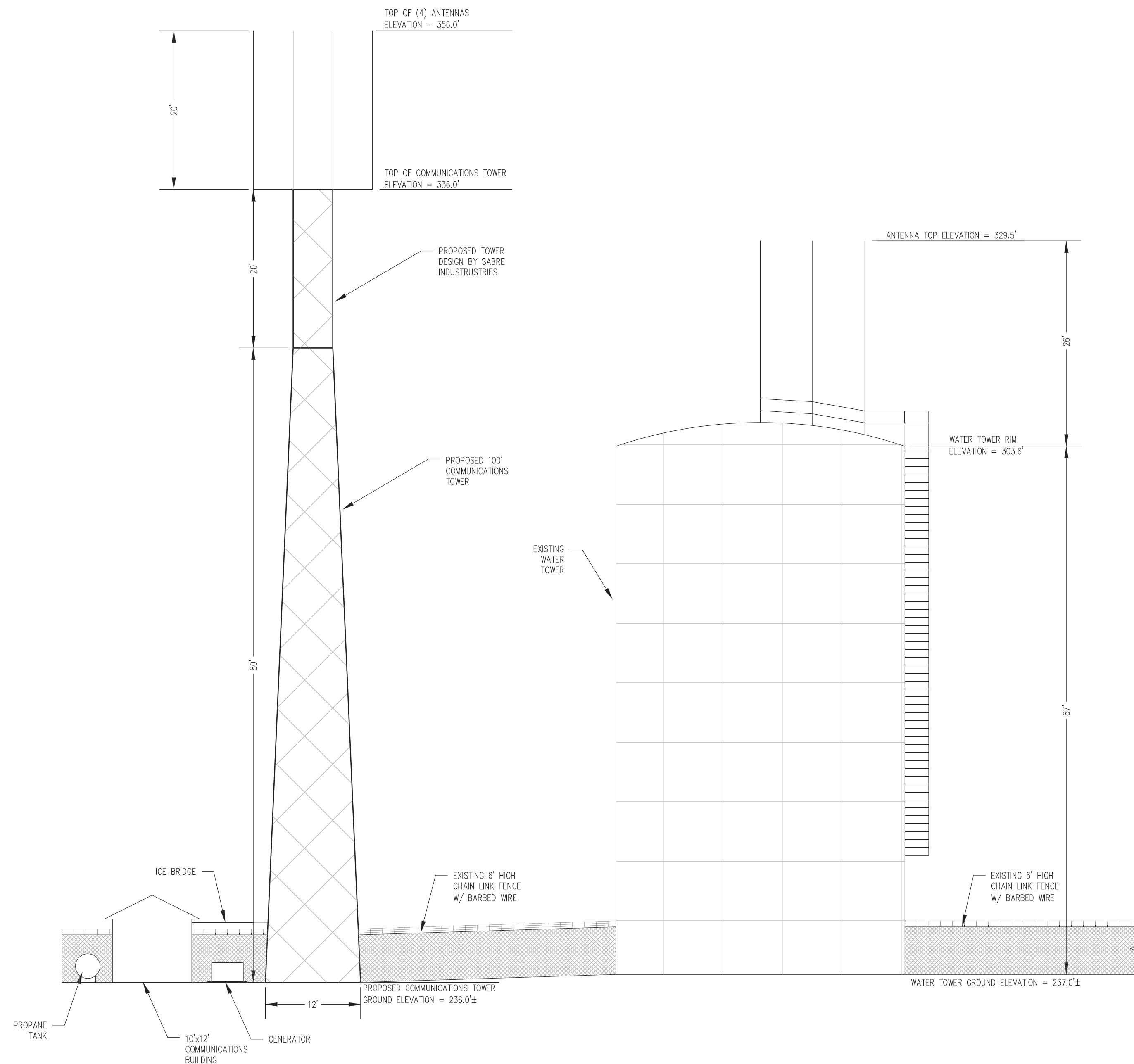
L2

SHEET: 2 OF 3

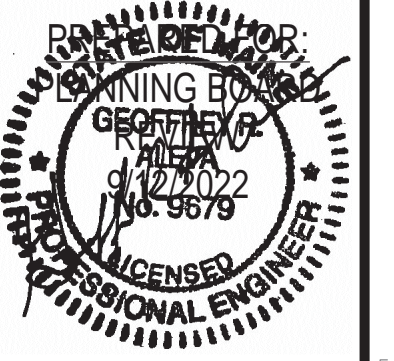


ENLARGED DETAIL PLAN
 SCALE: 1"=10'

TAX MAP NO. 4, LOT NO. 22-3



ELEVATION VIEW
SCALE: 1"=10'



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 Maine
 03908
 207-384-2550
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NO.	REVISIONS	INT.	DATE
1	UPDATE SITE PLAN	JAA	09/12/22

RECORD OWNER:
 TOWN OF NORTH BERWICK
 OWNER ADDRESS:
 PO BOX 422
 NORTH BERWICK, ME 03906

PROPOSED COMMUNICATION TOWER
LAND OF THE TOWN OF NORTH BERWICK
TAX MAP 4, LOT 22-3, LEBANON ROAD
NORTH BERWICK, YORK COUNTY, MAINE
 PREPARED FOR:
 TOWN OF NORTH BERWICK
 PO BOX 422, NORTH BERWICK, MAINE 03906
 CLIENT ADDRESS:

1"=10'
 0' 10'
 DATE: 07/18/2022
 DRAWN BY: JAA
 CHECKED BY:
 APPROVED BY:

GENERAL ELEVATION VIEW

PROJECT NO: 22-177.00

L3

SHEET: 3 OF 3

TAX MAP NO. 4, LOT NO. 22-3

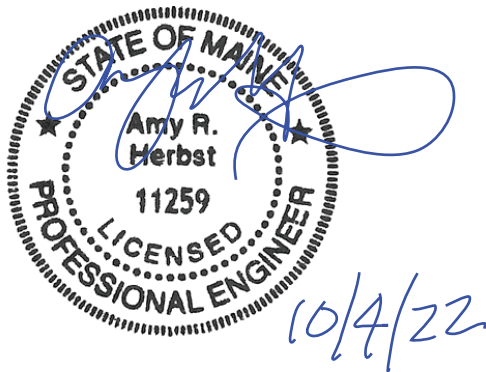


Structural Design Report
100' S3R Series SD Self-Supporting Tower
Site: North Berwick, ME

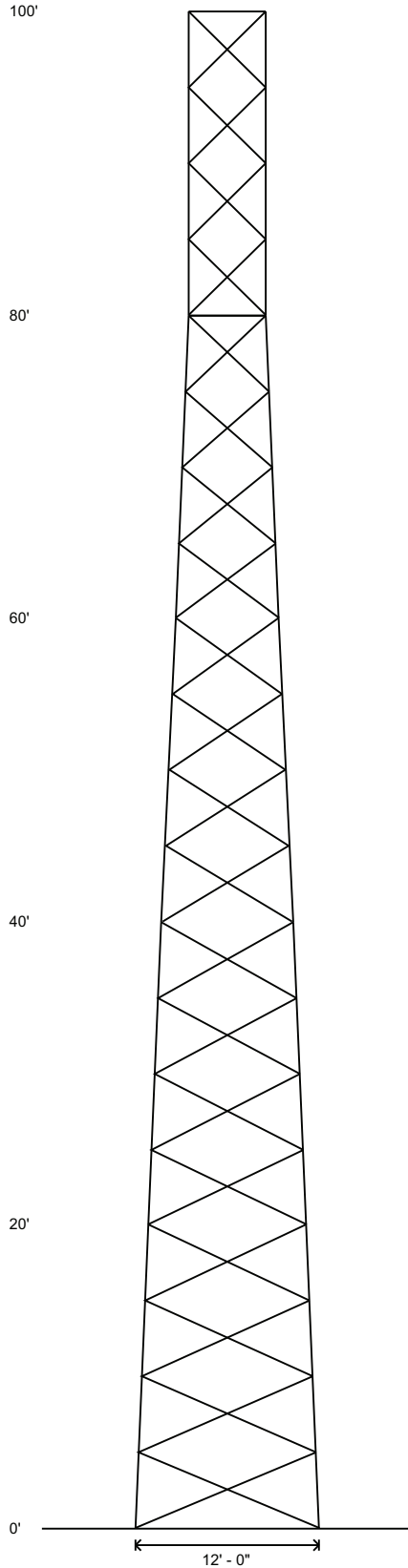
Prepared for: SOUTHERN MAINE COMMUNICATIONS
by: Sabre Industries™

Job Number: 512909
Revision A
October 4, 2022

Tower Profile.....	1-2
Foundation Design Summary.....	3
Maximum Leg Loads.....	4
Maximum Diagonal Loads.....	5
Maximum Foundation Loads.....	6
Calculations.....	7-28



Legs	2.75 S.R. L 2 X 2 X 3/16	2.25 S.R.	2.5 S.R.	2.0 S.R.	1.75 S.R.
Diagonals					
Horizontals		NONE	NONE	A	A
Brace Bolts		(1) 5/8"			
Top Face Width	10.25'	8.5'	6.75'	5'	
Panel Count/Height	2202	1662	1369	1166	982
Section Weight					



Design Criteria - ANSI/TIA-222-G

ASCE 7-16 Ultimate Wind Speed (No Ice)	121 mph
Wind Speed (Ice)	50 mph
Design Ice Thickness	1.50 in
Structure Class	III
Risk Category	III
Exposure Category	C
Topographic Category	1
Seismic Importance Factor, I _e	1.25
0.2-sec Spectral Response, S _s	0.313 g
1-sec Spectral Response, S ₁	0.074 g
Site Class	C
Seismic Design Category	B
Basic Seismic Force-Resisting System	Telecommunication Tower (Truss: Steel)

Base Reactions - Wind/Ice

Total Foundation		Individual Footing	
Shear (kips)	16.38	Shear (kips)	9.67
Axial (kips)	44.03	Compression (kips)	102
Moment (ft-kips)	1008	Uplift (kips)	88

Base Reactions - Seismic


Total Foundation		Individual Footing	
Shear (kips)	1.29	Shear (kips)	0.99
Axial (kips)	17.51	Compression (kips)	15
Moment (ft-kips)	97	Uplift (kips)	5

Material List

Display	Value
A	L 2 X 2 X 1/8

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 standard 12 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) This tower design and, if applicable, the foundation design(s) shown on the following page(s) also meet or exceed the requirements of the 2015 International Building Code.
- 11) Tower Rating: 78.69%
- 12) No grout is required under the base plates.


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

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Job:	512909A
Customer:	SOUTHERN MAINE COMMUNICATIONS
Site Name:	North Berwick, ME
Description:	100' S3R
Date:	10/4/2022
By:	ARH

Designed Appurtenance Loading

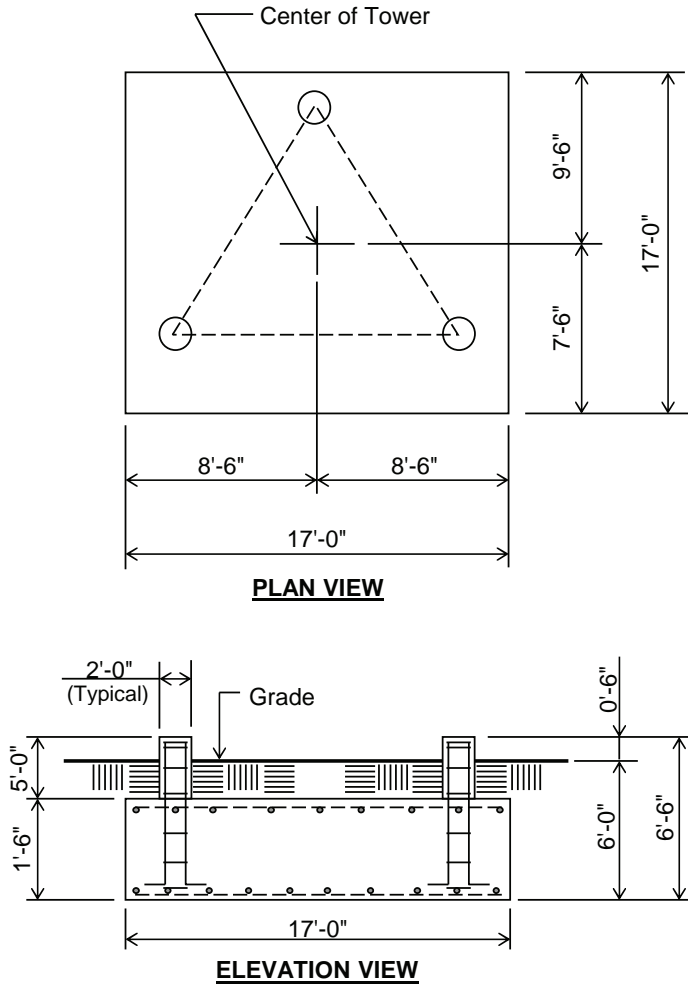
Elev	Description	Tx-Line
110	(6) 20' x 3in Omni	(6) 7/8"
105	(1) Extendible Lightning Rod	
100	3 EHD V-Boom - 12ft Face - 3ft Standoff	
90	(1) 20' x 3in Omni	(1) 7/8"
80	(2) Leg Dish Mount	
80	6ft Sidearm	

Elev	Description	Tx-Line
80	(2) 6' H.P. Dish	(2) 1 5/8"
75	(2) Flush Mount	
75	(2) 4' x 1' Yagi	(2) 7/8"
70	(2) 20' x 3in Omni	(2) 7/8"
60	(2) 6ft Sidearms	

 <p>Sabre Industries 7101 Southbridge Drive P.O. Box 658 Sioux City, IA 51102-0658 Phone: (712) 258-6690 Fax: (712) 279-0814</p> <p><small>Information contained herein is the sole property of Sabre Communications Corporation, constitutes a trade secret as defined by Iowa Code Ch. 550 and shall not be reproduced, copied or used in whole or part for any purpose whatsoever without the prior written consent of Sabre Communications Corporation.</small></p>	Job:	512909A
	Customer:	SOUTHERN MAINE COMMUNICATIONS
	Site Name:	North Berwick, ME
	Description:	100' S3R
	Date:	10/4/2022	By: ARH

Customer: SOUTHERN MAINE COMMUNICATIONS
Site: North Berwick, ME

100 ft. Model S3R Series SD Self Supporting Tower



ELEVATION VIEW
 (17.8 cu. yds.)
 (1 REQD.; NOT TO SCALE)

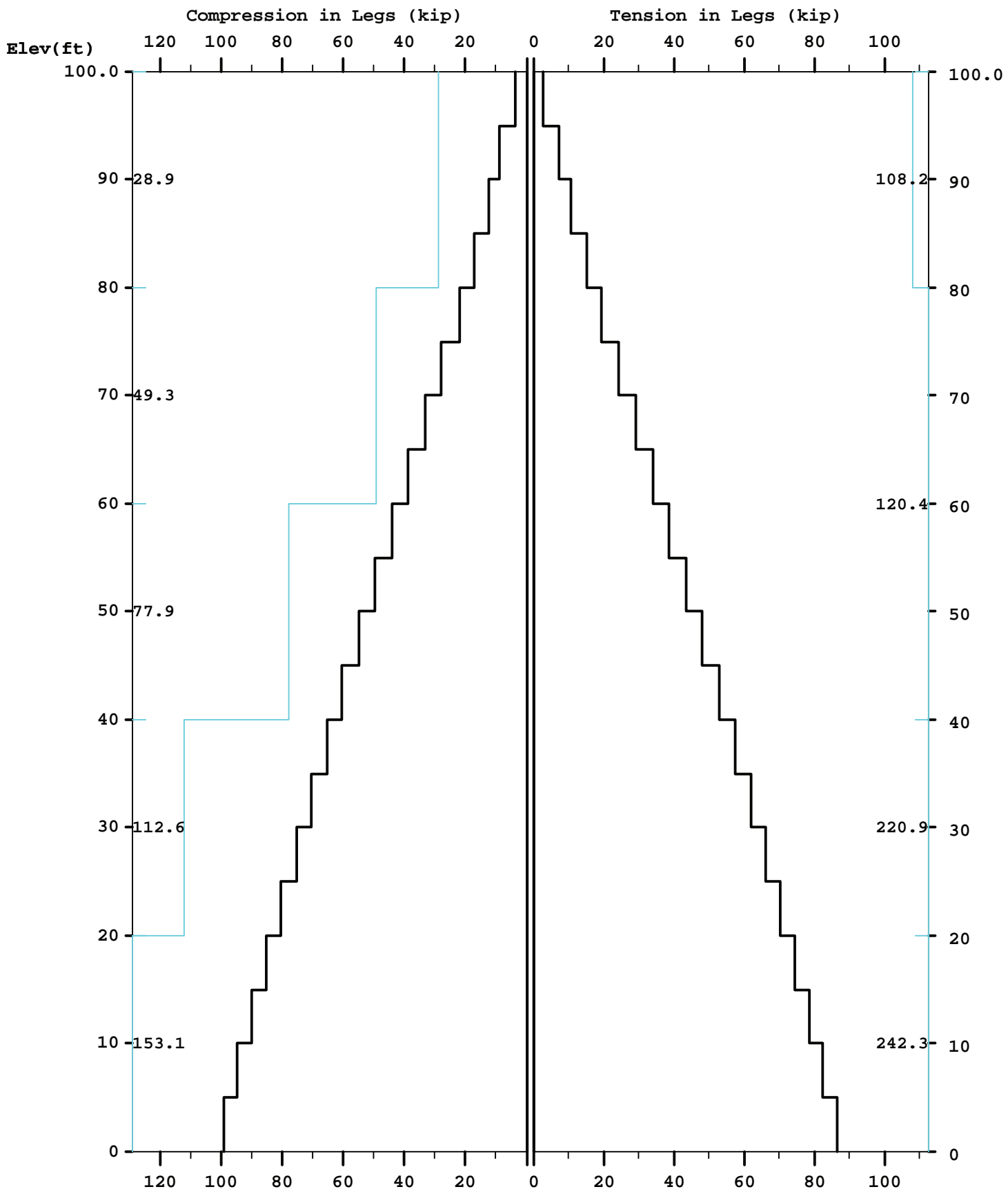
CAUTION: Center of tower is not in center of slab.

Notes:

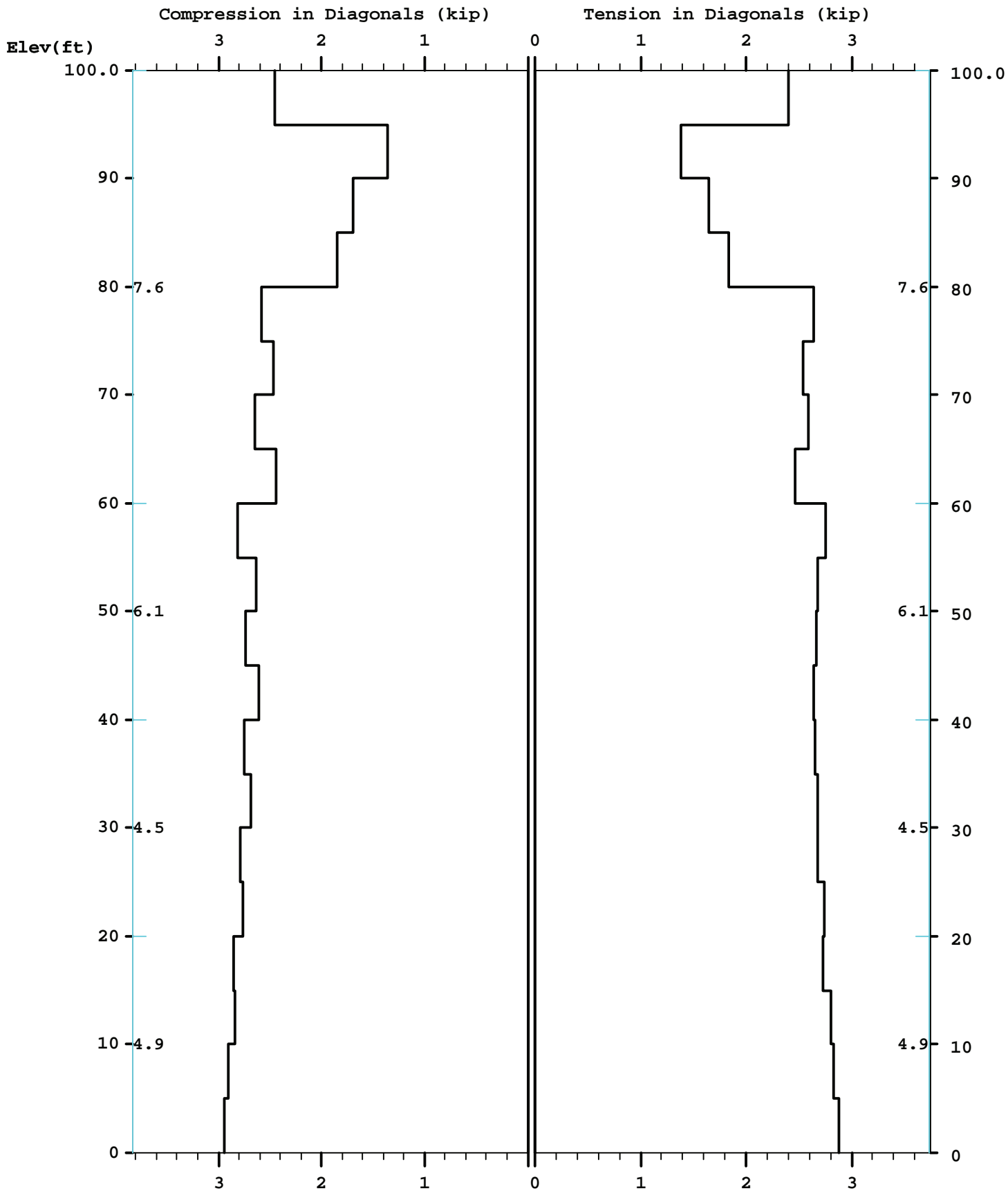
- 1) Concrete shall have a minimum 28-day compressive strength of 4,500 psi, in accordance with ACI 318-11.
- 2) Rebar to conform to ASTM specification A615 Grade 60.
- 3) All rebar to have a minimum of 3" concrete cover.
- 4) All exposed concrete corners to be chamfered 3/4".
- 5) The foundation design is based on the geotechnical report by R.W. Gillespie & Associates, Inc., project no. 0714-004, dated June 29, 2022.
- 6) See the geotechnical report for compaction requirements, if specified.
- 7) The foundation is based on the following factored loads:
 Factored download (kips) = 14.08
 Factored overturn (kip-ft) = 1,008.33
 Factored shear (kips) = 16.38
- 8) 4.5' of soil cover is required over the entire area of the foundation slab.
- 9) The bottom anchor bolt template shall be positioned as closely as possible to the bottom of the anchor bolts.

Rebar Schedule per Mat and per Pier	
Pier	(10) #6 vertical rebar w/ hooks at bottom w/ #4 rebar ties, two (2) within top 5" of pier then 12" C/C
Mat	(18) #6 horizontal rebar evenly spaced each way top and bottom. (72 total)
Anchor Bolts per Leg	
(4) 1" dia. x 51" F1554-105 on a 6.625" B.C. w/ 7" max. projection above concrete.	

Maximum

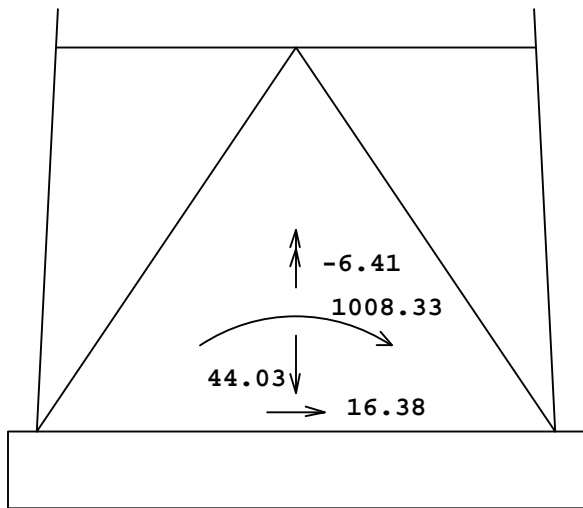


Maximum

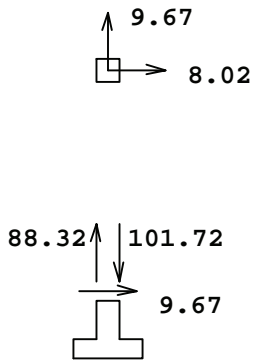


Maximum

TOTAL FOUNDATION LOADS (kip, ft-kip)



INDIVIDUAL FOOTING LOADS (kip)



=====
 Latticed Tower Analysis (Unguyed)
 Processed under license at:

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Sabre Towers and Poles

on: 4 oct 2022 at: 9:05:22
 =====

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	95.00	100.00	5.00	5.00	5.00
X	3	80.00	95.00	5.00	5.00	5.00
X	3	75.00	80.00	5.44	5.00	5.00
X	3	60.00	75.00	6.75	5.44	5.00
X	3	40.00	60.00	8.50	6.75	5.00
X	3	20.00	40.00	10.25	8.50	5.00
X	3	0.00	20.00	12.00	10.25	5.00

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	80.00	100.00	2.405	0.438	29000.	0.0000117
LE	60.00	80.00	3.142	0.438	29000.	0.0000117
LE	40.00	60.00	3.976	0.438	29000.	0.0000117
LE	20.00	40.00	4.909	0.438	29000.	0.0000117
LE	0.00	20.00	5.940	0.438	29000.	0.0000117
DI	20.00	100.00	0.484	0.626	29000.	0.0000117
DI	0.00	20.00	0.715	0.626	29000.	0.0000117
HO	95.00	100.00	0.484	0.626	29000.	0.0000117
HO	75.00	80.00	0.484	0.626	29000.	0.0000117

FACTORED MEMBER RESISTANCES
 =====

BOTTOM ELEV ft	TOP ELEV ft	LEGS		DIAGONALS		HORIZONTALS		INT BRACING	
		COMP kip	TENS kip	COMP kip	TENS kip	COMP kip	TENS kip	COMP kip	TENS kip
95.0	100.0	28.89	108.24	7.62	7.62	5.82	5.82	0.00	0.00
80.0	95.0	28.89	108.24	7.62	7.62	0.00	0.00	0.00	0.00
75.0	80.0	49.29	120.41	7.62	7.62	5.82	5.82	0.00	0.00
60.0	75.0	49.29	120.41	7.62	7.62	0.00	0.00	0.00	0.00
40.0	60.0	77.87	120.41	6.05	6.05	0.00	0.00	0.00	0.00
20.0	40.0	112.60	220.89	4.49	4.49	0.00	0.00	0.00	0.00
0.0	20.0	153.15	242.30	4.89	4.89	0.00	0.00	0.00	0.00

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 * Only 5 condition(s) shown in full

* Some wind loads may have been derived from full-scale wind tunnel testing

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 LOADING CONDITION A =====

121 mph Ultimate wind with no ice. Wind Azimuth: 0° (1.2 D + 1.0 Wo)

MAST LOADING

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LOAD TYPE	ELEV ft	APPLY.. RADIUS ft	LOAD..AT AZI	LOAD AZIFORCES.....	MOMENTS.....	
					HORIZ kip	DOWN kip	VERTICAL ft-kip	TORSNAL ft-kip
C	110.0	0.00	0.0	0.0	1.20	0.22	0.00	0.00
C	105.0	0.00	0.0	0.0	0.25	0.15	0.00	0.00
C	100.0	0.00	0.0	0.0	0.82	1.84	0.00	0.00
C	97.5	0.00	0.0	0.0	0.02	0.00	0.00	0.00
C	92.5	0.00	0.0	0.0	0.02	0.00	0.00	0.00
C	90.0	0.00	0.0	0.0	0.19	0.04	0.00	0.00
C	82.5	0.00	0.0	0.0	0.02	0.00	0.00	0.00
C	80.0	0.00	0.0	0.0	0.35	0.36	0.00	0.00
C	75.0	0.00	0.0	0.0	0.14	0.07	0.00	0.00
C	75.0	0.00	0.0	0.0	0.14	0.07	0.00	0.00
C	72.5	0.00	0.0	0.0	0.02	0.00	0.00	0.00
C	70.0	0.00	0.0	0.0	0.33	0.07	0.00	0.00
C	62.5	0.00	0.0	0.0	0.01	0.00	0.00	0.00
C	60.0	0.00	0.0	0.0	0.67	0.72	0.00	0.00
C	52.5	0.00	0.0	0.0	0.01	0.00	0.00	0.00
C	42.5	0.00	0.0	0.0	0.01	0.00	0.00	0.00
C	32.5	0.00	0.0	0.0	0.01	0.00	0.00	0.00
C	22.5	0.00	0.0	0.0	0.01	0.00	0.00	0.00
C	12.5	0.00	0.0	0.0	0.01	0.00	0.00	0.00
C	2.5	0.00	0.0	0.0	0.01	0.00	0.00	0.00
D	100.0	0.00	4.9	0.0	0.09	0.07	0.02	-0.01
D	95.0	0.00	4.9	0.0	0.09	0.07	0.02	-0.01
D	95.0	0.00	4.9	0.0	0.08	0.06	0.02	-0.01
D	80.0	0.00	4.9	0.0	0.08	0.06	0.02	-0.01
D	80.0	0.00	0.2	0.0	0.10	0.08	0.03	-0.01
D	60.0	0.00	358.6	0.0	0.09	0.08	0.03	-0.02
D	60.0	0.00	15.3	0.0	0.11	0.10	0.04	0.01
D	40.0	0.00	15.4	0.0	0.11	0.10	0.04	0.01
D	40.0	0.00	15.5	0.0	0.11	0.11	0.04	0.01
D	20.0	0.00	15.6	0.0	0.10	0.11	0.05	0.01
D	20.0	0.00	15.7	0.0	0.10	0.14	0.05	0.02
D	0.0	0.00	15.8	0.0	0.10	0.14	0.06	0.02

ANTENNA LOADING

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.....ANTENNA..... TYPE	ATTACHMENT			ANTENNA FORCES.....			
	ELEV ft	AZI	RAD ft	AZI	AXIAL kip	SHEAR kip	GRAVITY kip	TORSION ft-kip
HP	80.0	240.0	4.4	240.0	-0.62	0.38	0.34	0.55
HP	80.0	120.0	4.4	120.0	-0.62	-0.38	0.34	-0.55

=====
 LOADING CONDITION M =====

121 mph Ultimate wind with no ice. Wind Azimuth: 0° (0.9 D + 1.0 Wo)

MAST LOADING
 =====

LOAD TYPE	ELEV ft	APPLY. RADIUS ft	LOAD..AT AZI	LOAD AZI	.....FORCES.....		.....MOMENTS.....	
					HORIZ kip	DOWN kip	VERTICAL ft-kip	TORSNAL ft-kip
C	110.0	0.00	0.0	0.0	1.20	0.16	0.00	0.00
C	105.0	0.00	0.0	0.0	0.25	0.12	0.00	0.00
C	100.0	0.00	0.0	0.0	0.82	1.38	0.00	0.00
C	97.5	0.00	0.0	0.0	0.02	0.00	0.00	0.00
C	92.5	0.00	0.0	0.0	0.02	0.00	0.00	0.00
C	90.0	0.00	0.0	0.0	0.19	0.03	0.00	0.00
C	82.5	0.00	0.0	0.0	0.02	0.00	0.00	0.00
C	80.0	0.00	0.0	0.0	0.35	0.27	0.00	0.00
C	75.0	0.00	0.0	0.0	0.14	0.05	0.00	0.00
C	75.0	0.00	0.0	0.0	0.14	0.05	0.00	0.00
C	72.5	0.00	0.0	0.0	0.02	0.00	0.00	0.00
C	70.0	0.00	0.0	0.0	0.33	0.05	0.00	0.00
C	62.5	0.00	0.0	0.0	0.01	0.00	0.00	0.00
C	60.0	0.00	0.0	0.0	0.67	0.54	0.00	0.00
C	52.5	0.00	0.0	0.0	0.01	0.00	0.00	0.00
C	42.5	0.00	0.0	0.0	0.01	0.00	0.00	0.00
C	32.5	0.00	0.0	0.0	0.01	0.00	0.00	0.00
C	22.5	0.00	0.0	0.0	0.01	0.00	0.00	0.00
C	12.5	0.00	0.0	0.0	0.01	0.00	0.00	0.00
C	2.5	0.00	0.0	0.0	0.01	0.00	0.00	0.00
D	100.0	0.00	4.9	0.0	0.09	0.05	0.02	-0.01
D	95.0	0.00	4.9	0.0	0.09	0.05	0.02	-0.01
D	95.0	0.00	4.9	0.0	0.08	0.05	0.02	-0.01
D	80.0	0.00	4.9	0.0	0.08	0.05	0.02	-0.01
D	80.0	0.00	0.2	0.0	0.10	0.06	0.02	-0.01
D	60.0	0.00	358.6	0.0	0.09	0.06	0.03	-0.02
D	60.0	0.00	15.3	0.0	0.11	0.07	0.03	0.01
D	20.0	0.00	15.6	0.0	0.10	0.09	0.04	0.01
D	20.0	0.00	15.7	0.0	0.10	0.11	0.04	0.02
D	0.0	0.00	15.8	0.0	0.10	0.11	0.04	0.02

ANTENNA LOADING
 =====

.....ANTENNA..... TYPE	ATTACHMENT				.....ANTENNA FORCES.....			
	ELEV ft	AZI	RAD ft	AZI	AXIAL kip	SHEAR kip	GRAVITY kip	TORSION ft-kip
HP	80.0	240.0	4.4	240.0	-0.62	0.38	0.25	0.55
HP	80.0	120.0	4.4	120.0	-0.62	-0.38	0.25	-0.55

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 LOADING CONDITION Y =====

50 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 TYPE	ELEV ft	APPLY.. RADIUS ft	LOAD..AT AZI	LOAD AZIFORCES.....	MOMENTS.....	
					HORIZ kip	DOWN kip	VERTICAL ft-kip	TORSNAL ft-kip
C	110.0	0.00	0.0	0.0	0.52	0.60	0.00	0.00
C	105.0	0.00	0.0	0.0	0.12	0.32	0.00	0.00
C	100.0	0.00	0.0	0.0	0.31	4.41	0.00	0.00
C	97.5	0.00	0.0	0.0	0.01	0.00	0.00	0.00
C	92.5	0.00	0.0	0.0	0.01	0.00	0.00	0.00
C	90.0	0.00	0.0	0.0	0.08	0.10	0.00	0.00
C	82.5	0.00	0.0	0.0	0.01	0.00	0.00	0.00
C	80.0	0.00	0.0	0.0	0.14	0.77	0.00	0.00
C	75.0	0.00	0.0	0.0	0.10	0.16	0.00	0.00
C	75.0	0.00	0.0	0.0	0.10	0.16	0.00	0.00
C	72.5	0.00	0.0	0.0	0.01	0.00	0.00	0.00
C	70.0	0.00	0.0	0.0	0.14	0.19	0.00	0.00
C	62.5	0.00	0.0	0.0	0.01	0.00	0.00	0.00
C	60.0	0.00	0.0	0.0	0.25	1.52	0.00	0.00
C	52.5	0.00	0.0	0.0	0.01	0.00	0.00	0.00
C	42.5	0.00	0.0	0.0	0.01	0.00	0.00	0.00
C	32.5	0.00	0.0	0.0	0.01	0.00	0.00	0.00
C	22.5	0.00	0.0	0.0	0.01	0.00	0.00	0.00
C	12.5	0.00	0.0	0.0	0.01	0.00	0.00	0.00
C	2.5	0.00	0.0	0.0	0.00	0.00	0.00	0.00
D	100.0	0.00	359.1	0.0	0.04	0.30	0.12	0.00
D	95.0	0.00	359.1	0.0	0.04	0.30	0.12	0.00
D	95.0	0.00	359.2	0.0	0.03	0.25	0.12	0.00
D	80.0	0.00	359.2	0.0	0.03	0.25	0.12	0.00
D	80.0	0.00	356.1	0.0	0.04	0.32	0.15	0.00
D	75.0	0.00	356.1	0.0	0.04	0.32	0.15	0.00
D	75.0	0.00	355.4	0.0	0.03	0.29	0.18	0.00
D	60.0	0.00	355.5	0.0	0.03	0.30	0.19	0.00
D	60.0	0.00	12.1	0.0	0.04	0.35	0.19	0.01
D	40.0	0.00	12.5	0.0	0.04	0.36	0.21	0.01
D	40.0	0.00	12.8	0.0	0.04	0.37	0.23	0.01
D	25.0	0.00	13.0	0.0	0.03	0.37	0.24	0.01
D	25.0	0.00	13.0	0.0	0.03	0.37	0.25	0.01
D	20.0	0.00	13.0	0.0	0.03	0.37	0.25	0.01
D	20.0	0.00	13.1	0.0	0.03	0.40	0.26	0.01
D	5.0	0.00	13.0	0.0	0.03	0.38	0.26	0.01
D	5.0	0.00	13.3	0.0	0.03	0.34	0.21	0.01
D	0.0	0.00	13.3	0.0	0.03	0.34	0.21	0.01

ANTENNA LOADING

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.....ANTENNA..... TYPE ATTACHMENTANTENNA FORCES.....			
	ELEV ft	AZI	RAD ft	AZI	AXIAL kip	SHEAR kip	GRAVITY kip	TORSION ft-kip
HP	80.0	240.0	4.4	240.0	-0.12	0.08	1.24	0.12
HP	80.0	120.0	4.4	120.0	-0.12	-0.08	1.24	-0.12

=====
LOADING CONDITION k =====

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

MAST LOADING
 =====

LOAD TYPE	ELEV ft	APPLY..LOAD..AT		LOAD AZI	.....FORCES.....		.....MOMENTS.....	
		RADIUS ft	AZI		HORIZ kip	DOWN kip	VERTICAL ft-kip	TORSNAL ft-kip
C	110.0	0.00	0.0	0.0	0.03	0.23	0.00	0.00
C	105.0	0.00	0.0	0.0	0.02	0.16	0.00	0.00
C	100.0	0.00	0.0	0.0	0.26	1.92	0.00	0.00
C	98.7	0.00	0.0	0.0	0.00	0.01	0.00	0.00
C	98.7	0.00	0.0	0.0	0.00	0.02	0.00	0.00
C	97.5	0.00	0.0	0.0	0.00	0.00	0.00	0.00
C	95.0	0.00	0.0	0.0	0.00	0.03	0.00	0.00
C	95.0	0.00	0.0	0.0	0.01	0.05	0.00	0.00
C	92.5	0.00	0.0	0.0	0.00	0.00	0.00	0.00
C	90.0	0.00	0.0	0.0	0.15	1.23	0.00	0.00
C	90.0	0.00	0.0	0.0	0.00	0.04	0.00	0.00
C	87.5	0.00	0.0	0.0	0.01	0.05	0.00	0.00
C	87.5	0.00	0.0	0.0	0.01	0.09	0.00	0.00
C	82.5	0.00	0.0	0.0	0.00	0.00	0.00	0.00
C	81.2	0.00	0.0	0.0	0.00	0.01	0.00	0.00
C	81.2	0.00	0.0	0.0	0.00	0.02	0.00	0.00
C	80.0	0.00	0.0	0.0	0.06	0.54	0.00	0.00
C	80.0	0.00	0.0	0.0	0.06	0.54	0.00	0.00
C	80.0	0.00	0.0	0.0	0.01	0.06	0.00	0.00
C	80.0	0.00	0.0	0.0	0.04	0.38	0.00	0.00
C	80.0	0.00	0.0	0.0	0.06	0.60	0.00	0.00
C	80.0	0.00	0.0	0.0	0.06	0.60	0.00	0.00
C	80.0	0.00	0.0	0.0	0.01	0.06	0.00	0.00
C	77.5	0.00	0.0	0.0	0.01	0.06	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	0.01	0.07	0.00	0.00
C	75.0	0.00	0.0	0.0	0.01	0.07	0.00	0.00
C	73.7	0.00	0.0	0.0	0.00	0.01	0.00	0.00
C	73.7	0.00	0.0	0.0	0.00	0.03	0.00	0.00
C	72.5	0.00	0.0	0.0	0.00	0.00	0.00	0.00
C	70.0	0.00	0.0	0.0	0.01	0.08	0.00	0.00
C	70.0	0.00	0.0	0.0	0.14	1.46	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	0.01	0.14	0.00	0.00
C	62.5	0.00	0.0	0.0	0.00	0.00	0.00	0.00
C	61.2	0.00	0.0	0.0	0.00	0.01	0.00	0.00
C	61.2	0.00	0.0	0.0	0.00	0.03	0.00	0.00
C	60.0	0.00	0.0	0.0	0.06	0.75	0.00	0.00
C	56.2	0.00	0.0	0.0	0.01	0.11	0.00	0.00
C	56.2	0.00	0.0	0.0	0.00	0.04	0.00	0.00
C	56.2	0.00	0.0	0.0	0.00	0.04	0.00	0.00
C	52.5	0.00	0.0	0.0	0.00	0.00	0.00	0.00
C	50.0	0.00	0.0	0.0	0.12	1.72	0.00	0.00
C	47.5	0.00	0.0	0.0	0.00	0.05	0.00	0.00
C	47.5	0.00	0.0	0.0	0.01	0.14	0.00	0.00
C	47.5	0.00	0.0	0.0	0.00	0.06	0.00	0.00
C	42.5	0.00	0.0	0.0	0.00	0.00	0.00	0.00
C	41.2	0.00	0.0	0.0	0.00	0.01	0.00	0.00
C	41.2	0.00	0.0	0.0	0.00	0.04	0.00	0.00

C	41.2	0.00	0.0	0.0	0.00	0.01	0.00	0.00
C	36.2	0.00	0.0	0.0	0.00	0.04	0.00	0.00
C	36.2	0.00	0.0	0.0	0.00	0.04	0.00	0.00
C	36.2	0.00	0.0	0.0	0.01	0.11	0.00	0.00
C	32.5	0.00	0.0	0.0	0.00	0.00	0.00	0.00
C	30.0	0.00	0.0	0.0	0.08	2.08	0.00	0.00
C	27.5	0.00	0.0	0.0	0.00	0.05	0.00	0.00
C	27.5	0.00	0.0	0.0	0.01	0.14	0.00	0.00
C	27.5	0.00	0.0	0.0	0.00	0.06	0.00	0.00
C	22.5	0.00	0.0	0.0	0.00	0.00	0.00	0.00
C	21.2	0.00	0.0	0.0	0.00	0.04	0.00	0.00
C	21.2	0.00	0.0	0.0	0.00	0.01	0.00	0.00
C	21.2	0.00	0.0	0.0	0.00	0.01	0.00	0.00
C	16.2	0.00	0.0	0.0	0.00	0.04	0.00	0.00
C	16.2	0.00	0.0	0.0	0.00	0.04	0.00	0.00
C	16.2	0.00	0.0	0.0	0.00	0.11	0.00	0.00
C	12.5	0.00	0.0	0.0	0.00	0.00	0.00	0.00
C	10.0	0.00	0.0	0.0	0.04	2.76	0.00	0.00
C	7.5	0.00	0.0	0.0	0.00	0.05	0.00	0.00
C	7.5	0.00	0.0	0.0	0.00	0.14	0.00	0.00
C	7.5	0.00	0.0	0.0	0.00	0.06	0.00	0.00
C	2.5	0.00	0.0	0.0	0.00	0.00	0.00	0.00
C	1.2	0.00	0.0	0.0	0.00	0.01	0.00	0.00
C	1.2	0.00	0.0	0.0	0.00	0.01	0.00	0.00
C	1.2	0.00	0.0	0.0	0.00	0.04	0.00	0.00
D	100.0	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
HP	80.0	240.0	4.4	240.0	0.00	0.00	0.00	0.00
HP	80.0	120.0	4.4	120.0	0.00	0.00	0.00	0.00

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LOADING CONDITION n =====

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

MAST LOADING

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LOAD	ELEV	APPLY..LOAD..AT	LOADFORCES.....	MOMENTS.....		
TYPE	ft	RADIUS	AZI	AZI	HORIZ	DOWN	VERTICAL	TORSNAL
		ft			kip	kip	ft-kip	ft-kip
C	110.0	0.00	0.0	0.0	0.03	0.15	0.00	0.00
C	105.0	0.00	0.0	0.0	0.02	0.11	0.00	0.00
C	100.0	0.00	0.0	0.0	0.26	1.30	0.00	0.00
C	98.7	0.00	0.0	0.0	0.00	0.01	0.00	0.00
C	98.7	0.00	0.0	0.0	0.00	0.02	0.00	0.00
C	97.5	0.00	0.0	0.0	0.00	0.00	0.00	0.00
C	95.0	0.00	0.0	0.0	0.00	0.02	0.00	0.00
C	95.0	0.00	0.0	0.0	0.01	0.03	0.00	0.00

C	92.5	0.00	0.0	0.0	0.00	0.00	0.00	0.00
C	90.0	0.00	0.0	0.0	0.15	0.83	0.00	0.00
C	90.0	0.00	0.0	0.0	0.00	0.03	0.00	0.00
C	87.5	0.00	0.0	0.0	0.01	0.03	0.00	0.00
C	87.5	0.00	0.0	0.0	0.01	0.06	0.00	0.00
C	82.5	0.00	0.0	0.0	0.00	0.00	0.00	0.00
C	81.2	0.00	0.0	0.0	0.00	0.01	0.00	0.00
C	81.2	0.00	0.0	0.0	0.00	0.02	0.00	0.00
C	80.0	0.00	0.0	0.0	0.06	0.36	0.00	0.00
C	80.0	0.00	0.0	0.0	0.06	0.36	0.00	0.00
C	80.0	0.00	0.0	0.0	0.01	0.04	0.00	0.00
C	80.0	0.00	0.0	0.0	0.04	0.25	0.00	0.00
C	80.0	0.00	0.0	0.0	0.06	0.41	0.00	0.00
C	80.0	0.00	0.0	0.0	0.06	0.41	0.00	0.00
C	80.0	0.00	0.0	0.0	0.01	0.04	0.00	0.00
C	77.5	0.00	0.0	0.0	0.01	0.04	0.00	0.00
C	77.5	0.00	0.0	0.0	0.00	0.02	0.00	0.00
C	75.0	0.00	0.0	0.0	0.01	0.05	0.00	0.00
C	75.0	0.00	0.0	0.0	0.01	0.05	0.00	0.00
C	73.7	0.00	0.0	0.0	0.00	0.01	0.00	0.00
C	73.7	0.00	0.0	0.0	0.00	0.02	0.00	0.00
C	72.5	0.00	0.0	0.0	0.00	0.00	0.00	0.00
C	70.0	0.00	0.0	0.0	0.01	0.05	0.00	0.00
C	70.0	0.00	0.0	0.0	0.14	0.99	0.00	0.00
C	67.5	0.00	0.0	0.0	0.00	0.03	0.00	0.00
C	67.5	0.00	0.0	0.0	0.01	0.09	0.00	0.00
C	62.5	0.00	0.0	0.0	0.00	0.00	0.00	0.00
C	61.2	0.00	0.0	0.0	0.00	0.01	0.00	0.00
C	61.2	0.00	0.0	0.0	0.00	0.02	0.00	0.00
C	60.0	0.00	0.0	0.0	0.06	0.51	0.00	0.00
C	56.2	0.00	0.0	0.0	0.01	0.07	0.00	0.00
C	56.2	0.00	0.0	0.0	0.00	0.03	0.00	0.00
C	56.2	0.00	0.0	0.0	0.00	0.03	0.00	0.00
C	52.5	0.00	0.0	0.0	0.00	0.00	0.00	0.00
C	50.0	0.00	0.0	0.0	0.12	1.16	0.00	0.00
C	47.5	0.00	0.0	0.0	0.00	0.03	0.00	0.00
C	47.5	0.00	0.0	0.0	0.01	0.10	0.00	0.00
C	47.5	0.00	0.0	0.0	0.00	0.04	0.00	0.00
C	42.5	0.00	0.0	0.0	0.00	0.00	0.00	0.00
C	41.2	0.00	0.0	0.0	0.00	0.01	0.00	0.00
C	41.2	0.00	0.0	0.0	0.00	0.02	0.00	0.00
C	41.2	0.00	0.0	0.0	0.00	0.01	0.00	0.00
C	36.2	0.00	0.0	0.0	0.00	0.03	0.00	0.00
C	36.2	0.00	0.0	0.0	0.00	0.03	0.00	0.00
C	36.2	0.00	0.0	0.0	0.01	0.07	0.00	0.00
C	32.5	0.00	0.0	0.0	0.00	0.00	0.00	0.00
C	30.0	0.00	0.0	0.0	0.08	1.41	0.00	0.00
C	27.5	0.00	0.0	0.0	0.00	0.03	0.00	0.00
C	27.5	0.00	0.0	0.0	0.01	0.10	0.00	0.00
C	27.5	0.00	0.0	0.0	0.00	0.04	0.00	0.00
C	22.5	0.00	0.0	0.0	0.00	0.00	0.00	0.00
C	21.2	0.00	0.0	0.0	0.00	0.02	0.00	0.00
C	21.2	0.00	0.0	0.0	0.00	0.01	0.00	0.00
C	21.2	0.00	0.0	0.0	0.00	0.01	0.00	0.00
C	16.2	0.00	0.0	0.0	0.00	0.03	0.00	0.00
C	16.2	0.00	0.0	0.0	0.00	0.03	0.00	0.00
C	16.2	0.00	0.0	0.0	0.00	0.07	0.00	0.00
C	12.5	0.00	0.0	0.0	0.00	0.00	0.00	0.00
C	10.0	0.00	0.0	0.0	0.04	1.86	0.00	0.00
C	7.5	0.00	0.0	0.0	0.00	0.03	0.00	0.00
C	7.5	0.00	0.0	0.0	0.00	0.10	0.00	0.00

C	7.5	0.00	0.0	0.0	0.00	0.04	0.00	0.00
C	2.5	0.00	0.0	0.0	0.00	0.00	0.00	0.00
C	1.2	0.00	0.0	0.0	0.00	0.01	0.00	0.00
C	1.2	0.00	0.0	0.0	0.00	0.01	0.00	0.00
C	1.2	0.00	0.0	0.0	0.00	0.02	0.00	0.00
D	100.0	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	AZI	RAD	AZI	AXIAL	SHEAR	GRAVITY	TORSION
	ft		ft		kip	kip	kip	ft-kip
HP	80.0	240.0	4.4	240.0	0.00	0.00	0.00	0.00
HP	80.0	120.0	4.4	120.0	0.00	0.00	0.00	0.00

=====

MAXIMUM ANTENNA AND REFLECTOR ROTATIONS:

=====

ELEV	AZI	TYPE	.....BEAM DEFLECTIONS (deg).....			
ft	deg	*	ROLL	YAW	PITCH	TOTAL
80.0	240.0	HP	-0.383 K	0.117 H	0.384 H	0.401 H
80.0	120.0	HP	-0.382 C	0.116 H	-0.385 F	0.398 F

MAXIMUM TENSION IN MAST MEMBERS (kip)

=====

ELEV	LEGS	DIAG	HORIZ	BRACE
ft				
100.0	-----		1.16 G	0.00 A
	2.56 M	2.40 R		
95.0	-----		0.12 I	0.00 A
	7.14 M	1.39 C		
90.0	-----		0.05 W	0.00 A
	10.43 M	1.64 R		
85.0	-----		0.10 A	0.00 A
	14.93 M	1.83 L		
80.0	-----		0.47 N	0.00 A
	19.12 M	2.65 U		
75.0	-----		0.10 A	0.00 A
	24.23 M	2.53 J		
70.0	-----		0.01 O	0.00 A
	29.10 Q	2.59 U		
65.0	-----		0.10 A	0.00 A
	34.05 U	2.47 J		
60.0	-----		0.01 I	0.00 A
	38.58 Q	2.75 U		
55.0	-----		0.07 A	0.00 A
	43.61 Q	2.68 C		
50.0	-----		0.02 I	0.00 A
	48.16 Q	2.66 U		
45.0	-----		0.06 A	0.00 A
	52.85 M	2.64 K		
40.0	-----		0.02 E	0.00 A

	57.30 M	2.65 Q		
35.0	-----		0.04 A	0.00 A
	61.78 M	2.68 K		
30.0	-----		0.02 E	0.00 A
	66.06 M	2.68 Q		
25.0	-----		0.04 A	0.00 A
	70.34 M	2.74 K		
20.0	-----		0.02 A	0.00 A
	74.47 M	2.73 W		
15.0	-----		0.03 A	0.00 A
	78.55 M	2.81 K		
10.0	-----		0.00 U	0.00 A
	82.53 M	2.83 K		
5.0	-----		0.03 A	0.00 A
	86.46 M	2.88 K		
0.0	-----		0.00 A	0.00 A

MAXIMUM COMPRESSION IN MAST MEMBERS (kip)

=====

ELEV ft	LEGS	DIAG	HORIZ	BRACE
100.0	-----		-1.13 M	0.00 A
	-3.90 G	-2.45 F		
95.0	-----		-0.10 S	0.00 A
	-8.83 G	-1.36 X		
90.0	-----		-0.06 A	0.00 A
	-12.38 G	-1.70 C		
85.0	-----		-0.07 W	0.00 A
	-17.23 G	-1.84 F		
80.0	-----		-0.53 G	0.00 A
	-22.15 K	-2.59 C		
75.0	-----		-0.07 W	0.00 A
	-28.11 G	-2.46 U		
70.0	-----		-0.01 e	0.00 A
	-33.18 G	-2.65 C		
65.0	-----		-0.08 W	0.00 A
	-38.78 G	-2.43 U		
60.0	-----		-0.01 G	0.00 A
	-44.15 G	-2.82 C		
55.0	-----		-0.06 O	0.00 A
	-49.95 G	-2.63 U		
50.0	-----		-0.02 S	0.00 A
	-55.10 G	-2.74 C		
45.0	-----		-0.05 S	0.00 A
	-60.50 G	-2.61 W		
40.0	-----		-0.02 S	0.00 A
	-65.52 G	-2.74 K		
35.0	-----		-0.04 S	0.00 A
	-70.66 G	-2.68 K		
30.0	-----		-0.02 S	0.00 A
	-75.56 G	-2.79 K		
25.0	-----		-0.03 S	0.00 A
	-80.50 G	-2.76 K		
20.0	-----		-0.02 S	0.00 A

	-85.30 G	-2.85 K		
15.0	-----		-0.03 S	0.00 A
	-90.12 G	-2.84 K		
10.0	-----		0.00 k	0.00 A
	-94.83 G	-2.91 K		
5.0	-----		-0.02 S	0.00 A
	-99.50 G	-2.95 K		
0.0	-----		0.00 A	0.00 A

FORCE/RESISTANCE RATIO IN LEGS
=====

MAST ELEV ft	-- LEG COMPRESSION -			---- LEG TENSION ---		
	MAX COMP	COMP RESIST	FORCE/ RESIST RATIO	MAX TENS	TENS RESIST	FORCE/ RESIST RATIO
100.00	-----					
	3.90	28.89	0.13	2.56	108.24	0.02
95.00	-----					
	8.83	28.89	0.31	7.14	108.24	0.07
90.00	-----					
	12.38	28.89	0.43	10.43	108.24	0.10
85.00	-----					
	17.23	28.89	0.60	14.93	108.24	0.14
80.00	-----					
	22.15	49.29	0.45	19.12	120.41	0.16
75.00	-----					
	28.11	49.29	0.57	24.23	120.41	0.20
70.00	-----					
	33.18	49.29	0.67	29.10	120.41	0.24
65.00	-----					
	38.78	49.29	0.79	34.05	120.41	0.28
60.00	-----					
	44.15	77.87	0.57	38.58	120.41	0.32
55.00	-----					
	49.95	77.87	0.64	43.61	120.41	0.36
50.00	-----					
	55.10	77.87	0.71	48.16	120.41	0.40
45.00	-----					
	60.50	77.87	0.78	52.85	120.41	0.44
40.00	-----					
	65.52	112.60	0.58	57.30	220.89	0.26
35.00	-----					
	70.66	112.60	0.63	61.78	220.89	0.28
30.00	-----					
	75.56	112.60	0.67	66.06	220.89	0.30
25.00	-----					
	80.50	112.60	0.71	70.34	220.89	0.32
20.00	-----					
	85.30	153.15	0.56	74.47	242.30	0.31
15.00	-----					
	90.12	153.15	0.59	78.55	242.30	0.32
10.00	-----					
	94.83	153.15	0.62	82.53	242.30	0.34
5.00	-----					
	99.50	153.15	0.65	86.46	242.30	0.36
0.00	-----					

FORCE/RESISTANCE RATIO IN DIAGONALS


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=====
- DIAG COMPRESSION -      --- DIAG TENSION ---
MAST      MAX  COMP      FORCE/      MAX  TENS      FORCE/
ELEV      COMP COMP      RESIST     TENS  TENS      RESIST
ft        COMP RESIST  RATIO      TENS  RESIST  RATIO

100.00 ---
      2.45  7.62  0.32  2.40  7.62  0.32
95.00 ---
      1.36  7.62  0.18  1.39  7.62  0.18
90.00 ---
      1.70  7.62  0.22  1.64  7.62  0.22
85.00 ---
      1.84  7.62  0.24  1.83  7.62  0.24
80.00 ---
      2.59  7.62  0.34  2.65  7.62  0.35
75.00 ---
      2.46  7.62  0.32  2.53  7.62  0.33
70.00 ---
      2.65  7.62  0.35  2.59  7.62  0.34
65.00 ---
      2.43  7.62  0.32  2.47  7.62  0.32
60.00 ---
      2.82  6.05  0.47  2.75  6.05  0.45
55.00 ---
      2.63  6.05  0.43  2.68  6.05  0.44
50.00 ---
      2.74  6.05  0.45  2.66  6.05  0.44
45.00 ---
      2.61  6.05  0.43  2.64  6.05  0.44
40.00 ---
      2.74  4.49  0.61  2.65  4.49  0.59
35.00 ---
      2.68  4.49  0.60  2.68  4.49  0.60
30.00 ---
      2.79  4.49  0.62  2.68  4.49  0.60
25.00 ---
      2.76  4.49  0.62  2.74  4.49  0.61
20.00 ---
      2.85  4.89  0.58  2.73  4.89  0.56
15.00 ---
      2.84  4.89  0.58  2.81  4.89  0.57
10.00 ---
      2.91  4.89  0.59  2.83  4.89  0.58
 5.00 ---
      2.95  4.89  0.60  2.88  4.89  0.59
 0.00 ---

```

MAXIMUM INDIVIDUAL FOUNDATION LOADS: (kip)

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=====
-----LOAD-----COMPONENTS-----
NORTH      EAST          DOWN          UPLIFT
9.67 G      8.02 K        101.72 G     -88.32 M     9.67 G

```

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

=====

-----HORIZONTAL-----			DOWN	-----OVERTURNING-----			TORSION
NORTH	EAST	TOTAL		NORTH	EAST	TOTAL	
		@ 0.0				@ 0.0	
16.4	13.6	16.4	44.0	1008.3	886.9	1008.3	-6.4
G	J	G	a	G	J	G	Q

=====

=====
 Latticed Tower Analysis (Unguyed) (c)2015 Guymast Inc. 416-736-7453
 Processed under license at:

Sabre Towers and Poles on: 4 oct 2022 at: 9:05:42
 =====

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

=====
 * Only 1 condition(s) shown in full
 * Some wind loads may have been derived from full-scale wind tunnel testing
 =====

LOADING CONDITION A =====

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

MAST LOADING
 =====

LOAD TYPE	ELEV ft	APPLY..LOAD..AT		LOAD AZI	.....FORCES.....		.....MOMENTS.....	
		RADIUS ft	AZI		HORIZ kip	DOWN kip	VERTICAL ft-kip	TORSNAL ft-kip
C	110.0	0.00	0.0	0.0	0.31	0.18	0.00	0.00
C	105.0	0.00	0.0	0.0	0.07	0.13	0.00	0.00
C	100.0	0.00	0.0	0.0	0.21	1.53	0.00	0.00
C	97.5	0.00	0.0	0.0	0.00	0.00	0.00	0.00
C	92.5	0.00	0.0	0.0	0.00	0.00	0.00	0.00
C	90.0	0.00	0.0	0.0	0.05	0.03	0.00	0.00
C	82.5	0.00	0.0	0.0	0.00	0.00	0.00	0.00
C	80.0	0.00	0.0	0.0	0.09	0.30	0.00	0.00
C	75.0	0.00	0.0	0.0	0.03	0.05	0.00	0.00
C	75.0	0.00	0.0	0.0	0.03	0.05	0.00	0.00
C	72.5	0.00	0.0	0.0	0.00	0.00	0.00	0.00
C	70.0	0.00	0.0	0.0	0.08	0.06	0.00	0.00
C	62.5	0.00	0.0	0.0	0.00	0.00	0.00	0.00
C	60.0	0.00	0.0	0.0	0.17	0.60	0.00	0.00
C	52.5	0.00	0.0	0.0	0.00	0.00	0.00	0.00
C	42.5	0.00	0.0	0.0	0.00	0.00	0.00	0.00

C	32.5	0.00	0.0	0.0	0.00	0.00	0.00	0.00
C	22.5	0.00	0.0	0.0	0.00	0.00	0.00	0.00
C	12.5	0.00	0.0	0.0	0.00	0.00	0.00	0.00
C	2.5	0.00	0.0	0.0	0.00	0.00	0.00	0.00
D	100.0	0.00	4.9	0.0	0.02	0.06	0.02	0.00
D	80.0	0.00	4.9	0.0	0.02	0.05	0.02	0.00
D	80.0	0.00	0.2	0.0	0.02	0.07	0.02	0.00
D	60.0	0.00	358.6	0.0	0.02	0.06	0.03	0.00
D	60.0	0.00	15.3	0.0	0.03	0.08	0.03	0.00
D	40.0	0.00	15.4	0.0	0.03	0.08	0.03	0.00
D	40.0	0.00	15.5	0.0	0.03	0.09	0.04	0.00
D	20.0	0.00	15.6	0.0	0.03	0.09	0.04	0.00
D	20.0	0.00	15.7	0.0	0.03	0.12	0.04	0.00
D	0.0	0.00	15.8	0.0	0.03	0.12	0.05	0.00

ANTENNA LOADING

=====

.....ANTENNA.....		ATTACHMENT		.....ANTENNA FORCES.....				
TYPE	ELEV	AZI	RAD	AZI	AXIAL	SHEAR	GRAVITY	TORSION
	ft		ft		kip	kip	kip	ft-kip
HP	80.0	240.0	4.4	240.0	-0.16	0.10	0.28	0.14
HP	80.0	120.0	4.4	120.0	-0.16	-0.10	0.28	-0.14

=====

MAXIMUM MAST DISPLACEMENTS:

=====

ELEV ft	-----DEFLECTIONS (ft)-----			--TILTS (DEG)---		TWIST DEG
	NORTH	EAST	DOWN	NORTH	EAST	
100.0	0.117 G	0.106 J	0.002 G	0.115 G	0.107 J	0.032 H
95.0	0.106 G	0.097 J	0.002 G	0.114 G	0.106 J	0.031 H
90.0	0.096 G	0.087 J	0.002 G	0.111 G	0.103 J	0.031 H
85.0	0.086 G	0.078 J	0.002 G	0.107 G	0.099 J	0.031 H
80.0	0.077 G	0.070 J	0.002 G	0.101 G	0.093 J	0.030 H
75.0	0.068 G	0.061 J	0.001 G	0.096 G	0.088 J	0.027 H
70.0	0.059 G	0.054 J	0.001 G	0.090 G	0.083 J	0.024 H
65.0	0.051 G	0.046 J	0.001 G	0.083 G	0.076 J	0.021 H
60.0	0.044 G	0.040 J	0.001 G	0.075 G	0.069 J	0.019 H
55.0	0.037 G	0.033 J	0.001 G	0.069 G	0.063 J	0.017 H
50.0	0.031 G	0.028 J	0.001 G	0.062 G	0.057 J	0.015 H
45.0	0.026 G	0.023 J	0.001 F	0.055 G	0.050 J	0.013 H
40.0	0.021 G	0.018 J	0.001 G	0.048 G	0.043 J	0.011 H
35.0	0.016 G	0.014 J	0.001 L	0.042 G	0.038 J	0.009 H
30.0	0.012 G	0.011 J	0.001 F	0.036 G	0.032 J	0.007 H
25.0	0.009 G	0.008 J	0.001 L	0.029 G	0.026 J	0.006 H
20.0	0.006 G	0.005 J	0.000 F	0.023 G	0.020 J	0.004 H
15.0	0.004 G	0.003 J	0.000 L	0.017 G	0.015 J	0.003 H
10.0	0.002 G	0.002 J	0.000 F	0.011 G	0.010 J	-0.002 E
5.0	0.001 G	0.001 K	0.000 L	0.006 G	0.005 J	-0.001 E
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:

=====

ELEV ft	AZI deg	TYPE *	.....BEAM DEFLECTIONS (deg).....			
			ROLL	YAW	PITCH	TOTAL

80.0	240.0	HP	-0.099	K	0.030	H	0.099	H	0.103	H
80.0	120.0	HP	-0.099	C	0.030	H	-0.099	F	0.103	F

MAXIMUM TENSION IN MAST MEMBERS (kip)

=====

ELEV ft	LEGS	DIAG	HORIZ	BRACE
100.0	-----	-----	0.31 G	0.00 A
	0.18 A	0.61 F		
95.0	-----	-----	0.04 A	0.00 A
	1.27 A	0.37 F		
90.0	-----	-----	0.01 K	0.00 A
	2.07 A	0.42 F		
85.0	-----	-----	0.03 A	0.00 A
	3.17 A	0.47 L		
80.0	-----	-----	0.09 L	0.00 A
	4.08 A	0.68 I		
75.0	-----	-----	0.04 A	0.00 A
	5.20 A	0.69 J		
70.0	-----	-----	0.00 C	0.00 A
	6.36 A	0.64 I		
65.0	-----	-----	0.03 A	0.00 A
	7.51 A	0.65 D		
60.0	-----	-----	0.00 I	0.00 A
	8.46 A	0.69 I		
55.0	-----	-----	0.02 A	0.00 A
	9.65 A	0.70 C		
50.0	-----	-----	0.01 I	0.00 A
	10.76 A	0.67 I		
45.0	-----	-----	0.02 A	0.00 A
	11.86 A	0.69 K		
40.0	-----	-----	0.01 E	0.00 A
	12.91 A	0.67 E		
35.0	-----	-----	0.01 A	0.00 A
	13.94 A	0.69 K		
30.0	-----	-----	0.01 E	0.00 A
	14.93 A	0.68 E		
25.0	-----	-----	0.01 A	0.00 A
	15.91 A	0.71 K		
20.0	-----	-----	0.01 E	0.00 A
	16.84 A	0.70 K		
15.0	-----	-----	0.01 A	0.00 A
	17.74 A	0.72 K		
10.0	-----	-----	0.00 I	0.00 A
	18.61 A	0.72 K		
5.0	-----	-----	0.01 A	0.00 A
	19.47 A	0.74 K		
0.0	-----	-----	0.00 A	0.00 A

MAXIMUM COMPRESSION IN MAST MEMBERS (kip)

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ELEV ft	LEGS	DIAG	HORIZ	BRACE
100.0	-----	-----	-0.28 A	0.00 A
	-1.45 G	-0.65 F		
95.0	-----	-----	-0.02 G	0.00 A
	-2.82 G	-0.35 L		
90.0	-----	-----	-0.02 A	0.00 A
	-3.79 G	-0.45 C		
85.0	-----	-----	-0.01 K	0.00 A
	-5.11 G	-0.48 F		
80.0	-----	-----	-0.17 L	0.00 A
	-6.69 K	-0.68 C		
75.0	-----	-----	-0.01 C	0.00 A
	-8.31 K	-0.60 I		
70.0	-----	-----	0.00 G	0.00 A
	-9.64 K	-0.71 C		
65.0	-----	-----	-0.01 C	0.00 A
	-11.19 G	-0.61 I		
60.0	-----	-----	0.00 G	0.00 A
	-12.77 G	-0.75 C		
55.0	-----	-----	-0.01 C	0.00 A
	-14.39 G	-0.67 I		
50.0	-----	-----	0.00 G	0.00 A
	-15.79 G	-0.72 C		
45.0	-----	-----	-0.01 C	0.00 A
	-17.29 G	-0.67 K		
40.0	-----	-----	0.00 G	0.00 A
	-18.68 G	-0.72 K		
35.0	-----	-----	-0.01 K	0.00 A
	-20.12 G	-0.69 K		
30.0	-----	-----	0.00 G	0.00 A
	-21.49 G	-0.73 K		
25.0	-----	-----	-0.01 G	0.00 A
	-22.88 G	-0.71 K		
20.0	-----	-----	0.00 G	0.00 A
	-24.23 G	-0.74 K		
15.0	-----	-----	0.00 G	0.00 A
	-25.62 G	-0.73 K		
10.0	-----	-----	0.00 G	0.00 A
	-26.97 G	-0.75 K		
5.0	-----	-----	0.00 G	0.00 A
	-28.31 G	-0.76 K		
0.0	-----	-----	0.00 A	0.00 A

MAXIMUM INDIVIDUAL FOUNDATION LOADS: (kip)

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-----LOAD-----COMPONENTS-----				TOTAL
NORTH	EAST	DOWN	UPLIFT	SHEAR
2.62 G	2.18 K	28.95 G	-19.87 A	2.62 G

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

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-----HORIZONTAL-----			DOWN	-----OVERTURNING-----			TORSION
NORTH	EAST	TOTAL		NORTH	EAST	TOTAL	
		@ 0.0				@ 0.0	

4.2	3.5	4.2	11.7	260.2	229.3	260.2	-1.7
G	J	G	E	G	J	G	E

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

Description	h _i (ft.)	w _i (kips)	W ₂ (kips)	Vertical Distribution of Seismic Forces				1.2 D + 1.0 E _v (kips)	0.9 D - 1.0 E _v (kips)
				$\frac{w_i k_e}{w_i h_i}$	$\frac{F_{sz} \text{ or } E_h}{E_v}$ (kips)	$\frac{F_{sz} \text{ or } E_h}{E_v}$ (kips)	$\frac{F_{sz} \text{ or } E_h}{E_v}$ (kips)		
Ladder/Line	61.25	0.0274	0.0000	1.6782	0.0028	0.0015	0.0344	0.0232	
Mount Load	60.00	0.6000	0.0000	36.0000	0.0608	0.0325	0.7525	0.5075	
Ladder	56.25	0.0300	0.0000	1.6875	0.0028	0.0016	0.0376	0.0254	
Ladder/Line	56.25	0.0861	0.0000	4.8431	0.0082	0.0047	0.1080	0.0728	
Ladder/Line	56.25	0.0340	0.0000	1.9125	0.0032	0.0018	0.0426	0.0288	
Antenna Load	52.50	0.0010	0.0000	0.0525	0.0001	0.0001	0.0013	0.0008	
Structure - Section 3	50.00	1.3690	0.0000	68.4500	0.1155	0.0742	1.7170	1.1579	
Ladder	47.50	0.0400	0.0000	1.9000	0.0032	0.0022	0.0502	0.0338	
Ladder/Line	47.50	0.1148	0.0000	5.4530	0.0092	0.0062	0.1440	0.0971	
Ladder/Line	47.50	0.0454	0.0000	2.1565	0.0036	0.0025	0.0570	0.0384	
Antenna Load	42.50	0.0010	0.0000	0.0425	0.0001	0.0001	0.0013	0.0008	
Ladder	41.25	0.0100	0.0000	0.4125	0.0007	0.0005	0.0125	0.0085	
Ladder/Line	41.25	0.0287	0.0000	1.1839	0.0020	0.0016	0.0360	0.0242	
Ladder/Line	41.25	0.0113	0.0000	0.4661	0.0008	0.0006	0.0142	0.0096	
Ladder	36.25	0.0300	0.0000	1.0875	0.0018	0.0016	0.0376	0.0254	
Ladder/Line	36.25	0.0340	0.0000	1.2325	0.0021	0.0018	0.0426	0.0288	
Ladder/Line	36.25	0.0861	0.0000	3.1211	0.0053	0.0047	0.1080	0.0728	
Antenna Load	32.50	0.0010	0.0000	0.0325	0.0001	0.0001	0.0013	0.0008	
Structure - Section 4	30.00	1.6620	0.0000	49.8600	0.0842	0.0901	2.0845	1.4057	
Ladder	27.50	0.0400	0.0000	1.1000	0.0019	0.0022	0.0502	0.0338	
Ladder/Line	27.50	0.0454	0.0000	1.2485	0.0021	0.0025	0.0570	0.0384	
Ladder/Line	27.50	0.1148	0.0000	3.1570	0.0053	0.0062	0.1440	0.0971	
Antenna Load	22.50	0.0010	0.0000	0.0225	0.0000	0.0001	0.0013	0.0008	
Ladder	21.25	0.0100	0.0000	0.2125	0.0004	0.0005	0.0125	0.0085	
Ladder/Line	21.25	0.0287	0.0000	0.6099	0.0010	0.0016	0.0360	0.0242	
Ladder/Line	21.25	0.0113	0.0000	0.2401	0.0004	0.0006	0.0142	0.0096	
Ladder	16.25	0.0300	0.0000	0.4875	0.0008	0.0016	0.0376	0.0254	
Ladder/Line	16.25	0.0340	0.0000	0.5525	0.0009	0.0018	0.0426	0.0288	
Ladder/Line	16.25	0.0861	0.0000	1.3991	0.0024	0.0047	0.1080	0.0728	
Antenna Load	12.50	0.0010	0.0000	0.0125	0.0000	0.0001	0.0013	0.0008	
Structure - Section 5	10.00	2.2020	0.0000	22.0200	0.0372	0.1193	2.7617	1.8625	
Ladder	7.50	0.0400	0.0000	0.3000	0.0005	0.0022	0.0502	0.0338	
Ladder/Line	7.50	0.1148	0.0000	0.8610	0.0015	0.0062	0.1440	0.0971	
Ladder/Line	7.50	0.0454	0.0000	0.3405	0.0006	0.0025	0.0570	0.0384	
Antenna Load	2.50	0.0010	0.0000	0.0025	0.0000	0.0001	0.0013	0.0008	
Ladder	1.25	0.0100	0.0000	0.0125	0.0000	0.0005	0.0125	0.0085	
Ladder/Line	1.25	0.0287	0.0000	0.0359	0.0000	0.0016	0.0360	0.0242	
Ladder/Line	1.25	0.0113	0.0000	0.0141	0.0000	0.0006	0.0142	0.0096	
Σ		13.97	2.1999	802.96	1.36	0.76	17.52	11.82	

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)		
80	100	1.75 S.R.								4	0.75	5.50	0.75	7.50
60	80	2.0 S.R.	4	0.75	5.50	0.75	7.50	7.50	7.50	4	0.75	5.50	0.75	7.50
40	60	2.25 S.R.	4	0.75	5.50	1.00	7.50	7.50	7.50	4	0.75	5.50	1.00	7.50
20	40	2.5 S.R.	4	0.75	5.50	1.00	7.50	7.50	7.50	6	1.00	7.25	1.00	9.75
0	20	2.75 S.R.	6	1.00	7.25	1.25	9.75	9.75	9.75	4	1.00	6.63	1.25	9.13

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)
80	100	L 2 X 2 X 1/8	1	0.625	1.625		1.125	0.375
60	80	L 2 X 2 X 1/8	1	0.625	1.625		1.125	0.375
40	60	L 2 X 2 X 1/8	1	0.625	1.625		1.125	0.375
20	40	L 2 X 2 X 1/8	1	0.625	1.625		1.125	0.375
0	20	L 2 X 2 X 3/16	1	0.625	1.625		1.125	0.375

MAT FOUNDATION DESIGN BY SABRE INDUSTRIES

100' S3R Series SD SOUTHERN MAINE COMMUNICATIONS North Berwick, ME (512909) 10/04/22 ARH

Overall Loads:			
Factored Moment (ft-kips)	1008.33		
Factored Axial (kips)	44.03		
Factored Shear (kips)	16.38		
Individual Leg Loads:			
Factored Uplift (kips)	88.00	Tower eccentric from mat (ft)=	1
Factored Download (kips)	102.00		
Factored Shear (kips)	10.00		
Width of Tower (ft)	12	Allowable Bearing Pressure (ksf)	5.00
Ultimate Bearing Pressure	10.00	Safety Factor	2.00
Bearing Φ s	0.75		
Bearing Design Strength (ksf)	7.5	Max. Factored Net Bearing Pressure (ksf)	4.49
Water Table Below Grade (ft)	3.0		
Width of Mat (ft)	17	Minimum Mat Width (ft)	16.00
Thickness of Mat (ft)	1.5		
Depth to Bottom of Slab (ft)	6		
Bolt Circle Diameter (in)	6.625		
Top of Concrete to Top of Bottom Threads (in)	41.625	Minimum Pier Diameter (ft)	1.89
Diameter of Pier (ft)	2	Equivalent Square b (ft)	1.77
Ht. of Pier Above Ground (ft)	0.5		
Ht. of Pier Below Ground (ft)	4.5		
Quantity of Bars in Mat	18		
Bar Diameter in Mat (in)	0.75		
Area of Bars in Mat (in ²)	7.95		
Spacing of Bars in Mat (in)	11.60	Recommended Spacing (in)	6 to 12
Quantity of Bars Pier	10		
Bar Diameter in Pier (in)	0.75		
Tie Bar Diameter in Pier (in)	0.5	Minimum Pier A _s (in ²)	2.26
Spacing of Ties (in)	12	Recommended Spacing (in)	5 to 12
Area of Bars in Pier (in ²)	4.42		
Spacing of Bars in Pier (in)	5.02		
f'c (ksi)	4.5		
fy (ksi)	60		
Unit Wt. of Soil (kcf)	0.11		
Unit Wt. of Concrete (kcf)	0.15		
Volume of Concrete (yd ³)	17.80		

MAT FOUNDATION DESIGN BY SABRE INDUSTRIES (CONTINUED)

Two-Way Shear:

Average d (in)	14.25		
ϕv_c (ksi)	0.228	v_u (ksi)	0.064
$\phi v_c = \phi(2 + 4/\beta_c)f'_c{}^{1/2}$	0.342		
$\phi v_c = \phi(\alpha_s d/b_o + 2)f'_c{}^{1/2}$	0.385		
$\phi v_c = \phi 4f'_c{}^{1/2}$	0.228		
Shear perimeter, b_o (in)	120.08		
β_c	1		

Stability:

Overturning Design Strength (ft-k)	1257.1	Factored Overturning Moment (ft-k)	1114.8
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One-Way Shear:

ϕV_c (kips)	331.5	V_u (kips)	117.3
Pier Design:			
Design Tensile Strength (kips)	238.6	T_u (kips)	88.0
ϕV_n (kips)	32.1	V_u (kips)	10.0
$\phi V_c = \phi 2(1 + N_u/(500A_g))f'_c{}^{1/2}b_w d$	32.1		
V_s (kips)	0.0	V_s max = $4 f'_c{}^{1/2}b_w d$ (kips)	123.6
Maximum Spacing (in)	9.60	(Only if Shear Ties are Required)	
Actual Hook Development (in)	13.50	Req'd Hook Development l_{dh} (in)	9.39

*** Ref. ACI 11.5.5 & 11.5.6.3

Anchor Bolt Pull-Out:

$\phi P_c = \phi \lambda (2/3)f'_c{}^{1/2}(2.8A_{SLOPE} + 4A_{FLAT})$	68.1	P_u (kips)	88.0
Pier Rebar Development Length (in)	33.81	Required Length of Development (in)	9.90

Flexure in Slab:

ϕM_n (ft-kips)	499.0	M_u (ft-kips)	482.8
a (in)	0.61		
Steel Ratio	0.00274		
β_1	0.825		
Maximum Steel Ratio (ρ_t)	0.0197		
Minimum Steel Ratio	0.0018		

Condition	1 is OK, 0 Fails
Minimum Mat Width	1
Maximum Soil Bearing Pressure	1
Pier Area of Steel	1
Pier Shear	1
Two-Way Shear	1
Overturning	1
Anchor Bolt Pull-Out	1
Flexure	1
Steel Ratio	1
Interaction Diagram	1
One-Way Shear	1
Hook Development	1
Minimum Mat Depth	1