



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@ct.gov

www.ct.gov/csc

April 4, 2013

Jennifer Palumbo
Real Estate Consultant
48 Spruce Street
Oakland, NJ 07436

RE: **EM-SPRINT-124-121015A** – Sprint Spectrum notice of intent to modify an existing telecommunications facility located at 2 Progress Avenue, Seymour, Connecticut.

Dear Ms. Palumbo:

The Connecticut Siting Council (Council) hereby acknowledges your notice to modify this existing telecommunications facility, pursuant to Section 16-50j-73 of the Regulations of Connecticut State Agencies with the following conditions:

- Any deviation from the proposed modification as specified in this notice and supporting materials with Council shall render this acknowledgement invalid;
- Any material changes to this modification as proposed shall require the filing of a new notice with the Council;
- Not less than 45 days after completion of construction, the Council shall be notified in writing that construction has been completed;
- The validity of this action shall expire one year from the date of this letter; and
- The applicant may file a request for an extension of time beyond the one year deadline provided that such request is submitted to the Council not less than 60 days prior to the expiration.

The proposed modifications including the placement of all necessary equipment and shelters within the tower compound are to be implemented as specified here and in your notice dated September 19, 2012. The modifications are in compliance with the exception criteria in Section 16-50j-72 (b) of the Regulations of Connecticut State Agencies as changes to an existing facility site that would not increase tower height, extend the boundaries of the tower site, increase noise levels at the tower site boundary by six decibels, and increase the total radio frequencies electromagnetic radiation power density measured at the tower site boundary to or above the standard adopted by the State Department of Environmental Protection pursuant to General Statutes § 22a-162. 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. Please be advised that the validity of this action shall expire one year from the date of this letter. Any additional change to this facility will require explicit notice to this agency pursuant to Regulations of Connecticut State Agencies Section 16-50j-73. Such notice shall include all relevant information regarding the proposed change with cumulative worst-case modeling of radio frequency exposure at the closest point of uncontrolled access to the tower base, consistent with Federal Communications Commission, Office of Engineering and Technology, Bulletin 65. Thank you for your attention and cooperation.

Very truly yours,

Linda Roberts
Executive Director

LR/cdm

c: The Honorable W. Kurt Miller, First Selectman, Town of Seymour
James Baldwin, Sr., Zoning Enforcement Officer, Town of Seymour
EMAC Communications

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October 16, 2012

The Honorable W. Kurt Miller
First Selectman
Town of Seymour
Town Hall
One First Street
Seymour, CT 06483

RE: **EM-SPRINT-124-121015A** – Sprint Spectrum notice of intent to modify an existing telecommunications facility located at 2 Progress Avenue, Seymour, Connecticut.

EM-SPRINT-124-121015B – Sprint Spectrum notice of intent to modify an existing telecommunications facility located at 34 Rimmon Street, Seymour, Connecticut.

Dear First Selectman Miller:

The Connecticut Siting Council (Council) received a request to modify an existing telecommunications facility, pursuant to Regulations of Connecticut State Agencies Section 16-50j-72. A copy of which has already been provided to you.

If you have any questions or comments regarding the proposal, please call me or inform the Council by October 30, 2012.

Thank you for your cooperation and consideration.

Very truly yours,

Linda Roberts
Executive Director

LR/jbw

c: James Baldwin, Sr., Zoning Enforcement Officer, Town of Seymour

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Structural Analysis Report -Tower

For

**280 ft Self Supporting Tower
2 Progress Avenue
Seymour, CT**

Site ID: CT33XC610

Site Name: S. Bethany/EMAC Communications

Network Vision MMBS Launch

KMB ID: 332.1519

Prepared For:

**Sprint-Nextel
1 International Blvd
Mahwah, NJ 07495**

Date: February 28, 2013

Analyzed By:

Jiang J. Yu, P.E.

Reviewed By:



Stephen A. Bray
CT PE License No. 26657



Structural Analysis Report

332.1519

2/28/2013

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Structural Analysis Report

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1. Introduction

Pursuant to your request, KMB Design Group, LLC (KMB) has completed a structural analysis of the existing self supporting structure to evaluate Sprint's existing and proposed antenna and equipment infrastructure with respect to the deployment Network Vision system and ancillary equipment at this installation at an approximate centerline elevation of 170 ft above grade.

This structural analysis was completed according to the recommendations of the "Structural Standards for Steel Antenna Towers and Antenna Supporting Structures", ANSI TIA/EIA Standard and International Building Code (IBC) 2003 as adopted in 2005 CT Supplement with 2009 Amendments. Specifically this tower has been analyzed in accordance with the following:

- TIA/EIA-222-F
- 85 mph basic wind – New Haven County
- 0.5" ice
- 50 mph under service loads

2. Information Utilized for the Report

The following documents were provided to us to aid in the preparation of this analysis:

1. Existing Structural Documentation entitled "Tower Reanalysis Report", prepared by Valmont Structures, Inc. dated June 5, 2012.

Some information required for this analysis was not included in the above report. Hence we have prepared this analysis utilizing the following assumptions:

1. The grade for the connection bolts for legs, diagonals, horizontals and girt is assumed to be A325N.
2. The sizes of the above mentioned connection bolts are assumed as shown in the attached analysis output.

3. Existing and Proposed Tower Loading

The existing antenna information was obtained from the referenced analysis report prepared by Valmont Structures Inc., which is included in Appendix B. Proposed Sprint antenna information was obtained from the RF Data Sheet (RFDS) provided to us by Sprint. Our analysis considered the following loading:

Existing and Reserved Loading (except Sprint loading):

Status	Elevation	Qty.	Antenna Model/Appurtenance	Coax/Conduit
Existing	280 ft*	1	Beacon	(1) 1"
Existing	280 ft*	1	Lightning Rod Ext.	(2) 1 5/8"



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Existing	280 ft	1	DB420	
Existing	280 ft	1	DB 586-XC	
Existing	280 ft	1	Yagi	
Existing	280 ft*	1	9-Arm Halo Mount with pipe mounts	
Existing	250 ft*	12	EMS RR90-17-02DP on T-Frame Mount	(12) 1 5/8"
Existing	245 ft	1	DB420	(1) 1 5/8"
Existing	235 ft	1	DB225-2-F	(1) 1 5/8"
Existing	235 ft*	1	9-Arm Halo Mount with pipe mounts	
Existing	200 ft*	9	DB980H120A-M on T-Frame Mount	(9) 1 5/8"
Existing	190 ft*	9	DB980H120A-M on T-Frame Mount	(9) 1 5/8"
Existing	180 ft*	9	DB980H120A-M on T-Frame Mount	(9) 1 5/8"
Existing	160 ft*	6	7770.0	(6) 1 5/8" (1) Fiber
		4	LGP 214 TMA	
		6	7020 RET Unit	
		3	72" x 11.8" x 5.9" Panel Antenna	
		6	Ericsson RRH700	
		1	Racap DC6-48-60-18-8F	
		1	T-Frame Mount	
Existing	150 ft*	3	RFS APXV18-206517	(3) 1 5/8"
Existing	140 ft*	6	Decibel D846F65ZAXY	(12) 1 5/8"
		3	BXA-185063/12CF	
		3	LNX-6514DS	
		3	12ft V-Frame	
Existing	50 ft*	1	GPS	
Existing	50 ft*	1	Yagi	

* Centerline

Existing Sprint Loading:

Status	Elevation	Qty.	Antenna Model/Appurtenance	Coax/Conduit
Existing	170.5ft*	6	DB980F65T2E-M on (3) T-Arm Mounts	(6) 1-5/8"

* Centerline

Proposed Interim Sprint Loading:

Status	Elevation	Qty.	Antenna Model/Appurtenance	Coax/Conduit
Existing	170.5ft*	6	DB980F65T2E-M on (3) T-Arm Mounts	(6) 1-5/8"
Proposed	170 ft*	3	APXVSPPI8-C-A20 on T-Arm Mounts	(3) Hybriflex
	173.5 ft*	3	RRH 1900 on Tower Leg	
	173.5 ft*	3	RRH 800 on Tower Leg	

* Centerline



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Proposed Final Sprint Loading:

Status	Elevation	Qty.	Antenna Model/Appurtenance	Coax/Conduit
Proposed	170.5 ft*	3	APXVSPP18-C-A20 on T-Arm Mount	(3) Hybriflex
	173.5 ft*	3	RRH 1900 on Tower Leg	
	173.5 ft*	3	RRH 800 on Tower Leg	

* Centerline

Ultimate user is responsible to verify that the tower loading, as represented above, is the actual as-built tower loading. In the event of discrepancies, ultimate user shall notify KMB and a revised structural review must be conducted prior to any tower, antenna and appurtenance placement or modifications on the existing structure.

4. Analysis Method

Tnx Tower 6.0, a commercially available engineering software programs, was used to create a theoretical mathematical model of the tower members and calculate primary member stresses under various loading conditions. Selected output from the analysis is included in Appendix A.

5. Assumptions

This structural analysis is based on the theoretical capacity of the members and is not a condition assessment of the existing tower structure. Specifically, we assumed that the tower and foundations were erected, inspected and have been maintained according to the manufacturer's plans and specifications.

6. Tower Analysis Results

Based on the above tower loading scenarios and our structural analysis, the interim loading configuration will provide the maximum stress on the tower. Under this condition the analysis of the existing tower indicates that the tower will be stressed to 90% of its maximum allowable design capacity. Hence, the tower structure meets the minimum code requirements and has adequate structural capacity to support the proposed interim and final antenna loading.

Please note that the existing tower foundation drawings, geotechnical investigation and design reports were not available to KMB Design Group. However, it is our professional opinion that since the tower is only at 90% of its design capacity with the proposed loading, the tower's foundation should be structurally adequate, provided that it had been constructed, inspected and maintained in accordance with the applicable building codes. We note that it is our experience and general telecommunication industry observation that the design capacity of tower foundations is equal or greater than the tower's design capacity.



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7. Conclusion

Based on the structural analysis, KMB Design Group, LLC concludes the existing tower is structurally adequate to support the referenced loading and tower does not require structural reinforcements as recommended in the report.

Should you have any questions or comments do not hesitate to contact us.



Appendix A

tnx Tower Output For
Interim Loading

Section	T1	T2	T3	T4	T5	T6	T7	T8	T9	T10	T11	T12	T13	T14	T15	T16	T17	T18	T19	T20	T21	T22	T23	T24	T25	T26	T27	T28	T29	T30	T31	T32	T33	T34	T35	T36	T37	T38	T39	T40	T41	T42	T43	T44	T45	T46	T47	T48	T49	T50	T51	T52	T53	T54	T55	T56	T57	T58	T59	T60	T61	T62	T63	T64	T65	T66	T67	T68	T69	T70	T71	T72	T73	T74	T75	T76	T77	T78	T79	T80	T81	T82	T83	T84	T85	T86	T87	T88	T89	T90	T91	T92	T93	T94	T95	T96	T97	T98	T99	T100	T101	T102	T103	T104	T105	T106	T107	T108	T109	T110	T111	T112	T113	T114	T115	T116	T117	T118	T119	T120	T121	T122	T123	T124	T125	T126	T127	T128	T129	T130	T131	T132	T133	T134	T135	T136	T137	T138	T139	T140	T141	T142	T143	T144	T145	T146	T147	T148	T149	T150	T151	T152	T153	T154	T155	T156	T157	T158	T159	T160	T161	T162	T163	T164	T165	T166	T167	T168	T169	T170	T171	T172	T173	T174	T175	T176	T177	T178	T179	T180	T181	T182	T183	T184	T185	T186	T187	T188	T189	T190	T191	T192	T193	T194	T195	T196	T197	T198	T199	T200	T201	T202	T203	T204	T205	T206	T207	T208	T209	T210	T211	T212	T213	T214	T215	T216	T217	T218	T219	T220	T221	T222	T223	T224	T225	T226	T227	T228	T229	T230	T231	T232	T233	T234	T235	T236	T237	T238	T239	T240	T241	T242	T243	T244	T245	T246	T247	T248	T249	T250	T251	T252	T253	T254	T255	T256	T257	T258	T259	T260	T261	T262	T263	T264	T265	T266	T267	T268	T269	T270	T271	T272	T273	T274	T275	T276	T277	T278	T279	T280	T281	T282	T283	T284	T285	T286	T287	T288	T289	T290	T291	T292	T293	T294	T295	T296	T297	T298	T299	T300	T301	T302	T303	T304	T305	T306	T307	T308	T309	T310	T311	T312	T313	T314	T315	T316	T317	T318	T319	T320	T321	T322	T323	T324	T325	T326	T327	T328	T329	T330	T331	T332	T333	T334	T335	T336	T337	T338	T339	T340	T341	T342	T343	T344	T345	T346	T347	T348	T349	T350	T351	T352	T353	T354	T355	T356	T357	T358	T359	T360	T361	T362	T363	T364	T365	T366	T367	T368	T369	T370	T371	T372	T373	T374	T375	T376	T377	T378	T379	T380	T381	T382	T383	T384	T385	T386	T387	T388	T389	T390	T391	T392	T393	T394	T395	T396	T397	T398	T399	T400	T401	T402	T403	T404	T405	T406	T407	T408	T409	T410	T411	T412	T413	T414	T415	T416	T417	T418	T419	T420	T421	T422	T423	T424	T425	T426	T427	T428	T429	T430	T431	T432	T433	T434	T435	T436	T437	T438	T439	T440	T441	T442	T443	T444	T445	T446	T447	T448	T449	T450	T451	T452	T453	T454	T455	T456	T457	T458	T459	T460	T461	T462	T463	T464	T465	T466	T467	T468	T469	T470	T471	T472	T473	T474	T475	T476	T477	T478	T479	T480	T481	T482	T483	T484	T485	T486	T487	T488	T489	T490	T491	T492	T493	T494	T495	T496	T497	T498	T499	T500	T501	T502	T503	T504	T505	T506	T507	T508	T509	T510	T511	T512	T513	T514	T515	T516	T517	T518	T519	T520	T521	T522	T523	T524	T525	T526	T527	T528	T529	T530	T531	T532	T533	T534	T535	T536	T537	T538	T539	T540	T541	T542	T543	T544	T545	T546	T547	T548	T549	T550	T551	T552	T553	T554	T555	T556	T557	T558	T559	T560	T561	T562	T563	T564	T565	T566	T567	T568	T569	T570	T571	T572	T573	T574	T575	T576	T577	T578	T579	T580	T581	T582	T583	T584	T585	T586	T587	T588	T589	T590	T591	T592	T593	T594	T595	T596	T597	T598	T599	T600	T601	T602	T603	T604	T605	T606	T607	T608	T609	T610	T611	T612	T613	T614	T615	T616	T617	T618	T619	T620	T621	T622	T623	T624	T625	T626	T627	T628	T629	T630	T631	T632	T633	T634	T635	T636	T637	T638	T639	T640	T641	T642	T643	T644	T645	T646	T647	T648	T649	T650	T651	T652	T653	T654	T655	T656	T657	T658	T659	T660	T661	T662	T663	T664	T665	T666	T667	T668	T669	T670	T671	T672	T673	T674	T675	T676	T677	T678	T679	T680	T681	T682	T683	T684	T685	T686	T687	T688	T689	T690	T691	T692	T693	T694	T695	T696	T697	T698	T699	T700	T701	T702	T703	T704	T705	T706	T707	T708	T709	T710	T711	T712	T713	T714	T715	T716	T717	T718	T719	T720	T721	T722	T723	T724	T725	T726	T727	T728	T729	T730	T731	T732	T733	T734	T735	T736	T737	T738	T739	T740	T741	T742	T743	T744	T745	T746	T747	T748	T749	T750	T751	T752	T753	T754	T755	T756	T757	T758	T759	T760	T761	T762	T763	T764	T765	T766	T767	T768	T769	T770	T771	T772	T773	T774	T775	T776	T777	T778	T779	T780	T781	T782	T783	T784	T785	T786	T787	T788	T789	T790	T791	T792	T793	T794	T795	T796	T797	T798	T799	T800	T801	T802	T803	T804	T805	T806	T807	T808	T809	T810	T811	T812	T813	T814	T815	T816	T817	T818	T819	T820	T821	T822	T823	T824	T825	T826	T827	T828	T829	T830	T831	T832	T833	T834	T835	T836	T837	T838	T839	T840	T841	T842	T843	T844	T845	T846	T847	T848	T849	T850	T851	T852	T853	T854	T855	T856	T857	T858	T859	T860	T861	T862	T863	T864	T865	T866	T867	T868	T869	T870	T871	T872	T873	T874	T875	T876	T877	T878	T879	T880	T881	T882	T883	T884	T885	T886	T887	T888	T889	T890	T891	T892	T893	T894	T895	T896	T897	T898	T899	T900	T901	T902	T903	T904	T905	T906	T907	T908	T909	T910	T911	T912	T913	T914	T915	T916	T917	T918	T919	T920	T921	T922	T923	T924	T925	T926	T927	T928	T929	T930	T931	T932	T933	T934	T935	T936	T937	T938	T939	T940	T941	T942	T943	T944	T945	T946	T947	T948	T949	T950	T951	T952	T953	T954	T955	T956	T957	T958	T959	T960	T961	T962	T963	T964	T965	T966	T967	T968	T969	T970	T971	T972	T973	T974	T975	T976	T977	T978	T979	T980	T981	T982	T983	T984	T985	T986	T987	T988	T989	T990	T991	T992	T993	T994	T995	T996	T997	T998	T999	T1000	T1001	T1002	T1003	T1004	T1005	T1006	T1007	T1008	T1009	T1010	T1011	T1012	T1013	T1014	T1015	T1016	T1017	T1018	T1019	T1020	T1021	T1022	T1023	T1024	T1025	T1026	T1027	T1028	T1029	T1030	T1031	T1032	T1033	T1034	T1035	T1036	T1037	T1038	T1039	T1040	T1041	T1042	T1043	T1044	T1045	T1046	T1047	T1048	T1049	T1050	T1051	T1052	T1053	T1054	T1055	T1056	T1057	T1058	T1059	T1060	T1061	T1062	T1063	T1064	T1065	T1066	T1067	T1068	T1069	T1070	T1071	T1072	T1073	T1074	T1075	T1076	T1077	T1078	T1079	T1080	T1081	T1082	T1083	T1084	T1085	T1086	T1087	T1088	T1089	T1090	T1091	T1092	T1093	T1094	T1095	T1096	T1097	T1098	T1099	T1100	T1101	T1102	T1103	T1104	T1105	T1106	T1107	T1108	T1109	T1110	T1111	T1112	T1113	T1114	T1115	T1116	T1117	T1118	T1119	T1120	T1121	T1122	T1123	T1124	T1125	T1126	T1127	T1128	T1129	T1130	T1131	T1132	T1133	T1134	T1135	T1136	T1137	T1138	T1139	T1140	T1141	T1142	T1143	T1144	T1145	T1146	T1147	T1148	T1149	T1150	T1151	T1152	T1153	T1154	T1155	T1156	T1157	T1158	T1159	T1160	T1161	T1162	T1163	T1164	T1165	T1166	T1167	T1168	T1169	T1170	T1171	T1172	T1173	T1174	T1175	T1176	T1177	T1178	T1179	T1180	T1181	T1182	T1183	T1184	T1185	T1186	T1187	T1188	T1189	T1190	T1191	T1192	T1193	T1194	T1195	T1196	T1197	T1198	T1199	T1200	T1201	T1202	T1203	T1204	T1205	T1206	T1207	T1208	T1209	T1210	T1211	T1212	T1213	T1214	T1215	T1216	T1217	T1218	T1219	T1220	T1221	T1222	T1223	T1224	T1225	T1226	T1227	T1228	T1229	T1230	T1231	T1232	T1233	T1234	T1235	T1236	T1237	T1238	T1239	T1240	T1241	T1242	T1243	T1244	T1245	T1246	T1247	T1248	T1249	T1250	T1251	T1252	T1253	T1254	T1255	T1256	T1257	T1258	T1259	T1260	T1261	T1262	T1263	T1264	T1265	T1266	T1267	T1268	T1269	T1270	T1271	T1272	T1273	T1274	T1275	T1276	T1277	T1278	T1279	T1280	T1281	T1282	T1283	T1284	T1285	T1286	T1287	T1288	T1289	T1290	T1291	T1292	T1293	T1294	T1295	T1296	T1297	T1298	T1299	T1300	T1301	T1302	T1303	T1304	T1305	T1306	T1307	T1308	T1309	T1310	T1311	T1312	T1313	T1314	T1315	T1316	T1317	T1318	T1319	T1320	T1321	T1322	T1323	T1324	T1325	T1326	T1327	T1328	T1329	T1330	T1331	T1332	T1333	T1334	T1335	T1336	T1337	T1338	T1339	T1340	T1341	T1342	T1343	T1344	T1345	T1346	T1347	T1348	T1349	T1350	T1351	T1352	T1353	T1354	T1355	T1356	T1357	T1358	T1359	T1360	T1361	T1362	T1363	T1364	T1365	T1366	T1367	T1368	T1369	T1370	T1371	T1372	T1373	T1374	T1375	T1376	T1377	T1378	T1379	T1380	T1381	T1382	T1383	T1384	T1385	T1386	T1387	T1388	T1389	T1390	T1391	T1392	T1393	T1394	T1395	T1396	T1397	T1398	T1399	T1400	T1401	T1402	T1403	T1404	T1405	T1406	T1407	T1408	T1409	T1410	T1411	T1412	T1413	T1414	T1415	T1416	T1417	T1418	T1419	T1420	T1421	T1422	T1423	T1424	T1425	T1426	T1427	T1428	T1429	T1430	T1431	T1432	T1433	T1434	T1435	T1436	T1437	T1438	T1439	T1440	T1441	T1442	T1443	T1444	T1445	T1446	T1447	T1448	T1449	T1450	T1451	T1452	T1453	T1454	T1455	T1456	T1457	T1458	T1459	T1460	T1461	T1462	T1463	T1464	T1465	T1466	T1467	T1468	T1469	T1470	T1471	T1472	T1473	T1474	T1475	T1476	T1477	T1478	T1479	T1480	T1481	T1482	T1483	T1484	T1485	T1486	T1487	T1488	T1489	T1490	T1491	T1492	T1493	T1494	T1495</
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inxTower KMB Design Group 1800 Route 34, Suite 209 Wall, NJ Phone: 732-280-5623 FAX: 732-280-3980	Job 332.1519 - CT33XC610 (S. Bethany)	Page 1 of 33
	Project 280ft Self Supporting Tower; 2 Progress Avenue, Seymour, CT	Date 15:42:57 02/28/13
	Client Sprint (Alcatel-Lucent)	Designed by Ekata Shah, P.E.

Tower Input Data

The main tower is a 3x free standing tower with an overall height of 280.00 ft above the ground line.

The base of the tower is set at an elevation of 0.00 ft above the ground line.

The face width of the tower is 5.00 ft at the top and 28.00 ft at the base.

This tower is designed using the TIA/EIA-222-F standard.

The following design criteria apply:

Tower is located in New Haven County, Connecticut.

Basic wind speed of 85 mph.

Nominal ice thickness of 0.5000 in.

Ice density of 56 pcf.

A wind speed of 74 mph is used in combination with ice.

Temperature drop of 50 °F.

Deflections calculated using a wind speed of 50 mph.

Weld together tower sections have flange connections..

Connections use galvanized A325 bolts, nuts and locking devices. Installation per TIA/EIA-222 and AISC Specifications..

Tower members are "hot dipped" galvanized in accordance with ASTM A123 and ASTM A153 Standards..

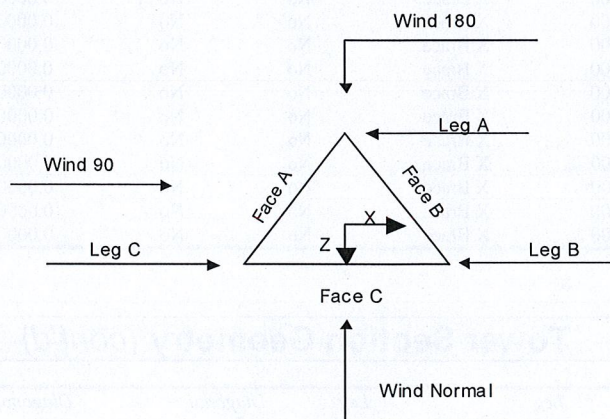
Welds are fabricated with ER-70S-6 electrodes..

A non-linear (P-delta) analysis was used.

Pressures are calculated at each section.

Stress ratio used in tower member design is 1.333.

Local bending stresses due to climbing loads, feedline supports, and appurtenance mounts are not considered.



Triangular Tower

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Tower Section Geometry

Tower Section	Tower Elevation	Assembly Database	Description	Section Width	Number of Sections	Section Length
	ft			ft		ft
T1	280.00-270.00			5.00	1	10.00
T2	270.00-250.00			5.00	1	20.00
T3	250.00-230.00			5.00	1	20.00
T4	230.00-220.00			5.00	1	10.00
T5	220.00-200.00			6.00	1	20.00
T6	200.00-180.00			8.00	1	20.00
T7	180.00-160.00			10.00	1	20.00
T8	160.00-140.00			12.00	1	20.00
T9	140.00-120.00			14.00	1	20.00
T10	120.00-100.00			16.00	1	20.00
T11	100.00-80.00			18.00	1	20.00
T12	80.00-60.00			20.00	1	20.00
T13	60.00-40.00			22.00	1	20.00
T14	40.00-20.00			24.00	1	20.00
T15	20.00-0.00			26.00	1	20.00

Tower Section Geometry (cont'd)

Tower Section	Tower Elevation	Diagonal Spacing	Bracing Type	Has K Brace End Panels	Has Horizontals	Top Girt Offset	Bottom Girt Offset
	ft	ft				in	in
T1	280.00-270.00	2.48	X Brace	No	Yes	0.0000	1.0000
T2	270.00-250.00	2.48	X Brace	No	Yes	1.0000	1.0000
T3	250.00-230.00	2.49	X Brace	No	Yes	1.0000	0.0000
T4	230.00-220.00	10.00	X Brace	No	No	0.0000	0.0000
T5	220.00-200.00	10.00	X Brace	No	No	0.0000	0.0000
T6	200.00-180.00	10.00	X Brace	No	No	0.0000	0.0000
T7	180.00-160.00	10.00	X Brace	No	No	0.0000	0.0000
T8	160.00-140.00	10.00	X Brace	No	No	0.0000	0.0000
T9	140.00-120.00	10.00	X Brace	No	No	0.0000	0.0000
T10	120.00-100.00	20.00	X Brace	No	No	0.0000	0.0000
T11	100.00-80.00	20.00	X Brace	No	No	0.0000	0.0000
T12	80.00-60.00	20.00	X Brace	No	No	0.0000	0.0000
T13	60.00-40.00	20.00	X Brace	No	No	0.0000	0.0000
T14	40.00-20.00	20.00	X Brace	No	No	0.0000	0.0000
T15	20.00-0.00	20.00	X Brace	No	No	0.0000	0.0000

Tower Section Geometry (cont'd)

Tower Elevation	Leg Type	Leg Size	Leg Grade	Diagonal Type	Diagonal Size	Diagonal Grade
ft						
T1 280.00-270.00	Solid Round	1 3/4	A572-50 (50 ksi)	Solid Round	7/8	A572-50 (50 ksi)
T2 270.00-250.00	Solid Round	2	A572-50 (50 ksi)	Solid Round	7/8	A572-50 (50 ksi)
T3 250.00-230.00	Solid Round	2 1/2	A572-50	Solid Round	1	A572-50

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Tower Elevation ft	Leg Type	Leg Size	Leg Grade	Diagonal Type	Diagonal Size	Diagonal Grade
T4 230.00-220.00	Truss Leg	Pirod 105245	(50 ksi) A572-50	Equal Angle	L2 1/2x2 1/2x3/16	(50 ksi) A36
T5 220.00-200.00	Truss Leg	Pirod 105218	(50 ksi) A572-50	Equal Angle	L3x3x3/16	(36 ksi) A36
T6 200.00-180.00	Truss Leg	Pirod 105218	(50 ksi) A572-50	Equal Angle	L3x3x3/16	(36 ksi) A36
T7 180.00-160.00	Truss Leg	Pirod 105219	(50 ksi) A572-50	Equal Angle	L3x3x5/16	(36 ksi) A36
T8 160.00-140.00	Truss Leg	Pirod 105220	(50 ksi) A572-50	Equal Angle	L3 1/2x3 1/2x5/16	(36 ksi) A36
T9 140.00-120.00	Truss Leg	Pirod 105220	(50 ksi) A572-50	Equal Angle	L3 1/2x3 1/2x5/16	(36 ksi) A36
T10 120.00-100.00	Truss Leg	Pirod 112743	(50 ksi) A572-50	Double Angle	2L3 1/2x3 1/2x5/16	(36 ksi) A36
T11 100.00-80.00	Truss Leg	Pirod 112743	(50 ksi) A572-50	Double Angle	2L3 1/2x3 1/2x5/16	(36 ksi) A36
T12 80.00-60.00	Truss Leg	Pirod 112744	(50 ksi) A572-50	Double Angle	2L3 1/2x3 1/2x5/16	(36 ksi) A36
T13 60.00-40.00	Truss Leg	Pirod 112744	(50 ksi) A572-50	Double Angle	2L3 1/2x3 1/2x5/16	(36 ksi) A36
T14 40.00-20.00	Truss Leg	Pirod 112745	(50 ksi) A572-50	Double Angle	2L3 1/2x3 1/2x5/16	(36 ksi) A36
T15 20.00-0.00	Truss Leg	Pirod 112740	(50 ksi) A572-50	Double Angle	2L3 1/2x3 1/2x5/16	(36 ksi) A36

Tower Section Geometry (cont'd)

Tower Elevation ft	Top Girt Type	Top Girt Size	Top Girt Grade	Bottom Girt Type	Bottom Girt Size	Bottom Girt Grade
T1 280.00-270.00	Solid Round	1	A36 (36 ksi)	Solid Round	1	A36 (36 ksi)
T2 270.00-250.00	Solid Round	1	A36 (36 ksi)	Solid Round	1	A36 (36 ksi)
T3 250.00-230.00	Solid Round	1 1/4	A36 (36 ksi)	Solid Round	1 1/4	A36 (36 ksi)
T6 200.00-180.00	Equal Angle	L3x3x3/16	A36 (36 ksi)	Solid Round		A36 (36 ksi)
T7 180.00-160.00	Equal Angle	L4x4x1/4	A36 (36 ksi)	Solid Round		A36 (36 ksi)
T8 160.00-140.00	Equal Angle	L3 1/2x3 1/2x5/16	A36 (36 ksi)	Solid Round		A36 (36 ksi)

Tower Section Geometry (cont'd)

Tower Elevation ft	No. of Mid Girts	Mid Girt Type	Mid Girt Size	Mid Girt Grade	Horizontal Type	Horizontal Size	Horizontal Grade
T1 280.00-270.00	1	Solid Round	1	A36	Solid Round	7/8	A572-50

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Tower Elevation ft	No. of Mid Girts	Mid Girt Type	Mid Girt Size	Mid Girt Grade	Horizontal Type	Horizontal Size	Horizontal Grade
T2 270.00-250.00	1	Solid Round	1	(36 ksi) A36	Solid Round	7/8	(50 ksi) A572-50
T3 250.00-230.00	None	Solid Round		(36 ksi) A36	Solid Round	7/8	(50 ksi) A572-50
T6 200.00-180.00	1	Equal Angle	L3x3x3/16	(36 ksi) A36	Solid Round		(50 ksi) A572-50
T7 180.00-160.00	1	Equal Angle	L4x4x1/4	(36 ksi) A36	Solid Round		(50 ksi) A572-50

Tower Section Geometry (cont'd)

Tower Elevation ft	Gusset Area (per face) ft ²	Gusset Thickness in	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in
T1	0.00	0.0000	A36	1	1	1	36.0000	36.0000
280.00-270.00			(36 ksi)					
T2	0.00	0.0000	A36	1	1	1	36.0000	36.0000
270.00-250.00			(36 ksi)					
T3	0.00	0.0000	A36	1	1	1	36.0000	36.0000
250.00-230.00			(36 ksi)					
T4	0.00	0.0000	A36	1	1	1	36.0000	36.0000
230.00-220.00			(36 ksi)					
T5	0.00	0.0000	A36	1	1	1	36.0000	36.0000
220.00-200.00			(36 ksi)					
T6	0.00	0.0000	A36	1	1	1	36.0000	36.0000
200.00-180.00			(36 ksi)					
T7	0.00	0.0000	A36	1	1	1	36.0000	36.0000
180.00-160.00			(36 ksi)					
T8	0.00	0.0000	A36	1	1	1	36.0000	36.0000
160.00-140.00			(36 ksi)					
T9	0.00	0.0000	A36	1	1	1	36.0000	36.0000
140.00-120.00			(36 ksi)					
T10	0.00	0.0000	A36	1	1	1	Mid-Pt	36.0000
120.00-100.00			(36 ksi)					
T11	0.00	0.0000	A36	1	1	1	Mid-Pt	36.0000
100.00-80.00			(36 ksi)					
T12	0.00	0.0000	A36	1	1	1	Mid-Pt	36.0000
80.00-60.00			(36 ksi)					
T13	0.00	0.0000	A36	1	1	1	Mid-Pt	36.0000
60.00-40.00			(36 ksi)					
T14	0.00	0.0000	A36	1	1	1	Mid-Pt	36.0000
40.00-20.00			(36 ksi)					
T15 20.00-0.00	0.00	0.0000	A36	1	1	1	Mid-Pt	36.0000
			(36 ksi)					

Tower Section Geometry (cont'd)

K Factors¹

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Tower Elevation	Calc K Single Angles	Calc K Solid Rounds	Legs	X Brace Diags X Y	K Brace Diags X Y	Single Diags X Y	Girts X Y	Horiz. X Y	Sec. Horiz. X Y	Inner Brace X Y
ft										
T1	Yes	Yes	1	1	1	1	1	1	1	1
280.00-270.00				1	1	1	1	1	1	1
T2	Yes	Yes	1	1	1	1	1	1	1	1
270.00-250.00				1	1	1	1	1	1	1
T3	Yes	Yes	1	1	1	1	1	1	1	1
250.00-230.00				1	1	1	1	1	1	1
T4	Yes	Yes	1	1	1	1	1	1	1	1
230.00-220.00				1	1	1	1	1	1	1
T5	Yes	Yes	1	1	1	1	1	1	1	1
220.00-200.00				1	1	1	1	1	1	1
T6	Yes	Yes	1	1	1	1	1	1	1	1
200.00-180.00				1	1	1	1	1	1	1
T7	Yes	Yes	1	1	1	1	1	1	1	1
180.00-160.00				1	1	1	1	1	1	1
T8	Yes	Yes	1	1	1	1	1	1	1	1
160.00-140.00				1	1	1	1	1	1	1
T9	Yes	Yes	1	1	1	1	1	1	1	1
140.00-120.00				1	1	1	1	1	1	1
T10	Yes	Yes	1	1	1	1	1	1	1	1
120.00-100.00				1	1	1	1	1	1	1
T11	Yes	Yes	1	1	1	1	1	1	1	1
100.00-80.00				1	1	1	1	1	1	1
T12	Yes	Yes	1	1	1	1	1	1	1	1
80.00-60.00				1	1	1	1	1	1	1
T13	Yes	Yes	1	1	1	1	1	1	1	1
60.00-40.00				1	1	1	1	1	1	1
T14	Yes	Yes	1	1	1	1	1	1	1	1
40.00-20.00				1	1	1	1	1	1	1
T15	Yes	Yes	1	0.9	1	1	1	1	1	1
20.00-0.00				0.9	1	1	1	1	1	1

¹Note: K factors are applied to member segment lengths. K-braces without inner supporting members will have the K factor in the out-of-plane direction applied to the overall length.

Tower Section Geometry (cont'd)

Tower Elevation	Truss-Leg K Factors					
	Truss-Legs Used As Leg Members			Truss-Legs Used As Inner Members		
	Leg Panels	X Brace Diagonals	Z Brace Diagonals	Leg Panels	X Brace Diagonals	Z Brace Diagonals
T4	1	0.5	0.85	1	0.5	0.85
230.00-220.00						
T5	1	0.5	0.85	1	0.5	0.85
220.00-200.00						
T6	1	0.5	0.85	1	0.5	0.85
200.00-180.00						
T7	1	0.5	0.85	1	0.5	0.85
180.00-160.00						
T8	1	0.5	0.85	1	0.5	0.85
160.00-140.00						
T9	1	0.5	0.85	1	0.5	0.85
140.00-120.00						
T10	1	0.5	0.85	1	0.5	0.85
120.00-100.00						

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T11	1	0.5	0.85	1	0.5	0.85
100.00-80.00						
T12	1	0.5	0.85	1	0.5	0.85
80.00-60.00						
T13	1	0.5	0.85	1	0.5	0.85
60.00-40.00						
T14	1	0.5	0.85	1	0.5	0.85
40.00-20.00						
T15	1	0.5	0.85	1	0.5	0.85
20.00-0.00						

Tower Section Geometry (cont'd)

Tower Elevation ft	Leg		Diagonal		Top Girt		Bottom Girt		Mid Girt		Long Horizontal		Short Horizontal	
	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U
T1	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
280.00-270.00														
T2	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
270.00-250.00														
T3	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
250.00-230.00														
T4	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	1	0.0000	1
230.00-220.00														
T5	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
220.00-200.00														
T6	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
200.00-180.00														
T7	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
180.00-160.00														
T8	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
160.00-140.00														
T9	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
140.00-120.00														
T10	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
120.00-100.00														
T11	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
100.00-80.00														
T12	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
80.00-60.00														
T13	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
60.00-40.00														
T14	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
40.00-20.00														
T15 20.00-0.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75

Tower Section Geometry (cont'd)

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Sprint (Alcatel-Lucent)	Ekata Shah, P.E.	

Tower Elevation ft	Leg Connection Type	Leg		Diagonal		Top Girt		Bottom Girt		Mid Girt		Long Horizontal		Short Horizontal	
		Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.
T1	Flange	0.7500	8	1.0000	1	0.6250	1	0.6250	1	0.6250	1	0.7500	1	0.6250	0
280.00-270.00		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T2	Flange	0.7500	8	1.0000	1	0.6250	1	0.6250	1	0.6250	1	0.7500	1	0.6250	0
270.00-250.00		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T3	Flange	0.7500	8	1.0000	1	0.6250	1	0.6250	1	0.6250	0	0.7500	1	0.6250	0
250.00-230.00		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T4	Flange	0.7500	8	1.0000	1	0.6250	1	0.6250	0	0.6250	0	0.6250	0	0.6250	0
230.00-220.00		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T5	Flange	0.7500	12	1.0000	1	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0
220.00-200.00		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T6	Flange	0.7500	12	1.0000	2	0.6250	1	0.6250	0	0.6250	0	0.6250	0	0.6250	0
200.00-180.00		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T7	Flange	0.7500	12	1.0000	2	0.6250	1	0.6250	0	0.6250	1	0.6250	0	0.6250	0
180.00-160.00		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T8	Flange	0.7500	12	1.0000	2	0.6250	1	0.6250	0	0.6250	1	0.6250	0	0.6250	0
160.00-140.00		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T9	Flange	0.7500	16	1.0000	2	0.6250	1	0.6250	0	0.6250	0	0.6250	0	0.6250	0
140.00-120.00		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T10	Flange	1.0000	16	1.0000	2	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0
120.00-100.00		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T11	Flange	1.0000	16	1.0000	2	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0
100.00-80.00		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T12	Flange	1.0000	16	1.0000	2	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0
80.00-60.00		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T13	Flange	1.0000	16	1.0000	2	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0
60.00-40.00		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T14	Flange	1.0000	16	1.0000	2	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0
40.00-20.00		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T15 20.00-0.00	Flange	1.0000	16	1.0000	2	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0
		A325N		A325N		A325N		A325N		A325N		A325N		A325N	

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number	Number Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight plf
LDF7-50A (1-5/8 FOAM)	C	Yes	Ar (CaAa)	280.00 - 10.00	2	2	1.9800	1.9800		0.82
LDF7-50A (1-5/8 FOAM)	A	Yes	Ar (CaAa)	250.00 - 10.00	12	6	1.9800	1.9800		0.82
LDF7-50A (1-5/8 FOAM)	C	Yes	Ar (CaAa)	245.00 - 10.00	1	1	1.9800	1.9800		0.82
LDF7-50A (1-5/8 FOAM)	C	Yes	Ar (CaAa)	235.00 - 10.00	1	1	1.9800	1.9800		0.82
LDF7-50A (1-5/8 FOAM)	B	Yes	Ar (CaAa)	200.00 - 10.00	9	4	1.9800	1.9800		0.82
LDF7-50A (1-5/8 FOAM)	C	Yes	Ar (CaAa)	190.00 - 10.00	9	4	1.9800	1.9800		0.82
LDF7-50A (1-5/8 FOAM)	C	Yes	Ar (CaAa)	180.00 - 10.00	9	4	1.9800	1.9800		0.82
LDF7-50A (1-5/8 FOAM)	C	Yes	Ar (CaAa)	170.00 - 10.00	6	6	1.9800	1.9800		0.82
Hybriflex HB114-1-08U4-M5J	B	Yes	Ar (CaAa)	170.00 - 10.00	3	3	1.5400	1.5400		1.08

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	Client	Sprint (Alcatel-Lucent)	Designed by	Ekata Shah, P.E.

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number	Number Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight plf
LDF7-50A (1-5/8 FOAM)	B	Yes	Ar (CaAa)	160.00 - 10.00	6	6	1.9800	1.9800		0.82
LDF7-50A (1-5/8 FOAM)	A	Yes	Ar (CaAa)	150.00 - 10.00	3	3	1.9800	1.9800		0.82
LDF7-50A (1-5/8 FOAM)	C	Yes	Ar (CaAa)	140.00 - 10.00	12	6	1.9800	1.9800		0.82

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A _R ft ²	A _F ft ²	C _A A _A In Face ft ²	C _A A _A Out Face ft ²	Weight K
T1	280.00-270.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	3.960	0.000	0.02
T2	270.00-250.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	7.920	0.000	0.03
T3	250.00-230.00	A	0.000	0.000	44.344	0.000	0.20
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	11.880	0.000	0.05
T4	230.00-220.00	A	0.000	0.000	22.172	0.000	0.10
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	7.920	0.000	0.03
T5	220.00-200.00	A	0.000	0.000	44.344	0.000	0.20
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	15.840	0.000	0.07
T6	200.00-180.00	A	0.000	0.000	44.344	0.000	0.20
		B	0.000	0.000	32.516	0.000	0.15
		C	0.000	0.000	32.098	0.000	0.14
T7	180.00-160.00	A	0.000	0.000	44.344	0.000	0.20
		B	0.000	0.000	37.136	0.000	0.18
		C	0.000	0.000	92.752	0.000	0.41
T8	160.00-140.00	A	0.000	0.000	50.284	0.000	0.22
		B	0.000	0.000	65.516	0.000	0.31
		C	0.000	0.000	104.632	0.000	0.46
T9	140.00-120.00	A	0.000	0.000	56.224	0.000	0.25
		B	0.000	0.000	65.516	0.000	0.31
		C	0.000	0.000	148.976	0.000	0.66
T10	120.00-100.00	A	0.000	0.000	56.224	0.000	0.25
		B	0.000	0.000	65.516	0.000	0.31
		C	0.000	0.000	148.976	0.000	0.66
T11	100.00-80.00	A	0.000	0.000	56.224	0.000	0.25
		B	0.000	0.000	65.516	0.000	0.31
		C	0.000	0.000	148.976	0.000	0.66
T12	80.00-60.00	A	0.000	0.000	56.224	0.000	0.25
		B	0.000	0.000	65.516	0.000	0.31
		C	0.000	0.000	148.976	0.000	0.66
T13	60.00-40.00	A	0.000	0.000	56.224	0.000	0.25
		B	0.000	0.000	65.516	0.000	0.31
		C	0.000	0.000	148.976	0.000	0.66
T14	40.00-20.00	A	0.000	0.000	56.224	0.000	0.25
		B	0.000	0.000	65.516	0.000	0.31
		C	0.000	0.000	148.976	0.000	0.66
T15	20.00-0.00	A	0.000	0.000	28.112	0.000	0.12
		B	0.000	0.000	32.758	0.000	0.16
		C	0.000	0.000	74.488	0.000	0.33

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	Client	Sprint (Alcatel-Lucent)	Designed by	Ekata Shah, P.E.

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft ²	A_F ft ²	$C_A A_A$ In Face ft ²	$C_A A_A$ Out Face ft ²	Weight K
T1	280.00-270.00	A	0.500	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	5.960	0.000	0.05
T2	270.00-250.00	A	0.500	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	11.920	0.000	0.09
T3	250.00-230.00	A	0.500	0.000	0.000	46.344	0.000	0.56
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	17.880	0.000	0.14
T4	230.00-220.00	A	0.500	0.000	0.000	23.172	0.000	0.28
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	11.920	0.000	0.09
T5	220.00-200.00	A	0.500	0.000	0.000	46.344	0.000	0.56
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	23.840	0.000	0.19
T6	200.00-180.00	A	0.500	0.000	0.000	46.344	0.000	0.56
		B		0.000	0.000	34.516	0.000	0.42
		C		0.000	0.000	41.098	0.000	0.40
T7	180.00-160.00	A	0.500	0.000	0.000	46.344	0.000	0.56
		B		0.000	0.000	42.136	0.000	0.49
		C		0.000	0.000	110.752	0.000	1.17
T8	160.00-140.00	A	0.500	0.000	0.000	55.284	0.000	0.63
		B		0.000	0.000	85.516	0.000	0.84
		C		0.000	0.000	128.632	0.000	1.31
T9	140.00-120.00	A	0.500	0.000	0.000	64.224	0.000	0.70
		B		0.000	0.000	85.516	0.000	0.84
		C		0.000	0.000	174.976	0.000	1.87
T10	120.00-100.00	A	0.500	0.000	0.000	64.224	0.000	0.70
		B		0.000	0.000	85.516	0.000	0.84
		C		0.000	0.000	174.976	0.000	1.87
T11	100.00-80.00	A	0.500	0.000	0.000	64.224	0.000	0.70
		B		0.000	0.000	85.516	0.000	0.84
		C		0.000	0.000	174.976	0.000	1.87
T12	80.00-60.00	A	0.500	0.000	0.000	64.224	0.000	0.70
		B		0.000	0.000	85.516	0.000	0.84
		C		0.000	0.000	174.976	0.000	1.87
T13	60.00-40.00	A	0.500	0.000	0.000	64.224	0.000	0.70
		B		0.000	0.000	85.516	0.000	0.84
		C		0.000	0.000	174.976	0.000	1.87
T14	40.00-20.00	A	0.500	0.000	0.000	64.224	0.000	0.70
		B		0.000	0.000	85.516	0.000	0.84
		C		0.000	0.000	174.976	0.000	1.87
T15	20.00-0.00	A	0.500	0.000	0.000	32.112	0.000	0.35
		B		0.000	0.000	42.758	0.000	0.42
		C		0.000	0.000	87.488	0.000	0.93

Feed Line Shielding

Section	Elevation ft	Face	A_R ft ²	A_R Ice ft ²	A_F ft ²	A_F Ice ft ²
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Section	Elevation	Face	A_R	A_R	A_F	A_F
	ft		ft ²	Ice ft ²	ft ²	Ice ft ²
T1	280.00-270.00	A	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.000	0.000
		C	0.345	1.097	0.000	0.000
T2	270.00-250.00	A	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.000	0.000
		C	0.657	2.100	0.000	0.000
T3	250.00-230.00	A	2.186	6.627	0.000	0.000
		B	0.000	0.000	0.000	0.000
		C	1.093	3.314	0.000	0.000
T4	230.00-220.00	A	0.000	0.515	0.855	1.287
		B	0.000	0.000	0.000	0.000
		C	0.000	0.343	0.570	0.858
T5	220.00-200.00	A	0.000	0.869	1.732	2.607
		B	0.000	0.000	0.000	0.000
		C	0.000	0.579	1.155	1.738
T6	200.00-180.00	A	0.000	0.992	1.978	2.976
		B	0.000	0.661	1.318	1.984
		C	0.000	0.992	1.978	2.976
T7	180.00-160.00	A	0.000	0.920	1.999	3.009
		B	0.000	0.810	1.722	2.647
		C	0.000	2.301	4.998	7.523
T8	160.00-140.00	A	0.000	0.939	2.184	3.286
		B	0.000	1.572	3.591	5.502
		C	0.000	2.254	5.241	7.887
T9	140.00-120.00	A	0.000	0.896	2.083	3.135
		B	0.000	1.250	2.855	4.374
		C	0.000	2.389	5.555	8.360
T10	120.00-100.00	A	0.000	0.575	1.337	2.012
		B	0.000	0.802	1.832	2.808
		C	0.000	1.533	3.566	5.366
T11	100.00-80.00	A	0.000	0.541	1.257	1.892
		B	0.000	0.754	1.723	2.640
		C	0.000	1.442	3.353	5.047
T12	80.00-60.00	A	0.000	0.514	1.196	1.800
		B	0.000	0.718	1.639	2.512
		C	0.000	1.371	3.189	4.800
T13	60.00-40.00	A	0.000	0.494	1.148	1.727
		B	0.000	0.689	1.573	2.410
		C	0.000	1.316	3.061	4.607
T14	40.00-20.00	A	0.000	0.477	1.109	1.669
		B	0.000	0.665	1.520	2.329
		C	0.000	1.272	2.958	4.452
T15	20.00-0.00	A	0.000	0.232	0.539	0.811
		B	0.000	0.323	0.739	1.132
		C	0.000	0.618	1.437	2.163

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft	$C_A A_A$ Front ft ²	$C_A A_A$ Side ft ²	Weight K
Beacon	C	None		0.0000	280.00	No Ice	2.70	0.05
						1/2" Ice	3.10	0.07

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	Client	Sprint (Alcatel-Lucent)	Designed by	Ekata Shah, P.E.

<i>Description</i>	<i>Face or Leg</i>	<i>Offset Type</i>	<i>Offsets: Horz Lateral Vert ft ft ft</i>	<i>Azimuth Adjustment °</i>	<i>Placement ft</i>	<i>C_AA₁ Front ft²</i>	<i>C_AA₁ Side ft²</i>	<i>Weight K</i>
Lightning Road	C	None		0.0000	280.00	No Ice 3.00 1/2" Ice 4.53	3.00 4.53	0.08 0.10
DB420	C	From Face	4.00 0.00 0.00	0.0000	280.00	No Ice 3.33 1/2" Ice 5.99	3.33 5.99	0.03 0.04
DB586-XC	C	From Face	4.00 0.00 0.00	0.0000	280.00	No Ice 1.01 1/2" Ice 1.28	1.01 1.28	0.01 0.02
7'x2" Antenna Mount Pipe Sch 40	C	From Face	4.00 0.00 0.00	0.0000	280.00	No Ice 1.66 1/2" Ice 2.39	1.66 2.39	0.03 0.04
7'x2" Antenna Mount Pipe Sch 40	C	From Face	4.00 0.00 0.00	0.0000	280.00	No Ice 1.66 1/2" Ice 2.39	1.66 2.39	0.03 0.04
9-Arm Halo Mount	A	None		0.0000	280.00	No Ice 32.94 1/2" Ice 47.60	32.94 47.60	0.74 1.00
(4) RR90-17-02DP	A	From Face	4.00 0.00 0.00	0.0000	250.00	No Ice 4.36 1/2" Ice 4.77	1.97 2.31	0.02 0.04
(4) 7'x2" Antenna Mount Pipe Sch 40	A	From Face	4.00 0.00 0.00	0.0000	250.00	No Ice 1.66 1/2" Ice 2.39	1.66 2.39	0.03 0.04
15' T-Frame	A	None		0.0000	250.00	No Ice 15.00 1/2" Ice 20.60	15.00 20.60	0.50 0.65
(4) RR90-17-02DP	B	From Face	4.00 0.00 0.00	0.0000	250.00	No Ice 4.36 1/2" Ice 4.77	1.97 2.31	0.02 0.04
(4) 7'x2" Antenna Mount Pipe Sch 40	B	From Face	4.00 0.00 0.00	0.0000	250.00	No Ice 1.66 1/2" Ice 2.39	1.66 2.39	0.03 0.04
15' T-Frame	B	None		0.0000	250.00	No Ice 15.00 1/2" Ice 20.60	15.00 20.60	0.50 0.65
(4) RR90-17-02DP	C	From Face	4.00 0.00 0.00	0.0000	250.00	No Ice 4.36 1/2" Ice 4.77	1.97 2.31	0.02 0.04
(4) 7'x2" Antenna Mount Pipe Sch 40	C	From Face	4.00 0.00 0.00	0.0000	250.00	No Ice 1.66 1/2" Ice 2.39	1.66 2.39	0.03 0.04
15' T-Frame	C	None		0.0000	250.00	No Ice 15.00 1/2" Ice 20.60	15.00 20.60	0.50 0.65
DB420-A	A	None		0.0000	245.00	No Ice 3.33 1/2" Ice 5.99	3.33 5.99	0.03 0.04
DB225-2-F	C	None		0.0000	235.00	No Ice 1.36 1/2" Ice 2.45	1.36 2.45	0.05 0.07
7'x2" Antenna Mount Pipe Sch 40	C	From Face	4.00 0.00 0.00	0.0000	235.00	No Ice 1.66 1/2" Ice 2.39	1.66 2.39	0.03 0.04
9-Arm Halo Mount	A	None		0.0000	235.00	No Ice 32.94 1/2" Ice 47.60	32.94 47.60	0.74 1.00
(3) DB980H120A-M	A	From Face	3.00 0.00 0.00	0.0000	200.00	No Ice 3.75 1/2" Ice 4.13	2.17 2.53	0.01 0.03
(3) 5'x2" Pipe Mount Sch 40	A	From Face	3.00 0.00 0.00	0.0000	200.00	No Ice 1.30 1/2" Ice 1.57	1.30 1.57	0.03 0.05
10' Lightweight T-Frame	A	None		0.0000	200.00	No Ice 9.30 1/2" Ice 14.50	9.30 14.50	0.25 0.34

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	Client	Sprint (Alcatel-Lucent)	Designed by	Ekata Shah, P.E.

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C _A A _A Front ft ²	C _A A _A Side ft ²	Weight K
(3) DB980H120A-M	B	From Face	3.00 0.00 0.00	0.0000	200.00	No Ice 1/2" Ice	3.75 4.13	2.17 2.53	0.01 0.03
(3) 5'x2" Pipe Mount Sch 40	B	From Face	3.00 0.00 0.00	0.0000	200.00	No Ice 1/2" Ice	1.30 1.57	1.30 1.57	0.03 0.05
10' Lightweight T-Frame	B	None		0.0000	200.00	No Ice 1/2" Ice	9.30 14.50	9.30 14.50	0.25 0.34
(3) DB980H120A-M	C	From Face	3.00 0.00 0.00	0.0000	200.00	No Ice 1/2" Ice	3.75 4.13	2.17 2.53	0.01 0.03
(3) 5'x2" Pipe Mount Sch 40	C	From Face	3.00 0.00 0.00	0.0000	200.00	No Ice 1/2" Ice	1.30 1.57	1.30 1.57	0.03 0.05
10' Lightweight T-Frame	C	None		0.0000	200.00	No Ice 1/2" Ice	9.30 14.50	9.30 14.50	0.25 0.34
(3) DB980H120A-M	A	From Face	3.00 0.00 0.00	0.0000	190.00	No Ice 1/2" Ice	3.75 4.13	2.17 2.53	0.01 0.03
(3) 5'x2" Pipe Mount Sch 40	A	From Face	3.00 0.00 0.00	0.0000	190.00	No Ice 1/2" Ice	1.30 1.57	1.30 1.57	0.03 0.05
10' Lightweight T-Frame	A	None		0.0000	190.00	No Ice 1/2" Ice	9.30 14.50	9.30 14.50	0.25 0.34
(3) DB980H120A-M	B	From Face	3.00 0.00 0.00	0.0000	190.00	No Ice 1/2" Ice	3.75 4.13	2.17 2.53	0.01 0.03
(3) 5'x2" Pipe Mount Sch 40	B	From Face	3.00 0.00 0.00	0.0000	190.00	No Ice 1/2" Ice	1.30 1.57	1.30 1.57	0.03 0.05
10' Lightweight T-Frame	B	None		0.0000	190.00	No Ice 1/2" Ice	9.30 14.50	9.30 14.50	0.25 0.34
(3) DB980H120A-M	C	From Face	3.00 0.00 0.00	0.0000	190.00	No Ice 1/2" Ice	3.75 4.13	2.17 2.53	0.01 0.03
(3) 5'x2" Pipe Mount Sch 40	C	From Face	3.00 0.00 0.00	0.0000	190.00	No Ice 1/2" Ice	1.30 1.57	1.30 1.57	0.03 0.05
10' Lightweight T-Frame	C	None		0.0000	190.00	No Ice 1/2" Ice	9.30 14.50	9.30 14.50	0.25 0.34
(3) DB980H120A-M	A	From Face	3.00 0.00 0.00	0.0000	180.00	No Ice 1/2" Ice	3.75 4.13	2.17 2.53	0.01 0.03
(3) 5'x2" Pipe Mount Sch 40	A	From Face	3.00 0.00 0.00	0.0000	180.00	No Ice 1/2" Ice	1.30 1.57	1.30 1.57	0.03 0.05
10' Lightweight T-Frame	A	None		0.0000	180.00	No Ice 1/2" Ice	9.30 14.50	9.30 14.50	0.25 0.34
(3) DB980H120A-M	B	From Face	3.00 0.00 0.00	0.0000	180.00	No Ice 1/2" Ice	3.75 4.13	2.17 2.53	0.01 0.03
(3) 5'x2" Pipe Mount Sch 40	B	From Face	3.00 0.00 0.00	0.0000	180.00	No Ice 1/2" Ice	1.30 1.57	1.30 1.57	0.03 0.05
10' Lightweight T-Frame	B	None		0.0000	180.00	No Ice 1/2" Ice	9.30 14.50	9.30 14.50	0.25 0.34
(3) DB980H120A-M	C	From Face	3.00	0.0000	180.00	No Ice	3.75	2.17	0.01

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	Client	Sprint (Alcatel-Lucent)	Designed by	Ekata Shah, P.E.

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C _A A _A Front ft ²	C _A A _A Side ft ²	Weight K
			0.00			1/2" Ice	4.13	2.53	0.03
(3) 5'x2" Pipe Mount Sch 40	C	From Face	0.00						
			0.00						
			3.00	0.0000	180.00	No Ice	1.30	1.30	0.03
			0.00			1/2" Ice	1.57	1.57	0.05
			0.00						
10' Lightweight T-Frame	C	None		0.0000	180.00	No Ice	9.30	9.30	0.25
						1/2" Ice	14.50	14.50	0.34
(2) DB980F65T2E-M	A	From Face	3.00	0.0000	170.50	No Ice	3.90	2.29	0.01
(Sprint)			0.00			1/2" Ice	4.28	2.65	0.03
			0.00						
(2) 5'x2" Pipe Mount Sch 40	A	From Face	3.00	0.0000	170.50	No Ice	1.30	1.30	0.03
(Sprint)			0.00			1/2" Ice	1.57	1.57	0.05
			0.00						
APXVSPPI8-C-A20	A	From Face	3.00	0.0000	170.50	No Ice	8.26	5.28	0.06
(Sprint)			0.00			1/2" Ice	8.81	5.74	0.11
			0.00						
RRH - 1900 4x45	A	None		0.0000	173.50	No Ice	2.81	2.61	0.06
(Sprint)						1/2" Ice	3.05	2.84	0.08
RRH - 800 2x50	A	None		0.0000	173.50	No Ice	2.40	2.25	0.06
(Sprint)						1/2" Ice	2.61	2.46	0.09
15' T-Frame	A	None		0.0000	170.50	No Ice	15.00	15.00	0.50
(Sprint)						1/2" Ice	20.60	20.60	0.65
(2) DB980F65T2E-M	B	From Face	3.00	0.0000	170.50	No Ice	3.90	2.29	0.01
(Sprint)			0.00			1/2" Ice	4.28	2.65	0.03
			0.00						
(2) 5'x2" Pipe Mount Sch 40	B	From Face	3.00	0.0000	170.50	No Ice	1.30	1.30	0.03
(Sprint)			0.00			1/2" Ice	1.57	1.57	0.05
			0.00						
APXVSPPI8-C-A20	B	From Face	3.00	0.0000	170.50	No Ice	8.26	5.28	0.06
(Sprint)			0.00			1/2" Ice	8.81	5.74	0.11
			0.00						
RRH - 1900 4x45	B	None		0.0000	173.50	No Ice	2.81	2.61	0.06
(Sprint)						1/2" Ice	3.05	2.84	0.08
RRH - 800 2x50	B	None		0.0000	173.50	No Ice	2.40	2.25	0.06
(Sprint)						1/2" Ice	2.61	2.46	0.09
15' T-Frame	B	None		0.0000	170.50	No Ice	15.00	15.00	0.50
(Sprint)						1/2" Ice	20.60	20.60	0.65
(2) DB980F65T2E-M	C	From Face	3.00	0.0000	170.50	No Ice	3.90	2.29	0.01
(Sprint)			0.00			1/2" Ice	4.28	2.65	0.03
			0.00						
(2) 5'x2" Pipe Mount Sch 40	C	From Face	3.00	0.0000	170.50	No Ice	1.30	1.30	0.03
(Sprint)			0.00			1/2" Ice	1.57	1.57	0.05
			0.00						
APXVSPPI8-C-A20	C	From Face	3.00	0.0000	170.50	No Ice	8.26	5.28	0.06
(Sprint)			0.00			1/2" Ice	8.81	5.74	0.11
			0.00						
RRH - 1900 4x45	C	None		0.0000	173.50	No Ice	2.81	2.61	0.06
(Sprint)						1/2" Ice	3.05	2.84	0.08
RRH - 800 2x50	C	None		0.0000	173.50	No Ice	2.40	2.25	0.06
(Sprint)						1/2" Ice	2.61	2.46	0.09
15' T-Frame	C	None		0.0000	170.50	No Ice	15.00	15.00	0.50
(Sprint)						1/2" Ice	20.60	20.60	0.65
(2) LGP 214nn	A	From Face	2.00	0.0000	160.00	No Ice	0.05	0.07	0.01
			0.00			1/2" Ice	0.09	0.11	0.01
			0.00						
(4) 7770	A	From Leg	2.00	0.0000	160.00	No Ice	5.88	2.93	0.04
			0.00			1/2" Ice	6.31	3.27	0.07

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	Client	Sprint (Alcatel-Lucent)	Designed by	Ekata Shah, P.E.

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C _{AA} Front ft ²	C _{AA} Side ft ²	Weight K
(2) 5'x2" Pipe Mount Sch 40	A	From Face	0.00 3.00 0.00 0.00	0.0000	160.00	No Ice 1/2" Ice	1.30 1.57	1.30 1.57	0.03 0.05
(2) 7020 RET Unit	A	None		0.0000	160.00	No Ice 1/2" Ice	0.41 0.51	0.12 0.17	0.01 0.01
15' T-Frame	A	None		0.0000	160.00	No Ice 1/2" Ice	15.00 20.60	15.00 20.60	0.50 0.65
Panel Antenna 72" x 11.8" x 5.9"	A	None		0.0000	160.00	No Ice 1/2" Ice	0.89 1.03	0.45 0.54	0.04 0.05
(2) Ericsson RRH700	A	None		0.0000	160.00	No Ice 1/2" Ice	2.99 3.23	1.25 1.41	0.02 0.04
2" x 72" Pipe Mount	A	None		0.0000	160.00	No Ice 1/2" Ice	1.32 1.58	1.32 1.58	0.04 0.06
(2) LGP 214nn	B	From Face	2.00 0.00 0.00	0.0000	160.00	No Ice 1/2" Ice	0.05 0.09	0.07 0.11	0.01 0.01
(4) 7770	B	From Leg	2.00 0.00 0.00	0.0000	160.00	No Ice 1/2" Ice	5.88 6.31	2.93 3.27	0.04 0.07
(2) 5'x2" Pipe Mount Sch 40	B	From Face	3.00 0.00 0.00	0.0000	160.00	No Ice 1/2" Ice	1.30 1.57	1.30 1.57	0.03 0.05
(2) 7020 RET Unit	B	None		0.0000	160.00	No Ice 1/2" Ice	0.41 0.51	0.12 0.17	0.01 0.01
15' T-Frame	B	None		0.0000	160.00	No Ice 1/2" Ice	15.00 20.60	15.00 20.60	0.50 0.65
Panel Antenna 72" x 11.8" x 5.9"	B	None		0.0000	160.00	No Ice 1/2" Ice	0.89 1.03	0.45 0.54	0.04 0.05
(2) Ericsson RRH700	B	None		0.0000	160.00	No Ice 1/2" Ice	2.99 3.23	1.25 1.41	0.02 0.04
2" x 72" Pipe Mount	B	None		0.0000	160.00	No Ice 1/2" Ice	1.32 1.58	1.32 1.58	0.04 0.06
(2) LGP 214nn	C	From Face	2.00 0.00 0.00	0.0000	160.00	No Ice 1/2" Ice	0.05 0.09	0.07 0.11	0.01 0.01
(4) 7770	C	From Leg	2.00 0.00 0.00	0.0000	160.00	No Ice 1/2" Ice	5.88 6.31	2.93 3.27	0.04 0.07
(2) 5'x2" Pipe Mount Sch 40	C	From Face	3.00 0.00 0.00	0.0000	160.00	No Ice 1/2" Ice	1.30 1.57	1.30 1.57	0.03 0.05
(2) 7020 RET Unit	C	None		0.0000	160.00	No Ice 1/2" Ice	0.41 0.51	0.12 0.17	0.01 0.01
15' T-Frame	C	None		0.0000	160.00	No Ice 1/2" Ice	15.00 20.60	15.00 20.60	0.50 0.65
Panel Antenna 72" x 11.8" x 5.9"	C	None		0.0000	160.00	No Ice 1/2" Ice	0.89 1.03	0.45 0.54	0.04 0.05
(2) Ericsson RRH700	C	None		0.0000	160.00	No Ice 1/2" Ice	2.99 3.23	1.25 1.41	0.02 0.04
2" x 72" Pipe Mount	C	None		0.0000	160.00	No Ice 1/2" Ice	1.32 1.58	1.32 1.58	0.04 0.06
Racap DC6-48-60-18-8F	C	None		0.0000	160.00	No Ice 1/2" Ice	1.32 1.58	1.32 1.58	0.04 0.06
APXV18-206517LS	A	None		0.0000	150.00	No Ice 1/2" Ice	5.05 5.50	3.01 3.44	0.03 0.05
APXV18-206517LS	B	None		0.0000	150.00	No Ice	5.05	3.01	0.03

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	Client	Sprint (Alcatel-Lucent)	Designed by	Ekata Shah, P.E.

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C _{AA} Front ft ²	C _{AA} Side ft ²	Weight K
APXV18-206517LS	C	None		0.0000	150.00	1/2" Ice	5.50	3.44	0.05
						No Ice	5.05	3.01	0.03
(2) DB846F65ZAXY	A	None		0.0000	140.00	1/2" Ice	5.50	3.44	0.05
						No Ice	7.03	6.16	0.02
(4) 2" x 72" Pipe Mount	A	None		0.0000	140.00	1/2" Ice	7.54	6.62	0.07
						No Ice	1.32	1.32	0.04
BXA 185063/12CF	A	None		0.0000	140.00	1/2" Ice	1.58	1.58	0.06
						No Ice	4.80	3.63	0.01
LNx-6514DS-T4M	A	None		0.0000	140.00	1/2" Ice	5.25	4.06	0.04
						No Ice	8.38	5.41	0.04
12' V-Frame	A	None		0.0000	140.00	1/2" Ice	8.93	5.86	0.09
						No Ice	10.20	10.20	0.25
(2) DB846F65ZAXY	B	None		0.0000	140.00	1/2" Ice	16.20	16.20	0.35
						No Ice	7.03	6.16	0.02
(4) 2" x 72" Pipe Mount	B	None		0.0000	140.00	1/2" Ice	7.54	6.62	0.07
						No Ice	1.32	1.32	0.04
BXA 185063/12CF	B	None		0.0000	140.00	1/2" Ice	1.58	1.58	0.06
						No Ice	4.80	3.63	0.01
LNx-6514DS-T4M	B	None		0.0000	140.00	1/2" Ice	5.25	4.06	0.04
						No Ice	8.38	5.41	0.04
12' V-Frame	B	None		0.0000	140.00	1/2" Ice	8.93	5.86	0.09
						No Ice	10.20	10.20	0.25
(2) DB846F65ZAXY	C	None		0.0000	140.00	1/2" Ice	16.20	16.20	0.35
						No Ice	7.03	6.16	0.02
(4) 2" x 72" Pipe Mount	C	None		0.0000	140.00	1/2" Ice	7.54	6.62	0.07
						No Ice	1.32	1.32	0.04
BXA 185063/12CF	C	None		0.0000	140.00	1/2" Ice	1.58	1.58	0.06
						No Ice	4.80	3.63	0.01
LNx-6514DS-T4M	C	None		0.0000	140.00	1/2" Ice	5.25	4.06	0.04
						No Ice	8.38	5.41	0.04
12' V-Frame	C	None		0.0000	140.00	1/2" Ice	8.93	5.86	0.09
						No Ice	10.20	10.20	0.25
Yagi	C	None		0.0000	280.00	1/2" Ice	16.20	16.20	0.35
						No Ice	2.08	2.08	0.03
Yagi	C	None		0.0000	50.00	1/2" Ice	3.79	3.79	0.05
						No Ice	2.08	2.08	0.03
GPS	C	None		0.0000	50.00	1/2" Ice	3.79	3.79	0.05
						No Ice	1.25	1.25	0.01
						1/2" Ice	1.45	1.45	0.01

Truss-Leg Properties

Section Designation	Area in ²	Area Ice in ²	Self Weight K	Ice Weight K	Equiv. Diameter in	Equiv. Diameter Ice in	Leg Area in ²
Pirol 105245	1090.3344	1814.3549	0.64	0.22	7.5718	12.5997	5.3014
Pirol 105218	2263.4687	3690.8612	0.72	0.46	7.8593	12.8155	7.2158
Pirol 105218	2263.4687	3690.8612	0.72	0.46	7.8593	12.8155	7.2158
Pirol 105219	2441.8688	3942.2854	0.90	0.49	8.4787	13.6885	9.4248
Pirol 105220	2578.8005	4132.5504	1.07	0.50	8.9542	14.3491	11.9282

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Section Designation	Area	Area Ice	Self Weight	Ice Weight	Equiv. Diameter	Equiv. Diameter Ice	Leg Area
	in ²	in ²	K	K	in	in	in ²
Pirol 105220	2578.8005	4132.5504	1.07	0.50	8.9542	14.3491	11.9282
Pirol 112743	3466.5160	5074.9521	1.61	0.68	12.0365	17.6214	14.7262
Pirol 112743	3466.5160	5074.9521	1.61	0.68	12.0365	17.6214	14.7262
Pirol 112744	3599.5585	5237.8064	1.81	0.70	12.4985	18.1868	17.8187
Pirol 112744	3599.5585	5237.8064	1.81	0.70	12.4985	18.1868	17.8187
Pirol 112745	3789.3331	5488.6535	2.09	0.72	13.1574	19.0578	21.2058
Pirol 112740	3789.3331	5488.6535	2.09	0.72	13.1574	19.0578	21.2058

Load Combinations

Comb. No.	Description
1	Dead Only
2	Dead+Wind 0 deg - No Ice
3	Dead+Wind 90 deg - No Ice
4	Dead+Wind 180 deg - No Ice
5	Dead+Ice+Temp
6	Dead+Wind 0 deg+Ice+Temp
7	Dead+Wind 90 deg+Ice+Temp
8	Dead+Wind 180 deg+Ice+Temp
9	Dead+Wind 0 deg - Service
10	Dead+Wind 90 deg - Service
11	Dead+Wind 180 deg - Service

Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
T1	280 - 270	Leg	Max Tension	8	4.96	0.00	0.07
			Max. Compression	6	-6.12	0.00	0.04
			Max. Mx	7	-5.64	0.06	0.01
			Max. My	6	-6.12	0.00	-0.07
			Max. Vy	7	1.23	-0.04	-0.00
			Max. Vx	6	-1.31	0.00	0.04
		Diagonal	Max Tension	7	1.28	0.00	0.00
			Max. Compression	7	-1.32	0.00	0.00
			Max. Mx	6	0.02	-0.00	-0.00
			Max. My	7	-0.34	-0.00	0.00
			Max. Vy	6	-0.00	-0.00	-0.00
			Max. Vx	7	0.00	0.00	0.00
		Horizontal	Max Tension	8	0.08	0.00	0.00
			Max. Compression	2	-0.03	0.00	0.00
			Max. Mx	5	0.03	0.01	0.00
			Max. My	7	0.03	0.00	0.00
			Max. Vy	5	-0.01	0.00	0.00
			Max. Vx	7	-0.00	0.00	0.00
		Top Girt	Max Tension	6	0.33	0.00	0.00
			Max. Compression	8	-0.32	0.00	0.00
			Max. Mx	5	0.00	0.01	0.00
			Max. My	7	0.00	0.00	0.00
			Max. Vy	5	-0.01	0.00	0.00
			Max. Vx	7	-0.00	0.00	0.00
		Bottom Girt	Max Tension	8	0.18	0.00	0.00

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Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
T2	270 - 250	Mid Girt	Max. Compression	6	-0.13	0.00	0.00
			Max. Mx	5	0.02	0.01	0.00
			Max. My	7	0.02	0.00	0.00
			Max. Vy	5	-0.01	0.00	0.00
			Max. Vx	7	-0.00	0.00	0.00
			Max Tension	8	0.05	0.00	0.00
			Max. Compression	3	-0.01	0.00	0.00
			Max. Mx	5	0.02	0.01	0.00
			Max. My	7	0.03	0.00	0.00
			Max. Vy	5	-0.01	0.00	0.00
		Leg	Max. Vx	7	-0.00	0.00	0.00
			Max Tension	8	20.83	0.00	0.12
			Max. Compression	6	-23.32	0.00	0.07
			Max. Mx	7	-5.64	-0.14	-0.01
			Max. My	6	-6.12	0.00	0.15
			Max. Vy	7	2.02	-0.06	-0.03
			Max. Vx	6	-2.36	0.00	0.07
		Diagonal	Max Tension	7	1.87	0.00	0.00
			Max. Compression	7	-1.93	0.00	0.00
			Max. Mx	7	0.60	-0.00	0.00
			Max. My	7	-0.84	-0.00	0.00
			Max. Vy	7	-0.00	-0.00	0.00
			Max. Vx	7	0.00	0.00	0.00
		Horizontal	Max Tension	8	0.34	0.00	0.00
			Max. Compression	6	-0.25	0.00	0.00
			Max. Mx	5	0.04	0.01	0.00
			Max. My	7	0.03	0.00	0.00
			Max. Vy	5	-0.01	0.00	0.00
			Max. Vx	7	-0.00	0.00	0.00
		Top Girt	Max Tension	6	0.08	0.00	0.00
			Max. Compression	8	-0.05	0.00	0.00
			Max. Mx	5	0.01	0.01	0.00
			Max. My	7	0.01	0.00	0.00
			Max. Vy	5	-0.01	0.00	0.00
			Max. Vx	7	-0.00	0.00	0.00
		Bottom Girt	Max Tension	8	0.08	0.00	0.00
			Max. Compression	6	-0.02	0.00	0.00
			Max. Mx	5	0.02	0.01	0.00
			Max. My	7	0.03	0.00	0.00
			Max. Vy	5	-0.01	0.00	0.00
			Max. Vx	7	-0.00	0.00	0.00
		Mid Girt	Max Tension	8	0.22	0.00	0.00
			Max. Compression	6	-0.14	0.00	0.00
			Max. Mx	5	0.03	0.01	0.00
			Max. My	7	0.03	0.00	0.00
			Max. Vy	5	-0.01	0.00	0.00
			Max. Vx	7	-0.00	0.00	0.00
T3	250 - 230	Leg	Max Tension	8	60.91	0.00	0.02
			Max. Compression	6	-67.78	0.00	0.52
			Max. Mx	7	-59.52	-0.45	-0.13
			Max. My	6	-67.78	0.00	0.52
			Max. Vy	7	3.25	-0.33	-0.07
			Max. Vx	6	-3.58	0.00	0.37
		Diagonal	Max Tension	7	4.76	0.00	0.00
			Max. Compression	7	-4.85	0.00	0.00
			Max. Mx	7	2.25	-0.01	0.00
			Max. My	7	-2.38	-0.00	0.00
			Max. Vy	8	-0.01	-0.01	-0.00
			Max. Vx	7	-0.00	0.00	0.00
		Horizontal	Max Tension	8	0.74	0.00	0.00
			Max. Compression	6	-0.57	0.00	0.00

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	Client	Sprint (Alcatel-Lucent)	Designed by	Ekata Shah, P.E.

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
T4	230 - 220	Top Girt	Max. Mx	5	0.08	0.01	0.00
			Max. My	7	0.06	0.00	0.00
			Max. Vy	5	-0.01	0.00	0.00
			Max. Vx	7	-0.00	0.00	0.00
			Max Tension	2	0.34	0.00	0.00
			Max. Compression	4	-0.29	0.00	0.00
		Bottom Girt	Max. Mx	5	0.03	0.02	0.00
			Max. My	7	0.03	0.00	0.00
			Max. Vy	5	0.01	0.00	0.00
			Max. Vx	7	-0.00	0.00	0.00
			Max Tension	8	0.97	0.00	0.00
			Max. Compression	6	-0.84	0.00	0.00
		Leg	Max. Mx	5	0.06	0.02	0.00
			Max. My	7	0.03	0.00	0.00
			Max. Vy	5	0.01	0.00	0.00
			Max. Vx	7	-0.00	0.00	0.00
			Max Tension	8	68.27	-0.49	0.00
			Max. Compression	6	-75.25	4.66	0.00
		Diagonal	Max. Mx	8	67.89	-4.96	0.00
			Max. My	7	-3.72	-0.16	6.38
			Max. Vy	8	0.78	-4.96	0.00
			Max. Vx	7	-0.94	-0.16	6.38
			Max Tension	8	4.46	0.00	0.00
			Max. Compression	6	-5.03	0.00	0.00
T5	220 - 200	Leg	Max. Mx	8	4.45	0.06	0.00
			Max. My	7	-4.63	-0.03	-0.02
			Max. Vy	8	0.02	0.06	0.00
			Max. Vx	7	0.00	0.00	0.00
			Max Tension	8	95.24	-3.86	0.00
			Max. Compression	6	-106.12	5.03	0.00
		Diagonal	Max. Mx	6	-106.12	5.03	0.00
			Max. My	7	-4.65	-0.16	6.38
			Max. Vy	2	-0.48	4.81	0.00
			Max. Vx	7	0.65	-0.11	5.49
			Max Tension	7	5.47	0.00	0.00
			Max. Compression	7	-5.58	0.00	0.00
		Leg	Max. Mx	6	3.49	0.08	0.01
			Max. My	7	3.37	0.06	-0.01
			Max. Vy	6	-0.03	0.08	0.01
			Max. Vx	7	0.00	0.00	0.00
			Max Tension	8	123.61	-3.76	0.00
			Max. Compression	6	-140.04	6.11	0.00
T6	200 - 180	Leg	Max. Mx	2	-132.67	6.13	0.00
			Max. My	3	-5.41	0.01	5.25
			Max. Vy	4	-1.38	-4.63	0.00
			Max. Vx	3	1.18	-0.07	4.63
			Max Tension	4	8.01	0.00	0.00
			Max. Compression	2	-8.80	0.00	0.00
		Diagonal	Max. Mx	8	7.67	0.08	0.00
			Max. My	7	-6.80	-0.02	-0.01
			Max. Vy	8	0.03	0.08	0.00
			Max. Vx	7	0.00	0.00	0.00
			Max Tension	8	3.33	0.00	0.00
			Max. Compression	6	-2.63	0.00	0.00
		Top Girt	Max. Mx	5	0.34	-0.05	0.00
			Max. My	7	-2.25	0.00	0.00
			Max. Vy	5	0.03	0.00	0.00
			Max. Vx	7	-0.00	0.00	0.00
			Max Tension	8	4.19	0.00	0.00
			Max. Compression	6	-3.15	0.00	0.00
		Mid Girt	Max. Mx	5	0.50	-0.07	0.00

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	Client	Sprint (Alcatel-Lucent)	Designed by Ekata Shah, P.E.

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
T7	180 - 160	Leg	Max. My	7	-2.68	0.00	0.00
			Max. Vy	5	0.03	0.00	0.00
			Max. Vx	7	-0.00	0.00	0.00
			Max Tension	4	162.96	-4.64	0.00
			Max. Compression	6	-187.22	6.50	0.00
			Max. Mx	6	-187.22	6.50	0.00
		Diagonal	Max. My	3	-7.20	-0.11	5.69
			Max. Vy	4	-1.70	-6.02	0.00
			Max. Vx	3	-1.80	-0.11	5.69
			Max Tension	4	11.76	0.00	0.00
			Max. Compression	2	-12.87	0.00	0.00
			Max. Mx	8	10.89	0.11	0.01
		Top Girt	Max. My	7	-9.85	-0.01	-0.01
			Max. Vy	8	0.04	0.11	0.01
			Max. Vx	7	0.00	0.00	0.00
			Max Tension	8	5.46	0.00	0.00
			Max. Compression	2	-4.12	0.00	0.00
			Max. Mx	5	0.66	-0.13	0.00
		Mid Girt	Max. My	5	0.67	0.00	0.00
			Max. Vy	5	0.05	0.00	0.00
			Max. Vx	5	-0.00	0.00	0.00
			Max Tension	8	5.96	0.00	0.00
			Max. Compression	2	-4.48	0.00	0.00
			Max. Mx	5	0.79	-0.15	0.00
T8	160 - 140	Leg	Max. My	5	0.80	0.00	0.00
			Max. Vy	5	0.06	0.00	0.00
			Max. Vx	5	-0.00	0.00	0.00
			Max Tension	4	219.42	-5.10	0.00
			Max. Compression	6	-249.60	5.90	0.00
			Max. Mx	6	-216.41	6.50	0.00
		Diagonal	Max. My	3	-10.19	-0.19	8.06
			Max. Vy	4	-2.40	-6.13	0.00
			Max. Vx	3	1.78	0.13	3.47
			Max Tension	3	14.65	0.00	0.00
			Max. Compression	3	-14.74	0.00	0.00
			Max. Mx	6	11.82	0.16	-0.01
		Top Girt	Max. My	7	-13.08	-0.01	-0.03
			Max. Vy	8	0.05	0.15	-0.01
			Max. Vx	7	0.00	0.00	0.00
			Max Tension	8	4.71	0.00	0.00
			Max. Compression	2	-3.59	0.00	0.00
			Max. Mx	5	0.62	-0.18	0.00
T9	140 - 120	Leg	Max. My	5	0.62	0.00	0.01
			Max. Vy	5	0.06	0.00	0.00
			Max. Vx	5	0.00	0.00	0.00
			Max Tension	4	281.11	-5.75	0.00
			Max. Compression	6	-314.44	13.50	0.00
			Max. Mx	2	-312.73	14.71	0.00
		Diagonal	Max. My	3	-13.93	0.08	13.40
			Max. Vy	4	-2.28	-6.11	0.00
			Max. Vx	3	2.51	-0.05	5.79
			Max Tension	3	16.82	0.00	0.00
			Max. Compression	3	-17.25	0.00	0.00
			Max. Mx	8	12.25	0.18	-0.01
		Leg	Max. My	7	-15.11	0.01	-0.04
			Max. Vy	8	0.06	0.18	-0.01
			Max. Vx	7	0.01	0.00	0.00
			Max Tension	4	322.92	-14.34	0.00
			Max. Compression	2	-357.81	17.08	0.00
			Max. Mx	4	321.54	-18.33	0.00
T10	120 - 100	Leg	Max. My	3	-16.05	-0.81	26.03

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1800 Route 34, Suite 209

Wall, NJ
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CT

Date

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Client

Sprint (Alcatel-Lucent)

Designed by

Ekata Shah, P.E.

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
T11	100 - 80	Diagonal	Max. Vy	4	1.98	-18.33	0.00
			Max. Vx	3	-2.38	-0.81	26.03
			Max Tension	3	23.59	0.00	0.00
			Max. Compression	3	-24.85	0.00	0.00
			Max. Mx	8	20.25	-0.49	0.03
			Max. My	7	-23.02	-0.07	0.13
		Leg	Max. Vy	8	-0.12	-0.49	0.03
			Max. Vx	7	-0.01	0.00	0.00
			Max Tension	4	386.23	-18.33	0.00
			Max. Compression	2	-428.55	21.28	0.00
			Max. Mx	8	359.38	-21.67	0.00
			Max. My	3	-17.61	-0.81	26.03
T12	80 - 60	Diagonal	Max. Vy	2	-1.85	21.28	0.00
			Max. Vx	3	2.26	-0.81	26.03
			Max Tension	3	25.46	0.00	0.00
			Max. Compression	3	-26.44	0.00	0.00
			Max. Mx	8	20.62	-0.52	0.06
			Max. My	7	12.39	-0.48	0.07
		Leg	Max. Vy	8	-0.13	-0.52	0.06
			Max. Vx	7	-0.01	0.00	0.00
			Max Tension	4	445.97	-20.05	0.00
			Max. Compression	2	-495.68	17.48	0.00
			Max. Mx	6	-486.57	22.23	0.00
			Max. My	3	-22.24	-0.99	24.08
T13	60 - 40	Diagonal	Max. Vy	8	-1.97	-21.67	0.00
			Max. Vx	3	-2.07	-0.99	24.08
			Max Tension	3	25.61	0.00	0.00
			Max. Compression	3	-26.52	0.00	0.00
			Max. Mx	8	19.46	-0.55	0.06
			Max. My	8	-21.48	-0.31	-0.07
		Leg	Max. Vy	8	-0.14	-0.55	0.06
			Max. Vx	7	-0.01	0.00	0.00
			Max Tension	4	502.65	-18.84	0.00
			Max. Compression	2	-559.39	22.17	0.00
			Max. Mx	8	461.17	-29.57	0.00
			Max. My	3	-23.25	-0.99	24.08
T14	40 - 20	Diagonal	Max. Vy	8	2.26	-29.57	0.00
			Max. Vx	3	2.10	-0.99	24.08
			Max Tension	3	26.59	0.00	0.00
			Max. Compression	3	-27.89	0.00	0.00
			Max. Mx	8	23.66	-0.57	0.06
			Max. My	7	15.90	-0.54	0.06
		Leg	Max. Vy	8	-0.15	-0.57	0.06
			Max. Vx	7	0.01	0.00	0.00
			Max Tension	4	561.51	-20.45	0.00
			Max. Compression	2	-627.14	17.64	0.00
			Max. Mx	6	-608.69	30.27	0.00
			Max. My	3	-29.12	-1.41	35.07
T15	20 - 0	Diagonal	Max. Vy	8	-2.48	-29.57	0.00
			Max. Vx	3	-2.50	-1.41	35.07
			Max Tension	3	26.31	0.00	0.00
			Max. Compression	7	-27.87	0.00	0.00
			Max. Mx	8	16.36	-0.67	0.10
			Max. My	8	-25.07	-0.34	0.13
		Leg	Max. Vy	8	-0.16	-0.67	0.10
			Max. Vx	8	0.01	0.00	0.00
			Max Tension	4	610.44	-19.77	0.00
			Max. Compression	2	-682.85	0.00	0.00
			Max. Mx	6	-666.38	30.27	0.00
			Max. My	3	-29.66	-1.41	35.07

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	Client	Sprint (Alcatel-Lucent)	Designed by	Ekata Shah, P.E.

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
		Diagonal	Max. Vx	3	2.61	-1.41	35.07
			Max Tension	7	29.50	0.00	0.00
			Max. Compression	3	-29.68	0.00	0.00
			Max. Mx	7	28.86	-0.61	-0.06
			Max. My	4	-7.10	-0.42	-0.10
			Max. Vy	7	-0.17	-0.61	-0.06
			Max. Vx	7	-0.01	0.00	0.00

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Leg C	Max. Vert	8	369.72	27.01	-20.34
	Max. H _x	4	368.51	32.77	-24.38
	Max. H _z	7	-502.29	-56.74	29.88
	Min. Vert	3	-551.82	-56.55	29.34
	Min. H _x	7	-502.29	-56.74	29.88
	Min. H _z	4	368.51	32.77	-24.38
Leg B	Max. Vert	3	617.17	-60.85	-31.94
	Max. H _x	6	-271.51	30.97	22.84
	Max. H _z	6	-271.51	30.97	22.84
	Min. Vert	2	-309.64	28.89	22.42
	Min. H _x	3	617.17	-60.85	-31.94
	Min. H _z	3	617.17	-60.85	-31.94
Leg A	Max. Vert	2	717.25	0.00	80.07
	Max. H _x	11	-199.79	0.00	-23.52
	Max. H _z	2	717.25	0.00	80.07
	Min. Vert	4	-639.05	0.00	-73.51
	Min. H _x	3	32.62	-5.52	2.60
	Min. H _z	4	-639.05	0.00	-73.51

Tower Mast Reaction Summary

Load Combination	Vertical K	Shear _x K	Shear _z K	Overturning Moment, M _x kip-ft	Overturning Moment, M _z kip-ft	Torque kip-ft
Dead Only	97.98	0.00	0.00	0.72	0.00	0.00
Dead+Wind 0 deg - No Ice	97.98	0.00	-124.91	-16600.52	0.00	0.00
Dead+Wind 90 deg - No Ice	97.98	122.92	0.00	0.84	-16365.82	1.79
Dead+Wind 180 deg - No Ice	97.98	0.00	122.26	16288.01	0.00	0.00
Dead+Ice+Temp	153.55	0.00	-0.00	0.96	0.00	0.00
Dead+Wind 0 deg+Ice+Temp	153.55	0.00	-115.84	-15649.80	0.00	0.00
Dead+Wind 90 deg+Ice+Temp	153.55	114.54	0.00	0.99	-15497.99	2.10
Dead+Wind 180 deg+Ice+Temp	153.55	0.00	114.10	15448.05	0.00	0.00
Dead+Wind 0 deg - Service	97.98	0.00	-43.22	-5743.79	0.00	0.00
Dead+Wind 90 deg - Service	97.98	42.53	0.00	0.74	-5663.08	0.64
Dead+Wind 180 deg - Service	97.98	0.00	42.30	5636.65	0.00	0.00

Solution Summary

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Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX K	PY K	PZ K	PX K	PY K	PZ K	
1	0.00	-97.98	0.00	0.00	97.98	-0.00	0.000%
2	0.00	-97.98	-124.91	0.00	97.98	124.91	0.003%
3	122.93	-97.98	-0.00	-122.92	97.98	-0.00	0.003%
4	0.00	-97.98	122.27	0.00	97.98	-122.26	0.004%
5	0.00	-153.55	0.00	0.00	153.55	0.00	0.000%
6	0.00	-153.55	-115.85	0.00	153.55	115.84	0.002%
7	114.54	-153.55	-0.00	-114.54	153.55	-0.00	0.002%
8	0.00	-153.55	114.11	0.00	153.55	-114.10	0.002%
9	0.00	-97.98	-43.22	0.00	97.98	43.22	0.002%
10	42.54	-97.98	0.00	-42.53	97.98	-0.00	0.002%
11	0.00	-97.98	42.31	0.00	97.98	-42.30	0.002%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	6	0.00000001	0.00000001
2	Yes	13	0.00006764	0.00011187
3	Yes	13	0.00007833	0.00012941
4	Yes	13	0.00008755	0.00014454
5	Yes	6	0.00000001	0.00000001
6	Yes	14	0.00005534	0.00009541
7	Yes	14	0.00006083	0.00010474
8	Yes	14	0.00006580	0.00011317
9	Yes	13	0.00007417	0.00012062
10	Yes	13	0.00007773	0.00012647
11	Yes	13	0.00008108	0.00013193

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	280 - 270	13.411	9	0.4436	0.0307
T2	270 - 250	12.478	9	0.4417	0.0266
T3	250 - 230	10.641	9	0.4248	0.0185
T4	230 - 220	8.894	9	0.3875	0.0120
T5	220 - 200	8.093	9	0.3614	0.0074
T6	200 - 180	6.638	9	0.3219	0.0036
T7	180 - 160	5.340	9	0.2806	0.0018
T8	160 - 140	4.205	9	0.2454	0.0011
T9	140 - 120	3.202	9	0.2135	0.0008
T10	120 - 100	2.329	9	0.1776	0.0005
T11	100 - 80	1.614	9	0.1457	0.0003
T12	80 - 60	1.045	9	0.1119	0.0002
T13	60 - 40	0.603	9	0.0825	0.0002
T14	40 - 20	0.287	9	0.0523	0.0001
T15	20 - 0	0.082	9	0.0261	0.0000

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Critical Deflections and Radius of Curvature - Service Wind

Elevation	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
ft						
280.00	Beacon	9	13.411	0.4436	0.0307	217080
250.00	(4) RR90-17-02DP	9	10.641	0.4248	0.0185	65345
245.00	DB420-A	9	10.192	0.4176	0.0169	43373
235.00	DB225-2-F	9	9.315	0.3992	0.0139	24281
200.00	(3) DB980H120A-M	9	6.638	0.3219	0.0036	33348
190.00	(3) DB980H120A-M	9	5.970	0.3014	0.0026	30296
180.00	(3) DB980H120A-M	9	5.340	0.2806	0.0018	27594
173.50	RRH - 1900 4x45	9	4.955	0.2682	0.0015	29975
170.50	(2) DB980F65T2E-M	9	4.782	0.2629	0.0014	31586
160.00	(2) LGP 214nn	9	4.205	0.2454	0.0011	38208
150.00	APXV18-206517LS	9	3.688	0.2298	0.0009	38953
140.00	(2) DB846F65ZAXY	9	3.202	0.2135	0.0008	38419
50.00	Yagi	9	0.430	0.0673	0.0001	42023

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	280 - 270	38.761	2	1.3006	0.1040
T2	270 - 250	36.060	2	1.2936	0.0901
T3	250 - 230	30.746	2	1.2370	0.0624
T4	230 - 220	25.692	2	1.1202	0.0404
T5	220 - 200	23.378	2	1.0445	0.0250
T6	200 - 180	19.175	2	0.9301	0.0121
T7	180 - 160	15.425	2	0.8107	0.0061
T8	160 - 140	12.145	2	0.7089	0.0038
T9	140 - 120	9.248	2	0.6165	0.0025
T10	120 - 100	6.728	2	0.5128	0.0016
T11	100 - 80	4.661	2	0.4209	0.0011
T12	80 - 60	3.017	2	0.3231	0.0008
T13	60 - 40	1.742	2	0.2384	0.0005
T14	40 - 20	0.828	2	0.1511	0.0003
T15	20 - 0	0.238	2	0.0754	0.0001

Critical Deflections and Radius of Curvature - Design Wind

Elevation	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
ft						
280.00	Beacon	2	38.761	1.3006	0.1040	73784
250.00	(4) RR90-17-02DP	2	30.746	1.2370	0.0624	19057
245.00	DB420-A	2	29.446	1.2135	0.0571	13142
235.00	DB225-2-F	2	26.911	1.1541	0.0468	7657
200.00	(3) DB980H120A-M	2	19.175	0.9301	0.0121	10828
190.00	(3) DB980H120A-M	2	17.243	0.8709	0.0088	9989
180.00	(3) DB980H120A-M	2	15.425	0.8107	0.0061	9238
173.50	RRH - 1900 4x45	2	14.310	0.7749	0.0050	10080

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Elevation	Appurtenance	Gov. Load Comb.	Deflection	Tilt	Twist	Radius of Curvature
ft			in	°	°	ft
170.50	(2) DB980F65T2E-M	2	13.813	0.7594	0.0046	10644
160.00	(2) LGP 214nn	2	12.145	0.7089	0.0038	12991
150.00	APXV18-206517LS	2	10.652	0.6637	0.0032	13342
140.00	(2) DB846F65ZAXY	2	9.248	0.6165	0.0025	13273
50.00	Yagi	2	1.244	0.1944	0.0004	14537

Bolt Design Data

Section No.	Elevation ft	Component Type	Bolt Grade	Bolt Size in	Number Of Bolts	Maximum Load per Bolt K	Allowable Load K	Ratio Load Allowable	Allowable Ratio	Criteria
T1	280	Leg	A325N	0.7500	8	0.07	19.44	0.003 ✓	1.333	Bolt Tension
		Diagonal	A325N	1.0000	1	1.32	16.49	0.080 ✓	1.333	Bolt Shear
		Horizontal	A325N	0.7500	1	0.08	9.28	0.008 ✓	1.333	Bolt Shear
		Top Girt	A325N	0.6250	1	0.33	6.44	0.050 ✓	1.333	Bolt Shear
		Bottom Girt	A325N	0.6250	1	0.18	6.44	0.027 ✓	1.333	Bolt Shear
		Mid Girt	A325N	0.6250	1	0.05	6.44	0.008 ✓	1.333	Bolt Shear
T2	270	Leg	A325N	0.7500	8	0.62	19.44	0.032 ✓	1.333	Bolt Tension
		Diagonal	A325N	1.0000	1	1.93	16.49	0.117 ✓	1.333	Bolt Shear
		Horizontal	A325N	0.7500	1	0.34	9.28	0.037 ✓	1.333	Bolt Shear
		Top Girt	A325N	0.6250	1	0.08	6.44	0.012 ✓	1.333	Bolt Shear
		Bottom Girt	A325N	0.6250	1	0.08	6.44	0.012 ✓	1.333	Bolt Shear
		Mid Girt	A325N	0.6250	1	0.22	6.44	0.033 ✓	1.333	Bolt Shear
T3	250	Leg	A325N	0.7500	8	2.60	19.42	0.134 ✓	1.333	Bolt Tension
		Diagonal	A325N	1.0000	1	4.85	16.49	0.294 ✓	1.333	Bolt Shear
		Horizontal	A325N	0.7500	1	0.74	9.28	0.080 ✓	1.333	Bolt Shear
		Top Girt	A325N	0.6250	1	0.34	6.44	0.052 ✓	1.333	Bolt Shear
		Bottom Girt	A325N	0.6250	1	0.97	6.44	0.150 ✓	1.333	Bolt Shear
T4	230	Leg	A325N	0.7500	8	8.53	19.44	0.439 ✓	1.333	Bolt Tension
		Diagonal	A325N	1.0000	1	4.46	9.52	0.469 ✓	1.333	Member Bearing
T5	220	Leg	A325N	0.7500	12	6.93	19.44	0.356 ✓	1.333	Bolt Tension
		Diagonal	A325N	1.0000	1	5.47	9.52	0.574 ✓	1.333	Member Bearing
T6	200	Leg	A325N	0.7500	12	8.99	19.44	0.463 ✓	1.333	Bolt Tension
		Diagonal	A325N	1.0000	2	4.40	13.05	0.337 ✓	1.333	Member Bearing
		Top Girt	A325N	0.6250	1	3.33	6.12	0.544 ✓	1.333	Member Bearing
T7	180	Leg	A325N	0.7500	12	11.79	19.44	0.607 ✓	1.333	Bolt Tension
		Diagonal	A325N	1.0000	2	6.43	16.49	0.390 ✓	1.333	Bolt Shear
		Top Girt	A325N	0.6250	1	5.46	6.44	0.848 ✓	1.333	Bolt Shear
		Mid Girt	A325N	0.6250	1	5.96	6.44	0.926 ✓	1.333	Bolt Shear
T8	160	Leg	A325N	0.7500	12	15.91	19.43	0.819 ✓	1.333	Bolt Tension
		Diagonal	A325N	1.0000	2	7.37	16.49	0.447 ✓	1.333	Bolt Shear

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Section No.	Elevation ft	Component Type	Bolt Grade	Bolt Size in	Number Of Bolts	Maximum Load per Bolt K	Allowable Load K	Ratio Load Allowable	Allowable Ratio	Criteria
T9	140	Top Girt	A325N	0.6250	1	4.71	6.44	0.732 ✓	1.333	Bolt Shear
		Leg	A325N	0.7500	16	15.57	19.44	0.801 ✓	1.333	Bolt Tension
		Diagonal	A325N	1.0000	2	8.62	16.49	0.523 ✓	1.333	Bolt Shear
T10	120	Leg	A325N	1.0000	16	20.18	34.56	0.584 ✓	1.333	Bolt Tension
		Diagonal	A325N	1.0000	2	12.43	32.99	0.377 ✓	1.333	Bolt Shear
T11	100	Leg	A325N	1.0000	16	24.14	34.56	0.699 ✓	1.333	Bolt Tension
		Diagonal	A325N	1.0000	2	13.22	32.99	0.401 ✓	1.333	Bolt Shear
		Leg	A325N	1.0000	16	27.87	34.56	0.807 ✓	1.333	Bolt Tension
T12	80	Diagonal	A325N	1.0000	2	13.26	32.99	0.402 ✓	1.333	Bolt Shear
		Leg	A325N	1.0000	16	31.42	34.56	0.909 ✓	1.333	Bolt Tension
T13	60	Diagonal	A325N	1.0000	2	13.94	32.99	0.423 ✓	1.333	Bolt Shear
		Leg	A325N	1.0000	16	35.09	34.56	1.016 ✓	1.333	Bolt Tension
T14	40	Diagonal	A325N	1.0000	2	13.94	32.99	0.422 ✓	1.333	Bolt Shear
		Leg	A325N	1.0000	16	38.15	34.56	1.104 ✓	1.333	Bolt Tension
T15	20	Diagonal	A325N	1.0000	2	14.84	32.99	0.450 ✓	1.333	Bolt Shear

Compression Checks

Leg Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	F _a ksi	A in ²	Actual P K	Allow. P _a K	Ratio P P _a
T1	280 - 270	1 3/4	10.00	2.48	68.0 K=1.00	21.305	2.4053	-6.12	51.25	0.119 ✓
T2	270 - 250	2	20.00	2.48	59.5 K=1.00	22.803	3.1416	-23.32	71.64	0.326 ✓
T3	250 - 230	2 1/2	20.00	2.49	47.8 K=1.00	24.690	4.9087	-67.78	121.20	0.559 ✓
T4	230 - 220	Pirol 105245	10.02	10.02	37.8 K=1.00	26.132	5.3014	-75.25	138.54	0.543 ✓
T5	220 - 200	Pirol 105218	20.03	10.02	32.4 K=1.00	26.848	7.2158	-106.12	193.73	0.548 ✓
T6	200 - 180	Pirol 105218	20.03	10.02	32.4 K=1.00	26.848	7.2158	-140.04	193.73	0.723 ✓
T7	180 - 160	Pirol 105219	20.03	10.02	28.4 K=1.00	27.351	9.4248	-187.22	257.78	0.726 ✓
T8	160 - 140	Pirol 105220	20.03	10.02	25.2 K=1.00	27.723	11.9282	-249.60	330.69	0.755 ✓
T9	140 - 120	Pirol 105220	20.03	10.02	25.2 K=1.00	27.723	11.9282	-314.44	330.69	0.951 ✓
T10	120 - 100	Pirol 112743	20.03	20.03	32.6	26.826	14.7262	-357.81	395.05	0.906 ✓

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Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	F _a ksi	A in ²	Actual P K	Allow. P _a K	Ratio P P _a
T11	100 - 80	Pirod 112743	20.03	20.03	K=1.00 32.6	26.826	14.7262	-428.55	395.05	1.085 ✓
T12	80 - 60	Pirod 112744	20.03	20.03	K=1.00 32.6	26.829	17.8187	-495.68	478.06	1.037 ✓
T13	60 - 40	Pirod 112744	20.03	20.03	K=1.00 32.6	26.829	17.8187	-559.39	478.06	1.170 ✓
T14	40 - 20	Pirod 112745	20.03	20.03	K=1.00 32.5	26.833	21.2057	-627.14	569.01	1.102 ✓
T15	20 - 0	Pirod 112740	20.03	20.03	K=1.00 32.5	26.833	21.2057	-682.85	569.01	1.200 ✓

Truss-Leg Diagonal Data

Section No.	Elevation ft	Diagonal Size	L _d ft	Kl/r	F _a ksi	A in ²	Actual V K	Allow. V _a K	Stress Ratio
T4	230 - 220	0.5	1.47	120.0	10.366	0.1963	0.94	2.28	0.412 ✓
T5	220 - 200	0.5	1.46	119.0	10.423	0.1963	0.65	2.29	0.286 ✓
T6	200 - 180	0.5	1.46	119.0	10.423	0.1963	1.38	2.29	0.602 ✓
T7	180 - 160	0.625	1.45	94.4	13.671	0.3068	1.80	4.69	0.383 ✓
T8	160 - 140	0.625	1.43	93.6	13.766	0.3068	2.40	4.73	0.507 ✓
T9	140 - 120	0.625	1.43	93.6	13.766	0.3068	2.51	4.73	0.531 ✓
T10	120 - 100	0.75	1.73	93.9	16.080	0.4418	2.38	9.78	0.243 ✓
T11	100 - 80	0.75	1.73	93.9	16.080	0.4418	2.26	9.78	0.231 ✓
T12	80 - 60	0.75	1.71	93.1	16.267	0.4418	2.07	9.90	0.209 ✓
T13	60 - 40	0.75	1.71	93.1	16.267	0.4418	2.27	9.90	0.230 ✓
T14	40 - 20	0.875	1.70	79.1	19.198	0.6013	2.71	15.90	0.170 ✓
T15	20 - 0	0.875	1.70	79.1	19.198	0.6013	2.61	15.90	0.164 ✓

Diagonal Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	F _a ksi	A in ²	Actual P K	Allow. P _a K	Ratio P P _a
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Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	F _a ksi	A in ²	Actual P K	Allow. P _a K	Ratio $\frac{P}{P_a}$
T1	280 - 270	7/8	5.58	2.71	133.8 K=0.90	8.348	0.6013	-1.32	5.02	0.262
T2	270 - 250	7/8	5.58	2.70	133.2 K=0.90	8.420	0.6013	-1.93	5.06	0.382
T3	250 - 230	1	5.59	2.68	115.6 K=0.90	11.171	0.7854	-4.85	8.77	0.553
T4	230 - 220	L2 1/2x2 1/2x3/16	11.42	5.00	121.3 K=1.00	10.097	0.9020	-5.03	9.11	0.552
T5	220 - 200	L3x3x3/16	12.50	5.65	115.3 K=1.01	10.840	1.0900	-5.58	11.82	0.472
T6	200 - 180	L3x3x3/16	13.80	6.22	124.1 K=0.99	9.662	1.0900	-8.80	10.53	0.835
T7	180 - 160	L3x3x5/16	15.24	6.98	136.9 K=0.96	7.965	1.7800	-12.87	14.18	0.908
T8	160 - 140	L3 1/2x3 1/2x5/16	16.80	7.78	131.7 K=0.97	8.613	2.0900	-14.74	18.00	0.819
T9	140 - 120	L3 1/2x3 1/2x5/16	18.45	8.61	142.8 K=0.95	7.328	2.0900	-16.47	15.31	1.076
T10	120 - 100	2L3 1/2x3 1/2x5/16	26.26	12.43	133.8 K=0.97	8.337	4.1800	-24.85	34.85	0.713
T11	100 - 80	2L3 1/2x3 1/2x5/16	27.59	13.12	139.7 K=0.96	7.653	4.1800	-26.44	31.99	0.827
T12	80 - 60	2L3 1/2x3 1/2x5/16	29.01	13.85	145.8 K=0.95	7.022	4.1800	-26.52	29.35	0.903
T13	60 - 40	2L3 1/2x3 1/2x5/16	30.49	14.60	152.2 K=0.94	6.446	4.1800	-27.89	26.94	1.035
T14	40 - 20	2L3 1/2x3 1/2x5/16	32.02	15.38	158.8 K=0.93	5.922	4.1800	-27.87	24.75	1.126
T15	20 - 0	2L3 1/2x3 1/2x5/16	33.61	16.49	154.3 K=0.84	6.275	4.1800	-29.68	26.23	1.132

Horizontal Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	F _a ksi	A in ²	Actual P K	Allow. P _a K	Ratio $\frac{P}{P_a}$
T1	280 - 270	7/8	5.00	4.85	186.4 K=0.70	4.298	0.6013	-0.03	2.58	0.012
T2	270 - 250	7/8	5.00	4.83	185.6 K=0.70	4.335	0.6013	-0.25	2.61	0.097
T3	250 - 230	7/8	5.00	4.79	184.0 K=0.70	4.411	0.6013	-0.57	2.65	0.214

Top Girt Design Data (Compression)

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Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	F _a ksi	A in ²	Actual P K	Allow. P _a K	Ratio P P _a
T1	280 - 270	1	5.00	4.85	163.1 K=0.70	5.614	0.7854	-0.32	4.41	0.072
T2	270 - 250	1	5.00	4.83	162.4 K=0.70	5.662	0.7854	-0.05	4.45	0.012
T3	250 - 230	1 1/4	5.00	4.79	128.8 K=0.70	9.002	1.2272	-0.29	11.05	0.026
T6	200 - 180	L3x3x3/16	8.00	6.73	135.5 K=1.00	8.135	1.0900	-2.63	8.87	0.297
T7	180 - 160	L4x4x1/4	10.00	8.73	131.8 K=1.00	8.602	1.9400	-4.12	16.69	0.247
T8	160 - 140	L3 1/2x3 1/2x5/16	12.00	10.73	186.6 K=1.00	4.289	2.0900	-3.59	8.96	0.400

Bottom Girt Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	F _a ksi	A in ²	Actual P K	Allow. P _a K	Ratio P P _a
T1	280 - 270	1	5.00	4.85	163.1 K=0.70	5.614	0.7854	-0.13	4.41	0.030
T2	270 - 250	1	5.00	4.83	162.4 K=0.70	5.662	0.7854	-0.02	4.45	0.006
T3	250 - 230	1 1/4	5.00	4.79	128.8 K=0.70	9.002	1.2272	-0.84	11.05	0.076

Mid Girt Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	F _a ksi	A in ²	Actual P K	Allow. P _a K	Ratio P P _a
T1	280 - 270	1	5.00	4.85	163.1 K=0.70	5.614	0.7854	-0.01	4.41	0.002
T2	270 - 250	1	5.00	4.83	162.4 K=0.70	5.662	0.7854	-0.14	4.45	0.033
T6	200 - 180	L3x3x3/16	9.00	8.00	145.3 K=0.90	7.077	1.0900	-3.15	7.71	0.408
T7	180 - 160	L4x4x1/4	11.00	9.73	146.9 K=1.00	6.924	1.9400	-4.48	13.43	0.334

Tension Checks

Leg Design Data (Tension)

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Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	F _a ksi	A in ²	Actual P K	Allow. P _a K	Ratio P P _a
T1	280 - 270	1 3/4	10.00	2.48	68.0	30.000	2.4053	4.96	72.16	0.069
T2	270 - 250	2	20.00	2.48	59.5	30.000	3.1416	20.83	94.25	0.221
T3	250 - 230	2 1/2	20.00	2.49	47.8	30.000	4.9087	60.91	147.26	0.414
T4	230 - 220	Pirod 105245	10.02	10.02	37.8	30.000	5.3014	68.27	159.04	0.429
T5	220 - 200	Pirod 105218	20.03	10.02	32.4	30.000	7.2158	95.24	216.47	0.440
T6	200 - 180	Pirod 105218	20.03	10.02	32.4	30.000	7.2158	123.10	216.47	0.569
T7	180 - 160	Pirod 105219	20.03	10.02	28.4	30.000	9.4248	162.96	282.74	0.576
T8	160 - 140	Pirod 105220	20.03	10.02	25.2	30.000	11.9282	219.40	357.85	0.613
T9	140 - 120	Pirod 105220	20.03	10.02	25.2	30.000	11.9282	281.11	357.85	0.786
T10	120 - 100	Pirod 112743	20.03	20.03	32.6	30.000	14.7262	322.92	441.79	0.731
T11	100 - 80	Pirod 112743	20.03	20.03	32.6	30.000	14.7262	386.24	441.79	0.874
T12	80 - 60	Pirod 112744	20.03	20.03	32.6	30.000	17.8187	445.97	534.56	0.834
T13	60 - 40	Pirod 112744	20.03	20.03	32.6	30.000	17.8187	502.65	534.56	0.940
T14	40 - 20	Pirod 112745	20.03	20.03	32.5	30.000	21.2057	561.51	636.17	0.883
T15	20 - 0	Pirod 112740	20.03	20.03	32.5	30.000	21.2057	610.44	636.17	0.960

Truss-Leg Diagonal Data

Section No.	Elevation ft	Diagonal Size	L _d ft	Kl/r	F _a ksi	A in ²	Actual V K	Allow. V _a K	Stress Ratio
T4	230 - 220	0.5	1.47	120.0	10.366	0.1963	0.94	2.28	0.412
T5	220 - 200	0.5	1.46	119.0	10.423	0.1963	0.65	2.29	0.286
T6	200 - 180	0.5	1.46	119.0	10.423	0.1963	1.38	2.29	0.602
T7	180 - 160	0.625	1.45	94.4	13.671	0.3068	1.80	4.69	0.383
T8	160 - 140	0.625	1.43	93.6	13.766	0.3068	2.40	4.73	0.507
T9	140 - 120	0.625	1.43	93.6	13.766	0.3068	2.51	4.73	0.531
T10	120 - 100	0.75	1.73	93.9	16.080	0.4418	2.38	9.78	0.243

tnxTower KMB Design Group 1800 Route 34, Suite 209 Wall, NJ Phone: 732-280-5623 FAX: 732-280-3980	Job	332.1519 - CT33XC610 (S. Bethany)	Page	30 of 33
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	Client	Sprint (Alcatel-Lucent)	Designed by	Ekata Shah, P.E.

Section No.	Elevation ft	Diagonal Size	L_d ft	Kl/r	F_a ksi	A in ²	Actual V_K	Allow. $V_a K$	Stress Ratio
T11	100 - 80	0.75	1.73	93.9	16.080	0.4418	2.26	9.78	0.231
T12	80 - 60	0.75	1.71	93.1	16.267	0.4418	2.07	9.90	0.209
T13	60 - 40	0.75	1.71	93.1	16.267	0.4418	2.27	9.90	0.230
T14	40 - 20	0.875	1.70	79.1	19.198	0.6013	2.71	15.90	0.170
T15	20 - 0	0.875	1.70	79.1	19.198	0.6013	2.61	15.90	0.164

Diagonal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in ²	Actual P_K	Allow. $P_a K$	Ratio $\frac{P}{P_a}$
T1	280 - 270	7/8	5.58	2.71	148.6	30.000	0.6013	1.28	18.04	0.071
T2	270 - 250	7/8	5.58	2.70	148.0	30.000	0.6013	1.87	18.04	0.104
T3	250 - 230	1	5.59	2.68	128.5	30.000	0.7854	4.76	23.56	0.202
T4	230 - 220	L2 1/2x2 1/2x3/16	11.42	5.00	80.1	29.000	0.5183	4.46	15.03	0.297
T5	220 - 200	L3x3x3/16	11.93	5.40	71.5	29.000	0.6593	5.47	19.12	0.286
T6	200 - 180	L3x3x3/16	13.80	6.22	83.5	29.000	0.6593	8.01	19.12	0.419
T7	180 - 160	L3x3x5/16	15.24	6.98	94.9	29.000	1.0713	11.76	31.07	0.378
T8	160 - 140	L3 1/2x3 1/2x5/16	16.80	7.78	89.9	29.000	1.3038	14.65	37.81	0.387
T9	140 - 120	L3 1/2x3 1/2x5/16	17.62	8.20	94.6	29.000	1.3038	16.82	37.81	0.445
T10	120 - 100	2L3 1/2x3 1/2x5/16	26.26	12.43	141.6	29.000	2.6077	23.59	75.62	0.312
T11	100 - 80	2L3 1/2x3 1/2x5/16	27.59	13.12	149.3	29.000	2.6077	25.46	75.62	0.337
T12	80 - 60	2L3 1/2x3 1/2x5/16	29.01	13.85	157.3	29.000	2.6077	25.61	75.62	0.339
T13	60 - 40	2L3 1/2x3 1/2x5/16	30.49	14.60	165.7	29.000	2.6077	26.59	75.62	0.352
T14	40 - 20	2L3 1/2x3 1/2x5/16	32.02	15.38	174.3	29.000	2.6077	26.31	75.62	0.348
T15	20 - 0	2L3 1/2x3 1/2x5/16	33.61	16.49	183.2	29.000	2.6077	29.50	75.62	0.390

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Horizontal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	F _a ksi	A in ²	Actual P K	Allow. P _a K	Ratio $\frac{P}{P_a}$
T1	280 - 270	7/8	5.00	4.85	266.3	30.000	0.6013	0.08	18.04	0.004
T2	270 - 250	7/8	5.00	4.83	265.1	30.000	0.6013	0.34	18.04	0.019
T3	250 - 230	7/8	5.00	4.79	262.9	30.000	0.6013	0.74	18.04	0.041

Top Girt Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	F _a ksi	A in ²	Actual P K	Allow. P _a K	Ratio $\frac{P}{P_a}$
T1	280 - 270	1	5.00	4.85	233.0	21.600	0.7854	0.33	16.96	0.019
T2	270 - 250	1	5.00	4.83	232.0	21.600	0.7854	0.08	16.96	0.005
T3	250 - 230	1 1/4	5.00	4.79	184.0	21.600	1.2272	0.34	26.51	0.013
T6	200 - 180	L3x3x3/16	8.00	6.73	89.5	29.000	0.7120	3.33	20.65	0.161
T7	180 - 160	L4x4x1/4	10.00	8.73	86.4	29.000	1.3144	5.46	38.12	0.143
T8	160 - 140	L3 1/2x3 1/2x5/16	12.00	10.73	122.2	29.000	1.3917	4.71	40.36	0.117

Bottom Girt Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	F _a ksi	A in ²	Actual P K	Allow. P _a K	Ratio $\frac{P}{P_a}$
T1	280 - 270	1	5.00	4.85	233.0	21.600	0.7854	0.18	16.96	0.010
T2	270 - 250	1	5.00	4.83	232.0	21.600	0.7854	0.08	16.96	0.004
T3	250 - 230	1 1/4	5.00	4.79	184.0	21.600	1.2272	0.97	26.51	0.036

Mid Girt Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	F _a ksi	A in ²	Actual P K	Allow. P _a K	Ratio $\frac{P}{P_a}$
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tnxTower KMB Design Group 1800 Route 34, Suite 209 Wall, NJ Phone: 732-280-5623 FAX: 732-280-3980	Job	332.1519 - CT33XC610 (S. Bethany)	Page	32 of 33
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	Client	Sprint (Alcatel-Lucent)	Designed by	Ekata Shah, P.E.

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	F _a ksi	A in ²	Actual P K	Allow. P _a K	Ratio P P _a
T1	280 - 270	1	5.00	4.85	233.0	21.600	0.7854	0.05	16.96	0.003
T2	270 - 250	1	5.00	4.83	232.0	21.600	0.7854	0.22	16.96	0.013
T6	200 - 180	L3x3x3/16	9.00	8.00	102.2	21.600	1.0900	4.19	23.54	0.178
T7	180 - 160	L4x4x1/4	11.00	9.73	96.0	29.000	1.3144	5.96	38.12	0.156

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	SF*P _{allow} K	% Capacity	Pass Fail
T1	280 - 270	Leg	1 3/4	3	-6.12	68.31	9.0	Pass
		Diagonal	7/8	14	-1.32	6.69	19.7	Pass
		Horizontal	7/8	34	-0.03	3.45	0.9	Pass
		Top Girt	1	4	-0.32	5.88	5.4	Pass
		Bottom Girt	1	7	-0.13	5.88	2.3	Pass
		Mid Girt	1	10	0.05	22.61	0.2	Pass
T2	270 - 250	Leg	2	45	-23.32	95.49	0.6 (b)	Pass
		Diagonal	7/8	56	-1.93	6.75	24.4	Pass
		Horizontal	7/8	61	-0.25	3.47	28.6	Pass
		Top Girt	1	46	-0.05	5.93	7.3	Pass
		Bottom Girt	1	49	-0.02	5.93	0.9 (b)	Pass
		Mid Girt	1	52	-0.14	5.93	0.4	Pass
T3	250 - 230	Leg	2 1/2	123	-67.78	161.55	2.4	Pass
		Diagonal	1	140	-4.85	11.70	42.0	Pass
		Horizontal	7/8	136	-0.57	3.54	41.5	Pass
		Top Girt	1 1/4	124	-0.29	14.73	16.0	Pass
		Bottom Girt	1 1/4	127	-0.84	14.73	2.0	Pass
							3.9 (b)	Pass
T4	230 - 220	Leg	Pirol 105245	201	-75.25	184.67	5.7	Pass
		Diagonal	L2 1/2x2 1/2x3/16	205	-5.03	12.14	11.3 (b)	Pass
T5	220 - 200	Leg	Pirol 105218	210	-106.12	258.24	40.7	Pass
		Diagonal	L3x3x3/16	212	-5.58	15.75	41.4	Pass
T6	200 - 180	Leg	Pirol 105218	225	-140.04	258.24	35.4	Pass
		Diagonal	L3x3x3/16	235	-8.80	14.04	43.1 (b)	Pass
		Top Girt	L3x3x3/16	226	-2.63	11.82	54.2	Pass
		Mid Girt	L3x3x3/16	229	-3.15	10.28	62.7	Pass
T7	180 - 160	Leg	Pirol 105219	246	-187.22	343.62	22.3	Pass
		Diagonal	L3x3x5/16	257	-12.87	18.90	30.6	Pass
		Top Girt	L4x4x1/4	247	-4.12	22.24	54.5	Pass
		Mid Girt	L4x4x1/4	250	-4.48	17.91	68.1	Pass
T8	160 - 140	Leg	Pirol 105220	267	-249.60	440.81	18.5	Pass
		Diagonal	L3 1/2x3 1/2x5/16	272	-14.74	24.00	63.6 (b)	Pass

tnxTower KMB Design Group 1800 Route 34, Suite 209 Wall, NJ Phone: 732-280-5623 FAX: 732-280-3980	Job	332.1519 - CT33XC610 (S. Bethany)	Page	33 of 33
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	Client	Sprint (Alcatel-Lucent)	Designed by	Ekata Shah, P.E.

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	SF*P _{allow} K	% Capacity	Pass Fail
		Top Girt	L3 1/2x3 1/2x5/16	268	-3.59	11.95	30.0	Pass
							54.9 (b)	
T9	140 - 120	Leg	Pirol 105220	285	-314.44	440.81	71.3	Pass
		Diagonal	L3 1/2x3 1/2x5/16	287	-16.47	20.41	80.7	Pass
T10	120 - 100	Leg	Pirol 112743	300	-357.81	526.59	67.9	Pass
		Diagonal	2L3 1/2x3 1/2x5/16	302	-24.85	46.45	53.5	Pass
T11	100 - 80	Leg	Pirol 112743	309	-428.55	526.59	81.4	Pass
		Diagonal	2L3 1/2x3 1/2x5/16	311	-26.44	42.64	62.0	Pass
T12	80 - 60	Leg	Pirol 112744	318	-495.68	637.26	77.8	Pass
		Diagonal	2L3 1/2x3 1/2x5/16	320	-26.52	39.13	67.8	Pass
T13	60 - 40	Leg	Pirol 112744	327	-559.39	637.26	87.8	Pass
		Diagonal	2L3 1/2x3 1/2x5/16	329	-27.89	35.92	77.6	Pass
T14	40 - 20	Leg	Pirol 112745	336	-627.14	758.48	82.7	Pass
		Diagonal	2L3 1/2x3 1/2x5/16	338	-27.87	33.00	84.5	Pass
T15	20 - 0	Leg	Pirol 112740	345	-682.85	758.48	90.0	Pass
		Diagonal	2L3 1/2x3 1/2x5/16	347	-29.68	34.96	84.9	Pass
							Summary	
							Leg (T15)	90.0 Pass
							Diagonal (T15)	84.9 Pass
							Horizontal (T3)	16.0 Pass
							Top Girt (T7)	63.6 Pass
							Bottom Girt (T3)	11.3 Pass
							Mid Girt (T7)	69.5 Pass
							Bolt Checks	82.8 Pass
							RATING =	90.0 Pass



Structural Analysis Report

332.1519
2/28/2013

Appendix B

Referenced Tower Design

Tower Reanalysis Report

Proposal 185135-1-1

June 5, 2012

U-28 x 280' Tower
Seymour, CT

PiRod Engineering File A-116966

Prepared for
Transcend Wireless
Attn: Chris Bisson
18 Industrial Ave
Mahwah NJ 07430

Authorization Provided by
EMAC Communications LLC
Edward MacConnie
2702 Forest View Lane
Kissimmee FL 34744

This document does not constitute a construction document. All modifications and/or installations of structural members and/or appurtenances shall be completed under the direction of a person qualified to conduct and/or direct the installation procedures in accordance with state, local and national rules.

<http://vo/sites/plymouth/Reanalysis/Report/116/116966 185135-1-1.docx>

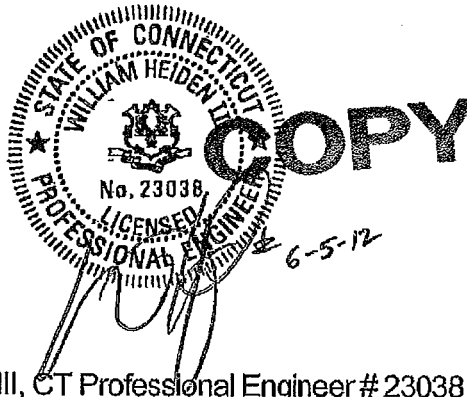
Tower Reanalysis Report Proposal 185135-1-1

Model: U-28 x 280' Tower
Site: Seymour, CT
PiRod Engineering File A-116966

Tower Contact Person:

Carol Fehrer
Product Specialist
e-mail: carol.fehrer@valmont.com
telephone extension: 5220

Completed under the Supervision and Approval by
William R. Heiden III, P.E.
Engineering Group Leader
e-mail: William.Heiden@valmont.com
telephone extension: 5243



William R. Heiden III, CT Professional Engineer # 23038

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1.0 EXECUTIVE SUMMARY

This reanalysis was performed by PiRod to determine if the structure is capable of accommodating loading that is different than previous design specifications. This engineering report gives details how the loading changes affect the tower, specifies feasible modifications, and proposes modification materials. **PiRod's engineering study concludes that the tower complies without modifications.** See section 6.0 for details.

2.0 ASSUMPTIONS

This engineering study is based on the theoretical capacity of the structure. It is not a condition assessment of the tower. This report is being provided by PiRod without the benefit of an inspection by PiRod personnel and is based on information supplied by the customer to PiRod. PiRod has made no independent determination, nor is required to, of the accuracy of the information provided. Therefore, unless specifically informed to the contrary by the customer in writing, PiRod assumes the following:

1. The subsoil characteristics exist as stated on the tower drawing or stated elsewhere in this report;
2. The tower is erected and maintained in accordance with the manufacturer's plans and specifications and is plumb;
3. There is no damage, natural or manmade, to the structure, either gradual or sudden;
4. All connections and guy cables are properly installed;
5. The information concerning the components, existing and proposed, is accurate; and
6. There are no modifications to the tower itself, except as may be disclosed elsewhere in this report.

PiRod recommends that qualified personnel assess the physical condition of the tower, preferably under the direction of a licensed professional engineer. Following is a list of the general areas that PiRod recommends to be inspected.

<u>Tower Structure</u>	<u>Guyed Towers</u>	<u>Foundations</u>	<u>Appurtenances</u>
Tower Sections	Guy Cables	Cracking	Antennas
Bolted Connections	Turnbuckles	Drainage	Mounts
Welded Connections	Preforms	Spalling	Transmission Lines
Plumbness	Guy Lugs	Anchor Bolts	Line Brackets
Corrosion	Thimbles	Settling	Cable Hangers
Linearity	Torque Arms	Grounding	Lighting
Galvanization	Ice Clips	Grout	
Paint	Guy Tensions	Subsoil	
	Anchor Rods	Characteristics	
	Shackles	Erosion	
	Insulators		

3.0 TOWER HISTORY

Date of Origination: 4/2000
PiRod Model: U-28 x 280' Tower
Sold to: EMAC Communications

ORIGINAL DESIGN CRITERIA				
Code/Standard	Wind Loading	Radial Ice	Wind Load Reduction Used	Allowable Stress Increase Used
TIA/EIA-222-F	90 mph fastest mile	no	none	yes
TIA/EIA-222-F	90 mph fastest mile	½" solid	25%	yes

For the structural analysis, the tower and foundation are assumed to exist as shown on the enclosed tower drawing, which is PiRod's latest revision.

4.0 CURRENT WIND LOAD REQUIREMENT

The TIA/EIA Standard is currently at version F for New Haven County. We have taken the opportunity to reanalyze this structure using the following wind speed and ice load conditions:

Code/Standard	Wind Loading	Radial Ice	Wind Load Reduction Used ⁽¹⁾	Allowable Stress Increase Used ⁽²⁾
TIA/EIA-222-F	85 mph fastest mile	no	none	yes
TIA/EIA-222-F	85 mph fastest mile	0.5"	25%	yes

(1) The wind load reduction is permitted by the TIA/EIA-222-F Standard section 2.3.16 and most other codes to account for the minimal chance that the maximum wind speed will occur simultaneously with the ice load.

(2) The allowable stress increase is permitted by the TIA/EIA-222-F Standard and most other codes in accordance with the AISC-ASD Manual of Steel Construction.

Note: Some localities stipulate wind load requirements that are different from that required by the TIA/EIA Standard. Please check with your local building department and verify the required wind load.

5.0 ANTENNA LOADING

The tower analysis uses the following antenna loading, which was provided on 5/29.

HEIGHT (FT)	ANTENNAS		ASSUMED CAAC (SQ.FT.)	MOUNTS		LINES		
	#	MODEL		#	MODEL	#	SIZE	BRACKET
Existing Loading								
Top	1 1	Beacon Lightning Rod Ext				1	1"	
280	1 1	DB420 DB586-XC		1	9-arm Halo	2	1-5/8"	Expandable T
250	12	RR90-17-02DP		3 12	15' T-frame 2" x 84" Antenna Pipe	12	1-5/8"	"
245	1	DB420				1	1-5/8"	"
235	1	DB225-2-F		1	9-arm Halo	1	1-5/8"	"
200	9	DB980H120A-M		3 9	10' Lt T-frames 2" x 60" Antenna Pipe	9	1-5/8"	"
190	9	DB980H120A-M		3 9	10' Lt T-frames 2" x 60" Antenna Pipe	9	1-5/8"	"
180	9	DB980H120A-M		3 9	10' Lt T-frames 2" x 60" Antenna Pipe	9	1-5/8"	"
170	6	DB980F65T2E		3 9	15' T-frame 2" x " Antenna Pipe	6	1-5/8"	"
160	6 4 6	7770.00 LGP 21401 TMA 7020.00 RET Unit		3 6	15' T-frame 2" x " Antenna Pipe	6	1-5/8"	"
150	3	APXV18-206517S0C- ACU				3	1-5/8"	"
140	3 6 3	LNK-6514DS-T4M DB846F65ZAXY BXA-185063/12CF	Verizon	3 9	12' V-frames 2" x 72" Pipe mounts	12	1-5/8"	SE leg Ext. Double T
Proposed Additional Loading								
160	3 6 1	KMW AM-X-CD-16-65- 00T-RET Ericsson RUS11 Racap DC6-48-60-18-8F		3	Existing T-frames 2"x72" Pipe mounts	1 2	Fiber DC	

These antennas, mounts, and lines represent our understanding of the antenna loading required. Please contact us if any discrepancies are evident. If different antennas, mounts, or lines are installed on this structure, this analysis is invalid. If the lines are mounted on PiRod Double-T, Extended Double-T or Expandable Double-T, they are assumed to be mounted inside the tower and the transmission lines are mounted in a back to back configuration. If any of these brackets cannot be placed inside concerning physical fit, alternatively they can be installed outside the tower, but all the brackets need to be swung back as close as possible to one of the tower faces, to minimize the torque.

* An asterisk indicates that we were not provided with a value for the effective projected area (C_{AAc}), and that the area has been assumed based on any information that was made available. The actual effective projected area for each antenna must be confirmed to be equal to the assumed area listed above. If it is determined that the area is different than that stated for any of the above items, this analysis is invalid.

PiRod, Inc.

A-116966

Seymour

U-28 x 280'

6.0 RESULTS

With the antennas listed in section 5.0, the following modifications are required for the tower to comply with the indicated code and TIA/EIA Standard listed in section 4.0.

6.1 Tower Results - The tower complies without modifications.

- Tower capacity 67.8%

6.2 Foundation Results – The foundation complies without modifications.

The foundation analysis is based on the soil report by AET, Inc., dated 3/31/2000, file #42GT2K.

7.0 LIST OF APPENDICES

Tower elevation drawing

8.0 DISCLAIMER

1. The information and conclusions contained in this Report were determined by the application of the then current "state of the art" engineering and analysis procedures and formulae, and Valmont Structures⁽¹⁾ assumes no obligation to revise any of the information or conclusions contained in this Report in the event such engineering and analysis procedures and formulae are hereafter modified or revised.
2. In no event shall Valmont Structures be liable for any incidental, consequential, indirect, special or punitive damages (including without limitation lost profits) arising out of any claim associated with the use of this report (whether for breach of contract, tort, negligence or other form of action), irrespective of whether Valmont Structures has been advised of the possibility of any such loss or damage. In no event shall Valmont Structures' total, cumulative liability to the customer exceed the amount paid by customer for the preparation of this report.
3. Valmont Structures shall have no liability whatsoever to Customer or to others for any work or services performed by any persons other than Valmont Structures personnel, including but not limited to, any services rendered by riggers, erectors or other subcontractors. Customer acknowledges and agrees that any riggers, erectors or subcontractors retained or employed by Customer shall be solely responsible to Customer for the quality of work performed by them.
4. Valmont Structures makes no warranties, expressed or implied, in connection with this Report as to any other matter whatsoever, and in particular, any and all warranties of merchantability or fitness for a particular purpose are hereby expressly disclaimed. Valmont Structures further expressly disclaims any liability arising from material, fabrication, and erection deficiencies. This Report is being provided by Valmont Structures without the benefit of an inspection by Valmont Structures personnel and is based solely on information supplied by the Customer to Valmont Structures. Valmont Structures has made no independent determination, nor is it required to do so, of the accuracy of the information provided by Customer. Therefore, unless specifically informed to the contrary by the Customer in writing, the following assumptions apply to the Report:
 - A. The subsoil characteristics exist as stated on the tower drawing or stated elsewhere in this report;
 - B. The tower is erected and maintained in accordance with the manufacturer's plans and specifications and is plumb;
 - C. There is no damage, natural or manmade, to the structure, either gradual or sudden;
 - D. All connections are properly installed;
 - E. The information concerning the components, existing and proposed, is accurate; and
 - F. There are no modifications to the tower itself, except as may be disclosed elsewhere in this report. Examples include but are not limited to replacement or strengthening of bracing members, reinforcing vertical members in any manner, adding additional bracing, or extending tower.
6. All representations and recommendations and conclusions are based upon the information contained and set forth herein. If Customer is aware of any information which is contrary to that which is contained herein, or if Customer is aware of any defects arising from the original design, material, fabrication, and erection deficiencies Customer must disregard this Report and immediately contact Valmont Structures.

⁽¹⁾ Valmont Structures is the Structures Division of Valmont Industries, Inc., and performs engineering services under the engineering corporation name PiRod, Inc.

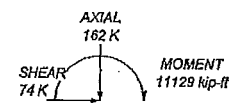
TYPE	ELEVATION	TYPE	ELEVATION
Beacon	280	15' Universal T-Frame	170
15' URE (Ann=5.31) BU5011	280	15' Universal T-Frame	170
DB420A	280	15' Universal T-Frame	170
DB890X3	280	(2) 2700.00	180
2' x 84" Sch. 40	280	(2) 2700.00	180
2' x 84" Sch. 40	280	(2) 2700.00	180
3-Ann Halo Mount	280	(2) 2700.00	180
(4) RB90-17X0DP	250	(4) Powerwave LGP214nn	180
(4) RB90-17X0DP	250	(4) Powerwave LGP214nn	180
(4) RB90-17X0DP	250	(4) Powerwave LGP214nn	180
(4) 2' x 84" Sch. 40	250	(2) Powerwave 7020.00 DualBand RET	180
(4) 2' x 84" Sch. 40	250	(2) Powerwave 7020.00 DualBand RET	180
(4) 2' x 84" Sch. 40	250	(2) Powerwave 7020.00 DualBand RET	180
15' Universal T-Frame	250	(2) 2' x 60" Sch. 40	180
15' Universal T-Frame	250	(2) 2' x 60" Sch. 40	180
15' Universal T-Frame	250	(2) 2' x 60" Sch. 40	180
DB420A	248	15' Universal T-Frame	180
DB235-74	238	15' Universal T-Frame	180
2' x 84" Sch. 40	238	15' Universal T-Frame	180
3-Ann Halo Mount	238	Panel Antenna (72"x11.8"x5.9") (Proposed)	180
(3) DB990H120E-M_EKL	200	Panel Antenna (72"x11.8"x5.9") (Proposed)	180
(3) DB990H120E-M_EKL	200	Panel Antenna (72"x11.8"x5.9") (Proposed)	180
(3) DB990H120E-M_EKL	200	2' x 72" Sch. 40 (Proposed)	180
(3) DB990H120E-M_EKL	200	2' x 72" Sch. 40 (Proposed)	180
(3) 2' x 60" Sch. 40	200	2' x 72" Sch. 40 (Proposed)	180
(3) 2' x 60" Sch. 40	200	(2) Ericsson RRH700 (17.6"x17.3"x7.2") (Proposed)	180
(3) 2' x 60" Sch. 40	200	(2) Ericsson RRH700 (17.6"x17.3"x7.2") (Proposed)	180
10' Lightweight T-Frame	200	(2) Ericsson RRH700 (17.6"x17.3"x7.2") (Proposed)	180
10' Lightweight T-Frame	200	(2) Ericsson RRH700 (17.6"x17.3"x7.2") (Proposed)	180
10' Lightweight T-Frame	200	(2) Ericsson RRH700 (17.6"x17.3"x7.2") (Proposed)	180
(3) DB890H120E-M_EKL	190	Raycap DC6-48-60-18-8F (Proposed)	180
(3) DB890H120E-M_EKL	190	APXV18-206S17S-C	180
(3) 2' x 60" Sch. 40	190	APXV18-206S17S-C	180
(3) 2' x 60" Sch. 40	190	APXV18-206S17S-C	180
(3) 2' x 60" Sch. 40	190	BXA-1850R3/12CF	140
10' Lightweight T-Frame	190	BXA-1850R3/12CF	140
10' Lightweight T-Frame	190	(3) 2' x 72" Sch. 40	140
10' Lightweight T-Frame	190	(3) 2' x 72" Sch. 40	140
(3) DB990H120E-M_EKL	180	(3) 2' x 72" Sch. 40	140
(3) DB990H120E-M_EKL	180	12' V Frame	140
(3) DB990H120E-M_EKL	180	12' V Frame	140
(3) 2' x 60" Sch. 40	180	12' V Frame	140
(3) 2' x 60" Sch. 40	180	(2) DB84F85ZAXY (Verizon)	140
(3) 2' x 60" Sch. 40	180	(2) DB84F85ZAXY	140
10' Lightweight T-Frame	180	BXA-1850G3/12CF	140
10' Lightweight T-Frame	180	LNX-8514DS-VTM (Verizon)	140
10' Lightweight T-Frame	180	LNX-8514DS-VTM (Verizon)	140
(2) DB890F65	170	LNX-8514DS-VTM (Verizon)	140
(2) DB890F65	170	2' x 72" Sch. 40 (Verizon)	140
(2) DB890F65	170	2' x 72" Sch. 40 (Verizon)	140
2' x 60" Sch. 40	170	2' x 72" Sch. 40 (Verizon)	140
2' x 60" Sch. 40	170	(2) DB84F85ZAXY (Verizon)	140
2' x 60" Sch. 40	170		

MARK	SIZE	MARK	SIZE
A	#12G - 1.50" - 1.00" conn. (P/rod 105245-RAD)	D	#18 - 3.00" (P/rod 112740) BASE ONLY
B	#12 - 2.00" - 1.25" conn. (P/rod 105218)	E	L2 1/2x2 1/2x3/16
C	#18 - 3.00" (P/rod 112745)		

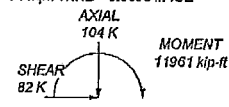
GRADE	Fy	Fu	GRADE	Fy	Fu
A572-50	50 ksi	65 ksi	A36	36 ksi	58 ksi

1. Tower is located in New Haven County, Connecticut.
2. Tower designed for a 85 mph basic wind in accordance with the TIA/EIA-222-F Standard.
3. Tower is also designed for a 74 mph basic wind with 0.50 in ice.
4. Deflections are based upon a 50 mph wind.
5. TOWER RATING: 67.8%

DOWN: 528 K
UPLIFT: -450 K
SHEAR: 55 K



TORQUE 2 kip-ft
74 mph WIND - 0.5000 in ICE



TORQUE 2 kip-ft
REACTIONS - 85 mph WIND

 Valmont Structures 1545 Pldco Drive Plymouth, IN 46563 Phone: (574) 938-4221 FAX: (574) 938-6458 Valmont Industries - Specialty Structures Group	Valmont Structures 1545 Pldco Drive Plymouth, IN 46563 Phone: (574) 938-4221 FAX: (574) 938-6458		Job: A-116966 (Reanalysis 185135-1-1) Project: U-28.0 x 28.0 - Seymour, CT Client: Transcend Wireless Office: TIA/EIA-222-F Date: 05/31/12 Path:		Drawn by: CRF1 Scale: NTS Dwg No. E-

EM-SPRINT-124-121015A



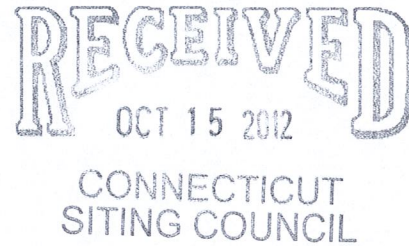
Together with Nextel

48 Spruce Street
Oakland, NJ 07436
Phone: (845) 499-4712
Jennifer Palumbo

September 19, 2012

Hand Delivered

Ms. Linda Roberts
Executive Director
Connecticut Siting Council
10 Franklin Square
New Britain, CT 06051



RE: Sprint Spectrum L.P. notice of intent to modify an existing telecommunications facility located at 2 Progress Avenue, Seymour, CT 06483. Known to Sprint Spectrum L.P. as site CT33XC610.

Dear Ms. Roberts:

In order to accommodate technological changes, implement Code Division Multiple Access ("CDMA") and/or Long Term Evolution ("LTE") capabilities, and enhance system performance in the state of Connecticut, Sprint Spectrum L.P. plans to modify the equipment configurations at many of its existing cell sites. Please accept this letter and attachments as notification, 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 and its attachments is being sent to the chief elected official of the municipality in which affected cell site is located.

CDMA employs Spread-Spectrum technology and special coding scheme to allow multiple users to be multiplexed over the same physical channel. LTE is a new high-performance air interface for cellular mobile communications. It is designed to increase the capacity and speed of mobile telephone networks.

As part of the project the new multi-mode 800/1900 antenna will replace existing antennas. These antennas will provide more flexibility for optimization by allowing fast and easy electrical tilt adjustment from remote location and will enable the transmission of multiple technologies from a single antenna. As Sprint Nextel's network evolves to meet the demands of its customers, it is essential for Sprint Nextel to install modern equipment and antennas in order to provide reliable wireless voice and data services. The

proposed equipment will include multi-mode radios that will allow Sprint Nextel to transmit at different frequencies using different technologies, including LTE technology. Likewise, the proposed antennas are quad-pole multi-band high gain antennas that will allow Sprint to operate using its multiple frequency bands and technologies, including LTE technology. The proposed equipment and antennas will improve the reliability, coverage and capacity of Sprint Nextel's voice and data networks across Sprint Nextel's various FCC licensed frequency bands and significantly increase the data speeds of Sprint Nextel's network by utilizing the latest LTE technology. Without the proposed modifications Sprint Nextel will be unable to provide reliable wireless voice and data service using the latest technologies.

Sprint Spectrum L.P. will have an interim (testing) period during the modification/installation prior to the final configuration. This antenna configuration is shown on the attached drawings of the planned modifications. Also included is the power density calculation reflecting the change in Sprint's operations at the site and documentation of the structural sufficiency of the tower to accommodate the revised antenna configuration.

The changes to the facility do not constitute modification as defined 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 the R.C.S.A. Section 16-50j-72(b)(2).

1. The height of the overall structure will not be affected.
2. The proposed changes will not extend the site boundaries. There will be no effect on the site compound.
3. The proposed changes will not increase the noise level at the existing facility by 6 decibels or more.
4. Radio Frequency power density may increase due to the use of one or more CDMA transmissions. Moreover, LTE will utilize additional radio frequencies newly licensed by the FCC for cellular mobile communications. However, the changes will not increase the calculated "worst case" power density for the combined operations at the site to a level at or above the applicable standard for uncontrolled environments as calculated for a mixed frequency site.

For the foregoing reasons Sprint Spectrum L.P. respectfully submits that the proposed changes at the referenced site constitute exempt modifications under R.C.S.A. Section 16-50j-72(b)(2).

Please feel free to call me at (845)-499-4712 or email JPalumbo@Transcendwireless.com with questions concerning this matter.
Thank you for your consideration.

Sincerely,

Jennifer Palumbo
Real Estate Consultant



EBI Consulting

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RADIO FREQUENCY EMISSIONS ANALYSIS REPORT EVALUATION OF HUMAN EXPOSURE POTENTIAL TO NON-IONIZING EMISSIONS

Sprint Existing Facility

Site ID: CT33XC610

S. Betahany / EMAC Communications
2 Progress Avenue
Seymour, CT 06483

September 06, 2012



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September 6, 2012

Sprint

Attn: RF Engineering Manager

1 International Boulevard, Suite 800

Mahwah, NJ 07495

Re: Emissions Values for Site **CT33XC610 - S. Betahany / EMAC Communications**

EBI Consulting was directed to analyze the proposed upgrades to the existing Sprint facility located at 2 Progress Avenue, Seymour, CT, for the purpose of determining whether the emissions from the proposed Sprint equipment upgrades on this property are within specified federal limits.

All information used in this report was analyzed as a percentage of current Maximum Permissible Exposure (% MPE) as listed in the FCC OET Bulletin 65 Edition 97-01 and ANSI/IEEE Std C95.1. The FCC regulates Maximum Permissible Exposure in units of microwatts per square centimeter ($\mu\text{W}/\text{cm}^2$). The number of $\mu\text{W}/\text{cm}^2$ calculated at each sample point is called the power density. The exposure limit for power density varies depending upon the frequencies being utilized. Wireless Carriers and Paging Services use different frequency bands each with different exposure limits, therefore it is necessary to report results and limits in terms of percent MPE rather than power density.

All results were compared to the FCC (Federal Communications Commission) radio frequency exposure rules, 47 CFR 1.1307(b)(1) – (b)(3), to determine compliance with the Maximum Permissible Exposure (MPE) limits for General Population/Uncontrolled environments as defined below.

General population/uncontrolled exposure limits apply to situations in which the general public may be exposed or in which persons who are exposed as a consequence of their employment may not be made fully aware of the potential for exposure or cannot exercise control over their exposure. Therefore, members of the general public would always be considered under this category when exposure is not employment related, for example, in the case of a telecommunications tower that exposes persons in a nearby residential area.

Public exposure to radio frequencies is regulated and enforced in units of microwatts per square centimeter ($\mu\text{W}/\text{cm}^2$). The general population exposure limit for the cellular band is approximately 567 $\mu\text{W}/\text{cm}^2$, and the general population exposure limit for the PCS band is 1000 $\mu\text{W}/\text{cm}^2$. Because each carrier will be using different frequency bands, and each frequency band has different exposure limits, it is necessary to report percent of MPE rather than power density.



Occupational/controlled exposure limits apply to situations in which persons are exposed as a consequence of their employment and in which those persons who are exposed have been made fully aware of the potential for exposure and can exercise control over their exposure. Occupational/controlled exposure limits also apply where exposure is of a transient nature as a result of incidental passage through a location where exposure levels may be above general population/uncontrolled limits (see below), as long as the exposed person has been made fully aware of the potential for exposure and can exercise control over his or her exposure by leaving the area or by some other appropriate means.

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were done for the proposed upgrades to the existing Sprint Wireless antenna facility located at 2 Progress Avenue, Seymour, CT, using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. All calculations were performed assuming the main lobe of the antenna was focused at the base of the tower to present a worst case scenario. Actual values seen from this site will be dramatically less than those shown in this report. For this report the sample point is the top of a 6 foot person standing at the base of the tower.

For all calculations, all emissions were calculated using the following assumptions:

- 1) 3 CDMA Carriers (1900 MHz) were considered for each sector of the proposed installation.
- 2) 1 CDMA Carrier (850 MHz) was considered for each sector of the proposed installation
- 3) All radios at the proposed installation were considered to be running at full power and were uncombined in their RF transmissions paths per carrier prescribed configuration. Per FCC OET Bulletin No. 65 - Edition 97-01 recommendations to achieve the maximum anticipated value at each sample point, all power levels emitting from the proposed antenna installation are increased by a factor of 2.56 to account for possible in-phase reflections from the surrounding environment. This is rarely the case, and if so, is never continuous.
- 4) For the following calculations the sample point was the top of a six foot person standing at the base of the tower. The actual gain in this direction was used per the manufactures supplied specifications.
- 5) The antenna used in this modeling is the RFS APXVSPP18-C-A20. This is based on feedback from the carrier with regards to anticipated antenna selection. This antenna has a 15.9 dBd gain value at its main lobe at 1900 MHz and 13.4 dBd at its main lobe for 850 MHz. All calculations were performed assuming the main lobe of the antenna was focused at the base of the tower to present a worst case scenario.



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- 6) The antenna mounting height centerline of the proposed antennas is **170 feet** above ground level (AGL)
- 7) Emissions values for additional carriers were taken from the Connecticut Siting Council active database. Values in this database are provided by the individual carriers themselves.

All calculation were done with respect to uncontrolled / general public threshold limits

Site ID		CT33XC610 - S. Betahany / EMAC Communications															
Site Address		2 Progress Avenue, Seymour, CT 06483															
Site Type		Self Support Tower															
Sector 1																	
Antenna Number	Antenna Make	Antenna Model	Radio Type	Frequency Band	Technology	Power Out Per Channel (Watts)	Number of Channels	Composite Power	Antenna Gain in direction of sample point (dBd)	Antenna Height (ft)	analysis height	Cable Size	Cable Loss (dB)	Additional Loss	ERP	Power Density Value	Power Density Percentage
1a	RFS	APXVSPP18-C-A20	RRH	1900 MHz	CDMA / LTE	20	3	60	15.9	170	164	1/2 "	0.5	0	2080.4211	27.80799	2.78080%
1a	RFS	APXVSPP18-C-A20	RRH	850 MHz	CDMA / LTE	20	1	20	13.4	170	164	1/2 "	0.5	0	389.96892	5.212527	0.91932%
Sector total Power Density Value:																3.700%	
Sector 2																	
Antenna Number	Antenna Make	Antenna Model	Radio Type	Frequency Band	Technology	Power Out Per Channel (Watts)	Number of Channels	Composite Power	Antenna Gain in direction of sample point (dBd)	Antenna Height (ft)	analysis height	Cable Size	Cable Loss (dB)	Additional Loss	ERP	Power Density Value	Power Density Percentage
2a	RFS	APXVSPP18-C-A20	RRH	1900 MHz	CDMA / LTE	20	3	60	15.9	127.4	170	1/2 "	0.5	0	2080.4211	25.87971	2.58797%
2a	RFS	APXVSPP18-C-A20	RRH	850 MHz	CDMA / LTE	20	1	20	13.4	127.4	170	1/2 "	0.5	0	389.96892	4.851077	0.85557%
Sector total Power Density Value:																3.444%	
Sector 3																	
Antenna Number	Antenna Make	Antenna Model	Radio Type	Frequency Band	Technology	Power Out Per Channel (Watts)	Number of Channels	Composite Power	Antenna Gain in direction of sample point (dBd)	Antenna Height (ft)	analysis height	Cable Size	Cable Loss (dB)	Additional Loss	ERP	Power Density Value	Power Density Percentage
3a	RFS	APXVSPP18-C-A20	RRH	1900 MHz	CDMA / LTE	20	3	60	15.9	127.4	170	1/2 "	0.5	0	2080.4211	25.87971	2.58797%
3a	RFS	APXVSPP18-C-A20	RRH	850 MHz	CDMA / LTE	20	1	20	13.4	127.4	170	1/2 "	0.5	0	389.96892	4.851077	0.85557%
Sector total Power Density Value:																3.444%	

Site Composite MPE %	
Carrier	MPE %
Sprint	10.587%
AT&T	3.770%
Verizon Wireless	15.360%
T-Mobile	0.460%
Mike Gardella	0.630%
Town	3.130%
Pocket	3.030%
Total Site MPE %	36.967%



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Summary

All calculations performed for this analysis yielded results that were well within the allowable limits for general public exposure to RF Emissions.

The anticipated Maximum Composite contributions from the Sprint facility are **10.587% (3.444% from each sector)** of the allowable FCC established general public limit considering all three sectors simultaneously sampled at the ground level.

The anticipated composite MPE value for this site assuming all carriers present is **36.967%** of the allowable FCC established general public limit sampled at the ground level. This is based upon values listed in the Connecticut Siting Council database for existing carrier emissions

FCC guidelines state that if a site is found to be out of compliance (over allowable thresholds), that carriers over a 5% contribution to the composite value will require measures to bring the site into compliance. For this facility, the composite values calculated were well within the allowable 100% threshold standard per the federal government

Scott Heffernan
RF Engineering Director

EBI Consulting
21 B Street
Burlington, MA 01803



Structural Analysis Report

For

**2 Progress Avenue
Seymour, CT**

Site ID: CT33XC610

KMB ID: 332.1519

Prepared For:

**Sprint-Nextel
1 International Blvd
Mahwah, NJ 07495**

Date: 06/19/2012

Analyzed By:

A handwritten signature in black ink, appearing to read "Jiang J. Yu".

Jiang J. Yu, P.E.

Reviewed By:



Stephen A. Bray, P.E.
CT PE License No. 26657

6/1/83

100-20-1000

100-20-1000

100-20-1000

100-20-1000

100-20-1000

100-20-1000

100-20-1000





Structural Analysis Report

332.1519

06/19/2012

Contents

1. Introduction
 2. Design Codes
 3. Conclusion
 4. Appendix A - Calculations
-



Structural Analysis Report

332.1519

06/19/2012

1.0 Introduction

Pursuant to your request, we have prepared this report describing the methodology and codes used to review the reactions imparted upon the existing antenna mounts.

The existing installation consists of three (3) antenna sectors and equipment cabinets on grade. Sprint-Nextel proposes to replace one (1) antenna per sector and add the associated remote radio units and combiners.

2.0 Design Codes

As part of the design process, structural engineers, licensed to practice in the State of New Jersey, have reviewed the existing platform and connections to which the proposed additional loads will be applied. The applicable design codes which govern the structural analysis of this project are as follows:

International Building Code – CT Edition 2009

“IBC 2009 - CT Edition”

American Institute of Steel Construction

“Steel Construction Manual – 9th Edition”

Masonry Standards Joint Committee Code

“2005 Masonry Standards Joint Committee Code”

3.0 Conclusion

Based on the attached calculations, the maximum stress on any antenna supporting member is 2.525 ksi which is less than the allowable member stress of 23.1 ksi.

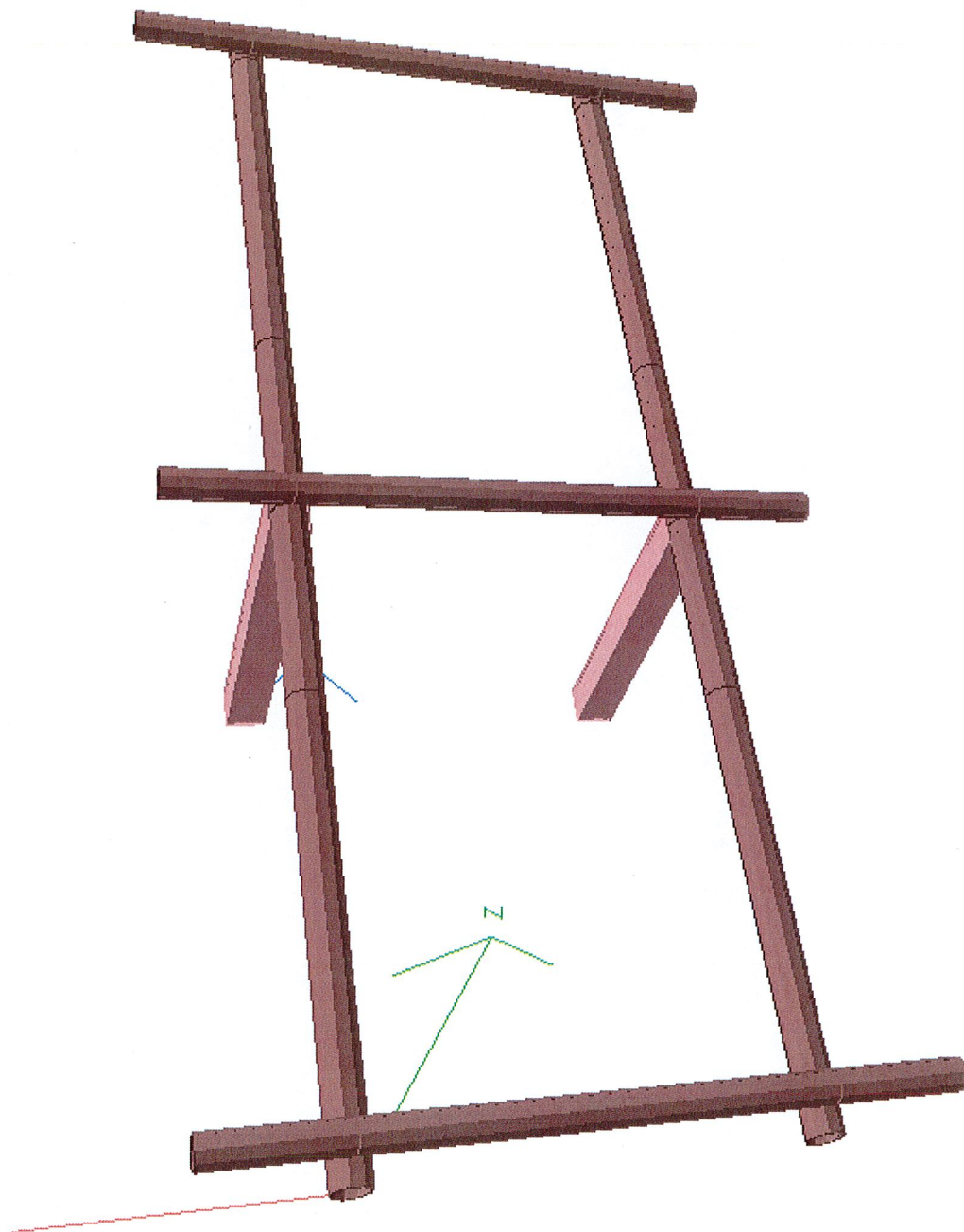
The proposed antenna systems are calculated to be within acceptable tolerances for pipe stress, deflection, and bending moment at critical bending section. Please refer to the calculations in Appendix A.



Appendix A

Structural Calculations

CT33XC610
332.1519



Antenna Support
Frame

KMB DESIGN GROUP, LLC

Project ID: SPRINT (CT33XC610)
Site: 2 PROGRESS AVENUE
Address: SEYMOUR, CT 06483

Page No.: 0
KMB ID 332.1519 Rev: 0
By: EAS Chk: JY
Date: 6/19/2012 Date: 6/19/2012

Antenna Mount Structural Calculation (All Sectors) WIND LOAD CALCULATION (Per IBC 2009)

Antenna Height z 171 feet
Basic wind speed (3 sec gust) 115 mph
Importance factor, I 1.00
Exposure Category C
Located on hill or escarpment? N (Y/N)
Direction factor 0.85
Exposure dependent factors from Tables C6-2 and C6-6

$\alpha = 9.5$ $\alpha\text{-bar} = 0.1538$
 $z_g = 900$ feet $b\text{-bar} = 0.65$
 $c = 0.20$
 $I = 500$
 $\epsilon = 0.200$

$G = 0.850$ gust effect factor
Height K_{zt} K_z q_z p
171 1.00 1.42 47.97 34.66

Cf 1 = Cf 2 = Cf 3 = Cf 4 =
1.4 1.25 0.7 1.0
 p_0 p_1 p_2 p_3
48.52 43.32 24.26 34.66



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Job No
332.1519Sheet No
1Rev
0Job Title **332.1519**

Part

Ref

By **EAS**Date **6/19/12**Chd **JY**Client **Sprint**File **332.1519.std**Date/Time **19-Jun-2012 15:21**

Node Displacements

Node	L/C	X (in)	Y (in)	Z (in)	Resultant (in)	rX (rad)	rY (rad)	rZ (rad)
1	1:LOAD CASE	0.000	-0.017	-0.047	0.050	0.000	-0.001	0.000
2	1:LOAD CASE	0.000	-0.017	-0.044	0.047	0.000	-0.001	0.000
3	1:LOAD CASE	0.000	-0.008	-0.007	0.011	0.000	-0.001	0.000
4	1:LOAD CASE	0.000	-0.008	-0.007	0.011	0.000	0.001	-0.000
5	1:LOAD CASE	0.000	-0.017	-0.046	0.049	0.000	0.001	-0.000
6	1:LOAD CASE	0.000	-0.017	-0.049	0.052	0.000	0.001	-0.000
8	1:LOAD CASE	0.000	-0.017	-0.051	0.054	0.000	-0.001	0.000
9	1:LOAD CASE	0.000	-0.017	-0.048	0.051	0.000	-0.001	0.000
10	1:LOAD CASE	0.000	-0.009	-0.008	0.012	0.000	-0.001	0.000
12	1:LOAD CASE	0.000	-0.009	-0.008	0.012	0.000	0.001	-0.000
13	1:LOAD CASE	0.000	-0.017	-0.049	0.052	0.000	0.001	-0.000
14	1:LOAD CASE	0.000	-0.017	-0.053	0.055	0.000	0.001	-0.000
15	1:LOAD CASE	-0.001	-0.017	-0.042	0.045	0.000	-0.001	0.000
16	1:LOAD CASE	0.000	-0.006	0.003	0.006	0.000	0.000	-0.000
18	1:LOAD CASE	0.002	-0.017	-0.044	0.047	0.000	0.001	-0.000
19	1:LOAD CASE	0.001	-0.017	-0.049	0.052	0.000	-0.001	0.000
20	1:LOAD CASE	0.000	-0.006	-0.002	0.006	0.000	0.000	-0.000
22	1:LOAD CASE	-0.001	-0.017	-0.050	0.053	0.000	0.001	-0.000
23	1:LOAD CASE	0.000	-0.006	-0.000	0.006	0.000	0.000	-0.000
24	1:LOAD CASE	0.000	-0.006	-0.000	0.006	0.000	0.000	-0.000
25	1:LOAD CASE	0.000	0.000	0.000	0.000	0.000	0.000	0.000
26	1:LOAD CASE	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Max Deflection



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1

Rev
0

Part

Job Title **332.1519**

Ref

By **EAS** Date **6/19/12** Chd **JY**

Client **Sprint**

File **332.1519.std**

Date/Time **19-Jun-2012 15:21**

Reactions

Node	L/C	Horizontal	Vertical	Horizontal	Moment		
		FX (kip)	FY (kip)	FZ (kip)	MX (kip·in)	MY (kip·in)	MZ (kip·in)
25	1:LOAD CASE	0.000	0.112	0.292	-3.290	-0.059	0.004
26	1:LOAD CASE	-0.000	0.212	0.435	-4.534	-0.049	0.004



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Job No
332.1519Sheet No
1Rev
0

Job Title 332.1519

Part

Ref

By EAS

Date 6/19/12

Chd JY

Client Sprint

File 332.1519.std

Date/Time 19-Jun-2012 15:21

Beam Combined Axial and Bending Stresses Summary

Beam	L/C	Length (ft)	Max Comp			Max Tens		
			Stress (ksi)	d (ft)	Corner	Stress (ksi)	d (ft)	Corner
1	1:LOAD CASE	0.250	0.003	0.250		-0.003	0.250	
2	1:LOAD CASE	3.333	1.195	3.333		-1.228	3.333	
3	1:LOAD CASE	1.667	2.230	1.667		-2.263	1.667	
4	1:LOAD CASE	3.333	1.220	0.000		-1.253	0.000	
5	1:LOAD CASE	0.250	0.003	0.000		-0.003	0.000	
7	1:LOAD CASE	0.250	0.003	0.250		-0.003	0.250	
8	1:LOAD CASE	3.333	1.329	3.333		-1.296	3.333	
9	1:LOAD CASE	1.667	2.504	1.667		-2.471	1.667	
10	1:LOAD CASE	3.333	1.346	0.000		-1.313	0.000	
11	1:LOAD CASE	0.250	0.003	0.000		-0.003	0.000	
13	1:LOAD CASE	1.000	0.058	1.000		-0.064	1.000	
14	1:LOAD CASE	3.333	0.718	0.000		-0.707	0.000	
15	1:LOAD CASE	1.000	0.064	0.000		-0.058	0.000	
16	1:LOAD CASE	1.000	0.058	1.000		-0.064	1.000	
17	1:LOAD CASE	3.333	2.513	0.000		-2.443	0.000	
18	1:LOAD CASE	1.000	0.064	0.000		-0.058	0.000	
22	1:LOAD CASE	1.000	0.058	1.000		-0.064	1.000	
23	1:LOAD CASE	3.333	0.720	0.000		-0.709	0.000	
24	1:LOAD CASE	1.000	0.075	0.000		-0.068	0.000	
25	1:LOAD CASE	1.667	2.268	0.000		-2.301	0.000	
26	1:LOAD CASE	1.667	2.525	0.000		-2.492	0.000	
27	1:LOAD CASE	3.000	0.898	0.000	3	-0.736	0.000	1
28	1:LOAD CASE	3.000	1.239	0.000	3	-0.997	0.000	1

Max Stress



Know what's below.
Call before you dig.

APPROVALS			
SPRINT REPRESENTATIVES	DATE	☐	☐
SPRINT RF ENGINEER	DATE	☐	☐
SITE OWNER	DATE	☐	☐
	DATE	☐	☐

Sprint[®]



SITE ID: CT33XC610
SITE NAME: S BETHANY/ EMAC COMMUNICATIONS

THE STRUCTURAL ENGINEERING CONCERNING THE STRUCTURAL STABILITY OF THE ANTENNAS, MOUNTS AND ALL ASSOCIATED ANCILLARY RADIO EQUIPMENT IS BEING COMPLETED BY OTHERS. KMB DESIGN GROUP, LLC HAS NOT BEEN REQUESTED TO PHYSICALLY CONFIRM THE EXISTING MOUNT CONFIGURATION AND PERFORM A STRUCTURAL ANALYSIS TO VERIFY THAT THE EXISTING, INTERIM AND PROPOSED ANTENNAS, MOUNTS AND ALL ASSOCIATED ANCILLARY RADIO EQUIPMENT CAN BE SAFELY SUPPORTED. SIGNED AND SEALED DRAWINGS REVISED TO STATE "ISSUED FOR CONSTRUCTION" SHALL BE PROVIDED TO THE PROFESSIONAL ENGINEERS RESPONSIBLE FOR THE STRUCTURAL ANALYSIS OF THE ANTENNAS, MOUNTS AND ALL ASSOCIATED ANCILLARY RADIO EQUIPMENT. KMB DESIGN GROUP, LLC SHALL BE NOTIFIED SHOULD THE STRUCTURAL ANALYSIS RESULT IN SOME ELEMENTS NOT BEING STRUCTURALLY CAPABLE OF SUPPORTING THE PROPOSED DESIGN DEPICTED. THE CONTRACTOR SHALL NOT COMMENCE CONSTRUCTION WITHOUT OBTAINING (A) A SIGNED AND SEALED COPY OF THE PLANS "ISSUED FOR CONSTRUCTION"; (B) STRUCTURAL ANALYSIS REPORT STATING THAT THE TOWER/POLE/FOUNDATION IS CAPABLE OF SUPPORTING THE PROPOSED LOADING REFERENCING THE SIGNED AND SEALED PLANS BY KMB DESIGN GROUP, LLC; (C) SPRINT PLATFORM ANALYSIS STATING THAT THE SPRINT PLATFORM IS CAPABLE OF SUPPORTING THE PROPOSED DESIGN AS REFERENCED WITHIN THE SIGNED AND SEALED PLANS BY KMB DESIGN GROUP, LLC.



NETWORK VISION CONSTRUCTION DRAWINGS



SITE INFORMATION	
BLOCK: TBD	
LOT: TBD	
MAP: TBD	
ZONING CLASSIFICATION: TBD	
ZONING JURISDICTION: TBD	
PROJECT INFORMATION:	
SITE ADDRESS: 2 PROGRESS AVENUE SEYMOUR, CT 06483 NEW HAVEN COUNTY	
COORDINATES: LATITUDE: 41.391754 LONGITUDE: -73.052854	DATUM : NAD 83
STRUCTURE HEIGHT: ±280'-0" (TOP OF EXISTING LATTICE TOWER)	
PROJECT DIRECTORY:	
PROPERTY OWNER: EDWARD MACCONNIE 2702 FOREST VIEW LANE KISSIMMEE, FL 34744 (203) 765-7733	

APPLICANT: SPRINT-NEXTEL 6200 SPRINT PARKWAY OVERLAND PARK, KS 66251
ENGINEER: KMB DESIGN GROUP, LLC 1800 ROUTE 34, SUITE 209 WALL, NJ 07719 KEITH DRENNAN - PROJECT MANAGER (732) 280-5623
POWER COMPANY: CONNECTICUT LIGHT & POWER P.O. BOX 270 HARTFORD, CT 06141-0270 (800) 286-2000



Stephen A. Bray



CT LICENSE: 26657 6/18/12

PROJECT NUMBER: 332.1519

SITE INFORMATION:
2 PROGRESS AVENUE
SEYMOUR, CT 06483
NEW HAVEN COUNTY

CT33XC610

PROJECT TYPE: NETWORK VISION

DRAWN BY: JLS CHECKED BY: DATE: 03-12-12

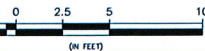
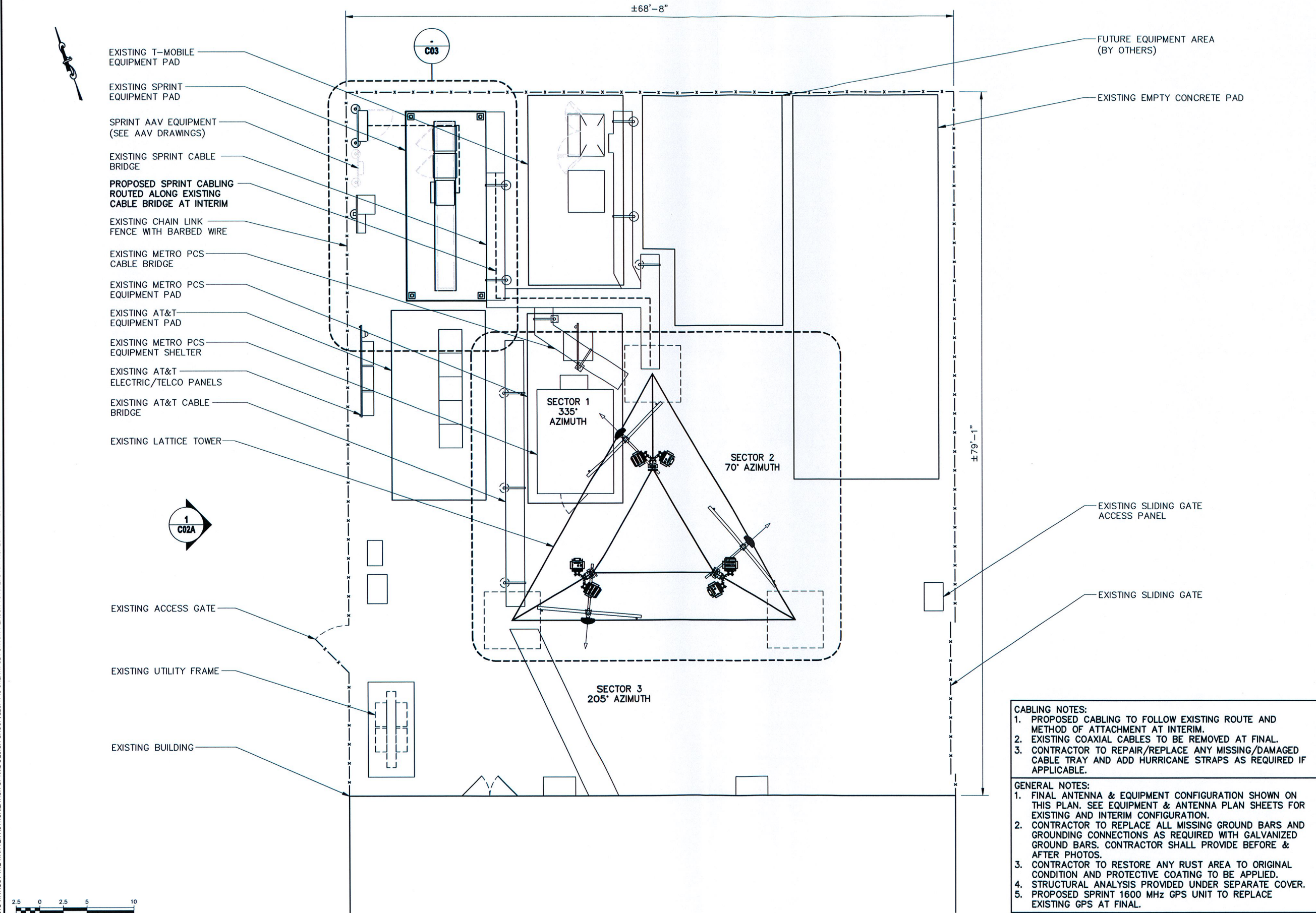
SHEET TITLE: COVER SHEET

SHEET NUMBER: A01 0

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1 COMPOUND PLAN

11x17 SCALE: 1" = 10'

24x36 SCALE: 1" = 5'

- CABLING NOTES:**
1. PROPOSED CABLING TO FOLLOW EXISTING ROUTE AND METHOD OF ATTACHMENT AT INTERIM.
 2. EXISTING COAXIAL CABLES TO BE REMOVED AT FINAL.
 3. CONTRACTOR TO REPAIR/REPLACE ANY MISSING/DAMAGED CABLE TRAY AND ADD HURRICANE STRAPS AS REQUIRED IF APPLICABLE.
- GENERAL NOTES:**
1. FINAL ANTENNA & EQUIPMENT CONFIGURATION SHOWN ON THIS PLAN. SEE EQUIPMENT & ANTENNA PLAN SHEETS FOR EXISTING AND INTERIM CONFIGURATION.
 2. CONTRACTOR TO REPLACE ALL MISSING GROUND BARS AND GROUNDING CONNECTIONS AS REQUIRED WITH GALVANIZED GROUND BARS. CONTRACTOR SHALL PROVIDE BEFORE & AFTER PHOTOS.
 3. CONTRACTOR TO RESTORE ANY RUST AREA TO ORIGINAL CONDITION AND PROTECTIVE COATING TO BE APPLIED.
 4. STRUCTURAL ANALYSIS PROVIDED UNDER SEPARATE COVER.
 5. PROPOSED SPRINT 1600 MHZ GPS UNIT TO REPLACE EXISTING GPS AT FINAL.

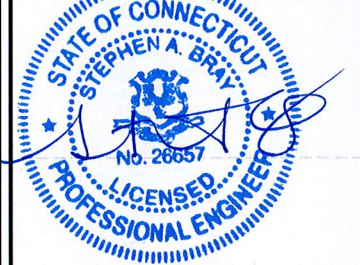
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REV.	DATE	REVISION DESCRIPTION	DRAWN BY	CHKD. BY

KMB
DESIGN GROUP
kmbdg.com
1800 ROUTE 34, SUITE 209
WALL, NJ 07719
(732) 280-5623

Stephen A. Bray
PROFESSIONAL ENGINEER



CT LICENSE: 26657 6/18/12

PROJECT NUMBER: 332.1519

SITE INFORMATION:
2 PROGRESS AVENUE
SEYMOUR, CT 06483
NEW HAVEN COUNTY

CT33XC610

PROJECT TYPE: NETWORK VISION

DRAWN BY: JLS CHECKED BY: DATE: 03-12-12

SHEET TITLE: COMPOUND PLAN

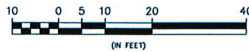
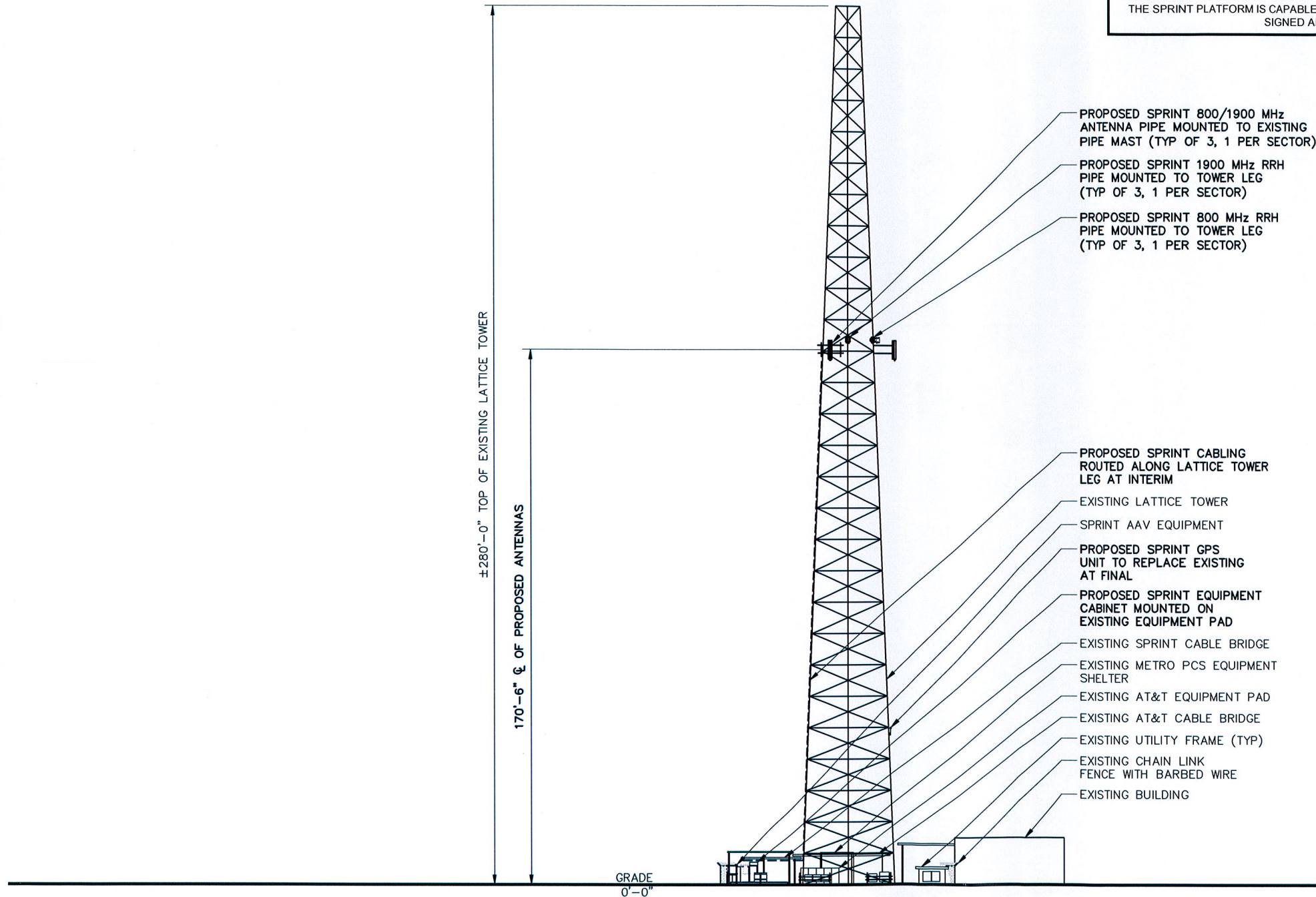
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- NOTES:
1. FINAL ANTENNA & EQUIPMENT CONFIGURATION SHOWN ON THIS PLAN. SEE EQUIPMENT & ANTENNA PLAN SHEETS FOR EXISTING AND INTERIM CONFIGURATION.
 2. EXISTING ANTENNAS (BY OTHERS) NOT SHOWN FOR CLARITY.

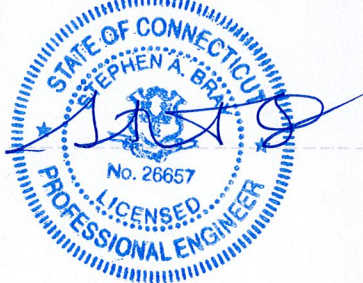
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Stephen A. Bray
PROFESSIONAL ENGINEER



CT LICENSE: 26657 6/18/12

PROJECT NUMBER: 332.1519

SITE INFORMATION:
2 PROGRESS AVENUE
SEYMOUR, CT 06483
NEW HAVEN COUNTY

CT33XC610

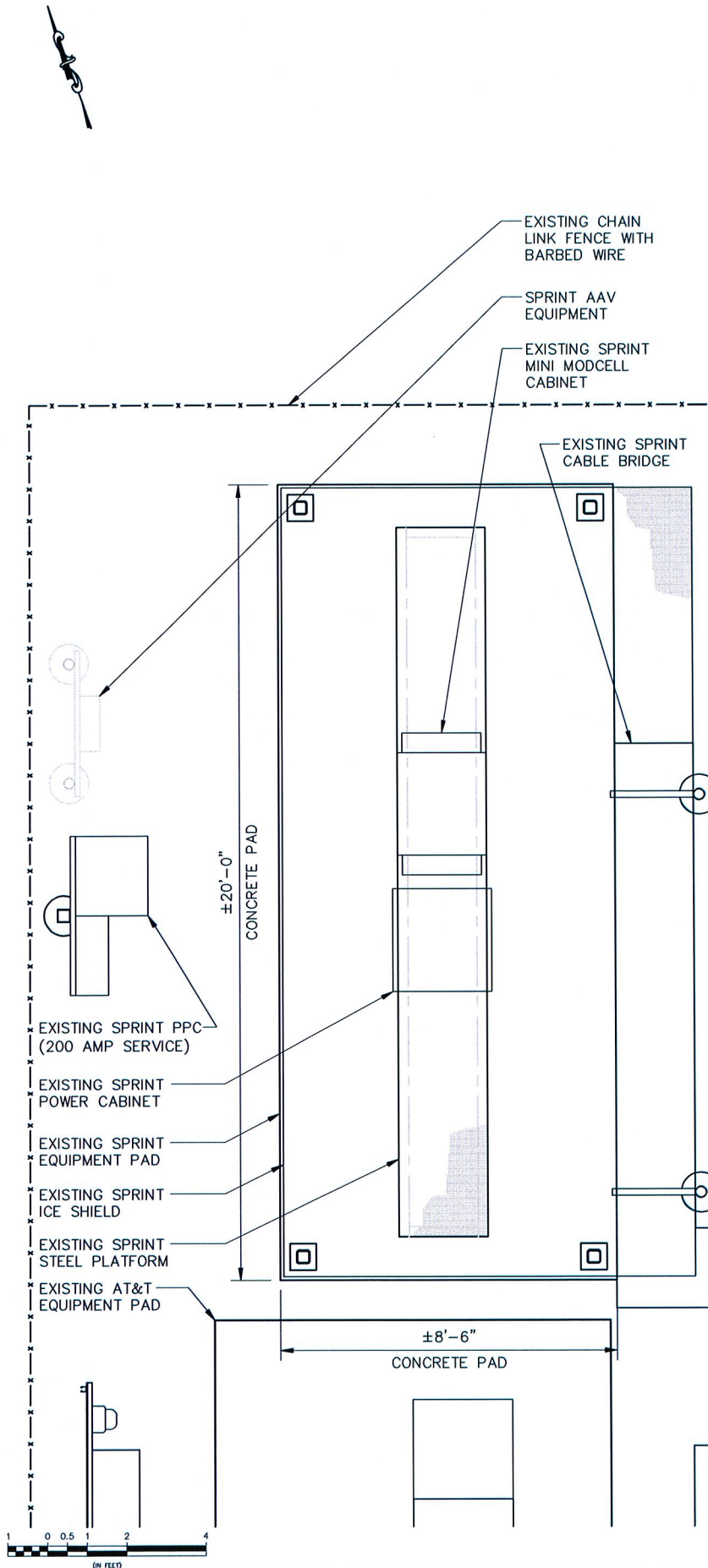
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DRAWN BY: JLS CHECKED BY: DATE: 03-12-12

SHEET TITLE: ELEVATION

SHEET NUMBER: C02A REV.: 0

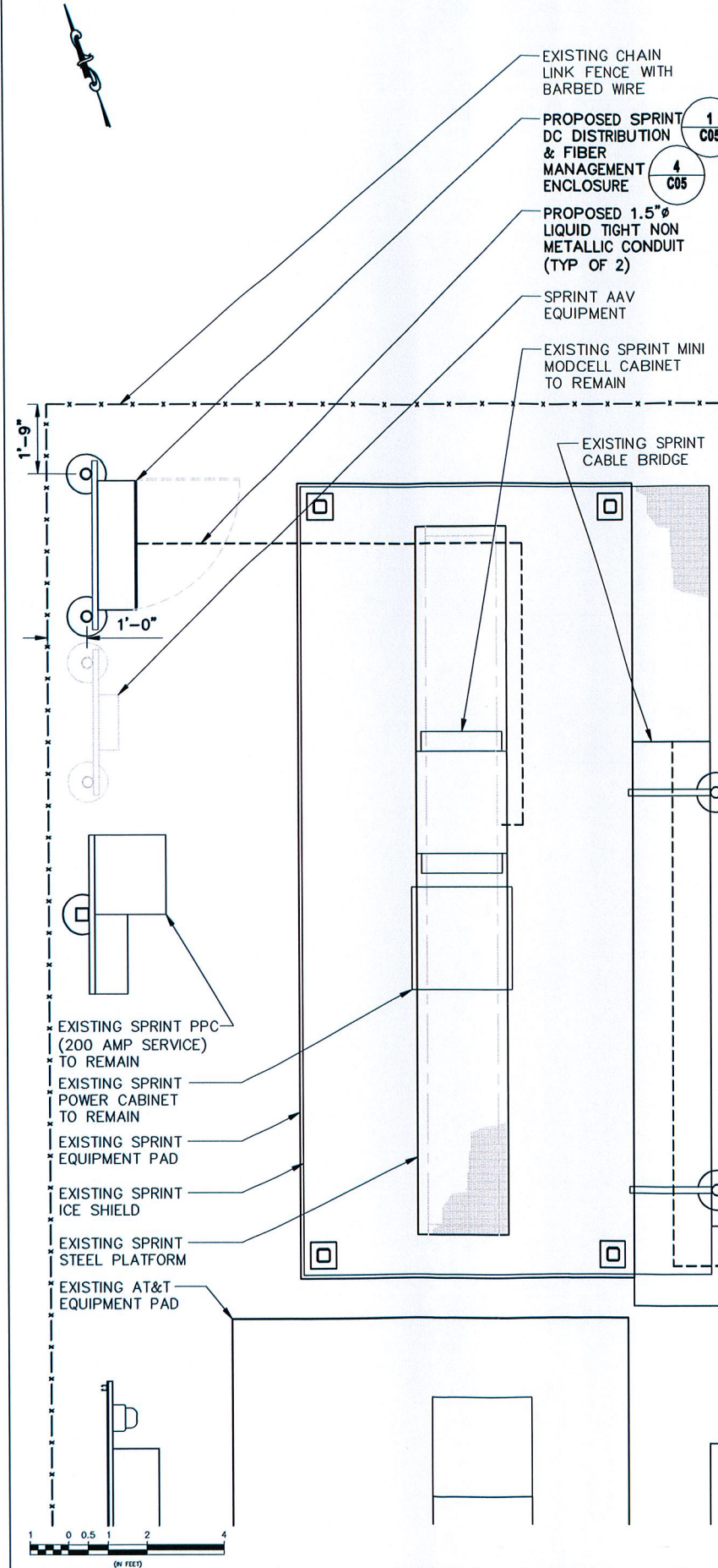
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1 EXISTING EQUIPMENT PLAN

11x17 SCALE: 1/4" = 1'-0"

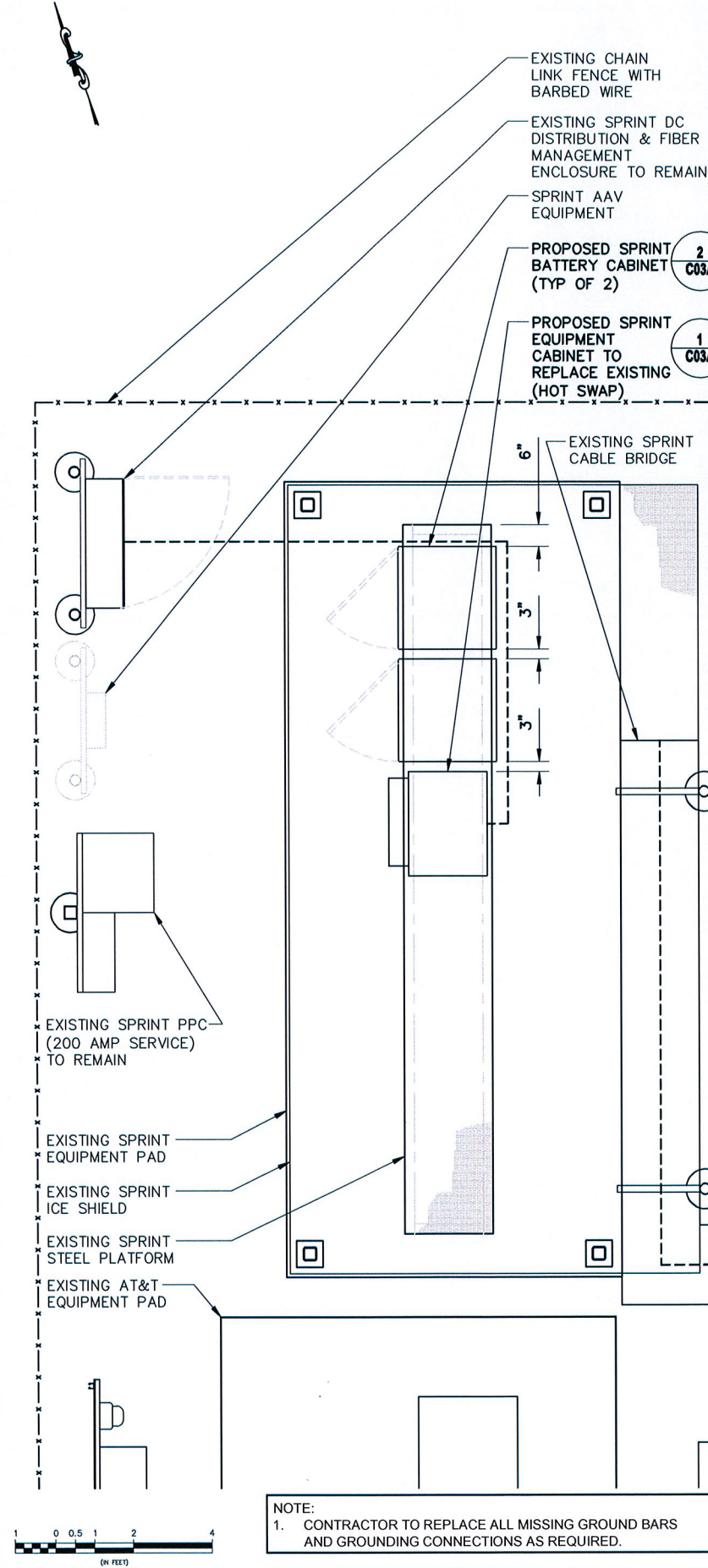
24x36 SCALE: 1/2" = 1'-0"



2 INTERIM EQUIPMENT PLAN

11x17 SCALE: 1/4" = 1'-0"

24x36 SCALE: 1/2" = 1'-0"



3 FINAL EQUIPMENT PLAN

11x17 SCALE: 1/4" = 1'-0"

24x36 SCALE: 1/2" = 1'-0"

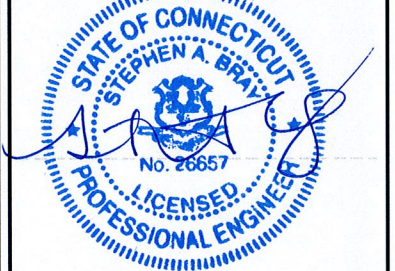
NOTE:
1. CONTRACTOR TO REPLACE ALL MISSING GROUND BARS AND GROUNDING CONNECTIONS AS REQUIRED.



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REV.	DATE	REVISION DESCRIPTION	DRAWN BY	CHKD. BY	



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PROFESSIONAL ENGINEER



CT LICENSE: 26657 6/18/12

PROJECT NUMBER: 332.1519

SITE INFORMATION:
2 PROGRESS AVENUE
SEYMOUR, CT 06483
NEW HAVEN COUNTY

CT33XC610

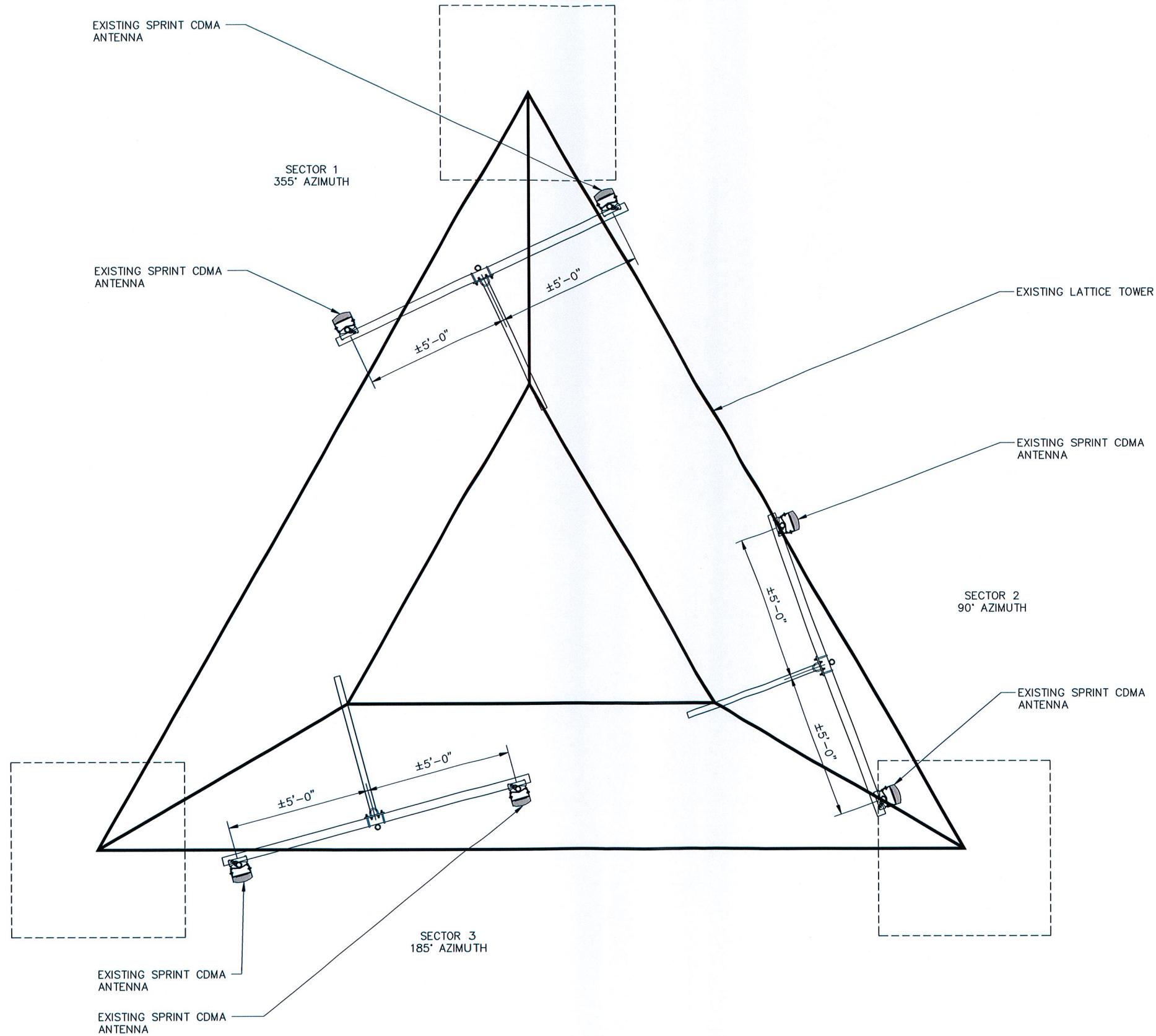
PROJECT TYPE: NETWORK VISION

DRAWN BY: JLS CHECKED BY: DATE: 03-12-12

SHEET TITLE: EQUIPMENT PLANS

SHEET NUMBER: C03 REV.: 0

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1 EXISTING ANTENNA PLAN @ ±170'-6" AGL (ALL SECTORS)

11x17 SCALE: 1/4" = 1'-0"

24x36 SCALE: 1/2" = 1'-0"



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PROJECT NUMBER: 332.1519

SITE INFORMATION:
2 PROGRESS AVENUE
SEYMOUR, CT 06483
NEW HAVEN COUNTY

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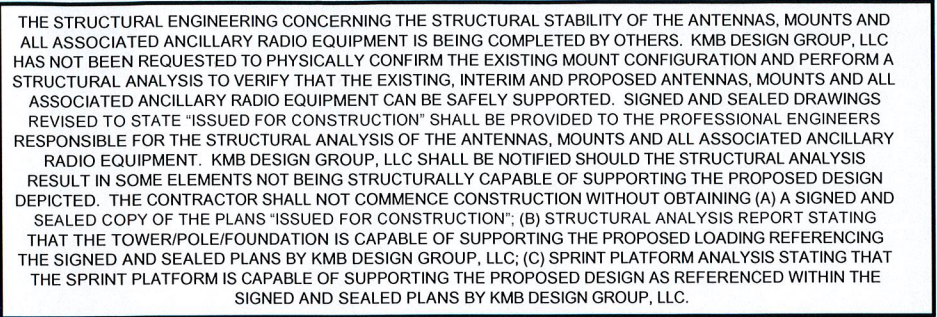
PROJECT TYPE: NETWORK VISION

DRAWN BY: JLS	CHECKED BY:	DATE: 03-12-12
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SHEET TITLE:
EXISTING ANTENNA PLAN
(ALL SECTORS)

SHEET NUMBER: C04	REV.: 0
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NOTE:
SEE DETAIL 1/C04C FOR INTERIM RRH PLAN.





EXISTING SPRINT CDMA
ANTENNA TO BE REMOVED.
PIPE MAST TO REMAIN

EXISTING SPRINT
800/1900 MHz
ANTENNA TO REMAIN

SECTOR 1
335° AZIMUTH

EXISTING SPRINT CDMA
ANTENNA TO BE REMOVED.
PIPE MAST TO REMAIN

EXISTING LATTICE TOWER

EXISTING SPRINT CDMA
ANTENNA TO BE REMOVED.
PIPE MAST TO REMAIN

EXISTING SPRINT 800/1900
MHz ANTENNA TO REMAIN

SECTOR 2
70° AZIMUTH

EXISTING SPRINT CDMA
ANTENNA TO BE REMOVED.
PIPE MAST TO REMAIN

EXISTING SPRINT CDMA
ANTENNA TO BE REMOVED.
PIPE MAST TO REMAIN

EXISTING SPRINT 800/1900
MHz ANTENNA TO REMAIN

EXISTING SPRINT CDMA
ANTENNA TO BE REMOVED.
PIPE MAST TO REMAIN

SECTOR 3
205° AZIMUTH

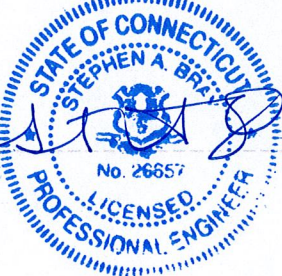
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REV.	DATE	REVISION DESCRIPTION	DRAWN BY	CHKD. BY



Stephen A. Bray
PROFESSIONAL ENGINEER



CT LICENSE: 26657

6/18/12

PROJECT NUMBER:
332.1519

SITE INFORMATION:
2 PROGRESS AVENUE
SEYMOUR, CT 06483
NEW HAVEN COUNTY

CT33XC610

PROJECT TYPE:
NETWORK VISION

DRAWN BY: JLS	CHECKED BY:	DATE: 03-12-12
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SHEET TITLE:
**FINAL ANTENNA PLAN
(ALL SECTORS)**

SHEET NUMBER: C04B	REV.: 0
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1 FINAL ANTENNA PLAN @ ±170'-6" AGL (ALL SECTORS)

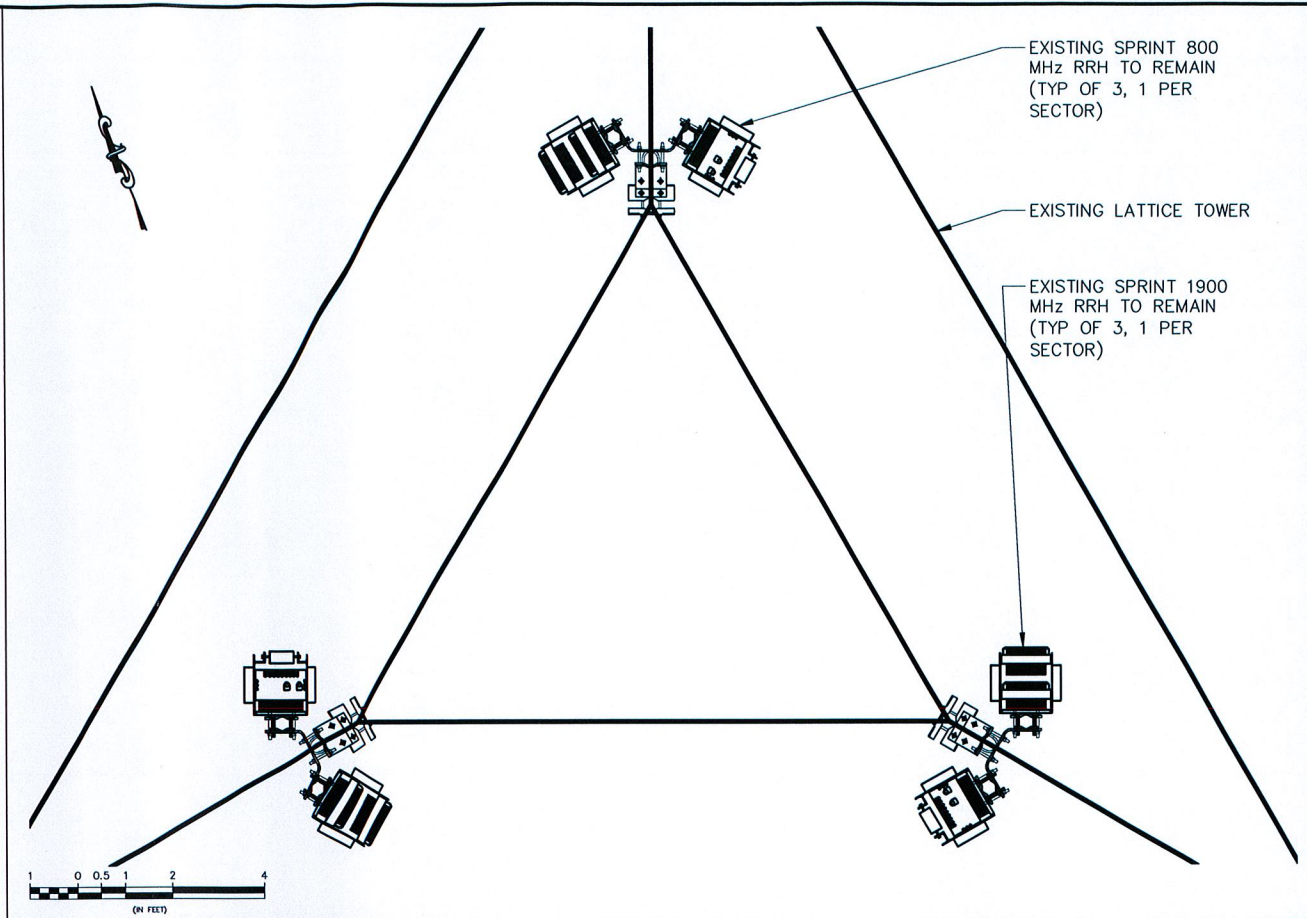
11x17 SCALE: 1/4" = 1'-0"

24x36 SCALE: 1/2" = 1'-0"

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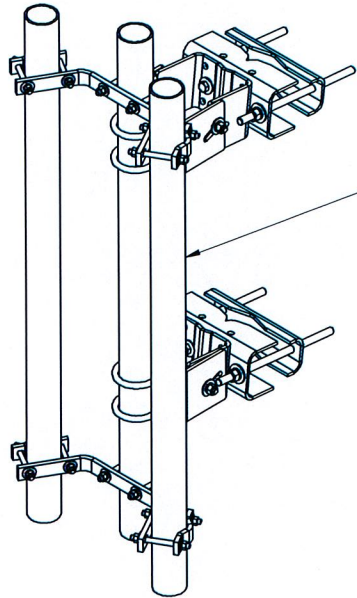
11x17 SCALE: 1/4" = 1'-0"	24x36 SCALE: 1/2" = 1'-0"
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11x17 SCALE: 1/4" = 1'-0"	24x36 SCALE: 1/2" = 1'-0"
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0	06-18-12	ISSUED FOR CONSTRUCTION	CCR	KCD
REV.	DATE	REVISION DESCRIPTION	DRAWN BY	CHKD. BY
1800 ROUTE 34, SUITE 209 WALL, NJ 07719 (732) 280-5623				
Stephen A. Bray PROFESSIONAL ENGINEER				
CT LICENSE: 26657			6/18/12	
PROJECT NUMBER: 332.1519				
SITE INFORMATION: 2 PROGRESS AVENUE SEYMOUR, CT 06483 NEW HAVEN COUNTY CT33XC610				
PROJECT TYPE: NETWORK VISION				
DRAWN BY: JLS	CHECKED BY:	DATE: 03-12-12		
SHEET TITLE: RRH PLANS (ALL SECTORS)				
SHEET NUMBER:			REV.:	
C04C			0	

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PROPOSED 2"Ø (NOM)
SCH 40 PIPE MAST
(LENGTH AS REQUIRED)
(TYP OF 3)

NOTE:
RRHs NOT SHOWN FOR CLARITY.

UNIVERSAL PIPE MOUNT WITH OPEN
FACE TAPER ADJUSTMENT KIT BY
COMMScope, PART # PM-SC2-B OR
AN APPROVED EQUAL
KIT INCLUDES:
UNIVERSAL SADDLE MOUNT & TAPER
ADJUSTMENT BRACKETS (PIPE NOT
INCLUDED)

DOUBLE ANTENNA CLAMP, KIT OF 2
BY COMMScope, PART # DA-C200
OR AN APPROVED EQUAL
KIT INCLUDES:
BRACKETS & HARDWARE

1 RRH MOUNT DETAIL

SCALE: NTS



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0	06-18-12	ISSUED FOR CONSTRUCTION	CCR	KCD
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Stephen A. Bray
PROFESSIONAL ENGINEER



CT LICENSE: 26657 6/18/12

PROJECT NUMBER:
332.1519

SITE INFORMATION:
2 PROGRESS AVENUE
SEYMOUR, CT 06483
NEW HAVEN COUNTY

CT33XC610

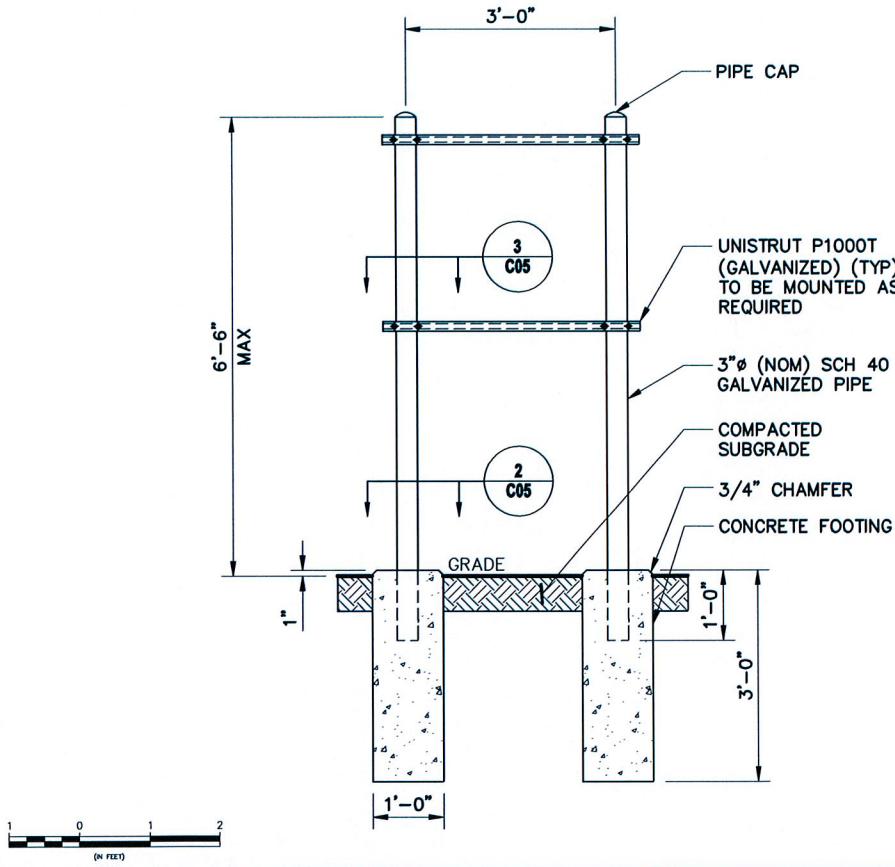
PROJECT TYPE:
NETWORK VISION

DRAWN BY: JLS	CHECKED BY:	DATE: 03-12-12
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SHEET TITLE:
RRH MOUNT DETAILS
(ALL SECTORS)

SHEET NUMBER: C04D	REV.: 0
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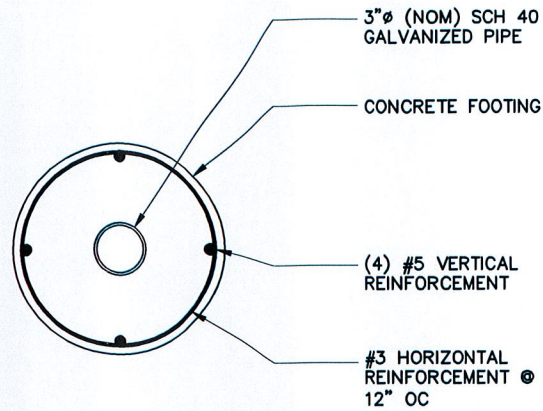
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1 UNISTRUT FRAME DETAIL

11x17 SCALE: 3/8" = 1'-0"

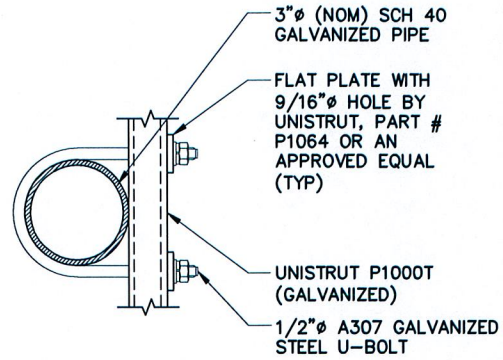
24x36 SCALE: 3/4" = 1'-0"



2 CONCRETE PIER DETAIL

11x17 SCALE: 1 1/2" = 1'-0"

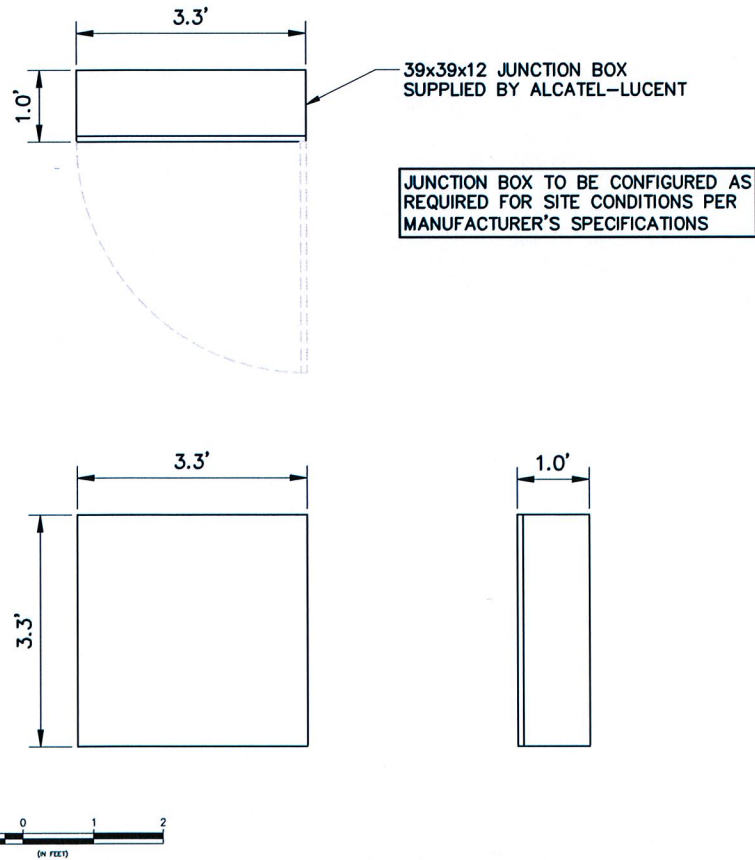
24x36 SCALE: 3" = 1'-0"



3 UNISTRUT CONNECTION DETAIL

11x17 SCALE: 1 1/2" = 1'-0"

24x36 SCALE: 3" = 1'-0"



4 DC DISTRIBUTION & FIBER MGMT ENCLOSURE DETAIL

11x17 SCALE: 3/8" = 1'-0"

24x36 SCALE: 3/4" = 1'-0"

Sprint

Alcatel-Lucent

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REV.	DATE	REVISION DESCRIPTION	DRAWN BY	CHKD. BY	



Stephen A. Bray
PROFESSIONAL ENGINEER



CT LICENSE: 26657 6/18/12

PROJECT NUMBER:
332.1519

SITE INFORMATION:
2 PROGRESS AVENUE
SEYMOUR, CT 06483
NEW HAVEN COUNTY

CT33XC610

PROJECT TYPE:
NETWORK VISION

DRAWN BY: JLS CHECKED BY: DATE: 03-12-12

SHEET TITLE:
SITE DETAILS

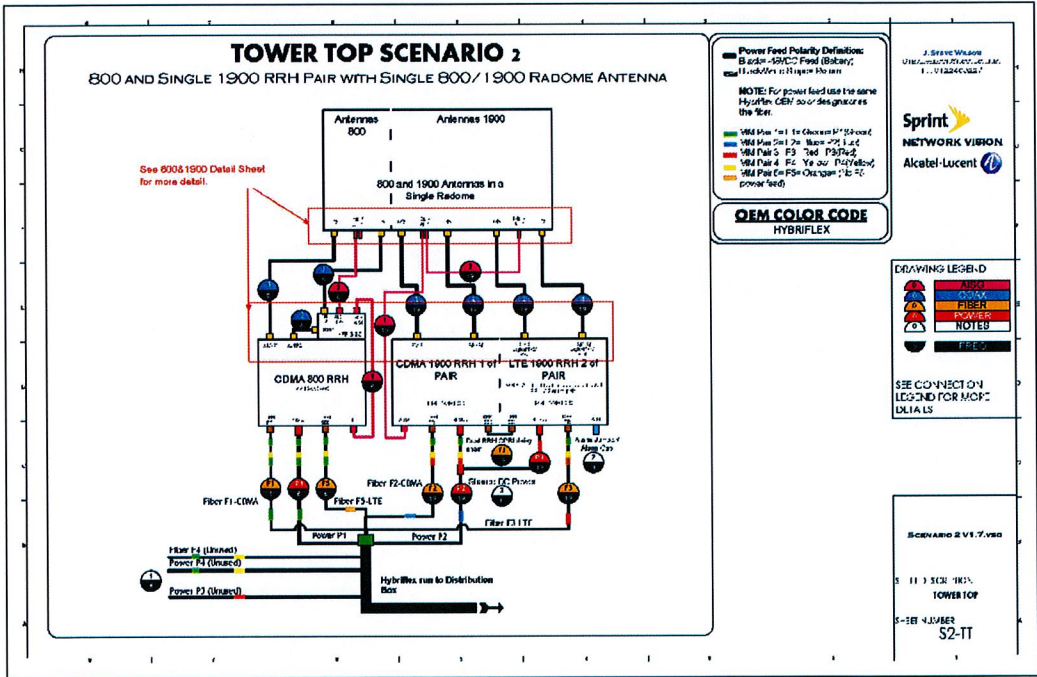
SHEET NUMBER: C05 REV.: 0

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FINAL ANTENNA AND CABLE SCHEDULE																	
SECTOR	ANTENNA	AZIMUTH (DEGREES)	MECHANICAL DT (DEGREES)	ELECTRICAL DT (DEGREES)	RAD CENTER AGL (FT)	ANTENNA		RRH		TOP COAX JUMPER		COMBINER JUMPER		NOTCH FILTER JUMPER		HYBRIFLEX LENGTH (FT)	
						MAKE	MODEL	QTY	QTY	LENGTH (FT)	QTY	LENGTH (FT)	QTY	LENGTH (FT)			
1	-															270	
	800/1900	355	0	800 -2	1900 -1	170.5	RFS	APXVSPP-18-A20	800 1	1900 1	6	10	-	-	1		3
	-																
2	-															270	
	800/1900	70	0	800 -2	1900 -1	170.5	RFS	APXVSPP-18-A20	800 1	1900 1	6	10	-	-	1		3
	-																
3	-															270	
	800/1900	205	0	800 -2	1900 -2	170.5	RFS	APXVSPP-18-A20	800 1	1900 1	6	10	-	-	1		3
	-																

- NOTES:
1. DUE TO FIELD MEASUREMENTS AND THE INSTALLATION OF NEW ANTENNAS THAT VARY IN SIZE FROM THE EXISTING ANTENNAS, THE ANTENNA RAD CENTER HAS CHANGED FROM WHAT IS ON RECORD. THE DATABASE MAY NEED TO BE UPDATED TO MATCH THESE PLANS.
 2. SOME CABLING MAY CHANGE AT THE TIME OF CONSTRUCTION. CONTRACTOR TO CONFIRM ALL CABLE LENGTHS, TYPE, QUANTITIES, AND CONFIGURATION PRIOR TO CONSTRUCTION.
 3. ALL UNUSED POWER AND FIBER MUST BE PROPERLY TERMINATED AND WEATHERPROOFED.

CONTRACTOR TO VERIFY & USE THE LATEST TOWER TOP SCENARIO AS PROVIDED BY ALCATEL-LUCENT CONSTRUCTION MANAGER



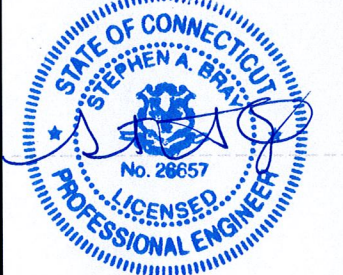
ALL SECTORS



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△	06-18-12	ISSUED FOR CONSTRUCTION	CCR	KCD
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Stephen A. Bray
PROFESSIONAL ENGINEER



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NEW HAVEN COUNTY

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PROJECT TYPE:
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DRAWN BY: JLS CHECKED BY: DATE: 03-12-12

SHEET TITLE:
RF SCHEDULE

SHEET NUMBER: REV.:

C06 0

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GENERAL SPECIFICATIONS

1. Contractor shall verify that the total number of service entrance disconnects in the existing utility company pedestal must not exceed six. If the new service added exceeds this value, contractor must coordinate with the utility company and authority having jurisdiction. Run an additional exclusive and dedicated service lateral set for the new load added to the compound as per NEC Article # 230-2(B)
2. All work should be done in a neat workmanlike manner, left clean and free from defects, and completely operable. The contractor shall provide all equipment as scheduled on the drawings. All materials shall be new and all work and materials shall be guaranteed by the contractor for a period of one (1) year from the date of acceptance by the owner.
3. All work shall be carefully coordinated with the landlord and all trades involved, and the contractor shall provide proper connections, fittings, valves, piping, etc. for all equipment furnished by carrier or other trades involved in this contract.
4. Contractor shall inform the engineer immediately of any conflict discovered before performing any work related to such conflict.
5. Provide all required temporary utilities and pay all associated fees and operating costs.
6. Before submitting this bid, the contractor shall visit the job site to examine and fully acquaint himself with the existing job conditions, paying particular attention to the location of existing conditions to make a complete and operable system without additional cost to the carrier or the engineer.
7. Obtain all permits and approvals from authorities having jurisdiction and paying all fees required.
8. Label all equipment served from Sprint panelboard with phenolic labels sized in relation to usage.
9. Contractor to provide and install engraved label on the Sprint meter socket enclosure.
10. Redlined As-Builts are to be delivered to a Sprint representative.
11. The equipment/protections must be rated for standard of AIC rate higher than incoming equipment and/or utility company AIC rate.

GROUNDING NOTES

1. The subcontractor is responsible for properly sequencing grounding and underground conduit installation as to prevent any loss of continuity in the grounding system or damage to the conduit.
2. All exterior ground conductors shall be #2 AWG solid tinned copper unless otherwise indicated.
3. All ground connections above grade (interior & exterior) shall be formed using high press crimps.
4. All ground connections below grade shall be exothermic (Cadweld).
5. Connections to equipment and enclosures shall be made utilizing two-hole ground lugs with an antioxidant compound.
6. Maximum resistance of the completed ground system shall not exceed 5 Ohms. Testing shall be performed in accordance with technical specification for facility grounding, using fall potential method.
7. Where grounding connections are made to painted metal surfaces shall be scraped clean to bear metal to ensure proper contact. Surfaces shall be restored to match original finishes.
8. Use of 90° bends in the protection grounding conductors shall be avoided when 45° bends can be adequately supported.
9. Ground depth shall be 30" minimum below finished grade, or 6" below frost line, whichever is greater.

ELECTRICAL SYMBOLS		ABBREVIATIONS	
WIRING SYMBOLS		AWG	AMERICAN WIRE GAUGE
	DISCONNECT SWITCH	BCW	BARE COPPER WIRE
	METER	DWG	DRAWING
	CIRCUIT BREAKER	EMT	ELECTRICAL METALLIC TUBING
	CADWELD TYPE CONNECTION	GEN	GENERATOR
	COMPRESSION TYPE CONNECTION	MGB	MASTER GROUND BAR
	GROUND ROD WITH ACCESS	PVC	RIGID (SCH 40) PVC CONDUIT
	CHEMICAL GROUND ROD	RGS	RIGID GALVANIZED STEEL
	GROUND ROD	RWY	RACEWAY
	CONDUIT TURNING DOWN	TYP	TYPICAL
	CONDUIT TURNING UP		
	JUNCTION BOX		
	PULL BOX		
	CONDUIT RUNNING ABOVE GRADE		
	CONDUIT RUNNING UNDER GROUND		

ELECTRICAL SPECIFICATIONS

1. General:

A. The electrical contractor shall furnish all labor,materials, tools, transportation equipment, services and facilities required for the complete, proper and substantial installation of all electrical work. All fixtures, devices, and equipment shown, noted or required on these drawings, and/or contained herein shall be connected from the source of electric power to the final connection, tested and made ready for satisfactory operation.

B. Service equipment shall be 120/240 VAC, 100 Amp, single phase, unless otherwise directed by the Sprint Construction Manager.

C. Unless otherwise indicated, the arrangement, position, connections, etc. shown on the drawings shall be taken on a diagram basis. The right is reserved by the engineer to make minor changes in locations and arrangements when required by job development without additional compensation to the contractor.

D. All work shall conform to the adopted edition of the National Electrical Code and local, state and applicable codes.

E. When a utility company meter is specified, the contractor shall obtain all associated cut-in cards, inspections, etc., necessary to have the meter set. It is the responsibility of the contractor to meet with utility company prior to construction to verify source of electric service, tap and meter location.
2. Identification:

A. Provide typewritten directories for panels, indicating use of each branch circuit and designating spare circuits. Handwritten directories are not acceptable.

B. All panel boards, switches and other equipment enclosures shall bear engraved nameplates as manufactured by Seton Nameplate Corp., or equal lettering to be 1/2" white letters on black background unless noted otherwise.
3. Raceways:

A. Minimum conduit size shall be 3/4" unless otherwise noted on the drawings.

B. Exposed raceways shall be run true, plumb, and parallel or perpendicular to building lines.

C. Conduit routings are schematic. Sub contractor shall install conduits so that access to equipment is not blocked.
4. Wiring Methods:

A. All feeders shall consist of pulled conductors in conduit. All branch circuits shall consist of pulled conductors in conduit. Except 15 and 20 Ampere 1 pole lighting receptacles, miscellaneous branch circuits concealed above suspended ceilings or within dry walls shall consist of type MC metal clad cable if allowed by code. Connections to communications cabinets and vibrating equipment shall consist of pulled conductors in LFMC, maximum 6' in length.

B. Conductors shall be continuous from origin to panel or equipment without splices. Where tap splices are necessary and approved, they shall be made with suitable connectors in junction boxes.

C. Equipment ground conductors shall be provided for all feeders and branch circuits.

D. The contractor shall conceal all conduit routing passing through finished areas. Conduit routing through unfinished shall be supported as specified in drawings. Unless clearly specified, no conduits shall be routed on exterior surface of buildings.

E. All conductor terminals shall be U.L. listed for minimum of 75° C.

F. Provide fire stopping around all conduits at wall and floor penetrations.

G. Seal all exterior wall penetrations as required.

H. Underground conduits shall be a minimum of 24" below finished grade. All underground work shall be documented by photograph before any backfill is begun. Photos will be required at time punchlist is performed. Feeders shall be individual conductors in schedule 40 PVC, direct burial conduit. When buried conduits are subject to vehicular traffic, conduits shall be encased in concrete. All sweeps below grade shall be schedule 80 PVC.

I. All feeders in "damp" or "wet" locations shall consist of individual conductor in rigid galvanized steel or rigid aluminum conduit. Liquid-tight flexible metallic conduit shall be utilized when connecting to equipment cabinets and vibrating equipment. The maximum length for flexible conduit shall be 6'-0".
5. Wiring Devices:

A. Switches, receptacles and other wiring devices shall be specification grade of type, size and rating indicated on the drawings.
6. Disconnect Switches:

A. Switches shall be quick-make, quick-break NEMA 1 for indoor use and NEMA 3R for outdoor use as manufactured by General Electric, Square D or equal. Electrical contractor to provide all safety disconnects.
7. Special Requirements:

A. The electrical contractor shall furnish and install all power and control wiring for equipment contained in contract documents.

B. All work requiring an outage or interruption of service (power, telephone) shall be scheduled only at such time permitted by owner.
8. Lighting fixtures and lamps:

A. Lighting fixtures shall be furnished complete with necessary hardware and lamps.
9. Transformers:

A. Transformers shall be dry type with average temperature rise not to exceed 150° C (115° C)(80° C)
- B. Transformers shall be as manufactured by Square D, General Electric, or Siemens.

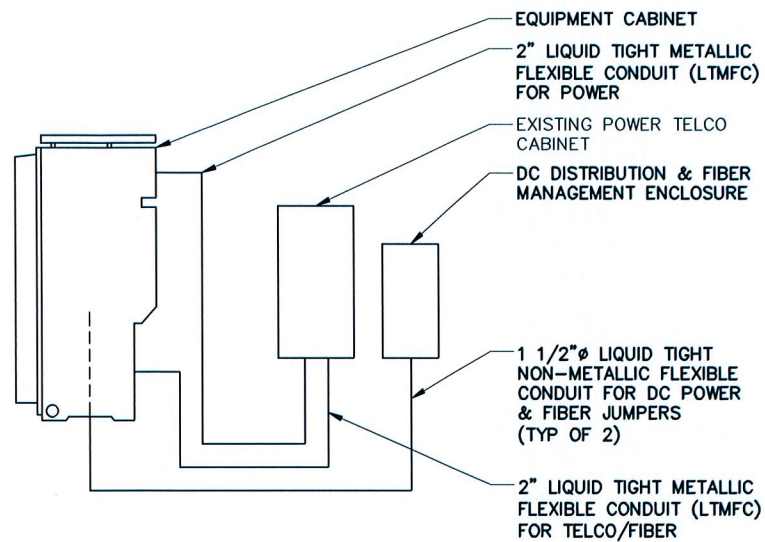
The contractor is required to contact the utility companies prior to starting construction. This is necessary to reconfirm that the utility points have remained consistent with the contractor documents:

- * Telephone Demarcation Point
- * Electrical Service Tap Point
- * New Utility Meter Location



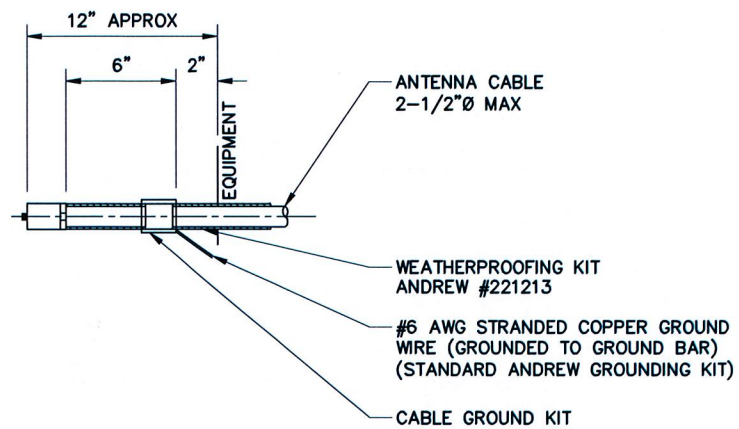
				
				
				
				
				
				
				
				
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1 PLUMBING SCHEMATIC (IF REQUIRED)

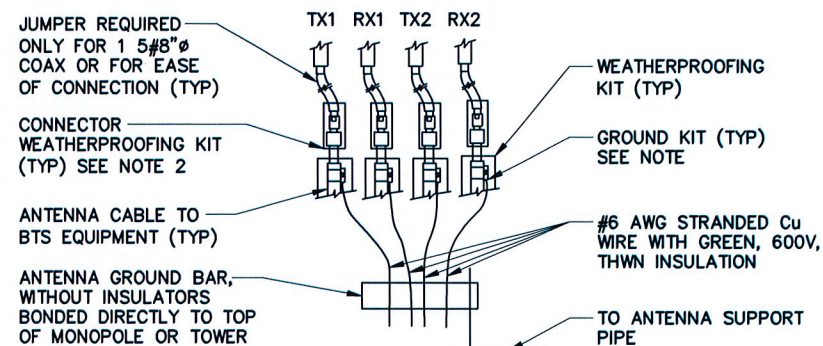
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NOTE:
DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO GROUND BAR.

4 CABLE GROUND KIT CONNECTION DETAIL

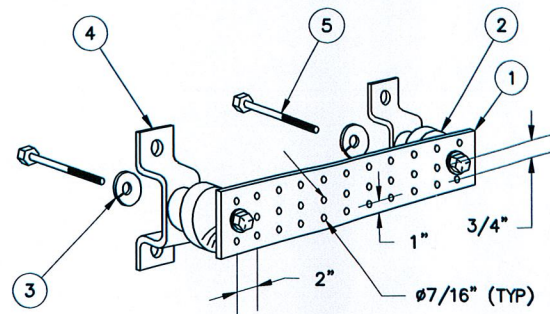
SCALE: NTS



- NOTES:**
- DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO ANTENNA GROUND BAR.
 - WEATHER PROOFING SHALL BE TWO-PART TAPE KIT. COLD SHRINK SHALL NOT BE USED.
 - ATTACH "DO NOT DISCONNECT" LABELS TO GROUND BARS. CAN USE BRASS TAG "DO NOT DISCONNECT" AT EACH COAX GROUND POINT OR BACK-A-LITE PLATE ON GROUND BAR.

7 GROUND BAR TO GROUND WIRE CONNECTION DETAIL

SCALE: NTS



- GALVANIZED STEEL GROUND BAR, 1/4" x 4" x 20", HAGER PART NO TGBI-14420C OR A.L.T. PART NO. 382227. HOLE CENTERS TO MATCH NEMA DOUBLE LUG CONFIGURATION.
- INSULATORS, NEWTON INSTRUMENT CAT. NO. 3061-4.
- 5/8" LOCKWASHERS, NEWTON INSTRUMENT CO. CAT. NO. 3015-8.
- WALL MOUNTING BRACKET, NEWTON INSTRUMENT CO. CAT NO. A-6056.
- 5/8-11 X 1" H.H.C.S.BOLTS, NEWTON INSTRUMENT CO. CAT NO. 3012-1

2 GROUND BAR DETAIL

SCALE: NTS

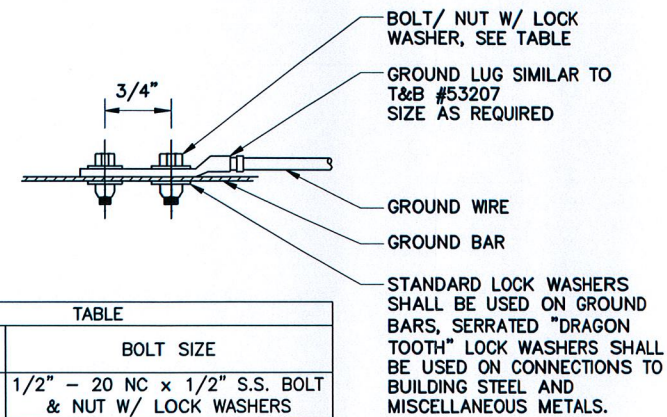
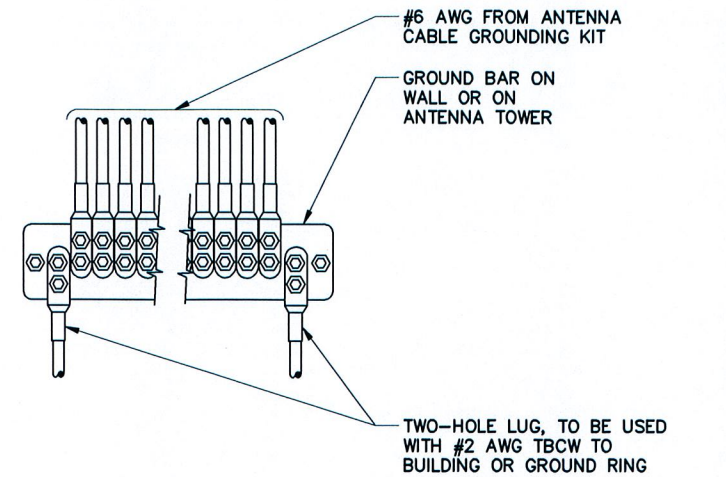


TABLE		
WIRE SIZE	LUG #	BOLT SIZE
#4/0	53212	1/2" - 20 NC x 1/2" S.S. BOLT & NUT W/ LOCK WASHERS
#2	53207	1/4" - 20 NC x 1/2" S.S. BOLT & NUT W/ LOCK WASHERS
#6	53205	

5 GROUND LUG CONNECTION DETAIL

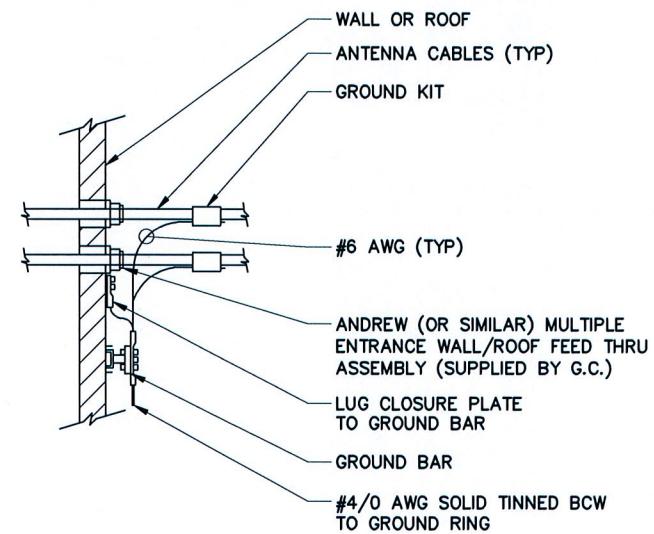
SCALE: NTS



NOTE:
CONTRACTOR TO UTILIZE KOPR-SHIELD (THOMAS & BETTS) ON ALL LUG CONNECTIONS

3 GROUND LUG TO GROUND BAR CONNECTION DETAIL

SCALE: NTS



6 CABLE GROUNDING DETAIL

SCALE: NTS

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(732) 260-5623

Stephen A. Bray
PROFESSIONAL ENGINEER



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PROJECT NUMBER: 332.1519

SITE INFORMATION:
2 PROGRESS AVENUE
SEYMOUR, CT 06483
NEW HAVEN COUNTY

CT33XC610

PROJECT TYPE: NETWORK VISION

DRAWN BY: JLS CHECKED BY: DATE: 03-12-12

SHEET TITLE: ELECTRICAL & GROUNDING DETAILS

SHEET NUMBER: REV.:

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