



Southwestern Bell Mobile Systems, LLC
500 Enterprise Drive
Rocky Hill, Connecticut 06067-3900
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Fax: (860) 513-7190

Michele G. Briggs
Manager of Real Estate

RECEIVED
DEC - 1 2003

**CONNECTICUT
SITING COUNCIL**

December 1, 2003

Ms. Pam Katz, Chairman
Connecticut Siting Council
10 Franklin Square
New Britain, Connecticut 06051

**Re: Notice of Exempt Modification – Existing Sprint Telecommunications Tower
Facility at 78 Route 81, Killingworth, Connecticut**

Dear Chairman Katz:

Southwestern Bell Mobile Systems, LLC ("SBMS") intends to install telecommunications antennas and associated equipment at an existing multicarrier telecommunications tower off Route 81 in Killingworth, Connecticut.

The Sprint Killingworth facility is located at 78 Route 81, approximately 1.7 miles south of the Killingworth rotary. Tower coordinates (NAD 83) are N 41° 20' 17.2" and W 72° 33' 23.4". The facility is owned and operated by Sprint Sites USA ("Sprint"), with offices at 535 E. Crescent Avenue, Ramsey, NJ 07446. Sprint leases the land from Sherwood Anderson of Niantic, CT.

Please accept this letter as notification to the Council, pursuant to R.C.S.A. Section 16-50j-73, of construction which constitutes an exempt modification pursuant to R.C.S.A. Section 16-50j-72(b)(2). In compliance with R.C.S.A. Section 16-50j-73, a copy of this letter is being sent to the 1st Selectman of Killingworth.

SBMS, the local component of the nationwide Cingular Wireless network, is licensed by the Federal Communications Commission ("FCC") to provide cellular mobile telephone service in the Hartford Connecticut Metropolitan Statistical Area, which includes the area to be served by SBMS' proposed installation. The public need for cellular service has been predetermined by the FCC.

Sprint has agreed to plans put forth by SBMS pursuant to mutually acceptable terms and conditions and has also authorized SBMS to obtain necessary government approvals. Attached to this Notice are a site location map, a proposed site plan, the proposed tower profile, and a structural analysis report that shows the tower is structurally capable of supporting the proposed SBMS telecommunications equipment.

The Sprint facility was approved by local zoning authorities and a building permit was issued on May 24, 2000. Because zoning approval pre-dated the Covello decision concerning Council and Town jurisdiction for tower siting, the tower is legally zoned. The tower came under Council jurisdiction with AT&T's application to co-locate in EM-AT&T-070-020626, which was approved on July 11, 2002.

The Route 81 facility consists of a 150-foot monopole within a roughly 60' x 60' square compound surrounded by 6-ft high chain link fence topped with barbed wire. Sprint operates panel antennas at the top of the 150' monopole and equipment cabinets mounted on a concrete pad. AT&T operates panel antennas at the 130' level of the tower and has its equipment on a 7' x 16' concrete pad.

As shown on the attached drawings and as further described below, SBMS proposes to install up to twelve CSS DUO4-8670 panel antennas, approximately 48 inches in height, with the center of radiation approximately 140 feet above ground level. Associated equipment to be installed on the tower are up to six ADC Co. dual-band tower top amplifiers ("TTA's"; small metal boxes approximately 26 pounds apiece) immediately behind the antennas, and up to three very small (5 pounds apiece) CSS dual-band "combiners." SBMS also proposes to place a 12' x 20' prefabricated concrete equipment building at the base of the tower. All work will be done inside the existing fenced compound.

With the "GSM-only" configuration, SBMS will broadcast up to:

- 2 channels, 296 Watts ERP, 880 – 894 MHz; and
- 2 channels, 427 Watts ERP, 1930 – 1935 MHz.

Statutory Considerations

The changes to the Killingworth tower facility do not constitute a modification as defined in Connecticut General Statutes ("C.G.S.") Section 16-50i(d) because the general physical characteristics of the facility will not be significantly changed or altered. Rather, the planned changes to the facility fall squarely within those activities explicitly provided for in R.C.S.A. Section 16-50j-72(b)(2) because they will not result in any substantial adverse environmental effect.

1. The height of the overall structure will be unaffected.
2. The proposed changes will not affect the property boundaries. All new construction will take place on property leased by Sprint and within the existing fenced compound.
3. The proposed additions will not increase the noise level at the existing facility by six decibels or more.
4. Operation of the additional antennas will not increase the total radio frequency electromagnetic radiation power density, measured at the tower base, to or above the standard adopted by the State of Connecticut and the FCC. The "worst-case" exposure

calculation in accordance with FCC OET Bulletin No. 65 (1997) for a point of interest at the base of the tower in relation to the operation of the currently proposed antenna array is as follows:

Company	Centerline Height (feet)	Frequency (MHz)	Number of Channels	Power Per Channel (Watts)	Power Density [†] (mW/cm ²)	Standard Limits (mW/cm ²)	Percent of Limit
Sprint *	150	1962	12	500	0.0959	1.0000	9.59
Cingular GSM	140	880 - 894	2	296	0.0109	0.5867	1.85
Cingular GSM	140	1930 - 1935	2	427	0.0157	1.0000	1.57
AT&T *	130	D: 1945 E: 1985	12	250	0.0638	1.0000	6.38
Total							19.39%

* Power density parameters taken from AT&T's application to the Council in EM-AT&T-070-020626.

† Please note that the standard power density equation provided by the Council in its memo of January 22, 2001 incorporates a ground reflection factor of 2.56 (i.e., the square of 1.6) as described in FCC OET Bulletin No. 65.

As the table demonstrates, the cumulative "worst-case" exposure would be approximately 19% of the ANSI/IEEE standard, as calculated for mixed frequency sites. Total power density levels resulting from SBMS' use of the tower facility would thus be within applicable standards.

For the foregoing reasons, SBMS respectfully submits that proposed changes to implement expanded shared use at the Killingworth site constitute an exempt modification under R.C.S.A. Section 16-50j-72(b)(2).

Please feel free to call me at (860) 513-7700 with questions concerning this application. Thank you for your consideration in this matter.

Respectfully yours,

Michele G. Briggs / SLL

Michele G. Briggs
Manager of Real Estate

Enclosures

cc: Honorable David L. Denvir, 1st Selectman, Town of Killingworth

EXISTING SPRINT PCS
EQUIPMENT AND ICE COVER

EXISTING FENCED
COMPOUND

EXISTING 150' MONOPOLE

EXISTING AT&T EQUIPMENT
AND ICE BRIDGE

PROPOSED CINGULAR
12 ft by 20 ft EQUIPMENT
BUILDING AND ICE BRIDGE

EXISTING UTILITY
BACKBOARDS

EXISTING
TRANSFORMER

EXISTING TELEPHONE
HANDHOLE

EXISTING ACCESS DRIVE

COMPOUND PLAN

SCALE: 1" = 20'-0"



DRAWING TITLE:

SITING COUNCIL

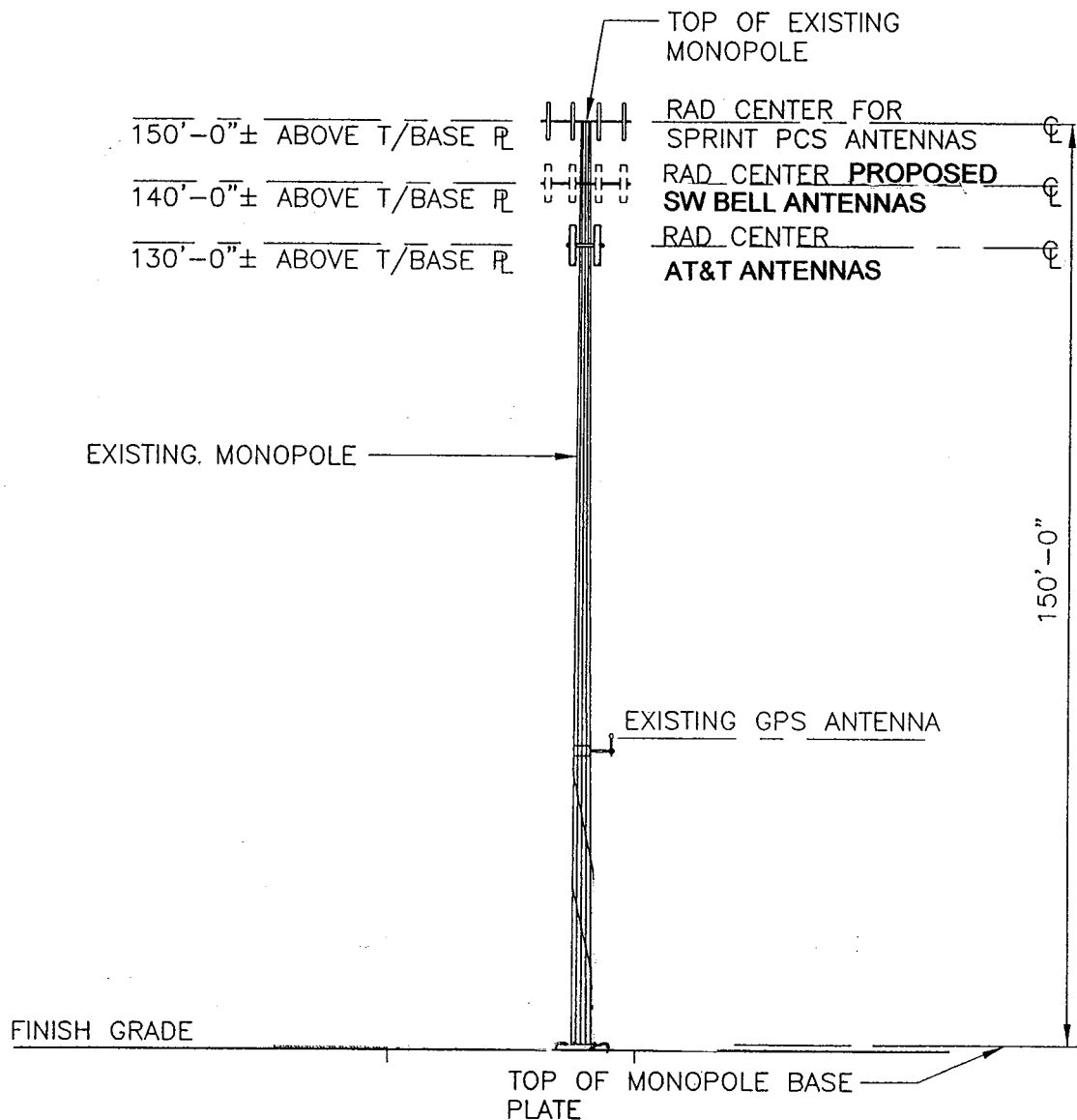
PROJECT INFORMATION:

KILLINGWORTH
CLINTON RD (RT 81)
KILLINGWORTH, CT 06357

LESSOR:

SPRINT SITES USA
535 EAST CRESCENT AVE
RAMSEY, NJ 07446

REVISION NO. 0	DRAWN BY: SLL
DATE ISSUED: 11-03	CHECKED BY:
SCALE: AS NOTED	APPROVED BY:
SHEET NO. 1 OF 2	
A/E PROJECT NO:	



TOWER ELEVATION

SCALE: 1" = 30'-0"



DRAWING TITLE:

SITING COUNCIL

PROJECT INFORMATION:

KILLINGWORTH

CLINTON RD (RT 81)
KILLINGWORTH, CT 06357

LESSOR:

SPRINT SITES USA
535 EAST CRESCENT AVE
RAMSEY, NJ 07446

REVISION NO.

DRAWN BY: **SLL**

DATE ISSUED: **11-03**

CHECKED BY:

SCALE:

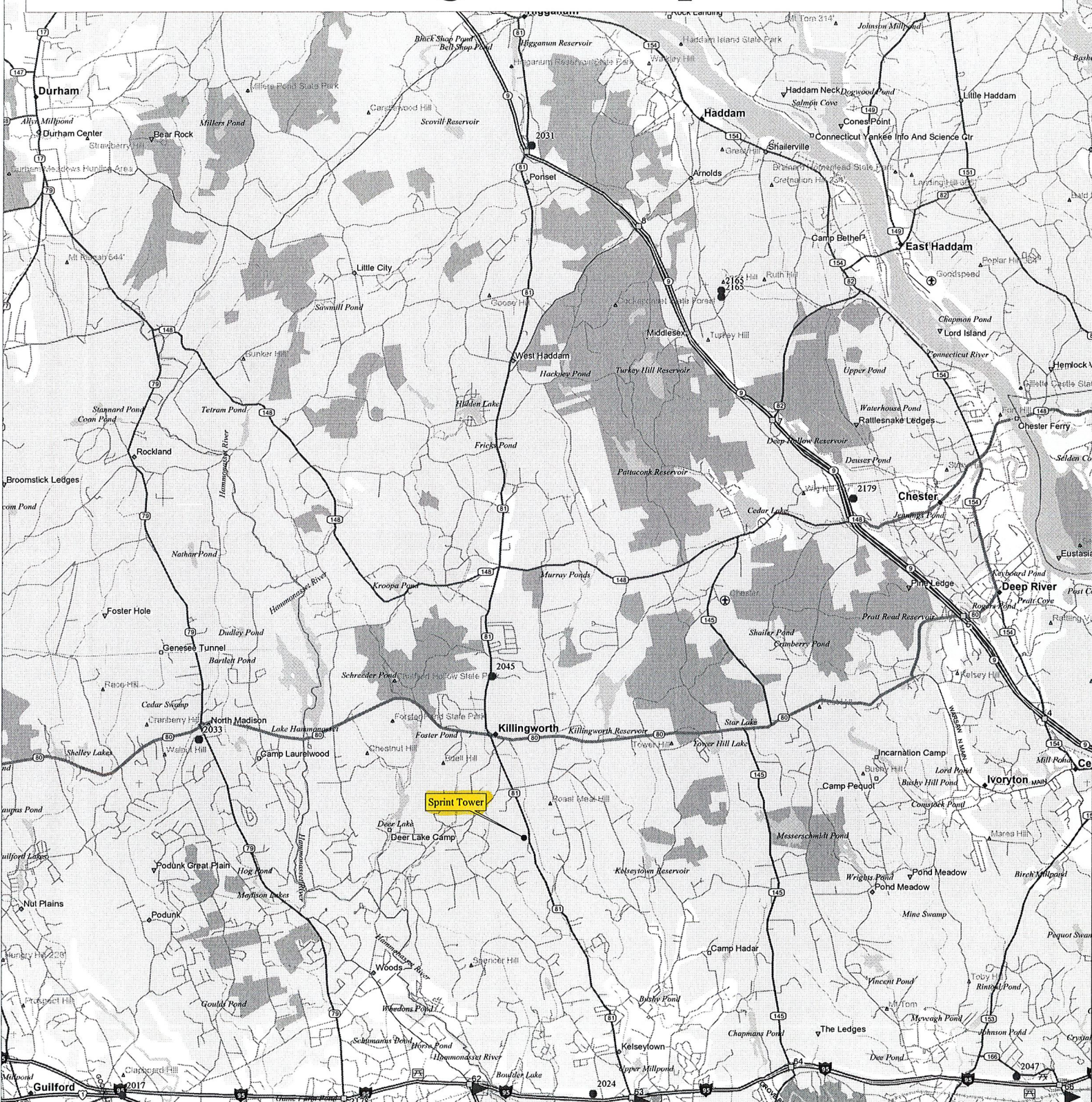
AS NOTED

APPROVED BY:

SHEET NO. 2 OF 2

A/E PROJECT NO:

Killingworth - Sprint



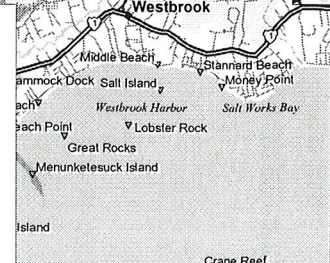
Mag 13.00
Mon Dec 01 13:51 2003

Scale 1:112,500 (at center)

2 Miles

2 KM

- Local Road
- Major Connector
- State Route
- Primary State Route
- Ferry



EM-CING-070-031201



ENGINEERED ENDEAVORS INCORPORATED

7610 Jenther Drive ■ Mentor, Ohio 44060
Telephone: (440) 918-1101 ■ Telefax: (440) 918-1108

**Sprint PCS
Structural Analysis
150' 3 Carrier Monopole
Site: Clinton/Anderson Prop
EEI Job #: 06927-P01**

CT33xc 543



**ENGINEERED
ENDEAVORS
INCORPORATED**

The Experienced Point of View

November 12, 2003

Reference: Structural Analysis of a 150' Monopole
Site Name: CT33XC543
Site Location: Killingworth, CT
EEI Job Number: 6927
EEI Drawing #: GS52258

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Executive Summary

The monopole and foundation are adequate to carry the proposed loads and new configuration presented herein.

Introduction

The monopole was analyzed under the proposed loading presented by Russ Van Oudenaren of Sprint Sites on the Tower Loading Form.

Structure Type: Monopole – 18 Poly-Sided
Manufacturer: Engineered Endeavors, Inc.

EEI used an “in-house” program to analyze the multi-sided pole structure. The

Engineered Endeavors, Inc.

7610 Jenther Drive

Mentor, OH 44060

Phone (440) 918-1101 ♦ Fax (440) 918-1108

Reference: *Structural Analysis of a 150' Monopole in Killingworth, CT*
Site Name: CT33XC543
EEI Job Number: 6927

CELLPOLE is a geometrically nonlinear program for tubular steel structures employing the finite element method (FEM) to perform the calculations. This program performs a non-linear geometric analysis to account for secondary moments caused by structural deflections due to anticipated loading. The program has been verified against closed form solutions and full-scale load tests, both providing excellent results.

Analysis Criteria

The objective of this analysis is to determine if the monopole can structurally support the desired configuration and meet the requirements of the:

1. EIA/TIA 222-F Code
2. *Manual of Steel Construction ASD Ninth Edition* American Institute of Steel Construction
3. American Concrete Institute's *Building Code Requirements for Structural Concrete* (ACI 318-95)
4. American Society of Civil Engineers (A.S.C.E.) *Design of Steel Transmission Pole Structures*

Monopole Loading

For further information on the structural loading, refer to the *EEI* analysis cover sheet and calculations. All mounts are assumed to be *EEI*'s standard mounting systems, unless noted otherwise. All transmission lines are assumed running inside of the pole shaft.

Monopole Results

This monopole is structurally adequate to support the desired antennas and ancillary equipment. The maximum bending stress in the shaft (40 *ksi*) occurs at the lower middle splice elevation, 46 *ft*, on the structure. The allowable strength at this point is 47.6 *ksi*. Refer to Case 1 of the design calculations for the full design loading output. In addition, all other components of the structure are adequate to support the proposed loading, *e.g.*, the base plate and anchor bolts. Refer to Table I for a summary of the maximum capacity of the individual structural components.

Reference: *Structural Analysis of a 150' Monopole in Killingworth, CT*
Site Name: CT33XC543
EEI Job Number: 6927

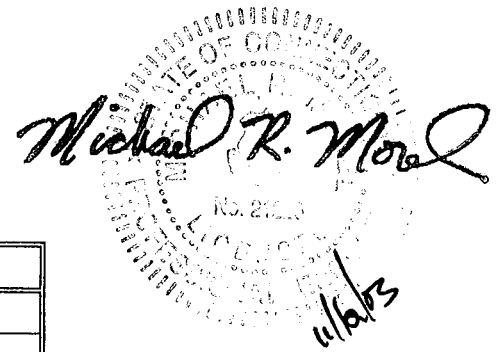


Table I: Capacity Usage on Pole

Description	% of Capacity
Maximum Shaft	85
Base Plate	79
Anchor Bolts	75

Foundation Results

The original foundation design for this site was provided by EEI and is depicted in drawing F6927-150. Table II provides a comparison of foundation loads between the original design loading and the new base loads; the new base loads less than the original base loads. Assuming that the foundation has been installed exactly according to the above referenced design and is in excellent condition, it will be adequate to support the desired loading.

Table II: Foundation Base Loads

	New Base Loads	Original Base Loads	% of Design
Moment - <i>ft-kips</i>	2128.0	2433.3	87
Shear - <i>kips</i>	19.5	22.3	87
Axial - <i>kips</i>	23.2	24.2	96

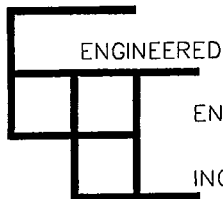
Conclusion

The **monopole and foundation** are adequate to handle the desired loading configuration, refer to the EEI cover sheet for the summary of the loading configuration.

It is the responsibility of Sprint Sites USA to verify that the monopole modeled and analyzed is the correct structure that exists. This report is intended for use with regard to this specific monopole discussed in general herein and any substantial changes in mounting or loading should be brought to EEI's attention so that we may determine how this may effect our conclusions.

Engineered Endeavors, Inc.

7610 Jenther Drive
Mentor, OH 44060
Phone (440) 918-1101 ♦ Fax (440) 918-1108



ENGINEERED

ENDEAVORS

INCORPORATED

Customer SPRINT SITES USA

By MRM

11/12/03

Structure 150' MONOPOLE

Checked _____

Date

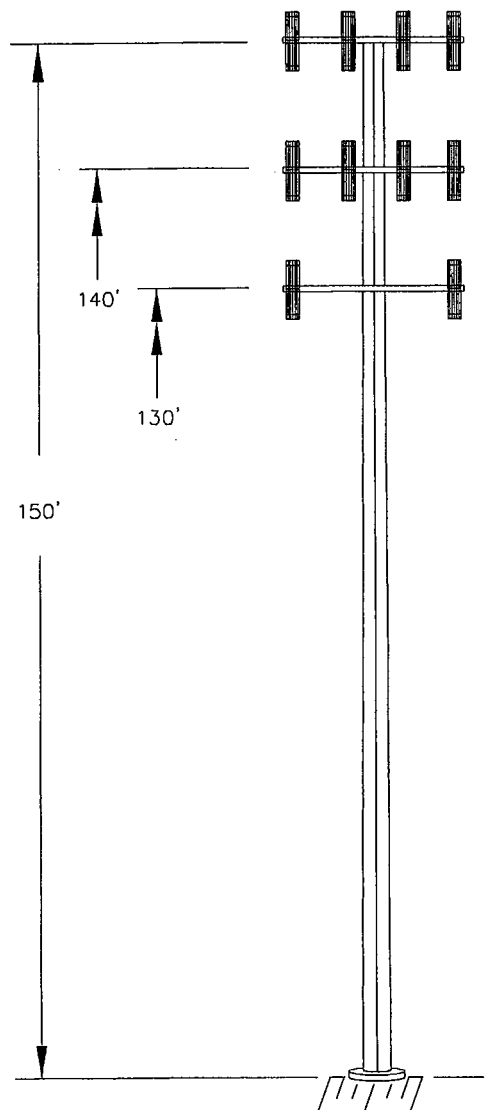
6927

Job/Quote No.

SITE LOCATION – KILLINGWORTH, MIDDLESEX COUNTY, CT

ANALYSIS

SITE NAME – CT33XC543/CLINTON



ANTENNA LOADING:

- (12) DB980H90 PANEL ANTENNAS
LOW PROFILE PLATFORM @ 150' (SPRINT)
- (12) CSS DU01417-8686 PANEL ANTENNAS
(6) ADC TMAs
(3) CSS COMBINERS
LOW PROFILE PLATFORM @ 140' (CINGULAR)
- (6) ALLGON 7250.02 PANEL ANTENNAS
T ARM MOUNTS @ 130' (AT&T)

DESIGN NOTES:

DESIGNED IN ACCORDANCE WITH TIA/EIA 222-F
85 MPH BASIC WIND SPEED
1/2" RADIAL ICE

CASE 1 – 85 MPH BASIC WIND SPEED
CASE 2 – 75% OF 85 MPH WIND LOAD
WITH 1/2" RADIAL ICE

NOTE: IT IS THE RESPONSIBILITY
OF THE PURCHASER TO VERIFY
THAT THE WIND LOADS AND DESIGN
CRITERIA SPECIFIED MEET THE REQUIREMENTS
OF ALL LOCAL BUILDING CODES

Engineered Endeavors Inc.

7610 Jenther Drive
Mentor, Ohio 44060
Tel (440) 918-1101 Fax (440) 918-1108

Communications Structure Nonlinear Analysis and Design Program

09:50:02 11-12-2003
Revision 1.3 - 2/07/00
Engineer: MRM

Customer SPRINT SITES USA
Job Name 6927
Structure 150 MONOPOLE
Location Killingworth, CT
Site CT33XC543

OD BOT	OD TOP	NUM. SIDES	THICK INCH	TAPER IN/FT	LENGTH FT	JOINT INCH	JOINT TYPE	YIELD KSI	WEIGHT LBS	JOINT HEIGHT
26.59	18.00	18	0.1875	0.227	37.92	46.00	SLIP	65.0	1677.	114.00
34.14	25.23	18	0.3125	0.227	39.33	58.00	SLIP	65.0	3852.	79.00
40.97	32.30	18	0.3125	0.227	38.25	68.00	SLIP	65.0	4631.	46.00
50.00	38.93	18	0.3750	0.227	48.83	0.00	BASEPL	65.0	8614.	0.00
TOTAL TUBE WEIGHT							18774.	POUNDS		
POLE SHAFT LENGTH							150.00	FEET		

E = 29600.0 KSI

UNIT WGT = 0.283 LBS/CU IN

AISC constants are used for stress reductions.

TUBE SECTIONS HAVE 18 SIDES AND ARE TREATED AS ROUND

Internal bend radius = 3 X T

Tube diameters are measured flat to flat.

Tube diameters are increased by 1.020 for wind across points.

Drag coefficients are increase by 1.300 for steps on the pole.

AISC Tube Shape Coefficient of 1.000 is applied.

REVISED DATA FILE NAME 6927150

APPURTENANCES

DESCRIPTION	NUM.	ELEV.	Kz	AREA	WGT	Ca	AREA	WGT	Ca	FACTOR
				< WITHOUT ICE	>		< WITH ICE	>		
DB 980H	12	150.	1.541	2.50	9.	2.0000	3.00	29.	2.0000	0.75
CLASSIC LOW PROFILE	1	150.	1.541	11.25	1500.	2.0000	14.10	2250.	2.0000	1.00
DUO1417-8686	12	140.	1.511	4.67	21.	1.4000	5.10	42.	1.4000	0.85
CLASSIC LOW PROFILE	1	140.	1.511	11.25	1500.	2.0000	14.10	2250.	2.0000	1.00
7250.02	6	130.	1.480	2.68	15.	1.5000	3.16	23.	1.5000	0.87
12' UNIVERSAL T-ARMS	1	130.	1.480	19.00	550.	1.0000	24.00	710.	1.0000	1.00
Combiners & TMA	9	140.	1.511	1.10	20.	1.4000	1.50	40.	1.4000	1.00

LOAD CASE 1

BASIC LOADING

DEAD LOAD FACTOR 1.00 WIND PSF REDUCTION 1.00 RADIAL ICE 0.00 IN.

WIND VELOCITY 85 BOTTOM 18.65 PSF TOP 28.47 PSF
MAX BASE ROTATION 0.00 DEG

APPLIED APPURTENANCE FORCES

	ELEVATION FT	WEIGHT KIPS	WIND KIPS
DB 980H	150.00	0.102	2.168
CLASSIC LOW PROFILE PLATFORM	150.00	1.500	1.084
DUO1417-8686	140.00	0.252	3.150
CLASSIC LOW PROFILE PLATFORM	140.00	1.500	1.063
7250.02	130.00	0.091	0.970
12' UNIVERSAL T-ARMS	130.00	0.550	0.879
Combiners & TMA	140.00	0.180	0.655

TUBE ELEV FT	PROPERTIES		MEMBER FORCES			STRESSES			STRESS RATIOS	TOTAL	
	DIAM IN	WALL IN	SHEAR K	BENDING K-FT	AXIAL K	AXIAL KSI	BEND. KSI	ALLOW KSI		DEFL IN	TILT DEG
150.00	18.00	0.1875	3.65	0.00	1.41	0.13	0.00	51.39	0.00	98.5	6.27
140.00	20.27	0.1875	3.65	36.31	1.41	0.12	7.41	49.71	0.15	85.6	6.17
130.00	22.53	0.1875	9.21	127.87	3.18	0.24	21.04	48.37	0.44	73.1	5.85
122.00	24.35	0.1875	11.59	220.12	4.05	0.28	30.97	47.48	0.66	63.7	5.44
114.00	26.16	0.1875	12.03	315.95	4.49	0.29	38.44	46.71	0.83	55.0	4.93
TYPE OF JOINT: SLIP JOINT											
114.00	25.66	0.3125	12.68	315.95	5.67	0.23	24.34	51.99	0.47	55.0	4.93
101.00	28.61	0.3125	12.68	480.28	5.67	0.20	29.65	51.99	0.57	42.5	4.34
90.00	31.10	0.3125	13.43	627.70	6.87	0.23	32.70	50.86	0.65	33.1	3.81
79.00	33.59	0.3125	14.15	783.03	8.09	0.25	34.89	49.78	0.71	24.9	3.28
TYPE OF JOINT: SLIP JOINT											
79.00	32.84	0.3125	14.89	783.02	9.92	0.31	36.52	50.09	0.73	24.9	3.28
68.00	35.34	0.3125	14.89	946.59	9.92	0.29	38.06	49.12	0.78	18.0	2.73
57.00	37.83	0.3125	15.59	1117.92	11.33	0.31	39.15	48.28	0.82	12.3	2.19
46.00	40.32	0.3125	16.29	1296.97	12.83	0.33	39.92	47.55	0.85	7.9	1.68
TYPE OF JOINT: SLIP JOINT											
46.00	39.57	0.3750	17.06	1296.97	16.05	0.35	34.72	50.03	0.70	7.9	1.68
33.00	42.52	0.3750	17.06	1518.67	16.05	0.32	35.14	49.09	0.72	4.0	1.17
22.00	45.01	0.3750	17.78	1714.17	18.07	0.34	35.34	48.38	0.74	1.7	0.76
11.00	47.51	0.3750	18.44	1916.98	20.05	0.36	35.44	47.75	0.75	0.4	0.37
0.00	50.00	0.3750	19.54	2127.35	23.22	0.40	35.46	47.19	0.76	0.0	0.00

REACTION COMPONENTS (KIPS AND FT-KIPS)

TRANSVERSE SHEAR	VERTICAL FORCE	WIND SHEAR	MOMENT ABOUT TRANSVERSE	MOMENT ABOUT VERTICAL	MOMENT ABOUT WIND AXIS
0.000	23.215	-19.541	2127.350	0.000	0.000

LOAD CASE 2

BASIC LOADING PLUS ICE

DEAD LOAD FACTOR 1.00 WIND PSF REDUCTION 0.75 RADIAL ICE 0.50 IN.

WIND VELOCITY 85 BOTTOM 13.99 PSF TOP 21.35 PSF

MAX BASE ROTATION 0.00 DEG

APPLIED APPURTENANCE FORCES

	ELEVATION FT	WEIGHT KIPS	WIND KIPS
DB 980H	150.00	0.343	1.951
CLASSIC LOW PROFILE PLATFORM	150.00	2.250	1.019
DUO1417-8686	140.00	0.504	2.580
CLASSIC LOW PROFILE PLATFORM	140.00	2.250	0.999
7250.02	130.00	0.139	0.858
12' UNIVERSAL T-ARMS	130.00	0.710	0.832
Combiners & TMA	140.00	0.360	0.670

TUBE ELEV FT	PROPERTIES		MEMBER FORCES			STRESSES		ALLOW KSI	STRESS RATIOS	TOTAL	
	DIAM IN	WALL IN	SHEAR K	BENDING K-FT	AXIAL K	AXIAL KSI	BEND. KSI			DEFL IN	TILT DEG
150.00	18.00	0.1875	3.40	0.00	2.47	0.24	0.00	51.39	0.00	87.1	5.59
140.00	20.27	0.1875	3.40	33.87	2.47	0.21	6.91	49.71	0.14	75.6	5.49
130.00	22.53	0.1875	8.33	116.77	5.55	0.42	19.21	48.37	0.40	64.4	5.20
122.00	24.35	0.1875	10.45	200.04	6.66	0.47	28.14	47.48	0.60	56.1	4.83
114.00	26.16	0.1875	10.77	285.95	7.10	0.46	34.79	46.71	0.75	48.4	4.37
TYPE OF JOINT: SLIP JOINT											
114.00	25.66	0.3125	11.27	285.96	8.27	0.33	22.03	51.99	0.43	48.4	4.37
101.00	28.61	0.3125	11.27	432.06	8.27	0.30	26.68	51.99	0.52	37.2	3.83
90.00	31.10	0.3125	11.83	561.91	9.47	0.31	29.28	50.86	0.58	29.0	3.36
79.00	33.59	0.3125	12.36	697.66	10.67	0.33	31.08	49.78	0.63	21.8	2.88
TYPE OF JOINT: SLIP JOINT											
79.00	32.84	0.3125	12.91	697.66	12.49	0.39	32.54	50.09	0.66	21.8	2.88
68.00	35.34	0.3125	12.91	839.54	12.49	0.36	33.76	49.12	0.69	15.7	2.39
57.00	37.83	0.3125	13.43	987.12	13.87	0.38	34.57	48.28	0.72	10.7	1.92
46.00	40.32	0.3125	13.94	1140.40	15.76	0.40	35.10	47.55	0.75	6.8	1.46
TYPE OF JOINT: SLIP JOINT											
46.00	39.57	0.3750	14.50	1140.40	18.43	0.40	30.53	50.03	0.62	6.8	1.46
33.00	42.52	0.3750	14.50	1328.89	18.43	0.37	30.75	49.09	0.63	3.4	1.02
22.00	45.01	0.3750	15.02	1494.15	20.45	0.39	30.81	48.38	0.64	1.5	0.66
11.00	47.51	0.3750	15.51	1664.72	22.43	0.40	30.77	47.75	0.65	0.4	0.32
0.00	50.00	0.3750	16.32	1840.78	25.60	0.44	30.68	47.19	0.66	0.0	0.00

REACTION COMPONENTS (KIPS AND FT-KIPS)

TRANSVERSE SHEAR	VERTICAL FORCE	WIND SHEAR	MOMENT ABOUT TRANSVERSE	MOMENT ABOUT VERTICAL	MOMENT ABOUT WIND AXIS
0.000	25.596	-16.325	1840.780	0.000	0.000

SUMMARY TABLE

ELEV	STRESS RATIO	AXIAL	BENDING	LOADING
150.00	0.01	1.41	0.0	1 BASIC LOADING
140.00	0.15	1.41	36.3	1 BASIC LOADING
130.00	0.44	3.18	127.9	1 BASIC LOADING
122.00	0.66	4.05	220.1	1 BASIC LOADING
114.00	0.83	4.49	316.0	1 BASIC LOADING
101.00	0.57	5.67	480.3	1 BASIC LOADING
90.00	0.65	6.87	627.7	1 BASIC LOADING
79.00	0.73	9.92	783.0	1 BASIC LOADING
68.00	0.78	9.92	946.6	1 BASIC LOADING
57.00	0.82	11.33	1117.9	1 BASIC LOADING
46.00	0.85	12.83	1297.0	1 BASIC LOADING
33.00	0.72	16.05	1518.7	1 BASIC LOADING
22.00	0.74	18.07	1714.2	1 BASIC LOADING
11.00	0.75	20.05	1917.0	1 BASIC LOADING
0.00	0.76	23.22	2127.3	1 BASIC LOADING

MAXIMUM SUPPORT MOMENT K-FT	2127.35
CORRESPONDING AXIAL FORCE KIPS	23.22
CORRESPONDING SHEAR FORCE KIPS	19.54

BASE PLATE AT ELEVATION 0.00 FEET

TUBE DIAMETER 50.00 INCHES

DESIGN MOMENT 2127.4 KIP FT

DESIGN MOMENT IS 0. DEGREES FROM THE WIND DIRECTION

BOLTS ARE ON THE KNUCKLES OF THE TUBE

APPLIED AXIAL FORCE 23.2 KIPS

APPLIED SHEAR 19.54 KIPS

BOLT DATA

BOLT TYPE A615 GR75

BOLTS ARE EVENLY SPACED

DIAMETER 2.250 INCHES

EFFECTIVE AREA 3.250 SQ IN

TOTAL LENGTH 6.0 FEET

End plates are required.

MINIMUM EMBEDMENT 5.0 FEET

NUMBER OF BOLTS 12

BOLT CIRCLE DIAMETER 59.00 INCHES

ALLOWABLE STRESS 60.0 KSI

APPLIED AXIAL STRESS 45.0 KSI

MAX BOLT FORCE 146.2 KIPS

BOLT BENDING STRESS 2.4 KSI

COMBINED BOLT STRESS 47.3 KSI

CLEARANCE UNDER PLATE 3.25 INCHES

BOLT WEIGHT 1015.2 POUNDS

PLATE DATA

DIAMETER OF PLATE 65.00 INCHES

MATERIAL A572mod60

PROVIDED THICKNESS 1.750 INCHES

REQUIRED THICKNESS 1.551 INCHES

BOLT HOLE DIAMETER 2.625 INCHES

CENTER HOLE SIZE 40.00 INCHES

NET WEIGHT 988.9 POUNDS

RAW STOCK WEIGHT 2092.4 POUNDS

SURFACE AREA 27.73 SQ FT

ALLOWABLE STRESS 54.00 KSI

MAX APPLIED STRESS 42.44 KSI

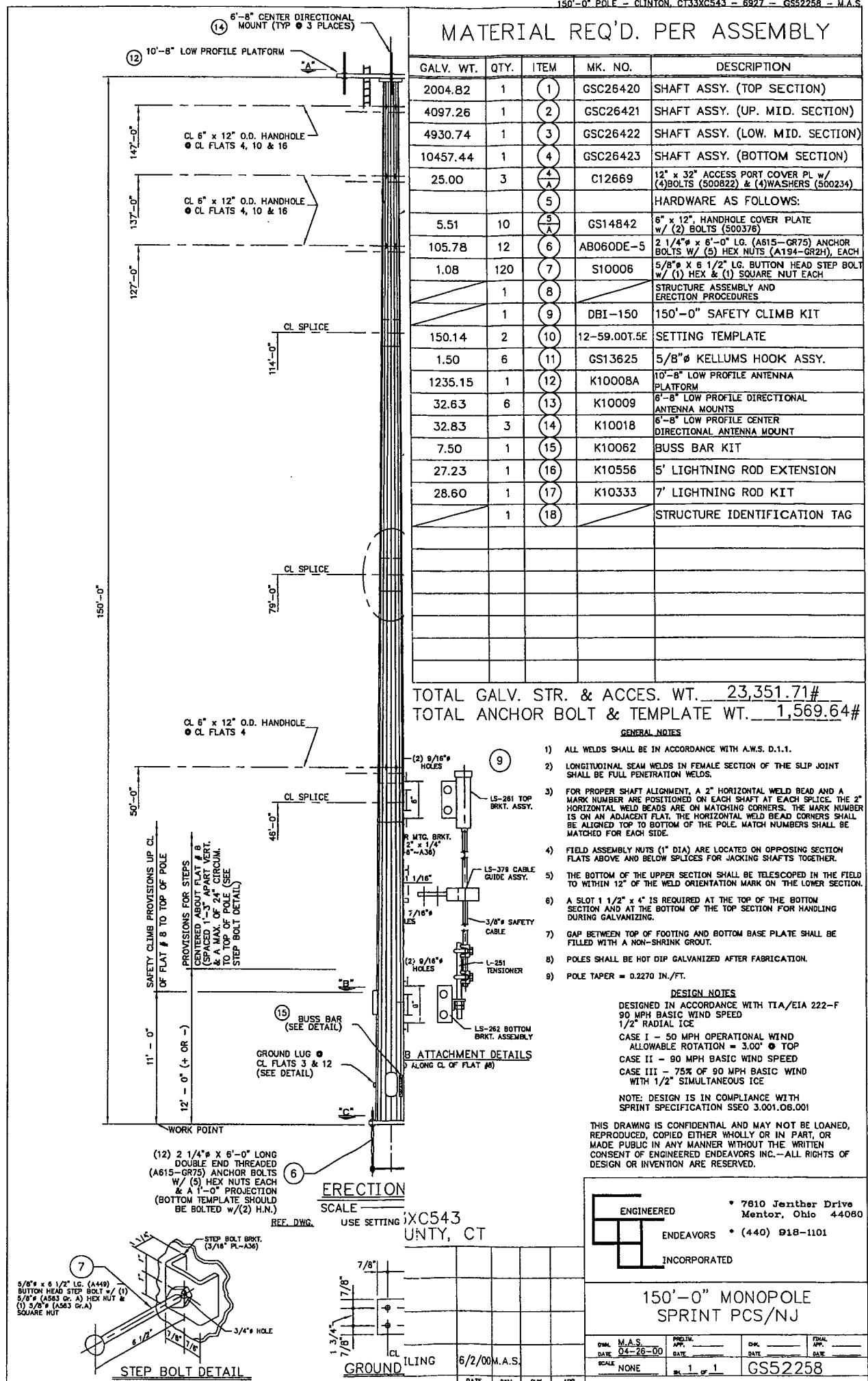
CONCRETE STRENGTH 3000. PSI

Base Plate - use 65.00 inch ROUND x 1.750 inch A572mod60
with (12) 2.250 diameter x 6.00 foot caged A615 GR75 bolts
on a 59.00 inch bolt circle. End plates are required.

Reference: *Structural Analysis of a 150' Monopole in Killingworth, CT*
Site Name: CT33XC543
EEI Job Number: 6927

MONOPOLE

Drawing GS52258



Reference: *Structural Analysis of a 150' Monopole in Killingworth, CT*
Site Name: CT33XC543
EEI Job Number: 6927

Monopole Loading Provided to EEI

Tower Loading Form

Site Reference Information:

Cascade #: CT33XC543

☐ % of Structural Capacity at last analysis

Site Address: Rt 81, Killingworth, CT

Lease Area 10,000SQ

Structure Height: 150

Compound Size: 60x60

Tower Manufacturer: EEI

Structure Type: Monopole

Tower Contact #: 440-918-1101

File #: 6927

Original Design Load for Structure:

☐ 1 Carrier ☐ 2 Carrier ☒ 3 Carrier ☐ 4 Carrier ☐ ___ Carrier

Prepared By: B.Ackerson

Date: 5/14/02

MPE: ☐

INTERFERENCE: ☐

Structural: ☐

Carrier Requested: Name

Sprint Antenna Information:

ACL	# of Ant.	Frequency	Model #	Type	Orientation	Mounting Type	# of Cables	Cable Size
150	12	A Block	DB980H90	Panel	0 120 240	Platform	12	1-5/8"
	*	*		*		*	*	*
	*	*		*		*	*	*

Co-location Information:

ID	Carrier	ACL	# Of Ant.	Frequency	TX Output	Model #	Antenna Type	Orientation	Mounting Type	# of Cables	Cable Size	Tenant Status	Cable Loc
1	Voicestream		*	*	*	withdrawn	*		*	*	*	*	*
2	ATT	130	6	D Block	* 25 Watts	Allgon 7250.02	Panel	0,120,240	T-Arm	12	1-1/4"	EXT	Ins
3	Cingular	140	12	* 850&1900	*	CSS DUO1417-8686	Panel	143-263-23	Platform	12	1-5/8"	NEW	Ins
3	Cingular	140	6	*	*	ADC TMA's	*		*	*	*	*	*
3	Cingular	140	3	*	*	CSS COMBINE RS	*		*	*	*	*	*
*	*		*	*	*		*		*	*	*	*	*
*	*		*	*	*		*		*	*	*	*	*
*	*		*	*	*		*		*	*	*	*	*
*	*		*	*	*		*		*	*	*	*	*
*	*		*	*	*		*		*	*	*	*	*

Comments:

Contact Information:

Co Id	Contact Person	Phone Number	E-Mail Address
1			
2	Henry Rabinderath	(203) 238-3078	hrabindr@bechtel.com

[illegible]

2045



November 12, 2003

Reference: Structural Analysis of a 150' Monopole
Site Name: CT33XC543
Site Location: Killingworth, CT
EEI Job Number: 6927
EEI Drawing #: GS52258

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Executive Summary

The monopole and foundation are adequate to carry the proposed loads and new configuration presented herein.

Introduction

The monopole was analyzed under the proposed loading presented by Russ Van Oudenaren of Sprint Sites on the Tower Loading Form.

Structure Type: Monopole – 18 Poly-Sided
Manufacturer: Engineered Endeavors, Inc.

EEI used an “in-house” program to analyze the multi-sided pole structure. The

Engineered Endeavors, Inc.

7610 Jenther Drive
Mentor, OH 44060

Phone (440) 918-1101 ♦ Fax (440) 918-1108

Reference: *Structural Analysis of a 150' Monopole in Killingworth, CT*
Site Name: CT33XC543
EEI Job Number: 6927

CELLPOLE is a geometrically nonlinear program for tubular steel structures employing the finite element method (FEM) to perform the calculations. This program performs a non-linear geometric analysis to account for secondary moments caused by structural deflections due to anticipated loading. The program has been verified against closed form solutions and full-scale load tests, both providing excellent results.

Analysis Criteria

The objective of this analysis is to determine if the monopole can structurally support the desired configuration and meet the requirements of the:

1. EIA/TIA 222-F Code
2. *Manual of Steel Construction ASD Ninth Edition* American Institute of Steel Construction
3. American Concrete Institute's *Building Code Requirements for Structural Concrete* (ACI 318-95)
4. American Society of Civil Engineers (A.S.C.E.) *Design of Steel Transmission Pole Structures*

Monopole Loading

For further information on the structural loading, refer to the *EEI* analysis cover sheet and calculations. All mounts are assumed to be *EEI*'s standard mounting systems, unless noted otherwise. All transmission lines are assumed running inside of the pole shaft.

Monopole Results

This monopole is structurally adequate to support the desired antennas and ancillary equipment. The maximum bending stress in the shaft (40 *ksi*) occurs at the lower middle splice elevation, 46 *ft*, on the structure. The allowable strength at this point is 47.6 *ksi*. Refer to Case 1 of the design calculations for the full design loading output. In addition, all other components of the structure are adequate to support the proposed loading, *e.g.*, the base plate and anchor bolts. Refer to Table I for a summary of the maximum capacity of the individual structural components.

Reference: *Structural Analysis of a 150' Monopole in Killingworth, CT*
Site Name: CT33XC543
EEI Job Number: 6927



Table I: Capacity Usage on Pole

Description	% of Capacity
Maximum Shaft	85
Base Plate	79
Anchor Bolts	75

Foundation Results

The original foundation design for this site was provided by EEI and is depicted in drawing F6927-150. Table II provides a comparison of foundation loads between the original design loading and the new base loads; the new base loads less than the original base loads. Assuming that the foundation has been installed exactly according to the above referenced design and is in excellent condition, it will be adequate to support the desired loading.

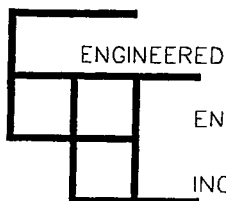
Table II: Foundation Base Loads

	New Base Loads	Original Base Loads	% of Design
Moment - <i>ft-kips</i>	2128.0	2433.3	87
Shear - <i>kips</i>	19.5	22.3	87
Axial - <i>kips</i>	23.2	24.2	96

Conclusion

The **monopole and foundation** are adequate to handle the desired loading configuration, refer to the EEI cover sheet for the summary of the loading configuration.

It is the responsibility of Sprint Sites USA to verify that the monopole modeled and analyzed is the correct structure that exists. This report is intended for use with regard to this specific monopole discussed in general herein and any substantial changes in mounting or loading should be brought to EEI's attention so that we may determine how this may effect our conclusions.



ENGINEERED
ENDEAVORS

INCORPORATED

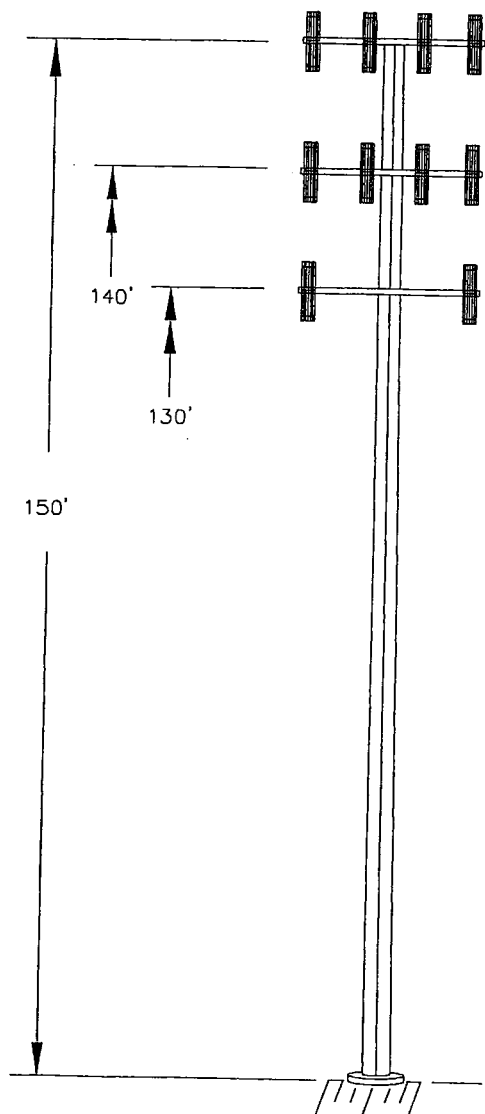
Customer SPRINT SITES USA By MRM 11/12/03

Structure 150' MONOPOLE Checked Date 6927

Job/Quote No.

SITE LOCATION – KILLINGWORTH, MIDDLESEX COUNTY, CT
SITE NAME – CT33XC543/CLINTON

ANALYSIS



ANTENNA LOADING:

- (12) DB980H90 PANEL ANTENNAS
LOW PROFILE PLATFORM @ 150' (SPRINT)
- (12) CSS DU01417-8686 PANEL ANTENNAS
(6) ADC TMAs
(3) CSS COMBINERS
LOW PROFILE PLATFORM @ 140' (CINGULAR)
- (6) ALLGON 7250.02 PANEL ANTENNAS
T ARM MOUNTS @ 130' (AT&T)

DESIGN NOTES:

DESIGNED IN ACCORDANCE WITH TIA/EIA 222-F
85 MPH BASIC WIND SPEED
1/2" RADIAL ICE

CASE 1 – 85 MPH BASIC WIND SPEED
CASE 2 – 75% OF 85 MPH WIND LOAD
WITH 1/2" RADIAL ICE

NOTE: IT IS THE RESPONSIBILITY
OF THE PURCHASER TO VERIFY
THAT THE WIND LOADS AND DESIGN
CRITERIA SPECIFIED MEET THE REQUIREMENTS
OF ALL LOCAL BUILDING CODES



Southwestern Bell Mobile Systems, LLC
500 Enterprise Drive
Rocky Hill, Connecticut 06067-3900
Phone: (860) 513-7700
Fax: (860) 513-7190

Michele G. Briggs
Manager of Real Estate

December 1, 2003

Honorable David L. Denvir
1st Selectman, Town of Killingworth
Town Office Building, 323 Route 81
Killingworth, Connecticut 06419

**Re: Notice of Exempt Modification – Existing Sprint Telecommunications Tower Facility at
78 Route 81, Killingworth, Connecticut**

Dear Mr. Denvir:

Southwestern Bell Mobile Systems, LLC ("SBMS") intends to install telecommunications antennas and associated equipment at an existing multicarrier telecommunications tower off Route 81 in Killingworth, Connecticut.

The facility is owned and operated by Sprint Sites USA ("Sprint"), with offices at 535 E. Crescent Avenue, Ramsey, NJ 07446. Sprint leases the land from Sherwood Anderson of Niantic, CT.

A Notice of Exempt Modification has been filed with the Connecticut Siting Council as required by Regulations of Connecticut State Agencies ("R.C.S.A.") Section 16-50j-73. Please accept this letter as notification to the Town of Killingworth under Section 16-50j-73 of construction which constitutes an exempt modification pursuant to R.C.S.A. Section 16-50j-72(b)(2).

The attached letter fully sets forth the SBMS proposal. However, if you have any questions or require any further information on the plans for the site or the Siting Council's procedures, please contact the undersigned or Mr. Derek Phelps, Executive Director of the Connecticut Siting Council, at (860) 827-2935.

Sincerely,

A handwritten signature in cursive script that reads "Michele G. Briggs" followed by a diagonal slash and the letters "SLC".

Michele G. Briggs
Manager of Real Estate

Enclosure