



STATE OF CONNECTICUT

CONNECTICUT SITING COUNCIL

Ten Franklin Square, New Britain, CT 06051

Phone: (860) 827-2935 Fax: (860) 827-2950

E-Mail: siting.council@po.state.ct.us

Web Site: www.state.ct.us/csc/index.htm

April 16, 2001

Sandy M. Carter
Verizon Wireless
20 Alexander Drive
P.O. Box 5029
Wallingford, CT 06492

RE: **TS-VER-033-010326** - Cellco Partnership d/b/a Verizon Wireless request for an order to approve tower sharing at an existing telecommunications facility located at 201 Main Street, Cromwell, Connecticut.

Dear Ms. Carter:

At a public meeting held April 12, 2001, the Connecticut Siting Council (Council) ruled that the shared use of this existing tower site is technically, legally, environmentally, and economically feasible and meets public safety concerns, and therefore, in compliance with General Statutes § 16-50aa, the Council has ordered the shared use of this facility to avoid the unnecessary proliferation of tower structures, with the condition that the building is architecturally treated, as recommended by the Town of Cromwell. This facility has also been carefully modeled to ensure that radio frequency emissions are conservatively below State and federal standards applicable to the frequencies now used on this tower.

This decision is under the exclusive jurisdiction of the Council. Any additional change to this facility may require an explicit request to this agency pursuant to General Statutes § 16-50aa or notice pursuant to Regulations of Connecticut State Agencies Section 16-50j-73, as applicable. Such request or notice shall include all relevant information regarding the proposed change with cumulative worst-case modeling of radio frequency exposure at the closest point uncontrolled access to the tower base, consistent with Federal Communications Commission, Office of Engineering and Technology, Bulletin 65. Any deviation from this format may result in the Council implementing enforcement proceedings pursuant to General Statutes § 16-50u including, without limitation, imposition of expenses resulting from such failure and of civil penalties in an amount not less than one thousand dollars per day for each day of construction or operation in material violation.

This decision applies only to this request for tower sharing and is not applicable to any other request or construction.

The proposed shared use is to be implemented as specified in your letters dated March 23, 2001, and April 5, 2001.

Thank you for your attention and cooperation.

Very truly yours,

Mortimer A. Gelston
Chairman

MAG/RKE/laf

c: Honorable Stanley A. Terry, Jr., First Selectman, Town of Cromwell
Frederic Curtin, Zoning Enforcement Officer, Town of Cromwell
Julie M. Donaldson, Esq., Hurwitz & Sagarin LLC

Network Dept.



Verizon Wireless
20 Alexander Drive
Wallingford, Connecticut 06492

Via Federal Express

April 5, 2001

Mr. Joel M. Rinebold
Executive Director
Connecticut Siting Council
10 Franklin Square
New Britain, Connecticut 06051



Re: **Request of Cellco Partnership d/b/a Verizon Wireless for an Order to Approve the Shared Use of a Tower Facility at 201 Main Street, Cromwell, Connecticut**

Dear Mr. Rinebold:

As per the application sent to you on March 23, 2001 from Attorney Kenneth Baldwin of Robinson & Cole, I enclosing three (3) copies of the Structural Report for the Sprint tower. This report was recently sent to Verizon Wireless so I am forwarding it to you under separate cover.

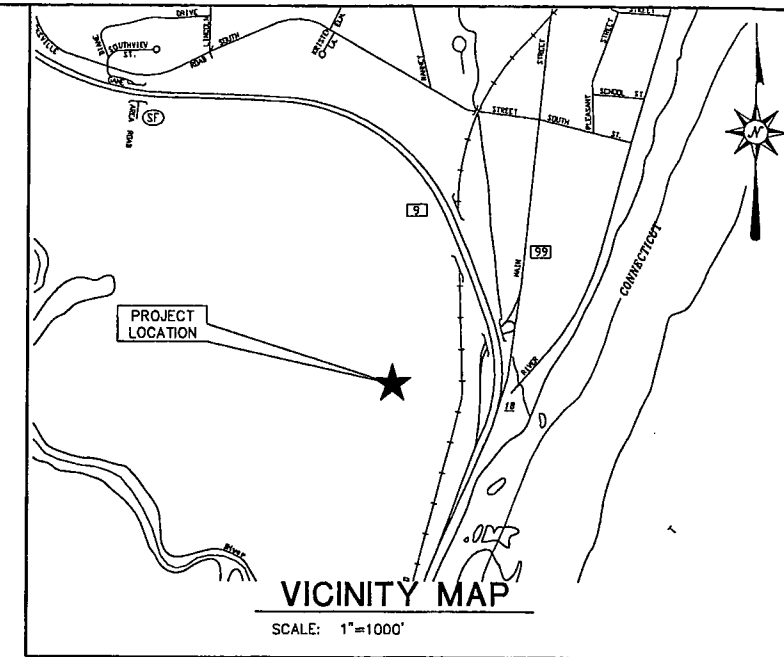
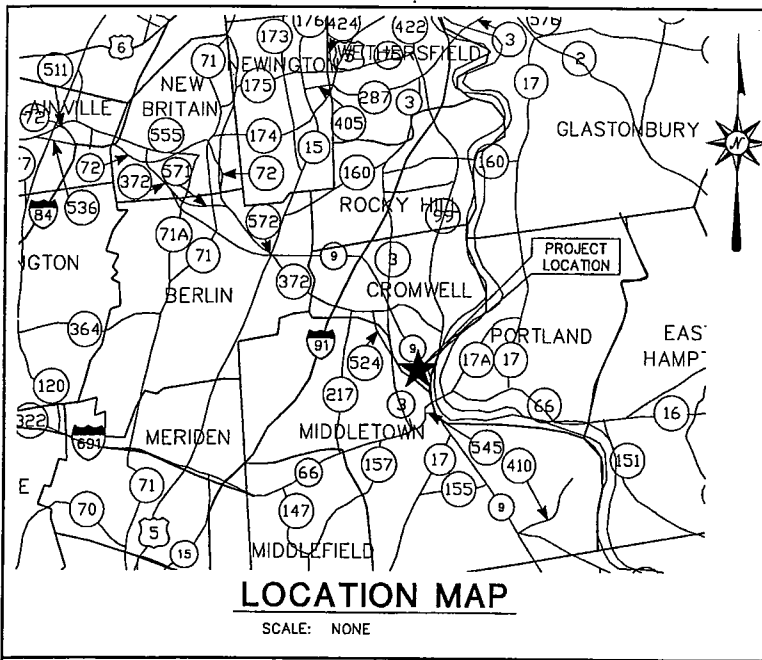
If you have any questions, please contact me at (203) 294-8519.

Very truly yours,

A handwritten signature in cursive script that reads "Sandy M. Carter".

Sandy M. Carter
Regulatory Manager
Verizon Wireless

enclosure



SITING COUNCIL SUBMISSION

CROMWELL SOUTHEAST

TELECOMMUNICATION FACILITY

201 MAIN STREET
 CROMWELL, CONNECTICUT 06416

PREPARED FOR:
 CELLCO PARTNERSHIP DBA
 VERIZON WIRELESS
 20 ALEXANDER DRIVE
 WALLINGFORD, CONNECTICUT 06492

CONTENTS

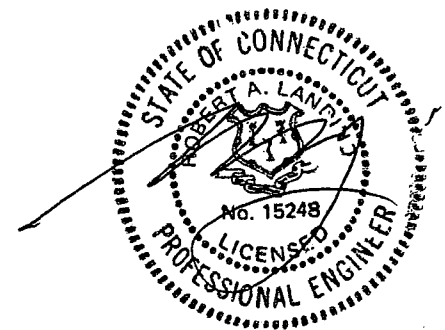
TITLE SHEET
SC-1 SITE PLAN AND ELEVATION

PREPARED BY:



ARCHITECTURE ENGINEERING PLANNING LANDSCAPE ARCHITECTURE
 LAND SURVEYING ENVIRONMENTAL SCIENCES ANALYTICAL SERVICES

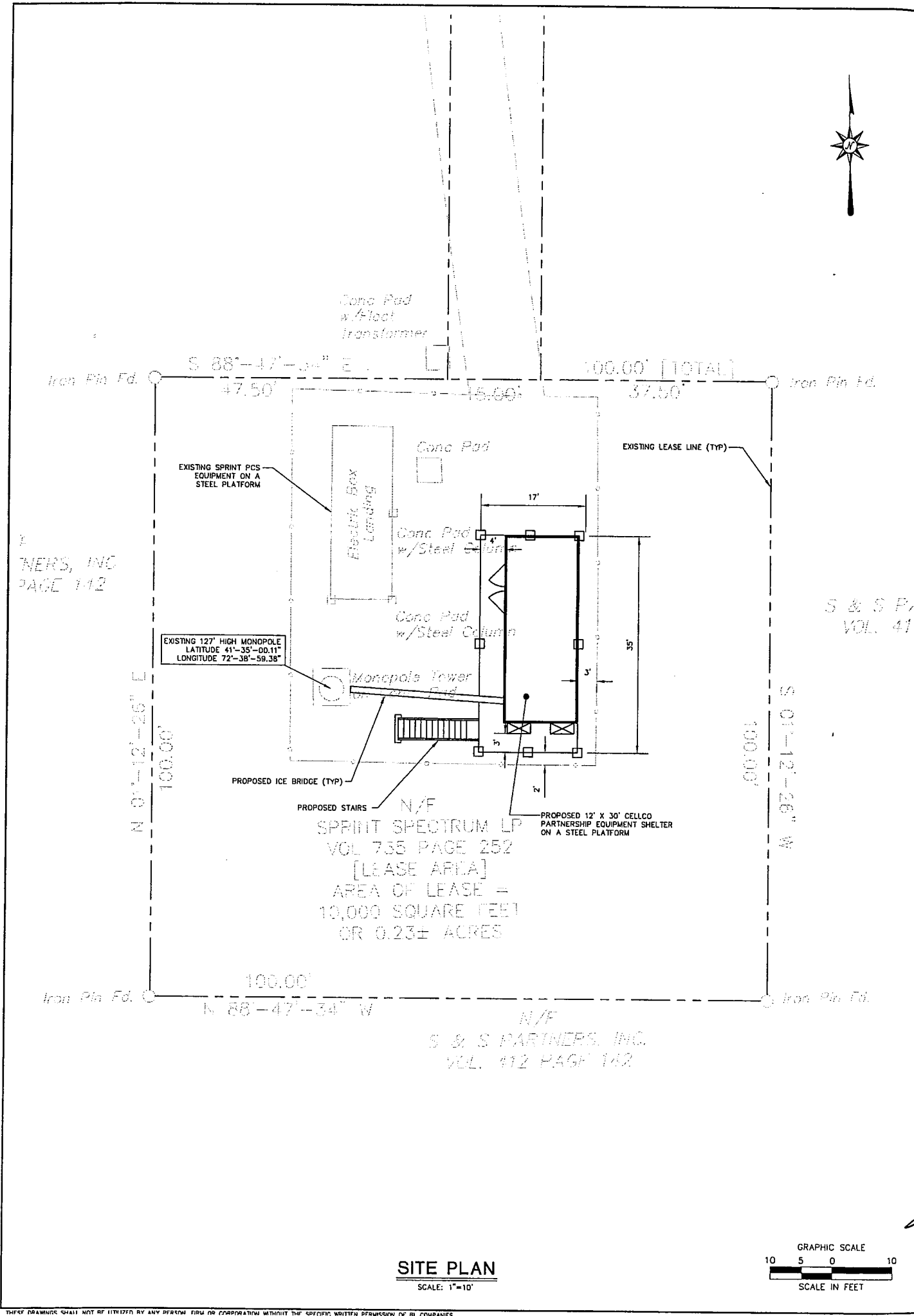
355 RESEARCH PARKWAY
 MERIDEN, CONNECTICUT 06450
 (203) 630-1406
 (203) 630-2615 Fax



NOT FOR CONSTRUCTION

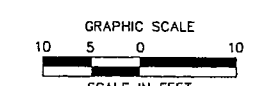
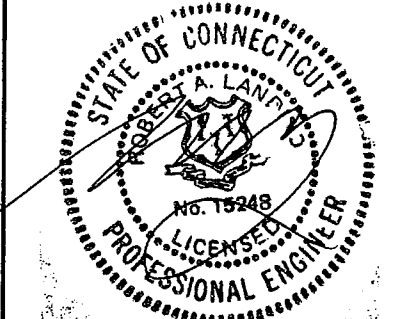
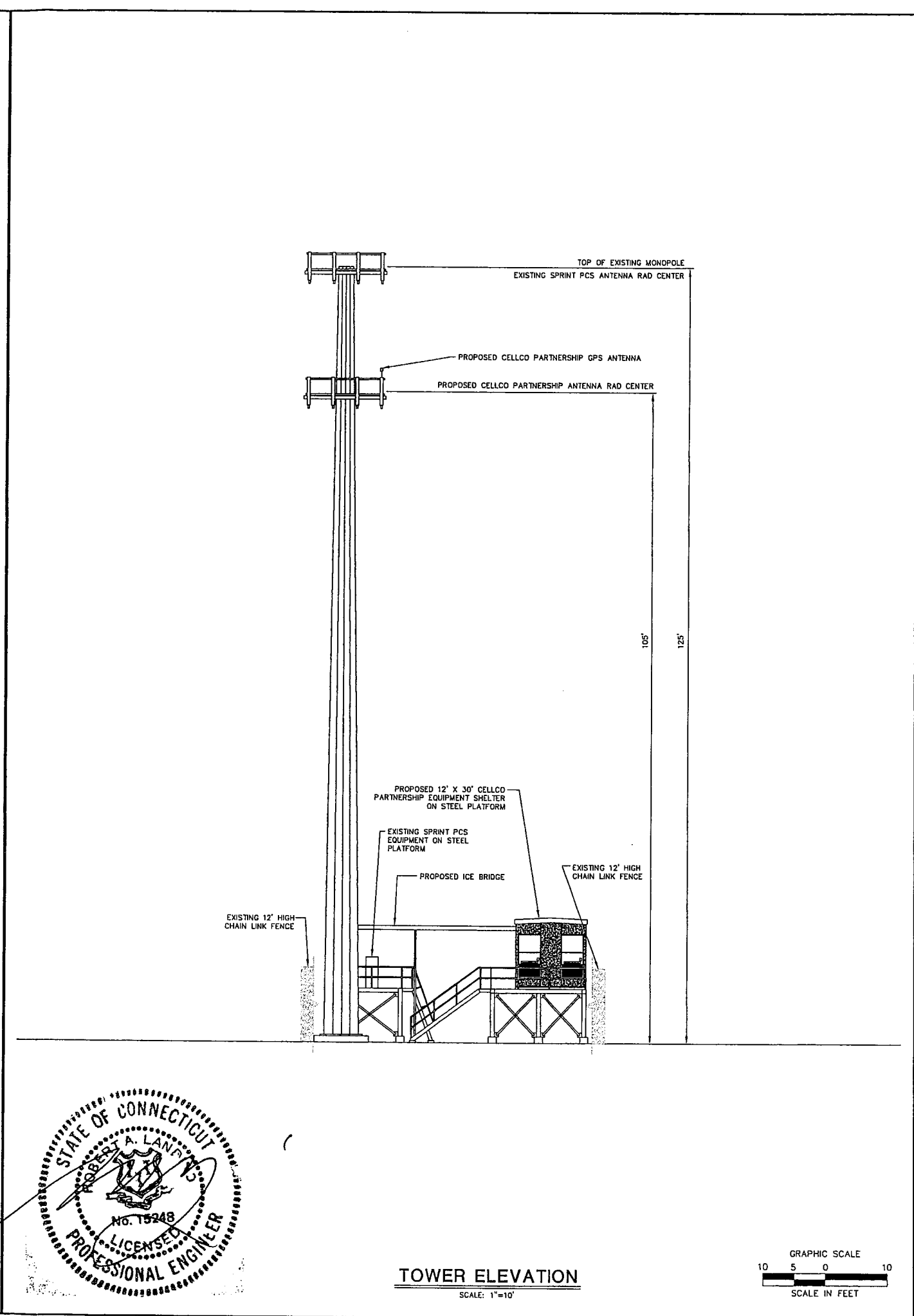
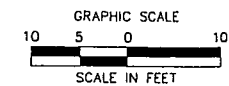
DATES

ISSUE DATE: MARCH 2, 2001
 REVISION:



PARTNERS, INC
 PAGE 142

S & S P,
 VOL. 41



REVISIONS	Date	Design
No.	Date	

Designed	R.C.B.
Drawn	R.C.B.
Checked	R.C.B.
Approved	R.A.L.
Scale	AS SHOWN
Project No.	00C843
Date	03/02/01
CAD File	SCC843D1

THESE DRAWINGS SHALL NOT BE UTILIZED BY ANY OTHER FIRM OR CORPORATION WITHOUT THE SPECIFIC WRITTEN PERMISSION OF BL COMPANIES

ROBINSON & COLE LLP

HARTFORD • STAMFORD • GREENWICH • NEW YORK • BOSTON

LAW OFFICES
www.rc.com

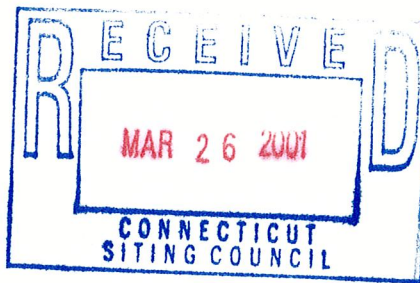
280 Trumbull Street
Hartford, CT 06103-3597
860-275-8200
Fax 860-275-8299

Kenneth C. Baldwin
860-275-8345
kbaldwin@rc.com

March 23, 2001

Via Federal Express

Mr. Joel M. Rinebold
Executive Director
Connecticut Siting Council
10 Franklin Square
New Britain, CT 06051



Re: **Request of Cellco Partnership d/b/a Verizon Wireless for an Order to Approve the Shared Use of a Tower Facility at 201 Main Street, Cromwell, Connecticut**

Dear Mr. Rinebold:

Pursuant to Connecticut General Statutes §16-50aa, as amended, Cellco Partnership d/b/a Verizon Wireless ("Cellco") hereby requests an order from the Connecticut Siting Council ("Council") to approve the proposed shared use by Cellco of an existing tower located at 201 Main Street in Cromwell, Connecticut. Cellco requests that the Council find that the proposed shared use of the tower satisfies the criteria stated in Connecticut General Statutes § 16-50aa and issue an order approving the proposed use.

Background

On November 9, 1999, Sprint Spectrum L.P. received the approval of the Cromwell Planning and Zoning Commission to construct a 125-foot tower at 201 Main Street in Cromwell. The tower currently supports Sprint antennas.

Cellco is licensed by the Federal Communications Commission (FCC) to provide cellular wireless telephone service in the State of Connecticut, which includes the area to be served by Cellco's proposed Cromwell installation. Cellco and Sprint have agreed to the proposed shared use of this tower pursuant to mutually acceptable terms and conditions, and Sprint has authorized Cellco to act on its behalf to apply for all necessary local, state and federal permits, approvals, and authorizations which may be required for the proposed shared use of this facility.

ROBINSON & COLE LLP

Joel M. Rinebold

March 23, 2001

Page 2

Cellco proposes to install twelve (12) panel-type antennas at the 105-foot level on the tower. The radio transmission equipment associated with these antennas would be located in a new 12-foot by 30-foot equipment building which would be located near the base of the tower. (See attached Site Plans).

C.G.S. § 16-50aa(c)(1) provides that, upon written request for approval of a proposed shared use, "if the council finds that the proposed shared use of the facility is technically, legally, environmentally and economically feasible and meets public safety concerns, the council shall issue an order approving such shared use." The shared use of the tower satisfies those criteria as follows:

A. Technical Feasibility. The existing tower is structurally capable of supporting the proposed Cellco antennas. The proposed shared use of this tower therefore is technically feasible. A structural analysis of the existing tower will be forwarded to the Council as soon as it is available.

B. Legal Feasibility. Under C.G.S. § 16-50aa, the Council has been authorized to issue orders approving the proposed shared use of an existing tower facility such as the facility at 201 Main Street in Cromwell. This authority complements the Council's prior-existing authority under C.G.S. § 16-50p to issue orders approving the construction of new towers that are subject to the Council's jurisdiction. In addition, § 16-50aa directs the Council to "give such consideration to other state laws and municipal regulations as it shall deem appropriate" in ruling on requests for the shared use of existing towers facilities. Under the statutory authority vested in the Council, an order by the Council approving the requested shared use would permit the Applicant to obtain a building permit for the proposed installations.

C. Environmental Feasibility. The proposed shared use would have a minimal environmental effect, for the following reasons:

1. The proposed installations would have an insignificant incremental visual impact, and would not cause any significant change or alteration in the physical or environmental characteristics of the existing site. In particular, the proposed installations would not increase the height of the existing tower, and would not extend the boundaries of the tower site outside the limits of the existing site compound.
2. The proposed installations would not increase the noise levels at the existing facility by six decibels or more.

3. Operation of antennas at this site would not exceed the total radio frequency (RF) electromagnetic radiation power density level adopted by the Federal Communications Commission. The "worst-case" exposure calculated for operation of this facility (i.e., calculated at the facility boundary, which represents the closest publicly accessible point within the broadcast field of the antennas), would be 0.0309 mW/cm² (3.09% of the standard) for Sprint antennas and 0.0619 mW/cm² (10.62% of the standard) for Cellco antennas, for a total of 13.71% of the standard as measured for mixed frequency sites.
4. The proposed installations, would not require any water or sanitary facilities, or generate air emissions or discharges to water or sanitary facilities, or generate air emissions or discharges to water bodies. After construction is complete the proposed installations would not generate any traffic other than periodic maintenance visits.

The proposed use of this facility would therefore have a minimal environmental effect, and is environmentally feasible.

E. Economic Feasibility. As previously mentioned, Sprint and Cellco have entered into a mutual agreement to share the use of the replacement tower on terms agreeable to the parties. The proposed tower sharing is therefore economically feasible.

F. Public Safety Concerns. As stated above, the proposed replacement tower will be structurally capable of supporting the Cellco antennas. Cellco is not aware of any public safety concerns relative to the proposed sharing of the existing tower. In fact, the provision of new or improved phone service through shared use of the existing tower is expected to enhance the safety and welfare of area residents.

Conclusion

For the reasons discussed above, the proposed shared use of the existing tower at 201 Main Street in Cromwell, Connecticut satisfies the criteria stated in C.G.S. § 16-50aa and advances the General Assembly's and the Siting Council's goal of preventing the proliferation of towers in Connecticut. The Applicant therefore requests that the Siting Council issue an order approving the proposed shared use.

ROBINSON & COLE_{LLP}


Joel M. Rinebold

March 23, 2001

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Thank you for your consideration of this matter.

Very truly yours,

A handwritten signature in blue ink, appearing to read "Kenneth C. Baldwin", with a long horizontal flourish extending to the right.

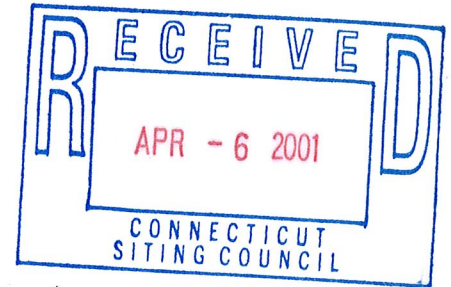
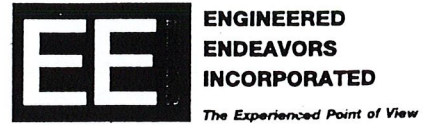
Kenneth C. Baldwin

KCB/kmd

Attachments

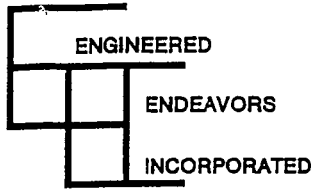
cc: Stanley A. Terry, Cromwell First Selectman
Craig Minor, Town Planner
Sandy M. Carter

CT3XC-558



**SPRINT PCS
STRUCTURE & FOUNDATION
DESIGN CALCULATIONS
125' MONOPOLE
SITE: FIRST LINE EMERGENCY SERVI
EEI JOB #: 6464**

ENGINEERED ENDEAVORS INCORPORATED

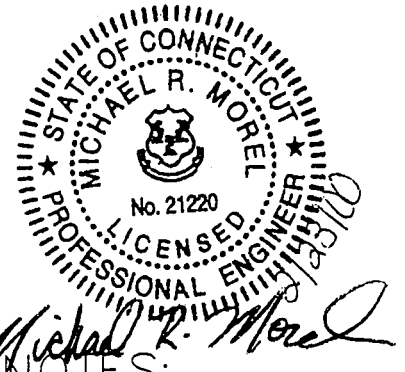
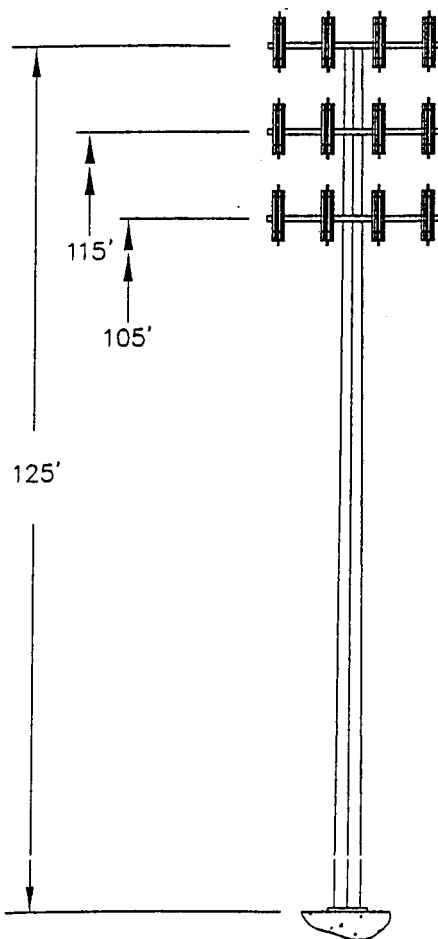


Customer SPRINT PCS By JOHN VOIKLIS 02/22/00
Date
Structure 125' MONOPOLE Checked LAP 6464
Job/Quote No.

SITE LOCATION: MIDDLESEX COUNTY, CT
SITE NAME: FIRST LINE EMERGENCY SERVICES/CT23XC558

ANTENNA LOADING:

- (12) DB980 PANEL ANTENNAS
LOW PROFILE PLATFORM @ 125'
- (12) DB980 PANEL ANTENNAS
LOW PROFILE PLATFORM @ 115' (FUTURE)
- (12) DB980 PANEL ANTENNAS
LOW PROFILE PLATFORM @ 105' (FUTURE)



DESIGN NOTES:

DESIGNED IN ACCORDANCE WITH TIA/EIA 222-F
90 MPH BASIC WIND SPEED
1/2" RADIAL ICE
CASE I - 50 MPH OPERATIONAL WIND SPEED
ALLOWABLE ROTATION - 3.00° @ 125'
CASE II - 90 MPH BASIC WIND SPEED
CASE III - 75% OF 90 MPH WIND LOAD
WITH 1/2" RADIAL ICE
DESIGNED IN COMPLIANCE WITH SPRINT TOWER
SPECIFICATIONS SSEO 3.001.06.001 (06/01/99)

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

08:13:43 02-22-2000
Revision 1.2 - 4/22/98
Engineer: JOHN E. VOIKLIS

Customer SPRINT PCS
Job Name 6464
Structure 125' MONOPOLE
Location MIDDLESEX COUNTY, CT
Site FIRST LINE EMERGENCY SERVICES/CT23XC558

OD BOT	OD TOP	NUM. SIDES	THICK INCH	TAPER IN/FT	LENGTH FT	JOINT INCH	JOINT TYPE	YIELD KSI	WEIGHT LBS	JOINT HEIGHT
27.09	18.50	18	0.1875	0.215	39.96	47.00	SLIP	65.0	1807.	87.00
36.18	25.75	18	0.2500	0.215	48.50	61.00	SLIP	65.0	3973.	43.00
44.25	34.46	18	0.3125	0.215	45.54	0.00	BASEPL	65.0	5928.	-0.00
TOTAL TUBE WEIGHT								11708.	POUNDS	
POLE SHAFT LENGTH								125.00	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.
ORIGINAL DATA FILE NAME 00049125
REVISED DATA FILE NAME 6464125

APPURTENANCES

DESCRIPTION	NUM.	ELEV.	Kz	< WITHOUT ICE >			< WITH ICE >			Ca FACTOR
				AREA	WGT	Ca	AREA	WGT	Ca	
DB 980H	12	125.	1.463	2.50	9.	1.7500	3.00	29.	1.7500	0.75
LOW PROFILE PLATFORM	1	125.	1.463	11.25	1500.	2.0000	14.10	2250.	2.0000	1.00
DB 980H	12	115.	1.429	2.50	9.	1.7500	3.00	29.	1.7500	0.75
LOW PROFILE PLATFORM	1	115.	1.429	11.25	1500.	2.0000	14.10	2250.	2.0000	1.00
DB 980H	12	105.	1.392	2.50	9.	1.7500	3.00	29.	1.7500	0.75
LOW PROFILE PLATFORM	1	105.	1.392	11.25	1500.	2.0000	14.10	2250.	2.0000	1.00

LOAD CASE 1

OPERATIONAL LOADING

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

WIND VELOCITY 50 BOTTOM 6.45 PSF TOP 9.33 PSF
 MAX BASE ROTATION 0.00 DEG

APPLIED APPURTENANCE FORCES

	ELEVATION FT	WEIGHT KIPS	WIND KIPS
DB 980H	125.00	0.102	0.623
LOW PROFILE PLATFORM	125.00	1.500	0.356
DB 980H	115.00	0.102	0.608
LOW PROFILE PLATFORM	115.00	1.500	0.348
DB 980H	105.00	0.102	0.593
LOW PROFILE PLATFORM	105.00	1.500	0.339

TUBE PROPERTIES			MEMBER FORCES			STRESSES			STRESS	TOTAL	
ELEV FT	DIAM IN	WALL IN	SHEAR K	BENDING K-FT	AXIAL K	AXIAL KSI	BEND. KSI	ALLOW KSI	RATIOS	DEFL IN	TILT DEG
125.00	18.50	0.1875	1.11	0.00	1.80	0.17	0.00	58.38	0.00	24.9	1.77
115.00	20.65	0.1875	2.28	11.10	3.81	0.32	2.18	57.38	0.04	21.2	1.74
105.00	22.80	0.1875	2.28	33.93	3.81	0.29	5.45	56.56	0.10	17.6	1.66
96.00	24.74	0.1875	3.43	64.75	5.85	0.40	8.82	55.95	0.16	14.6	1.53
87.00	26.67	0.1875	3.59	97.01	6.29	0.40	11.35	58.15	0.20	11.8	1.37
TYPE OF JOINT: SLIP JOINT											
87.00	26.17	0.2500	3.77	97.01	7.19	0.35	8.91	57.83	0.15	11.8	1.37
76.00	28.53	0.2500	3.77	138.51	7.19	0.32	10.67	57.07	0.18	8.9	1.19
65.00	30.90	0.2500	3.98	182.29	8.03	0.33	11.96	56.44	0.20	6.4	0.99
54.00	33.26	0.2500	4.19	228.36	8.94	0.34	12.90	55.89	0.22	4.3	0.80
43.00	35.63	0.2500	4.40	276.72	9.91	0.36	13.61	58.13	0.24	2.7	0.60
TYPE OF JOINT: SLIP JOINT											
43.00	35.01	0.3125	4.62	276.72	11.79	0.35	11.34	57.23	0.19	2.7	0.60
30.00	37.80	0.3125	4.62	336.83	11.79	0.32	11.82	56.60	0.20	1.3	0.41
20.00	39.95	0.3125	4.83	385.17	13.23	0.34	12.08	56.18	0.21	0.6	0.27
10.00	42.10	0.3125	5.02	435.37	14.56	0.35	12.28	55.80	0.21	0.1	0.13
0.00	44.25	0.3125	5.33	487.52	16.68	0.39	12.43	58.21	0.22	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	MOMENT ABOUT WIND AXIS
0.000	16.683	-5.331	487.522	0.000	0.000	0.000

LOAD CASE 2

90 MPH BASIC WIND SPEED

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

WIND VELOCITY 90 BOTTOM 20.91 PSF TOP 30.24 PSF
 MAX BASE ROTATION 0.00 DEG

APPLIED APPURTENANCE FORCES

	ELEVATION FT	WEIGHT KIPS	WIND KIPS
DB 980H	125.00	0.102	2.019
LOW PROFILE PLATFORM	125.00	1.500	1.154
DB 980H	115.00	0.102	1.971
LOW PROFILE PLATFORM	115.00	1.500	1.126
DB 980H	105.00	0.102	1.921
LOW PROFILE PLATFORM	105.00	1.500	1.098

TUBE PROPERTIES			MEMBER FORCES			STRESSES			STRESS	TOTAL	
ELEV FT	DIAM IN	WALL IN	SHEAR K	BENDING K-FT	AXIAL K	AXIAL KSI	BEND. KSI	ALLOW KSI	RATIOS	DEFL IN	TILT DEG
125.00	18.50	0.1875	3.58	0.00	1.45	0.13	0.00	58.38	0.00	79.7	5.70
115.00	20.65	0.1875	3.58	35.62	1.45	0.12	6.99	57.38	0.12	68.0	5.61
105.00	22.80	0.1875	7.36	108.90	3.12	0.23	17.50	56.56	0.29	56.5	5.34
96.00	24.74	0.1875	11.05	207.98	4.87	0.34	28.34	55.95	0.49	46.9	4.94
87.00	26.67	0.1875	11.58	311.79	5.36	0.34	36.48	58.15	0.63	38.1	4.41
TYPE OF JOINT: SLIP JOINT											
87.00	26.17	0.2500	12.19	311.79	6.33	0.31	28.63	57.83	0.46	38.1	4.41
76.00	28.53	0.2500	12.19	445.57	6.33	0.28	34.34	57.07	0.57	28.6	3.83
65.00	30.90	0.2500	12.87	586.89	7.25	0.30	38.49	56.44	0.65	20.5	3.21
54.00	33.26	0.2500	13.55	735.79	8.26	0.32	41.57	55.89	0.71	13.8	2.57
43.00	35.63	0.2500	14.23	892.21	9.36	0.34	43.87	58.13	0.76	8.6	1.94
TYPE OF JOINT: SLIP JOINT											
43.00	35.01	0.3125	14.98	892.22	11.80	0.35	36.57	57.23	0.60	8.6	1.94
30.00	37.80	0.3125	14.98	1086.91	11.80	0.32	38.13	56.60	0.64	4.1	1.33
20.00	39.95	0.3125	15.66	1243.50	13.23	0.34	39.00	56.18	0.66	1.8	0.87
10.00	42.10	0.3125	16.27	1406.17	14.56	0.35	39.66	55.80	0.68	0.5	0.43
0.00	44.25	0.3125	17.27	1575.14	16.68	0.39	40.17	58.21	0.70	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	MOMENT ABOUT WIND AXIS
0.000	16.683	-17.273	1575.138	0.000		0.000

LOAD CASE 3

BASIC LOADING PLUS ICE

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

WIND VELOCITY 90 BOTTOM 15.68 PSF TOP 22.68 PSF
 MAX BASE ROTATION 0.00 DEG

APPLIED APPURTENANCE FORCES

	ELEVATION FT	WEIGHT KIPS	WIND KIPS
DB 980H	125.00	0.343	1.817
LOW PROFILE PLATFORM	125.00	2.250	1.084
DB 980H	115.00	0.343	1.774
LOW PROFILE PLATFORM	115.00	2.250	1.059
DB 980H	105.00	0.343	1.729
LOW PROFILE PLATFORM	105.00	2.250	1.032

ELEV FT	TUBE 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
125.00	18.50	0.1875	3.33	0.00	2.50	0.23	0.00	58.38	0.00	72.0	5.18
115.00	20.65	0.1875	3.33	33.19	2.50	0.21	6.52	57.38	0.11	61.3	5.09
105.00	22.80	0.1875	6.81	101.05	5.22	0.39	16.24	56.56	0.28	50.9	4.85
96.00	24.74	0.1875	10.19	192.44	8.02	0.55	26.22	55.95	0.45	42.1	4.47
87.00	26.67	0.1875	10.57	287.32	8.51	0.55	33.62	58.15	0.59	34.2	3.98
TYPE OF JOINT: SLIP JOINT											
87.00	26.17	0.2500	11.03	287.33	9.47	0.47	26.39	57.83	0.43	34.2	3.98
76.00	28.53	0.2500	11.03	408.37	9.47	0.43	31.47	57.07	0.52	25.6	3.45
65.00	30.90	0.2500	11.52	534.87	10.38	0.43	35.08	56.44	0.59	18.3	2.88
54.00	33.26	0.2500	12.01	666.84	11.38	0.44	37.67	55.89	0.65	12.3	2.30
43.00	35.63	0.2500	12.50	804.21	12.45	0.45	39.54	58.13	0.69	7.7	1.74
TYPE OF JOINT: SLIP JOINT											
43.00	35.01	0.3125	13.04	804.21	14.77	0.43	32.96	57.23	0.54	7.7	1.74
30.00	37.80	0.3125	13.04	973.63	14.77	0.40	34.15	56.60	0.57	3.7	1.18
20.00	39.95	0.3125	13.52	1108.85	16.20	0.42	34.78	56.18	0.59	1.6	0.77
10.00	42.10	0.3125	13.96	1248.43	17.53	0.43	35.21	55.80	0.61	0.4	0.38
0.00	44.25	0.3125	14.70	1392.51	19.66	0.46	35.52	58.21	0.62	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	19.657	-14.697	1392.509	0.000	0.000

SUMMARY TABLE							
ELEV	STRESS RATIO	AXIAL	BENDING	LOADING			
125.00	0.01	1.45	0.0	2	90	MPH	BASIC WIND SPEED
115.00	0.12	1.45	35.6	2	90	MPH	BASIC WIND SPEED
105.00	0.29	3.12	108.9	2	90	MPH	BASIC WIND SPEED
96.00	0.49	4.87	208.0	2	90	MPH	BASIC WIND SPEED
87.00	0.63	5.36	311.8	2	90	MPH	BASIC WIND SPEED
76.00	0.57	6.33	445.6	2	90	MPH	BASIC WIND SPEED
65.00	0.65	7.25	586.9	2	90	MPH	BASIC WIND SPEED
54.00	0.71	8.26	735.8	2	90	MPH	BASIC WIND SPEED
43.00	0.76	9.36	892.2	2	90	MPH	BASIC WIND SPEED
30.00	0.64	11.80	1086.9	2	90	MPH	BASIC WIND SPEED
20.00	0.66	13.23	1243.5	2	90	MPH	BASIC WIND SPEED
10.00	0.68	14.56	1406.2	2	90	MPH	BASIC WIND SPEED
0.00	0.70	16.68	1575.1	2	90	MPH	BASIC WIND SPEED

MAXIMUM SUPPORT MOMENT K-FT	1575.14
CORRESPONDING AXIAL FORCE KIPS	16.68
CORRESPONDING SHEAR FORCE KIPS	17.27

BASE PLATE AT ELEVATION 0.00 FEET

TUBE DIAMETER 44.25 INCHES
 DESIGN MOMENT 1575.1 KIP FT
 DESIGN MOMENT IS 0. DEGREES FROM THE WIND DIRECTION
 BOLTS ARE ON THE KNUCKLES OF THE TUBE

APPLIED AXIAL FORCE 16.7 KIPS
 APPLIED SHEAR 17.27 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 DOUBLE-END THREADED
 MINIMUM EMBEDMENT 5.0 FEET

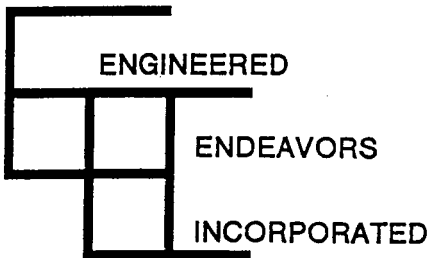
NUMBER OF BOLTS 12
 BOLT CIRCLE DIAMETER 53.00 INCHES
 ALLOWABLE STRESS 60.0 KSI
 APPLIED AXIAL STRESS 37.0 KSI
 MAX BOLT FORCE 120.3 KIPS
 BOLT BENDING STRESS 2.1 KSI
 COMBINED BOLT STRESS 39.1 KSI
 CLEARANCE UNDER PLATE 3.25 INCHES
 BOLT WEIGHT 1353.6 POUNDS

PLATE DATA

DIAMETER OF PLATE 59.00 INCHES
 MATERIAL A871 GR60
 PROVIDED THICKNESS 1.750 INCHES
 REQUIRED THICKNESS 1.413 INCHES
 BOLT HOLE DIAMETER 2.625 INCHES
 CENTER HOLE SIZE 34.25 INCHES
 NET WEIGHT 865.6 POUNDS
 RAW STOCK WEIGHT 1724.0 POUNDS
 SURFACE AREA 24.27 SQ FT
 ALLOWABLE STRESS 59.99 KSI
 MAX APPLIED STRESS 39.14 KSI

CONCRETE STRENGTH 3000. PSI

Base Plate - use 59.00 inch ROUND x 1.750 inch A871 GR60
 with (12) 2.250 diameter x 6.00 foot caged A615 GR75 bolts
 on a 53.00 inch bolt circle



FOUNDATION DESIGN

125-ft Monopole
CT23XC558 Cellular Site
Cromwell, CT
EEI Project 6464

Prepared for:
Sprint PCS

February 23, 2000
7610 Jenther Drive, Mentor, OH 44060
Phone(440)918-1101 * Fax(440)918-1108
www.engend.com

**FOUNDATION DESIGN CALCULATIONS
FOR
SPREAD FOOTING FOUNDATION**

ENGINEERED ENDEAVORS INC.
7610 Jentner Drive * Mentor, Ohio 44060
Tel:(216)918-1101 * Fax:(216)918-1108

23-Feb-00
07:40 AM

CUSTOMER	SPRINT PCS
STRUCTURE	125' MONOPOLE
EEI PROJECT	6464
LOCATION	CROMWELL. CT
SITE NAME	CT23XC558

SERVICE LOADS AT BASE OF THE MONOPOLE

	Design Loading
Moment, kip-ft	1575.1
Shear, kips	17.3
Axial Load, kips	16.7

Anchor Bolts	Quantity	12.0
	Length, ft	6.0
	Circle Dia., in	53.0
	Projection, in	12.0

Foundation Parameters

Pedestal Min. Width, in	71.00
Pedestal Projection, in	12.0
Found. Min Height, ft	5.5

	Height, ft	Width, ft	Soil Unit Wt., pcf	100.00
Footing	3.00	21.00	Concrete Unit Wt., pcf	150.00
Pedestal	3.00	6.00	Angle of friction	30.00

Foundation Weight, kips	214.65
Concrete, cub.yd.	53.00
Soil Weight, kips	91.06
Total Vertical Load, kips	322.41
Kern of Eccentricity, ft	3.50
Actual Eccentricity, ft	5.21
Overturning Moment, kip-ft	1678.90
Resisting Moment, kip-ft	3385.25
Allowable Gross Soil Pressure, ksf	0.0
Allowable Net Soil Pressure, ksf	4.0
Gross Soil Pressure, (Service Load), ksf	

H=	2.00
B=	23.31
	(gross)
max q=	1.93
min q=	0.00
	(net)
	1.24

Safety Factor	Sf=	2.02
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ULTIMATE STRENGTH DESIGN OF FOOTING

CONCRETE, psi	3000
STEEL, KSI	60

SHEAR IN FOOTING

1. CASE I - DEAD LOAD, TWO-WAY SHEAR		$U = 1.4 * D$	
Ultimate Vertical Load, kips	451.37		
Ultimate Pressure, ksf	1.02		
Ultimate shear V, kips	377.42		
Design shear Vn, kips	2279.40		O.K.

2. CASE II - WIND LOAD, ONE-WAY SHEAR		$U = 0.9 * D + 1.3 * W$	
Ultimate Moment, kip-ft	2182.57		
Ultimate Vertical Load, kips	290.16		
Eccentricity, ft	7.52		
Ultimate Pressure, ksf	3.09	qult=	
Dist. from edge to critical sect., ft	5.00		
Pressure distance ft	8.93	c=	
Pressure @ critical section, ksf	1.36		
Ultimate Shear, kips	233.89		
Design Shear, kips	703.93		O.K.

FLEXURE STRENGTH DESIGN

Ultimate Moment, kip-ft	Case I	604.51		
	Case II	2338.00	q1=	0.50
Coefficient of Resistance	Rn=	137.4		
Reinforcement Ratio	r=	0.00236		
Min. Reinforcement Ratio	r min	0.00180		
Min. Steel Area, sq.in.	A1	17.81		
Type of Bars	#	8		
	Ab,in^2=	0.79		
BOTTOM	Min. Number of Bars	22.55		
	Actual Number of Bars	25.00		
	Actual Steel Area, sq.in.	19.75		
	Steel Ratio Actual	0.00261	ra=	
	Revised Coef. of Resist	156.73	Rn=	
	Design Moment, kip-ft	2666.04		
	Horizontal Spacing, in	10.25	shor=	
TOP	Min. Steel Area, sq.in	13.61		
	Min. Number of Bars	17.23		
	Actual Number of Bars	19.00		
	Top Steel Area, sq.in	15.01		
	Horizontal Spacing, in	13.67	shor=	

PEDESTAL DESIGN

Pedestal Width, in	72	Ultim. Momen	2115.1
Concrete, ksi	3		
Reinforcement, ksi	60		
Rebars, #8	Q-ty 24	Area, sq.in	0.79
Design Rebars	Q-ty 12	Area, sq.in	1.58
Minimum reinforcement ratio	0.0033	Rebar space, i	8.25
Actual reinforcement ratio	0.0037		
Concrete cover, in	4		
Rebar layout radius, in	31.50		

Bending about the major axis

No.	Angle, deg	Coord., in	Edge Dist., in	No.	Angle, deg	Coord., in	dge Dist., in
1	0	31.50	4.50	7	180	-31.50	67.50
2	30	27.28	8.72	8	210	-27.28	63.28
3	60	15.75	20.25	9	240	-15.75	51.75
4	90	0.00	36.00	10	270	0.00	36.00
5	120	-15.75	51.75	11	300	15.75	20.25
6	150	-27.28	63.28	12	330	27.28	8.72

Location of neutral axis $c=$, **6.05**
 Compression zone, $a=$ **5.14**

No.	e	Force kips	Tension zone	No.	e	Force kips
1	0.0008	31.19		2	0.0013	60.67
				3	0.0070	94.80
$c_u=$ 0.003			$e_y=$ 0.00207	4	0.0149	94.80
				5	0.0227	94.80
				6	0.0284	94.80
				7	0.0305	94.80
				8	0.0284	94.80
				9	0.0227	94.80
				10	0.0149	94.80
Concrete, kips		944.16		11	0.0070	94.80
				12	0.0013	60.67
Total compression		975.35	Total tension, kips			974.54

Moment due to compression

Rebars	Force kips	Mom. Arm. in	Moment k-ft
1	31.19	31.50	81.87
2	0.00	27.28	0.00
12	0.00	27.28	0.00
Concrete	944.16	33.43	2630.18
Total in compression			2712.05

Moment due to tension

Rebars	Force kips	Mom. Arm. in	Moment k-ft
2	60.67	27.28	-137.92
3	94.80	15.75	-124.43
4	94.80	0.00	0.00
5	94.80	-15.75	124.43
6	94.80	-27.28	215.51
7	94.80	-31.50	248.85
8	94.80	-27.28	215.51
9	94.80	-15.75	124.43
10	94.80	0.00	0.00
11	94.80	15.75	-124.43
12	60.67	27.28	-137.92
Total in tension			404.03

Design moment about the major axis, kip **2804.48**

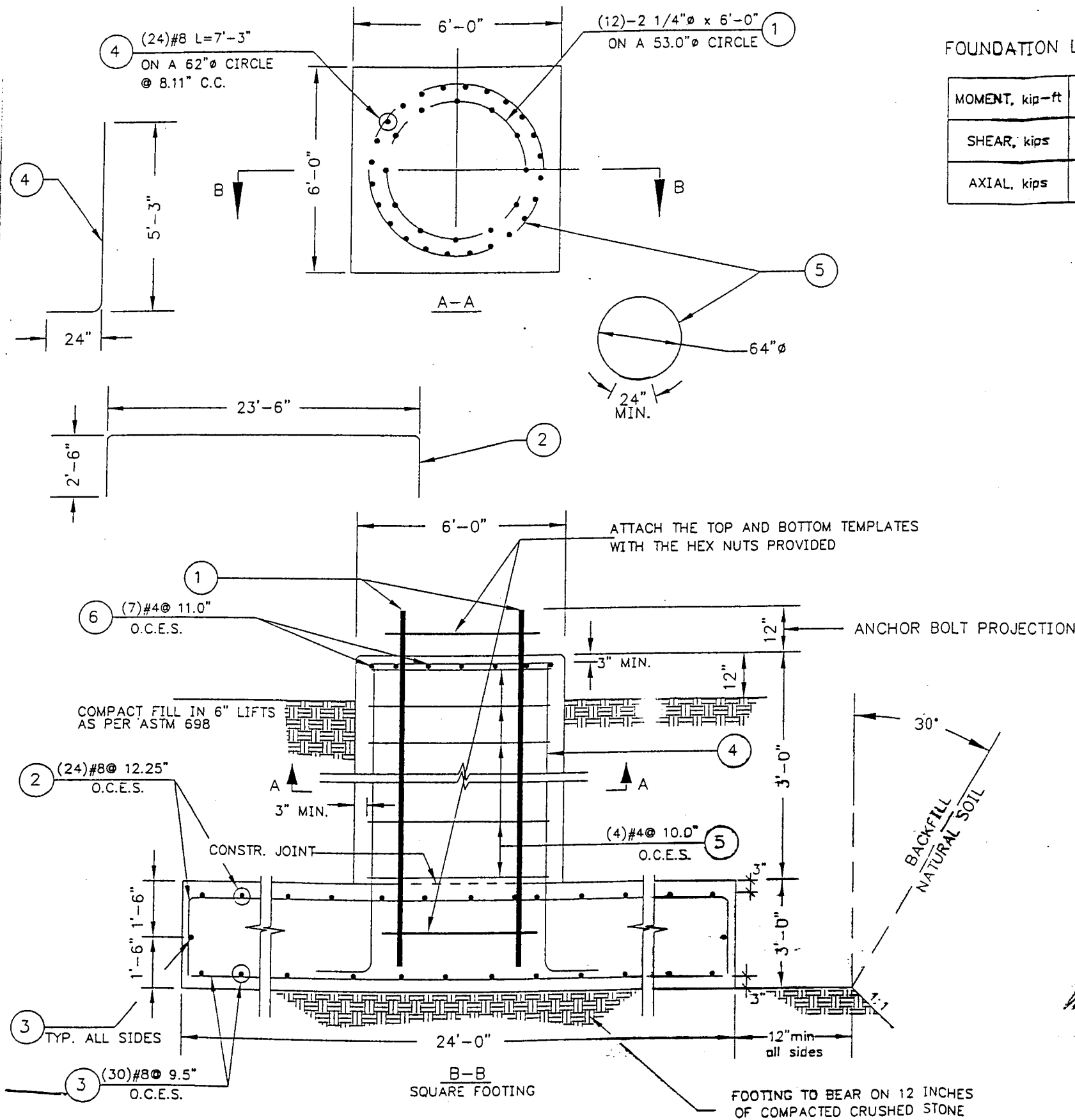
MATERIAL LIST

ITEM	QTY.	LENGTH	DESCRIPTION
①	12	6'-0"	2 1/4" Ø ANC. BOLTS A615-GR.75
②	48	28'-6"	#8 (ASTM A615-GR.60)
③	64	23'-6"	#8 (ASTM A615-GR.60)
④	24	7'-3"	#8 (ASTM A615-GR.60)
⑤	4	19'-0"	#4 (ASTM A615-GR.60)
⑥	14	5'-6"	#4 (ASTM A615-GR.60)

CONCRETE (cub.yd.)	68.25	4000 psi
STEEL (lbs.)	9220	ASTM A615 GR60

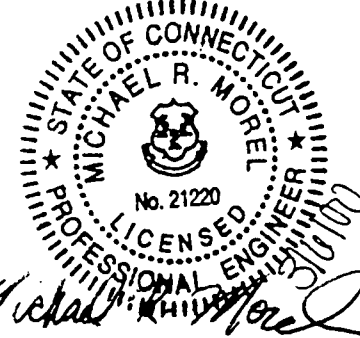
FOUNDATION LOADING

MOMENT, kip-ft	1575.1
SHEAR, kips	17.3
AXIAL, kips	16.7



GENERAL NOTES:

- FOUNDATION DESIGN IS BASED ON THE GEOTECHNICAL REPORT PROVIDED BY DR. CLARENCE C. WELTI ON AUGUST 2, 1999. PROJECT NO. N/A.
- GEOTECHNICAL AND CONSTRUCTION INSPECTION IS REQUIRED. SOIL REPORT SHOULD BE CONSULTED PRIOR TO CONSTRUCTION.
- REINFORCING STEEL SHALL CONFORM TO ASTM A615- WITH A MINIMUM YIELD STRESS OF 60 KSI. REBARS SHALL BE ASSEMBLED USING STEEL WIRE. WELDING OF CROSSING BARS OR SPLICES IS NOT PERMITTED.
- CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI AT 28 DAYS.
- CONCRETE SHALL BE VIBRATED TO ACHIEVE PROPER COMPACTION.
- REFER TO EEI DWG. NO GS52064 FOR ANCHOR BOLTS, TEMPLATES AND BASE PLATE DETAILS AND REQUIREMENTS. FOUNDATION INSTALLER MUST VERIFY ANCHOR BOLT LENGTH, QUANTITY, AND PATTERN PRIOR TO CONCRETE PLACEMENT.
- ANCHOR BOLT ORIENTATION REQUIRED PRIOR TO INSTALLATION.
- GROUNDING BY OTHERS.
- FOUNDATION IS DESIGNED IN ACCORDANCE WITH ACI 318-95 AND EIA/TIA-222F.



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

SPRINT PCS
125' MONOPOLE
FIRST LINE E.S., CT23XC558
MIDDLESEX COUNTY, CT

DESCRIPTION	DWN. BY	CHK. BY	DATE	PROJECT NO.
RELEASE ORIGINAL DESIGN	B.S.F.	L.A.P.	02/23/00	6464
REV. 1 REVISED FOUNDATION FOR FLOODPLAIN	L.A.P.	B.S.F.	03/03/00	
				DRAWING NO. S6464-125

MATERIAL REQ'D. PER ASSEMBLY

GALV. WT.	QTY.	ITEM	MK. NO.	DESCRIPTION
	1	(1)		SHAFT ASSY. (TOP SECTION)
	1	(2)		SHAFT ASSY. (MIDDLE SECTION)
	1	(3)		SHAFT ASSY. (BOTTOM SECTION)
25.00	3	(3)	C12669	12" x 32" ACCESS PORT COVER PL W/ (4) BOLTS (500822) & (4) WASHERS (500234)
		(4)		HARDWARE AS FOLLOWS:
5.51	9	(4)	GS14842	6" x 12" HANDHOLE COVER PLATE W/ (2) BOLTS (500376)
101.46	12	(5)	AB060DE-4	2 1/4" x 6'-0" LG. (A615-GR75) ANCHOR BOLTS W/ (4) HEX NUTS (A194-GR2H), EACH
1.08	--	(6)	S10006	5/8" x 6 1/2" LG. BOTTOM HEAD STEP BOLT W/ (1) HEX & (1) SQUARE NUT EACH
	1	(7)		STRUCTURE ASSEMBLY AND ERECTION PROCEDURES
	1	(8)	DBI-130	130'-0" SAFETY CLIMB KIT
134.10	2	(9)	12-53.00T.5E	SETTING TEMPLATE
0.40	6	(10)	GS13220	3/8" KELLUMS HOOK ASSY.
1235.15	1	(11)	K10008A	10'-0" LOW PROFILE ANTENNA PLATFORM
32.63	12	(12)	K10009	6'-8" LOW PROFILE DIRECTIONAL ANTENNA MOUNTS
28.60	1	(13)	K10333	7' LIGHTNING ROD KIT
7.50	1	(14)	K10062	BUSS BAR KIT
27.63	1	(15)	K10781	5'-0" LIGHTNING ROD EXTENSION CENTER MOUNTED PIPE
	1	(16)		STRUCTURE IDENTIFICATION TAG

TOTAL GALV. STR. & ACCES. WT. ---#
 TOTAL ANCHOR BOLT & TEMPLATE WT. ---#

- GENERAL NOTES**
- ALL WELDS SHALL BE IN ACCORDANCE WITH A.W.S. D.1.1.
 - LONGITUDINAL SEAM WELDS IN FEMALE SECTION OF THE SLIP JOINT SHALL BE FULL PENETRATION WELDS.
 - FOR PROPER SHAFT ALIGNMENT, A 2" HORIZONTAL WELD BEAD AND A MARK NUMBER ARE POSITIONED ON EACH SHAFT AT EACH SPLICE. THE 2" HORIZONTAL WELD BEADS ARE ON MATCHING CORNERS. THE MARK NUMBER IS ON AN ADJACENT FLAT. THE HORIZONTAL WELD BEAD CORNERS SHALL BE ALIGNED TOP TO BOTTOM OF THE POLE. MATCH NUMBERS SHALL BE WATCHED FOR EACH SIDE.
 - FIELD ASSEMBLY NUTS (1" DIA) ARE LOCATED ON OPPOSING SECTION FLATS ABOVE AND BELOW SPLICES FOR JACKING SHAFTS TOGETHER.
 - THE BOTTOM OF THE UPPER SECTION SHALL BE TELESCOPED IN THE FIELD TO WITHIN 12" OF THE WELD ORIENTATION MARK ON THE LOWER SECTION.
 - A SLOT 1 1/2" x 4" IS REQUIRED AT THE TOP OF THE BOTTOM SECTION AND AT THE BOTTOM OF THE TOP SECTION FOR HANDLING DURING GALVANIZING.
 - GAP BETWEEN TOP OF FOOTING AND BOTTOM BASE PLATE SHALL BE FILLED WITH A NON-SHRINK GROUT.
 - POLES SHALL BE HOT DIP GALVANIZED AFTER FABRICATION.
 - POLE TAPER = 0.2154 IN./FT.

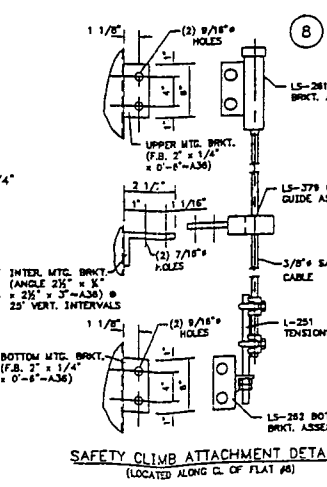
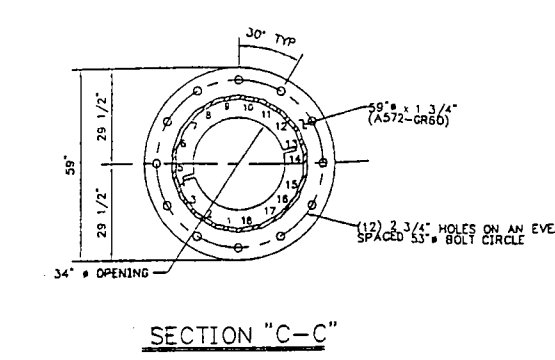
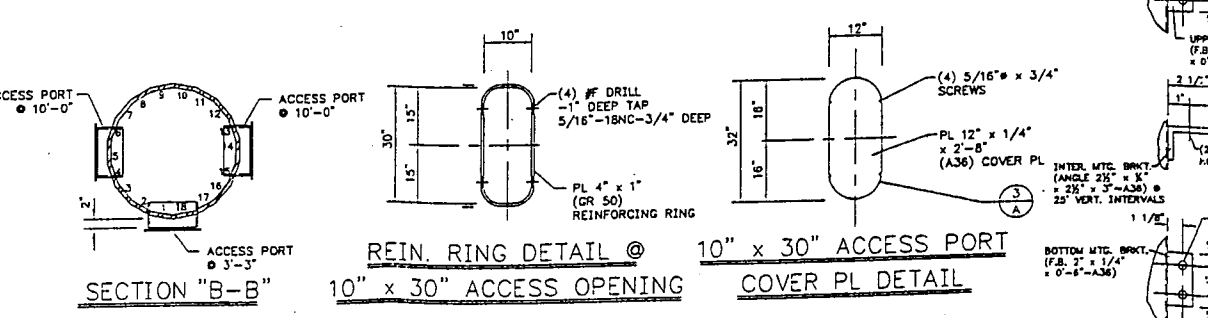
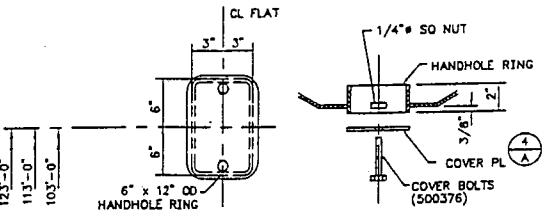
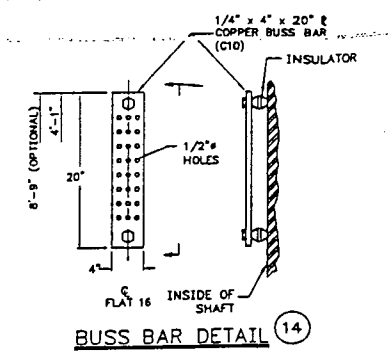
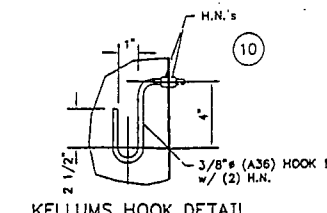
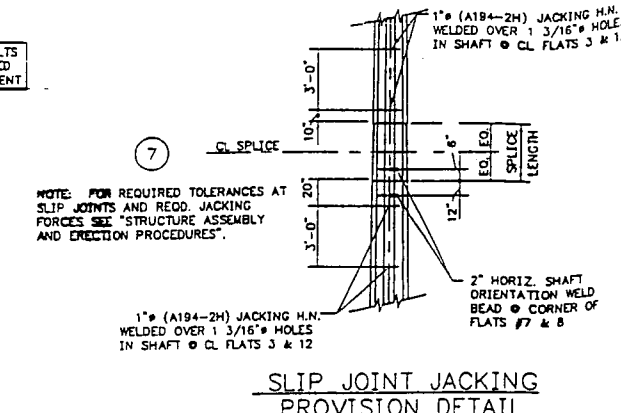
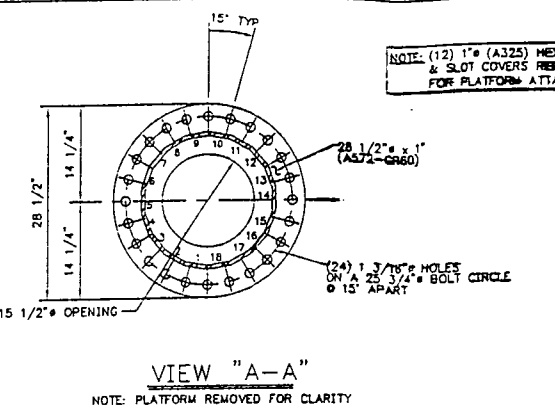
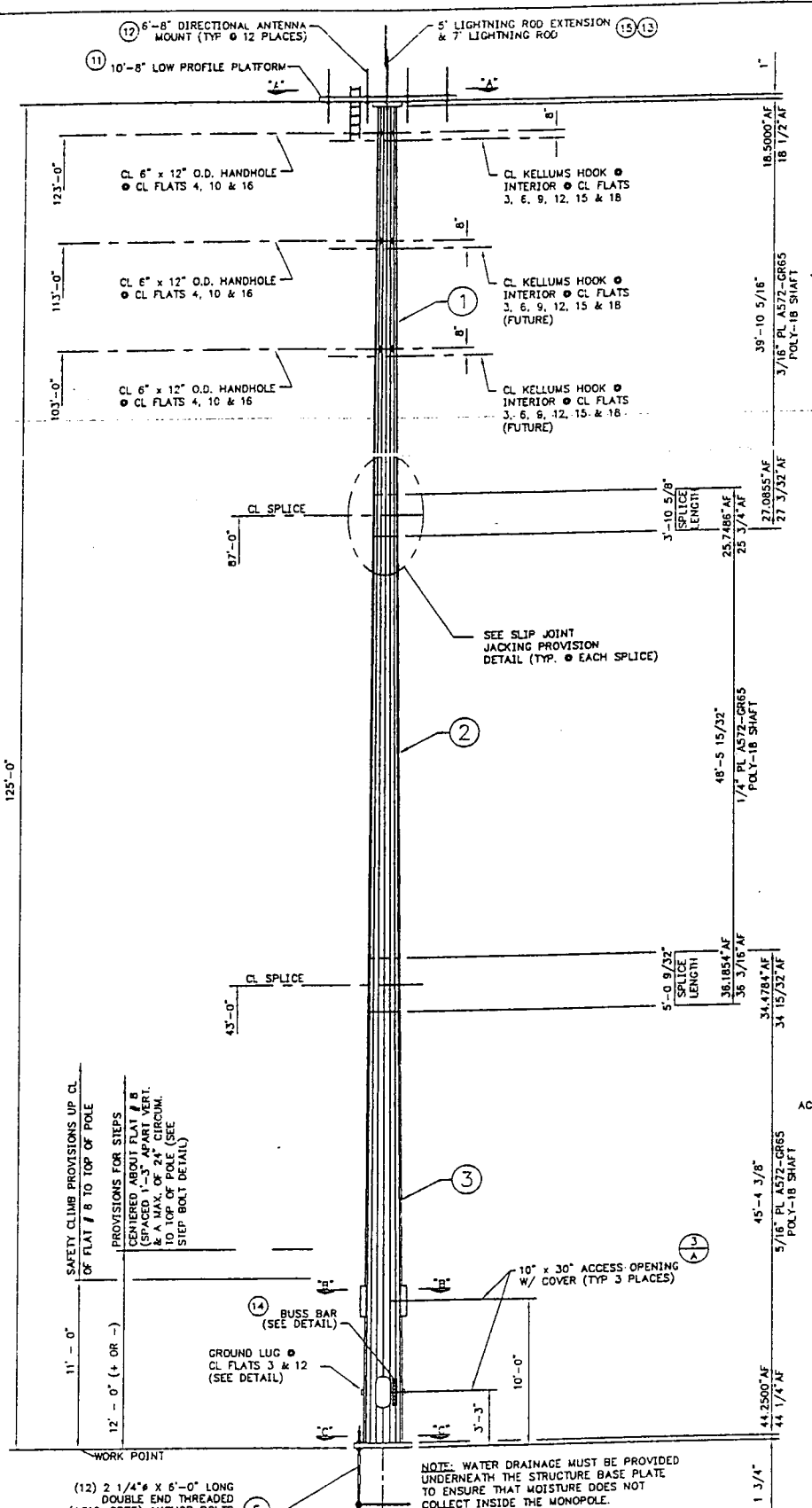
DESIGN NOTES
 DESIGNED IN ACCORDANCE WITH TIA/EIA 222-F
 90 MPH BASIC WIND SPEED
 1/2" RADIAL ICE
 CASE I - 50 MPH OPERATIONAL WIND SPEED
 ALLOWABLE ROTATION = 3.00° @ 125'
 CASE II - 90 MPH BASIC WIND SPEED
 ALLOWABLE ROTATION = 75% OF 90 MPH WIND LOAD
 WITH 1/2" RADIAL ICE
 DESIGNED IN COMPLIANCE WITH SPRINT TOWER SPECIFICATIONS SSEO 3.001.08.001 (6/1/99)

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ENGINEERED BY: J.G. MOORE
 ENDEAVORS INC. 7810 Jenther Drive Mentor, Ohio 44080
 (440) 918-1101
 INCORPORATED

125'-0" MONOPOLE SPRINT PCS

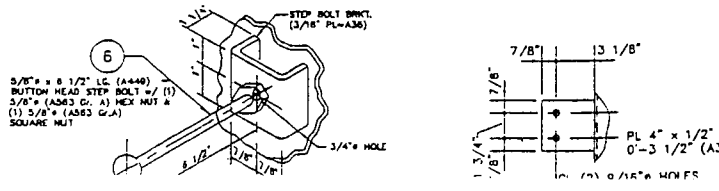
DATE: 02-22-00
 SCALE: NONE
 SHEET: 1 OF 1
 PROJECT: GS52064



STATE OF CONNECTICUT
 MICHAEL R. MOORE
 No. 21220
 LICENSED PROFESSIONAL ENGINEER
 12/15/99

Michael R. Moore

FIRST LINE EMERGENCY SERVICES/CT23XC558
 MIDDLESEX COUNTY, CT



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