April 22, 2022

Melanie A. Bachman
Executive Director
Connecticut Siting Council
10 Franklin Square
New Britain, CT 06051

Re: Tower Share Application – Dish Site 13733440
Dish Wireless Telecommunications Facility @ 123 Palmer Road, Chaplin, CT 06235

Dear Ms. Bachman,

Dish Wireless ("Dish") is proposing a wireless telecommunications facility on an existing one hundred and forty six (146) foot tall monopole tower at 123 Palmer Road, Chaplin, CT 06235 (Latitude: 41.78452800, Longitude: -72.13569400) and within the existing fenced compound. The monopole tower is owned and operated by American Tower Corporation. The subject property is owned by the Bessette Revocable Living Trust.

Dish proposes to install a five (5) foot by seven (7) foot metal platform within the existing fenced compound and install three (3) antennas, a single antenna mount, six (6) RRUs, and cables on the existing tower at one hundred and five (105) feet as more particularly detailed and described on the enclosed Construction Drawings. No height extension or compound expansion are proposed. I was unable to locate the original approval of the tower, but American Tower received tower modification approval in case EM-ATC-024-190111 on February 4, 2019.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies 16-50aa, of Dish's intent to share a telecommunications facility pursuant to R.C.S.A. 16-50j-88. In accordance with R.C.S.A §16-50j-73, a copy of this letter is being sent to the following individuals: American Tower Corporation as Tower Operator/Owner; the Bessette Revocable Living Trust as Property Owner; the Honorable Juan Roman III as First Selectman, Town of Chaplin, and Jay Gigliotti, Zoning Enforcement Officer, Town of Chaplin.

The applicant's proposal falls squarely within those activities explicitly provided for in R.C.S.A. §16-50j-89. Specifically:

1. The proposed modifications will NOT result in an increase in the height of the existing structure.
2. The proposed modifications will NOT require an extension of the site boundary.

Jack Andrews, Zoning Manager 10130 Donleigh Drive, Columbia, MD 21046 (443) 677-0144
Centerline Communications • 750 W Center Street, Suite 301, W Bridgewater, MA 02379

3. The proposed modifications will NOT increase noise levels at the facility by six decibels or more, or to levels that exceed state and local criteria.
4. The operation of the modified facility will NOT increase radio frequency emissions at the facility to a level at or above the Federal Communications Commission (FCC) safety standard. Please see the RF emissions calculation for Dish's modified facility enclosed herewith.
5. The proposed modifications will NOT cause an ineligible change or alteration in the physical or environmental characteristics of the site.
6. The existing structure and its foundation can support the proposed loading. Please see the structural analysis enclosed herewith.

Connecticut General Statute 16-50aa indicates that the Council must approve the shared use of a telecommunications facility provided it finds the shared use is technically, legally, environmentally, and economically feasible and meets public safety concerns. As demonstrated in this letter, Dish respectfully indicates that the shared use of this facility satisfies these criteria:

A. Technical Feasibility. The existing monopole has been deemed structurally capable of supporting Dish's proposed loading (see attached Structural Analysis).

B. Legal Feasibility. As referenced above, C.G.S. 16-50aa has been authorized to issue orders approving the shared use of an existing tower. Under the authority granted to the Council, an order of the Council approving the requested shared use would permit Dish to obtain a building permit for the proposed installation. Further, a Letter of Authorization is attached, authorizing Dish to file this application for shared use.

C. Environmental Feasibility. The proposed shared use of this facility would have a minimal environmental impact. The installation of Dish equipment on the existing tower would have an insignificant visual impact on the area around the tower. Dish ground equipment would be installed within the existing facility compound. The shared use would therefore not cause any significant alteration in the physical or environmental characteristics of the existing site. Additionally, as evidenced by the attached EME study, the proposed antennas would not increase radio frequency emissions to a level at or above the Federal Communications Commission safety standard.

D. Economic Feasibility. Dish will be entering into an agreement with the owner of this facility to mutually agreeable terms. As previously mentioned, the Letter of Authorization has been provided by the owner to assist Dish with this tower sharing application.

E. Public Safety Concerns. As discussed above, the tower is structurally capable of supporting the proposed loading. Dish is not aware of any public safety concerns relative to the proposed sharing of the existing tower. Dish's intentions of providing new and improved wireless service through the shared use of this facility is expected to enhance the safety and welfare of local residents and individuals traveling through the area.

For the foregoing reasons, Dish respectfully requests that the Council approve this request for the shared use of this tower located at 123 Palmer Road, Chaplin, CT 06235.

If you have any questions, please feel free to contact me.

Sincerely,

Jack Andrews
Zoning Manager, Centerline Communications
10130 Donleigh Drive
Columbia, MD 21046
443-677-0144

Enclosures:
Exhibit 1 – Letter of Authorization from tower owner
Exhibit 2 – Property Card and GIS
Exhibit 3 – Construction Drawings
Exhibit 4 – Structural Analysis Report
Exhibit 5 – Antenna Mount Analysis Report
Exhibit 6 – EME Study Report
Exhibit 7 – Original Tower Approval
Exhibit 8 – (4) Notice Confirmations

cc: American Tower Corporation - Tower Operator/Owner
Bessette Revocable Living Trust - Property Owner
The Honorable Juan Roman III as First Selectman, Town of Chaplin
Jay Gigliotti, Zoning Enforcement Officer, Town of Chaplin

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LETTER OF AUTHORIZATION

SITE NO: See Site List Below **SITE NAME: See Site List Below**

ADDRESS: See Site List Below

I, Margaret Robinson, Senior Counsel, US Tower Division on behalf of American Tower*, owner and/or operator of the tower facilities located at the addresses identified below (the "Tower Facilities"), do hereby authorize Centerline Communications, LLC ("Centerline"), its agents, successors and assigns, to act as American Tower's non-exclusive agent for the purpose of filing and securing any zoning, land-use, building permit and/or electrical permit application(s) and approvals of the applicable jurisdiction for and to conduct the construction of the installation of antennas and related telecommunications equipment owned and operated by DISH Network on the Tower Facilities located at the addresses identified below. This installation shall not affect adjoining lands and will occur only within the areas leased or owned by American Tower.

American Tower understands that the applications may be denied, modified or approved with conditions. The above authorization is limited to the acceptance by American Tower of conditions related to American Tower's installations. Any such conditions of approval or modifications will not be effective unless approved in writing by American Tower.

The above authorization does not permit Centerline to modify or alter any existing permit(s) and/or zoning or land-use conditions or impose any additional conditions unrelated to American Tower's installations of telecommunications equipment without the prior written approval of American Tower.

Site Authorized:

ATC PROJECT#	ATC SITE#	DISH SITE#	ADDRESS
13683503	302472	BOBDL00010A	104 Bunker Hill Road, Andover, Connecticut
13701209	302470	BOHVN00141A	401 Wakelee Ave, Ansonia, Connecticut
13702524	370641	BOHVN00148A	401-411 Lopus Road, Beacon Falls, Connecticut
13709244	88008	BOHVN00151A	9 Meyers Road, Bethany, Connecticut
13694329	283419	BOHVN00136A	123 Pine Orchard Road, Branford, Connecticut
13694332	283422	BOHVN00137A	171 Short Beach Road, Branford, Connecticut
13701211	302484	BOHVN00142A	405 Brushy Plain Rd, Branford, Connecticut
13709418	281862	BOHVN00200A	111 SECOND HILL RD, BRIDGEWATER, Connecticut
13733440	411216	BOBOS00893A	123 Palmer Road, Chaplin, Connecticut
13733449	208478	BOHVN00033A	1325 Cheshire Street, Cheshire, Connecticut
13694579	302496	BOBOS00887A	Chestnut Hill Road, Colchester, Connecticut
13694582	302465	BOBOS00890A	355 Route 85, Colchester, Connecticut
13733436	6270	BOBOS00031A	Rt 101 off Rt. 395 @1385 North Rd., Dayville, Connecticut
13702522	311305	BOHVN00147A	10 Tanner Marsh Road, Guilford, Connecticut
13733446	10029	BOBOS00894A	185 Fisk Road, Hampton, Connecticut
14046283	302466	BOBDL00079B	305 W. Service Rd., Hartford, Connecticut

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13746611	302503	BOBOS00068B	20 Mel Road, Jewett City, Connecticut
13702514	302540	BOHVN00146A	8 Old 79, Madison, Connecticut
OAA745087	411260	Middlefield CT	484 Meriden Rd., Middlefield, Connecticut
13698061	283564	BOHVN00139A	234 Melba Street, Milford, Connecticut
13702496	302516	BOHVN00144A	438 Bridgeport Ave, Milford, Connecticut
13693709	411182	BOHVN00005A	20 Antolini Road, New Hartford, Connecticut
13702509	302523	BOHVN00145A	4 Elkington Farm Rd, New Milford, Connecticut
13693659	283418	BOHVN00135A	50 Devine Street, North Haven, Connecticut
13694578	6260	BOBOS00884A	118C Wintechog Hill Rd., North Stonington, Connecticut
13693124	311014	BOBOS00023A	202 N Wawecus Hill Rd, Norwich, Connecticut
13726721	302532	BOBOS00022A	1337 Route 85, Oakdale, Connecticut
13693120	284984	BOBOS00021A	166 Pawcatuck Ave, Pawcatuck, Connecticut
13701212	302501	BOHVN00143A	297 North Street, Plymouth, Connecticut
13693135	411184	BOBOS00026A	399 West Road, SALEM, Connecticut
13729958	208205	BOHVN00035A	80 Great Hill Road, Seymour, Connecticut
13693705	411188	BOHVN00006A	111 Upper Fishrock Road, Southbury, Connecticut
13733433	415784	BOBOS00029A	165 Elmwood Hill Road, THOMPSON, Connecticut
13693127	370623	BOBOS00024A	139 Sharp Hill Road, Uncasville, Connecticut
13701206	302467	BOHVN00140A	90 North Plains Industrial Rd., Wallingford, Connecticut
13693131	411183	BOBOS00025A	53 Dayton Rd., Waterford, Connecticut
13693702	243036	BOHVN00132A	668 Jones Hill Road, West Haven, Connecticut
13729960	207941	BOHVN00036A	164 County Road, Wolcott, Connecticut
13702538	411180	BOHVN00150A	481 GOOD HILL ROAD, Woodbury, Connecticut
13733429	415439	BOBOS00027A	40 Sherman Road, Woodstock, Connecticut
13733431	415484	BOBOS00028A	445 Prospect St, Woodstock, Connecticut
13733434	418609	BOBOS00030A	87 West Quasset Road, Woodstock, Connecticut
13733438	6300	BOBOS00032A	156 Lebanon Hill Rd., Woodstock, Connecticut
13741553	283425	BOBOS00019A	350 Route 198, WOODSTOCK VALLEY, Connecticut
13743708	305310	BOPWM00004A	491 Court Street, Auburn, Maine
13743725	371976	BOPWM00007A	840 North River Rd, Auburn, Maine
13741457	371989	BOAUG00001A	627 Coldbrook Rd, BANGOR, Maine
13741460	416485	BOAUG00002A	237 Bomarc Rd, BANGOR, Maine
13735679	305311	BOBOS00433A	19 Little Harbor Road, Berwick, Maine
13746623	416552	BOPWM00012A	60 Andrews Road, Biddeford, Maine
13741463	305313	BOBOS00434A	71 Brixham Road, Eliot, Maine
13743702	10044	BOPWM00002A	26 Dorrington Drive, Freeport, Maine
13743704	281252	BOPWM00003A	71 Finn Parker Road, GORHAM, Maine

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13746621	371994	BOPWM00011A	4 Burnham Rd, Gorham, Maine
13746617	371990	BOPWM00009A	58 Buzzell Ln, Greene, Maine
13743722	371965	BOPWM00006A	67 Commercial Street, Lewiston, Maine
13746678	421397	BOPWM00013A	50 Potter Road, Lisbon, Maine
13743712	371964	BOPWM00005A	Pleasant Hill Rd, Sabattus, Maine
13738176	371992	BOBOS00777A	78 York Woods Rd, Rt 236, South Berwick, Maine
13743727	371978	BOPWM00008A	988 Roosevelt Trail, Windham, Maine
13746619	371993	BOPWM00010A	413 Roosevelt Tr, Windham, Maine
13734197	222167	BOBOS00393A	36 Knox trail, Acton, Massachusetts
13738223	371800	BOBOS00698A	107 South Main Street, Acushnet, Massachusetts
13738186	203692	BOBOS00788A	149 Haggets Pond Road, Andover, Massachusetts
13738208	371807	BOBOS00820A	165 South Main Street, ASSONET, Massachusetts
13728723	305010	BOBOS00387C	15 Washington Street, Attleboro, Massachusetts
13729951	92225	BOBOS00135A	55 Starkey Ave, Attleboro, Massachusetts
13729930	91563	BOBOS00133A	21 Parker Drive, Avon, Massachusetts
13738187	371838	BOBOS00791A	30 Shawsheen Ave, Bedford, Massachusetts
13734227	91567	BOBOS00612A	236 Maple Street, Bellingham, Massachusetts
13738231	88025	BOBOS00832A	39 Green Street, Berkley, Massachusetts
13746597	207264	BOBOS00281A	62R Anthony Street, Berkley, Massachusetts
13738152	283474	BOBOS00658A	347 Old Middlesex Turnpike, Billerica, Massachusetts
13734192	371816	BOBOS00616A	500 Morton Street, Boston, Massachusetts
13735268	305088	BOBOS00626A	22 Freeport Way, Boston, Massachusetts
13735650	262364	BOBOS00016A	53 C Pond Street, Boxford, Massachusetts
13729495	371820	BOBOS00004B	#26 Freemans Way Industrial Park, Brewster, Massachusetts
13735663	305054	BOBOS00111A	240 Burrill Avenue, Bridgewater, Massachusetts
13738201	414820	BOBOS00809A	434 Elm St., BRIDGEWATER, Massachusetts
13735259	371833	BOBOS00619A	1001 N Montello Street, Brockton, Massachusetts
13735275	371797	BOBOS00629A	500 Belmont Street, Brockton, Massachusetts
13735419	10008	BOBOS00646A	995 Belmont St., Brockton, Massachusetts
13738182	10342	BOBOS00670A	110 Mulberry Street, Brockton, Massachusetts
13738228	15456	BOBOS00389A	51 North Avenue, Burlington, Massachusetts
13746607	210761	BOBOS00139A	8 Springdale Avenue, Canton, Massachusetts
13734206	5870	BOBOS00395A	Off Montello Street, Carver, Massachusetts
13734212	15482	BOBOS00396A	31R Main Street, Carver, Massachusetts
13741598	10252	BOBOS00428A	31 J Hammond Road, Charlton, Massachusetts
13735290	371819	BOBOS00638A	7 Doris Drive, Chelmsford, Massachusetts
13759832	274893	BOBOS00636A	490 Stafford St., CHERRY VALLEY, Massachusetts

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13729557	412707	BOBOS00125A	40y Annursnac Hill Road, CONCORD, Massachusetts
13738190	240688	BOBOS00793A	323 Locust St, Danvers, Massachusetts
13735284	371805	BOBOS00631A	303 Broadway, Dracut, Massachusetts
13729926	5820	BOBOS00131A	32 Old County Road, East Wareham, Massachusetts
13734265	207267	BOBOS00282A	Upper Union Street, Franklin, Massachusetts
13735297	371782	BOBOS00644A	119 Dean Avenue, Franklin, Massachusetts
13735315	16228	BOBOS00649A	60 EARL'S WAY, Franklin, Massachusetts
13735654	10321	BOBOS00102A	16 Kondelin Rd, Gloucester, Massachusetts
13735670	305111	BOBOS00192B	400 Blackburn Drive, Gloucester, Massachusetts
13746594	210758	BOBOS00137A	434-438 Asbury Street, Hamilton, Massachusetts
13735658	283651	BOBOS00108A	263 Winter Street, Hanover, Massachusetts
13735666	371796	BOBOS00114A	171 Phillips Street, Hanson, Massachusetts
13741290	283476	BOBOS00615A	75 Willow Avenue, Haverhill, Massachusetts
13741718	283472	BOBOS01024A	1 Masys Way, Haverhill, Massachusetts
13743700	15659	BOBOS00903A	260 River Street, Jefferson, Massachusetts
13738229	305004	BOBOS00831A	23 Freetown Steet, Lakeville, Massachusetts
13735281	305117	BOBOS00630A	670 South Union Street, LAWRENCE, Massachusetts
13735286	371778	BOBOS00633A	576 Haverhill St, Lawrence, Massachusetts
13735709	210759	BOBOS00138A	280 New Lancaster Road, Leominster, Massachusetts
13743687	371808	BOBOS00853A	650 Willard Street, Leominster, Massachusetts
13735656	222165	BOBOS00105A	2005 Mass Ave, Lunenburg, Massachusetts
13734270	207263	BOBOS00283A	13 Mill Street, Marion, Massachusetts
13729921	412712	BOBOS00128A	860 BOSTON POST ROAD, Marlborough, Massachusetts
13738193	284981	BOBOS00806A	969 Ocean Street, Marshfield, Massachusetts
13746615	207266	BOBOS00284A	Holyoke Avenue, Marshfield, Massachusetts
13772780	202550	BOBOS01156C	0 Snow Road, Marshfield, Massachusetts
13735659	305027	BOBOS00109A	34 Topalian Street, Mattapan, Massachusetts
13734275	208176	BOBOS00285A	Summer Hill Road, Maynard, Massachusetts
13734201	16489	BOBOS00391A	31 BEDFORD ST, Middleboro, Massachusetts
13738205	305006	BOBOS00813A	164 Everett Street, Middleboro, Massachusetts
13735294	283071	BOBOS00641A	11 Natsue Way, MIDDLETON, Massachusetts
13735657	283070	BOBOS00107A	197 N. Main Street, MIDDLETON, Massachusetts
13743676	283767	BOBOS00842A	120 Highland Street, MILFORD, Massachusetts
13749484	91566	BOBOS00355B	111 Cedar Street, Milford, Massachusetts
13729925	412713	BOBOS00129A	25 Glenwood Street, Natick, Massachusetts
13734249	5762	BOBOS00614A	1555 Central Ave, Needham, Massachusetts
13735272	5860	BOBOS00628A	148 Penniman St., New Bedford, Massachusetts

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13737649	204458	BOBOS00651A	9 Eighth St, NEW BEDFORD, Massachusetts
13742882	305097	BOBOS00426A	127 R Duchaine Blvd., New Bedford, Massachusetts
13735652	1028	BOBOS00101A	1165 Chestnut Street, Newton, Massachusetts
13735266	305113	BOBOS00624A	20 Republic Road, North Billerica, Massachusetts
13742899	91886	BOBOS00758A	411 FAUNCE CORNER RD, North Dartmouth, Massachusetts
13738213	371810	BOBOS00829A	455 Somerset Avenue, North Dighton, Massachusetts
13741485	88027	BOBOS00833A	Maple Street, North Dighton, Massachusetts
13743644	91565	BOBOS00735A	38 Merriam District, North Oxford, Massachusetts
13735264	284980	BOBOS00620A	59 Davis Ave, Norwood, Massachusetts
13746603	207726	BOBOS00287A	15 Locust Road, Orleans, Massachusetts
13738197	15768	BOBOS00807A	171Mattakeesett Street, Pembroke, Massachusetts
13729507	371799	BOBOS00115A	75 Washington Street, Plainville, Massachusetts
13742871	10370	BOBOS00422A	50 Portside Drive, Pocasset, Massachusetts
13734236	10341	BOBOS00613A	106 Mazzeo Drive, Randolph, Massachusetts
13738200	305096	BOBOS00808A	1588 Broadway, Raynham, Massachusetts
13738203	10339	BOBOS00810A	678 Church Street, Raynham, Massachusetts
13738206	310959	BOBOS00817A	153 Cranberry Highway, Rochester, Massachusetts
13734282	207270	BOBOS00288A	320 Pleasant Street, Rockland, Massachusetts
13738199	305035	BOBOS00673A	488R Highland Avenue, Salem, Massachusetts
13742875	273378	BOBOS00423A	413 Rt 130, Sandwich, Massachusetts
13734198	10340	BOBOS00394A	1010 Chief Justice Cushing Highway, Scituate, Massachusetts
13741690	282810	BOBOS01155A	361 TILDEN RD, SCITUATE, Massachusetts
13729506	16459	BOBOS00103A	45 Vineyard Road, Seekonk, Massachusetts
13735664	207271	BOBOS00280A	212 Lake Street, Sherborn, Massachusetts
13738202	305051	BOBOS00674A	16 Kendall Avenue, Sherborn, Massachusetts
13735748	202086	BOBOS00659A	271 Spring Street, Shrewsbury, Massachusetts
13743636	91568	BOBOS00688A	800 Boston Turnpike, Shrewsbury, Massachusetts
13710032	371813	BOBOS00118A	3 Redemption Rock Trail, Sterling, Massachusetts
13741607	416056	BOBOS00866A	199 Raymond Rd., Sudbury, Massachusetts
13870803	371774	BOBOS00013D	142 North Road, Sudbury, Massachusetts
13743641	305009	BOBOS00733A	7 Kamaitas Road, Sutton, Massachusetts
13743672	305014	BOBOS00841A	194 Stone School Road, Sutton, Massachusetts
13742886	5830	BOBOS00427A	28 Dana Street, Taunton, Massachusetts
13729513	388560	BOBOS00122A	89 Progress Avenue, Tyngsboro, Massachusetts
13743680	305104	BOBOS00845A	87 Adams St., Upton, Massachusetts
13743669	305110	BOBOS00838A	70 Quaker Street, Uxbridge, Massachusetts
13734219	275069	BOBOS00601A	110 Bear Hill, Waltham, Massachusetts

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13737625	5810	BOBOS00816A	Thatcher Street, Wareham, Massachusetts
13743683	274897	BOBOS00851A	0 Century Drive, West Boylston, Massachusetts
13749477	305068	BOBOS00664B	225 Rivermoor St., West Roxbury, Massachusetts
13682009	283067	BOBDL00158A	1201 Westfield Street, WEST SPRINGFIELD, Massachusetts
13743698	9238	BOBOS00878A	972 Gilbert Road, West Warren, Massachusetts
13735736	305105	BOBOS00637A	25 Brigham Street, Westborough, Massachusetts
13743638	282319	BOBOS00690A	50 SMITH VALVE PKWY, WESTBOROUGH, Massachusetts
13734203	305034	BOBOS00392A	8 Nixon Rd., Westford, Massachusetts
13734284	274896	BOBOS00334B	19 Oak Street, Weston, Massachusetts
13735662	305041	BOBOS00110A	0 Nonesuch Road, Weston, Massachusetts
13742877	91559	BOBOS00425A	251 State Road, Westport, Massachusetts
13729511	371818	BOBOS00120A	611 Pleasant Street, Weymouth, Massachusetts
13735271	305028	BOBOS00627A	106 Finnell Dr., Weymouth, Massachusetts
13735303	282706	BOBOS00645A	10 Presidential Way, Woburn, Massachusetts
13772775	305060	BOBOS01068A	Green Street, Wrentham, Massachusetts
13741478	15136	BOBOS00443A	73 State Route 111, Atkinson, New Hampshire
13743271	91575	BOBOS00457A	437 Patten Hill Road, Candia, New Hampshire
13743029	306604	BOBOS00446A	359 Chester Street, Chester, New Hampshire
13743257	373098	BOBOS00449A	50 Town Dump Road, Chester, New Hampshire
13743267	88065	BOBOS00455A	674 Haverhill Road, Chester, New Hampshire
13743035	373099	BOBOS00450A	203 Haverhill Road, East Kingston, New Hampshire
13738226	91574	BOBOS00768A	49 Shirking Road, Epping, New Hampshire
13743263	373114	BOBOS00453A	7 CONTINENTAL DRIVE, Exeter, New Hampshire
13738179	373094	BOBOS00781A	789 Main Street, Fremont, New Hampshire
13743264	413027	BOBOS00454A	169 HAYDEN ROAD, HOLLIS, New Hampshire
13741480	15138	BOBOS00444A	36 Depot Road, Kingston, New Hampshire
13738183	273268	BOBOS00785A	242 New Derry Rd, Litchfield, New Hampshire
13738224	373116	BOBOS00705A	94 STONEHEDGE ROAD, Londonderry, New Hampshire
13743269	88069	BOBOS00456A	187A Pillsbury Road, Londonderry, New Hampshire
13738211	91571	BOBOS00683A	20 Daniel Webster Highway, Merrimack, New Hampshire
13741468	10304	BOBOS00441A	211 Ford Farm Road, Milton, New Hampshire
13743256	311757	BOBOS00448A	61 Old Coach Road, New Boston, New Hampshire
13743258	373101	BOBOS00451A	85 South Main Street, Newton, New Hampshire
13743031	311755	BOBOS00447A	34 Tower Hill Road, Pelham, New Hampshire
13741470	15134	BOBOS00442A	36 Cross Road, Rochester, New Hampshire
13743027	240696	BOBOS00445A	40 Jessie Doe Road, Rollinsford, New Hampshire
13743259	373102	BOBOS00452A	393 Main Street, Sandown, New Hampshire

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13714952	307060	SYSYR00023A	200 Irwin Road, Buffalo, New York
13767336	415364	SYSYR00507B	183 Saltonstall Street, Canandaigua, New York
13702046	373349	ALALB00011A	75 Van Dyke Road, Delmar, New York
13973540	392593	SYSYR00038A	571 Main Street, East Aurora, New York
13752077	413141	SYSYR00517B	91 Railroad Ave, Hamlin, New York
13713785	16467	SYSYR00015A	3181 Southwestern Blvd, Orchard Park, New York
13714492	414560	SYSYR00061A	4248 S. Taylor Road, Orchard Park, New York
13870807	91916	SYSYR00081A	County Route 6 and Fox Dr, Phoenix, New York
13712307	413140	SYSYR00407A	3830 Monroe Avenue, Pittsford, New York
13704766	91936	ALALB00020A	1245 Kings Road, SCHENECTADY, New York
OAA745429	280868	0190112-A	10790 Taylors Store Rd, Nashville, North Carolina
13741714	91582	BOBOS00881A	395 Woodville Road, Ashaway, Rhode Island
13738163	91983	BOBOS00662A	99 Tupelo Street, Bristol, Rhode Island
13743277	308765	BOBOS00586B	6 Minturn Farm Road, Bristol, Rhode Island
13742900	281265	BOBOS00899A	1380 Putnam Pike, CHEPACHET, Rhode Island
13735691	374117	BOBOS00522A	149 Laten Knight Road, Cranston, Rhode Island
13738222	374136	BOBOS00697A	1000 New London Avenue, Cranston, Rhode Island
13735296	374138	BOBOS00642A	500 Veterans Memorial Parkway, East Providence, Rhode Island
13738188	308768	BOBOS00672A	1 Dexter Road, East Providence, Rhode Island
13742895	1031	BOBOS00677A	2 Sunderland Road, Exeter, Rhode Island
13741622	374114	BOBOS00898A	2185 Putnam Pike, Glocester, Rhode Island
13743044	308772	BOBOS00519A	1677 Maple Valley Road, Greene, Rhode Island
13774131	91984	BOBOS00518B	2612 Victory Hwy, Harrisville, Rhode Island
13737644	91985	BOBOS00650A	74 Maria Ave., JOHNSTON, Rhode Island
13738150	273282	BOBOS00654A	32 Breakneck Hill Road, Lincoln, Rhode Island
13735720	6350	BOBOS00525A	1230 Chopmist Hill Rd. Rt. 102, North Scituate, Rhode Island
13743039	308766	BOBOS00517A	316 South Main St., Pascoag, Rhode Island
13738157	91581	BOBOS00661A	10 Dunnell Lane, Pawtucket, Rhode Island
13741493	91584	BOBOS00836A	205 Farnum Pike, Smithfield, Rhode Island
14049070	308759	BOBOS00587C	2935 Tower Hill Road, South Kingstown, Rhode Island
13738210	374137	BOBOS00828A	408 Stafford Road, Tiverton, Rhode Island
13738221	91986	BOBOS00696A	15 New Industrial Road, Warren, Rhode Island
13743273	308757	BOBOS00584B	289 Kilvert Street, Warwick, Rhode Island
13735687	374115	BOBOS00521A	244 Plain Road, West Greenwich, Rhode Island
13735723	91578	BOBOS00583A	830 Nooseneck Hill Road, West Greenwich, Rhode Island
13735700	374133	BOBOS00524A	226C Cowesett Avenue, West Warwick, Rhode Island
13735726	91579	BOBOS00585B	195 J.P. Murphy Highway, West Warwick, Rhode Island

AMERICAN TOWER®
CORPORATION

13742891	207962	BOBOS00552A	37 Laurel Avenue, Westerly, Rhode Island
13735695	374119	BOBOS00523A	9 New Kings Factory Road, Wood River Junction, Rhode Island

Signature: _____

Margaret Robinson, Senior Counsel
US Tower Division

NOTARY BLOCK

COMMONWEALTH OF MASSACHUSETTS
County of Middlesex

This instrument was acknowledged before me by Margaret Robinson, Senior Counsel of American Tower (owner and/or operator of the above referenced Tower Facilities), personally known to me (or proved to me on the basis of satisfactory evidence) to be the person whose name is subscribed to the within instrument and acknowledged to me that he/she executed the same.

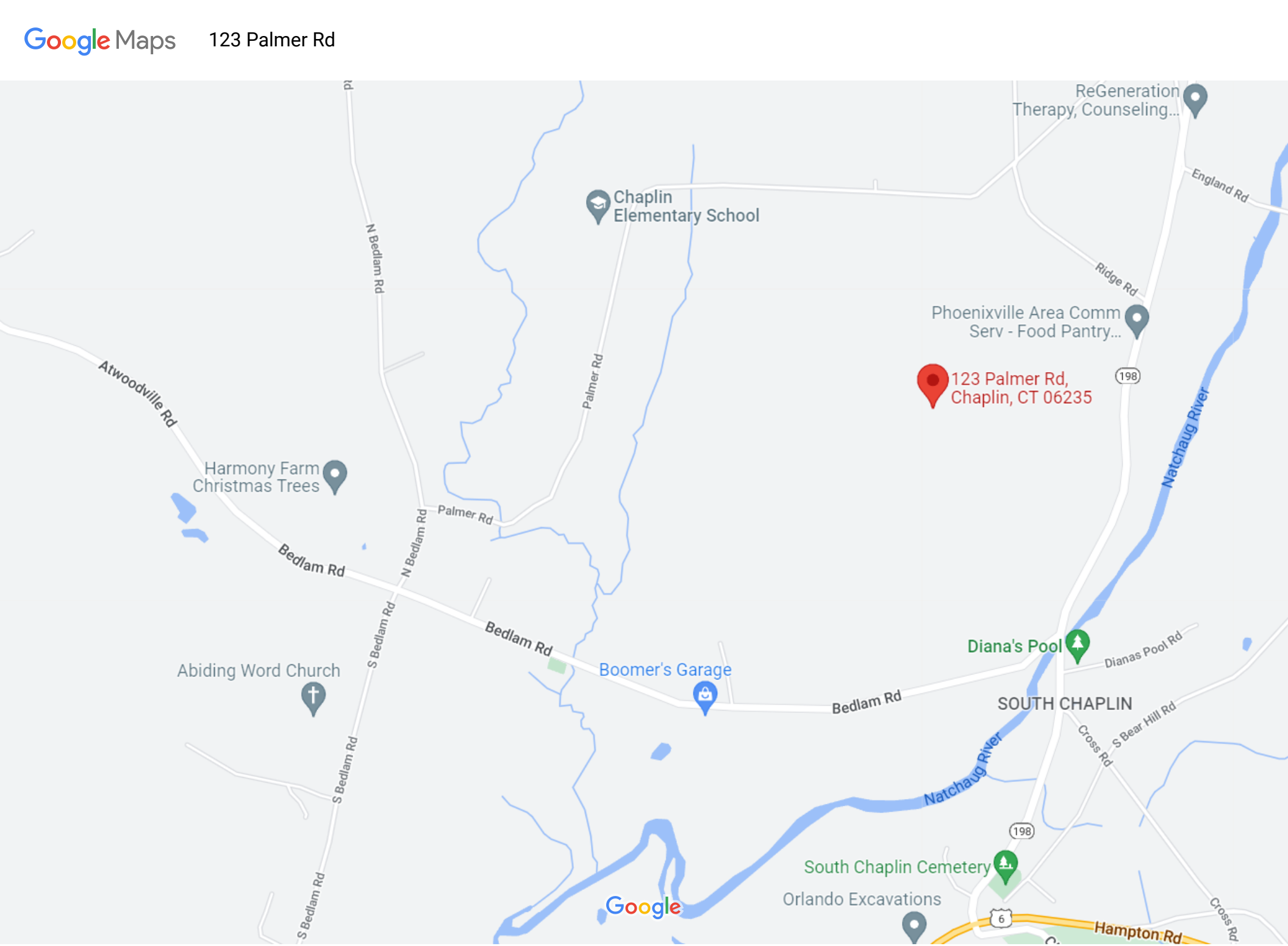
WITNESS my hand and official seal, this 24th day of March, 2022.

NOTARY SEAL

GERARD T. HEFFRON
Notary Public
Commonwealth of Massachusetts
My Commission Expires
August 9, 2024

Notary Public Gerard T. Heffron
My Commission Expires: August 9th, 2024

* American Tower as used herein is defined as American Tower Corporation and any of its affiliates or subsidiaries.


Google Maps
123 Palmer Rd
ReGeneration Therapy, Counseling...
Chaplin Elementary School
England Rd
Ridge Rd
Phoenixville Area Comm Serv - Food Pantry...
123 Palmer Rd, Chaplin, CT 06235
198
Natchaug River
Atwoodville Rd
Harmony Farm Christmas Trees
N Bedlam Rd
Palmer Rd
Bedlam Rd
S Bedlam Rd
Abiding Word Church
Boomer's Garage
Diana's Pool
Dianas Pool Rd
SOUTH CHAPLIN
S Bear Hill Rd
Cross Rd
South Chaplin Cemetery
Orlando Excavations
6
Hampton Rd
Google
Map data ©2022
1000 ft

Property Location: 123 PALMER RD REAR **MAP ID:** 55/ 54/ CELL/ / **Bldg Name:** **State Use:** 202

Vision ID: 1460 **Account #** 622CELL **Bldg #:** 1 of 1 **Sec #:** 1 of 1 **Card** 1 **of** 1 **Print Date:** 10/25/2018 10:13

CURRENT OWNER	TOPO.	UTILITIES	STRT./ROAD	LOCATION
CELLCO PROPERTY TAX DEPARTMENT ONE VERIZON WAY BASKING RIDGE, NJ 07920 Additional Owners:				

SUPPLEMENTAL DATA

Other ID:	622CELL
Census Tr.	
Survey #	
DV Map #	
GIS ID:	
DV Lot #	
Call Back	
ASSOC PID#	

CURRENT ASSESSMENT

Description	Code	Appraised Value	Assessed Value
COM OUTBL	2-5	859,000	601,300
VAC CM LN	5-2	180,000	126,000
		Total	1,039,000	727,300

6024
CHAPLIN, CT

VISION

RECORD OF OWNERSHIP

	BK-VOL/PAGE	SALE DATE	q/u	v/i	SALE PRICE	V.C.
CELLCO	0000/0000	02/09/2016	U	V	0	03
VERIZON WIRELESS	000/ 000	10/01/2008	U	V	0	03

PREVIOUS ASSESSMENTS (HISTORY)

Yr.	Code	Assessed Value	Yr.	Code	Assessed Value	Yr.	Code	Assessed Value
2017	2-5	715,200	2012	2-5	104,900			
2017	5-2	226,800	2012	5-2	226,800			
		Total: 942,000			Total: 331,700			Total: 0

EXEMPTIONS

Year	Type	Description	Amount
		Total:	

OTHER ASSESSMENTS

Code	Description	Number	Amount	Comm. Int.

This signature acknowledges a visit by a Data Collector or Assessor

ASSESSING NEIGHBORHOOD

NBHD/ SUB	NBHD Name	Street Index Name	Tracing	Batch
0001/A				

APPRAISED VALUE SUMMARY

Appraised Bldg. Value (Card)	0
Appraised XF (B) Value (Bldg)	0
Appraised OB (L) Value (Bldg)	859,000
Appraised Land Value (Bldg)	180,000
Special Land Value	0
Total Appraised Parcel Value	1,039,000
Valuation Method:	C
Adjustment:	0
Net Total Appraised Parcel Value	**1,039,000**

NOTES

PARCEL CREATED FOR REVAL

4 CELL SITES@2500/MONTH=10,000

10,000 X 12= 120,000-(20% EXP)=

96,000/.11 CAP= 872,700

2017-OWNER & ADDRESS CHANGE PER

AMERICAN TOWNER CORRESPONDENCE

SITE: CT CHAPLIN SOUTH CT

SITE # 411216, MONO POLE W/4 RINGS

FCC# 1240431,VERIZON, T-MOBILE,SPRINT

CINGULAR, AT+T

BUILDING PERMIT RECORD

Permit ID	Issue Date	Type	Description	Amount	Insp. Date	% Comp.	Date Comp.	Comments
	07/07/2015	OT	Other	15,000		100		MODIFICATIONS TO I

VISIT/ CHANGE HISTORY

Date	Type	IS	ID	Cd.	Purpose/Result
03/19/2018			RH	00	Complete
05/22/2013			JW	09	Review
05/22/2013			JW	09	Review
10/01/2008			JL	09	Review
10/01/2008			JL	09	Review

LAND LINE VALUATION SECTION

B #	Use Code	Use Description	Zone	D	Front	Depth	Units	Unit Price	I. Factor	S.A.	Acre Disc	C. Factor	ST. Idx	Adj.	Notes- Adj	Special Pricing Spec Use	Special Pricing Spec Calc	S Adj Fact	Adj. Unit Price	Land Value
1	202	Commercial Land & OB					1.00 AC	0.00	1.0000	0	1.0000	1.00		0.00	SITE			.00		0
1	202	Commercial Land & OB					1.00 BL	180,000.00	1.0000	0	1.0000	1.00		0.00				1.00		180,000

Total Card Land Units: 1.00 AC **Parcel Total Land Area:** 1 AC **Total Land Value:** 180,000

Property Location: 123 PALMER RD REAR **MAP ID:** 55/ 54/ CELL/ / **Bldg Name:** **State Use:** 202

Vision ID: 1460 **Account #** 622CELL **Bldg #:** 1 of 1 **Sec #:** 1 of 1 **Card** 1 of 1 **Print Date:** 10/25/2018 10:13

CONSTRUCTION DETAIL

Element	Cd.	Ch.	Description
Model	00		Vacant

CONSTRUCTION DETAIL (CONTINUED)

Element	Cd.	Ch.	Description

MIXED USE

Code	Description	Percentage
202	Commercial Land & OB	100

COST/MARKET VALUATION

Adj. Base Rate:	0.00
AYB	
Dep Code	
Remodel Rating	
Year Remodeled	
Dep %	
Functional Obslnc	
External Obslnc	
Cost Trend Factor	
Condition	
% Complete	
Overall % Cond	
Apprais Val	
Dep % Ovr	0
Dep Ovr Comment	
Misc Imp Ovr	0
Misc Imp Ovr Comment	
Cost to Cure Ovr	0
Cost to Cure Ovr Comment	

OB-OUTBUILDING & YARD ITEMS(L) / XF-BUILDING EXTRA FEATURES(B)

Code	Description	Sub	Sub Descript	L/B	Units	Unit Price	Yr	Gde	Dp Rt	Cnd	%Cnd	Apr Value
SHD5	PreCast Shed			L	360	350.00	2007		0		70	88,200
SHD5	PreCast Shed			L	200	350.00	2007		0		70	49,000
FN6	Fence 6'			L	280	13.00	2007		0		50	1,800
	TOWER			L	4	180,000.00	2007		0		100	720,000

BUILDING SUB-AREA SUMMARY SECTION

Code	Description	Living Area	Gross Area	Eff. Area	Unit Cost	Undeprec. Value
	Ttl. Gross Liv/Lease Area:	0	0			

No Photo On Record

123 PALMER RD

Location	123 PALMER RD	**Mblu**	55/ 54/ / /
Acct#	B000626	**Owner**	BESSETTE JANET L REVOCABLE LIVING TRUST
PBN		**Assessment**	$17,700
Appraisal	$25,300	**PID**	622
Building Count	1		

Current Value

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2018	$0	$25,300	$25,300
Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2018	$0	$17,700	$17,700

Owner of Record

Owner	BESSETTE JANET L REVOCABLE LIVING TRUST	**Sale Price**	$0
Co-Owner		**Certificate**	

Address	5 VICTORY LN WILLIMANTIC, CT 06226	**Book & Page**	102/ 971
		Sale Date	10/03/2016
		Instrument	01
		Qualified	U

Ownership History

Ownership History					
Owner	**Sale Price**	**Certificate**	**Book & Page**	**Instrument**	**Sale Date**
BESSETTE JANET L REVOCABLE LIVING TRUST	$0		102/ 971	01	10/03/2016
BESSETTE JANET L	$0		87/ 976	06	01/09/2007
	$0		60/ 633	00	01/25/1996

Building Information

Building 1 : Section 1

Year Built:
Living Area: 0
Replacement Cost: $0
Building Percent Good:
Replacement Cost Less Depreciation: $0

Building Attributes	
Field	**Description**
Style	Outbuildings
Model	
Grade:	
Stories:	
Occupancy:	

Building Photo

Building Photo
(http://images.vgsi.com/photos/ChaplinCTPhotos//default.jpg)

Building Layout

Building Layout
(http://images.vgsi.com/photos/ChaplinCTPhotos//Sketches/622_622.jpg)

Building Sub-Areas (sq ft)	Legend
No Data for Building Sub-Areas	

Exterior Wall 1:	
Exterior Wall 2:	
Roof Structure:	
Roof Cover:	
Interior Wall 1:	
Interior Wall 2:	
Interior Flr 1:	
Interior Flr 2:	
Heat Fuel:	
Heat Type:	
AC Type:	
Total Bedrooms:	
Total Bthrms:	
Total Half Baths:	
Xtra Fix:	
Total Rooms:	
Bath Style:	
Kitchen Style:	
Fireplace:	
Gas Fireplace:	
Whirlpool Tubs:	
Fin Bsmt SF	
Fin Bsmt Qual	

Extra Features

Extra Features	Legend

No Data for Extra Features

Land

Land Use

Use Code	100
Description	Resid Vacant
Zone	
Neighborhood	
Alt Land Appr	No
Category	

Land Line Valuation

Size (Acres)	10.23
Frontage	
Depth	
Assessed Value	$17,700
Appraised Value	$25,300

Outbuildings

Outbuildings	Legend
No Data for Outbuildings	

Valuation History

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2017	$0	$32,700	$32,700
2012	$0	$227,100	$227,100

Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2017	$0	$22,900	$22,900

2012	$0	$8,400	$8,400

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

February 4, 2019

David Hoogasian
Project Manager
Network Building & Consulting, LLC
100 Apollo Drive, Suite 303
Chelmsford, MA 01824

RE: **EM-ATC-024-190111** – American Tower Corporation, Inc. (ATC) notice of intent to modify an existing telecommunications facility located at 123 Palmer Road, Chaplin, Connecticut.

Dear Mr. Hoogasian:

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:

1. Any deviation from the proposed modification as specified in this notice and supporting materials with the Council shall render this acknowledgement invalid;

2. Any material changes to this modification as proposed shall require the filing of a new notice with the Council;

3. Within 45 days after completion of construction, the Council shall be notified in writing that construction has been completed;

4. The validity of this action shall expire one year from the date of this letter; and

5. 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 December 28, 2018. 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 by any dimension, increase noise levels at the tower site boundary by six decibels or more, and increase the total radio frequencies electromagnetic radiation power density measured at the tower site boundary to or above the standards adopted by the Federal Communications Commission pursuant to Section 704 of the Telecommunications Act of 1996 and by the state Department of Energy and Environmental Protection pursuant to Connecticut 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.

Sincerely,

Melanie A. Bachman
Executive Director

MAB/FOC/emr

c: The Honorable William Rose, IV, First Selectman, Town of Chaplin
Jay Gigliotti, Zoning Enforcement Officer, Town of Chaplin
Janet Bessette Revocable Living Trust, Property Owner

EBI Consulting

environmental | engineering | due diligence

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

Dish Wireless Existing Facility

Site ID: BOBOS00893A

BOBOS00893A
123 Palmer Road
Chaplin, Connecticut 06235

February 9, 2022

EBI Project Number: 6222000519

Site Compliance Summary	
Compliance Status:	**COMPLIANT**
Site total MPE% of FCC general population allowable limit:	**25.03%**

February 9, 2022

Dish Wireless

Emissions Analysis for Site: BOBOS00893A - BOBOS00893A

EBI Consulting was directed to analyze the proposed Dish Wireless facility located at **123 Palmer Road** in **Chaplin, Connecticut** for the purpose of determining whether the emissions from the Proposed Dish Wireless Antenna Installation located 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 97-01and ANSI/IEEE Std C95.1. The FCC regulates Maximum Permissible Exposure in units of microwatts per square centimeter ($\mu W/cm^2$). The number of $\mu W/cm^2$ 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 population 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 population 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 ($\mu W/cm^2$). The general population exposure limits for the 600 MHz and 700 MHz frequency bands are approximately 400 $\mu W/cm^2$ and 467 $\mu W/cm^2$, respectively. The general population exposure limit for the 1900 MHz (PCS), 2100 MHz (AWS) and 11 GHz frequency bands is 1000 $\mu W/cm^2$. 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 Dish Wireless antenna facility located at 123 Palmer Road in Chaplin, Connecticut using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since Dish Wireless is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 20 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was focused at the base of the tower. 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 equipment was calculated using the following assumptions:

1) 4 n71 channels (600 MHz Band) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.

2) 4 n70 channels (PCS Band - 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 40 Watts per Channel.

3) 4 n66 channels (AWS Band - 2190 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 40 Watts per Channel.

4) 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.

5) For the following calculations, the sample point was the top of a 6-foot person standing at the base of the tower. The maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 20 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was used in this direction. This value is a very conservative

estimate as gain reductions for these particular antennas are typically much higher in this direction.

6) The antennas used in this modeling are the Commscope FFVV-65B-R2 for the 600 MHz / 1900 MHz / 2190 MHz channel(s) in Sector A, the Commscope FFVV-65B-R2 for the 600 MHz / 1900 MHz / 2190 MHz channel(s) in Sector B, the Commscope FFVV-65B-R2 for the 600 MHz / 1900 MHz / 2190 MHz channel(s) in Sector C. This is based on feedback from the carrier with regard to anticipated antenna selection. All Antenna gain values and associated transmit power levels are shown in the Site Inventory and Power Data table below. The maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 20 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was used for all calculations. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

7) The antenna mounting height centerline of the proposed antennas is 105 feet above ground level (AGL).

8) 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.

9) All calculations were done with respect to uncontrolled / general population threshold limits.

Dish Wireless Site Inventory and Power Data

Sector:	A	Sector:	B	Sector:	C
Antenna #:	1	Antenna #:	1	Antenna #:	1
Make / Model:	Commscope FFVV-65B-R2	Make / Model:	Commscope FFVV-65B-R2	Make / Model:	Commscope FFVV-65B-R2
Frequency Bands:	600 MHz / 1900 MHz / 2190 MHz	Frequency Bands:	600 MHz / 1900 MHz / 2190 MHz	Frequency Bands:	600 MHz / 1900 MHz / 2190 MHz
Gain:	17.55 dBd / 22.05 dBd / 22.05 dBd	Gain:	17.55 dBd / 22.05 dBd / 22.05 dBd	Gain:	17.55 dBd / 22.05 dBd / 22.05 dBd
Height (AGL):	105 feet	Height (AGL):	105 feet	Height (AGL):	105 feet
Channel Count:	12	Channel Count:	12	Channel Count:	12
Total TX Power (W):	440 Watts	Total TX Power (W):	440 Watts	Total TX Power (W):	440 Watts
ERP (W):	4,956.89	ERP (W):	4,956.89	ERP (W):	4,956.89
Antenna A1 MPE %:	**2.32%**	Antenna B1 MPE %:	**2.32%**	Antenna C1 MPE %:	**2.32%**

Site Composite MPE %	
Carrier	**MPE %**
Dish Wireless (Max at Sector A):	2.32%
AT&T	5.97%
Sprint	3.21%
T-Mobile	9.37%
Verizon	4.16%
Site Total MPE % :	25.03%

Dish Wireless MPE % Per Sector	
Dish Wireless Sector A Total:	2.32%
Dish Wireless Sector B Total:	2.32%
Dish Wireless Sector C Total:	2.32%
Site Total MPE % :	25.03%

Dish Wireless Maximum MPE Power Values (Sector A)

Dish Wireless Frequency Band / Technology (Sector A)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density (μW/cm²)	Frequency (MHz)	Allowable MPE (μW/cm²)	Calculated % MPE
Dish Wireless 600 MHz n71	4	226.27	105.0	3.32	600 MHz n71	400	0.83%
Dish Wireless 1900 MHz n70	4	506.48	105.0	7.43	1900 MHz n70	1000	0.74%
Dish Wireless 2190 MHz n66	4	506.48	105.0	7.43	2190 MHz n66	1000	0.74%
						Total:	**2.32%**

• NOTE: Totals may vary by approximately 0.01% due to summation of remainders in calculations.

Summary

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

The anticipated maximum composite contributions from the Dish Wireless facility as well as the site composite emissions value with regards to compliance with FCC's allowable limits for general population exposure to RF Emissions are shown here:

Dish Wireless Sector	Power Density Value (%)
Sector A:	2.32%
Sector B:	2.32%
Sector C:	2.32%
Dish Wireless Maximum MPE % (Sector A):	2.32%
Site Total:	25.03%
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **25.03%** of the allowable FCC established general population 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.

MOUNT ANALYSIS REPORT

September 16, 2021

Dish Wireless Site Name	BOBOS00893A
Dish Wireless Site Number	BOBOS00893A
NSS/DISH Site Name	-
NSS/DISH Site Number	-
Infinigy Job Number	1197-F0001-B
Client	NSS/DISH
Carrier	Dish Wireless
Site Location	123 Palmer Road Chaplin, CT 06235 Windham County 41.784500 N NAD83 72.135700 W NAD83
Mount Type	8.0 ft Platform
Mount Elevation	105.0 ft AGL
Structural Usage Ratio	**40.1**
Overall Result	**Pass**

The enclosed mount structural analysis has been performed in accordance with the 2018 Connecticut State Building Code (2015 IBC) based on an ultimate 3-second gust wind speed of 120 mph. The evaluation criteria and applicable codes are presented in the next section of this report.

CONTENTS

1. Introduction
2. Design/Analysis Parameters
3. Proposed Loading Configuration
4. Supporting Documentation
5. Results
6. Recommendations
7. Assumptions
8. Liability Waiver and Limitations
9. Calculations

1. INTRODUCTION

Infinigy performed a structural analysis on the Dish Wireless proposed telecommunication equipment supporting Platform mounted to the existing structure located at the aforementioned address. All referenced supporting documents have been obtained from the client and are assumed to be accurate and applicable to this site. The mount was analyzed using Risa-3D version 17.0.4 analysis software.

2. DESIGN/ANALYSIS PARAMETERS

Wind Speed	120 mph (3-Second Gust)
Wind Speed w/ ice	50 mph (3-Second Gust) w/ 1.0" ice
Code / Standard	TIA-222-H
Adopted Code	2018 Connecticut State Building Code (2015 IBC)
Risk Category	II
Exposure Category	C
Topographic Category	5
Calculated Crest Height	190 ft.
Seismic Spectral Response	S_s = 0.185 g / S_1 = 0.055 g
Live Load Wind Speed	60 mph
Man Live Load at Mid/End Points	250 lbs
Man Live Load at Mount Pipes	500 lbs

3. PROPOSED LOADING CONFIGURATION - 105.0 ft. AGL Platform

Antenna Centerline (ft)	Qty.	Appurtenance Manufacturers	Appurtenance Models
105.0	3	JMA WIRELESS	MX08FRO665-21
	3	FUJITSU	TA08025-B605
	3	FUJITSU	TA08025-B604
	1	RAYCAP	RDIDC-9181-PF-48

4. SUPPORTING DOCUMENTATION

Proposed Loading	Dish Wireless Asset ID CT-ATC-T-411216 Rev 0, Site #BOBOS00893A, dated June 14, 2021
Mount Manufacturer Drawings	Commscope Document # MC-PK8-DSH, dated March 08, 2021

5. RESULTS

Components	Capacity	Pass/Fail
Mount Pipes	27.9%	Pass
Horizontals	17.0%	Pass
Standoffs	40.1%	Pass
Handrails	33.8%	Pass
Connections	40.0%	Pass
MOUNT RATING =	**40.1 %**	**Pass**

Notes:
1. See additional documentation in Appendix for calculations supporting the capacity consumed and detailed mount connection calculations.

6. RECOMMENDATIONS

Infinigy recommends installing Dish Wireless's proposed equipment loading configuration on the mount at 105.0 ft. The installation shall be performed in accordance with the construction documents issued for this site.

Pradin Suinyal Magar
Project Engineer II | **INFINIGY**

7. ASSUMPTIONS

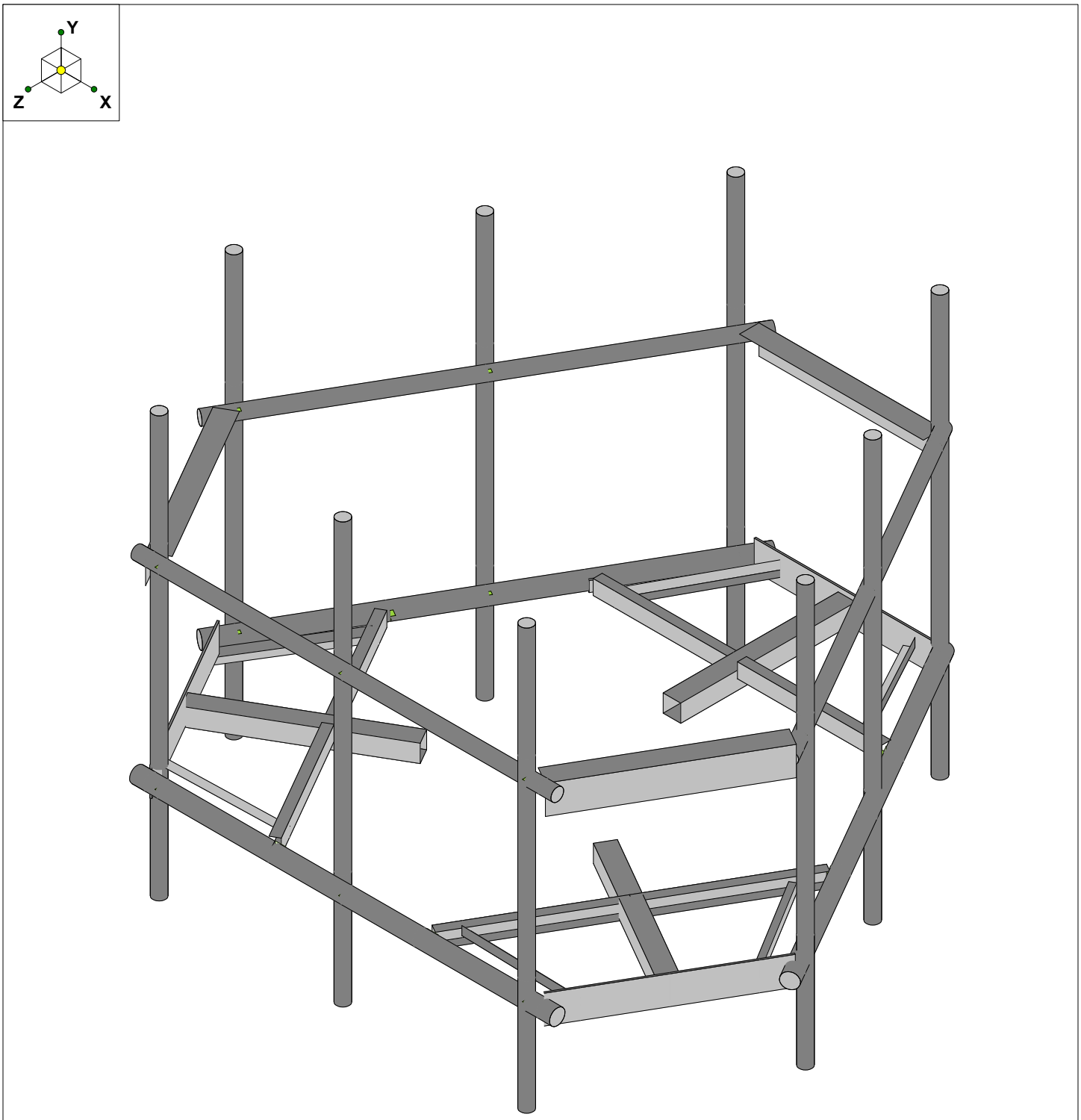
The antenna mounting system was properly fabricated, installed and maintained in accordance with its original design and manufacturer's specifications.
The configuration of antennas, mounts, and other appurtenances are as specified in the proposed loading configuration table.
All member connections are assumed to have been designed to meet or exceed the load carrying capacity of the connected member unless otherwise specified in this report.
The analysis will require revisions if the existing conditions in the field differ from those shown in the above-referenced documents or assumed in this analysis. No allowance was made for any damaged, missing, or rusted members.
Steel grades have been assumed as follows, unless noted otherwise: Channel, Solid Round, Plate, Built-up Angle — ASTM A1011 36 KSI Structural Angle — ASTM A529 Gr. 50 HSS (Rectangular) — ASTM A500-B GR 46 HSS (Circular) — ASTM A500-B GR 42 Pipe — ASTM A500 Gr C Connection Bolts — ASTM A325 U-Bolts — ASTM A307
All bolted connections are pretensioned in accordance with Table 8.2 of the RCSC 2014 Standard

8. LIABILITY WAIVER AND LIMITATIONS

Our structural calculations are completed assuming all information provided to Infinigy is accurate and applicable to this site. For the purposes of calculations, we assume an overall structure condition as erected and all members and connections to be free of corrosion and/or structural defects. The structure owner and/or contractor shall verify the structure's condition prior to installation of any proposed equipment. If actual conditions differ from those described in this report, Infinigy should be notified immediately to assess the impact on the results of this report.

Our evaluation is completed using industry standard methods and procedures. The structural results, conclusions and recommendations contained in this report are proprietary and should not be used by others as their own. Infinigy is not responsible for decisions made by others that are or are not based on the stated assumptions and conclusions in this report.

This report is an evaluation of the mount structure only and does not determine the adequacy of the supporting structure, other carrier mounts or cable mounting attachments. The analysis of these elements is outside the scope of this analysis, are assumed to be adequate for the purpose of this report and to have been installed per their manufacturer requirements. This document is not for construction purposes.



Envelope Only Solution

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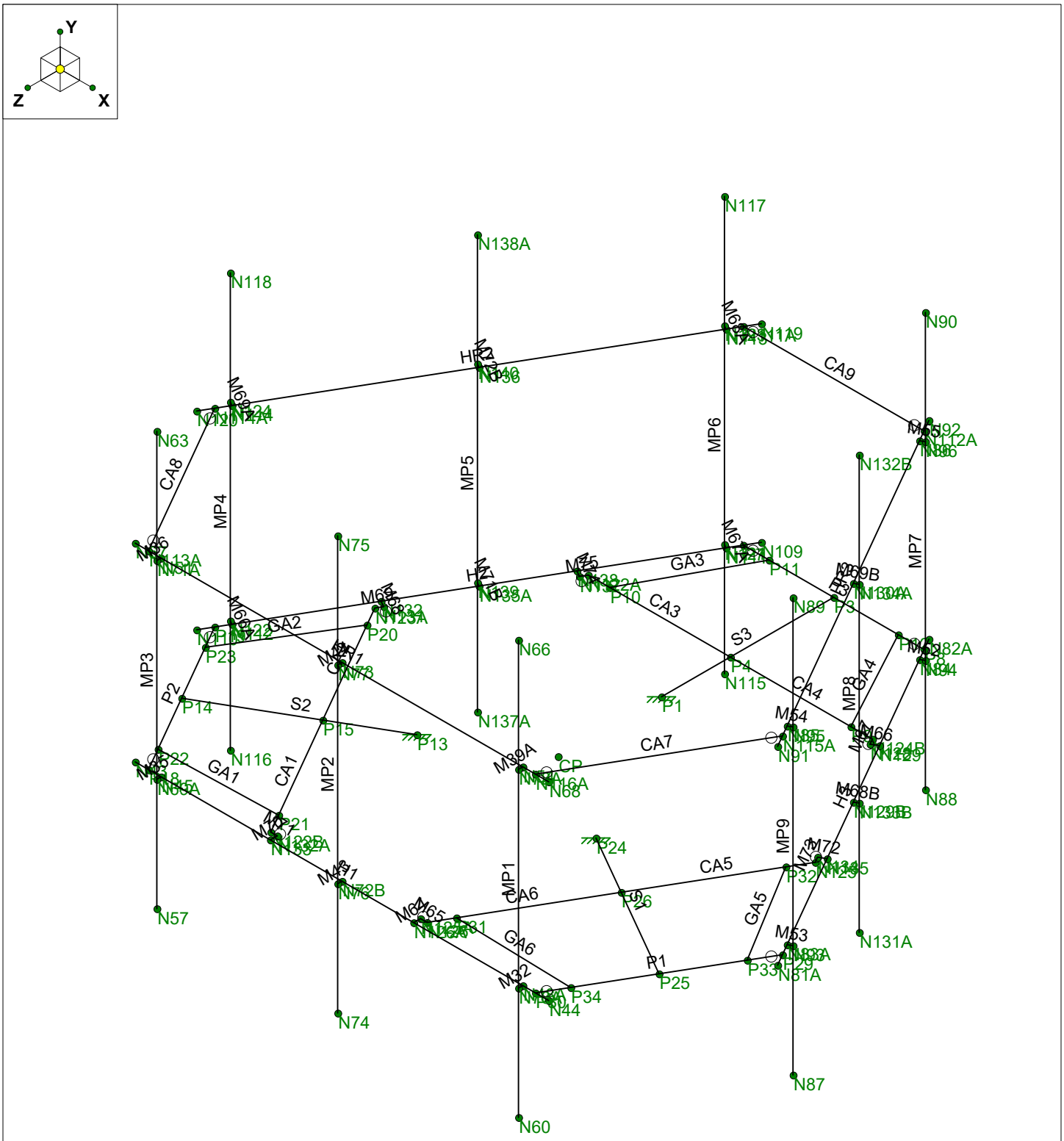

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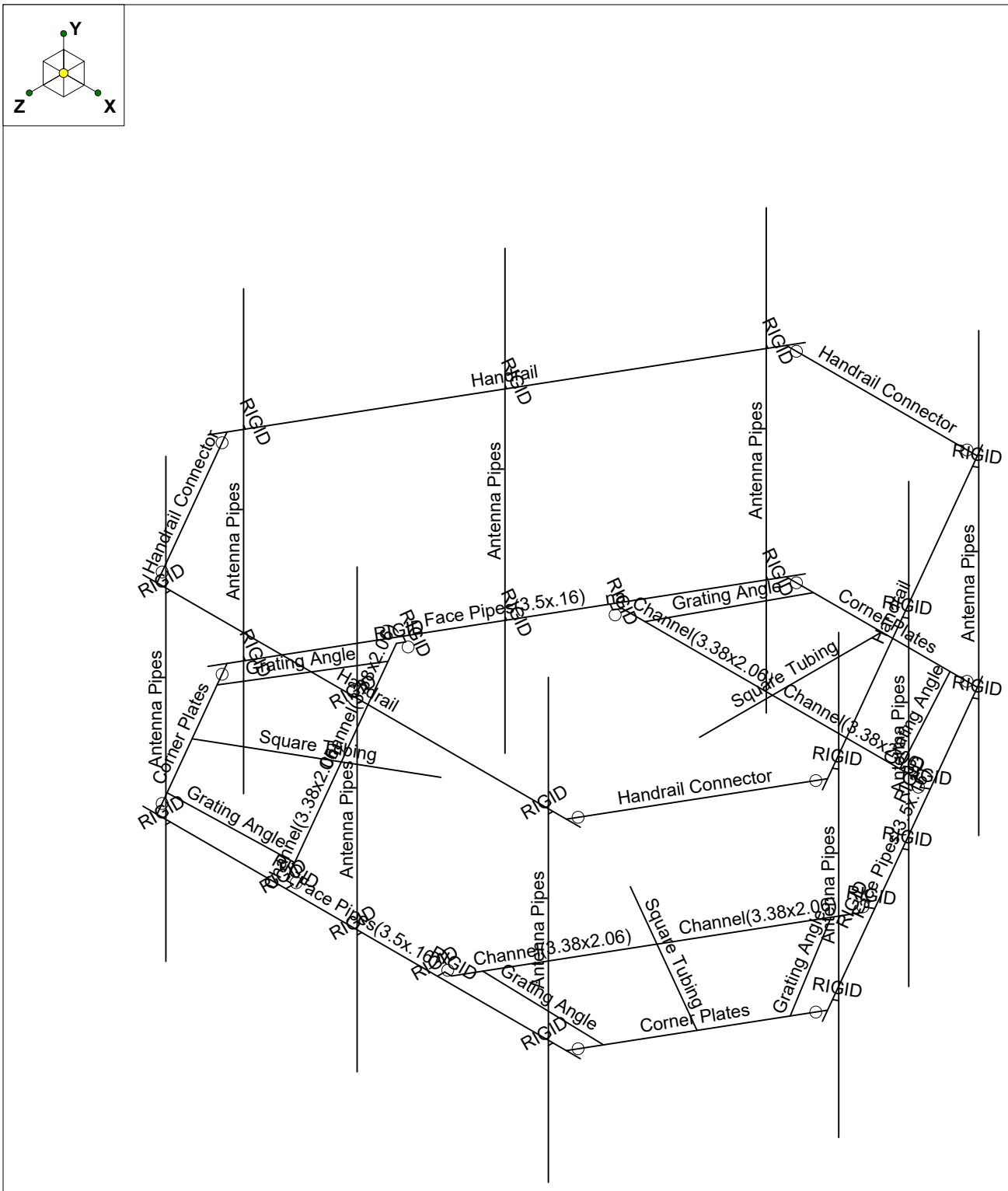

Envelope Only Solution

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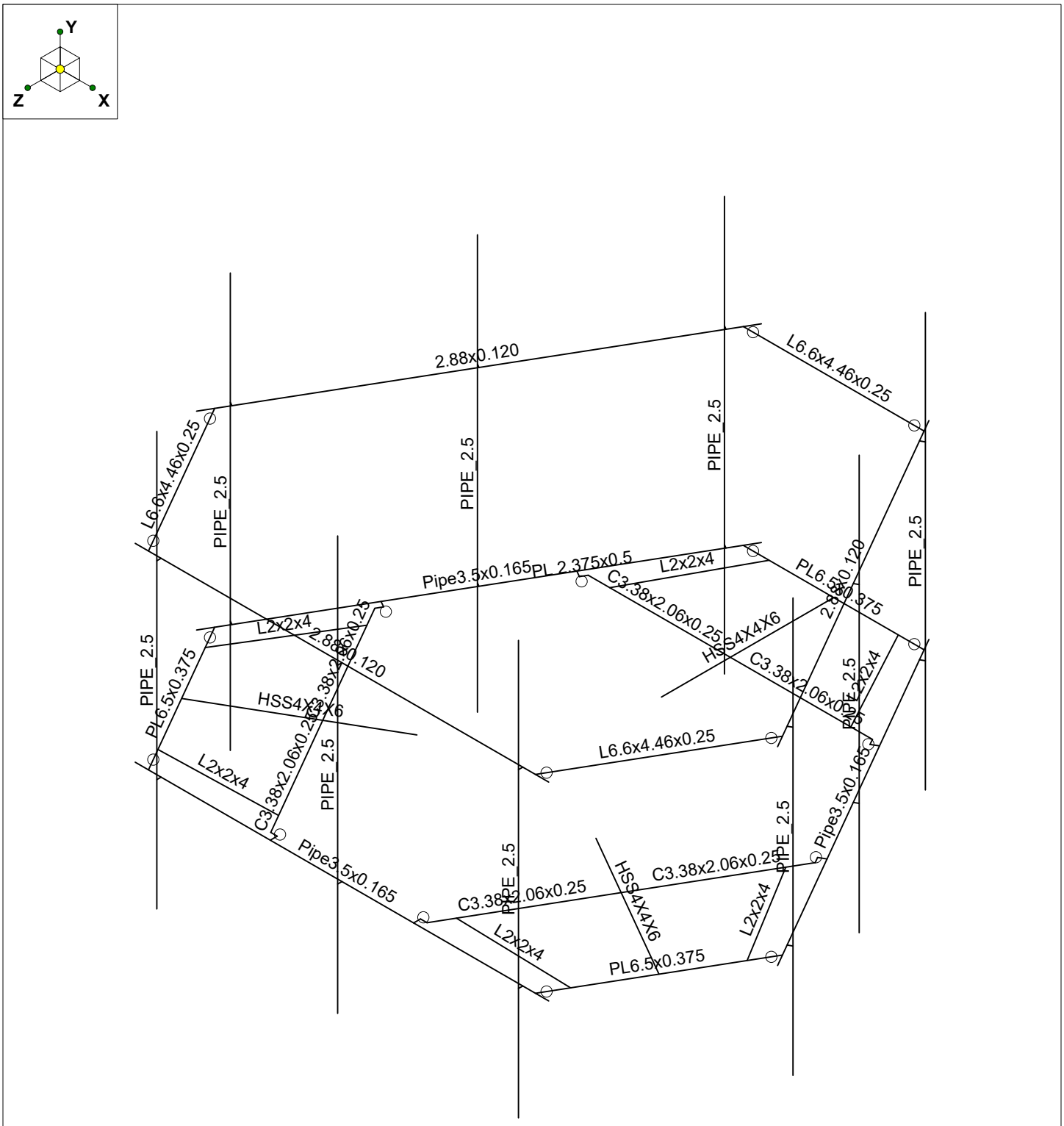

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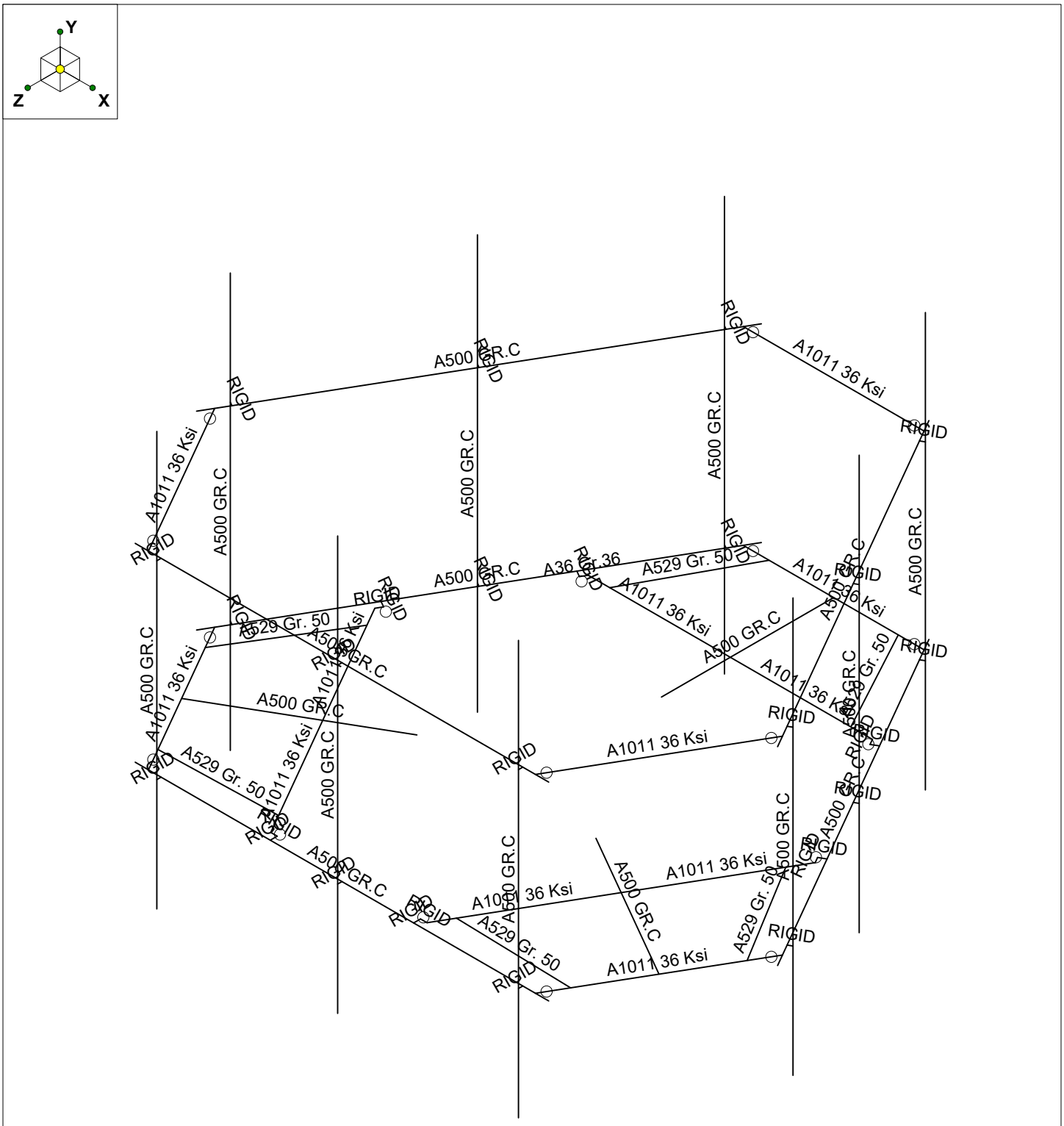

Envelope Only Solution

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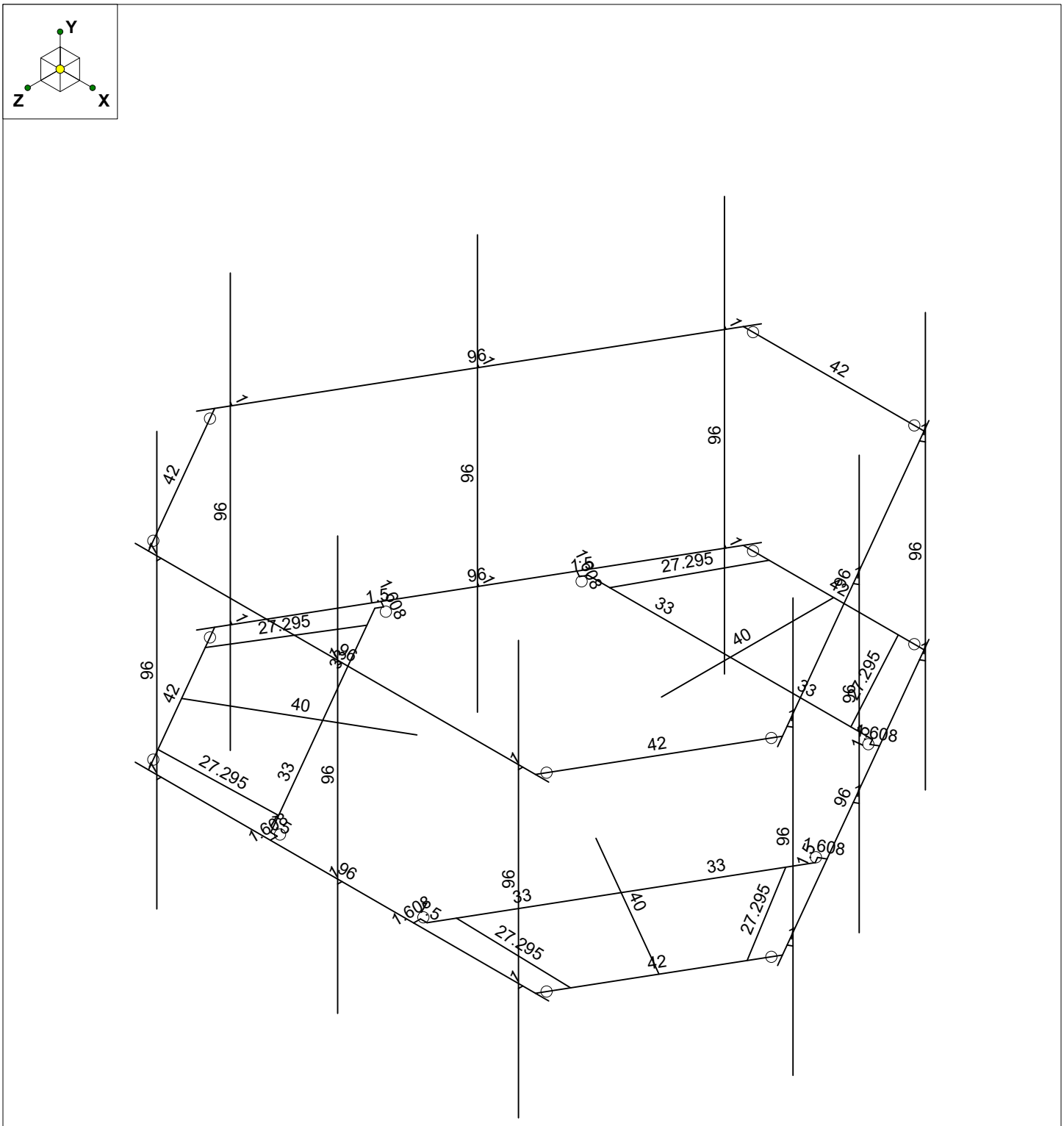

Member Length (in) Displayed
Envelope Only Solution

Infinigy Engineering, PLLC	BOBOS00893A	Member Lengths
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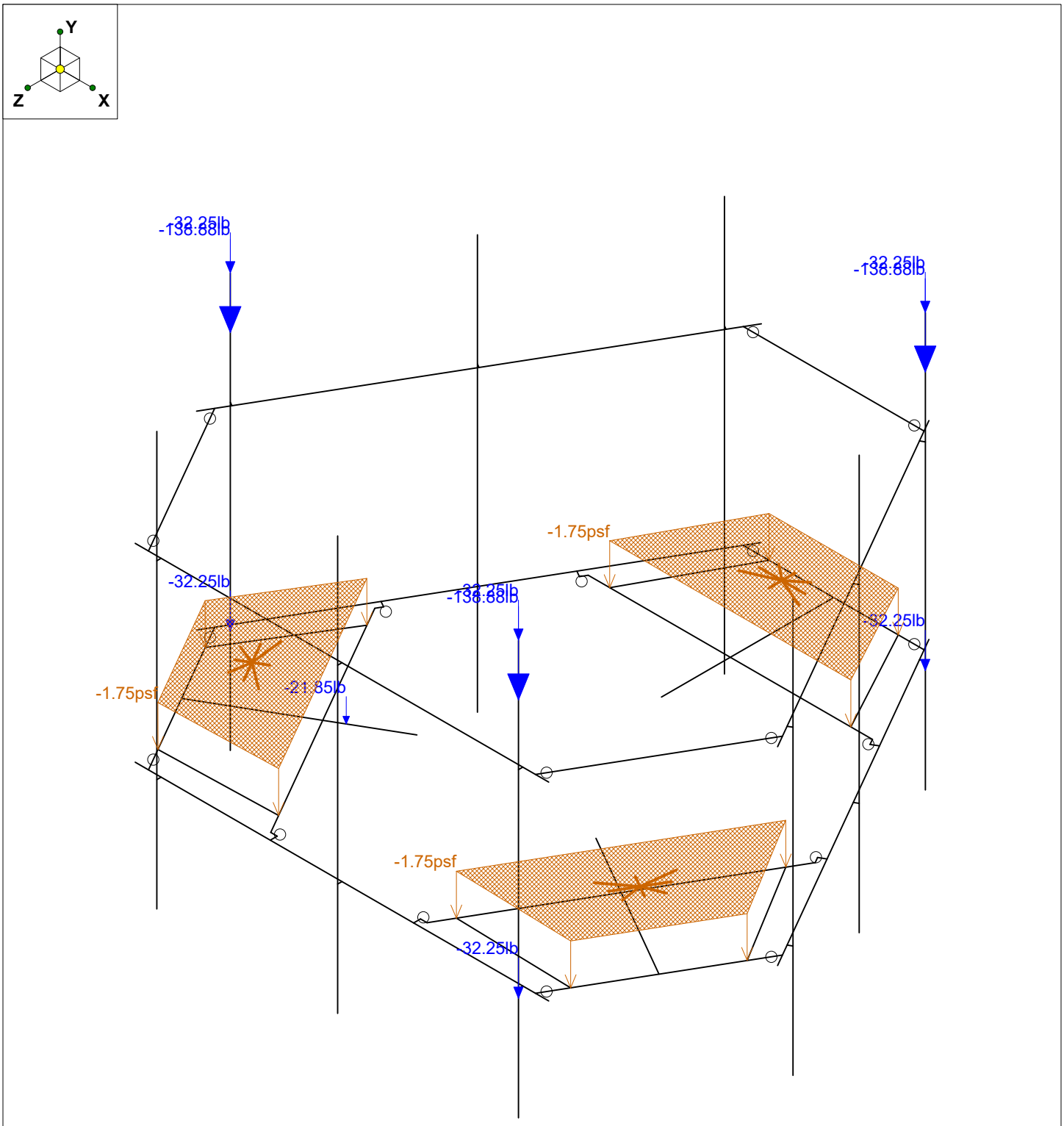

Loads: BLC 1, Self Weight
Envelope Only Solution

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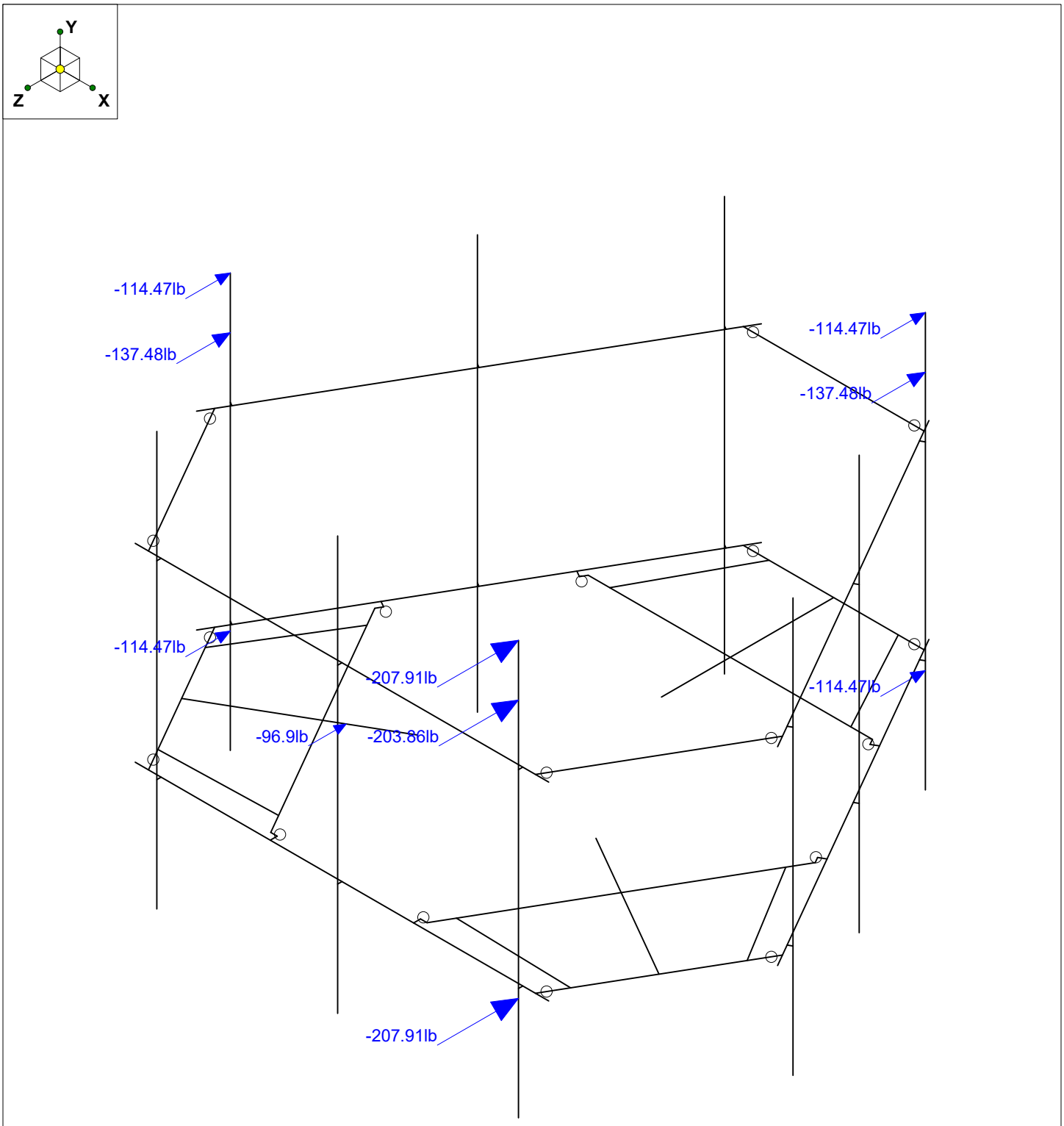

Loads: BLC 2, Wind Load AZI 0
Envelope Only Solution

Infinigy Engineering, PLLC	BOBOS00893A	Wind Load AZI 000
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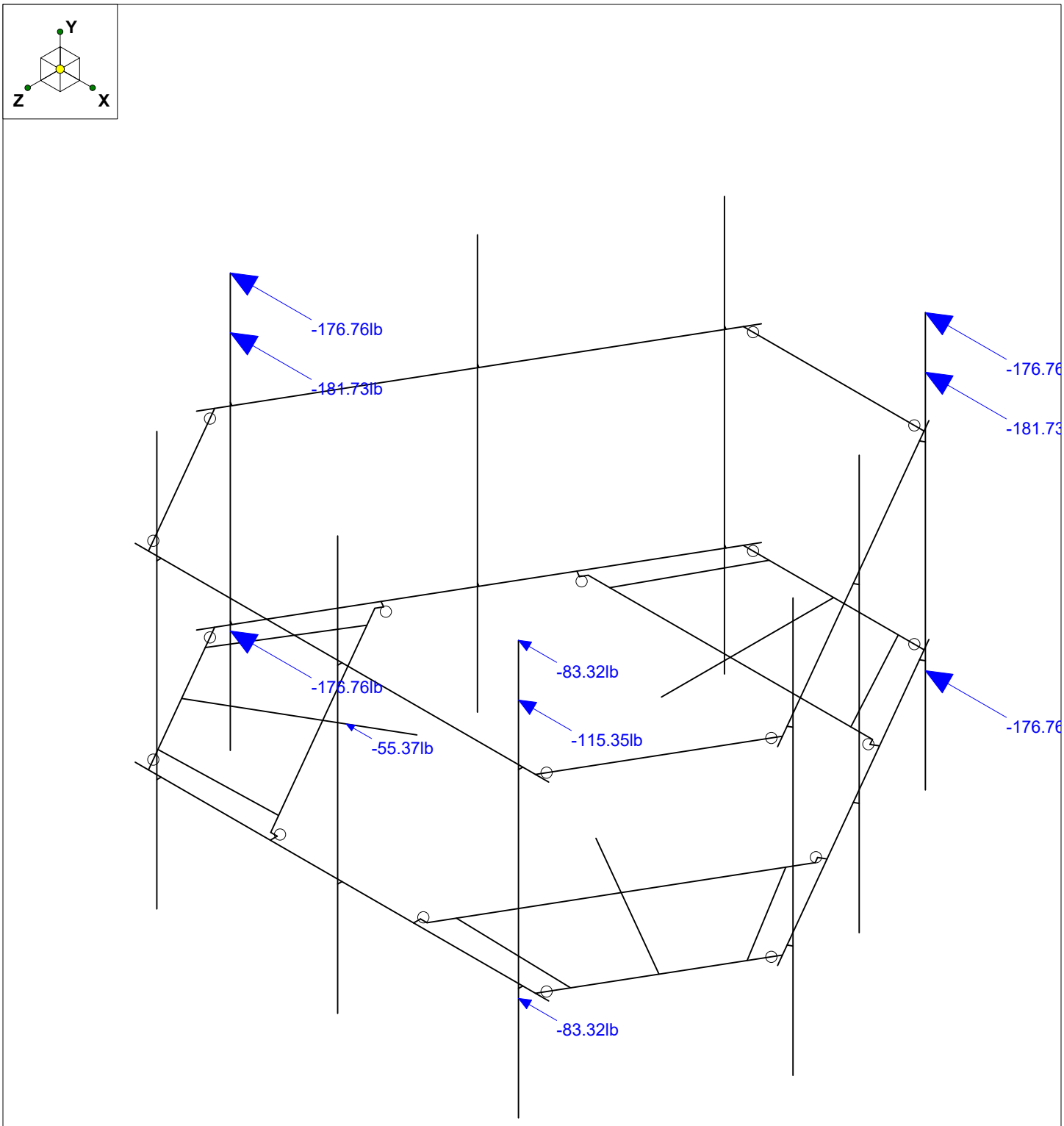

Loads: BLC 5, Wind Load AZI 90
Envelope Only Solution

Infinigy Engineering, PLLC	BOBOS00893A	Wind Load AZI 090
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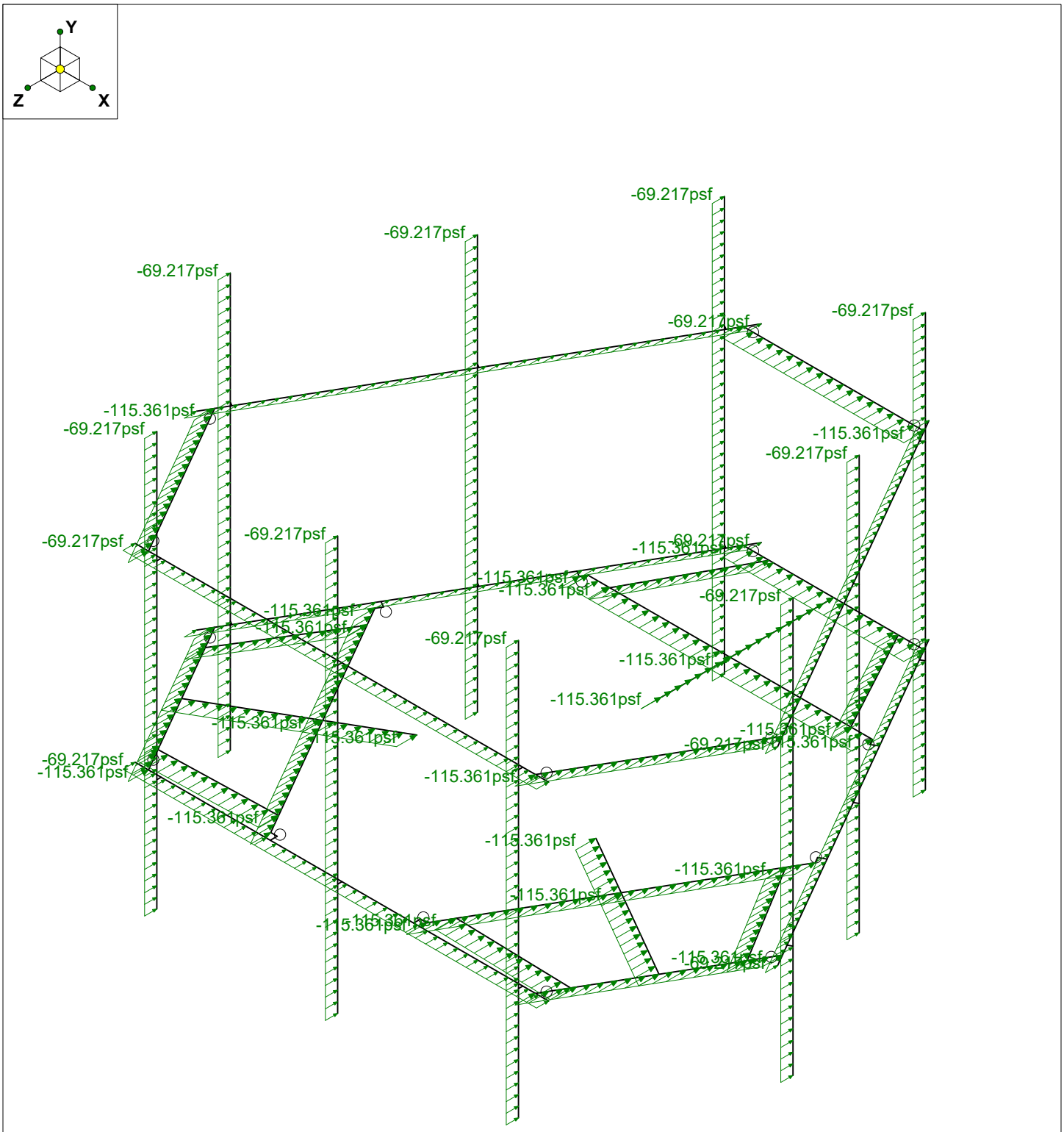

Loads: BLC 14, Distr. Wind Load Z
Envelope Only Solution

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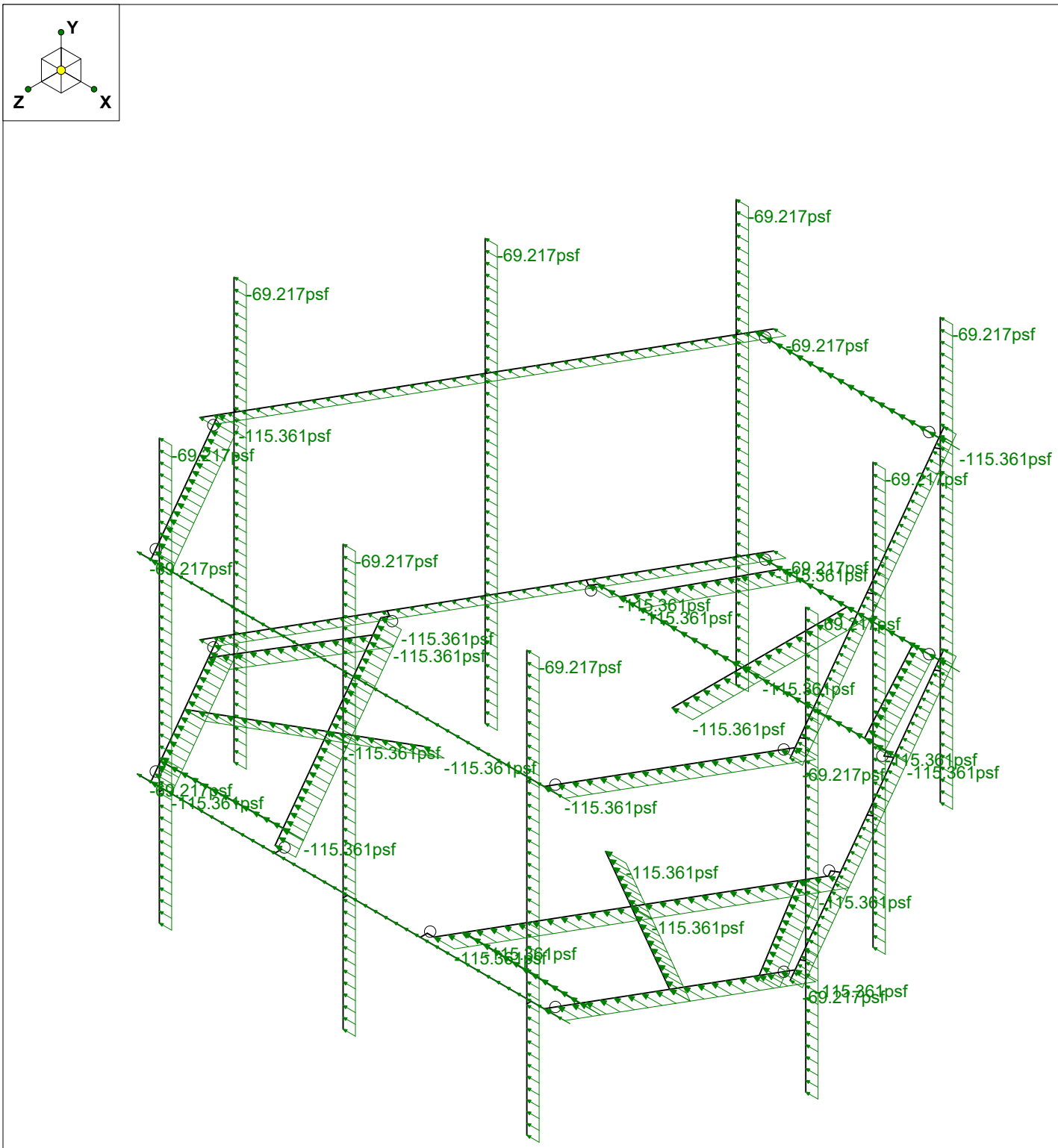

Loads: BLC 15, Distr. Wind Load X
Envelope Only Solution

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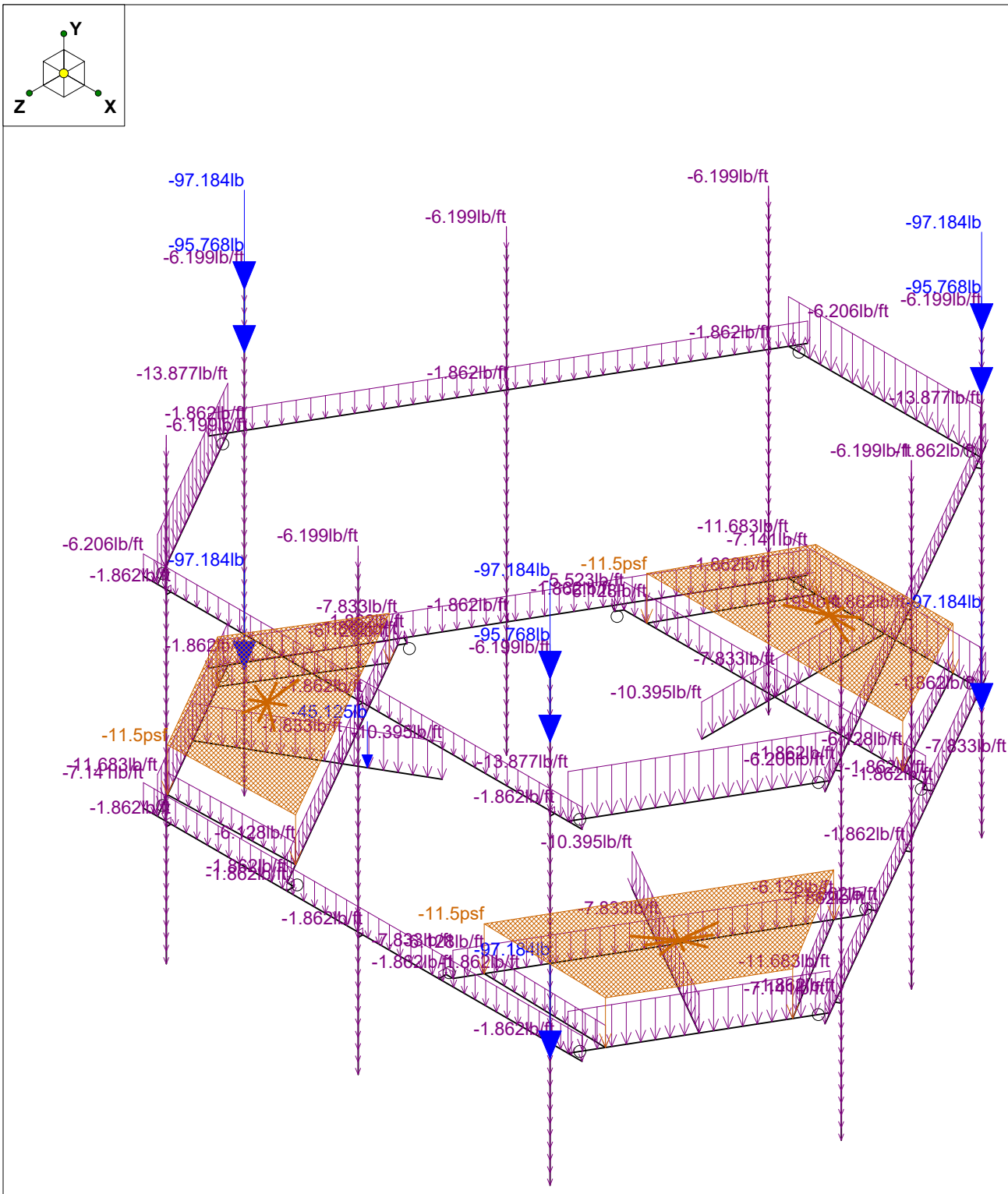

Loads: BLC 16, Ice Weight
Envelope Only Solution

Infinigy Engineering, PLLC	BOBOS00893A	Ice Weight
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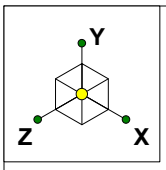

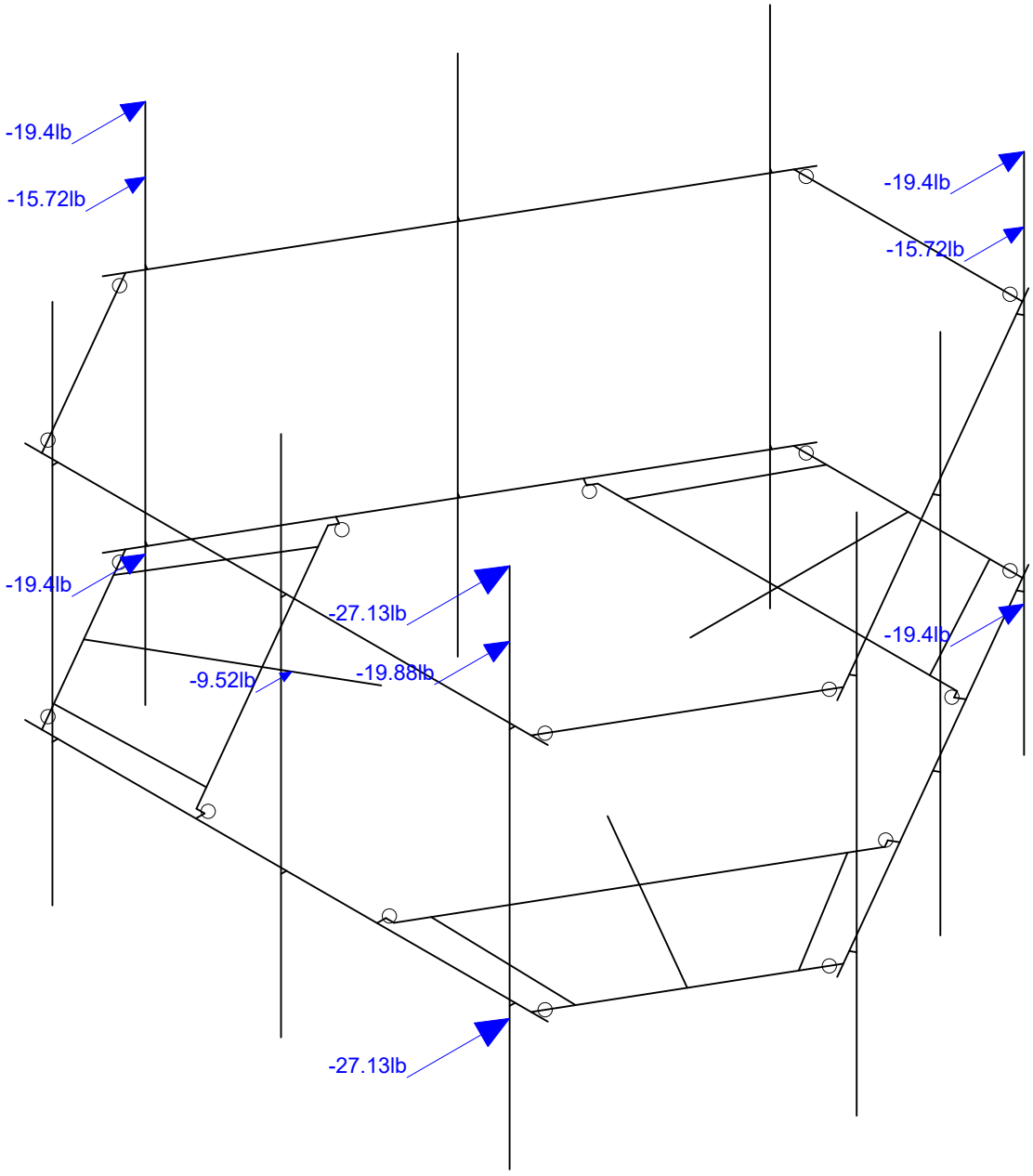

Loads: BLC 17, Ice Wind Load AZI 0
Envelope Only Solution

Infinigy Engineering, PLLC	BOBOS00893A	Ice + Wind Load AZI 000
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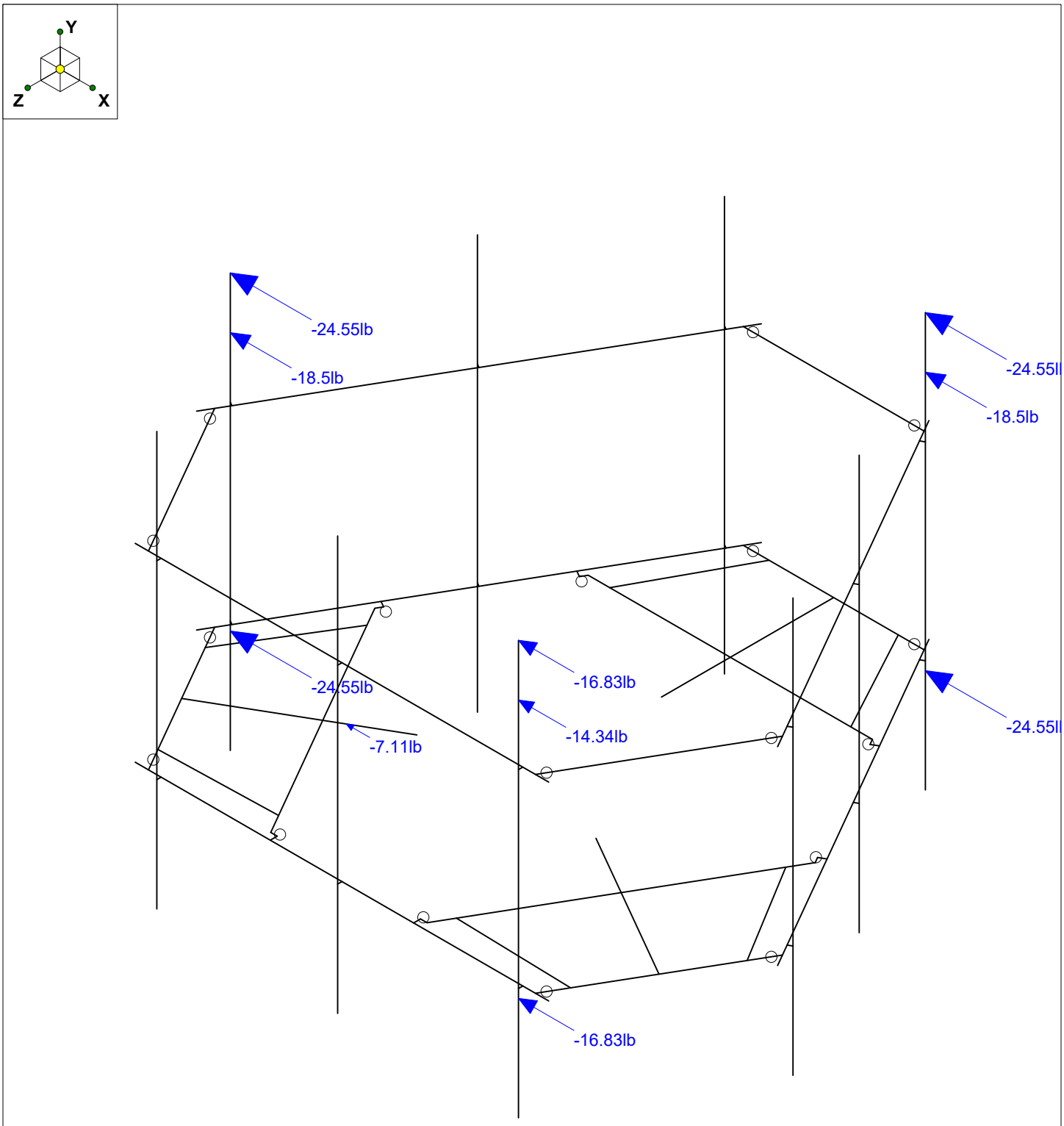

Loads: BLC 20, Ice Wind Load AZI 90
Envelope Only Solution

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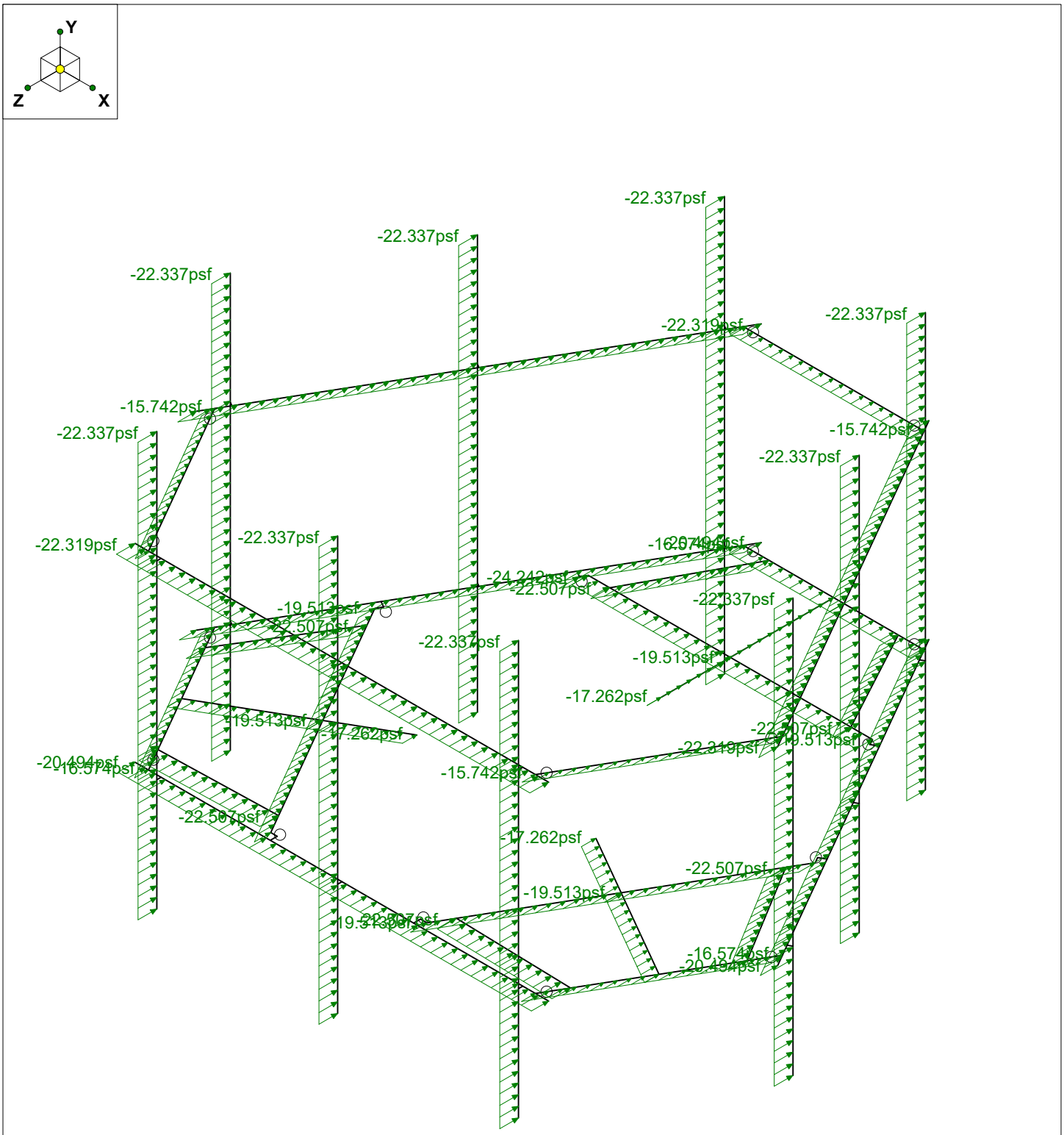

Loads: BLC 29, Distr. Ice Wind Load Z
Envelope Only Solution

Infinigy Engineering, PLLC	BOBOS00893A	Distr Ice + Wind Load AZI 000
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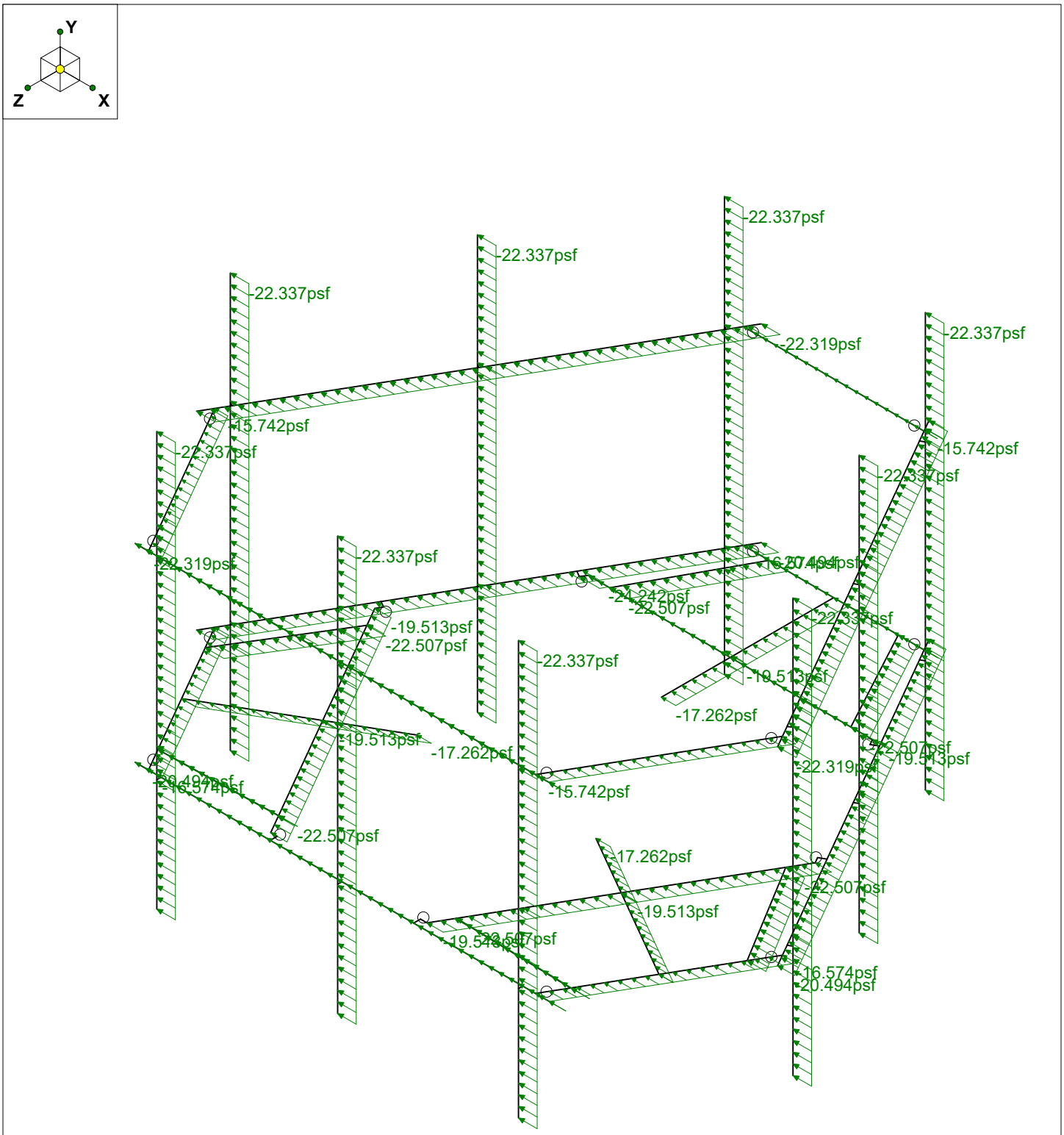

Loads: BLC 30, Distr. Ice Wind Load X
Envelope Only Solution

Infinigy Engineering, PLLC	BOBOS00893A	Distr Ice + Wind Load AZI 090
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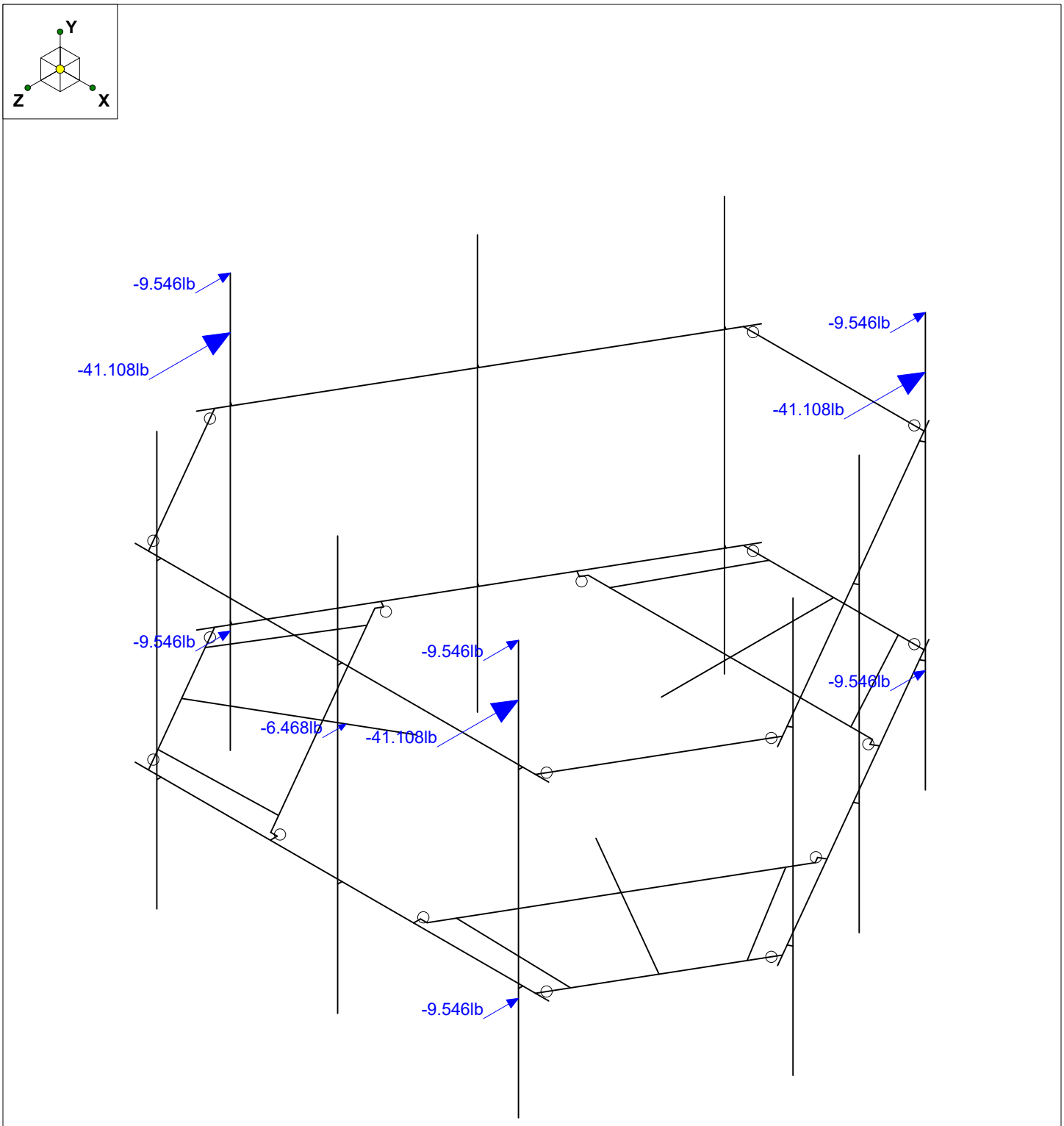

Loads: BLC 31, Seismic Load Z
Envelope Only Solution

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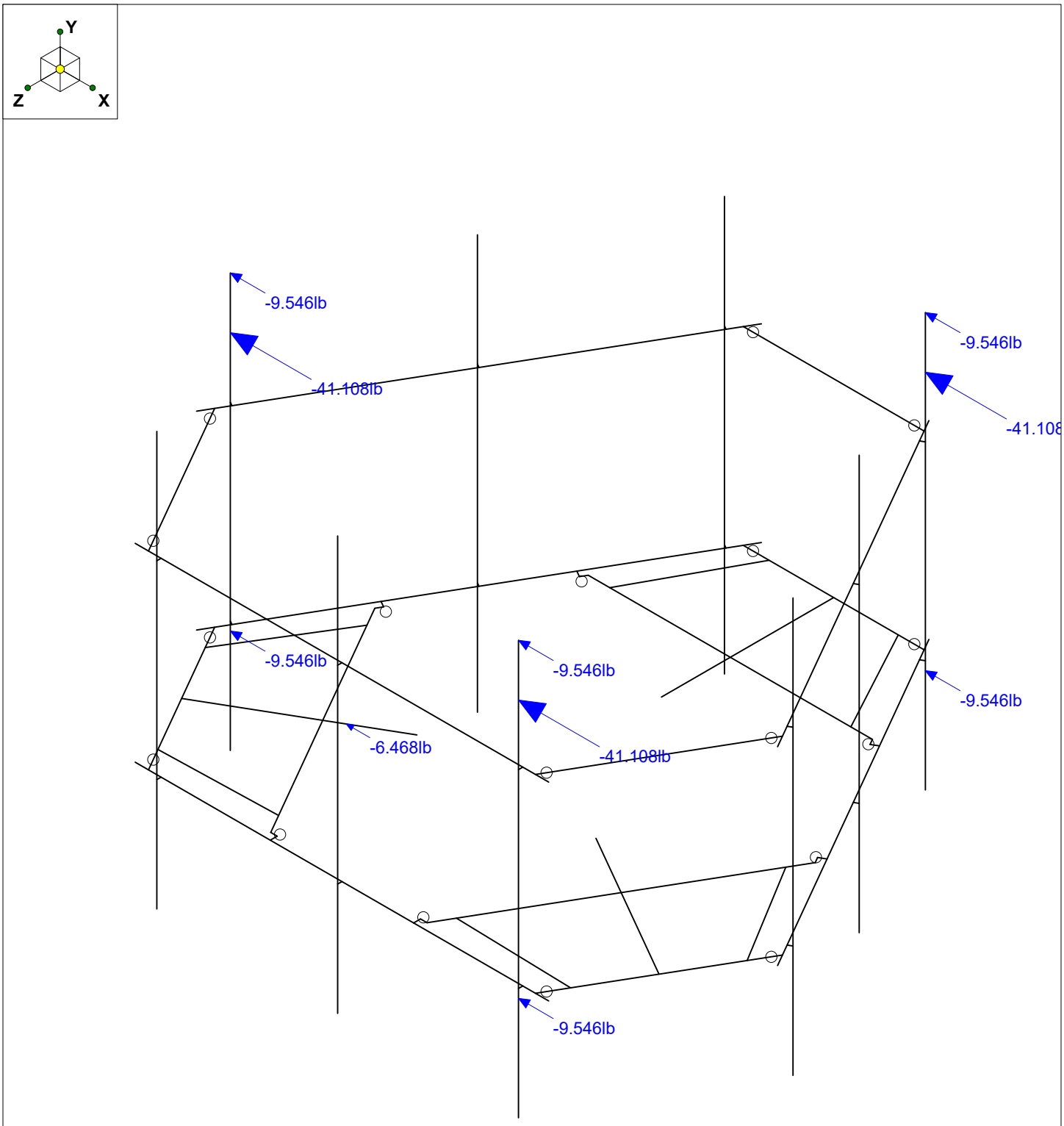

Loads: BLC 32, Seismic Load X
Envelope Only Solution

Infinigy Engineering, PLLC	BOBOS00893A	Seismic Load AZI 090
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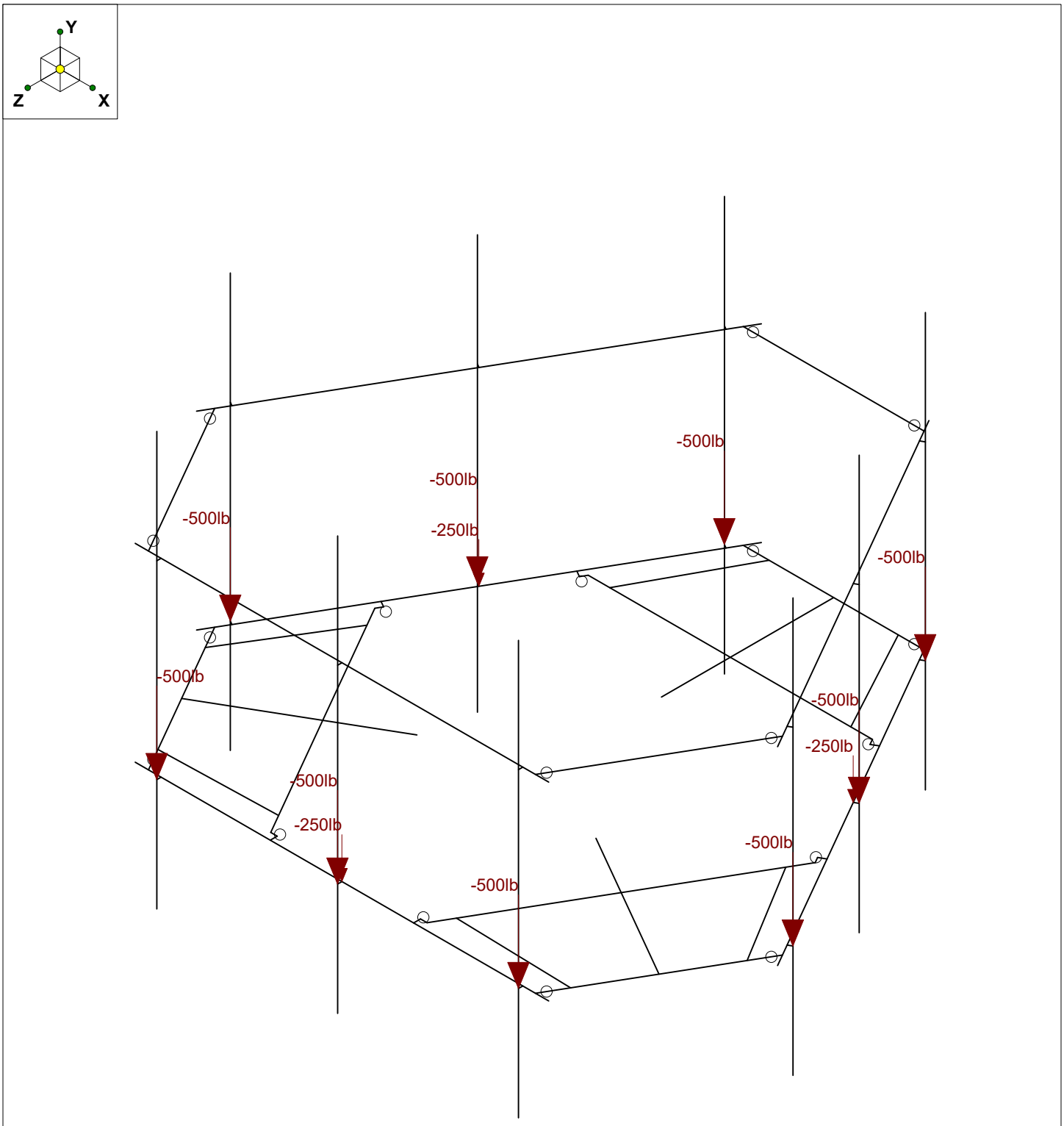

Loads: LL - Live Load
Envelope Only Solution

Infinigy Engineering, PLLC	BOBOS00893A	Non-concurrent Live Loads
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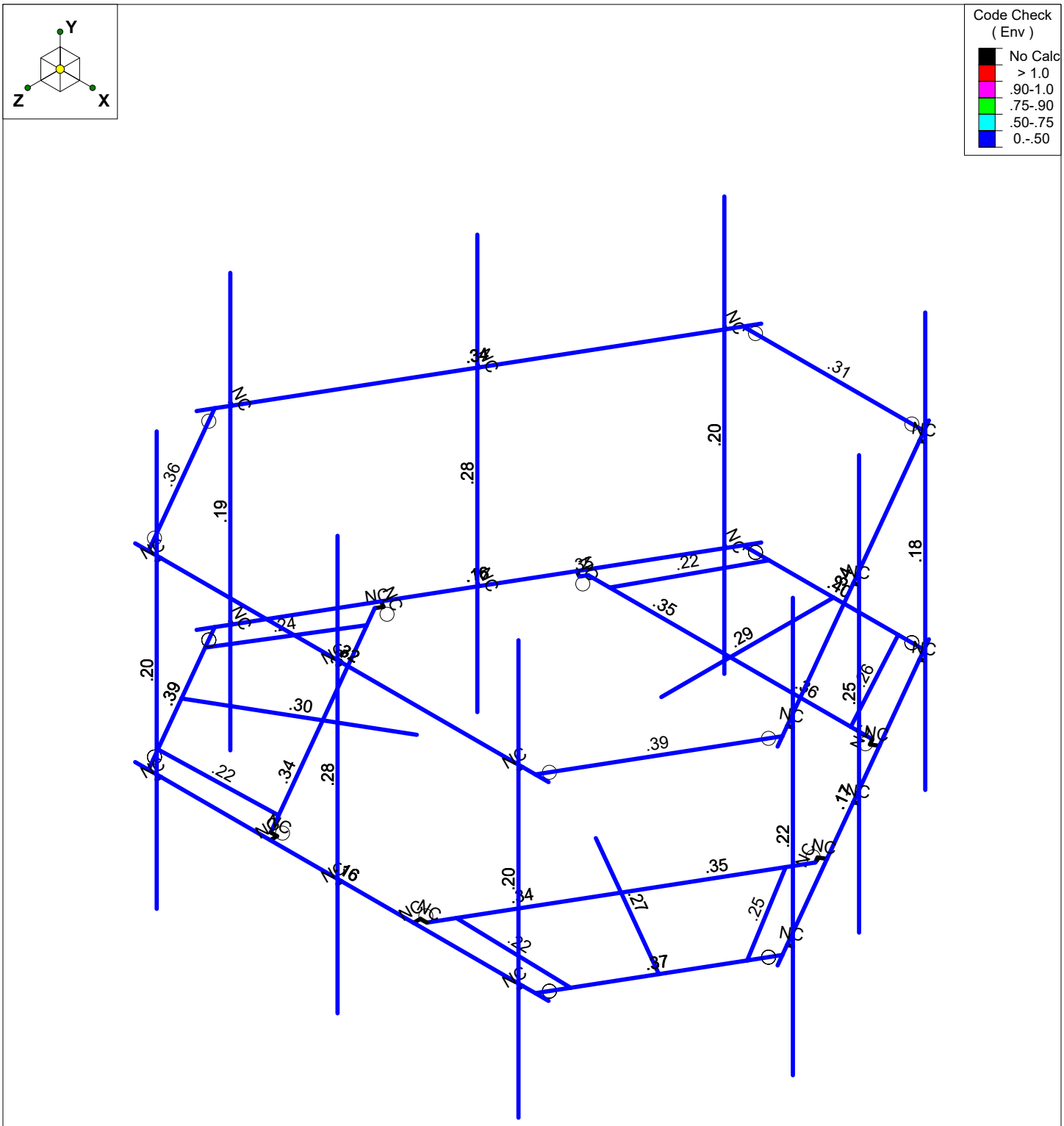

Member Code Checks Displayed (Enveloped)
Envelope Only Solution

Infinigy Engineering, PLLC	BOBOS00893A	Bending Check
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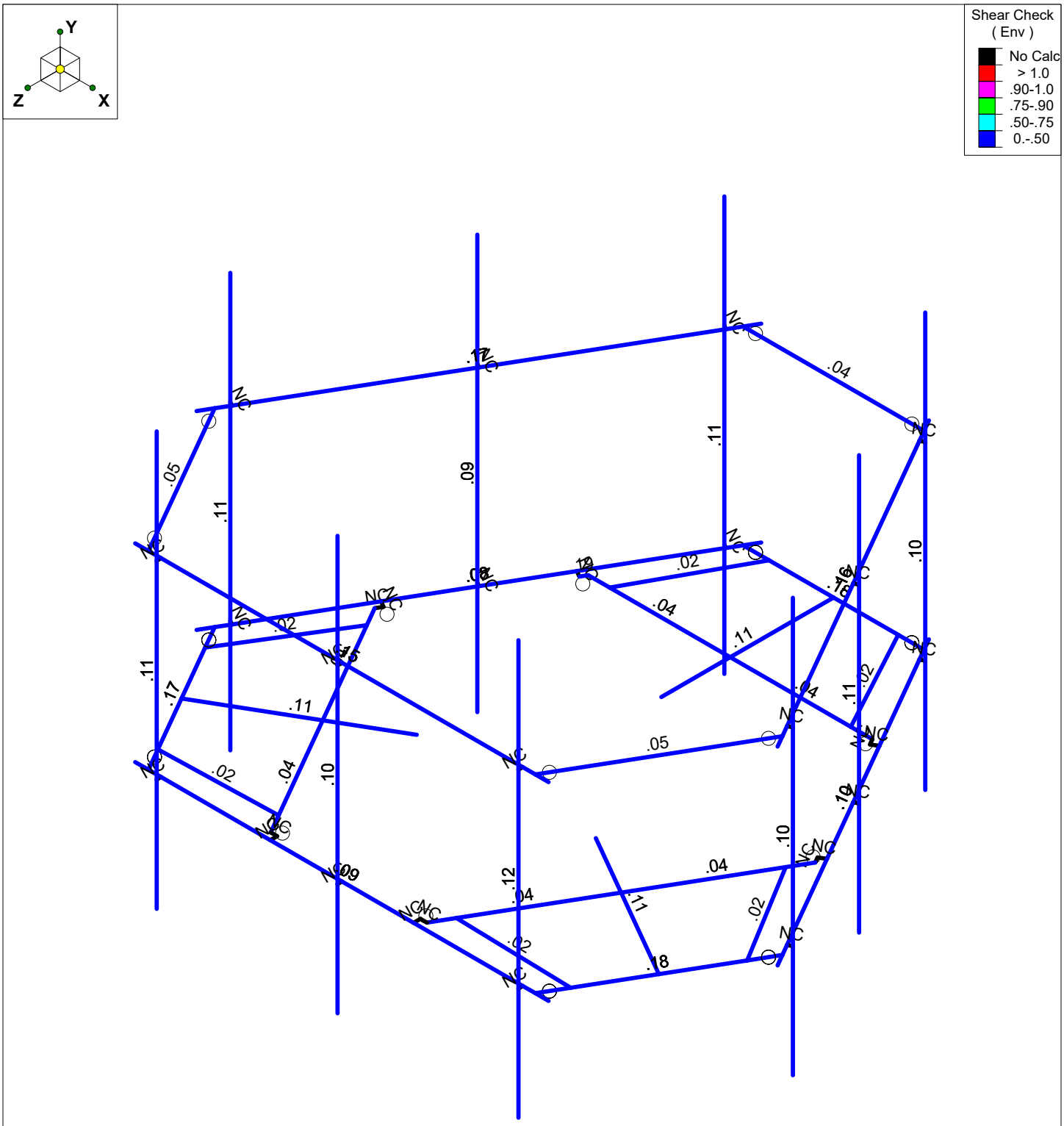


Member Shear Checks Displayed (Enveloped)
Envelope Only Solution

Infinigy Engineering, PLLC	BOBOS00893A	Shear Check
PSM		Sept 16, 2021 at 4:47 PM
1197-F0001-B		BOBOS00893A_loaded.r3d

Program Inputs

PROJECT INFORMATION	
Client:	ATC
Carrier:	Dish Wireless
Engineer:	Pradin Suinyal Magar, M.S

SITE INFORMATION		
Risk Category:	II	
Exposure Category:	C	
Topo Factor Procedure:	Method 2	
Site Class:	D - Stiff Soil (Assumed)	
Ground Elevation:	504.11	ft *Rev H

MOUNT INFORMATION		
Mount Type:	Platform	
Num Sectors:	3	
Centerline AGL:	105.00	ft
Tower Height AGL:	147.08	ft

TOPOGRAPHIC DATA		
Topo Feature:	Hill	
Slope Distance:	1682.0	ft
Crest Distance:	0.0	ft
Crest Height:	190.0	ft

FACTORS		
Directionality Fact. (K_d):	0.950	
Ground Ele. Factor (K_e):	0.982	*Rev H Only
Rooftop Speed-Up (K_s):	1.000	*Rev H Only
Topographic Factor (K_{zt}):	1.312	
Gust Effect Factor (G_h):	1.000	

CODE STANDARDS		
Building Code:	2015 IBC	
TIA Standard:	TIA-222-H	
ASCE Standard:	ASCE 7-16	

WIND AND ICE DATA		
Ultimate Wind (V_{ult}):	120	mph
Design Wind (V):	N/A	mph
Ice Wind (V_{ice}):	50	mph
Base Ice Thickness (t_i):	1	in
Flat Pressure:	115.361	psf
Round Pressure:	69.217	psf
Ice Wind Pressure:	12.017	psf

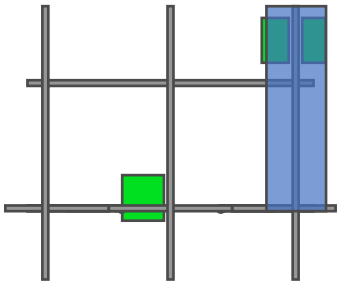
SEISMIC DATA		
Short-Period Accel. (S_s):	0.185	g
1-Second Accel. (S_1):	0.055	g
Short-Period Design (S_{DS}):	0.197	
1-Second Design (S_{D1}):	0.088	
Short-Period Coeff. (F_a):	1.600	
1-Second Coeff. (F_v):	2.400	
Amplification Factor (A_s):	3.000	
Response Mod. Coeff. (R):	2.000	

INFINIGY
FROM ZERO TO INFINIGY
the solutions are endless

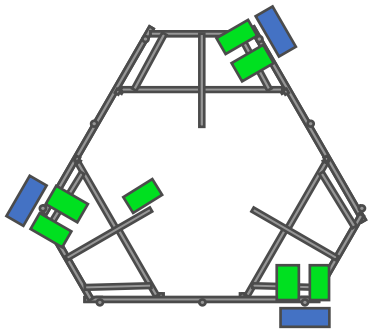
Infinigy Load Calculator V2.1.7

Program Inputs

ELEVATION VIEW



PLAN VIEW



INFINIGY
FROM ZERO TO INFINIGY
the solutions are endless

Infinigy Load Calculator V2.1.7

APPURTENANCE INFORMATION

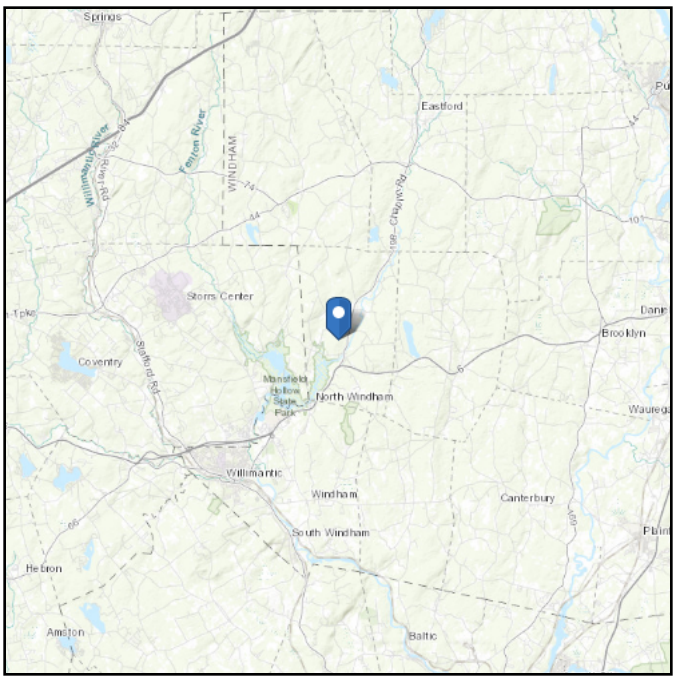
Appurtenance Name	Elevation	Qty.	K_a	q_z (psf)	EPA_N (ft^2)	EPA_T (ft^2)	Wind F_z (lbs)	Wind F_x (lbs)	Weight (lbs)	Seismic F (lbs)	Member (α sector)
JMA WIRELESS MX08FRO665-21	105.0	3	0.90	57.68	8.01	3.21	415.82	166.64	64.50	19.09	MP1
FUJITSU TA08025-B605	105.0	3	0.90	57.68	1.96	1.19	101.93	61.73	74.95	22.19	MP1
FUJITSU TA08025-B604	105.0	3	0.90	57.68	1.96	1.03	101.93	53.62	63.93	18.92	MP1
RAYCAP RDIDC-9181-PF-48	105.0	1	0.90	57.68	1.87	1.07	96.90	55.37	21.85	6.47	S2

ASCE 7 Hazards Report

Address:
No Address at This Location

Standard: ASCE/SEI 7-16
Risk Category: II
Soil Class: D - Default (see Section 11.4.3)

Elevation: 504.11 ft (NAVD 88)
Latitude: 41.7845
Longitude: -72.1357



Wind

Results:

Wind Speed:	120 Vmph
10-year MRI	75 Vmph
25-year MRI	84 Vmph
50-year MRI	93 Vmph
100-year MRI	99 Vmph

Data Source:	ASCE/SEI 7-16, Fig. 26.5-1B and Figs. CC.2-1–CC.2-4, and Section 26.5.2
Date Accessed:	Thu Sep 16 2021

Value provided is 3-second gust wind speeds at 33 ft above ground for Exposure C Category, based on linear interpolation between contours. Wind speeds are interpolated in accordance with the 7-16 Standard. Wind speeds correspond to approximately a 7% probability of exceedance in 50 years (annual exceedance probability = 0.00143, MRI = 700 years).

Site is in a hurricane-prone region as defined in ASCE/SEI 7-16 Section 26.2. Glazed openings need not be protected against wind-borne debris.

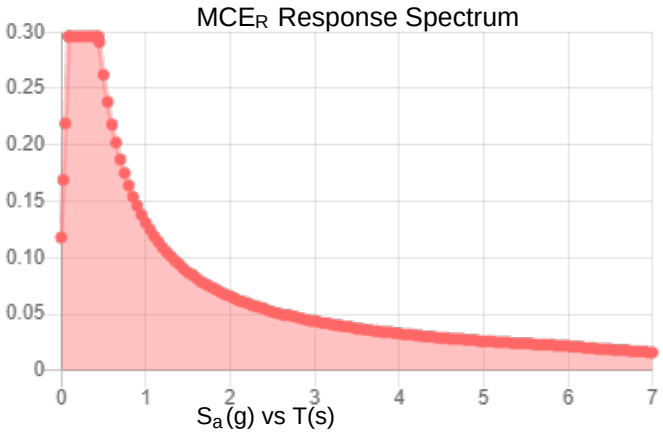
Seismic

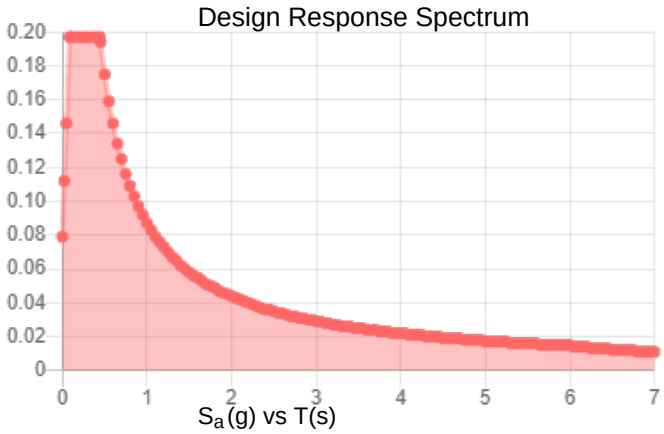
Site Soil Class: D - Default (see Section 11.4.3)

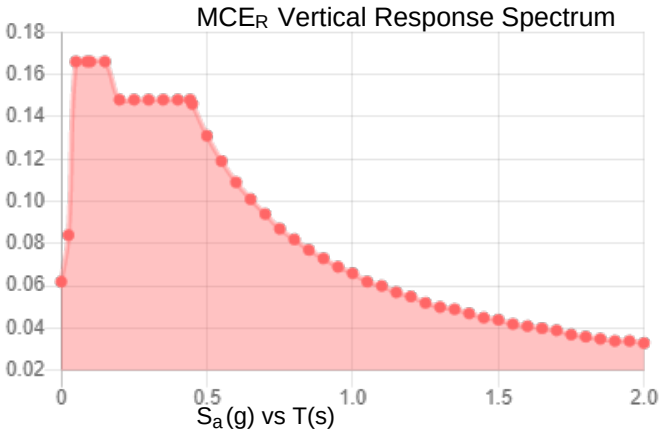
Results:

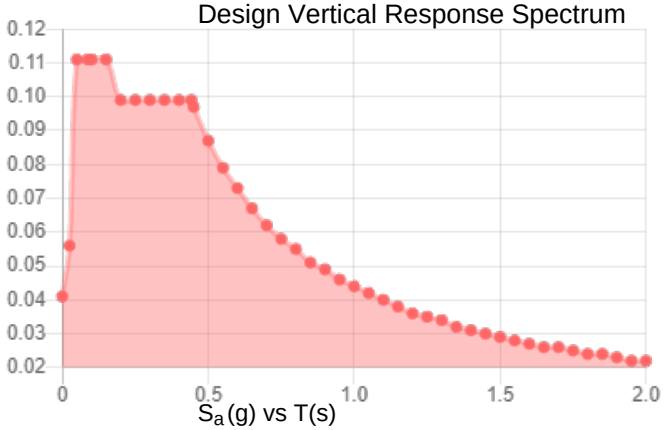
S_S :	0.185	S_{D1} :	0.087
S_1 :	0.055	T_L :	6
F_a :	1.6	PGA :	0.1
F_v :	2.4	PGA_M :	0.16
S_{MS} :	0.296	F_{PGA} :	1.6
S_{M1} :	0.131	I_e :	1
S_{DS} :	0.197	C_v :	0.7

Seismic Design Category B









Data Accessed: Thu Sep 16 2021

Date Source: USGS Seismic Design Maps based on ASCE/SEI 7-16 and ASCE/SEI 7-16 Table 1.5-2. Additional data for site-specific ground motion procedures in accordance with ASCE/SEI 7-16 Ch. 21 are available from USGS.

Ice

Results:

Ice Thickness:	1.00 in.
Concurrent Temperature:	15 F
Gust Speed:	50 mph
Data Source:	Standard ASCE/SEI 7-16, Figs. 10-2 through 10-8
Date Accessed:	Thu Sep 16 2021

Ice thicknesses on structures in exposed locations at elevations higher than the surrounding terrain and in valleys and gorges may exceed the mapped values.

Values provided are equivalent radial ice thicknesses due to freezing rain with concurrent 3-second gust speeds, for a 500-year mean recurrence interval, and temperatures concurrent with ice thicknesses due to freezing rain. Thicknesses for ice accretions caused by other sources shall be obtained from local meteorological studies. Ice thicknesses in exposed locations at elevations higher than the surrounding terrain and in valleys and gorges may exceed the mapped values.

Member Primary Data

	Label	I Joint	J Joint	K Joint	Rotate(...	Section/Shape	Type	Design List	Material	Design Rules
1	S3	P1	P3			Square Tubing	Beam	None	A500 GR.C	Typical
2	GA4	P9	P12		270	Grating Angle	Beam	None	A529 Gr. 50	Typical
3	GA3	P10	P11			Grating Angle	Beam	None	A529 Gr. 50	Typical
4	P3	P7	P8			Corner Plates	Beam	None	A1011 36 Ksi	Typical
5	S2	P13	P14			Square Tubing	Beam	None	A500 GR.C	Typical
6	GA2	P20	P23		270	Grating Angle	Beam	None	A529 Gr. 50	Typical
7	GA1	P21	P22			Grating Angle	Beam	None	A529 Gr. 50	Typical
8	P2	P18	P19			Corner Plates	Beam	None	A1011 36 Ksi	Typical
9	S1	P24	P25			Square Tubing	Beam	None	A500 GR.C	Typical
10	GA6	P31	P34		270	Grating Angle	Beam	None	A529 Gr. 50	Typical
11	GA5	P32	P33			Grating Angle	Beam	None	A529 Gr. 50	Typical
12	P1	P29	P30			Corner Plates	Beam	None	A1011 36 Ksi	Typical
13	H1	N43	N44			Face Pipes(3.5x.16)	Beam	None	A500 GR.C	Typical
14	MP1	N66	N60			Antenna Pipes	Beam	None	A500 GR.C	Typical
15	MP3	N63	N57			Antenna Pipes	Beam	None	A500 GR.C	Typical
16	HR1	N67	N68			Handrail	Beam	None	A500 GR.C	Typical
17	CA8	N114A	N113A		180	Handrail Connector	Beam	None	A1011 36 Ksi	Typical
18	CA9	N112A	N111A		180	Handrail Connector	Beam	None	A1011 36 Ksi	Typical
19	CA7	N116A	N115A		180	Handrail Connector	Beam	None	A1011 36 Ksi	Typical
20	M32	N48A	N70A			RIGID	None	None	RIGID	Typical
21	M35	N45	N69A			RIGID	None	None	RIGID	Typical
22	M36	N51	N71A			RIGID	None	None	RIGID	Typical
23	M39A	N54	N72A			RIGID	None	None	RIGID	Typical
24	CA3	P4	N122A			Channel(3.38x2.06)	Beam	None	A1011 36 Ksi	Typical
25	CA4	N124B	P4			Channel(3.38x2.06)	Beam	None	A1011 36 Ksi	Typical
26	CA1	P15	N122B			Channel(3.38x2.06)	Beam	None	A1011 36 Ksi	Typical
27	CA2	N123A	P15			Channel(3.38x2.06)	Beam	None	A1011 36 Ksi	Typical
28	CA5	P26	N125			Channel(3.38x2.06)	Beam	None	A1011 36 Ksi	Typical
29	CA6	N126	P26			Channel(3.38x2.06)	Beam	None	A1011 36 Ksi	Typical
30	M64	N126A	N125A			RIGID	None	None	RIGID	Typical
31	M65	N126	N125A			RIGID	None	None	RIGID	Typical
32	M66	N129	N128			RIGID	None	None	RIGID	Typical
33	M67	N124B	N128			RIGID	None	None	RIGID	Typical
34	M68	N132	N131			RIGID	None	None	RIGID	Typical
35	M69	N123A	N131			RIGID	None	None	RIGID	Typical
36	M70	N133	N132A			RIGID	None	None	RIGID	Typical
37	M71	N122B	N132A			RIGID	None	None	RIGID	Typical
38	M72	N135	N134			RIGID	None	None	RIGID	Typical
39	M73	N125	N134			RIGID	None	None	RIGID	Typical
40	M74	N138	N137			RIGID	None	None	RIGID	Typical
41	M75	N122A	N137			PL 2.375x0.5	None	None	A36 Gr.36	Typical

Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(...	Section/Shape	Type	Design List	Material	Design Rules
42	MP2	N75	N74			Antenna Pipes	Beam	None	A500 GR.C	Typical
43	M43	N72B	N76			RIGID	None	None	RIGID	Typical
44	M44	N73	N77			RIGID	None	None	RIGID	Typical
45	H3	N81A	N82A			Face Pipes(3.5x.16)	Beam	None	A500 GR.C	Typical
46	MP7	N90	N88			Antenna Pipes	Beam	None	A500 GR.C	Typical
47	MP9	N89	N87			Antenna Pipes	Beam	None	A500 GR.C	Typical
48	HR3	N91	N92			Handrail	Beam	None	A500 GR.C	Typical
49	M52	N84	N94			RIGID	None	None	RIGID	Typical
50	M53	N83A	N93			RIGID	None	None	RIGID	Typical
51	M54	N85	N95			RIGID	None	None	RIGID	Typical
52	M55	N86	N96			RIGID	None	None	RIGID	Typical
53	H2	N109	N110			Face Pipes(3.5x.16)	Beam	None	A500 GR.C	Typical
54	MP4	N118	N116			Antenna Pipes	Beam	None	A500 GR.C	Typical
55	MP6	N117	N115			Antenna Pipes	Beam	None	A500 GR.C	Typical
56	HR2	N119	N120			Handrail	Beam	None	A500 GR.C	Typical
57	M66A	N112	N122			RIGID	None	None	RIGID	Typical
58	M67A	N111	N121			RIGID	None	None	RIGID	Typical
59	M68A	N113	N123			RIGID	None	None	RIGID	Typical
60	M69A	N114	N124			RIGID	None	None	RIGID	Typical
61	MP8	N132B	N131A			Antenna Pipes	Beam	None	A500 GR.C	Typical
62	M68B	N129B	N133B			RIGID	None	None	RIGID	Typical
63	M69B	N130A	N134A			RIGID	None	None	RIGID	Typical
64	MP5	N138A	N137A			Antenna Pipes	Beam	None	A500 GR.C	Typical
65	M71B	N135A	N139			RIGID	None	None	RIGID	Typical
66	M72B	N136	N140			RIGID	None	None	RIGID	Typical

Hot Rolled Steel Design Parameters

	Label	Shape	Lengt...	Lbyy[in]	Lbzz[in]	Lcomp t...	Lcomp b...	L-tor...	Kyy	Kzz	Cb	Func...
1	S3	Square Tubing	40			Lbyy						Late...
2	GA4	Grating Angle	27.295			Lbyy						Late...
3	GA3	Grating Angle	27.295			Lbyy						Late...
4	P3	Corner Plates	42			Lbyy						Late...
5	S2	Square Tubing	40			Lbyy						Late...
6	GA2	Grating Angle	27.295			Lbyy						Late...
7	GA1	Grating Angle	27.295			Lbyy						Late...
8	P2	Corner Plates	42			Lbyy						Late...
9	S1	Square Tubing	40			Lbyy						Late...
10	GA6	Grating Angle	27.295			Lbyy						Late...
11	GA5	Grating Angle	27.295			Lbyy						Late...
12	P1	Corner Plates	42			Lbyy						Late...
13	H1	Face Pipes(3.5x.16)	96			Lbyy						Late...

Hot Rolled Steel Design Parameters (Continued)

	Label	Shape	Lengt...	Lbyy[in]	Lbzz[in]	Lcomp t...	Lcomp b...	L-tor...	Kyy	Kzz	Cb	Func...
14	MP1	Antenna Pipes	96			Lbyy						Late...
15	MP3	Antenna Pipes	96			Lbyy						Late...
16	HR1	Handrail	96			Lbyy						Late...
17	CA8	Handrail Connector	42			Lbyy						Late...
18	CA9	Handrail Connector	42			Lbyy						Late...
19	CA7	Handrail Connector	42			Lbyy						Late...
20	CA3	Channel(3.38x2.06)	33			Lbyy						Late...
21	CA4	Channel(3.38x2.06)	33			Lbyy						Late...
22	CA1	Channel(3.38x2.06)	33			Lbyy						Late...
23	CA2	Channel(3.38x2.06)	33			Lbyy						Late...
24	CA5	Channel(3.38x2.06)	33			Lbyy						Late...
25	CA6	Channel(3.38x2.06)	33			Lbyy						Late...
26	M75	PL 2.375x0.5	1.5			Lbyy						Late...
27	MP2	Antenna Pipes	96			Lbyy						Late...
28	H3	Face Pipes(3.5x.16)	96			Lbyy						Late...
29	MP7	Antenna Pipes	96			Lbyy						Late...
30	MP9	Antenna Pipes	96			Lbyy						Late...
31	HR3	Handrail	96			Lbyy						Late...
32	H2	Face Pipes(3.5x.16)	96			Lbyy						Late...
33	MP4	Antenna Pipes	96			Lbyy						Late...
34	MP6	Antenna Pipes	96			Lbyy						Late...
35	HR2	Handrail	96			Lbyy						Late...
36	MP8	Antenna Pipes	96			Lbyy						Late...
37	MP5	Antenna Pipes	96			Lbyy						Late...

Member Advanced Data

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Ra...	Analysis ...	Inactive	Seismi...
1	S3						Yes				None
2	GA4						Yes				None
3	GA3						Yes				None
4	P3	BenPIN	BenPIN				Yes	Default			None
5	S2						Yes				None
6	GA2						Yes				None
7	GA1						Yes				None
8	P2	BenPIN	BenPIN				Yes	Default			None
9	S1						Yes	Default			None
10	GA6						Yes				None
11	GA5						Yes				None
12	P1	BenPIN	BenPIN				Yes	Default			None
13	H1						Yes				None
14	MP1						Yes		+y+3		None

Member Advanced Data (Continued)

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Ra..	Analysis ...	Inactive	Seismi...
15	MP3						Yes		+y+3		None
16	HR1						Yes				None
17	CA8	OOOOOX	OOOOOX				Yes				None
18	CA9	OOOOOX	OOOOOX				Yes				None
19	CA7	OOOOOX	OOOOOX				Yes	Default			None
20	M32						Yes	** NA **			None
21	M35						Yes	** NA **			None
22	M36						Yes	** NA **			None
23	M39A						Yes	** NA **			None
24	CA3						Yes	Default			None
25	CA4						Yes	Default			None
26	CA1						Yes	Default			None
27	CA2						Yes	Default			None
28	CA5						Yes	Default			None
29	CA6						Yes	Default			None
30	M64	BenPIN					Yes	** NA **			None
31	M65						Yes	** NA **			None
32	M66	BenPIN					Yes	** NA **			None
33	M67						Yes	** NA **			None
34	M68	BenPIN					Yes	** NA **			None
35	M69						Yes	** NA **			None
36	M70	BenPIN					Yes	** NA **			None
37	M71						Yes	** NA **			None
38	M72	BenPIN					Yes	** NA **			None
39	M73						Yes	** NA **			None
40	M74	BenPIN					Yes	** NA **			None
41	M75						Yes	** NA **			None
42	MP2						Yes		+y+3		None
43	M43						Yes	** NA **			None
44	M44						Yes	** NA **			None
45	H3						Yes				None
46	MP7						Yes		+y+3		None
47	MP9						Yes		+y+3		None
48	HR3						Yes				None
49	M52						Yes	** NA **			None
50	M53						Yes	** NA **			None
51	M54						Yes	** NA **			None
52	M55						Yes	** NA **			None
53	H2						Yes				None
54	MP4						Yes		+y+3		None
55	MP6						Yes		+y+3		None
56	HR2						Yes				None

Member Advanced Data (Continued)

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Ra..	Analysis ...	Inactive	Seismi...
57	M66A						Yes	** NA **			None
58	M67A						Yes	** NA **			None
59	M68A						Yes	** NA **			None
60	M69A						Yes	** NA **			None
61	MP8						Yes		+y+3		None
62	M68B						Yes	** NA **			None
63	M69B						Yes	** NA **			None
64	MP5						Yes		+y+3		None
65	M71B						Yes	** NA **			None
66	M72B						Yes	** NA **			None

Material Takeoff

	Material	Size	Pieces	Length[in]	Weight[LB]
1	General				
2	RIGID		29	35.1	0
3	Total General		29	35.1	0
4					
5	Hot Rolled Steel				
6	A1011 36 Ksi	C3.38x2.06x0.25	6	198	98.255
7	A1011 36 Ksi	PL6.5x0.375	3	126	87.09
8	A1011 36 Ksi	L6.6x4.46x0.25	3	126	96.558
9	A36 Gr.36	PL 2.375x0.5	1	1.5	.505
10	A500 GR.C	2.88x0.120	3	288	84.974
11	A500 GR.C	HSS4X4X6	3	120	162.653
12	A500 GR.C	Pipe3.5x0.165	3	288	141.202
13	A500 GR.C	PIPE 2.5	9	864	394.45
14	A529 Gr. 50	L2x2x4	6	163.8	43.838
15	Total HR Steel		37	2175.3	1109.525

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design...	A [in2]	Iyy [in...	Izz [in...	J [in4]
1	Corner Plates	PL6.5x0.375	Beam	None	A1011 ...	Typical	2.438	.029	8.582	.11
2	6"x0.37" Plate	Plate 6x.37	Beam	None	A1011 ...	Typical	2.22	.025	6.66	.097
3	Grating Angle	L2x2x4	Beam	None	A529 G...	Typical	.944	.346	.346	.021
4	Face Pipes(3.5x.1...	Pipe3.5x0.165	Beam	None	A500 G...	Typical	1.729	2.409	2.409	4.819
5	Antenna Pipes	PIPE 2.5	Beam	None	A500 G...	Typical	1.61	1.45	1.45	2.89
6	Channel(3.38x2.06)	C3.38x2.06x0.25	Beam	None	A1011 ...	Typical	1.75	.715	3.026	.034
7	Square Tubing	HSS4X4X6	Beam	None	A500 G...	Typical	4.78	10.3	10.3	17.5
8	Handrail Connector	L6.6x4.46x0.25	Beam	None	A1011 ...	Typical	2.703	4.759	12.473	.055

Hot Rolled Steel Section Sets (Continued)

	Label	Shape	Type	Design List	Material	Design...	A [in2]	Iyy [in...	Izz [in...	J [in4]
9	Handrail	2.88x0.120	Beam	None	A500 G...	Typical	1.04	.993	.993	1.985

Basic Load Cases

	BLC Description	Category	X Gr...	Y Gr...	Z Gr...	Joint	Point	Distributed	Area(Memb...	Surface(Plate/Wall)
1	Self Weight	DL		-1			13		3	
2	Wind Load AZI 0	WLZ					26			
3	Wind Load AZI 30	None					26			
4	Wind Load AZI 60	None					26			
5	Wind Load AZI 90	WLX					26			
6	Wind Load AZI 1...	None					26			
7	Wind Load AZI 1...	None					26			
8	Wind Load AZI 1...	None					26			
9	Wind Load AZI 2...	None					26			
10	Wind Load AZI 2...	None					26			
11	Wind Load AZI 2...	None					26			
12	Wind Load AZI 3...	None					26			
13	Wind Load AZI 3...	None					26			
14	Distr. Wind Load Z	WLZ						66		
15	Distr. Wind Load X	WLX						66		
16	Ice Weight	OL1					13	66	3	
17	Ice Wind Load A...	OL2					26			
18	Ice Wind Load A...	None					26			
19	Ice Wind Load A...	None					26			
20	Ice Wind Load A...	OL3					26			
21	Ice Wind Load A...	None					26			
22	Ice Wind Load A...	None					26			
23	Ice Wind Load A...	None					26			
24	Ice Wind Load A...	None					26			
25	Ice Wind Load A...	None					26			
26	Ice Wind Load A...	None					26			
27	Ice Wind Load A...	None					26			
28	Ice Wind Load A...	None					26			
29	Distr. Ice Wind L...	OL2						66		
30	Distr. Ice Wind L...	OL3						66		
31	Seismic Load Z	ELZ			-.296		13			
32	Seismic Load X	ELX	-.296				13			
33	Service Live Loa...	LL				3				
34	Maintenance Loa...	LL				1				
35	Maintenance Loa...	LL				1				
36	Maintenance Loa...	LL				1				
37	Maintenance Loa...	LL				1				

Basic Load Cases (Continued)

	BLC Description	Category	X Gr...	Y Gr...	Z Gr...	Joint	Point	Distributed	Area(Memb...	Surface(Plate/Wall)
38	Maintenance Loa...	LL				1				
39	Maintenance Loa...	LL				1				
40	Maintenance Loa...	LL				1				
41	Maintenance Loa...	LL				1				
42	Maintenance Loa...	LL				1				
43	BLC 1 Transient ...	None						9		
44	BLC 16 Transien...	None						9		

Load Combinations

	Description	S...	P...	S...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
1	1.4DL	Y...	Y		1	1.4																				
2	1.2DL + 1WL AZI 0	Y...	Y		1	1.2	2	1	14	1	15															
3	1.2DL + 1WL AZI 30	Y...	Y		1	1.2	3	1	14	.866	15	.5														
4	1.2DL + 1WL AZI 60	Y...	Y		1	1.2	4	1	14	.5	15	.866														
5	1.2DL + 1WL AZI 90	Y...	Y		1	1.2	5	1	14		15	1														
6	1.2DL + 1WL AZI 120	Y...	Y		1	1.2	6	1	14	-.5	15	.866														
7	1.2DL + 1WL AZI 150	Y...	Y		1	1.2	7	1	14	-.8...	15	.5														
8	1.2DL + 1WL AZI 180	Y...	Y		1	1.2	8	1	14	-1	15															
9	1.2DL + 1WL AZI 210	Y...	Y		1	1.2	9	1	14	-.8...	15	-.5														
10	1.2DL + 1WL AZI 240	Y...	Y		1	1.2	10	1	14	-.5	15	-.8...														
11	1.2DL + 1WL AZI 270	Y...	Y		1	1.2	11	1	14		15	-1														
12	1.2DL + 1WL AZI 300	Y...	Y		1	1.2	12	1	14	.5	15	-.8...														
13	1.2DL + 1WL AZI 330	Y...	Y		1	1.2	13	1	14	.866	15	-.5														
14	0.9DL + 1WL AZI 0	Y...	Y		1	.9	2	1	14	1	15															
15	0.9DL + 1WL AZI 30	Y...	Y		1	.9	3	1	14	.866	15	.5														
16	0.9DL + 1WL AZI 60	Y...	Y		1	.9	4	1	14	.5	15	.866														
17	0.9DL + 1WL AZI 90	Y...	Y		1	.9	5	1	14		15	1														
18	0.9DL + 1WL AZI 120	Y...	Y		1	.9	6	1	14	-.5	15	.866														
19	0.9DL + 1WL AZI 150	Y...	Y		1	.9	7	1	14	-.8...	15	.5														
20	0.9DL + 1WL AZI 180	Y...	Y		1	.9	8	1	14	-1	15															
21	0.9DL + 1WL AZI 210	Y...	Y		1	.9	9	1	14	-.8...	15	-.5														
22	0.9DL + 1WL AZI 240	Y...	Y		1	.9	10	1	14	-.5	15	-.8...														
23	0.9DL + 1WL AZI 270	Y...	Y		1	.9	11	1	14		15	-1														
24	0.9DL + 1WL AZI 300	Y...	Y		1	.9	12	1	14	.5	15	-.8...														
25	0.9DL + 1WL AZI 330	Y...	Y		1	.9	13	1	14	.866	15	-.5														
26	1.2D + 1.0Di	Y...	Y		1	1.2	16	1																		
27	1.2D + 1.0Di +1.0Wi AZI 0	Y...	Y		1	1.2	16	1	17	1	29	1	30													
28	1.2D + 1.0Di +1.0Wi AZI 30	Y...	Y		1	1.2	16	1	18	1	29	.866	30	.5													
29	1.2D + 1.0Di +1.0Wi AZI 60	Y...	Y		1	1.2	16	1	19	1	29	.5	30	.866													
30	1.2D + 1.0Di +1.0Wi AZI 90	Y...	Y		1	1.2	16	1	20	1	29		30	1													
31	1.2D + 1.0Di +1.0Wi AZI 120	Y...	Y		1	1.2	16	1	21	1	29	-.5	30	.866													

Load Combinations (Continued)

	Description	S...	P...	S...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
32	1.2D + 1.0Di +1.0Wi AZI 150	Y...	Y		1	1.2	16	1	22	1	29	-.8...	30	.5												
33	1.2D + 1.0Di +1.0Wi AZI 180	Y...	Y		1	1.2	16	1	23	1	29	-1	30													
34	1.2D + 1.0Di +1.0Wi AZI 210	Y...	Y		1	1.2	16	1	24	1	29	-.8...	30	-.5												
35	1.2D + 1.0Di +1.0Wi AZI 240	Y...	Y		1	1.2	16	1	25	1	29	-.5	30	-.8...												
36	1.2D + 1.0Di +1.0Wi AZI 270	Y...	Y		1	1.2	16	1	26	1	29		30	-1												
37	1.2D + 1.0Di +1.0Wi AZI 300	Y...	Y		1	1.2	16	1	27	1	29	.5	30	-.8...												
38	1.2D + 1.0Di +1.0Wi AZI 330	Y...	Y		1	1.2	16	1	28	1	29	.866	30	-.5												
39	(1.2 + 0.2Sds)DL + 1.0E AZI 0	Y...	Y		1	1.2...	31	1	32																	
40	(1.2 + 0.2Sds)DL + 1.0E AZI 30	Y...	Y		1	1.2...	31	.866	32	.5																
41	(1.2 + 0.2Sds)DL + 1.0E AZI 60	Y...	Y		1	1.2...	31	.5	32	.866																
42	(1.2 + 0.2Sds)DL + 1.0E AZI 90	Y...	Y		1	1.2...	31		32	1																
43	(1.2 + 0.2Sds)DL + 1.0E AZI 1...	Y...	Y		1	1.2...	31	-.5	32	.866																
44	(1.2 + 0.2Sds)DL + 1.0E AZI 1...	Y...	Y		1	1.2...	31	-.8...	32	.5																
45	(1.2 + 0.2Sds)DL + 1.0E AZI 1...	Y...	Y		1	1.2...	31	-1	32																	
46	(1.2 + 0.2Sds)DL + 1.0E AZI 2...	Y...	Y		1	1.2...	31	-.8...	32	-.5																
47	(1.2 + 0.2Sds)DL + 1.0E AZI 2...	Y...	Y		1	1.2...	31	-.5	32	-.8...																
48	(1.2 + 0.2Sds)DL + 1.0E AZI 2...	Y...	Y		1	1.2...	31		32	-1																
49	(1.2 + 0.2Sds)DL + 1.0E AZI 3...	Y...	Y		1	1.2...	31	.5	32	-.8...																
50	(1.2 + 0.2Sds)DL + 1.0E AZI 3...	Y...	Y		1	1.2...	31	.866	32	-.5																
51	(0.9 - 0.2Sds)DL + 1.0E AZI 0	Y...	Y		1	.861	31	1	32																	
52	(0.9 - 0.2Sds)DL + 1.0E AZI 30	Y...	Y		1	.861	31	.866	32	.5																
53	(0.9 - 0.2Sds)DL + 1.0E AZI 60	Y...	Y		1	.861	31	.5	32	.866																
54	(0.9 - 0.2Sds)DL + 1.0E AZI 90	Y...	Y		1	.861	31		32	1																
55	(0.9 - 0.2Sds)DL + 1.0E AZI 1...	Y...	Y		1	.861	31	-.5	32	.866																
56	(0.9 - 0.2Sds)DL + 1.0E AZI 1...	Y...	Y		1	.861	31	-.8...	32	.5																
57	(0.9 - 0.2Sds)DL + 1.0E AZI 1...	Y...	Y		1	.861	31	-1	32																	
58	(0.9 - 0.2Sds)DL + 1.0E AZI 2...	Y...	Y		1	.861	31	-.8...	32	-.5																
59	(0.9 - 0.2Sds)DL + 1.0E AZI 2...	Y...	Y		1	.861	31	-.5	32	-.8...																
60	(0.9 - 0.2Sds)DL + 1.0E AZI 2...	Y...	Y		1	.861	31		32	-1																
61	(0.9 - 0.2Sds)DL + 1.0E AZI 3...	Y...	Y		1	.861	31	.5	32	-.8...																
62	(0.9 - 0.2Sds)DL + 1.0E AZI 3...	Y...	Y		1	.861	31	.866	32	-.5																
63	1.0DL + 1.5LL + 1.0SWL (60 ...	Y...	Y		1	1	2	.25	14	.25	15		33	1.5												
64	1.0DL + 1.5LL + 1.0SWL (60 ...	Y...	Y		1	1	3	.25	14	.216	15	.125	33	1.5												
65	1.0DL + 1.5LL + 1.0SWL (60 ...	Y...	Y		1	1	4	.25	14	.125	15	.216	33	1.5												
66	1.0DL + 1.5LL + 1.0SWL (60 ...	Y...	Y		1	1	5	.25	14		15	.25	33	1.5												
67	1.0DL + 1.5LL + 1.0SWL (60 ...	Y...	Y		1	1	6	.25	14	-.1...	15	.216	33	1.5												
68	1.0DL + 1.5LL + 1.0SWL (60 ...	Y...	Y		1	1	7	.25	14	-.2...	15	.125	33	1.5												
69	1.0DL + 1.5LL + 1.0SWL (60 ...	Y...	Y		1	1	8	.25	14	-.25	15		33	1.5												
70	1.0DL + 1.5LL + 1.0SWL (60 ...	Y...	Y		1	1	9	.25	14	-.2...	15	-.1...	33	1.5												
71	1.0DL + 1.5LL + 1.0SWL (60 ...	Y...	Y		1	1	10	.25	14	-.1...	15	-.2...	33	1.5												
72	1.0DL + 1.5LL + 1.0SWL (60 ...	Y...	Y		1	1	11	.25	14		15	-.25	33	1.5												
73	1.0DL + 1.5LL + 1.0SWL (60 ...	Y...	Y		1	1	12	.25	14	.125	15	-.2...	33	1.5												

Load Combinations (Continued)

	Description	S...	P...	S...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
74	1.0DL + 1.5LL + 1.0SWL (60 ...	Y...	Y		1	1	13	.25	14	.216	15	-.1...	33	1.5												
75	1.2DL + 1.5LL	Y...	Y		1	1.2	33	1.5																		
76	1.2DL + 1.5LM-MP1 + 1SWL (...	Y...	Y		1	1.2	34	1.5	2	.063	14	.063	15													
77	1.2DL + 1.5LM-MP1 + 1SWL (...	Y...	Y		1	1.2	34	1.5	3	.063	14	.054	15	.031												
78	1.2DL + 1.5LM-MP1 + 1SWL (...	Y...	Y		1	1.2	34	1.5	4	.063	14	.031	15	.054												
79	1.2DL + 1.5LM-MP1 + 1SWL (...	Y...	Y		1	1.2	34	1.5	5	.063	14		15	.063												
80	1.2DL + 1.5LM-MP1 + 1SWL (...	Y...	Y		1	1.2	34	1.5	6	.063	14	-.0...	15	.054												
81	1.2DL + 1.5LM-MP1 + 1SWL (...	Y...	Y		1	1.2	34	1.5	7	.063	14	-.0...	15	.031												
82	1.2DL + 1.5LM-MP1 + 1SWL (...	Y...	Y		1	1.2	34	1.5	8	.063	14	-.0...	15													
83	1.2DL + 1.5LM-MP1 + 1SWL (...	Y...	Y		1	1.2	34	1.5	9	.063	14	-.0...	15	-.0...												
84	1.2DL + 1.5LM-MP1 + 1SWL (...	Y...	Y		1	1.2	34	1.5	10	.063	14	-.0...	15	-.0...												
85	1.2DL + 1.5LM-MP1 + 1SWL (...	Y...	Y		1	1.2	34	1.5	11	.063	14		15	-.0...												
86	1.2DL + 1.5LM-MP1 + 1SWL (...	Y...	Y		1	1.2	34	1.5	12	.063	14	.031	15	-.0...												
87	1.2DL + 1.5LM-MP1 + 1SWL (...	Y...	Y		1	1.2	34	1.5	13	.063	14	.054	15	-.0...												
88	1.2DL + 1.5LM-MP2 + 1SWL (...	Y...	Y		1	1.2	35	1.5	2	.063	14	.063	15													
89	1.2DL + 1.5LM-MP2 + 1SWL (...	Y...	Y		1	1.2	35	1.5	3	.063	14	.054	15	.031												
90	1.2DL + 1.5LM-MP2 + 1SWL (...	Y...	Y		1	1.2	35	1.5	4	.063	14	.031	15	.054												
91	1.2DL + 1.5LM-MP2 + 1SWL (...	Y...	Y		1	1.2	35	1.5	5	.063	14		15	.063												
92	1.2DL + 1.5LM-MP2 + 1SWL (...	Y...	Y		1	1.2	35	1.5	6	.063	14	-.0...	15	.054												
93	1.2DL + 1.5LM-MP2 + 1SWL (...	Y...	Y		1	1.2	35	1.5	7	.063	14	-.0...	15	.031												
94	1.2DL + 1.5LM-MP2 + 1SWL (...	Y...	Y		1	1.2	35	1.5	8	.063	14	-.0...	15													
95	1.2DL + 1.5LM-MP2 + 1SWL (...	Y...	Y		1	1.2	35	1.5	9	.063	14	-.0...	15	-.0...												
96	1.2DL + 1.5LM-MP2 + 1SWL (...	Y...	Y		1	1.2	35	1.5	10	.063	14	-.0...	15	-.0...												
97	1.2DL + 1.5LM-MP2 + 1SWL (...	Y...	Y		1	1.2	35	1.5	11	.063	14		15	-.0...												
98	1.2DL + 1.5LM-MP2 + 1SWL (...	Y...	Y		1	1.2	35	1.5	12	.063	14	.031	15	-.0...												
99	1.2DL + 1.5LM-MP2 + 1SWL (...	Y...	Y		1	1.2	35	1.5	13	.063	14	.054	15	-.0...												
100	1.2DL + 1.5LM-MP3 + 1SWL (...	Y...	Y		1	1.2	36	1.5	2	.063	14	.063	15													
101	1.2DL + 1.5LM-MP3 + 1SWL (...	Y...	Y		1	1.2	36	1.5	3	.063	14	.054	15	.031												
102	1.2DL + 1.5LM-MP3 + 1SWL (...	Y...	Y		1	1.2	36	1.5	4	.063	14	.031	15	.054												
103	1.2DL + 1.5LM-MP3 + 1SWL (...	Y...	Y		1	1.2	36	1.5	5	.063	14		15	.063												
104	1.2DL + 1.5LM-MP3 + 1SWL (...	Y...	Y		1	1.2	36	1.5	6	.063	14	-.0...	15	.054												
105	1.2DL + 1.5LM-MP3 + 1SWL (...	Y...	Y		1	1.2	36	1.5	7	.063	14	-.0...	15	.031												
106	1.2DL + 1.5LM-MP3 + 1SWL (...	Y...	Y		1	1.2	36	1.5	8	.063	14	-.0...	15													
107	1.2DL + 1.5LM-MP3 + 1SWL (...	Y...	Y		1	1.2	36	1.5	9	.063	14	-.0...	15	-.0...												
108	1.2DL + 1.5LM-MP3 + 1SWL (...	Y...	Y		1	1.2	36	1.5	10	.063	14	-.0...	15	-.0...												
109	1.2DL + 1.5LM-MP3 + 1SWL (...	Y...	Y		1	1.2	36	1.5	11	.063	14		15	-.0...												
110	1.2DL + 1.5LM-MP3 + 1SWL (...	Y...	Y		1	1.2	36	1.5	12	.063	14	.031	15	-.0...												
111	1.2DL + 1.5LM-MP3 + 1SWL (...	Y...	Y		1	1.2	36	1.5	13	.063	14	.054	15	-.0...												
112	1.2DL + 1.5LM-MP4 + 1SWL (...	Y...	Y		1	1.2	37	1.5	2	.063	14	.063	15													
113	1.2DL + 1.5LM-MP4 + 1SWL (...	Y...	Y		1	1.2	37	1.5	3	.063	14	.054	15	.031												
114	1.2DL + 1.5LM-MP4 + 1SWL (...	Y...	Y		1	1.2	37	1.5	4	.063	14	.031	15	.054												
115	1.2DL + 1.5LM-MP4 + 1SWL (...	Y...	Y		1	1.2	37	1.5	5	.063	14		15	.063												

Load Combinations (Continued)

	Description	S...	P...	S...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
116	1.2DL + 1.5LM-MP4 + 1SWL (...	Y...	Y		1	1.2	37	1.5	6	.063	14	-.0...	15	.054										
117	1.2DL + 1.5LM-MP4 + 1SWL (...	Y...	Y		1	1.2	37	1.5	7	.063	14	-.0...	15	.031										
118	1.2DL + 1.5LM-MP4 + 1SWL (...	Y...	Y		1	1.2	37	1.5	8	.063	14	-.0...	15											
119	1.2DL + 1.5LM-MP4 + 1SWL (...	Y...	Y		1	1.2	37	1.5	9	.063	14	-.0...	15	-.0...										
120	1.2DL + 1.5LM-MP4 + 1SWL (...	Y...	Y		1	1.2	37	1.5	10	.063	14	-.0...	15	-.0...										
121	1.2DL + 1.5LM-MP4 + 1SWL (...	Y...	Y		1	1.2	37	1.5	11	.063	14		15	-.0...										
122	1.2DL + 1.5LM-MP4 + 1SWL (...	Y...	Y		1	1.2	37	1.5	12	.063	14	.031	15	-.0...										
123	1.2DL + 1.5LM-MP4 + 1SWL (...	Y...	Y		1	1.2	37	1.5	13	.063	14	.054	15	-.0...										
124	1.2DL + 1.5LM-MP5 + 1SWL (...	Y...	Y		1	1.2	38	1.5	2	.063	14	.063	15											
125	1.2DL + 1.5LM-MP5 + 1SWL (...	Y...	Y		1	1.2	38	1.5	3	.063	14	.054	15	.031										
126	1.2DL + 1.5LM-MP5 + 1SWL (...	Y...	Y		1	1.2	38	1.5	4	.063	14	.031	15	.054										
127	1.2DL + 1.5LM-MP5 + 1SWL (...	Y...	Y		1	1.2	38	1.5	5	.063	14		15	.063										
128	1.2DL + 1.5LM-MP5 + 1SWL (...	Y...	Y		1	1.2	38	1.5	6	.063	14	-.0...	15	.054										
129	1.2DL + 1.5LM-MP5 + 1SWL (...	Y...	Y		1	1.2	38	1.5	7	.063	14	-.0...	15	.031										
130	1.2DL + 1.5LM-MP5 + 1SWL (...	Y...	Y		1	1.2	38	1.5	8	.063	14	-.0...	15											
131	1.2DL + 1.5LM-MP5 + 1SWL (...	Y...	Y		1	1.2	38	1.5	9	.063	14	-.0...	15	-.0...										
132	1.2DL + 1.5LM-MP5 + 1SWL (...	Y...	Y		1	1.2	38	1.5	10	.063	14	-.0...	15	-.0...										
133	1.2DL + 1.5LM-MP5 + 1SWL (...	Y...	Y		1	1.2	38	1.5	11	.063	14		15	-.0...										
134	1.2DL + 1.5LM-MP5 + 1SWL (...	Y...	Y		1	1.2	38	1.5	12	.063	14	.031	15	-.0...										
135	1.2DL + 1.5LM-MP5 + 1SWL (...	Y...	Y		1	1.2	38	1.5	13	.063	14	.054	15	-.0...										
136	1.2DL + 1.5LM-MP6 + 1SWL (...	Y...	Y		1	1.2	39	1.5	2	.063	14	.063	15											
137	1.2DL + 1.5LM-MP6 + 1SWL (...	Y...	Y		1	1.2	39	1.5	3	.063	14	.054	15	.031										
138	1.2DL + 1.5LM-MP6 + 1SWL (...	Y...	Y		1	1.2	39	1.5	4	.063	14	.031	15	.054										
139	1.2DL + 1.5LM-MP6 + 1SWL (...	Y...	Y		1	1.2	39	1.5	5	.063	14		15	.063										
140	1.2DL + 1.5LM-MP6 + 1SWL (...	Y...	Y		1	1.2	39	1.5	6	.063	14	-.0...	15	.054										
141	1.2DL + 1.5LM-MP6 + 1SWL (...	Y...	Y		1	1.2	39	1.5	7	.063	14	-.0...	15	.031										
142	1.2DL + 1.5LM-MP6 + 1SWL (...	Y...	Y		1	1.2	39	1.5	8	.063	14	-.0...	15											
143	1.2DL + 1.5LM-MP6 + 1SWL (...	Y...	Y		1	1.2	39	1.5	9	.063	14	-.0...	15	-.0...										
144	1.2DL + 1.5LM-MP6 + 1SWL (...	Y...	Y		1	1.2	39	1.5	10	.063	14	-.0...	15	-.0...										
145	1.2DL + 1.5LM-MP6 + 1SWL (...	Y...	Y		1	1.2	39	1.5	11	.063	14		15	-.0...										
146	1.2DL + 1.5LM-MP6 + 1SWL (...	Y...	Y		1	1.2	39	1.5	12	.063	14	.031	15	-.0...										
147	1.2DL + 1.5LM-MP6 + 1SWL (...	Y...	Y		1	1.2	39	1.5	13	.063	14	.054	15	-.0...										
148	1.2DL + 1.5LM-MP7 + 1SWL (...	Y...	Y		1	1.2	40	1.5	2	.063	14	.063	15											
149	1.2DL + 1.5LM-MP7 + 1SWL (...	Y...	Y		1	1.2	40	1.5	3	.063	14	.054	15	.031										
150	1.2DL + 1.5LM-MP7 + 1SWL (...	Y...	Y		1	1.2	40	1.5	4	.063	14	.031	15	.054										
151	1.2DL + 1.5LM-MP7 + 1SWL (...	Y...	Y		1	1.2	40	1.5	5	.063	14		15	.063										
152	1.2DL + 1.5LM-MP7 + 1SWL (...	Y...	Y		1	1.2	40	1.5	6	.063	14	-.0...	15	.054										
153	1.2DL + 1.5LM-MP7 + 1SWL (...	Y...	Y		1	1.2	40	1.5	7	.063	14	-.0...	15	.031										
154	1.2DL + 1.5LM-MP7 + 1SWL (...	Y...	Y		1	1.2	40	1.5	8	.063	14	-.0...	15											
155	1.2DL + 1.5LM-MP7 + 1SWL (...	Y...	Y		1	1.2	40	1.5	9	.063	14	-.0...	15	-.0...										
156	1.2DL + 1.5LM-MP7 + 1SWL (...	Y...	Y		1	1.2	40	1.5	10	.063	14	-.0...	15	-.0...										
157	1.2DL + 1.5LM-MP7 + 1SWL (...	Y...	Y		1	1.2	40	1.5	11	.063	14		15	-.0...										

Load Combinations (Continued)

	Description	S...	P...	S...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
158	1.2DL + 1.5LM-MP7 + 1SWL (...	Y...	Y		1	1.2	40	1.5	12	.063	14	.031	15	-.0...												
159	1.2DL + 1.5LM-MP7 + 1SWL (...	Y...	Y		1	1.2	40	1.5	13	.063	14	.054	15	-.0...												
160	1.2DL + 1.5LM-MP8 + 1SWL (...	Y...	Y		1	1.2	41	1.5	2	.063	14	.063	15													
161	1.2DL + 1.5LM-MP8 + 1SWL (...	Y...	Y		1	1.2	41	1.5	3	.063	14	.054	15	.031												
162	1.2DL + 1.5LM-MP8 + 1SWL (...	Y...	Y		1	1.2	41	1.5	4	.063	14	.031	15	.054												
163	1.2DL + 1.5LM-MP8 + 1SWL (...	Y...	Y		1	1.2	41	1.5	5	.063	14		15	.063												
164	1.2DL + 1.5LM-MP8 + 1SWL (...	Y...	Y		1	1.2	41	1.5	6	.063	14	-.0...	15	.054												
165	1.2DL + 1.5LM-MP8 + 1SWL (...	Y...	Y		1	1.2	41	1.5	7	.063	14	-.0...	15	.031												
166	1.2DL + 1.5LM-MP8 + 1SWL (...	Y...	Y		1	1.2	41	1.5	8	.063	14	-.0...	15													
167	1.2DL + 1.5LM-MP8 + 1SWL (...	Y...	Y		1	1.2	41	1.5	9	.063	14	-.0...	15	-.0...												
168	1.2DL + 1.5LM-MP8 + 1SWL (...	Y...	Y		1	1.2	41	1.5	10	.063	14	-.0...	15	-.0...												
169	1.2DL + 1.5LM-MP8 + 1SWL (...	Y...	Y		1	1.2	41	1.5	11	.063	14		15	-.0...												
170	1.2DL + 1.5LM-MP8 + 1SWL (...	Y...	Y		1	1.2	41	1.5	12	.063	14	.031	15	-.0...												
171	1.2DL + 1.5LM-MP8 + 1SWL (...	Y...	Y		1	1.2	41	1.5	13	.063	14	.054	15	-.0...												
172	1.2DL + 1.5LM-MP9 + 1SWL (...	Y...	Y		1	1.2	42	1.5	2	.063	14	.063	15													
173	1.2DL + 1.5LM-MP9 + 1SWL (...	Y...	Y		1	1.2	42	1.5	3	.063	14	.054	15	.031												
174	1.2DL + 1.5LM-MP9 + 1SWL (...	Y...	Y		1	1.2	42	1.5	4	.063	14	.031	15	.054												
175	1.2DL + 1.5LM-MP9 + 1SWL (...	Y...	Y		1	1.2	42	1.5	5	.063	14		15	.063												
176	1.2DL + 1.5LM-MP9 + 1SWL (...	Y...	Y		1	1.2	42	1.5	6	.063	14	-.0...	15	.054												
177	1.2DL + 1.5LM-MP9 + 1SWL (...	Y...	Y		1	1.2	42	1.5	7	.063	14	-.0...	15	.031												
178	1.2DL + 1.5LM-MP9 + 1SWL (...	Y...	Y		1	1.2	42	1.5	8	.063	14	-.0...	15													
179	1.2DL + 1.5LM-MP9 + 1SWL (...	Y...	Y		1	1.2	42	1.5	9	.063	14	-.0...	15	-.0...												
180	1.2DL + 1.5LM-MP9 + 1SWL (...	Y...	Y		1	1.2	42	1.5	10	.063	14	-.0...	15	-.0...												
181	1.2DL + 1.5LM-MP9 + 1SWL (...	Y...	Y		1	1.2	42	1.5	11	.063	14		15	-.0...												
182	1.2DL + 1.5LM-MP9 + 1SWL (...	Y...	Y		1	1.2	42	1.5	12	.063	14	.031	15	-.0...												

Joint Boundary Conditions

	Joint Label	X [k/in]	Y [k/in]	Z [k/in]	X Rot.[k-ft/rad]	Y Rot.[k-ft/rad]	Z Rot.[k-ft/rad]
1	P24	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
2	P13	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
3	P1	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction

Envelope Joint Reactions

	Joint		X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [lb-ft]	LC	MY [lb-ft]	LC	MZ [lb-ft]	LC
1	P24	...	1271.22	6	1994.0...	10	1936.5...	13	1528.7...	16	2454.317	19	4445.676	10
2		...	-1251.033	24	-856.24	16	-1928.82	19	-3258.9...	10	-2469.6	13	-2531.357	16
3	P13	...	1553.381	4	2141.14	6	2055.0...	15	1369.5...	24	2766.294	15	2430.635	24
4		...	-1553.946	22	-765.3...	24	-2060.5...	9	-2852.1...	92	-2809.884	9	-5456.174	6
5	P1	...	2002.535	17	2084.3...	2	1031.7...	2	5819.9...	2	2265.66	11	1594.387	115

Envelope Joint Reactions (Continued)

	Joint		X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [lb-ft]	LC	MY [lb-ft]	LC	MZ [lb-ft]	LC
6		...	-2022.559	11	-857.8...	20	-1043.0...	8	-2984.8...	20	-2211.775	17	-873.038	157
7	Totals:	...	4597.519	5	4655.6...	34	4869.5...	14						
8		...	-4597.512	23	1530.9...	53	-4869.5...	8						

Member Point Loads (BLC 1 : Self Weight)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	Y	-32.25	0
2	MP1	Y	-32.25	72
3	MP1	Y	-74.95	12
4	MP1	Y	-63.93	12
5	S2	Y	-21.85	12
6	MP4	Y	-32.25	0
7	MP4	Y	-32.25	72
8	MP4	Y	-74.95	12
9	MP4	Y	-63.93	12
10	MP7	Y	-32.25	0
11	MP7	Y	-32.25	72
12	MP7	Y	-74.95	12
13	MP7	Y	-63.93	12

Member Point Loads (BLC 2 : Wind Load AZI 0)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	0	0
2	MP1	Z	-207.91	0
3	MP1	X	0	72
4	MP1	Z	-207.91	72
5	MP1	X	0	12
6	MP1	Z	-101.93	12
7	MP1	X	0	12
8	MP1	Z	-101.93	12
9	S2	X	0	12
10	S2	Z	-96.9	12
11	MP4	X	0	0
12	MP4	Z	-114.47	0
13	MP4	X	0	72
14	MP4	Z	-114.47	72
15	MP4	X	0	12
16	MP4	Z	-71.78	12
17	MP4	X	0	12
18	MP4	Z	-65.7	12

Member Point Loads (BLC 2 : Wind Load AZI 0) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
19	MP7	X	0	0
20	MP7	Z	-114.47	0
21	MP7	X	0	72
22	MP7	Z	-114.47	72
23	MP7	X	0	12
24	MP7	Z	-71.78	12
25	MP7	X	0	12
26	MP7	Z	-65.7	12

Member Point Loads (BLC 3 : Wind Load AZI 30)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	-88.38	0
2	MP1	Z	-153.08	0
3	MP1	X	-88.38	72
4	MP1	Z	-153.08	72
5	MP1	X	-45.94	12
6	MP1	Z	-79.57	12
7	MP1	X	-44.93	12
8	MP1	Z	-77.82	12
9	S2	X	-43.26	12
10	S2	Z	-74.93	12
11	MP4	X	-88.38	0
12	MP4	Z	-153.08	0
13	MP4	X	-88.38	72
14	MP4	Z	-153.08	72
15	MP4	X	-45.94	12
16	MP4	Z	-79.57	12
17	MP4	X	-44.93	12
18	MP4	Z	-77.82	12
19	MP7	X	-41.66	0
20	MP7	Z	-72.16	0
21	MP7	X	-41.66	72
22	MP7	Z	-72.16	72
23	MP7	X	-30.87	12
24	MP7	Z	-53.46	12
25	MP7	X	-26.81	12
26	MP7	Z	-46.44	12

Member Point Loads (BLC 4 : Wind Load AZI 60)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	-99.13	0

Member Point Loads (BLC 4 : Wind Load AZI 60) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
2	MP1	Z	-57.23	0
3	MP1	X	-99.13	72
4	MP1	Z	-57.23	72
5	MP1	X	-62.16	12
6	MP1	Z	-35.89	12
7	MP1	X	-56.9	12
8	MP1	Z	-32.85	12
9	S2	X	-56.95	12
10	S2	Z	-32.88	12
11	MP4	X	-180.06	0
12	MP4	Z	-103.96	0
13	MP4	X	-180.06	72
14	MP4	Z	-103.96	72
15	MP4	X	-88.27	12
16	MP4	Z	-50.97	12
17	MP4	X	-88.27	12
18	MP4	Z	-50.97	12
19	MP7	X	-99.13	0
20	MP7	Z	-57.23	0
21	MP7	X	-99.13	72
22	MP7	Z	-57.23	72
23	MP7	X	-62.16	12
24	MP7	Z	-35.89	12
25	MP7	X	-56.9	12
26	MP7	Z	-32.85	12

Member Point Loads (BLC 5 : Wind Load AZI 90)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	-83.32	0
2	MP1	Z	0	0
3	MP1	X	-83.32	72
4	MP1	Z	0	72
5	MP1	X	-61.73	12
6	MP1	Z	0	12
7	MP1	X	-53.62	12
8	MP1	Z	0	12
9	S2	X	-55.37	12
10	S2	Z	0	12
11	MP4	X	-176.76	0
12	MP4	Z	0	0
13	MP4	X	-176.76	72
14	MP4	Z	0	72

Member Point Loads (BLC 5 : Wind Load AZI 90) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
15	MP4	X	-91.88	12
16	MP4	Z	0	12
17	MP4	X	-89.85	12
18	MP4	Z	0	12
19	MP7	X	-176.76	0
20	MP7	Z	0	0
21	MP7	X	-176.76	72
22	MP7	Z	0	72
23	MP7	X	-91.88	12
24	MP7	Z	0	12
25	MP7	X	-89.85	12
26	MP7	Z	0	12

Member Point Loads (BLC 6 : Wind Load AZI 120)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	-99.13	0
2	MP1	Z	57.23	0
3	MP1	X	-99.13	72
4	MP1	Z	57.23	72
5	MP1	X	-62.16	12
6	MP1	Z	35.89	12
7	MP1	X	-56.9	12
8	MP1	Z	32.85	12
9	S2	X	-56.95	12
10	S2	Z	32.88	12
11	MP4	X	-99.13	0
12	MP4	Z	57.23	0
13	MP4	X	-99.13	72
14	MP4	Z	57.23	72
15	MP4	X	-62.16	12
16	MP4	Z	35.89	12
17	MP4	X	-56.9	12
18	MP4	Z	32.85	12
19	MP7	X	-180.06	0
20	MP7	Z	103.96	0
21	MP7	X	-180.06	72
22	MP7	Z	103.96	72
23	MP7	X	-88.27	12
24	MP7	Z	50.97	12
25	MP7	X	-88.27	12
26	MP7	Z	50.97	12

Member Point Loads (BLC 7 : Wind Load AZI 150)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	-88.38	0
2	MP1	Z	153.08	0
3	MP1	X	-88.38	72
4	MP1	Z	153.08	72
5	MP1	X	-45.94	12
6	MP1	Z	79.57	12
7	MP1	X	-44.93	12
8	MP1	Z	77.82	12
9	S2	X	-43.26	12
10	S2	Z	74.93	12
11	MP4	X	-41.66	0
12	MP4	Z	72.16	0
13	MP4	X	-41.66	72
14	MP4	Z	72.16	72
15	MP4	X	-30.87	12
16	MP4	Z	53.46	12
17	MP4	X	-26.81	12
18	MP4	Z	46.44	12
19	MP7	X	-88.38	0
20	MP7	Z	153.08	0
21	MP7	X	-88.38	72
22	MP7	Z	153.08	72
23	MP7	X	-45.94	12
24	MP7	Z	79.57	12
25	MP7	X	-44.93	12
26	MP7	Z	77.82	12

Member Point Loads (BLC 8 : Wind Load AZI 180)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	0	0
2	MP1	Z	207.91	0
3	MP1	X	0	72
4	MP1	Z	207.91	72
5	MP1	X	0	12
6	MP1	Z	101.93	12
7	MP1	X	0	12
8	MP1	Z	101.93	12
9	S2	X	0	12
10	S2	Z	96.9	12
11	MP4	X	0	0
12	MP4	Z	114.47	0
13	MP4	X	0	72

Member Point Loads (BLC 8 : Wind Load AZI 180) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
14	MP4	Z	114.47	72
15	MP4	X	0	12
16	MP4	Z	71.78	12
17	MP4	X	0	12
18	MP4	Z	65.7	12
19	MP7	X	0	0
20	MP7	Z	114.47	0
21	MP7	X	0	72
22	MP7	Z	114.47	72
23	MP7	X	0	12
24	MP7	Z	71.78	12
25	MP7	X	0	12
26	MP7	Z	65.7	12

Member Point Loads (BLC 9 : Wind Load AZI 210)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	88.38	0
2	MP1	Z	153.08	0
3	MP1	X	88.38	72
4	MP1	Z	153.08	72
5	MP1	X	45.94	12
6	MP1	Z	79.57	12
7	MP1	X	44.93	12
8	MP1	Z	77.82	12
9	S2	X	43.26	12
10	S2	Z	74.93	12
11	MP4	X	88.38	0
12	MP4	Z	153.08	0
13	MP4	X	88.38	72
14	MP4	Z	153.08	72
15	MP4	X	45.94	12
16	MP4	Z	79.57	12
17	MP4	X	44.93	12
18	MP4	Z	77.82	12
19	MP7	X	41.66	0
20	MP7	Z	72.16	0
21	MP7	X	41.66	72
22	MP7	Z	72.16	72
23	MP7	X	30.87	12
24	MP7	Z	53.46	12
25	MP7	X	26.81	12
26	MP7	Z	46.44	12

Member Point Loads (BLC 10 : Wind Load AZI 240)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	99.13	0
2	MP1	Z	57.23	0
3	MP1	X	99.13	72
4	MP1	Z	57.23	72
5	MP1	X	62.16	12
6	MP1	Z	35.89	12
7	MP1	X	56.9	12
8	MP1	Z	32.85	12
9	S2	X	56.95	12
10	S2	Z	32.88	12
11	MP4	X	180.06	0
12	MP4	Z	103.96	0
13	MP4	X	180.06	72
14	MP4	Z	103.96	72
15	MP4	X	88.27	12
16	MP4	Z	50.97	12
17	MP4	X	88.27	12
18	MP4	Z	50.97	12
19	MP7	X	99.13	0
20	MP7	Z	57.23	0
21	MP7	X	99.13	72
22	MP7	Z	57.23	72
23	MP7	X	62.16	12
24	MP7	Z	35.89	12
25	MP7	X	56.9	12
26	MP7	Z	32.85	12

Member Point Loads (BLC 11 : Wind Load AZI 270)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	83.32	0
2	MP1	Z	0	0
3	MP1	X	83.32	72
4	MP1	Z	0	72
5	MP1	X	61.73	12
6	MP1	Z	0	12
7	MP1	X	53.62	12
8	MP1	Z	0	12
9	S2	X	55.37	12
10	S2	Z	0	12
11	MP4	X	176.76	0
12	MP4	Z	0	0
13	MP4	X	176.76	72

Member Point Loads (BLC 11 : Wind Load AZI 270) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
14	MP4	Z	0	72
15	MP4	X	91.88	12
16	MP4	Z	0	12
17	MP4	X	89.85	12
18	MP4	Z	0	12
19	MP7	X	176.76	0
20	MP7	Z	0	0
21	MP7	X	176.76	72
22	MP7	Z	0	72
23	MP7	X	91.88	12
24	MP7	Z	0	12
25	MP7	X	89.85	12
26	MP7	Z	0	12

Member Point Loads (BLC 12 : Wind Load AZI 300)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	99.13	0
2	MP1	Z	-57.23	0
3	MP1	X	99.13	72
4	MP1	Z	-57.23	72
5	MP1	X	62.16	12
6	MP1	Z	-35.89	12
7	MP1	X	56.9	12
8	MP1	Z	-32.85	12
9	S2	X	56.95	12
10	S2	Z	-32.88	12
11	MP4	X	99.13	0
12	MP4	Z	-57.23	0
13	MP4	X	99.13	72
14	MP4	Z	-57.23	72
15	MP4	X	62.16	12
16	MP4	Z	-35.89	12
17	MP4	X	56.9	12
18	MP4	Z	-32.85	12
19	MP7	X	180.06	0
20	MP7	Z	-103.96	0
21	MP7	X	180.06	72
22	MP7	Z	-103.96	72
23	MP7	X	88.27	12
24	MP7	Z	-50.97	12
25	MP7	X	88.27	12
26	MP7	Z	-50.97	12

Member Point Loads (BLC 13 : Wind Load AZI 330)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	88.38	0
2	MP1	Z	-153.08	0
3	MP1	X	88.38	72
4	MP1	Z	-153.08	72
5	MP1	X	45.94	12
6	MP1	Z	-79.57	12
7	MP1	X	44.93	12
8	MP1	Z	-77.82	12
9	S2	X	43.26	12
10	S2	Z	-74.93	12
11	MP4	X	41.66	0
12	MP4	Z	-72.16	0
13	MP4	X	41.66	72
14	MP4	Z	-72.16	72
15	MP4	X	30.87	12
16	MP4	Z	-53.46	12
17	MP4	X	26.81	12
18	MP4	Z	-46.44	12
19	MP7	X	88.38	0
20	MP7	Z	-153.08	0
21	MP7	X	88.38	72
22	MP7	Z	-153.08	72
23	MP7	X	45.94	12
24	MP7	Z	-79.57	12
25	MP7	X	44.93	12
26	MP7	Z	-77.82	12

Member Point Loads (BLC 16 : Ice Weight)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	Y	-97.184	0
2	MP1	Y	-97.184	72
3	MP1	Y	-49.464	12
4	MP1	Y	-46.304	12
5	S2	Y	-45.125	12
6	MP4	Y	-97.184	0
7	MP4	Y	-97.184	72
8	MP4	Y	-49.464	12
9	MP4	Y	-46.304	12
10	MP7	Y	-97.184	0
11	MP7	Y	-97.184	72
12	MP7	Y	-49.464	12
13	MP7	Y	-46.304	12

Member Point Loads (BLC 17 : Ice Wind Load AZI 0)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	0	0
2	MP1	Z	-27.13	0
3	MP1	X	0	72
4	MP1	Z	-27.13	72
5	MP1	X	0	12
6	MP1	Z	-9.94	12
7	MP1	X	0	12
8	MP1	Z	-9.94	12
9	S2	X	0	12
10	S2	Z	-9.52	12
11	MP4	X	0	0
12	MP4	Z	-19.4	0
13	MP4	X	0	72
14	MP4	Z	-19.4	72
15	MP4	X	0	12
16	MP4	Z	-8.01	12
17	MP4	X	0	12
18	MP4	Z	-7.71	12
19	MP7	X	0	0
20	MP7	Z	-19.4	0
21	MP7	X	0	72
22	MP7	Z	-19.4	72
23	MP7	X	0	12
24	MP7	Z	-8.01	12
25	MP7	X	0	12
26	MP7	Z	-7.71	12

Member Point Loads (BLC 18 : Ice Wind Load AZI 30)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	-12.28	0
2	MP1	Z	-21.26	0
3	MP1	X	-12.28	72
4	MP1	Z	-21.26	72
5	MP1	X	-4.65	12
6	MP1	Z	-8.05	12
7	MP1	X	-4.6	12
8	MP1	Z	-7.96	12
9	S2	X	-4.46	12
10	S2	Z	-7.72	12
11	MP4	X	-12.28	0
12	MP4	Z	-21.26	0
13	MP4	X	-12.28	72

Member Point Loads (BLC 18 : Ice Wind Load AZI 30) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
14	MP4	Z	-21.26	72
15	MP4	X	-4.65	12
16	MP4	Z	-8.05	12
17	MP4	X	-4.6	12
18	MP4	Z	-7.96	12
19	MP7	X	-8.41	0
20	MP7	Z	-14.57	0
21	MP7	X	-8.41	72
22	MP7	Z	-14.57	72
23	MP7	X	-3.69	12
24	MP7	Z	-6.39	12
25	MP7	X	-3.49	12
26	MP7	Z	-6.04	12

Member Point Loads (BLC 19 : Ice Wind Load AZI 60)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	-16.8	0
2	MP1	Z	-9.7	0
3	MP1	X	-16.8	72
4	MP1	Z	-9.7	72
5	MP1	X	-6.94	12
6	MP1	Z	-4.01	12
7	MP1	X	-6.68	12
8	MP1	Z	-3.86	12
9	S2	X	-6.68	12
10	S2	Z	-3.86	12
11	MP4	X	-23.49	0
12	MP4	Z	-13.56	0
13	MP4	X	-23.49	72
14	MP4	Z	-13.56	72
15	MP4	X	-8.61	12
16	MP4	Z	-4.97	12
17	MP4	X	-8.61	12
18	MP4	Z	-4.97	12
19	MP7	X	-16.8	0
20	MP7	Z	-9.7	0
21	MP7	X	-16.8	72
22	MP7	Z	-9.7	72
23	MP7	X	-6.94	12
24	MP7	Z	-4.01	12
25	MP7	X	-6.68	12
26	MP7	Z	-3.86	12

Member Point Loads (BLC 20 : Ice Wind Load AZI 90)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	-16.83	0
2	MP1	Z	0	0
3	MP1	X	-16.83	72
4	MP1	Z	0	72
5	MP1	X	-7.37	12
6	MP1	Z	0	12
7	MP1	X	-6.97	12
8	MP1	Z	0	12
9	S2	X	-7.11	12
10	S2	Z	0	12
11	MP4	X	-24.55	0
12	MP4	Z	0	0
13	MP4	X	-24.55	72
14	MP4	Z	0	72
15	MP4	X	-9.3	12
16	MP4	Z	0	12
17	MP4	X	-9.2	12
18	MP4	Z	0	12
19	MP7	X	-24.55	0
20	MP7	Z	0	0
21	MP7	X	-24.55	72
22	MP7	Z	0	72
23	MP7	X	-9.3	12
24	MP7	Z	0	12
25	MP7	X	-9.2	12
26	MP7	Z	0	12

Member Point Loads (BLC 21 : Ice Wind Load AZI 120)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	-16.8	0
2	MP1	Z	9.7	0
3	MP1	X	-16.8	72
4	MP1	Z	9.7	72
5	MP1	X	-6.94	12
6	MP1	Z	4.01	12
7	MP1	X	-6.68	12
8	MP1	Z	3.86	12
9	S2	X	-6.68	12
10	S2	Z	3.86	12
11	MP4	X	-16.8	0
12	MP4	Z	9.7	0
13	MP4	X	-16.8	72

Member Point Loads (BLC 21 : Ice Wind Load AZI 120) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
14	MP4	Z	9.7	72
15	MP4	X	-6.94	12
16	MP4	Z	4.01	12
17	MP4	X	-6.68	12
18	MP4	Z	3.86	12
19	MP7	X	-23.49	0
20	MP7	Z	13.56	0
21	MP7	X	-23.49	72
22	MP7	Z	13.56	72
23	MP7	X	-8.61	12
24	MP7	Z	4.97	12
25	MP7	X	-8.61	12
26	MP7	Z	4.97	12

Member Point Loads (BLC 22 : Ice Wind Load AZI 150)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	-12.28	0
2	MP1	Z	21.26	0
3	MP1	X	-12.28	72
4	MP1	Z	21.26	72
5	MP1	X	-4.65	12
6	MP1	Z	8.05	12
7	MP1	X	-4.6	12
8	MP1	Z	7.96	12
9	S2	X	-4.46	12
10	S2	Z	7.72	12
11	MP4	X	-8.41	0
12	MP4	Z	14.57	0
13	MP4	X	-8.41	72
14	MP4	Z	14.57	72
15	MP4	X	-3.69	12
16	MP4	Z	6.39	12
17	MP4	X	-3.49	12
18	MP4	Z	6.04	12
19	MP7	X	-12.28	0
20	MP7	Z	21.26	0
21	MP7	X	-12.28	72
22	MP7	Z	21.26	72
23	MP7	X	-4.65	12
24	MP7	Z	8.05	12
25	MP7	X	-4.6	12
26	MP7	Z	7.96	12

Member Point Loads (BLC 23 : Ice Wind Load AZI 180)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	0	0
2	MP1	Z	27.13	0
3	MP1	X	0	72
4	MP1	Z	27.13	72
5	MP1	X	0	12
6	MP1	Z	9.94	12
7	MP1	X	0	12
8	MP1	Z	9.94	12
9	S2	X	0	12
10	S2	Z	9.52	12
11	MP4	X	0	0
12	MP4	Z	19.4	0
13	MP4	X	0	72
14	MP4	Z	19.4	72
15	MP4	X	0	12
16	MP4	Z	8.01	12
17	MP4	X	0	12
18	MP4	Z	7.71	12
19	MP7	X	0	0
20	MP7	Z	19.4	0
21	MP7	X	0	72
22	MP7	Z	19.4	72
23	MP7	X	0	12
24	MP7	Z	8.01	12
25	MP7	X	0	12
26	MP7	Z	7.71	12

Member Point Loads (BLC 24 : Ice Wind Load AZI 210)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	12.28	0
2	MP1	Z	21.26	0
3	MP1	X	12.28	72
4	MP1	Z	21.26	72
5	MP1	X	4.65	12
6	MP1	Z	8.05	12
7	MP1	X	4.6	12
8	MP1	Z	7.96	12
9	S2	X	4.46	12
10	S2	Z	7.72	12
11	MP4	X	12.28	0
12	MP4	Z	21.26	0
13	MP4	X	12.28	72

Member Point Loads (BLC 24 : Ice Wind Load AZI 210) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
14	MP4	Z	21.26	72
15	MP4	X	4.65	12
16	MP4	Z	8.05	12
17	MP4	X	4.6	12
18	MP4	Z	7.96	12
19	MP7	X	8.41	0
20	MP7	Z	14.57	0
21	MP7	X	8.41	72
22	MP7	Z	14.57	72
23	MP7	X	3.69	12
24	MP7	Z	6.39	12
25	MP7	X	3.49	12
26	MP7	Z	6.04	12

Member Point Loads (BLC 25 : Ice Wind Load AZI 240)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	16.8	0
2	MP1	Z	9.7	0
3	MP1	X	16.8	72
4	MP1	Z	9.7	72
5	MP1	X	6.94	12
6	MP1	Z	4.01	12
7	MP1	X	6.68	12
8	MP1	Z	3.86	12
9	S2	X	6.68	12
10	S2	Z	3.86	12
11	MP4	X	23.49	0
12	MP4	Z	13.56	0
13	MP4	X	23.49	72
14	MP4	Z	13.56	72
15	MP4	X	8.61	12
16	MP4	Z	4.97	12
17	MP4	X	8.61	12
18	MP4	Z	4.97	12
19	MP7	X	16.8	0
20	MP7	Z	9.7	0
21	MP7	X	16.8	72
22	MP7	Z	9.7	72
23	MP7	X	6.94	12
24	MP7	Z	4.01	12
25	MP7	X	6.68	12
26	MP7	Z	3.86	12

Member Point Loads (BLC 26 : Ice Wind Load AZI 270)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	16.83	0
2	MP1	Z	0	0
3	MP1	X	16.83	72
4	MP1	Z	0	72
5	MP1	X	7.37	12
6	MP1	Z	0	12
7	MP1	X	6.97	12
8	MP1	Z	0	12
9	S2	X	7.11	12
10	S2	Z	0	12
11	MP4	X	24.55	0
12	MP4	Z	0	0
13	MP4	X	24.55	72
14	MP4	Z	0	72
15	MP4	X	9.3	12
16	MP4	Z	0	12
17	MP4	X	9.2	12
18	MP4	Z	0	12
19	MP7	X	24.55	0
20	MP7	Z	0	0
21	MP7	X	24.55	72
22	MP7	Z	0	72
23	MP7	X	9.3	12
24	MP7	Z	0	12
25	MP7	X	9.2	12
26	MP7	Z	0	12

Member Point Loads (BLC 27 : Ice Wind Load AZI 300)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	16.8	0
2	MP1	Z	-9.7	0
3	MP1	X	16.8	72
4	MP1	Z	-9.7	72
5	MP1	X	6.94	12
6	MP1	Z	-4.01	12
7	MP1	X	6.68	12
8	MP1	Z	-3.86	12
9	S2	X	6.68	12
10	S2	Z	-3.86	12
11	MP4	X	16.8	0
12	MP4	Z	-9.7	0
13	MP4	X	16.8	72

Member Point Loads (BLC 27 : Ice Wind Load AZI 300) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
14	MP4	Z	-9.7	72
15	MP4	X	6.94	12
16	MP4	Z	-4.01	12
17	MP4	X	6.68	12
18	MP4	Z	-3.86	12
19	MP7	X	23.49	0
20	MP7	Z	-13.56	0
21	MP7	X	23.49	72
22	MP7	Z	-13.56	72
23	MP7	X	8.61	12
24	MP7	Z	-4.97	12
25	MP7	X	8.61	12
26	MP7	Z	-4.97	12

Member Point Loads (BLC 28 : Ice Wind Load AZI 330)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	12.28	0
2	MP1	Z	-21.26	0
3	MP1	X	12.28	72
4	MP1	Z	-21.26	72
5	MP1	X	4.65	12
6	MP1	Z	-8.05	12
7	MP1	X	4.6	12
8	MP1	Z	-7.96	12
9	S2	X	4.46	12
10	S2	Z	-7.72	12
11	MP4	X	8.41	0
12	MP4	Z	-14.57	0
13	MP4	X	8.41	72
14	MP4	Z	-14.57	72
15	MP4	X	3.69	12
16	MP4	Z	-6.39	12
17	MP4	X	3.49	12
18	MP4	Z	-6.04	12
19	MP7	X	12.28	0
20	MP7	Z	-21.26	0
21	MP7	X	12.28	72
22	MP7	Z	-21.26	72
23	MP7	X	4.65	12
24	MP7	Z	-8.05	12
25	MP7	X	4.6	12
26	MP7	Z	-7.96	12

Member Point Loads (BLC 31 : Seismic Load Z)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	Z	-9.546	0
2	MP1	Z	-9.546	72
3	MP1	Z	-22.185	12
4	MP1	Z	-18.923	12
5	S2	Z	-6.468	12
6	MP4	Z	-9.546	0
7	MP4	Z	-9.546	72
8	MP4	Z	-22.185	12
9	MP4	Z	-18.923	12
10	MP7	Z	-9.546	0
11	MP7	Z	-9.546	72
12	MP7	Z	-22.185	12
13	MP7	Z	-18.923	12

Member Point Loads (BLC 32 : Seismic Load X)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	-9.546	0
2	MP1	X	-9.546	72
3	MP1	X	-22.185	12
4	MP1	X	-18.923	12
5	S2	X	-6.468	12
6	MP4	X	-9.546	0
7	MP4	X	-9.546	72
8	MP4	X	-22.185	12
9	MP4	X	-18.923	12
10	MP7	X	-9.546	0
11	MP7	X	-9.546	72
12	MP7	X	-22.185	12
13	MP7	X	-18.923	12

Joint Loads and Enforced Displacements (BLC 33 : Service Live Loads)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
1	N72B	L	Y	-250
2	N135A	L	Y	-250
3	N129B	L	Y	-250

Joint Loads and Enforced Displacements (BLC 34 : Maintenance Load 1)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
1	N70A	L	Y	-500

Joint Loads and Enforced Displacements (BLC 35 : Maintenance Load 2)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
1	N69A	L	Y	-500

Joint Loads and Enforced Displacements (BLC 36 : Maintenance Load 3)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
1	N76	L	Y	-500

Joint Loads and Enforced Displacements (BLC 37 : Maintenance Load 4)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
1	N94	L	Y	-500

Joint Loads and Enforced Displacements (BLC 38 : Maintenance Load 5)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
1	N93	L	Y	-500

Joint Loads and Enforced Displacements (BLC 39 : Maintenance Load 6)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
1	N122	L	Y	-500

Joint Loads and Enforced Displacements (BLC 40 : Maintenance Load 7)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
1	N121	L	Y	-500

Joint Loads and Enforced Displacements (BLC 41 : Maintenance Load 8)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
1	N133B	L	Y	-500

Joint Loads and Enforced Displacements (BLC 42 : Maintenance Load 9)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
1	N139	L	Y	-500

Member Distributed Loads (BLC 14 : Distr. Wind Load Z)

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magn...	Start Location...	End Location[in,%]
1	S3	SZ	-115.361	-115.361	0	%100
2	GA4	SZ	-115.361	-115.361	0	%100
3	GA3	SZ	-115.361	-115.361	0	%100
4	P3	SZ	-115.361	-115.361	0	%100
5	S2	SZ	-115.361	-115.361	0	%100
6	GA2	SZ	-115.361	-115.361	0	%100

Member Distributed Loads (BLC 14 : Distr. Wind Load Z) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magn...	Start Location...	End Location[in,%]
7	GA1	SZ	-115.361	-115.361	0	%100
8	P2	SZ	-115.361	-115.361	0	%100
9	S1	SZ	-115.361	-115.361	0	%100
10	GA6	SZ	-115.361	-115.361	0	%100
11	GA5	SZ	-115.361	-115.361	0	%100
12	P1	SZ	-115.361	-115.361	0	%100
13	H1	SZ	-69.217	-69.217	0	%100
14	MP1	SZ	-69.217	-69.217	0	%100
15	MP3	SZ	-69.217	-69.217	0	%100
16	HR1	SZ	-69.217	-69.217	0	%100
17	CA8	SZ	-115.361	-115.361	0	%100
18	CA9	SZ	-115.361	-115.361	0	%100
19	CA7	SZ	-115.361	-115.361	0	%100
20	M32	SZ	0	0	0	%100
21	M35	SZ	0	0	0	%100
22	M36	SZ	0	0	0	%100
23	M39A	SZ	0	0	0	%100
24	CA3	SZ	-115.361	-115.361	0	%100
25	CA4	SZ	-115.361	-115.361	0	%100
26	CA1	SZ	-115.361	-115.361	0	%100
27	CA2	SZ	-115.361	-115.361	0	%100
28	CA5	SZ	-115.361	-115.361	0	%100
29	CA6	SZ	-115.361	-115.361	0	%100
30	M64	SZ	0	0	0	%100
31	M65	SZ	0	0	0	%100
32	M66	SZ	0	0	0	%100
33	M67	SZ	0	0	0	%100
34	M68	SZ	0	0	0	%100
35	M69	SZ	0	0	0	%100
36	M70	SZ	0	0	0	%100
37	M71	SZ	0	0	0	%100
38	M72	SZ	0	0	0	%100
39	M73	SZ	0	0	0	%100
40	M74	SZ	0	0	0	%100
41	M75	SZ	-115.361	-115.361	0	%100
42	MP2	SZ	-69.217	-69.217	0	%100
43	M43	SZ	0	0	0	%100
44	M44	SZ	0	0	0	%100
45	H3	SZ	-69.217	-69.217	0	%100
46	MP7	SZ	-69.217	-69.217	0	%100
47	MP9	SZ	-69.217	-69.217	0	%100
48	HR3	SZ	-69.217	-69.217	0	%100

Member Distributed Loads (BLC 14 : Distr. Wind Load Z) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magn...	Start Location...	End Location[in,%]
49	M52	SZ	0	0	0	%100
50	M53	SZ	0	0	0	%100
51	M54	SZ	0	0	0	%100
52	M55	SZ	0	0	0	%100
53	H2	SZ	-69.217	-69.217	0	%100
54	MP4	SZ	-69.217	-69.217	0	%100
55	MP6	SZ	-69.217	-69.217	0	%100
56	HR2	SZ	-69.217	-69.217	0	%100
57	M66A	SZ	0	0	0	%100
58	M67A	SZ	0	0	0	%100
59	M68A	SZ	0	0	0	%100
60	M69A	SZ	0	0	0	%100
61	MP8	SZ	-69.217	-69.217	0	%100
62	M68B	SZ	0	0	0	%100
63	M69B	SZ	0	0	0	%100
64	MP5	SZ	-69.217	-69.217	0	%100
65	M71B	SZ	0	0	0	%100
66	M72B	SZ	0	0	0	%100

Member Distributed Loads (BLC 15 : Distr. Wind Load X)

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magn...	Start Location...	End Location[in,%]
1	S3	SX	-115.361	-115.361	0	%100
2	GA4	SX	-115.361	-115.361	0	%100
3	GA3	SX	-115.361	-115.361	0	%100
4	P3	SX	-115.361	-115.361	0	%100
5	S2	SX	-115.361	-115.361	0	%100
6	GA2	SX	-115.361	-115.361	0	%100
7	GA1	SX	-115.361	-115.361	0	%100
8	P2	SX	-115.361	-115.361	0	%100
9	S1	SX	-115.361	-115.361	0	%100
10	GA6	SX	-115.361	-115.361	0	%100
11	GA5	SX	-115.361	-115.361	0	%100
12	P1	SX	-115.361	-115.361	0	%100
13	H1	SX	-69.217	-69.217	0	%100
14	MP1	SX	-69.217	-69.217	0	%100
15	MP3	SX	-69.217	-69.217	0	%100
16	HR1	SX	-69.217	-69.217	0	%100
17	CA8	SX	-115.361	-115.361	0	%100
18	CA9	SX	-115.361	-115.361	0	%100
19	CA7	SX	-115.361	-115.361	0	%100
20	M32	SX	0	0	0	%100
21	M35	SX	0	0	0	%100

Member Distributed Loads (BLC 15 : Distr. Wind Load X) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magn...	Start Location...	End Location[in,%]
22	M36	SX	0	0	0	%100
23	M39A	SX	0	0	0	%100
24	CA3	SX	-115.361	-115.361	0	%100
25	CA4	SX	-115.361	-115.361	0	%100
26	CA1	SX	-115.361	-115.361	0	%100
27	CA2	SX	-115.361	-115.361	0	%100
28	CA5	SX	-115.361	-115.361	0	%100
29	CA6	SX	-115.361	-115.361	0	%100
30	M64	SX	0	0	0	%100
31	M65	SX	0	0	0	%100
32	M66	SX	0	0	0	%100
33	M67	SX	0	0	0	%100
34	M68	SX	0	0	0	%100
35	M69	SX	0	0	0	%100
36	M70	SX	0	0	0	%100
37	M71	SX	0	0	0	%100
38	M72	SX	0	0	0	%100
39	M73	SX	0	0	0	%100
40	M74	SX	0	0	0	%100
41	M75	SX	-115.361	-115.361	0	%100
42	MP2	SX	-69.217	-69.217	0	%100
43	M43	SX	0	0	0	%100
44	M44	SX	0	0	0	%100
45	H3	SX	-69.217	-69.217	0	%100
46	MP7	SX	-69.217	-69.217	0	%100
47	MP9	SX	-69.217	-69.217	0	%100
48	HR3	SX	-69.217	-69.217	0	%100
49	M52	SX	0	0	0	%100
50	M53	SX	0	0	0	%100
51	M54	SX	0	0	0	%100
52	M55	SX	0	0	0	%100
53	H2	SX	-69.217	-69.217	0	%100
54	MP4	SX	-69.217	-69.217	0	%100
55	MP6	SX	-69.217	-69.217	0	%100
56	HR2	SX	-69.217	-69.217	0	%100
57	M66A	SX	0	0	0	%100
58	M67A	SX	0	0	0	%100
59	M68A	SX	0	0	0	%100
60	M69A	SX	0	0	0	%100
61	MP8	SX	-69.217	-69.217	0	%100
62	M68B	SX	0	0	0	%100
63	M69B	SX	0	0	0	%100

Member Distributed Loads (BLC 15 : Distr. Wind Load X) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magn...	Start Location...	End Location[in,%]
64	MP5	SX	-69.217	-69.217	0	%100
65	M71B	SX	0	0	0	%100
66	M72B	SX	0	0	0	%100

Member Distributed Loads (BLC 16 : Ice Weight)

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magn...	Start Location...	End Location[in,%]
1	S3	Y	-10.395	-10.395	0	%100
2	GA4	Y	-6.128	-6.128	0	%100
3	GA3	Y	-6.128	-6.128	0	%100
4	P3	Y	-11.683	-11.683	0	%100
5	S2	Y	-10.395	-10.395	0	%100
6	GA2	Y	-6.128	-6.128	0	%100
7	GA1	Y	-6.128	-6.128	0	%100
8	P2	Y	-11.683	-11.683	0	%100
9	S1	Y	-10.395	-10.395	0	%100
10	GA6	Y	-6.128	-6.128	0	%100
11	GA5	Y	-6.128	-6.128	0	%100
12	P1	Y	-11.683	-11.683	0	%100
13	H1	Y	-7.141	-7.141	0	%100
14	MP1	Y	-6.199	-6.199	0	%100
15	MP3	Y	-6.199	-6.199	0	%100
16	HR1	Y	-6.206	-6.206	0	%100
17	CA8	Y	-13.877	-13.877	0	%100
18	CA9	Y	-13.877	-13.877	0	%100
19	CA7	Y	-13.877	-13.877	0	%100
20	M32	Y	-1.862	-1.862	0	%100
21	M35	Y	-1.862	-1.862	0	%100
22	M36	Y	-1.862	-1.862	0	%100
23	M39A	Y	-1.862	-1.862	0	%100
24	CA3	Y	-7.833	-7.833	0	%100
25	CA4	Y	-7.833	-7.833	0	%100
26	CA1	Y	-7.833	-7.833	0	%100
27	CA2	Y	-7.833	-7.833	0	%100
28	CA5	Y	-7.833	-7.833	0	%100
29	CA6	Y	-7.833	-7.833	0	%100
30	M64	Y	-1.862	-1.862	0	%100
31	M65	Y	-1.862	-1.862	0	%100
32	M66	Y	-1.862	-1.862	0	%100
33	M67	Y	-1.862	-1.862	0	%100
34	M68	Y	-1.862	-1.862	0	%100
35	M69	Y	-1.862	-1.862	0	%100
36	M70	Y	-1.862	-1.862	0	%100

Member Distributed Loads (BLC 16 : Ice Weight) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magn...	Start Location...	End Location[in,%]
37	M71	Y	-1.862	-1.862	0	%100
38	M72	Y	-1.862	-1.862	0	%100
39	M73	Y	-1.862	-1.862	0	%100
40	M74	Y	-1.862	-1.862	0	%100
41	M75	Y	-5.523	-5.523	0	%100
42	MP2	Y	-6.199	-6.199	0	%100
43	M43	Y	-1.862	-1.862	0	%100
44	M44	Y	-1.862	-1.862	0	%100
45	H3	Y	-7.141	-7.141	0	%100
46	MP7	Y	-6.199	-6.199	0	%100
47	MP9	Y	-6.199	-6.199	0	%100
48	HR3	Y	-6.206	-6.206	0	%100
49	M52	Y	-1.862	-1.862	0	%100
50	M53	Y	-1.862	-1.862	0	%100
51	M54	Y	-1.862	-1.862	0	%100
52	M55	Y	-1.862	-1.862	0	%100
53	H2	Y	-7.141	-7.141	0	%100
54	MP4	Y	-6.199	-6.199	0	%100
55	MP6	Y	-6.199	-6.199	0	%100
56	HR2	Y	-6.206	-6.206	0	%100
57	M66A	Y	-1.862	-1.862	0	%100
58	M67A	Y	-1.862	-1.862	0	%100
59	M68A	Y	-1.862	-1.862	0	%100
60	M69A	Y	-1.862	-1.862	0	%100
61	MP8	Y	-6.199	-6.199	0	%100
62	M68B	Y	-1.862	-1.862	0	%100
63	M69B	Y	-1.862	-1.862	0	%100
64	MP5	Y	-6.199	-6.199	0	%100
65	M71B	Y	-1.862	-1.862	0	%100
66	M72B	Y	-1.862	-1.862	0	%100

Member Distributed Loads (BLC 29 : Distr. Ice Wind Load Z)

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magn...	Start Location...	End Location[in,%]
1	S3	SZ	-17.262	-17.262	0	%100
2	GA4	SZ	-22.507	-22.507	0	%100
3	GA3	SZ	-22.507	-22.507	0	%100
4	P3	SZ	-16.574	-16.574	0	%100
5	S2	SZ	-17.262	-17.262	0	%100
6	GA2	SZ	-22.507	-22.507	0	%100
7	GA1	SZ	-22.507	-22.507	0	%100
8	P2	SZ	-16.574	-16.574	0	%100
9	S1	SZ	-17.262	-17.262	0	%100

Member Distributed Loads (BLC 29 : Distr. Ice Wind Load Z) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magn...	Start Location...	End Location[in,%]
10	GA6	SZ	-22.507	-22.507	0	%100
11	GA5	SZ	-22.507	-22.507	0	%100
12	P1	SZ	-16.574	-16.574	0	%100
13	H1	SZ	-20.494	-20.494	0	%100
14	MP1	SZ	-22.337	-22.337	0	%100
15	MP3	SZ	-22.337	-22.337	0	%100
16	HR1	SZ	-22.319	-22.319	0	%100
17	CA8	SZ	-15.742	-15.742	0	%100
18	CA9	SZ	-15.742	-15.742	0	%100
19	CA7	SZ	-15.742	-15.742	0	%100
20	M32	SZ	0	0	0	%100
21	M35	SZ	0	0	0	%100
22	M36	SZ	0	0	0	%100
23	M39A	SZ	0	0	0	%100
24	CA3	SZ	-19.513	-19.513	0	%100
25	CA4	SZ	-19.513	-19.513	0	%100
26	CA1	SZ	-19.513	-19.513	0	%100
27	CA2	SZ	-19.513	-19.513	0	%100
28	CA5	SZ	-19.513	-19.513	0	%100
29	CA6	SZ	-19.513	-19.513	0	%100
30	M64	SZ	0	0	0	%100
31	M65	SZ	0	0	0	%100
32	M66	SZ	0	0	0	%100
33	M67	SZ	0	0	0	%100
34	M68	SZ	0	0	0	%100
35	M69	SZ	0	0	0	%100
36	M70	SZ	0	0	0	%100
37	M71	SZ	0	0	0	%100
38	M72	SZ	0	0	0	%100
39	M73	SZ	0	0	0	%100
40	M74	SZ	0	0	0	%100
41	M75	SZ	-24.242	-24.242	0	%100
42	MP2	SZ	-22.337	-22.337	0	%100
43	M43	SZ	0	0	0	%100
44	M44	SZ	0	0	0	%100
45	H3	SZ	-20.494	-20.494	0	%100
46	MP7	SZ	-22.337	-22.337	0	%100
47	MP9	SZ	-22.337	-22.337	0	%100
48	HR3	SZ	-22.319	-22.319	0	%100
49	M52	SZ	0	0	0	%100
50	M53	SZ	0	0	0	%100
51	M54	SZ	0	0	0	%100

Member Distributed Loads (BLC 29 : Distr. Ice Wind Load Z) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magn...	Start Location...	End Location[in,%]
52	M55	SZ	0	0	0	%100
53	H2	SZ	-20.494	-20.494	0	%100
54	MP4	SZ	-22.337	-22.337	0	%100
55	MP6	SZ	-22.337	-22.337	0	%100
56	HR2	SZ	-22.319	-22.319	0	%100
57	M66A	SZ	0	0	0	%100
58	M67A	SZ	0	0	0	%100
59	M68A	SZ	0	0	0	%100
60	M69A	SZ	0	0	0	%100
61	MP8	SZ	-22.337	-22.337	0	%100
62	M68B	SZ	0	0	0	%100
63	M69B	SZ	0	0	0	%100
64	MP5	SZ	-22.337	-22.337	0	%100
65	M71B	SZ	0	0	0	%100
66	M72B	SZ	0	0	0	%100

Member Distributed Loads (BLC 30 : Distr. Ice Wind Load X)

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magn...	Start Location...	End Location[in,%]
1	S3	SX	-17.262	-17.262	0	%100
2	GA4	SX	-22.507	-22.507	0	%100
3	GA3	SX	-22.507	-22.507	0	%100
4	P3	SX	-16.574	-16.574	0	%100
5	S2	SX	-17.262	-17.262	0	%100
6	GA2	SX	-22.507	-22.507	0	%100
7	GA1	SX	-22.507	-22.507	0	%100
8	P2	SX	-16.574	-16.574	0	%100
9	S1	SX	-17.262	-17.262	0	%100
10	GA6	SX	-22.507	-22.507	0	%100
11	GA5	SX	-22.507	-22.507	0	%100
12	P1	SX	-16.574	-16.574	0	%100
13	H1	SX	-20.494	-20.494	0	%100
14	MP1	SX	-22.337	-22.337	0	%100
15	MP3	SX	-22.337	-22.337	0	%100
16	HR1	SX	-22.319	-22.319	0	%100
17	CA8	SX	-15.742	-15.742	0	%100
18	CA9	SX	-15.742	-15.742	0	%100
19	CA7	SX	-15.742	-15.742	0	%100
20	M32	SX	0	0	0	%100
21	M35	SX	0	0	0	%100
22	M36	SX	0	0	0	%100
23	M39A	SX	0	0	0	%100
24	CA3	SX	-19.513	-19.513	0	%100

Member Distributed Loads (BLC 30 : Distr. Ice Wind Load X) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magn...	Start Location...	End Location[in,%]
25	CA4	SX	-19.513	-19.513	0	%100
26	CA1	SX	-19.513	-19.513	0	%100
27	CA2	SX	-19.513	-19.513	0	%100
28	CA5	SX	-19.513	-19.513	0	%100
29	CA6	SX	-19.513	-19.513	0	%100
30	M64	SX	0	0	0	%100
31	M65	SX	0	0	0	%100
32	M66	SX	0	0	0	%100
33	M67	SX	0	0	0	%100
34	M68	SX	0	0	0	%100
35	M69	SX	0	0	0	%100
36	M70	SX	0	0	0	%100
37	M71	SX	0	0	0	%100
38	M72	SX	0	0	0	%100
39	M73	SX	0	0	0	%100
40	M74	SX	0	0	0	%100
41	M75	SX	-24.242	-24.242	0	%100
42	MP2	SX	-22.337	-22.337	0	%100
43	M43	SX	0	0	0	%100
44	M44	SX	0	0	0	%100
45	H3	SX	-20.494	-20.494	0	%100
46	MP7	SX	-22.337	-22.337	0	%100
47	MP9	SX	-22.337	-22.337	0	%100
48	HR3	SX	-22.319	-22.319	0	%100
49	M52	SX	0	0	0	%100
50	M53	SX	0	0	0	%100
51	M54	SX	0	0	0	%100
52	M55	SX	0	0	0	%100
53	H2	SX	-20.494	-20.494	0	%100
54	MP4	SX	-22.337	-22.337	0	%100
55	MP6	SX	-22.337	-22.337	0	%100
56	HR2	SX	-22.319	-22.319	0	%100
57	M66A	SX	0	0	0	%100
58	M67A	SX	0	0	0	%100
59	M68A	SX	0	0	0	%100
60	M69A	SX	0	0	0	%100
61	MP8	SX	-22.337	-22.337	0	%100
62	M68B	SX	0	0	0	%100
63	M69B	SX	0	0	0	%100
64	MP5	SX	-22.337	-22.337	0	%100
65	M71B	SX	0	0	0	%100
66	M72B	SX	0	0	0	%100

Member Distributed Loads (BLC 43 : BLC 1 Transient Area Loads)

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magn...	Start Location...	End Location[in,%]
1	S2	Y	-3.185	-3.185	16.404	40
2	GA2	Y	-1.605	-1.605	3.828	27.295
3	GA1	Y	-1.605	-1.605	3.828	27.295
4	S3	Y	-3.185	-3.185	16.404	40
5	GA4	Y	-1.605	-1.605	3.828	27.295
6	GA3	Y	-1.605	-1.605	3.828	27.295
7	S1	Y	-3.185	-3.185	16.404	40
8	GA6	Y	-1.605	-1.605	3.828	27.295
9	GA5	Y	-1.605	-1.605	3.828	27.295

Member Distributed Loads (BLC 44 : BLC 16 Transient Area Loads)

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magn...	Start Location...	End Location[in,%]
1	S2	Y	-20.932	-20.932	16.404	40
2	GA2	Y	-10.549	-10.549	3.828	27.295
3	GA1	Y	-10.549	-10.549	3.828	27.295
4	S3	Y	-20.932	-20.932	16.404	40
5	GA4	Y	-10.549	-10.549	3.828	27.295
6	GA3	Y	-10.549	-10.549	3.828	27.295
7	S1	Y	-20.932	-20.932	16.404	40
8	GA6	Y	-10.549	-10.549	3.828	27.295
9	GA5	Y	-10.549	-10.549	3.828	27.295

Member Area Loads (BLC 1 : Self Weight)

	Joint A	Joint B	Joint C	Joint D	Direction	Distribution	Magnitude[psf]
1	P22	P21	P20	P23	Y	Two Way	-1.75
2	P10	P11	P12	P9	Y	Two Way	-1.75
3	P31	P34	P33	P32	Y	Two Way	-1.75

Member Area Loads (BLC 16 : Ice Weight)

	Joint A	Joint B	Joint C	Joint D	Direction	Distribution	Magnitude[psf]
1	P22	P21	P20	P23	Y	Two Way	-11.5
2	P10	P11	P12	P9	Y	Two Way	-11.5
3	P31	P34	P33	P32	Y	Two Way	-11.5

Envelope AISC 15th(360-16): LRFD Steel Code Checks

	Member	Shape	Code Check	Loc[in]	LC	She...	Loc[in]	Dir	LC	phi*P...	phi*P...	phi*M...	phi*Mn z-z [lb...	Cb	Eqn
1	P3	PL6.5x0.375	.401	21	2	.177	36.312	y	5	3658....	78975	616.9...	7887.853	1....	H1-1b
2	P2	PL6.5x0.375	.390	21	6	.172	36.312	y	10	3658....	78975	616.9...	7889.413	1....	H1-1b
3	CA7	L6.6x4.46x0...	.387	41.562	14	.045	42	z	8	5117...	87561	2464....	7125.374	1....	H2-1

Envelope AISC 15th(360-16): LRFD Steel Code Checks (Continued)

	Member	Shape	Code Check	Loc[in]	LC	She...	Loc[in]	Dir	LC	phi*P...	phi*P...	phi*M...	phi*Mn z-z [lb...	Cb	Eqn
4	P1	PL6.5x0.375	.371	21	10	.183	36.312	y	2	3658...	78975	616.9...	7900.193	1....	H1-1b
5	CA4	C3.38x2.06...	.364	33	2	.039	4.813	z	8	4776...	56700	2202....	5751.945	1....	H1-1b
6	CA8	L6.6x4.46x0...	.358	41.562	22	.048	42	z	4	5117...	87561	2464....	7125.374	1....	H2-1
7	CA5	C3.38x2.06...	.354	0	10	.038	28.187	z	4	4776...	56700	2202....	5751.945	1....	H1-1b
8	M75	PL 2.375x0.5	.348	1.5	12	.187	0	y	173	3825...	38475	400.7...	1903.711	2....	H1-1b
9	CA3	C3.38x2.06...	.346	0	2	.036	28.188	y	32	4776...	56700	2202....	5751.945	1....	H1-1b
10	CA2	C3.38x2.06...	.343	33	6	.040	4.813	z	12	4776...	56700	2202....	5751.945	1....	H1-1b
11	CA1	C3.38x2.06...	.341	0	6	.037	28.188	y	36	4776...	56700	2202....	5751.945	1....	H1-1b
12	HR2	2.88x0.120	.338	90	3	.168	92		4	2249...	4307...	3155....	3155.674	1....	H1-1b
13	CA6	C3.38x2.06...	.338	33	10	.038	4.813	y	10	4776...	56700	2202....	5751.945	1....	H1-1b
14	HR3	2.88x0.120	.336	6	2	.157	92		6	2249...	4307...	3155....	3155.674	1....	H1-1b
15	HR1	2.88x0.120	.324	6	4	.146	6		4	2249...	4307...	3155....	3155.674	1....	H1-1b
16	CA9	L6.6x4.46x0...	.310	41.562	6	.043	42	z	12	5117...	87561	2464....	7125.374	1....	H2-1
17	S2	HSS4X4X6	.301	0	5	.111	0	y	142	1882...	1978...	2204...	22045.5	1....	H1-1b
18	S3	HSS4X4X6	.294	0	13	.112	0	y	114	1882...	1978...	2204...	22045.5	1....	H1-1b
19	MP2	PIPE_2.5	.279	70	5	.100	70		5	3348...	66654	4726.5	4726.5	4....	H1-1b
20	MP5	PIPE_2.5	.277	70	7	.086	70		7	3348...	66654	4726.5	4726.5	4....	H1-1b
21	S1	HSS4X4X6	.272	0	9	.109	0	y	86	1882...	1978...	2204...	22045.5	1....	H1-1b
22	GA4	L2x2x4	.260	0	2	.018	27.295	y	9	2952...	42480	959.63	2190.068	2....	H2-1
23	GA5	L2x2x4	.249	0	9	.021	27.295	z	2	2952...	42480	959.63	2190.068	2....	H2-1
24	MP8	PIPE_2.5	.249	70	9	.106	70		3	3348...	66654	4726.5	4726.5	4....	H1-1b
25	GA2	L2x2x4	.241	0	12	.019	0	y	12	2952...	42480	959.63	2190.068	2....	H2-1
26	GA6	L2x2x4	.223	0	4	.018	0	y	4	2952...	42480	959.63	2190.068	2....	H2-1
27	GA1	L2x2x4	.223	0	6	.019	27.295	z	10	2952...	42480	959.63	2190.068	2....	H2-1
28	GA3	L2x2x4	.222	0	7	.021	27.295	z	6	2952...	42480	959.63	2190.068	2....	H2-1
29	MP9	PIPE_2.5	.218	70	2	.099	70		7	3348...	66654	4726.5	4726.5	3....	H1-1b
30	MP6	PIPE_2.5	.199	70	7	.108	70		6	3348...	66654	4726.5	4726.5	4....	H1-1b
31	MP1	PIPE_2.5	.197	70	11	.122	26		8	3348...	66654	4726.5	4726.5	2....	H1-1b
32	MP3	PIPE_2.5	.196	70	5	.110	70		3	3348...	66654	4726.5	4726.5	4.38	H1-1b
33	MP4	PIPE_2.5	.188	70	7	.110	26		4	3348...	66654	4726.5	4726.5	1....	H1-1b
34	MP7	PIPE_2.5	.184	70	9	.099	26		6	3348...	66654	4726.5	4726.5	3....	H1-1b
35	H3	Pipe3.5x0.1...	.170	31	2	.100	90		2	4587...	7158...	6337....	6337.65	1....	H1-1b
36	H1	Pipe3.5x0.1...	.164	31	10	.093	48		4	4587...	7158...	6337....	6337.65	1....	H1-1b
37	H2	Pipe3.5x0.1...	.162	31	6	.075	48		12	4587...	7158...	6337....	6337.65	1....	H1-1b

INFINIGY
FROM ZERO TO INFINIGY
the solutions are endless

Bolt Calculation Tool, V1.5.1

PROJECT DATA	
Site Name:	BOBOS00893A
Site Number:	BOBOS00893A
Connection Description:	Platform to Monopole

MAXIMUM BOLT LOADS		
Bolt Tension:	8130.02	lbs
Bolt Shear:	1649.60	lbs

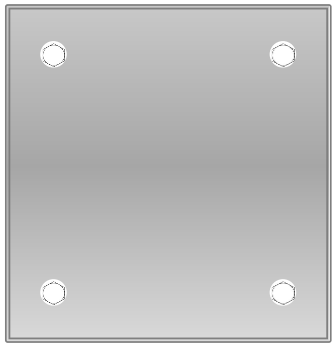
WORST CASE BOLT LOADS[1]		
Bolt Tension:	8130.02	lbs
Bolt Shear:	549.47	lbs

BOLT PROPERTIES		
Bolt Type:	Bolt	-
Bolt Diameter:	0.625	in
Bolt Grade:	A325	-
# of Bolts:	4	-
Threads Excluded?	No	-

[1] *Worst case bolt loads correspond to Load combination #5 on member S2 in RISA-3D, which causes the maximum demand on the bolts.*

Member Information
I nodes of S3, S2, S1

BOLT CHECK		
Tensile Strength	20340.15	
Shear Strength	13805.83	
Max Tensile Usage	40.0%	
Max Shear Usage	11.9%	
Interaction Check (Worst Case)	0.16	***≤1.05***
Result	Pass	



dish wireless

DISH Wireless L.L.C. SITE ID:

BOBOS00893A

DISH Wireless L.L.C. SITE ADDRESS:

123 PALMER ROAD
CHAPLIN, CT 06235

THE PROJECT DEPICTED IN THESE PLANS QUALIFIES AS AN ELIGIBLE FACILITIES REQUEST ENTITLED TO EXPEDITED REVIEW UNDER 47 U.S.C. 1455(A) AS A MODIFICATION OF AN EXISTING WIRELESS TOWER THAT INVOLVES THE COLLOCATION REMOVAL AND/OR REPLACEMENT OF TRANSMISSION EQUIPMENT THAT IS NOT A SUBSTANTIAL CHANGE UNDER CFR 1.61000 (B)(7).

SCOPE OF WORK

THIS IS NOT AN ALL INCLUSIVE LIST. CONTRACTOR SHALL UTILIZE SPECIFIED EQUIPMENT PART OR ENGINEER APPROVED EQUIVALENT. CONTRACTOR SHALL VERIFY ALL NEEDED EQUIPMENT TO PROVIDE A FUNCTIONAL SITE. THE PROJECT GENERALLY CONSISTS OF THE FOLLOWING:

TOWER SCOPE OF WORK:
- INSTALL (3) PROPOSED PANEL ANTENNAS (1 PER SECTOR)
- INSTALL (1) PROPOSED ANTENNA PLATFORM MOUNT
- INSTALL PROPOSED JUMPERS
- INSTALL (6) PROPOSED RRUs (2 PER SECTOR)
- INSTALL (1) PROPOSED OVER VOLTAGE PROTECTION DEVICE (OVP)
- INSTALL (1) PROPOSED HYBRID CABLE

GROUND SCOPE OF WORK:
- INSTALL (1) PROPOSED METAL PLATFORM
- INSTALL (1) PROPOSED ICE BRIDGE
- INSTALL (1) PROPOSED PPC CABINET
- INSTALL (1) PROPOSED EQUIPMENT CABINET
- INSTALL (1) PROPOSED POWER CONDUIT
- INSTALL (1) PROPOSED TELCO CONDUIT
- INSTALL (1) PROPOSED TELCO-FIBER BOX
- INSTALL (1) PROPOSED GPS UNIT
- INSTALL (1) PROPOSED FIBER NID (IF REQUIRED)

SITE INFORMATION

PROPERTY OWNER:	BESSETTE JANET L REVOCABLE LIVING TRUST
ADDRESS:	5 VICTORY LN WILLIMANTIC, CT 06226
TOWER TYPE:	MONOPOLE
TOWER CO SITE ID:	411216
TOWER APP NUMBER:	13733440
COUNTY:	WINDHAM
LATITUDE (NAD 83):	41° 47' 04.30" N 41.78452800
LONGITUDE (NAD 83):	72° 08' 08.50" W -72.13569400
ZONING JURISDICTION:	CONNECTICUT SITING COUNCIL
ZONING DISTRICT:	UNZONED
PARCEL NUMBER:	55-54
OCCUPANCY GROUP:	U
CONSTRUCTION TYPE:	II-B
POWER COMPANY:	NORTHEAST UTILITY SERVICES
TELEPHONE COMPANY:	AT&T FIBER

PROJECT DIRECTORY

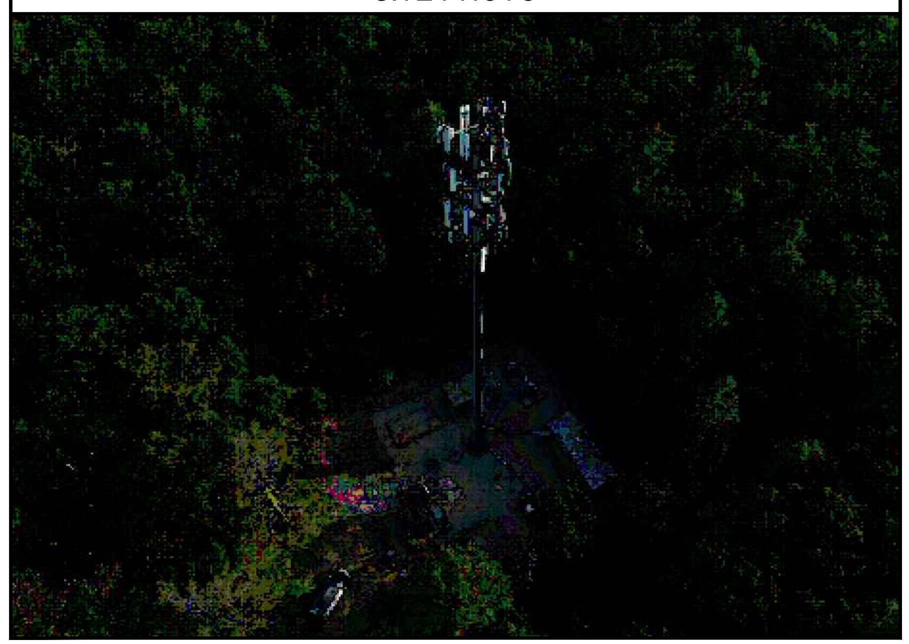
APPLICANT:	DISH Wireless L.L.C. 5701 SOUTH SANTA FE DRIVE LITTLETON, CO 80120
TOWER OWNER:	AMERICAN TOWER CORPORATION 10 PRESIDENTIAL WAY WOBURN, MA 01801 (781) 926-4500
SITE DESIGNER:	B+T GROUP 1717 S. BOULDER AVE, SUITE 300 TULSA, OK 74119 (918) 587-4630
SITE ACQUISITION:	KENNETH R. BRADBURY II (781) 926-4770
CONST. MANAGER:	CHAD WILCOX CHAD.WILCOX@DISH.COM
RF ENGINEER:	ARVIN SEBASTIAN ARVIN.SEBASTIAN@DISH.COM

CONNECTICUT CODE OF COMPLIANCE

ALL WORK SHALL BE PERFORMED AND MATERIALS INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL GOVERNING AUTHORITIES. NOTHING IN THESE PLANS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THESE CODES

CODE TYPE	CODE
BUILDING	2018 CT STATE BUILDING CODE/2015 IBC W/ CT AMENDMENTS
MECHANICAL	2018 CT STATE BUILDING CODE/2015 IMC W/ CT AMENDMENTS
ELECTRICAL	2018 CT STATE BUILDING CODE/2017 NEC W/ CT AMENDMENTS

SITE PHOTO



DIRECTIONS

DIRECTIONS FROM BRADLEY INTERNATIONAL AIRPORT:

CONTINUE TO EAST GRANBY, HEAD NORTH TOWARD BRADLEY INTERNATIONAL AIRPORT, SLIGHT LEFT ONTO BRADLEY INTERNATIONAL AIRPORT, CONTINUE STRAIGHT, TAKE I-91 S, I-291 E AND I-384 TO US-6 E IN BOLTON, CONTINUE ONTO BRADLEY INTERNATIONAL AIRPORT CON, CONTINUE ONTO CT-20 E/BRADLEY INTERNATIONAL AIRPORT CON, TAKE THE EXIT ONTO I-91 S TOWARD HARTFORD, TAKE EXIT 35A FOR I-291 TOWARD MANCHESTER, CONTINUE ONTO I-291 E, TAKE THE I-384 E EXIT, CONTINUE ONTO I-384, CONTINUE ONTO US-44 E/US-6 E, FOLLOW US-6 E TO CT-198 N IN CHAPLIN, KEEP RIGHT AT THE Y JUNCTION TO CONTINUE ON US-6 E, FOLLOW SIGNS FOR WILLIMANTIC/PROVIDENCE, TURN LEFT TO STAY ON US-6 E, USE THE RIGHT 2 LANES TO TURN RIGHT TO STAY ON US-6 E, TURN LEFT ONTO CT-198 N AND ARRIVE AT BOBOS00893A.

SHEET INDEX

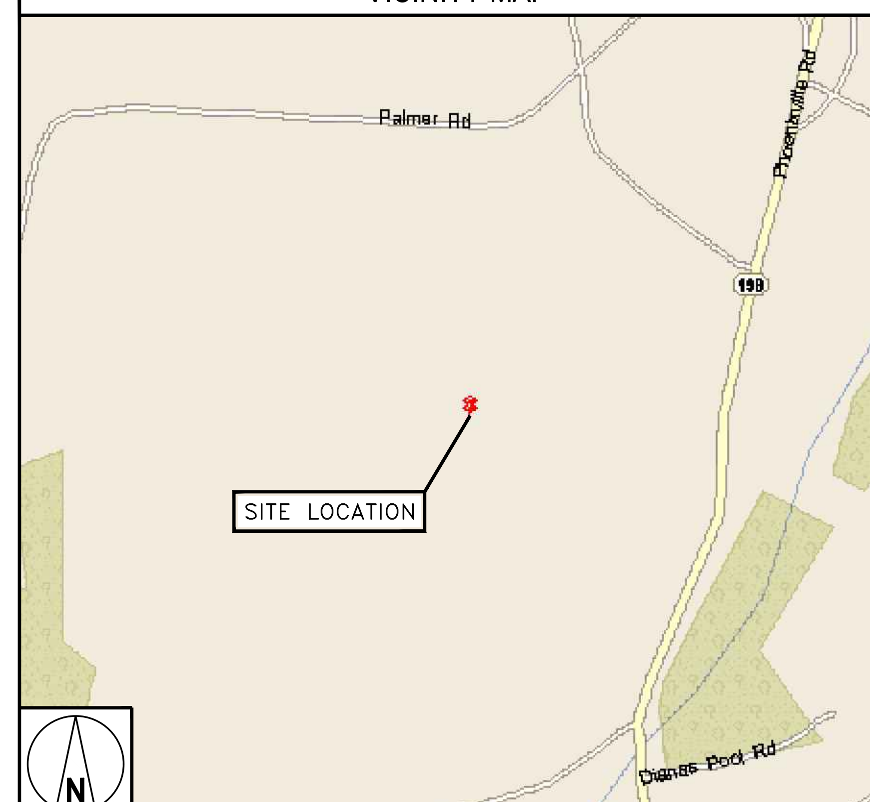
SHEET NO.	SHEET TITLE
T-1	TITLE SHEET
A-1	OVERALL AND ENLARGED SITE PLAN
A-2	ELEVATION, ANTENNA LAYOUT AND SCHEDULE
A-3	EQUIPMENT PLATFORM AND H-FRAME DETAILS
A-4	EQUIPMENT DETAILS
A-5	EQUIPMENT DETAILS
A-6	EQUIPMENT DETAILS
E-1	ELECTRICAL/FIBER ROUTE PLAN AND NOTES
E-2	ELECTRICAL DETAILS
E-3	ELECTRICAL ONE-LINE, FAULT CALCS & PANEL SCHEDULE
G-1	GROUNDING PLANS AND NOTES
G-2	GROUNDING DETAILS
G-3	GROUNDING DETAILS
RF-1	RF CABLE COLOR CODE
GN-1	LEGEND AND ABBREVIATIONS
GN-2	GENERAL NOTES
GN-3	GENERAL NOTES
GN-4	GENERAL NOTES

UNDERGROUND SERVICE ALERT CBYD 811
UTILITY NOTIFICATION CENTER OF CONNECTICUT
(800) 922-4455
WWW.CBYD.COM

CALL 2 WORKING DAYS UTILITY NOTIFICATION PRIOR TO CONSTRUCTION

811

VICINITY MAP



NO SCALE

GENERAL NOTES

THE FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION. A TECHNICIAN WILL VISIT THE SITE AS REQUIRED FOR ROUTINE MAINTENANCE. THE PROJECT WILL NOT RESULT IN ANY SIGNIFICANT DISTURBANCE OR EFFECT ON DRAINAGE. NO SANITARY SEWER SERVICE, POTABLE WATER, OR TRASH DISPOSAL IS REQUIRED AND NO COMMERCIAL SIGNAGE IS PROPOSED.

11"x17" PLOT WILL BE HALF SCALE UNLESS OTHERWISE NOTED

CONTRACTOR SHALL VERIFY ALL PLANS, EXISTING DIMENSIONS, AND CONDITIONS ON THE JOB SITE, AND SHALL IMMEDIATELY NOTIFY THE ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK.

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AMERICAN TOWER
10 PRESIDENTIAL WAY
WOBURN, MA 01801

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SUITE 300
TULSA, OK 74119
PH: (918) 587-4630
www.btgrp.com

STATE OF CONNECTICUT
CHAD TITLE
No. 23924
LICENSED
PROFESSIONAL ENGINEER
3/29/22
B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/23

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT.

DRAWN BY:	CHECKED BY:	APPROVED BY:
NGN	YF	YF

RFDS REV #: 1.0

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	10/28/21	ISSUED FOR REVIEW
0	3/29/22	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER
157530.001.01

DISH Wireless L.L.C.
PROJECT INFORMATION

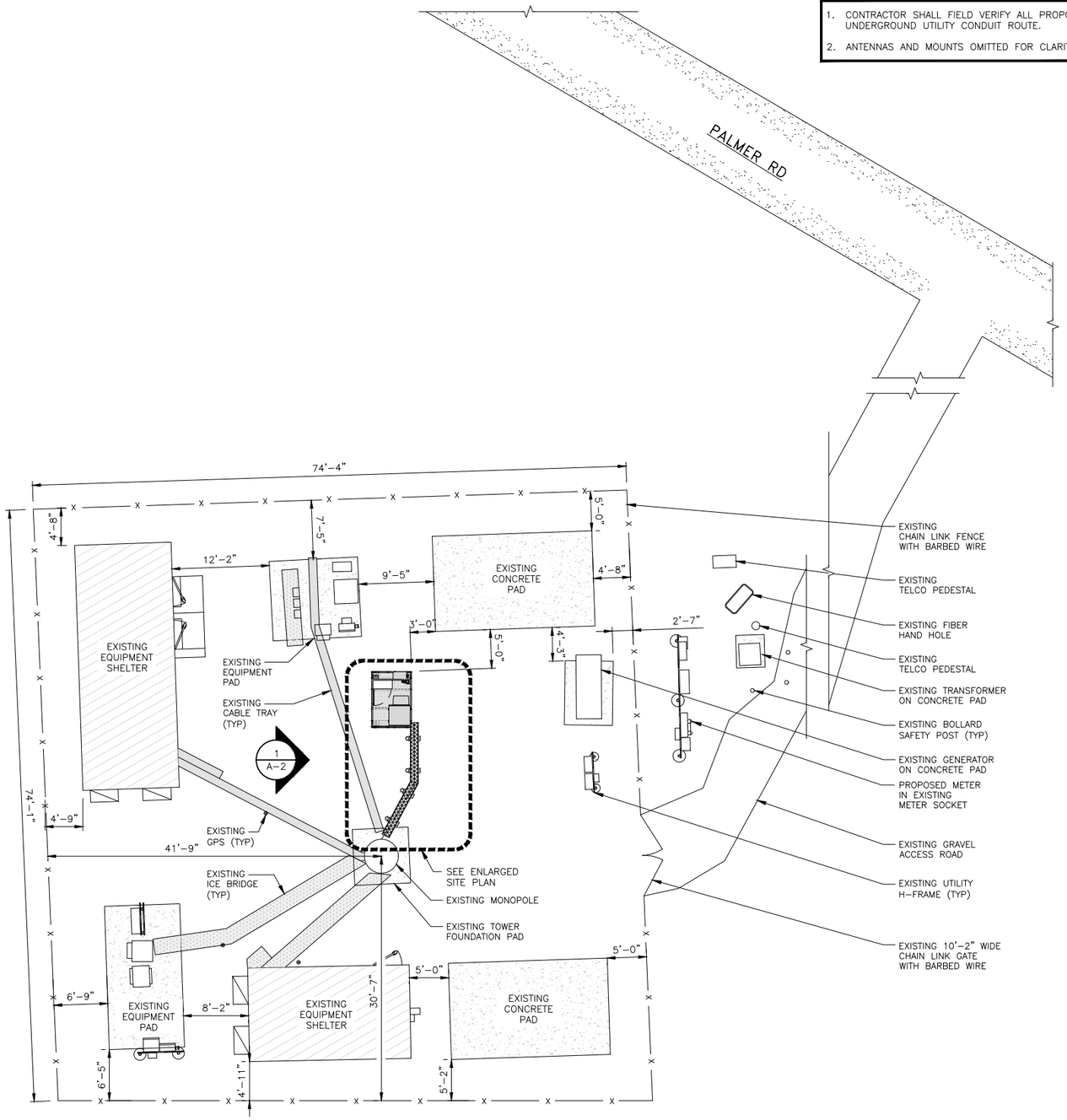
BOBOS00893A
123 PALMER ROAD
CHAPLIN, CT 06235

SHEET TITLE
TITLE SHEET

SHEET NUMBER
T-1

NOTES

1. CONTRACTOR SHALL FIELD VERIFY ALL PROPOSED UNDERGROUND UTILITY CONDUIT ROUTE.
2. ANTENNAS AND MOUNTS OMITTED FOR CLARITY.



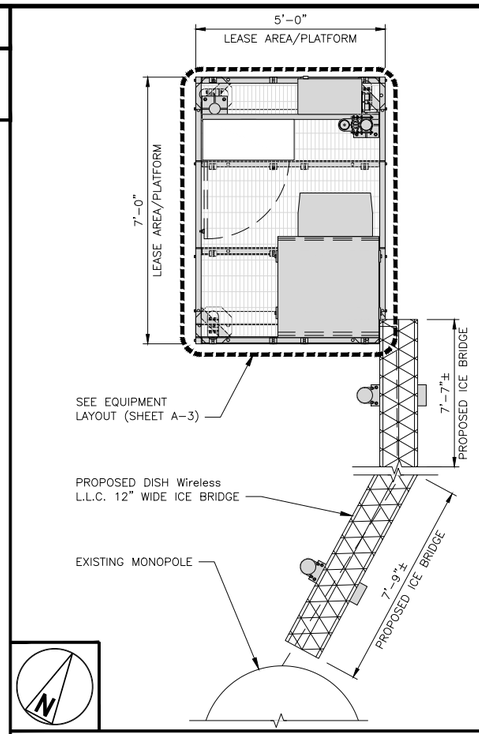
OVERALL SITE PLAN

8' 4' 0 8' 16'
1/8"=1'-0"

1

NOTES

1. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS.
2. CONTRACTOR SHALL MAINTAIN A 10'-0" MINIMUM SEPARATION BETWEEN THE PROPOSED GPS UNIT, TRANSMITTING ANTENNAS AND EXISTING GPS UNITS.
3. ANTENNAS AND MOUNTS OMITTED FOR CLARITY.



ENLARGED SITE PLAN

12" 6" 0 1' 2' 3' 4' 5'
1/2"=1'-0"

2

AN EXISTING CONDITIONS SURVEY WAS NOT AVAILABLE AT THE TIME THIS DRAWINGS CREATIONS.

AERIAL IMAGE

NO SCALE

3

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SHEET TITLE

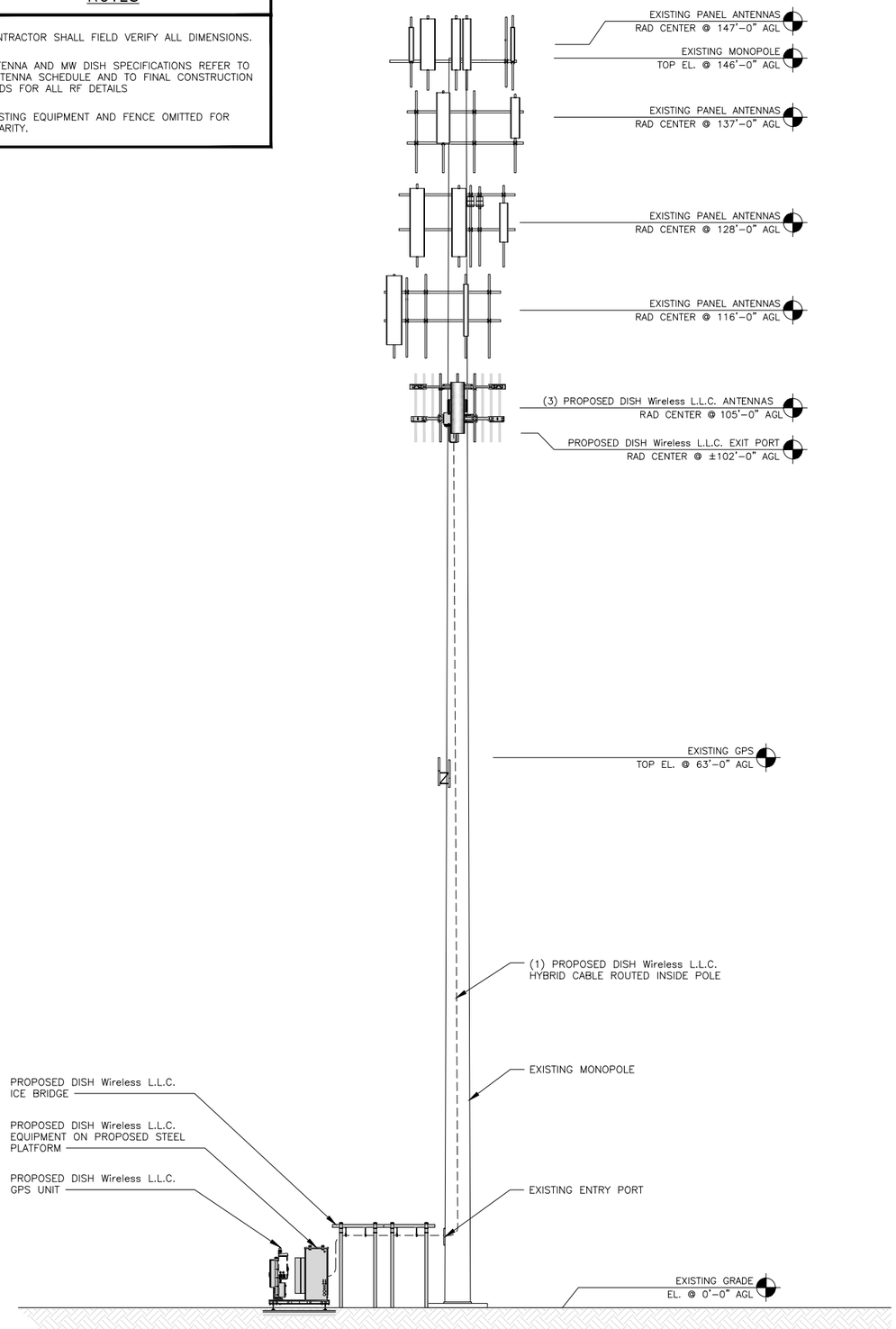
OVERALL AND ENLARGED SITE PLAN

SHEET NUMBER

A-1

NOTES

1. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS.
2. ANTENNA AND MW DISH SPECIFICATIONS REFER TO ANTENNA SCHEDULE AND TO FINAL CONSTRUCTION RFDS FOR ALL RF DETAILS
3. EXISTING EQUIPMENT AND FENCE OMITTED FOR CLARITY.



PROPOSED NORTH WEST ELEVATION

8' 4' 0 8' 16'
1/8"=1'-0"

1

N

ANTENNA LAYOUT

12" 6" 0 1' 2' 3'
3/4"=1'-0"

2

SECTOR	POSITION	ANTENNA						TRANSMISSION CABLE
		EXISTING OR PROPOSED	MANUFACTURER – MODEL NUMBER	TECHNOLOGY	SIZE (HxW)	AZIMUTH	RAD CENTER	FEED LINE TYPE AND LENGTH
ALPHA	A1	PROPOSED	COMMSCOPE – FFVV-65B-R2	5G	72.0" x 19.6"	0°	105'-0"	(1) HIGH-CAPACITY HYBRID CABLE (145' LONG)
BETA	B1	PROPOSED	COMMSCOPE – FFVV-65B-R2	5G	72.0" x 19.6"	120°	105'-0"	
GAMMA	G1	PROPOSED	COMMSCOPE – FFVV-65B-R2	5G	72.0" x 19.6"	240°	105'-0"	

SECTOR	POSITION	RRH	
		MANUFACTURER – MODEL NUMBER	TECHNOLOGY
ALPHA	A1	FUJITSU – TA08025-B605	5G
	A1	FUJITSU – TA08025-B604	5G
BETA	B1	FUJITSU – TA08025-B605	5G
	B1	FUJITSU – TA08025-B604	5G
GAMMA	G1	FUJITSU – TA08025-B605	5G
	G1	FUJITSU – TA08025-B604	5G

NOTES

1. CONTRACTOR TO REFER TO FINAL CONSTRUCTION RFDS FOR ALL RF DETAILS.
2. ANTENNA AND RRH MODELS MAY CHANGE DUE TO EQUIPMENT AVAILABILITY. ALL EQUIPMENT CHANGES MUST BE APPROVED AND REMAIN IN COMPLIANCE WITH THE PROPOSED DESIGN AND STRUCTURAL ANALYSES.

OVP		
EXISTING OR PROPOSED	MANUFACTURER – MODEL NUMBER	SIZE (HxWxD)
PROPOSED	RAYCAP-RDIDC-9181-PF-48	16"x14"x8"

ANTENNA SCHEDULE

NO SCALE

3

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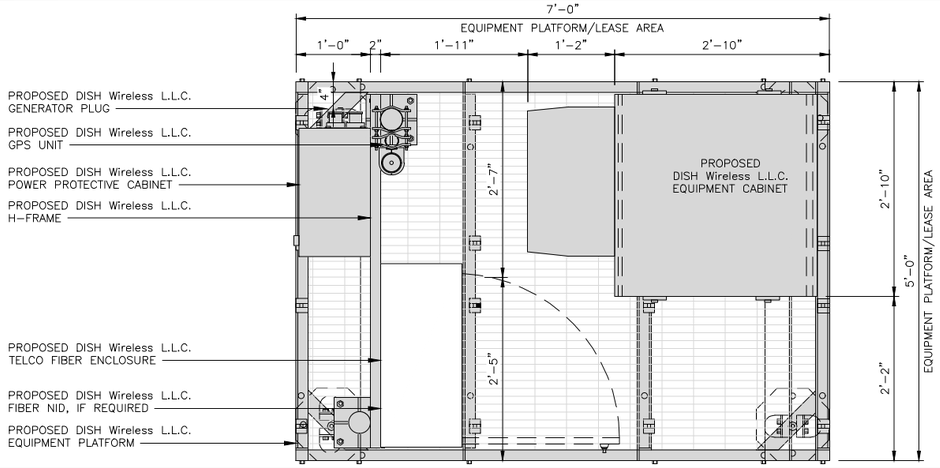
SHEET TITLE

ELEVATION, ANTENNA LAYOUT AND SCHEDULE

SHEET NUMBER

A-2



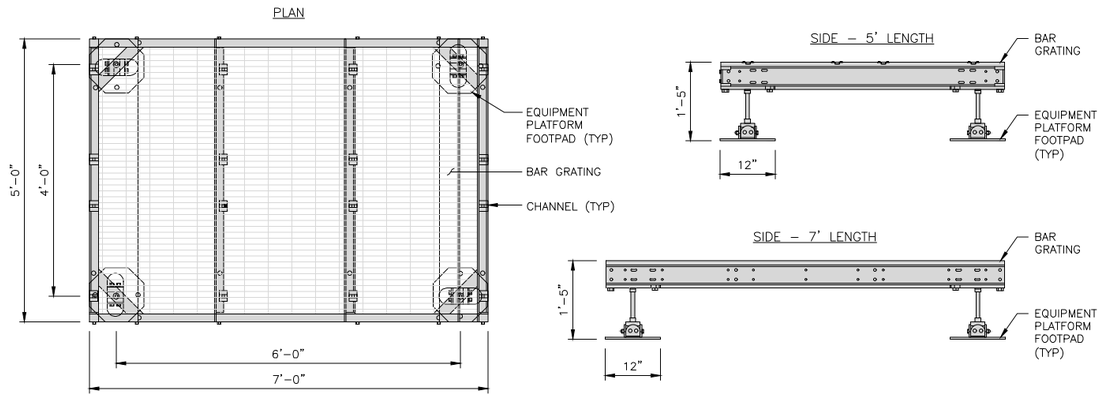
PLATFORM EQUIPMENT PLAN

12" 9" 6" 3" 0 1' 2'
1"=1'-0"

1

COMMSCOPE MTC4045LP 5X7 PLATFORM	
DIMENSIONS (HxWxD)	16"x84"x60"
TOTAL WEIGHT	423 LBS

NOTE:
GC TO PROVIDE EXTENDED THREAD FOR PLATFORM IF REQUIRED HEIGHT EXCEEDS 17"

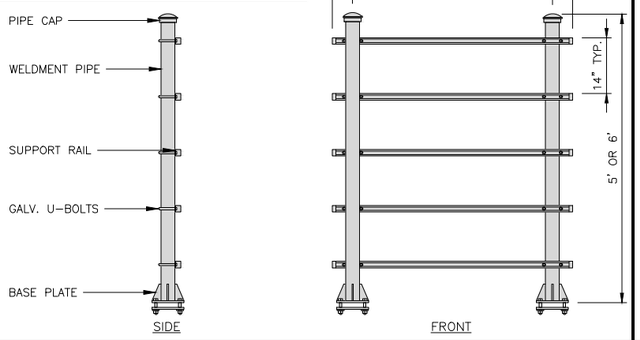


PLATFORM DETAIL

NO SCALE

2

COMMSCOPE MTC4045HFLD H-FRAME	
UNISTRUT/SUPPORT RAILS QTY	5
WEIGHT	59.74 lbs



H-FRAME DETAIL

NO SCALE

3

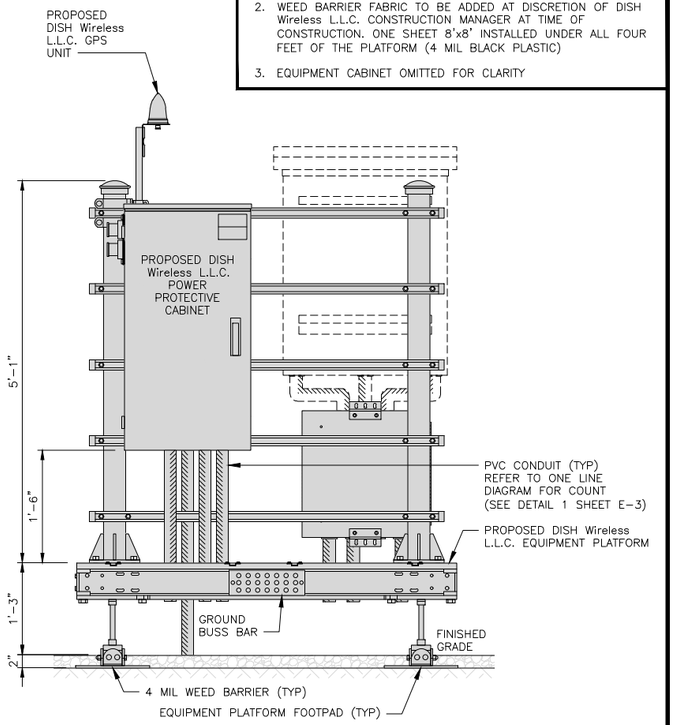
NOT USED

NO SCALE

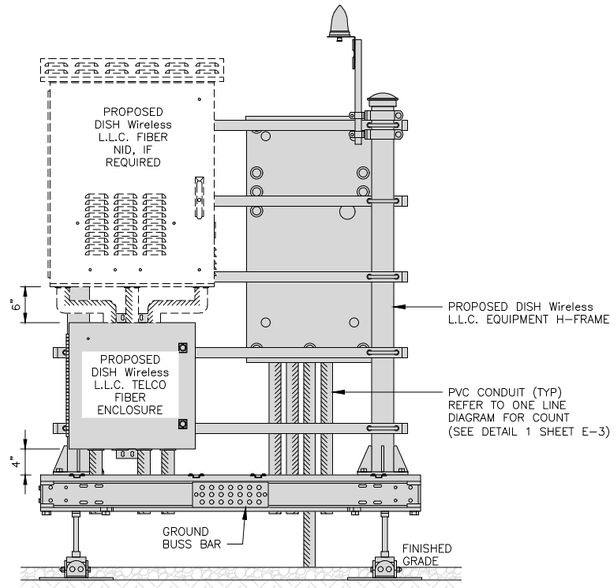
4

NOTES

1. CONTRACTOR TO BURY PLATFORM FEET WITH A MINIMUM OF 2" OF FILL PER EXISTING SITE SURFACE
2. WEED BARRIER FABRIC TO BE ADDED AT DISCRETION OF DISH Wireless L.L.C. CONSTRUCTION MANAGER AT TIME OF CONSTRUCTION. ONE SHEET 8'x8' INSTALLED UNDER ALL FOUR FEET OF THE PLATFORM (4 MIL BLACK PLASTIC)
3. EQUIPMENT CABINET OMITTED FOR CLARITY



FRONT ELEVATION



BACK ELEVATION

H-FRAME EQUIPMENT ELEVATION

12" 9" 6" 3" 0 1' 2'
1"=1'-0"

5

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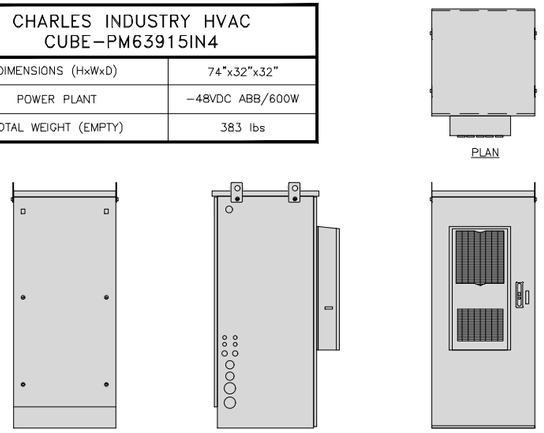
PROJECT INFORMATION
BOBOS00893A
123 PALMER ROAD
CHAPLIN, CT 06235

SHEET TITLE
EQUIPMENT PLATFORM AND H-FRAME DETAILS

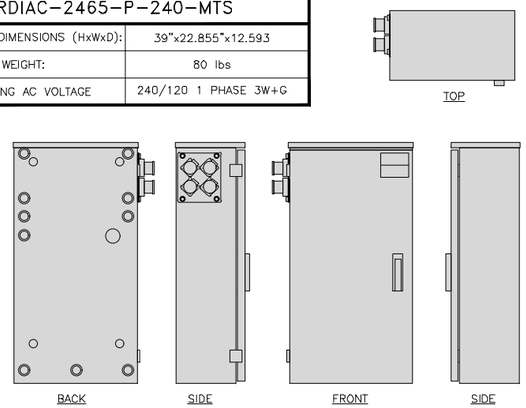
SHEET NUMBER
A-3

CHARLES INDUSTRY HVAC CUBE-PM63915IN4	
DIMENSIONS (HxWxD)	74"x32"x32"
POWER PLANT	-48VDC ABB/600W
TOTAL WEIGHT (EMPTY)	383 lbs



CABINET DETAIL | NO SCALE | 1

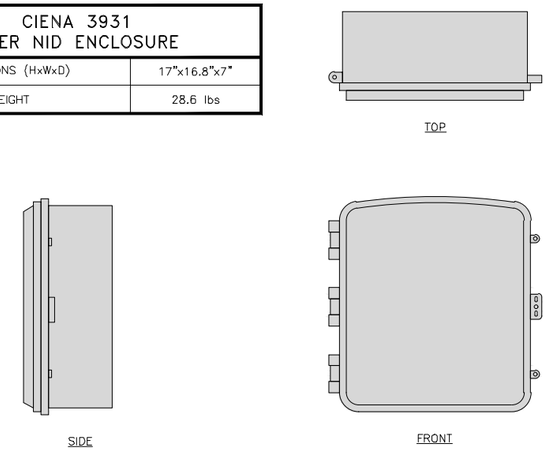
RAYCAP PPC RDIAC-2465-P-240-MTS	
ENCLOSURE DIMENSIONS (HxWxD):	39"x22.855"x12.593
WEIGHT:	80 lbs
OPERATING AC VOLTAGE	240/120 1 PHASE 3W+G



POWER PROTECTION CABINET (PPC) DETAIL | NO SCALE | 2

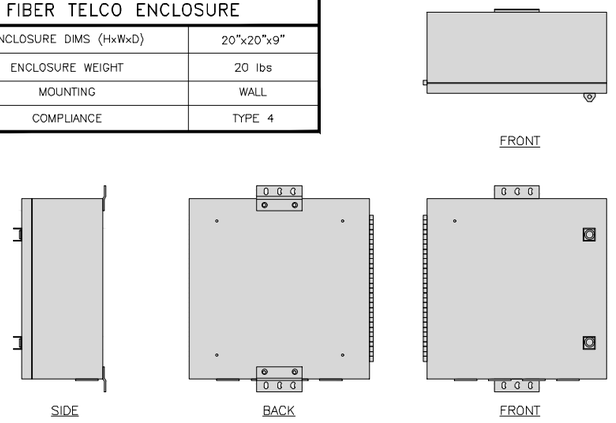
NOT USED | NO SCALE | 3

CIENA 3931 FIBER NID ENCLOSURE	
DIMENSIONS (HxWxD)	17"x16.8"x7"
WEIGHT	28.6 lbs



FIBER NID ENCLOSURE DETAIL | NO SCALE | 5

CHARLES CFIT-PF2020DSH1 FIBER TELCO ENCLOSURE	
ENCLOSURE DIMS (HxWxD)	20"x20"x9"
ENCLOSURE WEIGHT	20 lbs
MOUNTING	WALL
COMPLIANCE	TYPE 4

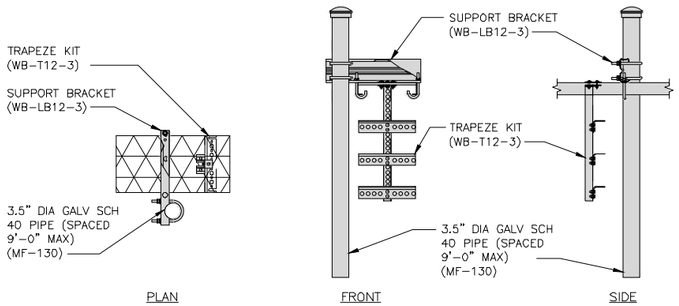


FIBER TELCO ENCLOSURE DETAIL | NO SCALE | 6

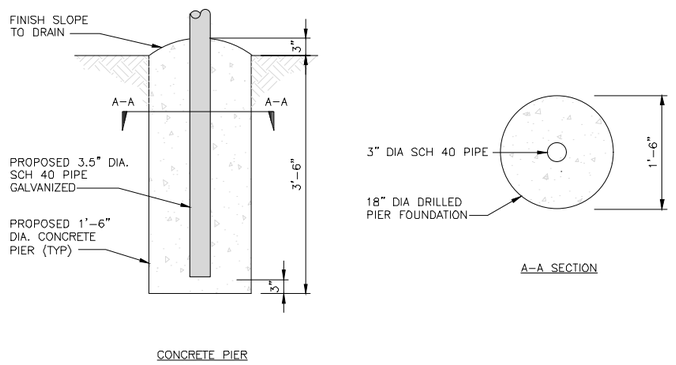
NOT USED | NO SCALE | 4

COMMSCOPE WB-K110-B WAVEGUIDE BRIDGE KIT	
DIMENSIONS (HxL)	160"x10'
WEIGHT/ VOLUME	325.0 LBS
CABLE RUN (QTY)	12

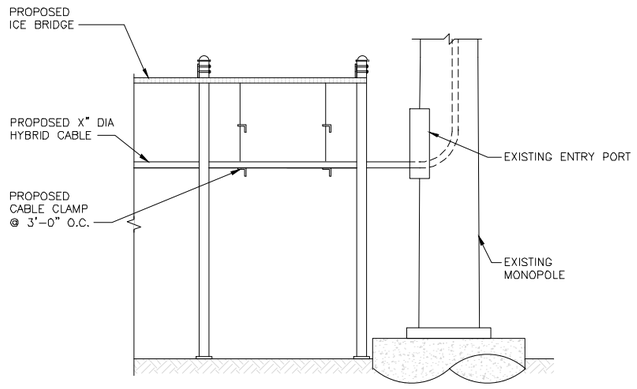
INCLUDED PRODUCTS:	WB-T12-3 TRAPEZE KIT, 3 RUNGS
	WB-LB12-3 SUPPORT BRACKET
	MF-130 DIRECT BURIAL PIPE COLUMN, 13'-4"



ICE BRIDGE DETAIL | NO SCALE | 7



TYPICAL ICE BRIDGE CONCRETE PIER DETAIL | NO SCALE | 8



HYBRID CABLE RUN | NO SCALE | 9

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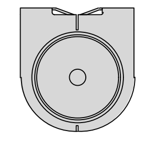
SHEET TITLE

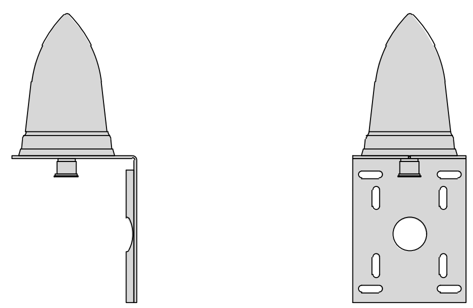
EQUIPMENT DETAILS

SHEET NUMBER

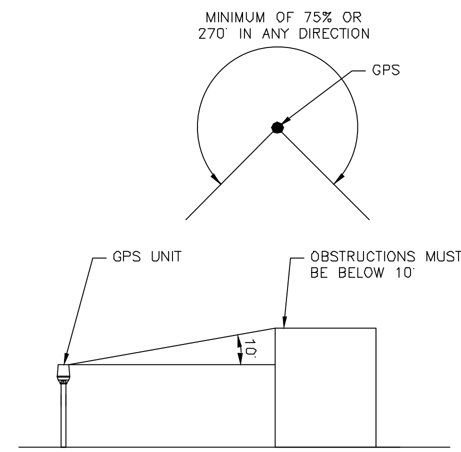
A-4

PCTEL GPSGL–TMG–SPI–40NCB	
DIMENSIONS (DIAxH) MM/INCH	81x184mm 3.2"x7.25"
WEIGHT W/ACCESSORIES	075 lbs
CONNECTOR	N–FEMALE
FREQUENCY RANGE	1590 ± 30MHz

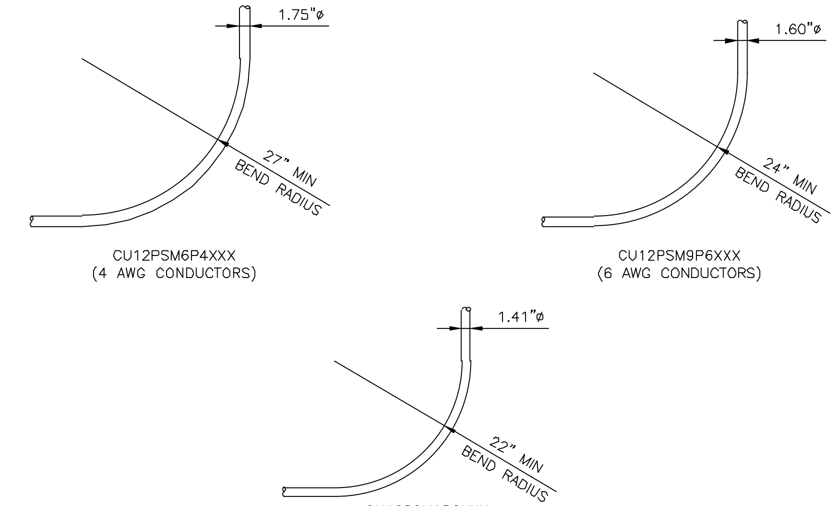




GPS DETAIL — NO SCALE — 1



GPS MINIMUM SKY VIEW REQUIREMENTS — NO SCALE — 2



CABLES UNLIMITED HYBRID CABLE MINIMUM BEND RADIUSES — NO SCALE — 3

NOT USED — NO SCALE — 4

NOT USED — NO SCALE — 5

NOT USED — NO SCALE — 6

NOT USED — NO SCALE — 7

NOT USED — NO SCALE — 8

NOT USED — NO SCALE — 9

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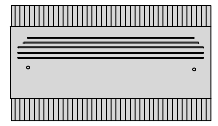
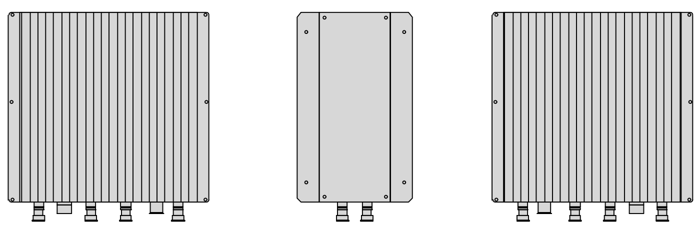
SHEET TITLE
EQUIPMENT DETAILS

SHEET NUMBER
A-5

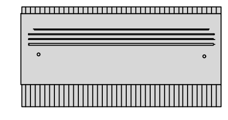
FUJITSU TRIPLE BAND TA08025-B605	
DIMENSIONS (HxWxD)	14.9"x15.7"x9"
WEIGHT	74.95 lbs
CONNECTOR TYPE	4.3-10 RF CONNECTOR
POWER SUPPLY	DC -58~-36V

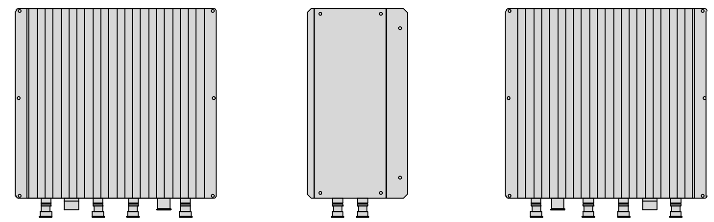




RRH DETAIL — NO SCALE — 1

FUJITSU DUAL BAND TA08025-B604	
DIMENSIONS (HxWxD)	14.9"x15.7"x7.8"
WEIGHT	63.9 lbs
CONNECTOR TYPE	4.3-10 RF CONNECTOR
POWER SUPPLY	DC -58~-36V

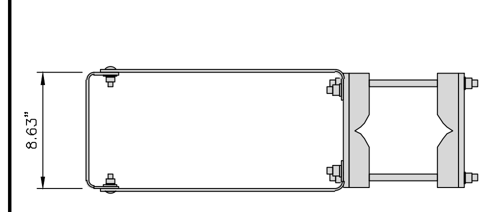


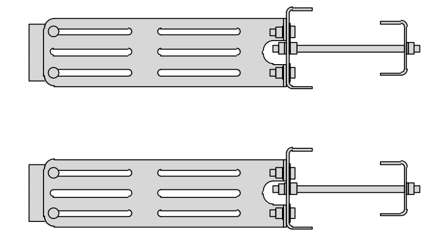


RRH DETAIL — NO SCALE — 2

COMMSCOPE RR-FA2 LARGE STABILIZER	
DIMENSIONS (HxWxD)	16.4"x8.5"x18"
WEIGHT	39.2 lbs

DESIGN NOTES:
MOUNT WILL FIT LEGS UP TO:
- 5.6" ROUND
- 6.0" 60° ANGLE
- 4.5" 90° ANGLE

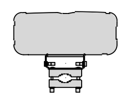


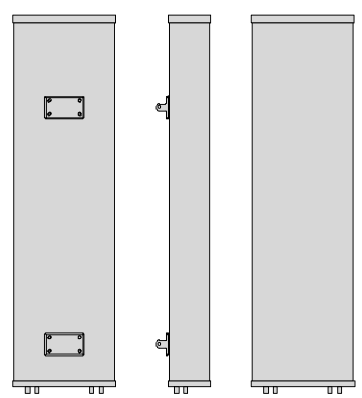


NOTE:
OR DISH Wireless L.L.C. APPROVED EQUIVALENT

RRH MOUNT DETAIL — NO SCALE — 3

COMMSCOPE FFVV-65B-R2	
DIMENSIONS (HxWxD)(MM/IN)	1828x498x197 72"x19.6"x7.8"
RF CONNECTOR INTERFACE	4.3-10 FEMALE
WEIGHT	70.8 lbs
WEIGHT WITH BRACKETS	98.1 lbs



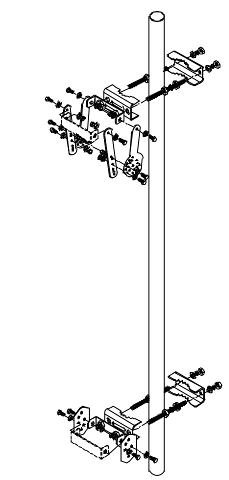


ANTENNA DETAIL — NO SCALE — 4

NOT USED — NO SCALE — 5

COMMSCOPE ANTENNA MOUNTING BRACKET	
TOTAL WEIGHT (WITH BRACKETS)	18 lbs (8.18 Kg)
POLE DIAMETER RANGE	2.5" TO 4.5"

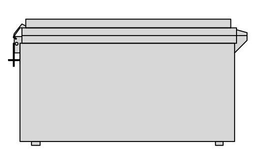
NOTE:
KIT #91900318: TOP AND BOTTOM BRACKETS FOR 4-,6-, AND 8-FOOT ANTENNAS
ANTENNA BRACKET NOT PART OF KIT

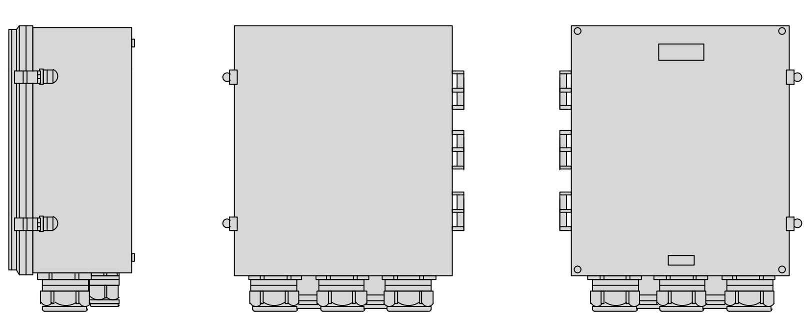


NOTE:
OR DISH Wireless L.L.C. APPROVED EQUIVALENT

ANTENNA BRACKET DETAIL — NO SCALE — 6

RAYCAP RDIDC-9181-PF-48 DC SURGE PROTECTION (OVP)	
DIMENSIONS (HxWxD)	18.98"x14.39"x8.15"
WEIGHT	21.82 LBS

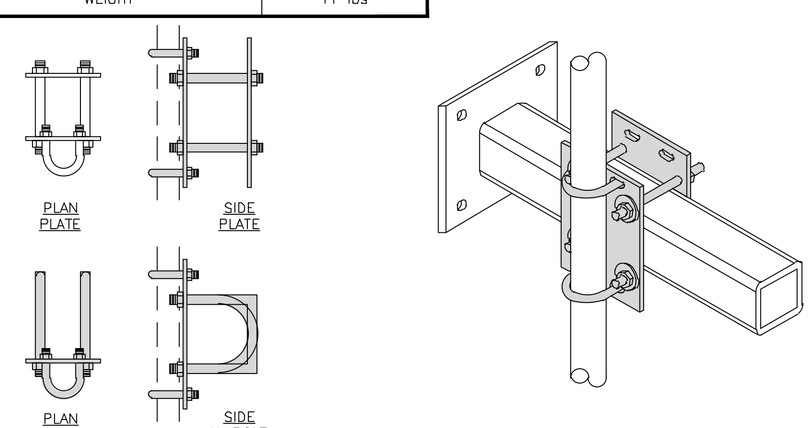




SURGE SUPPRESSION DETAIL (OVP) — NO SCALE — 7

COMMSCOPE XP-2040 CROSSOVER PLATE	
DIMENSIONS (HxW)	10"x12"
WEIGHT	11 lbs

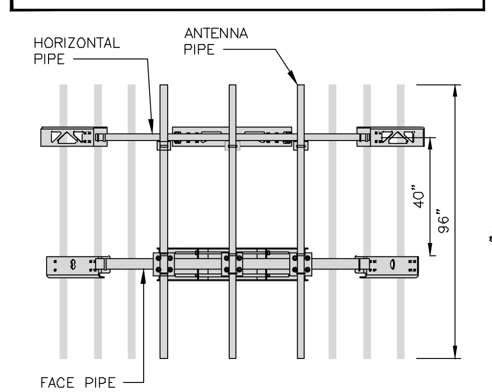
NOTE:
OR DISH Wireless L.L.C. APPROVED EQUIVALENT

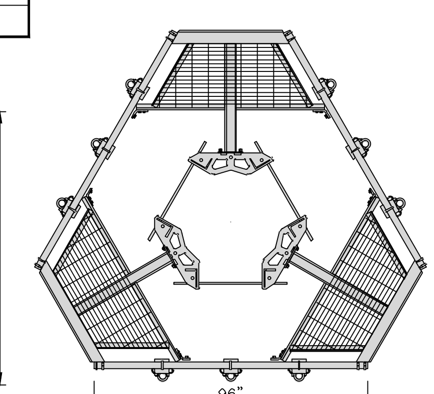


RRH/OVP MOUNT DETAIL — NO SCALE — 8

COMMSCOPE MC-PK8-DSH	
FACE WIDTH	96"
WEIGHT	1373.08 lbs
NOTE: 15" TO 38" O.D.	

NOTE:
OR DISH Wireless L.L.C. APPROVED EQUIVALENT





ANTENNA PLATFORM DETAIL — NO SCALE — 9

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DRAWN BY:	CHECKED BY:	APPROVED BY:
NGN	YF	YF

RFDS REV #: 1.0

CONSTRUCTION DOCUMENTS

SUBMITTALS		
REV	DATE	DESCRIPTION
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A&E PROJECT NUMBER
157530.001.01

DISH Wireless L.L.C. PROJECT INFORMATION
BOBOS00893A
123 PALMER ROAD
CHAPLIN, CT 06235

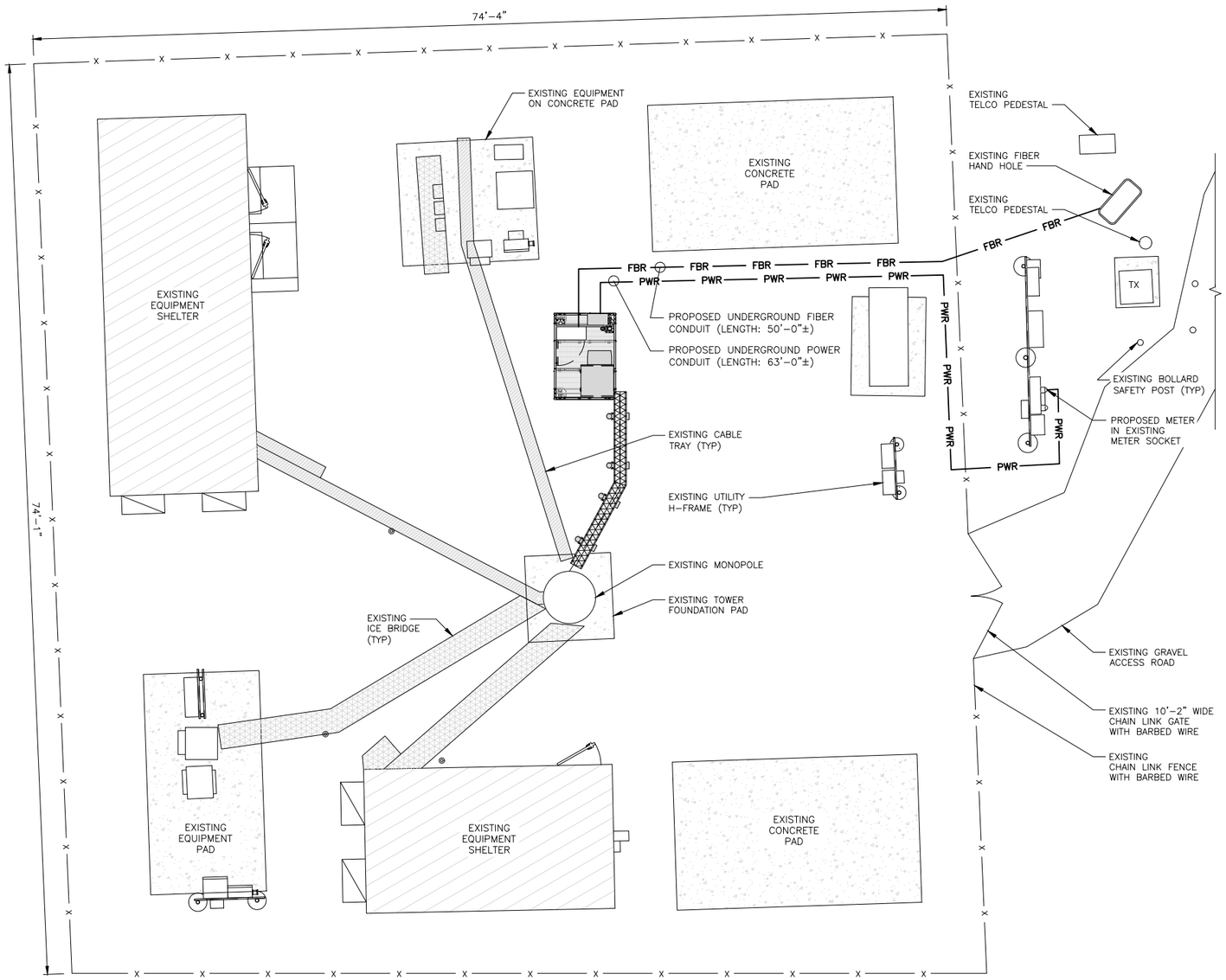
SHEET TITLE
EQUIPMENT DETAILS

SHEET NUMBER
A-6

FINAL POWER OR FIBER DESIGN
NOT AVAILABLE AT TIME OF ISSUE

NOTES

1. A BOUNDARY SURVEY OF THE EXISTING EASEMENT WAS NOT AVAILABLE AT CONSTRUCTION DRAWING CREATION. CONSTRUCTION CONTRACTOR MUST FIELD VERIFY THAT THE PROPOSED UTILITY ROUTES ARE WITHIN AMERICAN TOWER'S EASEMENT.
2. ANTENNAS AND MOUNTS OMITTED FOR CLARITY.



DC POWER WIRING SHALL BE COLOR CODED AT EACH END FOR IDENTIFYING +24V AND -48V CONDUCTORS. RED MARKINGS SHALL IDENTIFY +24V AND BLUE MARKINGS SHALL IDENTIFY -48V.

1. CONTRACTOR SHALL INSPECT THE EXISTING CONDITIONS PRIOR TO SUBMITTING A BID. ANY QUESTIONS ARISING DURING THE BID PERIOD IN REGARDS TO THE CONTRACTOR'S FUNCTIONS, THE SCOPE OF WORK, OR ANY OTHER ISSUE RELATED TO THIS PROJECT SHALL BE BROUGHT UP DURING THE BID PERIOD WITH THE PROJECT MANAGER FOR CLARIFICATION, NOT AFTER THE CONTRACT HAS BEEN AWARDED.
2. ALL ELECTRICAL WORK SHALL BE DONE IN ACCORDANCE WITH CURRENT NATIONAL ELECTRICAL CODES AND ALL STATE AND LOCAL CODES, LAWS, AND ORDINANCES. PROVIDE ALL COMPONENTS AND WIRING SIZES AS REQUIRED TO MEET NEC STANDARDS.
3. LOCATION OF EQUIPMENT, CONDUIT AND DEVICES SHOWN ON THE DRAWINGS ARE APPROXIMATE AND SHALL BE COORDINATED WITH FIELD CONDITIONS PRIOR TO CONSTRUCTION.
4. CONDUIT ROUGH-IN SHALL BE COORDINATED WITH THE MECHANICAL EQUIPMENT TO AVOID LOCATION CONFLICTS. VERIFY WITH THE MECHANICAL EQUIPMENT CONTRACTOR AND COMPLY AS REQUIRED.
5. CONTRACTOR SHALL PROVIDE ALL BREAKERS, CONDUITS AND CIRCUITS AS REQUIRED FOR A COMPLETE SYSTEM.
6. CONTRACTOR SHALL PROVIDE PULL BOXES AND JUNCTION BOXES AS REQUIRED BY THE NEC ARTICLE 314.
7. CONTRACTOR SHALL PROVIDE ALL STRAIN RELIEF AND CABLE SUPPORTS FOR ALL CABLE ASSEMBLIES. INSTALLATION SHALL BE IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS AND RECOMMENDATIONS.
8. ALL DISCONNECTS AND CONTROLLING DEVICES SHALL BE PROVIDED WITH ENGRAVED PHENOLIC NAMEPLATES INDICATING EQUIPMENT CONTROLLED, BRANCH CIRCUITS INSTALLED ON, AND PANEL FIELD LOCATIONS FED FROM.
9. INSTALL AN EQUIPMENT GROUNDING CONDUCTOR IN ALL CONDUITS PER THE SPECIFICATIONS AND NEC 250. THE EQUIPMENT GROUNDING CONDUCTORS SHALL BE BONDED AT ALL JUNCTION BOXES, PULL BOXES, AND ALL DISCONNECT SWITCHES, AND EQUIPMENT CABINETS.
10. ALL NEW MATERIAL SHALL HAVE A U.L. LABEL.
11. PANEL SCHEDULE LOADING AND CIRCUIT ARRANGEMENTS REFLECT POST-CONSTRUCTION EQUIPMENT.
12. CONTRACTOR SHALL BE RESPONSIBLE FOR AS-BUILT PANEL SCHEDULE AND SITE DRAWINGS.
13. ALL TRENCHES IN COMPOUND TO BE HAND DUG

UTILITY ROUTE PLAN

6' 4' 2' 0 5' 10'
3/16"=1'-0"

1

ELECTRICAL NOTES

NO SCALE

2

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PROJECT INFORMATION
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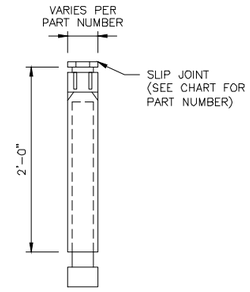
CHAPLIN, CT 06235

SHEET TITLE
ELECTRICAL/FIBER ROUTE PLAN AND NOTES

SHEET NUMBER
E-1

CARLON EXPANSION FITTINGS

COUPLING END PART#	MALE TERMINAL ADAPTER END PART#	SIZE	STD CTN QTY.	TRAVEL LENGTH
E945D	E945DX	1/2"	20	4"
E945E	E945EX	3/4"	15	4"
E945F	E945FX	1"	10	4"
E945G	E945GX	1 1/4"	5	4"
E945H	E945HX	1 1/2"	5	4"
E945J	E945JX	2"	15	8"
E945K	E945KX	2 1/2"	10	8"
E945L	E945LX	3"	10	8"
E945M	E945MX	3 1/2"	5	8"
E945N	E945NX	4"	5	8"
E945P	E945PX	5"	1	8"
E945R	E945RX	6"	1	8"

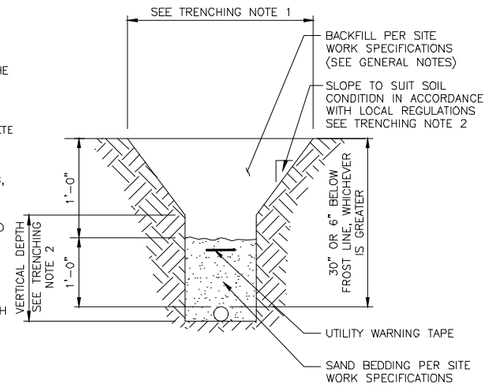


NOTE:
CONTRACTOR TO INSTALL EXPANSION FITTING SLIP JOINT AT METER CENTER CONDUIT TERMINATION, AS PER LOCAL UTILITY POLICY, ORDINANCE AND/OR SPECIFIED REQUIREMENT.

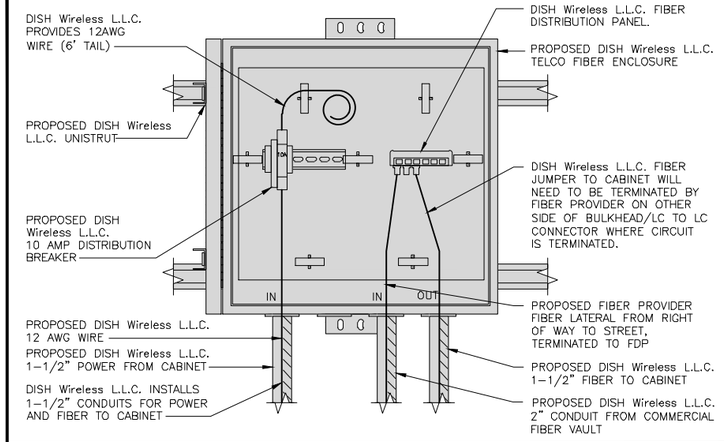
EXPANSION JOINT DETAIL | NO SCALE | 1

TRENCHING NOTES

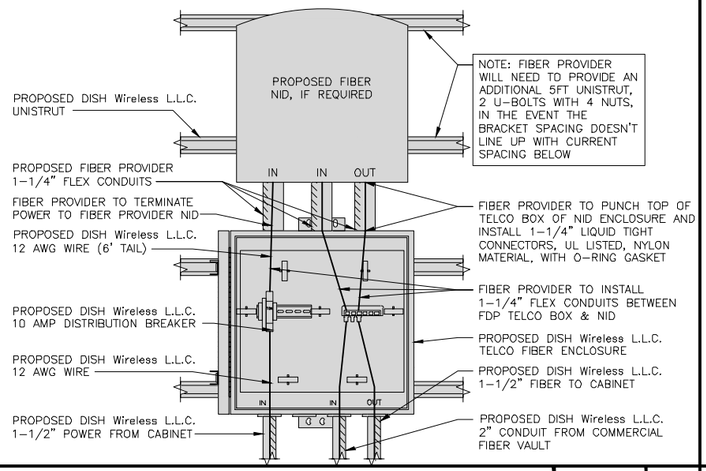
1. CONTRACTOR SHALL RESTORE THE TRENCH TO ITS ORIGINAL CONDITIONS BY EITHER SEEDING OR SODDING GRASS AREAS, OR REPLACING ASPHALT OR CONCRETE AREAS TO ITS ORIGINAL CROSS SECTION.
2. TRENCHING SAFETY; INCLUDING, BUT NOT LIMITED TO SOIL CLASSIFICATION, SLOPING, AND SHORING, SHALL BE GOVERNED BY THE CURRENT OSHA TRENCHING AND EXCAVATION SAFETY STANDARDS.
3. ALL CONDUITS SHALL BE INSTALLED IN COMPLIANCE WITH THE CURRENT NATIONAL ELECTRIC CODE (NEC) OR AS REQUIRED BY THE LOCAL JURISDICTION, WHICHEVER IS THE MOST STRINGENT.



TYPICAL UNDERGROUND TRENCH DETAIL | NO SCALE | 2



DARK TELCO BOX – INTERIOR WIRING LAYOUT | NO SCALE | 3



LIT TELCO BOX – INTERIOR WIRING LAYOUT (OPTIONAL) | NO SCALE | 4

NOT USED | NO SCALE | 5

NOT USED | NO SCALE | 6

NOT USED | NO SCALE | 7

NOT USED | NO SCALE | 8

NOT USED | NO SCALE | 9

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DISH Wireless L.L.C.
PROJECT INFORMATION

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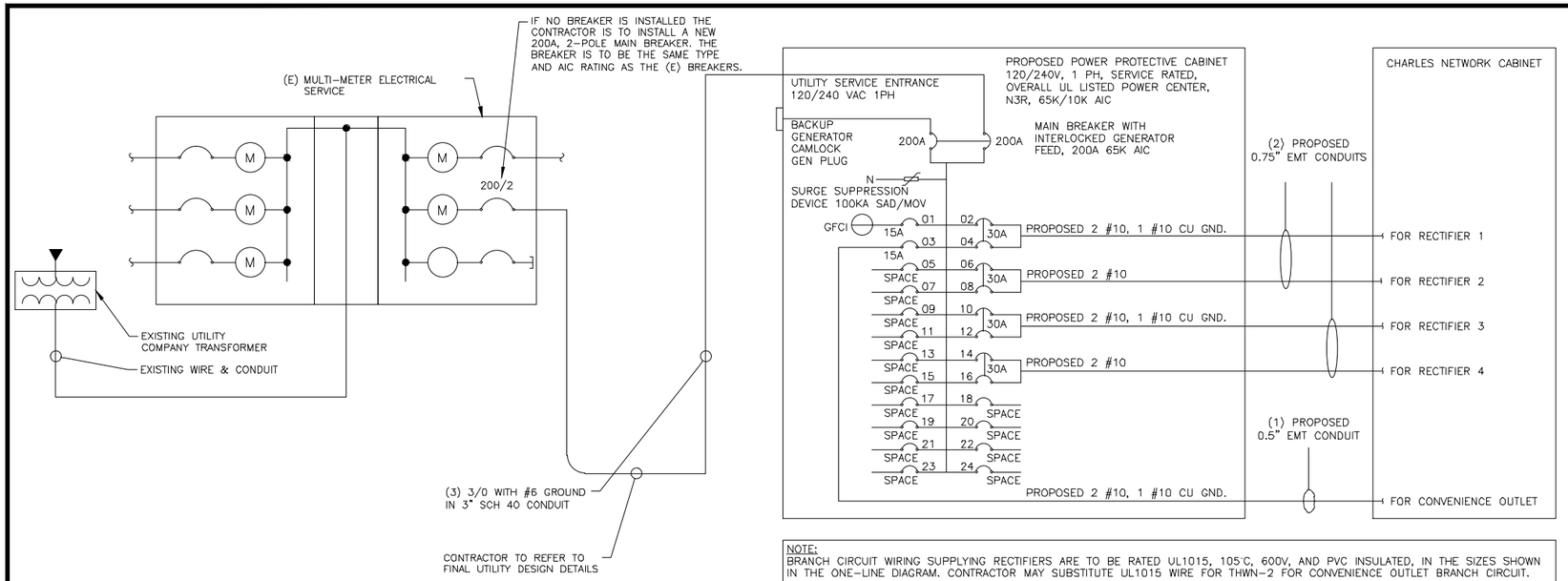
123 PALMER ROAD
CHAPLIN, CT 06235

SHEET TITLE

ELECTRICAL DETAILS

SHEET NUMBER

E-2



NOTE:
BRANCH CIRCUIT WIRING SUPPLYING RECTIFIERS ARE TO BE RATED UL1015, 105°C, 600V, AND PVC INSULATED, IN THE SIZES SHOWN IN THE ONE-LINE DIAGRAM. CONTRACTOR MAY SUBSTITUTE UL1015 WIRE FOR THWN-2 FOR CONVENIENCE OUTLET BRANCH CIRCUIT.

BREAKERS REQUIRED:
(4) 30A, 2P BREAKER - SQUARE D P/N:QO230
(1) 15A, 1P BREAKER - SQUARE D P/N:QO115

NOTES

THE ENGINEER OF RECORD HAS PERFORMED ALL REQUIRED SHORT CIRCUIT CALCULATIONS AND THE AIC RATINGS FOR EACH DEVICE IS ADEQUATE TO PROTECT THE EQUIPMENT AND THE ELECTRICAL SYSTEM.

THE ENGINEER OF RECORD HAS PERFORMED ALL REQUIRED VOLTAGE DROP CALCULATIONS AND ALL BRANCH CIRCUIT AND FEEDERS COMPLY WITH THE NEC (LISTED ON T-1) ARTICLE 210.19(A)(1) FPN NO. 4.

THE (2) CONDUITS WITH (4) CURRENT CARRYING CONDUCTORS EACH, SHALL APPLY THE ADJUSTMENT FACTOR OF 80% PER 2014/17 NEC TABLE 310.15(B)(3)(a) OR 2020 NEC TABLE 310.15(C)(1) FOR UL1015 WIRE.

#12 FOR 15A-20A/1P BREAKER: 0.8 x 30A = 24.0A
#10 FOR 25A-30A/2P BREAKER: 0.8 x 40A = 32.0A
#8 FOR 35A-40A/2P BREAKER: 0.8 x 55A = 44.0A
#6 FOR 45A-60A/2P BREAKER: 0.8 x 75A = 60.0A

CONDUIT SIZING: AT 40% FILL PER NEC CHAPTER 9, TABLE 4, ARTICLE 358.
0.5" CONDUIT - 0.122 SQ. IN AREA
0.75" CONDUIT - 0.213 SQ. IN AREA
2.0" CONDUIT - 1.316 SQ. IN AREA
3.0" CONDUIT - 2.907 SQ. IN AREA

CABINET CONVENIENCE OUTLET CONDUCTORS (1 CONDUIT): USING THWN-2, CU.

#10 - 0.0211 SQ. IN X 2 = 0.0422 SQ. IN
#10 - 0.0211 SQ. IN X 1 = 0.0211 SQ. IN <GROUND
TOTAL = 0.0633 SQ. IN

0.5" EMT CONDUIT IS ADEQUATE TO HANDLE THE TOTAL OF (3) WIRES, INCLUDING GROUND WIRE, AS INDICATED ABOVE.

RECTIFIER CONDUCTORS (2 CONDUITS): USING UL1015, CU.

#10 - 0.0266 SQ. IN X 4 = 0.1064 SQ. IN
#10 - 0.0082 SQ. IN X 1 = 0.0082 SQ. IN <BARE GROUND
TOTAL = 0.1146 SQ. IN

0.75" EMT CONDUIT IS ADEQUATE TO HANDLE THE TOTAL OF (5) WIRES, INCLUDING GROUND WIRE, AS INDICATED ABOVE.

PPC FEED CONDUCTORS (1 CONDUIT): USING THWN, CU.

3/0 - 0.2679 SQ. IN X 3 = 0.8037 SQ. IN
#6 - 0.0507 SQ. IN X 1 = 0.0507 SQ. IN <GROUND
TOTAL = 0.8544 SQ. IN

3.0" SCH 40 PVC CONDUIT IS ADEQUATE TO HANDLE THE TOTAL OF (4) WIRES, INCLUDING GROUND WIRE, AS INDICATED ABOVE.

PPC ONE-LINE DIAGRAM

NO SCALE | 1

PROPOSED CHARLES PANEL SCHEDULE

LOAD SERVED	VOLT AMPS (WATTS) L1	VOLT AMPS (WATTS) L2	TRIP	CKT #	PHASE	CKT #	TRIP	VOLT AMPS (WATTS) L1	VOLT AMPS (WATTS) L2	LOAD SERVED
PPC GFCI OUTLET	180		15A	1	A	2	30A	2880		ABB/GE INFINITY RECTIFIER 1
CHARLES GFCI OUTLET		180	15A	3	B	4			2880	
-SPACE-				5	A	6	30A	2880		ABB/GE INFINITY RECTIFIER 2
-SPACE-				7	B	8			2880	
-SPACE-				9	A	10	30A	2880		ABB/GE INFINITY RECTIFIER 3
-SPACE-				11	B	12			2880	
-SPACE-				13	A	14	30A	2880		ABB/GE INFINITY RECTIFIER 4
-SPACE-				15	B	16			2880	
-SPACE-				17	A	18				-SPACE-
-SPACE-				19	B	20				-SPACE-
-SPACE-				21	A	22				-SPACE-
-SPACE-				23	B	24				-SPACE-
VOLTAGE AMPS	180	180						11520	11520	
200A MCB, 1ϕ, 24 SPACE, 120/240V			L1		L2					
MB RATING: 65,000 AIC			11700		11700		VOLTAGE AMPS			
			98		98		AMPS			
			98				MAX AMPS			
			123				MAX 125%			

PANEL SCHEDULE

NO SCALE | 2

NOT USED

NO SCALE | 3

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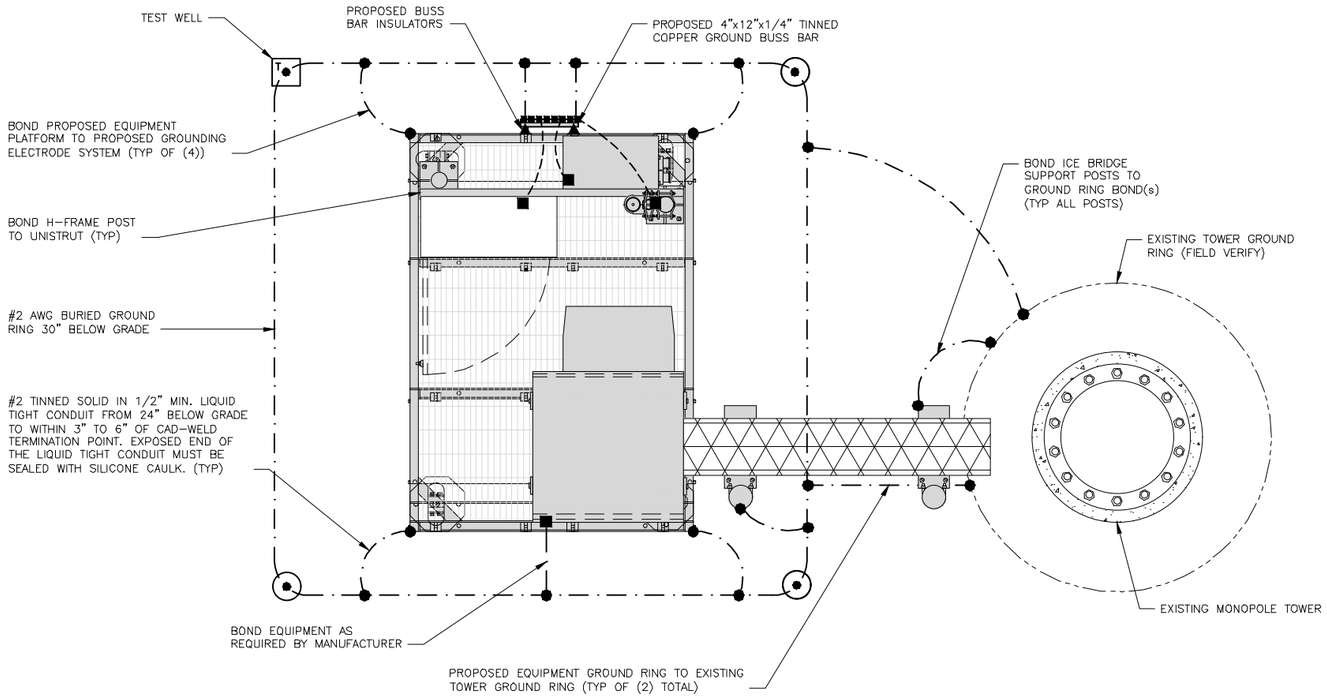
123 PALMER ROAD
CHAPLIN, CT 06235

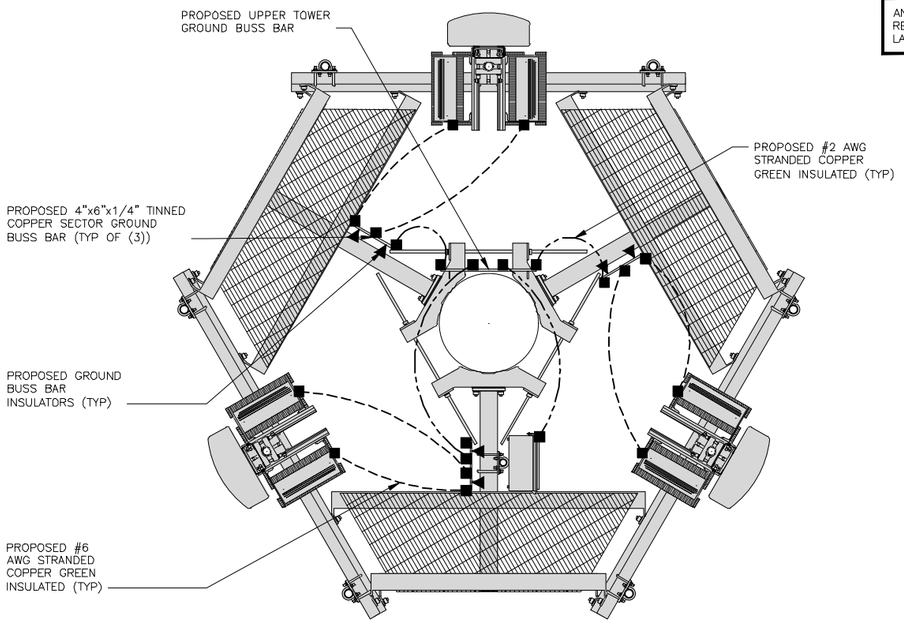
SHEET TITLE
ELECTRICAL ONE-LINE, FAULT CALCS & PANEL SCHEDULE

SHEET NUMBER
E-3



TYPICAL EQUIPMENT GROUNDING PLAN

NO SCALE | 1



TYPICAL ANTENNA GROUNDING PLAN

NO SCALE | 2

NOTES

ANTENNAS AND OVP SHOWN ARE GENERIC AND NOT REFERENCING TO A SPECIFIC MANUFACTURER. THIS LAYOUT IS FOR REFERENCE PURPOSES ONLY

- EXOTHERMIC CONNECTION
- MECHANICAL CONNECTION
- GROUND BUS BAR
- GROUND ROD
- TEST GROUND ROD WITH INSPECTION SLEEVE
- #6 AWG STRANDED & INSULATED
- #2 AWG SOLID COPPER TINNED
- #2 AWG STRANDED & INSULATED
- BUSS BAR INSULATOR

GROUNDING LEGEND

1. GROUNDING IS SHOWN DIAGRAMMATICALLY ONLY.
2. CONTRACTOR SHALL GROUND ALL EQUIPMENT AS A COMPLETE SYSTEM. GROUNDING SHALL BE IN COMPLIANCE WITH NEC SECTION 250 AND DISH Wireless L.L.C. GROUNDING AND BONDING REQUIREMENTS AND MANUFACTURER'S SPECIFICATIONS.
3. ALL GROUND CONDUCTORS SHALL BE COPPER; NO ALUMINUM CONDUCTORS SHALL BE USED.

GROUNDING KEY NOTES

(A) EXTERIOR GROUND RING: #2 AWG SOLID COPPER, BURIED AT A DEPTH OF AT LEAST 30 INCHES BELOW GRADE, OR 6 INCHES BELOW THE FROST LINE AND APPROXIMATELY 24 INCHES FROM THE EXTERIOR WALL OR FOOTING.

(B) TOWER GROUND RING: THE GROUND RING SYSTEM SHALL BE INSTALLED AROUND AN ANTENNA TOWER'S LEGS, AND/OR GUY ANCHORS. WHERE SEPARATE SYSTEMS HAVE BEEN PROVIDED FOR THE TOWER AND THE BUILDING, AT LEAST TWO BONDS SHALL BE MADE BETWEEN THE TOWER RING GROUND SYSTEM AND THE BUILDING RING GROUND SYSTEM USING MINIMUM #2 AWG SOLID COPPER CONDUCTORS.

(C) INTERIOR GROUND RING: #2 AWG STRANDED GREEN INSULATED COPPER CONDUCTOR EXTENDED AROUND THE PERIMETER OF THE EQUIPMENT AREA. ALL NON-TELECOMMUNICATIONS RELATED METALLIC OBJECTS FOUND WITHIN A SITE SHALL BE GROUNDED TO THE INTERIOR GROUND RING WITH #6 AWG STRANDED GREEN INSULATED CONDUCTOR.

(D) BOND TO INTERIOR GROUND RING: #2 AWG SOLID TINNED COPPER WIRE PRIMARY BONDS SHALL BE PROVIDED AT LEAST AT FOUR POINTS ON THE INTERIOR GROUND RING, LOCATED AT THE CORNERS OF THE BUILDING.

(E) GROUND ROD: UL LISTED COPPER CLAD STEEL. MINIMUM 1/2" DIAMETER BY EIGHT FEET LONG. GROUND RODS SHALL BE INSTALLED WITH INSPECTION SLEEVES. GROUND RODS SHALL BE DRIVEN TO THE DEPTH OF GROUND RING CONDUCTOR.

(F) CELL REFERENCE GROUND BAR: POINT OF GROUND REFERENCE FOR ALL COMMUNICATIONS EQUIPMENT FRAMES. ALL BONDS ARE MADE WITH #2 AWG UNLESS NOTED OTHERWISE STRANDED GREEN INSULATED COPPER CONDUCTORS. BOND TO GROUND RING WITH (2) #2 SOLID TINNED COPPER CONDUCTORS.

(G) HATCH PLATE GROUND BAR: BOND TO THE INTERIOR GROUND RING WITH TWO #2 AWG STRANDED GREEN INSULATED COPPER CONDUCTORS. WHEN A HATCH-PLATE AND A CELL REFERENCE GROUND BAR ARE BOTH PRESENT, THE CRGB MUST BE CONNECTED TO THE HATCH-PLATE AND TO THE INTERIOR GROUND RING USING (2) TWO #2 AWG STRANDED GREEN INSULATED COPPER CONDUCTORS EACH.

(H) EXTERIOR CABLE ENTRY PORT GROUND BARS: LOCATED AT THE ENTRANCE TO THE CELL SITE BUILDING. BOND TO GROUND RING WITH A #2 AWG SOLID TINNED COPPER CONDUCTORS WITH AN EXOTHERMIC WELD AND INSPECTION SLEEVE.

(I) TELCO GROUND BAR: BOND TO BOTH CELL REFERENCE GROUND BAR OR EXTERIOR GROUND RING.

(J) FRAME BONDING: THE BONDING POINT FOR TELECOM EQUIPMENT FRAMES SHALL BE THE GROUND BUS THAT IS NOT ISOLATED FROM THE EQUIPMENTS METAL FRAMEWORK.

(K) INTERIOR UNIT BONDS: METAL FRAMES, CABINETS AND INDIVIDUAL METALLIC UNITS LOCATED WITH THE AREA OF THE INTERIOR GROUND RING REQUIRE A #6 AWG STRANDED GREEN INSULATED COPPER BOND TO THE INTERIOR GROUND RING.

(L) FENCE AND GATE GROUNDING: METAL FENCES WITHIN 7 FEET OF THE EXTERIOR GROUND RING OR OBJECTS BONDED TO THE EXTERIOR GROUND RING SHALL BE BONDED TO THE GROUND RING WITH A #2 AWG SOLID TINNED COPPER CONDUCTOR AT AN INTERVAL NOT EXCEEDING 25 FEET. BONDS SHALL BE MADE AT EACH GATE POST AND ACROSS GATE OPENINGS.

(M) EXTERIOR UNIT BONDS: METALLIC OBJECTS, EXTERNAL TO OR MOUNTED TO THE BUILDING, SHALL BE BONDED TO THE EXTERIOR GROUND RING. USING #2 TINNED SOLID COPPER WIRE

(N) ICE BRIDGE SUPPORTS: EACH ICE BRIDGE LEG SHALL BE BONDED TO THE GROUND RING WITH #2 AWG BARE TINNED COPPER CONDUCTOR. PROVIDE EXOTHERMIC WELDS AT BOTH THE ICE BRIDGE LEG AND BURIED GROUND RING.

(O) DURING ALL DC POWER SYSTEM CHANGES INCLUDING DC SYSTEM CHANGE OUTS, RECTIFIER REPLACEMENTS OR ADDITIONS, BREAKER DISTRIBUTION CHANGES, BATTERY ADDITIONS, BATTERY REPLACEMENTS AND INSTALLATIONS OR CHANGES TO DC CONVERTER SYSTEMS IT SHALL BE REQUIRED THAT SERVICE CONTRACTORS VERIFY ALL DC POWER SYSTEMS ARE EQUIPPED WITH A MASTER DC SYSTEM RETURN GROUND CONDUCTOR FROM THE DC POWER SYSTEM COMMON RETURN BUS DIRECTLY CONNECTED TO THE CELL SITE REFERENCE GROUND BAR

(P) TOWER TOP COLLECTOR BUSS BAR IS TO BE MECHANICALLY BONDED TO PROPOSED ANTENNA MOUNT COLLAR.

(Q) REFER TO DISH Wireless L.L.C. GROUNDING NOTES.

GROUNDING KEY NOTES

NO SCALE | 3

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STATE OF CONNECTICUT
CHAD TUTTLE
No. 23924
LICENSED
PROFESSIONAL ENGINEER
3/29/22

B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/23

DRAWN BY:	CHECKED BY:	APPROVED BY:
NGN	YF	YF

RFDS REV #: 1.0

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
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0	3/29/22	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER

157530.001.01

DISH Wireless L.L.C.
PROJECT INFORMATION

BOBOS00893A
123 PALMER ROAD
CHAPLIN, CT 06235

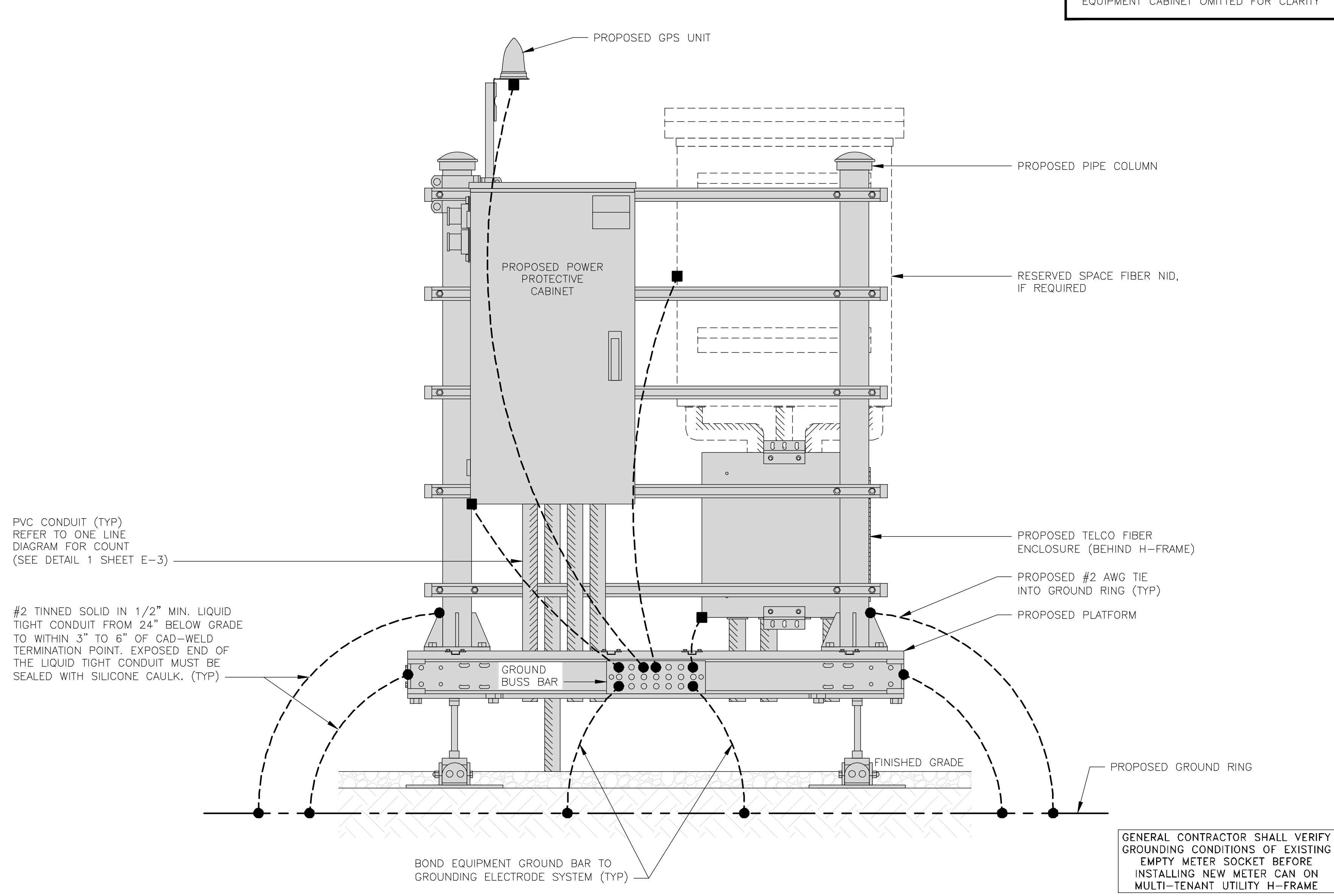
SHEET TITLE

GROUNDING PLANS AND NOTES

SHEET NUMBER

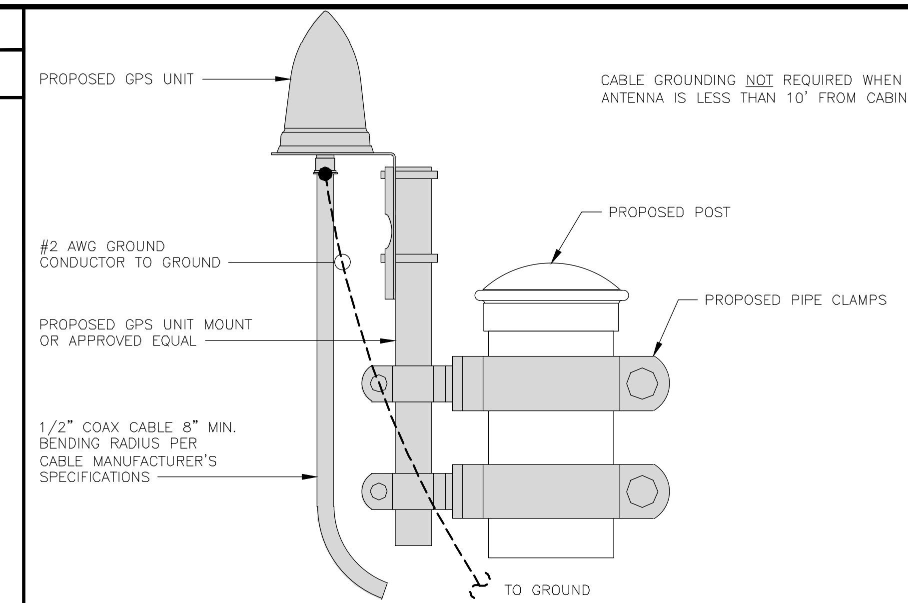
G-1

NOTES
EQUIPMENT CABINET OMITTED FOR CLARITY

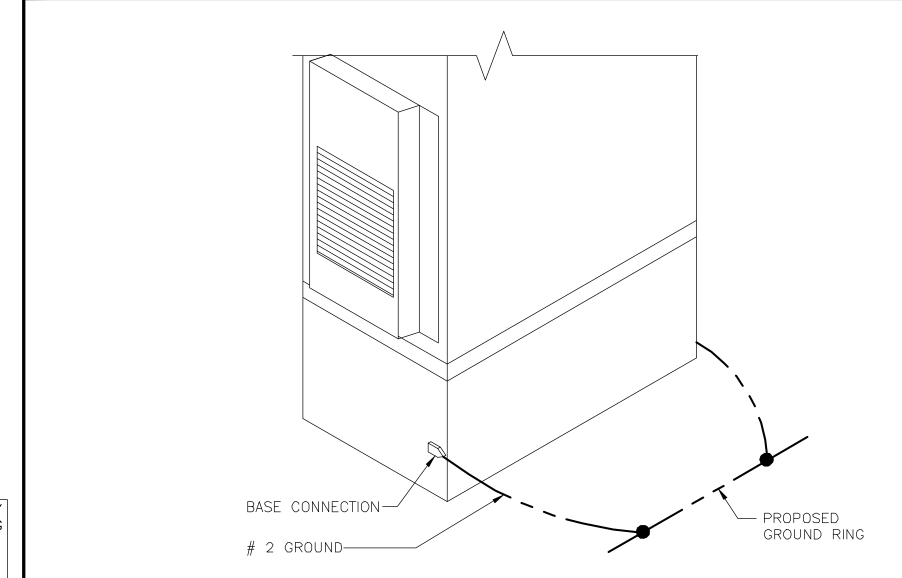


GENERAL CONTRACTOR SHALL VERIFY GROUNDING CONDITIONS OF EXISTING EMPTY METER SOCKET BEFORE INSTALLING NEW METER CAN ON MULTI-TENANT UTILITY H-FRAME

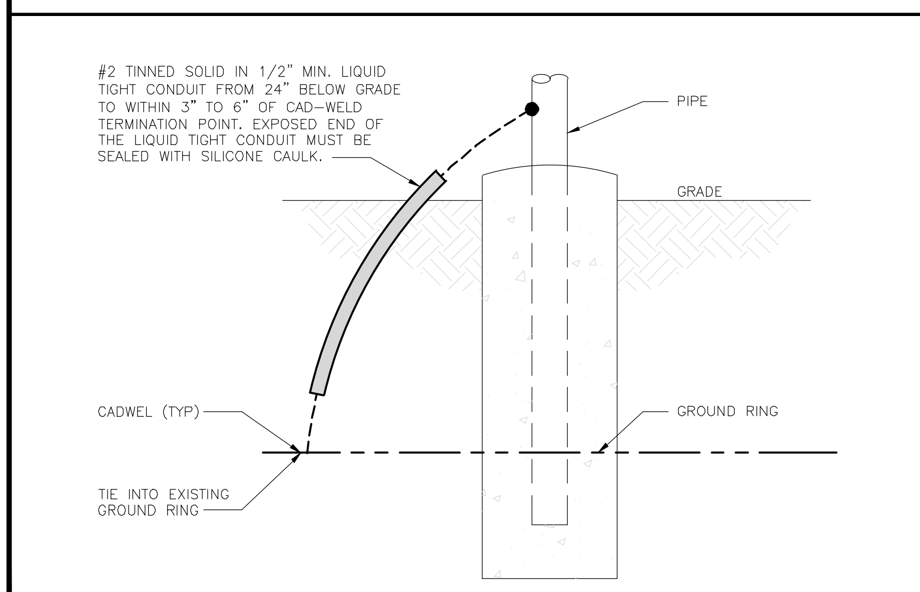
H-FRAME GROUNDING DETAIL — NO SCALE — 1



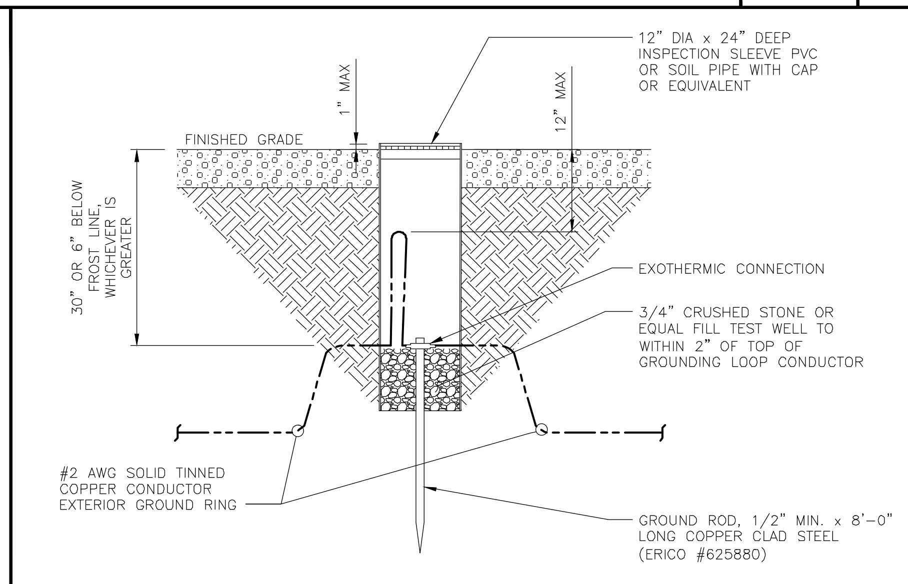
TYPICAL GPS UNIT GROUNDING — NO SCALE — 2



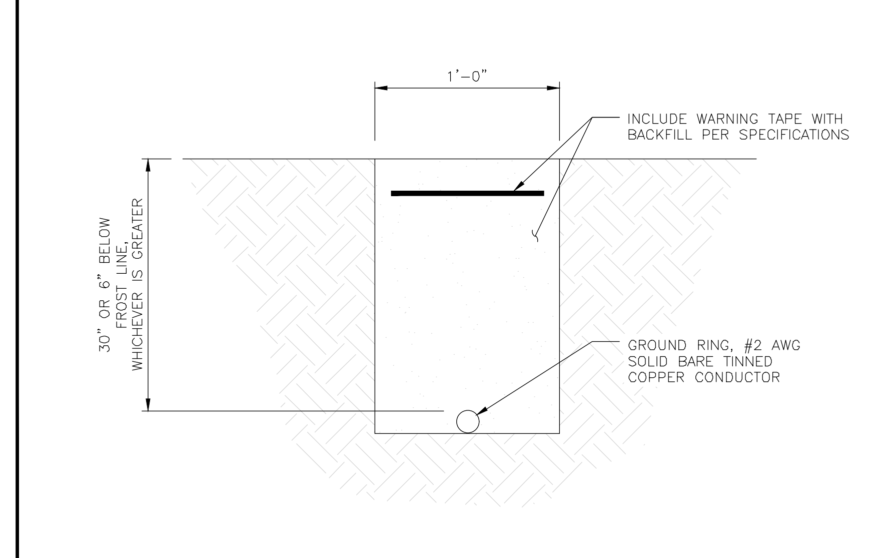
OUTDOOR CABINET GROUNDING — NO SCALE — 3



TRANSITIONING GROUND DETAIL — NO SCALE — 4



TYPICAL TEST GROUND ROD WITH INSPECTION SLEEVE — NO SCALE — 5



TYPICAL GROUND RING TRENCH — NO SCALE — 6

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IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT.

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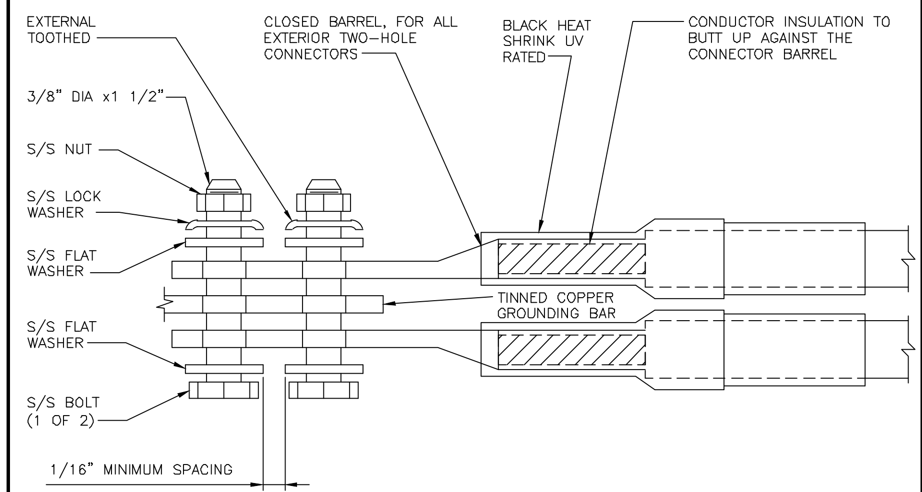
DISH Wireless L.L.C. PROJECT INFORMATION
BOBOS00893A
123 PALMER ROAD
CHAPLIN, CT 06235

SHEET TITLE
GROUNDING DETAILS

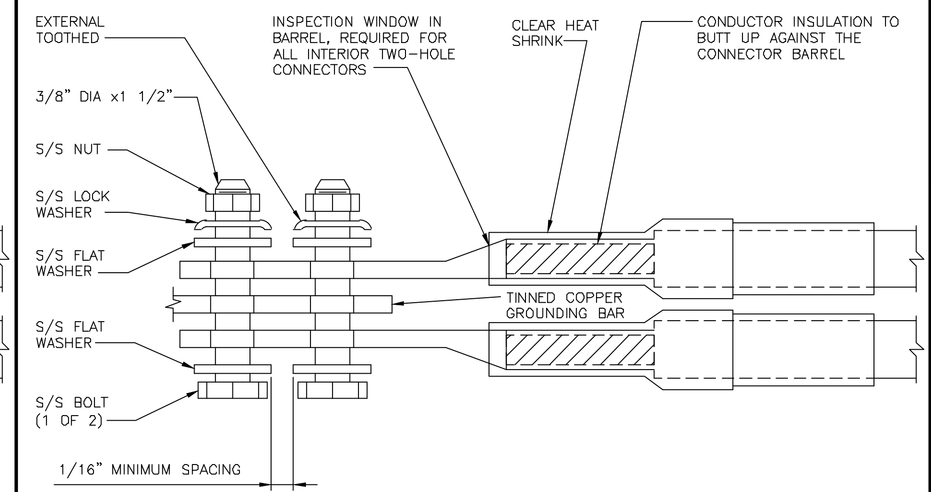
SHEET NUMBER
G-2

1. EXOTHERMIC WELD (2) TWO, #2 AWG BARE TINNED SOLID COPPER CONDUCTORS TO GROUND BAR. ROUTE CONDUCTORS TO BURIED GROUND RING AND PROVIDE PARALLEL EXOTHERMIC WELD.
2. ALL EXTERIOR GROUNDING HARDWARE SHALL BE STAINLESS STEEL 3/8" DIAMETER OR LARGER. ALL HARDWARE 18-8 STAINLESS STEEL INCLUDING LOCK WASHERS, COAT ALL SURFACES WITH AN ANTI-OXIDANT COMPOUND BEFORE MATING.
3. FOR GROUND BOND TO STEEL ONLY: COAT ALL SURFACES WITH AN ANTI-OXIDANT COMPOUND BEFORE MATING.
4. DO NOT INSTALL CABLE GROUNDING KIT AT A BEND AND ALWAYS DIRECT GROUND CONDUCTOR DOWN TO GROUNDING BUS.
5. NUT & WASHER SHALL BE PLACED ON THE FRONT SIDE OF THE GROUND BAR AND BOLTED ON THE BACK SIDE.
6. ALL GROUNDING PARTS AND EQUIPMENT TO BE SUPPLIED AND INSTALLED BY CONTRACTOR.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING ADDITIONAL GROUND BAR AS REQUIRED.
8. ENSURE THE WIRE INSULATION TERMINATION IS WITHIN 1/8" OF THE BARREL (NO SHINERS).

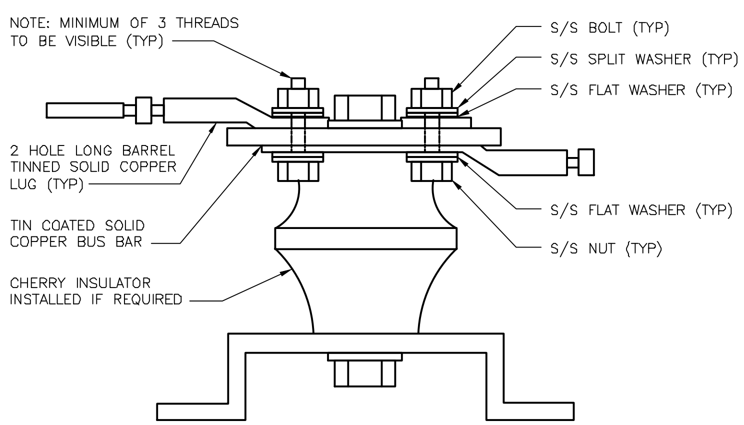
TYPICAL GROUNDING NOTES — NO SCALE — 1



TYPICAL EXTERIOR TWO HOLE LUG — NO SCALE — 2



TYPICAL INTERIOR TWO HOLE LUG — NO SCALE — 3



LUG DETAIL — NO SCALE — 4

NOT USED — NO SCALE — 5

NOT USED — NO SCALE — 6

NOT USED — NO SCALE — 7

NOT USED — NO SCALE — 8

NOT USED — NO SCALE — 9

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DISH Wireless L.L.C.
PROJECT INFORMATION

BOBOS00893A
123 PALMER ROAD
CHAPLIN, CT 06235

SHEET TITLE
GROUNDING DETAILS

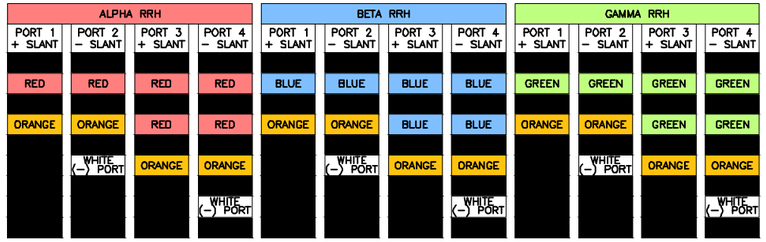
SHEET NUMBER
G-3

HYBRID/DISCREET CABLES

3/4" TAPE WIDTHS WITH 3/4" SPACING

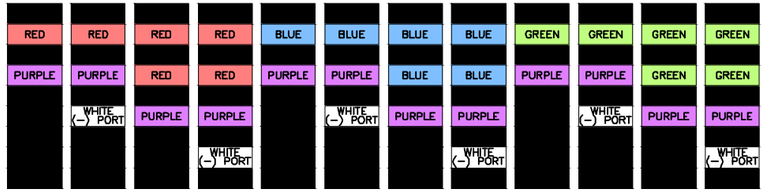
LOW-BAND RRH
(600 MHz N71 BASEBAND) +
(850 MHz N26 BAND) +
(700 MHz N29 BAND) - OPTIONAL PER MARKET

ADD FREQUENCY COLOR TO SECTOR BAND
(CBRS WILL USE YELLOW BAND)



MID-BAND RRH
(AWS BANDS N66+N70)

ADD FREQUENCY COLOR TO SECTOR BAND
(CBRS WILL USE YELLOW BANDS)



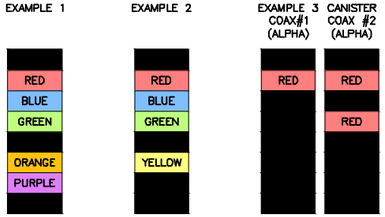
HYBRID/DISCREET CABLES

INCLUDE SECTOR BANDS BEING SUPPORTED ALONG WITH FREQUENCY BANDS.

EXAMPLE 1 - HYBRID, OR DISCREET, SUPPORTS ALL SECTORS, BOTH LOW-BANDS AND MID-BANDS.

EXAMPLE 2 - HYBRID, OR DISCREET, SUPPORTS CBRS ONLY, ALL SECTORS.

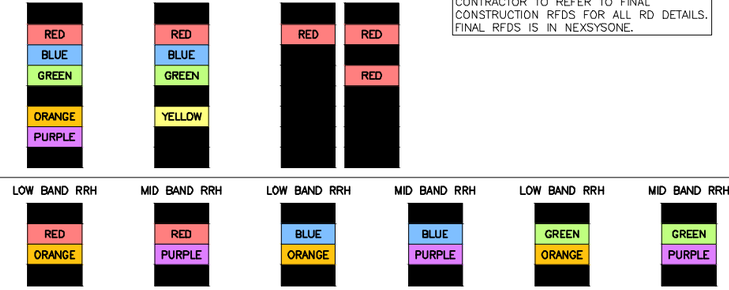
EXAMPLE 3 - MAIN COAX WITH GROUND MOUNTED RRHs.



CONTRACTOR TO REFER TO FINAL CONSTRUCTION RFDS FOR ALL RD DETAILS. FINAL RFDS IS IN NEXSYSONE.

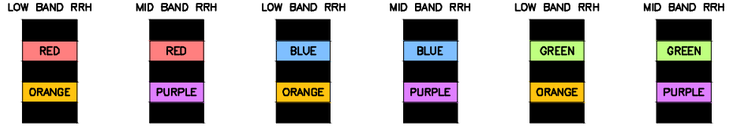
FIBER JUMPERS TO RRHs

LOW-BAND HHR FIBER CABLES HAVE SECTOR STRIPE ONLY.



POWER CABLES TO RRHs

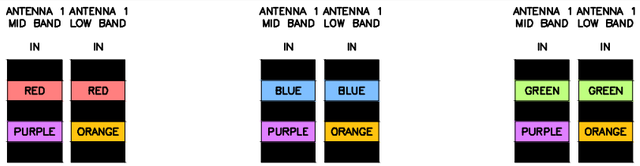
LOW-BAND RRH POWER CABLES HAVE SECTOR STRIPE ONLY



RET MOTORS AT ANTENNAS

RET CONTROL IS HANDLED BY THE MID-BAND RRH WHEN ONE SET OF RET PORTS EXIST ON ANTENNA.

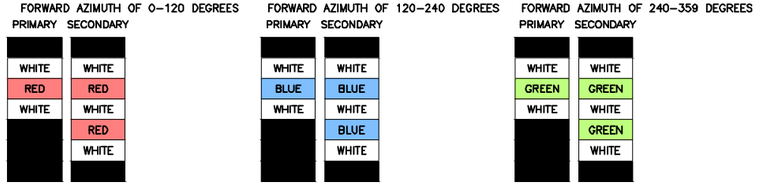
SEPARATE RET CABLES ARE USED WHEN ANTENNA PORTS PROVIDE INPUTS FOR BOTH LOW AND MID BANDS.



MICROWAVE RADIO LINKS

LINKS WILL HAVE A 1.5-2 INCH WHITE WRAP WITH THE AZIMUTH COLOR OVERLAPPING IN THE MIDDLE.
ADD ADDITIONAL SECTOR COLOR BANDS FOR EACH ADDITIONAL MW RADIO.

MICROWAVE CABLES WILL REQUIRE P-TOUCH LABELS INSIDE THE CABINET TO IDENTIFY THE LOCAL AND REMOTE SITE ID's.



LOW BANDS (N71+N26) OPTIONAL - (N29): ORANGE

AWS (N66+N70+H-BLOCK): PURPLE

CBRS TECH (3 GHz): YELLOW

NEGATIVE SLANT PORT ON ANT/RRH: WHITE

ALPHA SECTOR: RED

BETA SECTOR: BLUE

GAMMA SECTOR: GREEN

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DISH Wireless L.L.C.
PROJECT INFORMATION

BOBOS00893A
123 PALMER ROAD
CHAPLIN, CT 06235

SHEET TITLE

RF
CABLE COLOR CODES

SHEET NUMBER

RF-1

LEGEND

EXOTHERMIC CONNECTION

MECHANICAL CONNECTION

BUSS BAR INSULATOR

CHEMICAL ELECTROLYTIC GROUNDING SYSTEM

TEST CHEMICAL ELECTROLYTIC GROUNDING SYSTEM

EXOTHERMIC WITH INSPECTION SLEEVE

GROUNDING BAR

GROUND ROD

TEST GROUND ROD WITH INSPECTION SLEEVE

SINGLE POLE SWITCH

DUPLEX RECEPTACLE

DUPLEX GFCI RECEPTACLE

FLUORESCENT LIGHTING FIXTURE (2) TWO LAMPS 48-T8

SMOKE DETECTION (DC)

EMERGENCY LIGHTING (DC)

SECURITY LIGHT W/PHOTOCELL LITHONIA ALXW LED-1-25A400/51K-SR4-120-PE-DDBTXD

CHAIN LINK FENCE

WOOD/WROUGHT IRON FENCE

WALL STRUCTURE

LEASE AREA

PROPERTY LINE (PL)

SETBACKS

ICE BRIDGE

CABLE TRAY

WATER LINE

UNDERGROUND POWER

UNDERGROUND TELCO

OVERHEAD POWER

OVERHEAD TELCO

UNDERGROUND TELCO/POWER

ABOVE GROUND POWER

ABOVE GROUND TELCO

ABOVE GROUND TELCO/POWER

WORKPOINT

W.P.

SECTION REFERENCE

XX
X-X

DETAIL REFERENCE

XX
X-X

ABBREVIATIONS

AB	ANCHOR BOLT
ABV	ABOVE
AC	ALTERNATING CURRENT
ADDL	ADDITIONAL
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AGL	ABOVE GROUND LEVEL
AIC	AMPERAGE INTERRUPTION CAPACITY
ALUM	ALUMINUM
ALT	ALTERNATE
ANT	ANTENNA
APPROX	APPROXIMATE
ARCH	ARCHITECTURAL
ATS	AUTOMATIC TRANSFER SWITCH
AWG	AMERICAN WIRE GAUGE
BATT	BATTERY
BLDG	BUILDING
BLK	BLOCK
BLKG	BLOCKING
BM	BEAM
BTC	BARE TINNED COPPER CONDUCTOR
BOF	BOTTOM OF FOOTING
CAB	CABINET
CANT	CANTILEVERED
CHG	CHARGING
CLG	CEILING
CLR	CLEAR
COL	COLUMN
COMM	COMMON
CONC	CONCRETE
CONSTR	CONSTRUCTION
DBL	DOUBLE
DC	DIRECT CURRENT
DEPT	DEPARTMENT
DF	DOUGLAS FIR
DIA	DIAMETER
DIAG	DIAGONAL
DIM	DIMENSION
DWG	DRAWING
DWL	DOWEL
EA	EACH
EC	ELECTRICAL CONDUCTOR
EL.	ELEVATION
ELEC	ELECTRICAL
EMT	ELECTRICAL METALLIC TUBING
ENG	ENGINEER
EQ	EQUAL
EXP	EXPANSION
EXT	EXTERIOR
EW	EACH WAY
FAB	FABRICATION
FF	FINISH FLOOR
FG	FINISH GRADE
FIF	FACILITY INTERFACE FRAME
FIN	FINISH(ED)
FLR	FLOOR
FDN	FOUNDATION
FOC	FACE OF CONCRETE
FOM	FACE OF MASONRY
FOS	FACE OF STUD
FOW	FACE OF WALL
FS	FINISH SURFACE
FT	FOOT
FTG	FOOTING
GA	GAUGE
GEN	GENERATOR
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GLB	GLUE LAMINATED BEAM
GLV	GALVANIZED
GPS	GLOBAL POSITIONING SYSTEM
GND	GROUND
GSM	GLOBAL SYSTEM FOR MOBILE
HDG	HOT DIPPED GALVANIZED
HDR	HEADER
HGR	HANGER
HVAC	HEAT/VENTILATION/AIR CONDITIONING
HT	HEIGHT
IGR	INTERIOR GROUND RING
IN	INCH
INT	INTERIOR
LB(S)	POUND(S)
LF	LINEAR FEET
LTE	LONG TERM EVOLUTION
MAS	MASONRY
MAX	MAXIMUM
MB	MACHINE BOLT
MECH	MECHANICAL
MFR	MANUFACTURER
MGB	MASTER GROUND BAR
MIN	MINIMUM
MISC	MISCELLANEOUS
MTL	METAL
MTS	MANUAL TRANSFER SWITCH
MW	MICROWAVE
NEC	NATIONAL ELECTRIC CODE
NM	NEWTON METERS
NO.	NUMBER
#	NUMBER
NTS	NOT TO SCALE
OC	ON-CENTER
OSHA	OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION
OPNG	OPENING
P/C	PRECAST CONCRETE
PCS	PERSONAL COMMUNICATION SERVICES
PCU	PRIMARY CONTROL UNIT
PRC	PRIMARY RADIO CABINET
PP	POLARIZING PRESERVING
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PT	PRESSURE TREATED
PWR	POWER CABINET
QTY	QUANTITY
RAD	RADIUS
RECT	RECTIFIER
REF	REFERENCE
REINF	REINFORCEMENT
REQ'D	REQUIRED
RET	REMOTE ELECTRIC TILT
RF	RADIO FREQUENCY
RMC	RIGID METALLIC CONDUIT
RRH	REMOTE RADIO HEAD
RRU	REMOTE RADIO UNIT
RWY	RACEWAY
SCH	SCHEDULE
SHT	SHEET
SIAD	SMART INTEGRATED ACCESS DEVICE
SIM	SIMILAR
SPEC	SPECIFICATION
SQ	SQUARE
SS	STAINLESS STEEL
STD	STANDARD
STL	STEEL
TEMP	TEMPORARY
THK	THICKNESS
TMA	TOWER MOUNTED AMPLIFIER
TN	TOE NAIL
TOA	TOP OF ANTENNA
TOC	TOP OF CURB
TOF	TOP OF FOUNDATION
TOP	TOP OF PLATE (PARAPET)
TOS	TOP OF STEEL
TOW	TOP OF WALL
TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSION
TYP	TYPICAL
UG	UNDERGROUND
UL	UNDERWRITERS LABORATORY
UNO	UNLESS NOTED OTHERWISE
UMTS	UNIVERSAL MOBILE TELECOMMUNICATIONS SYSTEM
UPS	UNITERRUPTIBLE POWER SYSTEM (DC POWER PLANT)
VIF	VERIFIED IN FIELD
W	WIDE
W/	WITH
WD	WOOD
WP	WEATHERPROOF
WT	WEIGHT

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DISH Wireless L.L.C.
PROJECT INFORMATION

BOBOS00893A
123 PALMER ROAD
CHAPLIN, CT 06235

SHEET TITLE

LEGEND AND ABBREVIATIONS

SHEET NUMBER

GN-1

SITE ACTIVITY REQUIREMENTS:

1. NOTICE TO PROCEED – NO WORK SHALL COMMENCE PRIOR TO CONTRACTOR RECEIVING A WRITTEN NOTICE TO PROCEED (NTP) AND THE ISSUANCE OF A PURCHASE ORDER. PRIOR TO ACCESSING/ENTERING THE SITE YOU MUST CONTACT THE DISH Wireless L.L.C. AND TOWER OWNER NOC & THE DISH Wireless L.L.C. AND TOWER OWNER CONSTRUCTION MANAGER.

2. "LOOK UP" – DISH Wireless L.L.C. AND TOWER OWNER SAFETY CLIMB REQUIREMENT:

THE INTEGRITY OF THE SAFETY CLIMB AND ALL COMPONENTS OF THE CLIMBING FACILITY SHALL BE CONSIDERED DURING ALL STAGES OF DESIGN, INSTALLATION, AND INSPECTION. TOWER MODIFICATION, MOUNT REINFORCEMENTS, AND/OR EQUIPMENT INSTALLATIONS SHALL NOT COMPROMISE THE INTEGRITY OR FUNCTIONAL USE OF THE SAFETY CLIMB OR ANY COMPONENTS OF THE CLIMBING FACILITY ON THE STRUCTURE. THIS SHALL INCLUDE, BUT NOT BE LIMITED TO: PINCHING OF THE WIRE ROPE, BENDING OF THE WIRE ROPE FROM ITS SUPPORTS, DIRECT CONTACT OR CLOSE PROXIMITY TO THE WIRE ROPE WHICH MAY CAUSE FRICTIONAL WEAR, IMPACT TO THE ANCHORAGE POINTS IN ANY WAY, OR TO IMPEDE/BLOCK ITS INTENDED USE. ANY COMPROMISED SAFETY CLIMB, INCLUDING EXISTING CONDITIONS MUST BE TAGGED OUT AND REPORTED TO YOUR DISH Wireless L.L.C. AND DISH Wireless L.L.C. AND TOWER OWNER POC OR CALL THE NOC TO GENERATE A SAFETY CLIMB MAINTENANCE AND CONTRACTOR NOTICE TICKET.

3. PRIOR TO THE START OF CONSTRUCTION, ALL REQUIRED JURISDICTIONAL PERMITS SHALL BE OBTAINED. THIS INCLUDES, BUT IS NOT LIMITED TO, BUILDING, ELECTRICAL, MECHANICAL, FIRE, FLOOD ZONE, ENVIRONMENTAL, AND ZONING. AFTER ONSITE ACTIVITIES AND CONSTRUCTION ARE COMPLETED, ALL REQUIRED PERMITS SHALL BE SATISFIED AND CLOSED OUT ACCORDING TO LOCAL JURISDICTIONAL REQUIREMENTS.

4. ALL CONSTRUCTION MEANS AND METHODS; INCLUDING BUT NOT LIMITED TO, ERECTION PLANS, RIGGING PLANS, CLIMBING PLANS, AND RESCUE PLANS SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR RESPONSIBLE FOR THE EXECUTION OF THE WORK CONTAINED HEREIN, AND SHALL MEET ANSI/ASSE A10.48 (LATEST EDITION); FEDERAL, STATE, AND LOCAL REGULATIONS; AND ANY APPLICABLE INDUSTRY CONSENSUS STANDARDS RELATED TO THE CONSTRUCTION ACTIVITIES BEING PERFORMED. ALL RIGGING PLANS SHALL ADHERE TO ANSI/ASSE A10.48 (LATEST EDITION) AND DISH Wireless L.L.C. AND TOWER OWNER STANDARDS, INCLUDING THE REQUIRED INVOLVEMENT OF A QUALIFIED ENGINEER FOR CLASS IV CONSTRUCTION, TO CERTIFY THE SUPPORTING STRUCTURE(S) IN ACCORDANCE WITH ANSI/TIA-322 (LATEST EDITION).

5. ALL SITE WORK TO COMPLY WITH DISH Wireless L.L.C. AND TOWER OWNER INSTALLATION STANDARDS FOR CONSTRUCTION ACTIVITIES ON DISH Wireless L.L.C. AND TOWER OWNER TOWER SITE AND LATEST VERSION OF ANSI/TIA-1019-A-2012 "STANDARD FOR INSTALLATION, ALTERATION, AND MAINTENANCE OF ANTENNA SUPPORTING STRUCTURES AND ANTENNAS."

6. IF THE SPECIFIED EQUIPMENT CAN NOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION FOR APPROVAL BY DISH Wireless L.L.C. AND TOWER OWNER PRIOR TO PROCEEDING WITH ANY SUCH CHANGE OF INSTALLATION.

7. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS AND ORDINANCES. CONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.

8. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.

9. THE CONTRACTOR SHALL CONTACT UTILITY LOCATING SERVICES INCLUDING PRIVATE LOCATES SERVICES PRIOR TO THE START OF CONSTRUCTION.

10. ALL EXISTING ACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES WHERE ENCOUNTERED IN THE WORK, SHALL BE PROTECTED AT ALL TIMES AND WHERE REQUIRED FOR THE PROPER EXECUTION OF THE WORK, SHALL BE RELOCATED AS DIRECTED BY CONTRACTOR. EXTREME CAUTION SHOULD BE USED BY THE CONTRACTOR WHEN EXCAVATING OR DRILLING PIERS AROUND OR NEAR UTILITIES. CONTRACTOR SHALL PROVIDE SAFETY TRAINING FOR THE WORKING CREW. THIS WILL INCLUDE BUT NOT BE LIMITED TO A) FALL PROTECTION B) CONFINED SPACE C) ELECTRICAL SAFETY D) TRENCHING AND EXCAVATION E) CONSTRUCTION SAFETY PROCEDURES.

11. ALL SITE WORK SHALL BE AS INDICATED ON THE STAMPED CONSTRUCTION DRAWINGS AND DISH PROJECT SPECIFICATIONS, LATEST APPROVED REVISION.

12. CONTRACTOR SHALL KEEP THE SITE FREE FROM ACCUMULATING WASTE MATERIAL, DEBRIS, AND TRASH AT THE COMPLETION OF THE WORK. IF NECESSARY, RUBBISH, STUMPS, DEBRIS, STICKS, STONES AND OTHER REFUSE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF LEGALLY.

13. ALL EXISTING INACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES, WHICH INTERFERE WITH THE EXECUTION OF THE WORK, SHALL BE REMOVED AND/OR CAPPED, PLUGGED OR OTHERWISE DISCONTINUED AT POINTS WHICH WILL NOT INTERFERE WITH THE EXECUTION OF THE WORK, SUBJECT TO THE APPROVAL OF DISH Wireless L.L.C. AND TOWER OWNER, AND/OR LOCAL UTILITIES.

14. THE CONTRACTOR SHALL PROVIDE SITE SIGNAGE IN ACCORDANCE WITH THE TECHNICAL SPECIFICATION FOR SITE SIGNAGE REQUIRED BY LOCAL JURISDICTION AND SIGNAGE REQUIRED ON INDIVIDUAL PIECES OF EQUIPMENT, ROOMS, AND SHELTERS.

15. THE SITE SHALL BE GRADED TO CAUSE SURFACE WATER TO FLOW AWAY FROM THE CARRIER'S EQUIPMENT AND TOWER AREAS.

16. THE SUB GRADE SHALL BE COMPACTED AND BROUGHT TO A SMOOTH UNIFORM GRADE PRIOR TO FINISHED SURFACE APPLICATION.

17. THE AREAS OF THE OWNERS PROPERTY DISTURBED BY THE WORK AND NOT COVERED BY THE TOWER, EQUIPMENT OR DRIVEWAY, SHALL BE GRADED TO A UNIFORM SLOPE, AND STABILIZED TO PREVENT EROSION AS SPECIFIED ON THE CONSTRUCTION DRAWINGS AND/OR PROJECT SPECIFICATIONS.

18. CONTRACTOR SHALL MINIMIZE DISTURBANCE TO EXISTING SITE DURING CONSTRUCTION. EROSION CONTROL MEASURES, IF REQUIRED DURING CONSTRUCTION, SHALL BE IN CONFORMANCE WITH THE LOCAL GUIDELINES FOR EROSION AND SEDIMENT CONTROL.

19. THE CONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE TO THE SATISFACTION OF OWNER.

20. CONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS AND RADIOS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.

21. CONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION. TRASH AND DEBRIS SHOULD BE REMOVED FROM SITE ON A DAILY BASIS.

22. NO FILL OR EMBANKMENT MATERIAL SHALL BE PLACED ON FROZEN GROUND. FROZEN MATERIALS, SNOW OR ICE SHALL NOT BE PLACED IN ANY FILL OR EMBANKMENT.

GENERAL NOTES:

1.FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:

CONTRACTOR:GENERAL CONTRACTOR RESPONSIBLE FOR CONSTRUCTION

CARRIER:DISH Wireless L.L.C.

TOWER OWNER:TOWER OWNER

2. THESE DRAWINGS HAVE BEEN PREPARED USING STANDARDS OF PROFESSIONAL CARE AND COMPLETENESS NORMALLY EXERCISED UNDER SIMILAR CIRCUMSTANCES BY REPUTABLE ENGINEERS IN THIS OR SIMILAR LOCALITIES. IT IS ASSUMED THAT THE WORK DEPICTED WILL BE PERFORMED BY AN EXPERIENCED CONTRACTOR AND/OR WORKPEOPLE WHO HAVE A WORKING KNOWLEDGE OF THE APPLICABLE CODE STANDARDS AND REQUIREMENTS AND OF INDUSTRY ACCEPTED STANDARD GOOD PRACTICE. AS NOT EVERY CONDITION OR ELEMENT IS (OR CAN BE) EXPLICITLY SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL USE INDUSTRY ACCEPTED STANDARD GOOD PRACTICE FOR MISCELLANEOUS WORK NOT EXPLICITLY SHOWN.

3. THESE DRAWINGS REPRESENT THE FINISHED STRUCTURE. THEY DO NOT INDICATE THE MEANS OR METHODS OF CONSTRUCTION. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES. THE CONTRACTOR SHALL PROVIDE ALL MEASURES NECESSARY FOR PROTECTION OF LIFE AND PROPERTY DURING CONSTRUCTION. SUCH MEASURES SHALL INCLUDE, BUT NOT BE LIMITED TO, BRACING, FORMWORK, SHORING, ETC. SITE VISITS BY THE ENGINEER OR HIS REPRESENTATIVE WILL NOT INCLUDE INSPECTION OF THESE ITEMS AND IS FOR STRUCTURAL OBSERVATION OF THE FINISHED STRUCTURE ONLY.

4. NOTES AND DETAILS IN THE CONSTRUCTION DRAWINGS SHALL TAKE PRECEDENCE OVER GENERAL NOTES AND TYPICAL DETAILS. WHERE NO DETAILS ARE SHOWN, CONSTRUCTION SHALL CONFORM TO SIMILAR WORK ON THE PROJECT, AND/OR AS PROVIDED FOR IN THE CONTRACT DOCUMENTS. WHERE DISCREPANCIES OCCUR BETWEEN PLANS, DETAILS, GENERAL NOTES, AND SPECIFICATIONS, THE GREATER, MORE STRICT REQUIREMENTS, SHALL GOVERN. IF FURTHER CLARIFICATION IS REQUIRED CONTACT THE ENGINEER OF RECORD.

5. SUBSTANTIAL EFFORT HAS BEEN MADE TO PROVIDE ACCURATE DIMENSIONS AND MEASUREMENTS ON THE DRAWINGS TO ASSIST IN THE FABRICATION AND/OR PLACEMENT OF CONSTRUCTION ELEMENTS BUT IT IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO FIELD VERIFY THE DIMENSIONS, MEASUREMENTS, AND/OR CLEARANCES SHOWN IN THE CONSTRUCTION DRAWINGS PRIOR TO FABRICATION OR CUTTING OF ANY NEW OR EXISTING CONSTRUCTION ELEMENTS. IF IT IS DETERMINED THAT THERE ARE DISCREPANCIES AND/OR CONFLICTS WITH THE CONSTRUCTION DRAWINGS THE ENGINEER OF RECORD IS TO BE NOTIFIED AS SOON AS POSSIBLE.

6. PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING CONTRACTOR SHALL VISIT THE CELL SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS AND TO CONFIRM THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF CARRIER POC AND TOWER OWNER.

7. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS AND ORDINANCES. CONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.

8. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.

9. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.

10. IF THE SPECIFIED EQUIPMENT CAN NOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION FOR APPROVAL BY THE CARRIER AND TOWER OWNER PRIOR TO PROCEEDING WITH ANY SUCH CHANGE OF INSTALLATION.

11. CONTRACTOR IS TO PERFORM A SITE INVESTIGATION, BEFORE SUBMITTING BIDS, TO DETERMINE THE BEST ROUTING OF ALL CONDUITS FOR POWER, AND TELCO AND FOR GROUNDING CABLES AS SHOWN IN THE POWER, TELCO, AND GROUNDING PLAN DRAWINGS.

12. THE CONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE TO THE SATISFACTION OF DISH Wireless L.L.C. AND TOWER OWNER

13. CONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.

14. CONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION. TRASH AND DEBRIS SHOULD BE REMOVED FROM SITE ON A DAILY BASIS.

dish wireless.

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3/29/22

B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/23

DRAWN BY:	CHECKED BY:	APPROVED BY:
NGN	YF	YF

RFDS REV #: 1.0

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
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0	3/29/22	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER

157530.001.01

DISH Wireless L.L.C.
PROJECT INFORMATION

BOBOS00893A
123 PALMER ROAD
CHAPLIN, CT 06235

SHEET TITLE

GENERAL NOTES

SHEET NUMBER

GN-2

CONCRETE, FOUNDATIONS, AND REINFORCING STEEL:

1. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE ACI 301, ACI 318, ACI 336, ASTM A184, ASTM A185 AND THE DESIGN AND CONSTRUCTION SPECIFICATION FOR CAST-IN-PLACE CONCRETE.

2. UNLESS NOTED OTHERWISE, SOIL BEARING PRESSURE USED FOR DESIGN OF SLABS AND FOUNDATIONS IS ASSUMED TO BE 1000 psf.

3. ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH (f'c) OF 3000 psi AT 28 DAYS, UNLESS NOTED OTHERWISE. NO MORE THAN 90 MINUTES SHALL ELAPSE FROM BATCH TIME TO TIME OF PLACEMENT UNLESS APPROVED BY THE ENGINEER OF RECORD. TEMPERATURE OF CONCRETE SHALL NOT EXCEED 90°f AT TIME OF PLACEMENT.

4. CONCRETE EXPOSED TO FREEZE-THAW CYCLES SHALL CONTAIN AIR ENTRAINING ADMIXTURES. AMOUNT OF AIR ENTRAINMENT TO BE BASED ON SIZE OF AGGREGATE AND F3 CLASS EXPOSURE (VERY SEVERE). CEMENT USED TO BE TYPE II PORTLAND CEMENT WITH A MAXIMUM WATER-TO-CEMENT RATIO (W/C) OF 0.45.

5. ALL STEEL REINFORCING SHALL CONFORM TO ASTM A615. ALL WELDED WIRE FABRIC (WWF) SHALL CONFORM TO ASTM A185. ALL SPLICES SHALL BE CLASS "B" TENSION SPLICES, UNLESS NOTED OTHERWISE. ALL HOOKS SHALL BE STANDARD 90 DEGREE HOOKS, UNLESS NOTED OTHERWISE. YIELD STRENGTH (Fy) OF STANDARD DEFORMED BARS ARE AS FOLLOWS:

#4 BARS AND SMALLER 40 ksi

#5 BARS AND LARGER 60 ksi

6. THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCING STEEL UNLESS SHOWN OTHERWISE ON DRAWINGS:

- CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH 3"
- CONCRETE EXPOSED TO EARTH OR WEATHER:
- #6 BARS AND LARGER 2"
- #5 BARS AND SMALLER 1-1/2"
- CONCRETE NOT EXPOSED TO EARTH OR WEATHER:
- SLAB AND WALLS 3/4"
- BEAMS AND COLUMNS 1-1/2"

7. A TOOLED EDGE OR A 3/4" CHAMFER SHALL BE PROVIDED AT ALL EXPOSED EDGES OF CONCRETE, UNLESS NOTED OTHERWISE, IN ACCORDANCE WITH ACI 301 SECTION 4.2.4.

ELECTRICAL INSTALLATION NOTES:

1. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS, NEC AND ALL APPLICABLE FEDERAL, STATE, AND LOCAL CODES/ORDINANCES.

2. CONDUIT ROUTINGS ARE SCHEMATIC. CONTRACTOR SHALL INSTALL CONDUITS SO THAT ACCESS TO EQUIPMENT IS NOT BLOCKED AND TRIP HAZARDS ARE ELIMINATED.

3. WIRING, RACEWAY AND SUPPORT METHODS AND MATERIALS SHALL COMPLY WITH THE REQUIREMENTS OF THE NEC.

4. ALL CIRCUITS SHALL BE SEGREGATED AND MAINTAIN MINIMUM CABLE SEPARATION AS REQUIRED BY THE NEC.

4.1. ALL EQUIPMENT SHALL BEAR THE UNDERWRITERS LABORATORIES LABEL OF APPROVAL, AND SHALL CONFORM TO REQUIREMENT OF THE NATIONAL ELECTRICAL CODE.

4.2. ALL OVERCURRENT DEVICES SHALL HAVE AN INTERRUPTING CURRENT RATING THAT SHALL BE GREATER THAN THE SHORT CIRCUIT CURRENT TO WHICH THEY ARE SUBJECTED, 22,000 AIC MINIMUM. VERIFY AVAILABLE SHORT CIRCUIT CURRENT DOES NOT EXCEED THE RATING OF ELECTRICAL EQUIPMENT IN ACCORDANCE WITH ARTICLE 110.24 NEC OR THE MOST CURRENT ADOPTED CODE PRE THE GOVERNING JURISDICTION.

5. EACH END OF EVERY POWER PHASE CONDUCTOR, GROUNDING CONDUCTOR, AND TELCO CONDUCTOR OR CABLE SHALL BE LABELED WITH COLOR-CODED INSULATION OR ELECTRICAL TAPE (3M BRAND, 1/2" PLASTIC ELECTRICAL TAPE WITH UV PROTECTION, OR EQUAL). THE IDENTIFICATION METHOD SHALL CONFORM WITH NEC AND OSHA.

6. ALL ELECTRICAL COMPONENTS SHALL BE CLEARLY LABELED WITH LAMICOID TAGS SHOWING THEIR RATED VOLTAGE, PHASE CONFIGURATION, WIRE CONFIGURATION, POWER OR AMPACITY RATING AND BRANCH CIRCUIT ID NUMBERS (i.e. PANEL BOARD AND CIRCUIT ID'S).

7. PANEL BOARDS (ID NUMBERS) SHALL BE CLEARLY LABELED WITH PLASTIC LABELS.

8. TIE WRAPS ARE NOT ALLOWED.

9. ALL POWER AND EQUIPMENT GROUND WIRING IN TUBING OR CONDUIT SHALL BE SINGLE COPPER CONDUCTOR (#14 OR LARGER) WITH TYPE THHW, THWN, THWN-2, XHHW, XHHW-2, THW, THW-2, RHW, OR RHW-2 INSULATION UNLESS OTHERWISE SPECIFIED.

10. SUPPLEMENTAL EQUIPMENT GROUND WIRING LOCATED INDOORS SHALL BE SINGLE COPPER CONDUCTOR (#6 OR LARGER) WITH TYPE THHW, THWN, THWN-2, XHHW, XHHW-2, THW, THW-2, RHW, OR RHW-2 INSULATION UNLESS OTHERWISE SPECIFIED.

11. POWER AND CONTROL WIRING IN FLEXIBLE CORD SHALL BE MULTI-CONDUCTOR, TYPE SOOW CORD (#14 OR LARGER) UNLESS OTHERWISE SPECIFIED.

12. POWER AND CONTROL WIRING FOR USE IN CABLE TRAY SHALL BE MULTI-CONDUCTOR, TYPE TC CABLE (#14 OR LARGER), WITH TYPE THHW, THWN, THWN-2, XHHW, XHHW-2, THW, THW-2, RHW, OR RHW-2 INSULATION UNLESS OTHERWISE SPECIFIED.

13. ALL POWER AND GROUNDING CONNECTIONS SHALL BE CRIMP-STYLE, COMPRESSION WIRE LUGS AND WIRE NUTS BY THOMAS AND BETTS (OR EQUAL). LUGS AND WIRE NUTS SHALL BE RATED FOR OPERATION NOT LESS THAN 75° C (90° C IF AVAILABLE).

14. RACEWAY AND CABLE TRAY SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE AND NEC.

15. ELECTRICAL METALLIC TUBING (EMT), INTERMEDIATE METAL CONDUIT (IMC), OR RIGID METAL CONDUIT (RMC) SHALL BE USED FOR EXPOSED INDOOR LOCATIONS.

16. ELECTRICAL METALLIC TUBING (EMT) OR METAL-CLAD CABLE (MC) SHALL BE USED FOR CONCEALED INDOOR LOCATIONS.

17. SCHEDULE 40 PVC UNDERGROUND ON STRAIGHTS AND SCHEDULE 80 PVC FOR ALL ELBOWS/90s AND ALL APPROVED ABOVE GRADE PVC CONDUIT.

18. LIQUID-TIGHT FLEXIBLE METALLIC CONDUIT (LIQUID-TITE FLEX) SHALL BE USED INDOORS AND OUTDOORS, WHERE VIBRATION OCCURS OR FLEXIBILITY IS NEEDED.

19. CONDUIT AND TUBING FITTINGS SHALL BE THREADED OR COMPRESSION-TYPE AND APPROVED FOR THE LOCATION USED. SET SCREW FITTINGS ARE NOT ACCEPTABLE.

20. CABINETS, BOXES AND WIRE WAYS SHALL BE LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE AND THE NEC.

21. WIREWAYS SHALL BE METAL WITH AN ENAMEL FINISH AND INCLUDE A HINGED COVER, DESIGNED TO SWING OPEN DOWNWARDS (WIREMOLD SPECMATE WIREWAY).

22. SLOTTED WIRING DUCT SHALL BE PVC AND INCLUDE COVER (PANDUIT TYPE E OR EQUAL).

23. CONDUITS SHALL BE FASTENED SECURELY IN PLACE WITH APPROVED NON-PERFORATED STRAPS AND HANGERS. EXPLOSIVE DEVICES (i.e. POWDER-ACTUATED) FOR ATTACHING HANGERS TO STRUCTURE WILL NOT BE PERMITTED. CLOSELY FOLLOW THE LINES OF THE STRUCTURE, MAINTAIN CLOSE PROXIMITY TO THE STRUCTURE AND KEEP CONDUITS IN TIGHT ENVELOPES. CHANGES IN DIRECTION TO ROUTE AROUND OBSTACLES SHALL BE MADE WITH CONDUIT OUTLET BODIES. CONDUIT SHALL BE INSTALLED IN A NEAT AND WORKMANLIKE MANNER. PARALLEL AND PERPENDICULAR TO STRUCTURE WALL AND CEILING LINES. ALL CONDUIT SHALL BE FISHED TO CLEAR OBSTRUCTIONS. ENDS OF CONDUITS SHALL BE TEMPORARILY CAPPED FLUSH TO FINISH GRADE TO PREVENT CONCRETE, PLASTER OR DIRT FROM ENTERING. CONDUITS SHALL BE RIGIDLY CLAMPED TO BOXES BY GALVANIZED MALLEABLE IRON BUSHING ON INSIDE AND GALVANIZED MALLEABLE IRON LOCKNUT ON OUTSIDE AND INSIDE.

24. EQUIPMENT CABINETS, TERMINAL BOXES, JUNCTION BOXES AND PULL BOXES SHALL BE GALVANIZED OR EPOXY-COATED SHEET STEEL. SHALL MEET OR EXCEED UL 50 AND BE RATED NEMA 1 (OR BETTER) FOR INTERIOR LOCATIONS AND NEMA 3 (OR BETTER) FOR EXTERIOR LOCATIONS.

25. METAL RECEPTACLE, SWITCH AND DEVICE BOXES SHALL BE GALVANIZED, EPOXY-COATED OR NON-CORRODING; SHALL MEET OR EXCEED UL 514A AND NEMA OS 1 AND BE RATED NEMA 1 (OR BETTER) FOR INTERIOR LOCATIONS AND WEATHER PROTECTED (WP OR BETTER) FOR EXTERIOR LOCATIONS.

26. NONMETALLIC RECEPTACLE, SWITCH AND DEVICE BOXES SHALL MEET OR EXCEED NEMA OS 2 (NEWEST REVISION) AND BE RATED NEMA 1 (OR BETTER) FOR INTERIOR LOCATIONS AND WEATHER PROTECTED (WP OR BETTER) FOR EXTERIOR LOCATIONS.

27. THE CONTRACTOR SHALL NOTIFY AND OBTAIN NECESSARY AUTHORIZATION FROM THE CARRIER AND/OR DISH Wireless L.L.C. AND TOWER OWNER BEFORE COMMENCING WORK ON THE AC POWER DISTRIBUTION PANELS.

28. THE CONTRACTOR SHALL PROVIDE NECESSARY TAGGING ON THE BREAKERS, CABLES AND DISTRIBUTION PANELS IN ACCORDANCE WITH THE APPLICABLE CODES AND STANDARDS TO SAFEGUARD LIFE AND PROPERTY.

29. INSTALL LAMICOID LABEL ON THE METER CENTER TO SHOW "DISH Wireless L.L.C.".

30. ALL EMPTY/SPARE CONDUITS THAT ARE INSTALLED ARE TO HAVE A METERED MULE TAPE PULL CORD INSTALLED.

dish wireless.

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PROFESSIONAL ENGINEER

3/29/22

B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/23

DRAWN BY:	CHECKED BY:	APPROVED BY:
NGN	YF	YF

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CONSTRUCTION DOCUMENTS

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DISH Wireless L.L.C.
PROJECT INFORMATION

BOBOS00893A
123 PALMER ROAD
CHAPLIN, CT 06235

SHEET TITLE

GENERAL NOTES

SHEET NUMBER

GN-3

GROUNDING NOTES:

1. ALL GROUND ELECTRODE SYSTEMS (INCLUDING TELECOMMUNICATION, RADIO, LIGHTNING PROTECTION AND AC POWER GES'S) SHALL BE BONDED TOGETHER AT OR BELOW GRADE, BY TWO OR MORE COPPER BONDING CONDUCTORS IN ACCORDANCE WITH THE NEC.

2. THE CONTRACTOR SHALL PERFORM IEEE FALL-OF-POTENTIAL RESISTANCE TO EARTH TESTING (PER IEEE 1100 AND 81) FOR GROUND ELECTRODE SYSTEMS, THE CONTRACTOR SHALL FURNISH AND INSTALL SUPPLEMENTAL GROUND ELECTRODES AS NEEDED TO ACHIEVE A TEST RESULT OF 5 OHMS OR LESS.

3. THE CONTRACTOR 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 AND PROVIDE TESTING RESULTS.

4. METAL CONDUIT AND TRAY SHALL BE GROUNDED AND MADE ELECTRICALLY CONTINUOUS WITH LISTED BONDING FITTINGS OR BY BONDING ACROSS THE DISCONTINUITY WITH #6 COPPER WIRE UL APPROVED GROUNDING TYPE CONDUIT CLAMPS.

5. METAL RACEWAY SHALL NOT BE USED AS THE NEC REQUIRED EQUIPMENT GROUND CONDUCTOR. STRANDED COPPER CONDUCTORS WITH GREEN INSULATION, SIZED IN ACCORDANCE WITH THE NEC, SHALL BE FURNISHED AND INSTALLED WITH THE POWER CIRCUITS TO BTS EQUIPMENT.

6. EACH CABINET FRAME SHALL BE DIRECTLY CONNECTED TO THE MASTER GROUND BAR WITH GREEN INSULATED SUPPLEMENTAL EQUIPMENT GROUND WIRES, #6 STRANDED COPPER OR LARGER FOR INDOOR BTS; #2 BARE SOLID TINNED COPPER FOR OUTDOOR BTS.

7. CONNECTIONS TO THE GROUND BUS SHALL NOT BE DOUBLED UP OR STACKED BACK TO BACK CONNECTIONS ON OPPOSITE SIDE OF THE GROUND BUS ARE PERMITTED.

8. ALL EXTERIOR GROUND CONDUCTORS BETWEEN EQUIPMENT/GROUND BARS AND THE GROUND RING SHALL BE #2 SOLID TINNED COPPER UNLESS OTHERWISE INDICATED.

9. ALUMINUM CONDUCTOR OR COPPER CLAD STEEL CONDUCTOR SHALL NOT BE USED FOR GROUNDING CONNECTIONS.

10. USE OF 90° BENDS IN THE PROTECTION GROUNDING CONDUCTORS SHALL BE AVOIDED WHEN 45° BENDS CAN BE ADEQUATELY SUPPORTED.

11. EXOTHERMIC WELDS SHALL BE USED FOR ALL GROUNDING CONNECTIONS BELOW GRADE.

12. ALL GROUND CONNECTIONS ABOVE GRADE (INTERIOR AND EXTERIOR) SHALL BE FORMED USING HIGH PRESS CRIMPS.

13. COMPRESSION GROUND CONNECTIONS MAY BE REPLACED BY EXOTHERMIC WELD CONNECTIONS.

14. ICE BRIDGE BONDING CONDUCTORS SHALL BE EXOTHERMICALLY BONDED OR BOLTED TO THE BRIDGE AND THE TOWER GROUND BAR.

15. APPROVED ANTIOXIDANT COATINGS (i.e. CONDUCTIVE GEL OR PASTE) SHALL BE USED ON ALL COMPRESSION AND BOLTED GROUND CONNECTIONS.

16. ALL EXTERIOR GROUND CONNECTIONS SHALL BE COATED WITH A CORROSION RESISTANT MATERIAL.

17. MISCELLANEOUS ELECTRICAL AND NON-ELECTRICAL METAL BOXES, FRAMES AND SUPPORTS SHALL BE BONDED TO THE GROUND RING, IN ACCORDANCE WITH THE NEC.

18. BOND ALL METALLIC OBJECTS WITHIN 6 ft OF MAIN GROUND RING WITH (1) #2 BARE SOLID TINNED COPPER GROUND CONDUCTOR.

19. GROUND CONDUCTORS USED FOR THE FACILITY GROUNDING AND LIGHTNING PROTECTION SYSTEMS SHALL NOT BE ROUTED THROUGH METALLIC OBJECTS THAT FORM A RING AROUND THE CONDUCTOR, SUCH AS METALLIC CONDUITS, METAL SUPPORT CLIPS OR SLEEVES THROUGH WALLS OR FLOORS. WHEN IT IS REQUIRED TO BE HOUSED IN CONDUIT TO MEET CODE REQUIREMENTS OR LOCAL CONDITIONS, NON-METALLIC MATERIAL SUCH AS PVC CONDUIT SHALL BE USED. WHERE USE OF METAL CONDUIT IS UNAVOIDABLE (i.e., NONMETALLIC CONDUIT PROHIBITED BY LOCAL CODE) THE GROUND CONDUCTOR SHALL BE BONDED TO EACH END OF THE METAL CONDUIT.

20. ALL GROUNDS THAT TRANSITION FROM BELOW GRADE TO ABOVE GRADE MUST BE #2 BARE SOLID TINNED COPPER IN 3/4" NON-METALLIC, FLEXIBLE CONDUIT FROM 24" BELOW GRADE TO WITHIN 3" TO 6" OF CAD-WELD TERMINATION POINT. THE EXPOSED END OF THE CONDUIT MUST BE SEALED WITH SILICONE CAULK. (ADD TRANSITIONING GROUND STANDARD DETAIL AS WELL).

21. BUILDINGS WHERE THE MAIN GROUNDING CONDUCTORS ARE REQUIRED TO BE ROUTED TO GRADE, THE CONTRACTOR SHALL ROUTE TWO GROUNDING CONDUCTORS FROM THE ROOFTOP, TOWERS, AND WATER TOWERS GROUNDING RING, TO THE EXISTING GROUNDING SYSTEM, THE GROUNDING CONDUCTORS SHALL NOT BE SMALLER THAN 2/0 COPPER. ROOFTOP GROUNDING RING SHALL BE BONDED TO THE EXISTING GROUNDING SYSTEM, THE BUILDING STEEL COLUMNS, LIGHTNING PROTECTION SYSTEM, AND BUILDING MAIN WATER LINE (FERROUS OR NONFERROUS METAL PIPING ONLY). DO NOT ATTACH GROUNDING TO FIRE SPRINKLER SYSTEM PIPES.

dish wireless.

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LITTLETON, CO 80120

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STATE OF CONNECTICUT
CHAD W. TUTTLE
No. 23924
LICENSED
PROFESSIONAL ENGINEER
3/29/22

B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/23

DRAWN BY:	CHECKED BY:	APPROVED BY:
NGN	YF	YF

RFDS REV #: 1.0

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	10/28/21	ISSUED FOR REVIEW
0	3/29/22	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER

157530.001.01

DISH Wireless L.L.C.
PROJECT INFORMATION

BOBOS00893A
123 PALMER ROAD
CHAPLIN, CT 06235

SHEET TITLE

GENERAL NOTES

SHEET NUMBER

GN-4

AMERICAN TOWER®
CORPORATION

This report was prepared for American Tower Corporation by

TOWER ENGINEERING PROFESSIONALS

Structural Analysis Report

Structure	:	**146 ft Monopole**
ATC Site Name	:	**CT Chaplin South CT,CT**
ATC Site Number	:	**411216**
Engineering Number	:	**13733440_C3_03**
Proposed Carrier	:	**DISH WIRELESS L.L.C.**
Carrier Site Name	:	**BOBOS00893A**
Carrier Site Number	:	**BOBOS00893A**
Site Location	:	**123 Palmer Road** **Chaplin, CT 06235-2416** **41.7845, -72.1357**
County	:	**Windham**
Date	:	**October 22, 2021**
Max Usage	:	**71%**
Result	:	**Pass**

Prepared By:

Ayoub Sabor
TEP

Ayoub Sabor

Reviewed By:

STATE OF CONNECTICUT
AARON THOMAS RUCKER
32608
LICENSED
PROFESSIONAL ENGINEER

10/25/2021

COA : PEC.0001553

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Introduction

The purpose of this report is to summarize results of a structural analysis performed on the 146 ft Monopole to reflect the change in loading by DISH WIRELESS L.L.C..

Supporting Documents

Tower Drawings	EEI Project #12120 Rev. 2, dated November 21, 2003
Foundation Drawing	EEI Project #12120 Rev. 3, dated December 18, 2003
Geotechnical Report	GEOServices Project #31-151287M, dated September 8, 2015

Analysis

The tower was analyzed using American Tower Corporation's tower analysis software. This program considers an elastic three-dimensional model and second-order effects per ANSI/TIA-222.

Basic Wind Speed:	120 mph (3-second gust)
Basic Wind Speed w/ Ice:	50 mph (3-second gust) w/ 1.00" radial ice concurrent
Code:	ANSI/TIA-222-H / 2015 IBC / 2018 Connecticut State Building Code
Exposure Category:	B
Risk Category:	II
Topographic Factor Procedure:	Method 1
Topographic Category:	1
Spectral Response:	Ss = 0.19, S_1 = 0.06
Site Class:	D - Stiff Soil - Default

Conclusion

Based on the analysis results, the structure meets the requirements per the applicable codes listed above. The tower and foundation can support the equipment as described in this report.

If you have any questions or require additional information, please contact American Tower via email at Engineering@americantower.com. Please include the American Tower site name, site number, and engineering number in the subject line for any questions.

Existing and Reserved Equipment

Elev.[1] (ft)	Qty	Equipment	Mount Type	Lines	Carrier
148.0	3	Samsung MT6407-77A	Low Profile Platform	(18) 1 5/8" Coax (2) 1 5/8" Hybriflex	VERIZON WIRELESS
	4	Antel LPA-80080/4CF ___			
	2	Antel LPA-80063/4CF			
	6	Andrew SBNHH-1D65B			
147.0	3	Samsung B5/B13 RRH-BR04C			
	3	Samsung B2/B66A RRH-BR049			
	2	Raycap RC3DC-3315-PF-48			
137.0	3	RFS APXVTM14-ALU-I20	Platform with Handrails	(4) 1 1/4" Hybriflex Cable (7) 1 5/8" Coax	SPRINT NEXTEL
	3	Alcatel-Lucent TD-RRH8x20-25 w/ Solar Shield			
	6	Alcatel-Lucent RRH2x50-08			
	1	GPS			
	3	Commscope NNVV-65B-R4			
	3	Alcatel-Lucent 1900 MHz 4X45 RRH			
128.0	3	CCI OPA65R-BU8D	Platform with Handrails	(2) 0.39" (10mm) Fiber Trunk (6) 0.78" (19.7mm) 8 AWG 6 (6) 1 5/8" Coax (3) 2" conduit	AT&T MOBILITY
	3	CCI DMP65R-BU8D			
	3	Allgon 7770.00			
	3	Ericsson RRUS 4449 B5, B12			
	3	Ericsson RRUS 4478 B14			
	3	Ericsson Radio 8843 - B2 + B66A			
	3	Raycap DC6-48-60-18-8F			
	6	Powerwave Allgon LGP21401			
116.0	3	Ericsson KRY 112 489/2	Platform with Handrails	(1) 1 5/8" (1.63"-41.3mm) Fiber (24) 1 5/8" Coax	T-MOBILE
	3	Ericsson Radio 4449 B12,B71			
	3	RFS APXV18-206517			
	3	RFS APXVAARR24_43-U-NA20			
	3	Ericsson KRY 112 144/1			
63.0	1	GPS	Stand-Off	(1) 1/2" Coax	AT&T MOBILITY

Equipment to be Removed

Elev.[1] (ft)	Qty	Equipment	Mount Type	Lines	Carrier
No loading was considered as removed as part of this analysis.					

Proposed Equipment

Elev.[1] (ft)	Qty	Equipment	Mount Type	Lines	Carrier
105.0	1	Raycap RDIDC-9181-PF-48	Platform with Handrails	(1) 1.60" (40.6mm) Hybrid	DISH WIRELESS L.L.C.
	3	Fujitsu TA08025-B604			
	3	Fujitsu TA08025-B605			
	3	Commscope FFVV-65B-R2			

[1] Contracted elevations are shown for appurtenances within contracted installation tolerances. Appurtenances outside of contract limits are shown at installed elevations.

Install proposed lines outside the pole shaft. Stacking lines is not allowed.

Structure Usages

Structural Component	Controlling Usage	Pass/Fail
Anchor Bolts	64%	Pass
Shaft	66%	Pass
Base Plate	40%	Pass

Foundations

Reaction Component	Original Design Reactions	Factored Design Reactions*	Analysis Reactions	% of Design
Moment (Kips-Ft)	3157.8	4263.0	3040.0	71%
Shear (Kips)	30.5	41.2	27.5	67%
* The design reactions are factored by 1.35 per ANSI/TIA-222-H, Sec. 15.6.2				

The structure base reactions resulting from this analysis are acceptable when compared to those shown on the original structure drawings, therefore no modification or reinforcement of the foundation will be required.

Deflection, Twist and Sway*

Antenna Elevation (ft)	Antenna	Carrier	Deflection (ft)	Sway (Rotation) (°)
105.0	Raycap RDIDC-9181-PF-48	DISH WIRELESS L.L.C.	0.828	0.930
	Commscope FFVV-65B-R2			
	Fujitsu TA08025-B605			
	Fujitsu TA08025-B604			

***Deflection, Twist and Sway was evaluated considering a design wind speed of 60 mph (3-Second Gust) per ANSI/TIA-222-H**

Standard Conditions

All engineering services performed by A.T. Engineering Service, PLLC are prepared on the basis that the information used is current and correct. This information may consist of, but is not limited to the following:

- Information supplied by the client regarding antenna, mounts and feed line loading
- Information from drawings, design and analysis documents, and field notes in the possession of A.T. Engineering Service, PLLC

It is the responsibility of the client to ensure that the information provided to A.T. Engineering Service, PLLC and used in the performance of our engineering services is correct and complete.

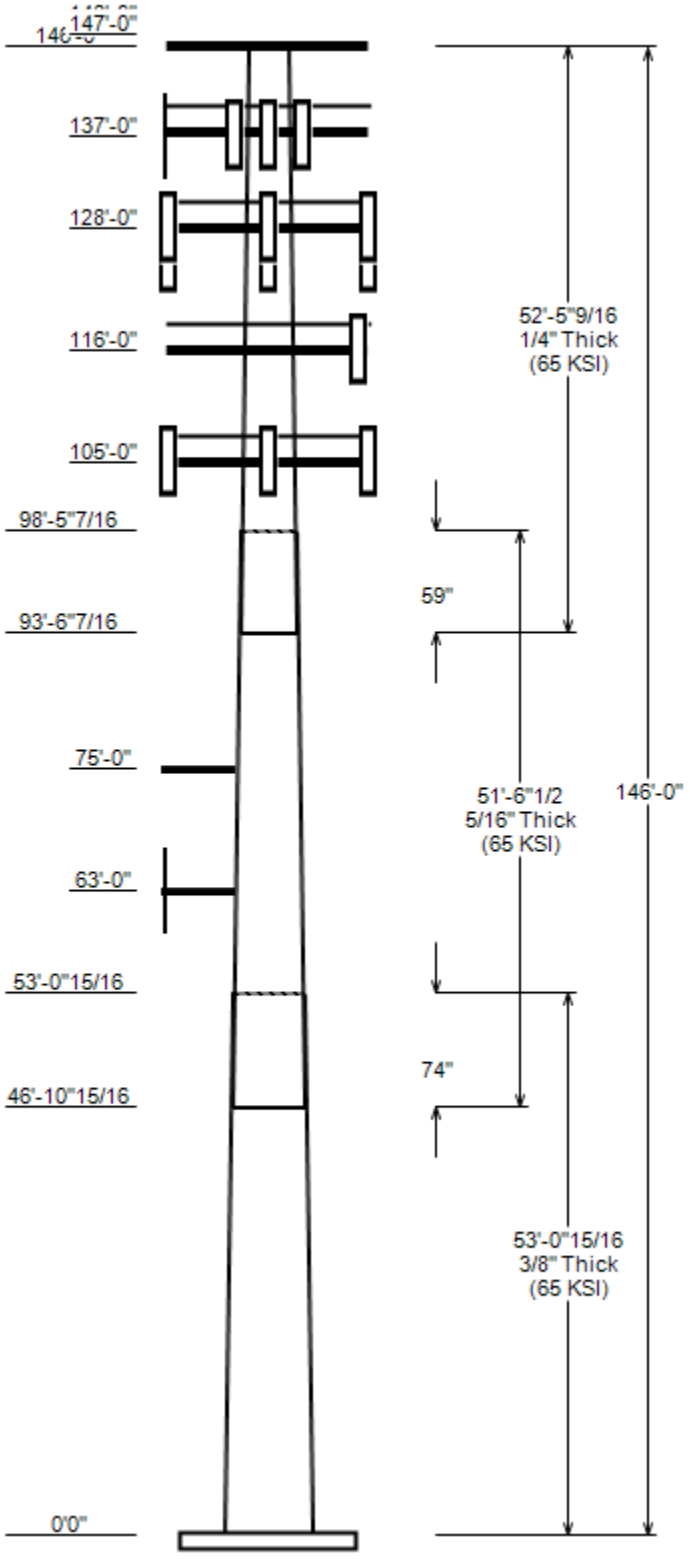
All assets of American Tower Corporation, its affiliates, and subsidiaries (collectively "American Tower") are inspected at regular intervals. Based upon these inspections and in the absence of information to the contrary, American Tower assumes that all structures were constructed in accordance with the drawings and specifications.

Unless explicitly agreed by both the client and A.T. Engineering Service, PLLC, all services will be performed in accordance with the current revision of ANSI/TIA-222.

All services are performed, results obtained, and recommendations made in accordance with generally accepted engineering principles and practices. A.T. Engineering Service, PLLC is not responsible for the conclusions, opinions and recommendations made by others based on the information supplied herein.

JOB INFORMATION

Asset :	411216, CT Chaplin South CT	Height :	146 ft
Client :	DISH WIRELESS L.L.C.	Base Width :	54.5
Code :	ANSI/TIA-222-H	Shape :	18 Sides



SITE PARAMETERS

Base Elev (ft):	0.00	Structure Class:	II
Taper :	0.22000 (In/ft)	Exposure :	B
Topographic Category :	1	Topographic Feature:	
Topo Method :	Method 1		

SECTION PROPERTIES

Shaft Section	Length (ft)	Diameter (in) Across Flats Top	Diameter (in) Across Flats Bottom	Thick (in)	Joint Type	Overlap Length (in)	Shape	Steel Grade (ksi)
1	53.080	42.82	54.50	0.375		0.000	18 Sides	65
2	51.540	33.46	44.80	0.312	Slip Joint	74.000	18 Sides	65
3	52.463	23.50	35.04	0.250	Slip Joint	59.000	18 Sides	65

DISCRETE APPURTENANCE

Attach Elev (ft)	Force Elev (ft)	Qty	Description
148.0	148.0	3	Samsung MT6407-77A
148.0	148.0	4	Antel LPA-80080/4CF ___
148.0	148.0	2	Antel LPA-80063/4CF
148.0	148.0	6	Andrew SBNHH-1D65B
147.0	147.0	3	Samsung B5/B13 RRH-BR04C
147.0	147.0	3	Samsung B2/B66A RRH-BR049
147.0	147.0	2	Raycap RC3DC-3315-PF-48
146.0	146.0	1	Flat Low Profile Platform
137.5	137.5	1	Site Pro RMQP-496-HK
137.0	137.0	1	Generic GPS
137.0	137.0	6	Alcatel-Lucent RRH2x50-08
137.0	137.0	3	Alcatel-Lucent 1900 MHz 4X45 R
137.0	137.0	3	Alcatel-Lucent TD-RRH8x20-25 w
137.0	137.0	3	RFS APXVTM14-ALU-I20
137.0	137.0	3	Commscope NNVV-65B-R4
128.0	126.0	6	Powerwave Allgon LGP21401
128.0	126.0	3	Raycap DC6-48-60-18-8F
128.0	128.0	3	Ericsson Radio 8843 - B2 + B66
128.0	128.0	3	Ericsson RRUS 4478 B14
128.0	128.0	3	Ericsson RRUS 4449 B5, B12
128.0	126.0	3	Allgon 7770.00
128.0	128.0	1	Generic Mount Reinforcement
128.0	128.0	3	CCI DMP65R-BU8D
128.0	128.0	3	CCI OPA65R-BU8D
128.0	128.0	1	Generic Round Platform with Ha
116.0	116.0	3	Ericsson KRY 112 144/1
116.0	116.0	3	Ericsson KRY 112 489/2
116.0	116.0	3	Ericsson Radio 4449 B12,B71
116.0	116.0	3	RFS APXV18-206517
116.0	116.0	1	Generic Mount Reinforcement
116.0	116.0	3	RFS APXVAARR24_43-U-NA20
116.0	116.0	1	Round Platform w/ Handrails
105.0	105.0	1	Raycap RDIDC-9181-PF-48
105.0	105.0	3	Fujitsu TA08025-B604
105.0	105.0	3	Fujitsu TA08025-B605
105.0	105.0	3	Commscope FFVV-65B-R2
105.0	105.0	1	Generic Flat Platform with Han
75.0	75.0	1	Stand-Off
63.0	63.0	1	Generic GPS
63.0	63.0	1	Stand-Off

LINEAR APPURTENANCE

Elev From (ft)	Elev To (ft)	Description	Exp To Wind

JOB INFORMATION

Asset :	411216, CT Chaplin South CT	Height :	146 ft
Client :	DISH WIRELESS L.L.C.	Base Width :	54.5
Code :	ANSI/TIA-222-H	Shape :	18 Sides

LINEAR APPURTENANCE

Elev From (ft)	Elev To (ft)	Description	Exp To Wind
0.0	149.0	1 5/8" Coax	No
0.0	148.0	1 5/8" Coax	No
0.0	147.0	1 5/8" Hybriflex	No
0.0	137.0	1 5/8" Coax	No
0.0	137.0	1 1/4" Hybriflex Cable	No
0.0	128.0	2" conduit	No
0.0	128.0	1 5/8" Coax	No
0.0	128.0	0.78" (19.7mm) 8 AWG 6	No
0.0	128.0	0.39" (10mm) Fiber Trunk	No
0.0	116.0	1 5/8" Coax	No
0.0	116.0	1 5/8" Coax	No
0.0	116.0	1 5/8" Coax	Yes
0.0	116.0	1 5/8" (1.63"-41.3mm) Fiber	No
0.0	105.0	1.60" (40.6mm) Hybrid	Yes
0.0	63.0	1/2" Coax	No

LOAD CASES

1.2D + 1.0W Normal	120 mph wind with no ice
0.9D + 1.0W Normal	120 mph wind with no ice
1.2D + 1.0Di + 1.0Wi Nor	50 mph wind with 1" radial ice
1.2D + 1.0Ev + 1.0Eh Nor	Seismic
0.9D - 1.0Ev + 1.0Eh Nor	Seismic (Reduced DL)
1.0D + 1.0W Service Norm	60 mph Wind with No Ice

REACTIONS

Load Case	Moment (kip-ft)	Shear (Kip)	Axial (Kip)
1.2D + 1.0W Normal	3040.01	27.53	56.26
0.9D + 1.0W Normal	2994.26	27.51	42.18
1.2D + 1.0Di + 1.0Wi Normal	774.05	7.09	75.36
1.2D + 1.0Ev + 1.0Eh Normal	175.47	1.41	56.37
0.9D - 1.0Ev + 1.0Eh Normal	172.17	1.41	39.14
1.0D + 1.0W Service Normal	673.83	6.16	46.92

DISH DEFLECTIONS

Load Case	Attach Elev (ft)	Deflection (in)	Rotation (deg)

ANALYSIS PARAMETERS

Location:	Windham County,CT	Height:	146 ft
Type and Shape:	Taper, 18 Sides	Base Diameter:	54.50 in
Manufacturer:	EEI	Top Diameter:	23.50 in
K_d (non-service):	0.95	Taper:	0.2200 in/ft
K_e:	0.98	Rotation:	0.000°

ICE & WIND PARAMETERS

Exposure Category:	B	Design Wind Speed w/o Ice:	120 mph
Risk Category:	II	Design Wind Speed w/Ice:	50 mph
Topo Factor Procedure:	Method 1	Operational Wind Speed:	60 mph
Topographic Category:	1	Design Ice Thickness:	1.00 in
Crest Height:	0 ft	HMSL:	505.00 ft

SEISMIC PARAMETERS

Analysis Method:	Equivalent Lateral Force Method				
Site Class:	D - Stiff Soil			Period Based on Rayleigh Method (sec):	2.64
T_L (sec):	6	P:	1	$C_{s:}$	0.030
$S_{s:}$	0.185	$S_{1:}$	0.055	C_s Max:	0.030
$F_{a:}$	1.600	$F_{v:}$	2.400	C_s Min:	0.030
$S_{ds:}$	0.197	$S_{d1:}$	0.088		

LOAD CASES

1.2D + 1.0W Normal	120 mph wind with no ice
0.9D + 1.0W Normal	120 mph wind with no ice
1.2D + 1.0Di + 1.0Wi Normal	50 mph wind with 1" radial ice
1.2D + 1.0Ev + 1.0Eh Normal	Seismic
0.9D - 1.0Ev + 1.0Eh Normal	Seismic (Reduced DL)
1.0D + 1.0W Service Normal	60 mph Wind with No Ice

SHAFT SECTION PROPERTIES

Sect Info	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Slip Joint len (in)	Weight (lb)	Bottom Dia (in)	Bottom Elev (ft)	Bottom Area (in²)	Bottom Ix (in⁴)	Bottom W/t Ratio	Bottom D/t Ratio	Top Dia (in)	Top Elev (in)	Top Area (in²)	Top Ix (in⁴)	Top W/t Ratio	Top D/t Ratio	Taper (in/ft)
1-18	53.08	0.3750	65		0.00	10,380	54.50	0.000	64.42	23,843.5	24.22	145.33	42.82	53.08	50.52	11,499.1	18.72	114.19	0.2200
2-18	51.54	0.3125	65	Slip	74.00	6,753	44.80	46.910	44.13	11,035.0	23.87	143.37	33.46	98.45	32.88	4,564.6	17.47	107.08	0.2200
3-18	52.46	0.2500	65	Slip	59.00	4,111	35.04	93.537	27.61	4,222.5	23.31	140.17	23.50	146.00	18.45	1,259.8	15.16	94.00	0.2200
				Shaft Weight		21,244													

DISCRETE APPURTENANCE PROPERTIES

Attach Elev (ft)	Description	Qty	Ka	Vert Ecc (ft)	No Ice Weight (lb)	No Ice EPAa (sf)	No Ice Orientation Factor	Ice Weight (lb)	Ice EPAa (sf)	Ice Orientation Factor
148.00	Andrew SBNHH-1D65B	6	0.80	0.000	50.70	8.173	0.69	167.56	10.058	0.69
148.00	Antel LPA-80080/4CF ___	4	0.80	0.000	12.00	5.399	0.62	95.71	3.166	0.62
148.00	Samsung MT6407-77A	3	0.80	0.000	81.60	4.709	0.61	149.48	5.721	0.61
148.00	Antel LPA-80063/4CF	2	0.80	0.000	20.00	6.142	0.82	149.92	6.819	0.82
147.00	Raycap RC3DC-3315-PF-48	2	0.80	0.000	32.00	3.781	0.77	104.86	4.663	0.77
147.00	Samsung B5/B13 RRH-BR04C	3	0.80	0.000	70.30	1.875	0.50	108.40	2.476	0.50
147.00	Samsung B2/B66A RRH-BR049	3	0.80	0.000	84.40	1.875	0.50	126.89	2.476	0.50
146.00	Flat Low Profile Platform	1	1.00	0.000	1500.00	26.100	1.00	1931.50	38.815	1.00
137.50	Site Pro RMQP-496-HK	1	1.00	0.000	2448.70	27.200	1.00	3499.16	43.385	1.00
137.00	Alcatel-Lucent RRH2x50-08	6	0.75	0.000	52.90	1.701	0.50	92.10	2.272	0.50
137.00	Alcatel-Lucent 1900 MHz 4X45 R	3	0.75	0.000	60.00	2.322	0.67	113.31	3.037	0.67
137.00	Generic GPS	1	0.75	0.000	10.00	0.900	1.00	29.36	1.323	1.00
137.00	Alcatel-Lucent TD-RRH8x20-25 w	3	0.75	0.000	70.00	4.046	0.61	132.52	4.924	0.61
137.00	RFS APXVTM14-ALU-I20	3	0.75	0.000	56.20	6.342	0.66	147.29	7.783	0.66
137.00	Commscope NNVV-65B-R4	3	0.75	0.000	77.40	12.271	0.64	243.62	14.126	0.64
128.00	Ericsson RRUS 4478 B14	3	0.75	0.000	59.90	1.842	0.50	96.21	2.431	0.50
128.00	Ericsson RRUS 4449 B5, B12	3	0.75	0.000	71.00	1.969	0.50	113.33	2.582	0.50
128.00	Allgon 7770.00	3	0.75	-2.000	35.00	5.508	0.65	116.75	6.183	0.65
128.00	Generic Mount Reinforcement	1	1.00	0.000	200.00	7.500	1.00	327.10	12.417	1.00
128.00	Powerwave Allgon LGP21401	6	0.75	-2.000	14.10	1.104	0.50	30.49	1.573	0.50
128.00	Raycap DC6-48-60-18-8F	3	0.75	-2.000	20.00	1.260	1.00	54.58	1.692	1.00
128.00	Generic Round Platform with Ha	1	1.00	0.000	2500.00	27.200	1.00	3563.75	43.254	1.00
128.00	CCI OPA65R-BU8D	3	0.75	0.000	76.50	18.089	0.63	302.96	20.514	0.63
128.00	CCI DMP65R-BU8D	3	0.75	0.000	95.70	17.871	0.63	318.92	20.291	0.63
128.00	Ericsson Radio 8843 - B2 + B66	3	0.75	0.000	71.90	1.650	0.50	112.36	2.206	0.50
116.00	Ericsson KRY 112 489/2	3	0.75	0.000	15.40	0.559	0.50	26.89	0.900	0.50
116.00	Round Platform w/ Handrails	1	1.00	0.000	2000.00	27.200	1.00	2843.30	43.108	1.00
116.00	RFS APXVAARR24_43-U-NA20	3	0.75	0.000	127.90	20.243	0.63	383.39	22.657	0.63
116.00	Generic Mount Reinforcement	1	1.00	0.000	200.00	7.500	1.00	325.95	12.373	1.00
116.00	Ericsson KRY 112 144/1	3	0.75	0.000	11.00	0.351	0.50	18.00	0.615	0.50
116.00	Ericsson Radio 4449 B12,B71	3	0.75	0.000	74.00	1.639	0.50	110.44	2.188	0.50
116.00	RFS APXV18-206517	3	0.75	0.000	26.40	5.050	0.68	85.88	6.589	0.68
105.00	Generic Flat Platform with Han	1	1.00	0.000	2500.00	42.400	1.00	3642.41	55.887	1.00
105.00	Commscope FFVV-65B-R2	3	0.75	0.000	70.80	12.271	0.64	232.41	14.074	0.64
105.00	Fujitsu TA08025-B605	3	0.75	0.000	75.00	1.962	0.50	115.29	2.554	0.50
105.00	Raycap RDIDC-9181-PF-48	1	0.75	0.000	21.90	1.867	1.00	58.50	2.446	1.00
105.00	Fujitsu TA08025-B604	3	0.75	0.000	63.90	1.962	0.50	101.40	2.554	0.50
75.00	Stand-Off	1	1.00	0.000	75.00	2.500	1.00	107.46	3.582	1.00
63.00	Generic GPS	1	1.00	0.000	10.00	0.900	1.00	27.88	1.291	1.00
63.00	Stand-Off	1	1.00	0.000	75.00	2.500	1.00	106.93	3.564	1.00
Totals	Num Loadings: 40	104			16,581.70			28,727.56		

LINEAR APPURTENANCE PROPERTIES

Load Case Azimuth (deg) : _

Elev From (ft)	Elev To (ft)	Qty	Description	Coax Dia (in)	Coax Wt (lb/ft)	Flat	Max Coax/ Row	Dist Between Rows(in)	Dist Between Cols(in)	Azimuth (deg)	Dist From Face (in)	Exposed To Wind	Carrier
0.00	149.00	6	1 5/8" Coax	1.98	0.82	N	0	0	0	0	0	N	VERIZON WIREL
0.00	148.00	12	1 5/8" Coax	1.98	0.82	N	0	0	0	0	0	N	VERIZON WIREL
0.00	147.00	2	1 5/8" Hybriflex	1.98	1.3	N	0	0	0	0	0	N	VERIZON WIREL
0.00	137.00	7	1 5/8" Coax	1.98	0.82	N	0	0	0	0	0	N	SPRINT NEXTEL
0.00	137.00	4	1 1/4" Hybriflex Cabl	1.54	1	N	0	0	0	0	0	N	SPRINT NEXTEL
0.00	128.00	6	1 5/8" Coax	1.98	0.82	N	0	0	0	0	0	N	AT&T MOBILITY
0.00	128.00	6	0.78" (19.7mm) 8 AWG	0.78	0.59	N	0	0	0	0	0	N	AT&T MOBILITY

Elev From (ft)	Elev To (ft)	Qty	Description	Coax Dia (in)	Coax Wt (lb/ft)	Flat	Max Coax/ Row	Dist Between Rows(in)	Dist Between Cols(in)	Azimuth (deg)	Dist From Face (in)	Exposed To Wind	Carrier
0.00	128.00	3	2" conduit	2.38	3.65	N	0	0	0	0	0	N	AT&T MOBILITY
0.00	128.00	2	0.39" (10mm) Fiber Tr	0.39	0.06	N	0	0	0	0	0	N	AT&T MOBILITY
0.00	116.00	12	1 5/8" Coax	1.98	0.82	N	0	0	0	0	0	N	T-MOBILE
0.00	116.00	6	1 5/8" Coax	1.98	0.82	N	0	0	0	0	0	N	T-MOBILE
0.00	116.00	6	1 5/8" Coax	1.98	0.82	N	6	1	1	90	1	Y	T-MOBILE
0.00	116.00	1	1 5/8" (1.63"-41.3mm)	1.63	1.61	N	0	0	0	0	0	N	T-MOBILE
0.00	105.00	1	1.60" (40.6mm) Hybrid	1.6	2.34	N	1	1	1	100	1	Y	DISH WIRELESS
0.00	63.00	1	1/2" Coax	0.63	0.15	N	0	0	0	0	0	N	AT&T MOBILITY

SEGMENT PROPERTIES

(Max Len: 5.ft)

Seg Top Elev (ft)	Description	Thick (in)	Flat Dia (in)	Area (in^2)	Ix (in^4)	W/t Ratio	D/t Ratio	F'y (ksi)	S (in^3)	Z (in^3)	Weight (lb)
0.00		0.3750	54.500	64.420	23,843.50	24.22	145.33	72.9	861.7	0.0	0.0
5.00		0.3750	53.400	63.111	22,418.80	23.70	142.40	73.5	826.9	0.0	1,084.9
10.00		0.3750	52.300	61.801	21,052.10	23.18	139.47	74.1	792.8	0.0	1,062.6
15.00		0.3750	51.199	60.492	19,742.10	22.66	136.53	74.7	759.5	0.0	1,040.3
20.00		0.3750	50.099	59.182	18,487.60	22.15	133.60	75.4	726.8	0.0	1,018.1
25.00		0.3750	48.999	57.873	17,287.30	21.63	130.66	76	694.9	0.0	995.8
30.00		0.3750	47.899	56.563	16,140.20	21.11	127.73	76.6	663.7	0.0	973.5
35.00		0.3750	46.799	55.254	15,045.00	20.59	124.80	77.2	633.2	0.0	951.2
40.00		0.3750	45.698	53.944	14,000.50	20.08	121.86	77.8	603.4	0.0	928.9
45.00		0.3750	44.598	52.635	13,005.50	19.56	118.93	78.4	574.4	0.0	906.7
46.91	Bot - Section 2	0.3750	44.177	52.134	12,637.60	19.36	117.81	78.6	563.4	0.0	341.1
50.00		0.3750	43.498	51.325	12,058.80	19.04	115.99	79	546.0	0.0	1,003.3
53.08	Top - Section 1	0.3125	43.445	42.781	10,055.80	23.10	139.03	74.2	455.9	0.0	985.6
55.00		0.3125	43.023	42.362	9,763.20	22.86	137.67	74.5	447.0	0.0	278.1
60.00		0.3125	41.923	41.271	9,028.00	22.24	134.15	75.2	424.2	0.0	711.5
63.00		0.3125	41.263	40.616	8,605.10	21.87	132.04	75.7	410.8	0.0	418.0
65.00		0.3125	40.822	40.179	8,330.70	21.62	130.63	76	401.9	0.0	274.9
70.00		0.3125	39.722	39.088	7,670.20	21.00	127.11	76.7	380.3	0.0	674.3
75.00		0.3125	38.622	37.997	7,045.60	20.38	123.59	77.4	359.3	0.0	655.8
80.00		0.3125	37.522	36.906	6,455.80	19.76	120.07	78.2	338.9	0.0	637.2
85.00		0.3125	36.422	35.815	5,899.90	19.14	116.55	78.9	319.1	0.0	618.6
90.00		0.3125	35.321	34.723	5,376.90	18.52	113.03	79.6	299.8	0.0	600.1
93.54	Bot - Section 3	0.3125	34.543	33.951	5,026.30	18.08	110.54	80.1	286.6	0.0	413.2
95.00		0.3125	34.221	33.632	4,885.80	17.90	109.51	80.3	281.2	0.0	305.1
98.45	Top - Section 2	0.2500	33.961	26.749	3,840.70	22.54	135.85	74.9	222.7	0.0	708.6
100.00		0.2500	33.621	26.479	3,725.60	22.30	134.48	75.2	218.3	0.0	140.1
105.00		0.2500	32.521	25.606	3,369.10	21.53	130.08	76.1	204.0	0.0	443.1
110.00		0.2500	31.421	24.733	3,036.20	20.75	125.68	77	190.3	0.0	428.2
115.00		0.2500	30.321	23.860	2,725.90	19.97	121.28	77.9	177.1	0.0	413.4
116.00		0.2500	30.100	23.685	2,666.50	19.82	120.40	78.1	174.5	0.0	80.9
120.00		0.2500	29.220	22.987	2,437.50	19.20	116.88	78.8	164.3	0.0	317.6
125.00		0.2500	28.120	22.114	2,170.20	18.42	112.48	79.7	152.0	0.0	383.7
128.00		0.2500	27.460	21.590	2,019.60	17.96	109.84	80.3	144.9	0.0	223.1
130.00		0.2500	27.020	21.241	1,923.20	17.65	108.08	80.6	140.2	0.0	145.7
135.00		0.2500	25.920	20.368	1,695.70	16.87	103.68	81.6	128.9	0.0	354.0
137.00		0.2500	25.480	20.019	1,610.00	16.56	101.92	81.9	124.5	0.0	137.4
137.50		0.2500	25.370	19.932	1,589.00	16.48	101.48	82	123.4	0.0	34.0
140.00		0.2500	24.820	19.495	1,486.90	16.09	99.28	82.5	118.0	0.0	167.7
145.00		0.2500	23.719	18.622	1,295.90	15.32	94.88	82.6	107.6	0.0	324.3
146.00		0.2500	23.499	18.448	1,259.80	15.16	94.00	82.6	105.6	0.0	63.1
								Totals:			21,243.7

Load Case: 1.2D + 1.0W Normal 120 mph wind with no ice 24 Iterations
Gust Response Factor: 1.10
Dead load Factor: 1.20
Wind Load Factor: 1.00

CALCULATED FORCES

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	Phi Pn (kips)	Phi Vn (kips)	Phi Tn (ft-kips)	Phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-56.26	-27.53	0.00	-3,040.0	0.00	3,040.01	4,227.69	1,130.57	5,526.88	4,712.55	0	0	0.659
5.00	-54.45	-27.26	0.00	-2,902.3	0.00	2,902.34	4,176.31	1,107.59	5,304.49	4,560.00	0.1	-0.18	0.650
10.00	-52.67	-27.00	0.00	-2,766.0	0.00	2,766.02	4,123.50	1,084.61	5,086.68	4,408.26	0.38	-0.36	0.641
15.00	-50.92	-26.73	0.00	-2,631.0	0.00	2,631.05	4,069.26	1,061.63	4,873.43	4,257.44	0.85	-0.54	0.631
20.00	-49.19	-26.46	0.00	-2,497.4	0.00	2,497.41	4,013.58	1,038.65	4,664.74	4,107.62	1.51	-0.72	0.621
25.00	-47.49	-26.19	0.00	-2,365.1	0.00	2,365.12	3,956.47	1,015.67	4,460.63	3,958.90	2.37	-0.91	0.610
30.00	-45.83	-25.92	0.00	-2,234.2	0.00	2,234.17	3,897.92	992.68	4,261.08	3,811.39	3.43	-1.1	0.599
35.00	-44.18	-25.64	0.00	-2,104.6	0.00	2,104.57	3,837.94	969.70	4,066.09	3,665.19	4.68	-1.29	0.586
40.00	-42.57	-25.34	0.00	-1,976.4	0.00	1,976.40	3,776.52	946.72	3,875.67	3,520.38	6.14	-1.48	0.573
45.00	-41.01	-25.11	0.00	-1,849.7	0.00	1,849.72	3,713.67	923.74	3,689.82	3,377.07	7.8	-1.68	0.560
46.91	-40.40	-24.95	0.00	-1,801.7	0.00	1,801.68	3,689.24	914.95	3,619.91	3,322.65	8.49	-1.76	0.554
50.00	-38.89	-24.73	0.00	-1,724.7	0.00	1,724.66	3,649.39	900.76	3,508.54	3,235.36	9.66	-1.88	0.544
53.08	-37.42	-24.54	0.00	-1,648.5	0.00	1,648.48	2,857.95	750.80	2,924.98	2,537.94	10.92	-2	0.664
55.00	-36.87	-24.33	0.00	-1,601.4	0.00	1,601.36	2,840.65	743.45	2,867.97	2,497.68	11.74	-2.08	0.655
60.00	-35.53	-24.06	0.00	-1,479.7	0.00	1,479.70	2,794.59	724.30	2,722.13	2,393.44	14.03	-2.3	0.632
63.00	-34.64	-23.77	0.00	-1,407.5	0.00	1,407.53	2,766.27	712.81	2,636.46	2,331.31	15.52	-2.44	0.617
65.00	-34.09	-23.56	0.00	-1,360.0	0.00	1,359.98	2,747.10	705.15	2,580.10	2,290.09	16.57	-2.53	0.607
70.00	-32.79	-23.21	0.00	-1,242.2	0.00	1,242.21	2,698.18	686.00	2,441.88	2,187.75	19.34	-2.75	0.581
75.00	-31.43	-22.77	0.00	-1,126.2	0.00	1,126.15	2,647.83	666.85	2,307.46	2,086.52	22.34	-2.97	0.553
80.00	-30.19	-22.41	0.00	-1,012.3	0.00	1,012.31	2,596.04	647.70	2,176.84	1,986.48	25.56	-3.19	0.522
85.00	-28.97	-22.05	0.00	-900.2	0.00	900.24	2,542.81	628.54	2,050.03	1,887.74	29.01	-3.4	0.490
90.00	-27.78	-21.73	0.00	-790.0	0.00	789.99	2,488.15	609.39	1,927.03	1,790.40	32.68	-3.6	0.454
93.54	-26.97	-21.52	0.00	-713.2	0.00	713.15	2,448.63	595.85	1,842.32	1,722.45	35.4	-3.74	0.426
95.00	-26.46	-21.34	0.00	-681.7	0.00	681.66	2,432.06	590.24	1,807.83	1,694.56	36.56	-3.8	0.414
98.45	-25.30	-21.11	0.00	-608.0	0.00	607.95	1,802.83	469.45	1,429.40	1,251.05	39.36	-3.93	0.502
100.00	-24.97	-20.90	0.00	-575.3	0.00	575.30	1,791.36	464.71	1,400.69	1,230.45	40.64	-3.99	0.484
105.00	-20.39	-17.76	0.00	-470.8	0.00	470.82	1,753.33	449.39	1,309.86	1,164.33	44.92	-4.19	0.418
110.00	-19.45	-17.37	0.00	-382.0	0.00	382.05	1,713.87	434.07	1,222.08	1,099.03	49.4	-4.37	0.361
115.00	-18.54	-17.11	0.00	-295.2	0.00	295.18	1,672.98	418.74	1,137.35	1,034.64	54.06	-4.53	0.298
116.00	-15.04	-13.78	0.00	-278.1	0.00	278.07	1,664.63	415.68	1,120.76	1,021.88	55.01	-4.56	0.282
120.00	-14.44	-13.44	0.00	-223.0	0.00	222.96	1,630.65	403.42	1,055.65	971.26	58.87	-4.66	0.240
125.00	-13.70	-13.12	0.00	-155.8	0.00	155.76	1,586.89	388.10	977.01	908.99	63.81	-4.77	0.181
128.00	-8.76	-8.31	0.00	-116.4	0.00	116.40	1,559.94	378.91	931.28	872.20	66.83	-4.83	0.140
130.00	-8.53	-8.06	0.00	-99.8	0.00	99.78	1,541.69	372.78	901.40	847.93	68.85	-4.86	0.124
135.00	-7.96	-7.79	0.00	-59.5	0.00	59.46	1,495.06	357.46	828.84	788.18	73.97	-4.92	0.081
137.00	-6.55	-5.92	0.00	-43.9	0.00	43.88	1,476.01	351.33	800.67	764.66	76.03	-4.93	0.062
137.50	-3.67	-4.46	0.00	-40.9	0.00	40.92	1,471.21	349.80	793.70	758.82	76.55	-4.94	0.057
140.00	-3.44	-4.20	0.00	-29.8	0.00	29.78	1,447.00	342.14	759.33	729.83	79.13	-4.95	0.043
145.00	-2.96	-3.98	0.00	-8.8	0.00	8.77	1,383.54	326.82	692.86	666.26	84.32	-4.97	0.015
146.00	0.00	-3.70	0.00	-4.8	0.00	4.79	1,370.57	323.76	679.93	653.76	85.36	-4.97	0.007

Load Case: 0.9D + 1.0W Normal 120 mph wind with no ice 24 Iterations
Gust Response Factor: 1.10
Dead load Factor: 0.90
Wind Load Factor: 1.00

CALCULATED FORCES

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	Phi Pn (kips)	Phi Vn (kips)	Phi Tn (ft-kips)	Phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-42.18	-27.51	0.00	-2,994.3	0.00	2,994.26	4,227.69	1,130.57	5,526.88	4,712.55	0	0	0.646
5.00	-40.81	-27.20	0.00	-2,856.7	0.00	2,856.71	4,176.31	1,107.59	5,304.49	4,560.00	0.09	-0.17	0.637
10.00	-39.45	-26.89	0.00	-2,720.7	0.00	2,720.72	4,123.50	1,084.61	5,086.68	4,408.26	0.37	-0.35	0.627
15.00	-38.12	-26.58	0.00	-2,586.3	0.00	2,586.29	4,069.26	1,061.63	4,873.43	4,257.44	0.84	-0.53	0.617
20.00	-36.81	-26.27	0.00	-2,453.4	0.00	2,453.40	4,013.58	1,038.65	4,664.74	4,107.62	1.49	-0.71	0.607
25.00	-35.52	-25.97	0.00	-2,322.0	0.00	2,322.03	3,956.47	1,015.67	4,460.63	3,958.90	2.33	-0.9	0.596
30.00	-34.25	-25.67	0.00	-2,192.2	0.00	2,192.18	3,897.92	992.68	4,261.08	3,811.39	3.37	-1.08	0.585
35.00	-33.00	-25.35	0.00	-2,063.9	0.00	2,063.86	3,837.94	969.70	4,066.09	3,665.19	4.61	-1.27	0.572
40.00	-31.77	-25.02	0.00	-1,937.1	0.00	1,937.12	3,776.52	946.72	3,875.67	3,520.38	6.04	-1.46	0.559
45.00	-30.59	-24.78	0.00	-1,812.0	0.00	1,812.01	3,713.67	923.74	3,689.82	3,377.07	7.67	-1.65	0.546
46.91	-30.13	-24.61	0.00	-1,764.6	0.00	1,764.60	3,689.24	914.95	3,619.91	3,322.65	8.34	-1.72	0.540
50.00	-28.99	-24.38	0.00	-1,688.6	0.00	1,688.64	3,649.39	900.76	3,508.54	3,235.36	9.5	-1.84	0.531
53.08	-27.87	-24.18	0.00	-1,613.6	0.00	1,613.55	2,857.95	750.80	2,924.98	2,537.94	10.73	-1.96	0.647
55.00	-27.45	-23.95	0.00	-1,567.1	0.00	1,567.12	2,840.65	743.45	2,867.97	2,497.68	11.53	-2.04	0.638
60.00	-26.43	-23.66	0.00	-1,447.4	0.00	1,447.37	2,794.59	724.30	2,722.13	2,393.44	13.79	-2.26	0.615
63.00	-25.76	-23.37	0.00	-1,376.4	0.00	1,376.38	2,766.27	712.81	2,636.46	2,331.31	15.25	-2.39	0.601
65.00	-25.33	-23.13	0.00	-1,329.6	0.00	1,329.65	2,747.10	705.15	2,580.10	2,290.09	16.27	-2.48	0.591
70.00	-24.34	-22.76	0.00	-1,214.0	0.00	1,214.02	2,698.18	686.00	2,441.88	2,187.75	18.99	-2.7	0.565
75.00	-23.31	-22.31	0.00	-1,100.2	0.00	1,100.20	2,647.83	666.85	2,307.46	2,086.52	21.93	-2.91	0.537
80.00	-22.37	-21.94	0.00	-988.7	0.00	988.67	2,596.04	647.70	2,176.84	1,986.48	25.09	-3.12	0.507
85.00	-21.44	-21.56	0.00	-879.0	0.00	878.99	2,542.81	628.54	2,050.03	1,887.74	28.48	-3.33	0.475
90.00	-20.55	-21.23	0.00	-771.2	0.00	771.18	2,488.15	609.39	1,927.03	1,790.40	32.07	-3.53	0.440
93.54	-19.93	-21.03	0.00	-696.1	0.00	696.09	2,448.63	595.85	1,842.32	1,722.45	34.74	-3.67	0.414
95.00	-19.54	-20.85	0.00	-665.3	0.00	665.32	2,432.06	590.24	1,807.83	1,694.56	35.87	-3.72	0.402
98.45	-18.67	-20.62	0.00	-593.3	0.00	593.33	1,802.83	469.45	1,429.40	1,251.05	38.61	-3.85	0.487
100.00	-18.42	-20.40	0.00	-561.4	0.00	561.43	1,791.36	464.71	1,400.69	1,230.45	39.86	-3.91	0.468
105.00	-15.02	-17.33	0.00	-459.4	0.00	459.44	1,753.33	449.39	1,309.86	1,164.33	44.06	-4.1	0.405
110.00	-14.31	-16.95	0.00	-372.8	0.00	372.80	1,713.87	434.07	1,222.08	1,099.03	48.45	-4.28	0.349
115.00	-13.62	-16.70	0.00	-288.1	0.00	288.07	1,672.98	418.74	1,137.35	1,034.64	53.01	-4.43	0.288
116.00	-11.05	-13.44	0.00	-271.4	0.00	271.37	1,664.63	415.68	1,120.76	1,021.88	53.94	-4.46	0.273
120.00	-10.60	-13.10	0.00	-217.6	0.00	217.63	1,630.65	403.42	1,055.65	971.26	57.72	-4.56	0.232
125.00	-10.05	-12.79	0.00	-152.1	0.00	152.11	1,586.89	388.10	977.01	908.99	62.55	-4.67	0.175
128.00	-6.43	-8.10	0.00	-113.7	0.00	113.73	1,559.94	378.91	931.28	872.20	65.5	-4.72	0.135
130.00	-6.26	-7.86	0.00	-97.5	0.00	97.53	1,541.69	372.78	901.40	847.93	67.49	-4.75	0.120
135.00	-5.83	-7.59	0.00	-58.2	0.00	58.25	1,495.06	357.46	828.84	788.18	72.49	-4.81	0.078
137.00	-4.81	-5.76	0.00	-43.1	0.00	43.07	1,476.01	351.33	800.67	764.66	74.51	-4.83	0.060
137.50	-2.67	-4.37	0.00	-40.2	0.00	40.19	1,471.21	349.80	793.70	758.82	75.02	-4.83	0.055
140.00	-2.50	-4.12	0.00	-29.3	0.00	29.27	1,447.00	342.14	759.33	729.83	77.55	-4.85	0.042
145.00	-2.15	-3.90	0.00	-8.7	0.00	8.69	1,383.54	326.82	692.86	666.26	82.63	-4.87	0.015
146.00	0.00	-3.70	0.00	-4.8	0.00	4.79	1,370.57	323.76	679.93	653.76	83.65	-4.87	0.007

Load Case: 1.2D + 1.0Di + 1.0Wi Normal		50 mph wind with 1" radial ice			23 Iterations
Gust Response Factor:	1.10	Ice Dead Load Factor	1.00		
Dead load Factor:	1.20			Ice Importance Factor	1.00
Wind Load Factor:	1.00				

CALCULATED FORCES

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	Phi Pn (kips)	Phi Vn (kips)	Phi Tn (ft-kips)	Phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-75.36	-7.09	0.00	-774.0	0.00	774.05	4,227.69	1,130.57	5,526.88	4,712.55	0	0	0.182
5.00	-73.30	-7.02	0.00	-738.6	0.00	738.59	4,176.31	1,107.59	5,304.49	4,560.00	0.02	-0.05	0.180
10.00	-71.24	-6.95	0.00	-703.5	0.00	703.48	4,123.50	1,084.61	5,086.68	4,408.26	0.1	-0.09	0.177
15.00	-69.19	-6.88	0.00	-668.7	0.00	668.72	4,069.26	1,061.63	4,873.43	4,257.44	0.22	-0.14	0.174
20.00	-67.17	-6.81	0.00	-634.3	0.00	634.33	4,013.58	1,038.65	4,664.74	4,107.62	0.39	-0.18	0.171
25.00	-65.17	-6.74	0.00	-600.3	0.00	600.29	3,956.47	1,015.67	4,460.63	3,958.90	0.6	-0.23	0.168
30.00	-63.19	-6.66	0.00	-566.6	0.00	566.61	3,897.92	992.68	4,261.08	3,811.39	0.87	-0.28	0.165
35.00	-61.24	-6.59	0.00	-533.3	0.00	533.30	3,837.94	969.70	4,066.09	3,665.19	1.19	-0.33	0.162
40.00	-59.32	-6.50	0.00	-500.4	0.00	500.37	3,776.52	946.72	3,875.67	3,520.38	1.56	-0.38	0.158
45.00	-57.44	-6.44	0.00	-467.9	0.00	467.86	3,713.67	923.74	3,689.82	3,377.07	1.98	-0.43	0.154
46.91	-56.72	-6.40	0.00	-455.5	0.00	455.53	3,689.24	914.95	3,619.91	3,322.65	2.16	-0.45	0.153
50.00	-55.02	-6.34	0.00	-435.8	0.00	435.79	3,649.39	900.76	3,508.54	3,235.36	2.46	-0.48	0.150
53.08	-53.34	-6.28	0.00	-416.3	0.00	416.27	2,857.95	750.80	2,924.98	2,537.94	2.77	-0.51	0.183
55.00	-52.70	-6.23	0.00	-404.2	0.00	404.21	2,840.65	743.45	2,867.97	2,497.68	2.98	-0.53	0.180
60.00	-51.05	-6.15	0.00	-373.1	0.00	373.08	2,794.59	724.30	2,722.13	2,393.44	3.56	-0.58	0.174
63.00	-49.94	-6.07	0.00	-354.6	0.00	354.63	2,766.27	712.81	2,636.46	2,331.31	3.94	-0.62	0.170
65.00	-49.29	-6.01	0.00	-342.5	0.00	342.48	2,747.10	705.15	2,580.10	2,290.09	4.21	-0.64	0.168
70.00	-47.70	-5.92	0.00	-312.4	0.00	312.41	2,698.18	686.00	2,441.88	2,187.75	4.91	-0.7	0.161
75.00	-46.02	-5.79	0.00	-282.8	0.00	282.83	2,647.83	666.85	2,307.46	2,086.52	5.67	-0.75	0.153
80.00	-44.48	-5.69	0.00	-253.9	0.00	253.86	2,596.04	647.70	2,176.84	1,986.48	6.48	-0.81	0.145
85.00	-42.97	-5.59	0.00	-225.4	0.00	225.40	2,542.81	628.54	2,050.03	1,887.74	7.36	-0.86	0.136
90.00	-41.49	-5.49	0.00	-197.5	0.00	197.46	2,488.15	609.39	1,927.03	1,790.40	8.29	-0.91	0.127
93.54	-40.46	-5.43	0.00	-178.0	0.00	178.03	2,448.63	595.85	1,842.32	1,722.45	8.97	-0.95	0.120
95.00	-39.87	-5.38	0.00	-170.1	0.00	170.08	2,432.06	590.24	1,807.83	1,694.56	9.26	-0.96	0.117
98.45	-38.50	-5.32	0.00	-151.5	0.00	151.49	1,802.83	469.45	1,429.40	1,251.05	9.97	-0.99	0.143
100.00	-38.09	-5.25	0.00	-143.3	0.00	143.27	1,791.36	464.71	1,400.69	1,230.45	10.3	-1.01	0.138
105.00	-31.57	-4.49	0.00	-117.0	0.00	117.01	1,753.33	449.39	1,309.86	1,164.33	11.38	-1.06	0.119
110.00	-30.34	-4.38	0.00	-94.5	0.00	94.54	1,713.87	434.07	1,222.08	1,099.03	12.51	-1.1	0.104
115.00	-29.14	-4.30	0.00	-72.6	0.00	72.64	1,672.98	418.74	1,137.35	1,034.64	13.68	-1.14	0.088
116.00	-23.73	-3.45	0.00	-68.3	0.00	68.34	1,664.63	415.68	1,120.76	1,021.88	13.92	-1.15	0.081
120.00	-22.96	-3.35	0.00	-54.5	0.00	54.52	1,630.65	403.42	1,055.65	971.26	14.89	-1.17	0.070
125.00	-22.01	-3.25	0.00	-37.8	0.00	37.76	1,586.89	388.10	977.01	908.99	16.14	-1.2	0.055
128.00	-13.92	-2.07	0.00	-28.0	0.00	28.00	1,559.94	378.91	931.28	872.20	16.9	-1.21	0.041
130.00	-13.60	-2.00	0.00	-23.9	0.00	23.86	1,541.69	372.78	901.40	847.93	17.41	-1.22	0.037
135.00	-12.82	-1.91	0.00	-13.9	0.00	13.88	1,495.06	357.46	828.84	788.18	18.69	-1.23	0.026
137.00	-10.10	-1.48	0.00	-10.1	0.00	10.06	1,476.01	351.33	800.67	764.66	19.21	-1.24	0.020
137.50	-6.28	-1.06	0.00	-9.3	0.00	9.33	1,471.21	349.80	793.70	758.82	19.34	-1.24	0.017
140.00	-5.93	-0.97	0.00	-6.7	0.00	6.69	1,447.00	342.14	759.33	729.83	19.99	-1.24	0.013
145.00	-5.26	-0.90	0.00	-1.8	0.00	1.81	1,383.54	326.82	692.86	666.26	21.29	-1.25	0.007
146.00	0.00	-0.79	0.00	-0.9	0.00	0.91	1,370.57	323.76	679.93	653.76	21.56	-1.25	0.001

Load Case: 1.0D + 1.0W Service Normal 60 mph Wind with No Ice 23 Iterations
Gust Response Factor: 1.10
Dead load Factor: 1.00
Wind Load Factor: 1.00

CALCULATED FORCES

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	Phi Pn (kips)	Phi Vn (kips)	Phi Tn (ft-kips)	Phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-46.92	-6.16	0.00	-673.8	0.00	673.83	4,227.69	1,130.57	5,526.88	4,712.55	0	0	0.154
5.00	-45.48	-6.09	0.00	-643.1	0.00	643.06	4,176.31	1,107.59	5,304.49	4,560.00	0.02	-0.04	0.152
10.00	-44.06	-6.02	0.00	-612.6	0.00	612.62	4,123.50	1,084.61	5,086.68	4,408.26	0.08	-0.08	0.150
15.00	-42.66	-5.96	0.00	-582.5	0.00	582.51	4,069.26	1,061.63	4,873.43	4,257.44	0.19	-0.12	0.147
20.00	-41.29	-5.89	0.00	-552.7	0.00	552.73	4,013.58	1,038.65	4,664.74	4,107.62	0.34	-0.16	0.145
25.00	-39.93	-5.83	0.00	-523.3	0.00	523.27	3,956.47	1,015.67	4,460.63	3,958.90	0.53	-0.2	0.142
30.00	-38.61	-5.76	0.00	-494.1	0.00	494.14	3,897.92	992.68	4,261.08	3,811.39	0.76	-0.24	0.140
35.00	-37.30	-5.69	0.00	-465.3	0.00	465.34	3,837.94	969.70	4,066.09	3,665.19	1.04	-0.29	0.137
40.00	-36.01	-5.62	0.00	-436.9	0.00	436.88	3,776.52	946.72	3,875.67	3,520.38	1.36	-0.33	0.134
45.00	-34.75	-5.57	0.00	-408.8	0.00	408.77	3,713.67	923.74	3,689.82	3,377.07	1.73	-0.37	0.130
46.91	-34.27	-5.53	0.00	-398.1	0.00	398.11	3,689.24	914.95	3,619.91	3,322.65	1.88	-0.39	0.129
50.00	-33.05	-5.48	0.00	-381.0	0.00	381.04	3,649.39	900.76	3,508.54	3,235.36	2.14	-0.42	0.127
53.08	-31.85	-5.44	0.00	-364.2	0.00	364.15	2,857.95	750.80	2,924.98	2,537.94	2.42	-0.44	0.155
55.00	-31.43	-5.39	0.00	-353.7	0.00	353.71	2,840.65	743.45	2,867.97	2,497.68	2.6	-0.46	0.153
60.00	-30.37	-5.33	0.00	-326.8	0.00	326.77	2,794.59	724.30	2,722.13	2,393.44	3.11	-0.51	0.147
63.00	-29.65	-5.26	0.00	-310.8	0.00	310.79	2,766.27	712.81	2,636.46	2,331.31	3.44	-0.54	0.144
65.00	-29.23	-5.21	0.00	-300.3	0.00	300.27	2,747.10	705.15	2,580.10	2,290.09	3.67	-0.56	0.142
70.00	-28.20	-5.13	0.00	-274.2	0.00	274.22	2,698.18	686.00	2,441.88	2,187.75	4.28	-0.61	0.136
75.00	-27.12	-5.03	0.00	-248.6	0.00	248.57	2,647.83	666.85	2,307.46	2,086.52	4.94	-0.66	0.129
80.00	-26.13	-4.95	0.00	-223.4	0.00	223.41	2,596.04	647.70	2,176.84	1,986.48	5.66	-0.7	0.123
85.00	-25.15	-4.87	0.00	-198.7	0.00	198.67	2,542.81	628.54	2,050.03	1,887.74	6.42	-0.75	0.115
90.00	-24.20	-4.79	0.00	-174.3	0.00	174.33	2,488.15	609.39	1,927.03	1,790.40	7.23	-0.8	0.107
93.54	-23.54	-4.75	0.00	-157.4	0.00	157.38	2,448.63	595.85	1,842.32	1,722.45	7.83	-0.83	0.101
95.00	-23.13	-4.71	0.00	-150.4	0.00	150.43	2,432.06	590.24	1,807.83	1,694.56	8.09	-0.84	0.098
98.45	-22.18	-4.66	0.00	-134.2	0.00	134.16	1,802.83	469.45	1,429.40	1,251.05	8.71	-0.87	0.120
100.00	-21.93	-4.61	0.00	-127.0	0.00	126.96	1,791.36	464.71	1,400.69	1,230.45	8.99	-0.88	0.116
105.00	-17.99	-3.92	0.00	-103.9	0.00	103.91	1,753.33	449.39	1,309.86	1,164.33	9.94	-0.93	0.100
110.00	-17.22	-3.83	0.00	-84.3	0.00	84.32	1,713.87	434.07	1,222.08	1,099.03	10.93	-0.96	0.087
115.00	-16.47	-3.78	0.00	-65.2	0.00	65.16	1,672.98	418.74	1,137.35	1,034.64	11.96	-1	0.073
116.00	-13.36	-3.04	0.00	-61.4	0.00	61.38	1,664.63	415.68	1,120.76	1,021.88	12.17	-1.01	0.068
120.00	-12.86	-2.96	0.00	-49.2	0.00	49.23	1,630.65	403.42	1,055.65	971.26	13.02	-1.03	0.059
125.00	-12.24	-2.90	0.00	-34.4	0.00	34.40	1,586.89	388.10	977.01	908.99	14.12	-1.05	0.046
128.00	-7.83	-1.83	0.00	-25.7	0.00	25.72	1,559.94	378.91	931.28	872.20	14.78	-1.07	0.035
130.00	-7.63	-1.78	0.00	-22.0	0.00	22.05	1,541.69	372.78	901.40	847.93	15.23	-1.07	0.031
135.00	-7.14	-1.72	0.00	-13.2	0.00	13.16	1,495.06	357.46	828.84	788.18	16.36	-1.09	0.021
137.00	-5.84	-1.30	0.00	-9.7	0.00	9.72	1,476.01	351.33	800.67	764.66	16.82	-1.09	0.017
137.50	-3.35	-0.99	0.00	-9.1	0.00	9.07	1,471.21	349.80	793.70	758.82	16.93	-1.09	0.014
140.00	-3.14	-0.93	0.00	-6.6	0.00	6.60	1,447.00	342.14	759.33	729.83	17.51	-1.09	0.011
145.00	-2.73	-0.88	0.00	-2.0	0.00	1.95	1,383.54	326.82	692.86	666.26	18.65	-1.1	0.005
146.00	0.00	-0.83	0.00	-1.1	0.00	1.07	1,370.57	323.76	679.93	653.76	18.88	-1.1	0.002

EQUIVALENT LATERAL FORCES METHOD ANALYSIS

(Based on ASCE7-16 Chapters 11, 12 and 15)

Spectral Response Acceleration for Short Period (S_S):	0.185
Spectral Response Acceleration at 1.0 Second Period (S_1):	0.055
Long-Period Transition Period (T_L – Seconds):	6
Importance Factor (I_e):	1.000
Site Coefficient F_a:	1.600
Site Coefficient F_v:	2.400
Response Modification Coefficient (R):	1.500
Design Spectral Response Acceleration at Short Period (S_{ds}):	0.197
Design Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.088
Seismic Response Coefficient (C_s):	0.030
Upper Limit C_S:	0.030
Lower Limit C_S:	0.030
Period based on Rayleigh Method (sec):	2.640
Redundancy Factor (p):	1.000
Seismic Force Distribution Exponent (k):	2.000
Total Unfactored Dead Load:	46.920 k
Seismic Base Shear (E):	1.410 k

1.2D + 1.0Ev + 1.0Eh Normal **Seismic**

Segment	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
39	145.5	80	1,703	0.004	6	100
38	142.5	411	8,347	0.020	28	509
37	138.75	211	4,064	0.010	14	262
36	137.25	43	804	0.002	3	53
35	136	192	3,544	0.008	12	238
34	132.5	489	8,593	0.020	29	607
33	129	200	3,327	0.008	11	248
32	126.5	363	5,808	0.014	19	450
31	122.5	617	9,256	0.022	31	765
30	118	504	7,020	0.017	23	625
29	115.5	149	1,985	0.005	7	184
28	112.5	753	9,530	0.023	32	933
27	107.5	768	8,873	0.021	30	952
26	102.5	794	8,346	0.020	28	985
25	99.2267	249	2,449	0.006	8	308
24	96.7267	951	8,900	0.021	30	1,179
23	94.2683	408	3,625	0.009	12	506
22	91.7683	662	5,573	0.013	19	820
21	87.5	951	7,284	0.017	24	1,179
20	82.5	970	6,602	0.016	22	1,202
19	77.5	988	5,937	0.014	20	1,225
18	72.5	1,007	5,293	0.013	18	1,248
17	67.5	1,026	4,673	0.011	16	1,271
16	64	415	1,702	0.004	6	515
15	61.5	629	2,380	0.006	8	780
14	57.5	1,064	3,516	0.008	12	1,318
13	54.04	413	1,207	0.003	4	512
12	51.54	1,202	3,194	0.008	11	1,490
11	48.4567	1,221	2,866	0.007	10	1,513
10	45.9567	476	1,005	0.002	3	590
9	42.5	1,259	2,274	0.005	8	1,560
8	37.5	1,281	1,801	0.004	6	1,588
7	32.5	1,303	1,377	0.003	5	1,615
6	27.5	1,326	1,002	0.002	3	1,643

Segment	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
5	22.5	1,348	682	0.002	2	1,671
4	17.5	1,370	420	0.001	1	1,698
3	12.5	1,392	218	0.000	1	1,726
2	7.5	1,415	80	0.000	0	1,753
1	2.5	1,437	9	0.000	0	1,781
Samsung MT6407-77A	146	245	5,218	0.012	17	303
Antel LPA-80080/4CF ___	146	48	1,023	0.002	3	59
Antel LPA-80063/4CF	146	40	853	0.002	3	50
Andrew SBNHH-1D65B	146	304	6,484	0.015	22	377
Samsung B5/B13 RRH-BR04C	146	211	4,496	0.011	15	261
Samsung B2/B66A RRH-BR049	146	253	5,397	0.013	18	314
Raycap RC3DC-3315-PF-48	146	64	1,364	0.003	5	79
Flat Low Profile Platform	146	1,500	31,974	0.076	107	1,859
Site Pro RMQP-496-HK	137.5	2,449	46,296	0.110	155	3,035
Generic GPS	137	10	188	0.000	1	12
Generic GPS	63	10	40	0.000	0	12
Alcatel-Lucent RRH2x50-08	137	317	5,957	0.014	20	393
Alcatel-Lucent 1900 MHz 4X45 RRH	137	180	3,378	0.008	11	223
Alcatel-Lucent TD-RRH8x20-25 w/ Solar Shield	137	210	3,941	0.009	13	260
RFS APXVTM14-ALU-I20	137	169	3,164	0.008	11	209
Commscope NNVV-65B-R4	137	232	4,358	0.010	15	288
Powerwave Allgon LGP21401	128	85	1,386	0.003	5	105
Raycap DC6-48-60-18-8F	128	60	983	0.002	3	74
Ericsson Radio 8843 - B2 + B66A	128	216	3,534	0.008	12	267
Ericsson RRUS 4478 B14	128	180	2,944	0.007	10	223
Ericsson RRUS 4449 B5, B12	128	213	3,490	0.008	12	264
Allgon 7770.00	128	105	1,720	0.004	6	130
Generic Mount Reinforcement	128	200	3,277	0.008	11	248
Generic Mount Reinforcement	116	200	2,691	0.006	9	248
CCI DMP65R-BU8D	128	287	4,704	0.011	16	356
CCI OPA65R-BU8D	128	230	3,760	0.009	13	284
Generic Round Platform with Handrails	128	2,500	40,960	0.097	137	3,099
Ericsson KRY 112 144/1	116	33	444	0.001	1	41
Ericsson KRY 112 489/2	116	46	622	0.002	2	57
Ericsson Radio 4449 B12,B71	116	222	2,987	0.007	10	275
RFS APXV18-206517	116	79	1,066	0.002	4	98
RFS APXVAARR24_43-U-NA20	116	384	5,163	0.012	17	476
Round Platform w/ Handrails	116	2,000	26,912	0.064	90	2,479
Raycap RDIDC-9181-PF-48	105	22	241	0.001	1	27
Fujitsu TA08025-B604	105	192	2,113	0.005	7	238
Fujitsu TA08025-B605	105	225	2,481	0.006	8	279
Commscope FFVV-65B-R2	105	212	2,342	0.006	8	263
Generic Flat Platform with Handrails	105	2,500	27,562	0.065	92	3,099
Stand-Off	75	75	422	0.001	1	93
Stand-Off	63	75	298	0.001	1	93
		46,919	421,503	1.000	1,408	58,154

0.9D - 1.0Ev + 1.0Eh Normal **Seismic (Reduced DL)**

Segment	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
39	145.5	80	1,703	0.004	6	69
38	142.5	411	8,347	0.020	28	354
37	138.75	211	4,064	0.010	14	182
36	137.25	43	804	0.002	3	37
35	136	192	3,544	0.008	12	165
34	132.5	489	8,593	0.020	29	421
33	129	200	3,327	0.008	11	172
32	126.5	363	5,808	0.014	19	312
31	122.5	617	9,256	0.022	31	531
30	118	504	7,020	0.017	23	434
29	115.5	149	1,985	0.005	7	128
28	112.5	753	9,530	0.023	32	648

Segment	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
27	107.5	768	8,873	0.021	30	661
26	102.5	794	8,346	0.020	28	684
25	99.2267	249	2,449	0.006	8	214
24	96.7267	951	8,900	0.021	30	819
23	94.2683	408	3,625	0.009	12	351
22	91.7683	662	5,573	0.013	19	569
21	87.5	951	7,284	0.017	24	819
20	82.5	970	6,602	0.016	22	835
19	77.5	988	5,937	0.014	20	851
18	72.5	1,007	5,293	0.013	18	867
17	67.5	1,026	4,673	0.011	16	883
16	64	415	1,702	0.004	6	358
15	61.5	629	2,380	0.006	8	541
14	57.5	1,064	3,516	0.008	12	915
13	54.04	413	1,207	0.003	4	356
12	51.54	1,202	3,194	0.008	11	1,035
11	48.4567	1,221	2,866	0.007	10	1,050
10	45.9567	476	1,005	0.002	3	409
9	42.5	1,259	2,274	0.005	8	1,083
8	37.5	1,281	1,801	0.004	6	1,102
7	32.5	1,303	1,377	0.003	5	1,122
6	27.5	1,326	1,002	0.002	3	1,141
5	22.5	1,348	682	0.002	2	1,160
4	17.5	1,370	420	0.001	1	1,179
3	12.5	1,392	218	0.000	1	1,198
2	7.5	1,415	80	0.000	0	1,217
1	2.5	1,437	9	0.000	0	1,237
Samsung MT6407-77A	146	245	5,218	0.012	17	211
Antel LPA-80080/4CF ___	146	48	1,023	0.002	3	41
Antel LPA-80063/4CF	146	40	853	0.002	3	34
Andrew SBNHH-1D65B	146	304	6,484	0.015	22	262
Samsung B5/B13 RRH-BR04C	146	211	4,496	0.011	15	181
Samsung B2/B66A RRH-BR049	146	253	5,397	0.013	18	218
Raycap RC3DC-3315-PF-48	146	64	1,364	0.003	5	55
Flat Low Profile Platform	146	1,500	31,974	0.076	107	1,291
Site Pro RMQP-496-HK	137.5	2,449	46,296	0.110	155	2,107
Generic GPS	137	10	188	0.000	1	9
Generic GPS	63	10	40	0.000	0	9
Alcatel-Lucent RRH2x50-08	137	317	5,957	0.014	20	273
Alcatel-Lucent 1900 MHz 4X45 RRH	137	180	3,378	0.008	11	155
Alcatel-Lucent TD-RRH8x20-25 w/ Solar Shield	137	210	3,941	0.009	13	181
RFS APXVTM14-ALU-I20	137	169	3,164	0.008	11	145
Commscope NNVV-65B-R4	137	232	4,358	0.010	15	200
Powerwave Allgon LGP21401	128	85	1,386	0.003	5	73
Raycap DC6-48-60-18-8F	128	60	983	0.002	3	52
Ericsson Radio 8843 - B2 + B66A	128	216	3,534	0.008	12	186
Ericsson RRUS 4478 B14	128	180	2,944	0.007	10	155
Ericsson RRUS 4449 B5, B12	128	213	3,490	0.008	12	183
Allgon 7770.00	128	105	1,720	0.004	6	90
Generic Mount Reinforcement	128	200	3,277	0.008	11	172
Generic Mount Reinforcement	116	200	2,691	0.006	9	172
CCI DMP65R-BU8D	128	287	4,704	0.011	16	247
CCI OPA65R-BU8D	128	230	3,760	0.009	13	197
Generic Round Platform with Handrails	128	2,500	40,960	0.097	137	2,151
Ericsson KRY 112 144/1	116	33	444	0.001	1	28
Ericsson KRY 112 489/2	116	46	622	0.002	2	40
Ericsson Radio 4449 B12,B71	116	222	2,987	0.007	10	191
RFS APXV18-206517	116	79	1,066	0.002	4	68
RFS APXVAARR24_43-U-NA20	116	384	5,163	0.012	17	330
Round Platform w/ Handrails	116	2,000	26,912	0.064	90	1,721
Raycap RDIDC-9181-PF-48	105	22	241	0.001	1	19
Fujitsu TA08025-B604	105	192	2,113	0.005	7	165
Fujitsu TA08025-B605	105	225	2,481	0.006	8	194
Commscope FFVV-65B-R2	105	212	2,342	0.006	8	183
Generic Flat Platform with Handrails	105	2,500	27,562	0.065	92	2,151
Stand-Off	75	75	422	0.001	1	65
Stand-Off	63	75	298	0.001	1	65
		46,919	421,503	1.000	1,408	40,375

1.2D + 1.0Ev + 1.0Eh Normal **Seismic**

CALCULATED FORCES

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (fr-kips)	Mu Mx (ft-kips)	Resultant Moment (ft-kips)	Phi Pn (kips)	Phi Vn (kips)	Phi Tn (kips)	Phi Mn (kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-56.37	-1.41	0.00	-175.47	0.00	175.47	4,227.69	1,130.57	5,527	4,712.55	0.00	0.00	0.05
5.00	-54.62	-1.42	0.00	-168.41	0.00	168.41	4,176.31	1,107.59	5,304	4,560.00	0.01	-0.01	0.05
10.00	-52.89	-1.43	0.00	-161.30	0.00	161.30	4,123.50	1,084.61	5,087	4,408.26	0.02	-0.02	0.05
15.00	-51.19	-1.44	0.00	-154.15	0.00	154.15	4,069.26	1,061.63	4,873	4,257.44	0.05	-0.03	0.05
20.00	-49.52	-1.44	0.00	-146.97	0.00	146.97	4,013.58	1,038.65	4,665	4,107.62	0.09	-0.04	0.05
25.00	-47.88	-1.45	0.00	-139.75	0.00	139.75	3,956.47	1,015.67	4,461	3,958.90	0.14	-0.05	0.05
30.00	-46.27	-1.45	0.00	-132.51	0.00	132.51	3,897.92	992.68	4,261	3,811.39	0.20	-0.06	0.05
35.00	-44.68	-1.45	0.00	-125.25	0.00	125.25	3,837.94	969.70	4,066	3,665.19	0.27	-0.08	0.05
40.00	-43.12	-1.45	0.00	-117.99	0.00	117.99	3,776.52	946.72	3,876	3,520.38	0.36	-0.09	0.05
45.00	-42.53	-1.45	0.00	-110.74	0.00	110.74	3,713.67	923.74	3,690	3,377.07	0.46	-0.10	0.04
46.91	-41.01	-1.44	0.00	-107.96	0.00	107.96	3,689.24	914.95	3,620	3,322.65	0.50	-0.10	0.04
50.00	-39.52	-1.44	0.00	-103.50	0.00	103.50	3,649.39	900.76	3,509	3,235.36	0.57	-0.11	0.04
53.08	-39.01	-1.44	0.00	-99.07	0.00	99.07	2,857.95	750.80	2,925	2,537.94	0.64	-0.12	0.05
55.00	-37.69	-1.43	0.00	-96.32	0.00	96.32	2,840.65	743.45	2,868	2,497.68	0.69	-0.12	0.05
60.00	-36.91	-1.42	0.00	-89.18	0.00	89.18	2,794.59	724.30	2,722	2,393.44	0.83	-0.14	0.05
63.00	-36.29	-1.42	0.00	-84.91	0.00	84.91	2,766.27	712.81	2,636	2,331.31	0.91	-0.14	0.05
65.00	-35.02	-1.41	0.00	-82.07	0.00	82.07	2,747.10	705.15	2,580	2,290.09	0.98	-0.15	0.05
70.00	-33.77	-1.39	0.00	-75.04	0.00	75.04	2,698.18	686.00	2,442	2,187.75	1.14	-0.16	0.05
75.00	-32.45	-1.38	0.00	-68.07	0.00	68.07	2,647.83	666.85	2,307	2,086.52	1.32	-0.18	0.05
80.00	-31.25	-1.36	0.00	-61.19	0.00	61.19	2,596.04	647.70	2,177	1,986.48	1.51	-0.19	0.04
85.00	-30.07	-1.34	0.00	-54.40	0.00	54.40	2,542.81	628.54	2,050	1,887.74	1.72	-0.20	0.04
90.00	-29.25	-1.32	0.00	-47.72	0.00	47.72	2,488.15	609.39	1,927	1,790.40	1.94	-0.21	0.04
93.54	-28.75	-1.31	0.00	-43.06	0.00	43.06	2,448.63	595.85	1,842	1,722.45	2.10	-0.22	0.04
95.00	-27.57	-1.28	0.00	-41.14	0.00	41.14	2,432.06	590.24	1,808	1,694.56	2.17	-0.23	0.04
98.45	-27.26	-1.27	0.00	-36.74	0.00	36.74	1,802.83	469.45	1,429	1,251.05	2.33	-0.23	0.04
100.00	-26.27	-1.24	0.00	-34.77	0.00	34.77	1,791.36	464.71	1,401	1,230.45	2.41	-0.24	0.04
105.00	-21.42	-1.08	0.00	-28.56	0.00	28.56	1,753.33	449.39	1,310	1,164.33	2.67	-0.25	0.04
110.00	-20.48	-1.05	0.00	-23.17	0.00	23.17	1,713.87	434.07	1,222	1,099.03	2.93	-0.26	0.03
115.00	-20.30	-1.04	0.00	-17.93	0.00	17.93	1,672.98	418.74	1,137	1,034.64	3.21	-0.27	0.03
116.00	-16.00	-0.87	0.00	-16.89	0.00	16.89	1,664.63	415.68	1,121	1,021.88	3.27	-0.27	0.03
120.00	-15.24	-0.83	0.00	-13.43	0.00	13.43	1,630.65	403.42	1,056	971.26	3.50	-0.28	0.02
125.00	-14.79	-0.81	0.00	-9.26	0.00	9.26	1,586.89	388.10	977	908.99	3.80	-0.29	0.02
128.00	-9.49	-0.55	0.00	-6.82	0.00	6.82	1,559.94	378.91	931	872.20	3.98	-0.29	0.01
130.00	-8.88	-0.52	0.00	-5.72	0.00	5.72	1,541.69	372.78	901	847.93	4.10	-0.29	0.01
135.00	-8.65	-0.51	0.00	-3.11	0.00	3.11	1,495.06	357.46	829	788.18	4.41	-0.29	0.01
137.00	-7.21	-0.43	0.00	-2.09	0.00	2.09	1,476.01	351.33	801	764.66	4.53	-0.29	0.01
137.50	-3.91	-0.24	0.00	-1.88	0.00	1.88	1,471.21	349.80	794	758.82	4.56	-0.29	0.01
140.00	-3.40	-0.21	0.00	-1.27	0.00	1.27	1,447.00	342.14	759	729.83	4.72	-0.30	0.00
145.00	-3.30	-0.21	0.00	-0.21	0.00	0.21	1,383.54	326.82	693	666.26	5.03	-0.30	0.00
146.00	0.00	-0.19	0.00	0.00	0.00	0.00	1,370.57	323.76	680	653.76	5.09	-0.30	0.00

0.9D - 1.0Ev + 1.0Eh Normal **Seismic (Reduced DL)**

CALCULATED FORCES

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (fr-kips)	Mu Mx (ft-kips)	Resultant Moment (ft-kips)	Phi Pn (kips)	Phi Vn (kips)	Phi Tn (kips)	Phi Mn (kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-39.14	-1.41	0.00	-172.17	0.00	172.17	4,227.69	1,130.57	5,527	4,712.55	0.00	0.00	0.05
5.00	-37.92	-1.42	0.00	-165.12	0.00	165.12	4,176.31	1,107.59	5,304	4,560.00	0.01	-0.01	0.05
10.00	-36.72	-1.42	0.00	-158.04	0.00	158.04	4,123.50	1,084.61	5,087	4,408.26	0.02	-0.02	0.05
15.00	-35.54	-1.43	0.00	-150.92	0.00	150.92	4,069.26	1,061.63	4,873	4,257.44	0.05	-0.03	0.04
20.00	-34.38	-1.43	0.00	-143.79	0.00	143.79	4,013.58	1,038.65	4,665	4,107.62	0.09	-0.04	0.04
25.00	-33.24	-1.43	0.00	-136.64	0.00	136.64	3,956.47	1,015.67	4,461	3,958.90	0.14	-0.05	0.04
30.00	-32.12	-1.43	0.00	-129.47	0.00	129.47	3,897.92	992.68	4,261	3,811.39	0.20	-0.06	0.04
35.00	-31.02	-1.43	0.00	-122.31	0.00	122.31	3,837.94	969.70	4,066	3,665.19	0.27	-0.07	0.04
40.00	-29.93	-1.43	0.00	-115.15	0.00	115.15	3,776.52	946.72	3,876	3,520.38	0.35	-0.09	0.04
45.00	-29.52	-1.43	0.00	-108.01	0.00	108.01	3,713.67	923.74	3,690	3,377.07	0.45	-0.10	0.04
46.91	-28.47	-1.42	0.00	-105.27	0.00	105.27	3,689.24	914.95	3,620	3,322.65	0.49	-0.10	0.04
50.00	-27.44	-1.41	0.00	-100.89	0.00	100.89	3,649.39	900.76	3,509	3,235.36	0.55	-0.11	0.04
53.08	-27.08	-1.41	0.00	-96.54	0.00	96.54	2,857.95	750.80	2,925	2,537.94	0.63	-0.12	0.05
55.00	-26.17	-1.40	0.00	-93.84	0.00	93.84	2,840.65	743.45	2,868	2,497.68	0.67	-0.12	0.05
60.00	-25.63	-1.40	0.00	-86.84	0.00	86.84	2,794.59	724.30	2,722	2,393.44	0.81	-0.13	0.05
63.00	-25.20	-1.39	0.00	-82.66	0.00	82.66	2,766.27	712.81	2,636	2,331.31	0.89	-0.14	0.05
65.00	-24.31	-1.38	0.00	-79.88	0.00	79.88	2,747.10	705.15	2,580	2,290.09	0.95	-0.15	0.04

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (fr-kips)	Mu Mx (ft-kips)	Resultant Moment (ft-kips)	Phi Pn (kips)	Phi Vn (kips)	Phi Tn (kips)	Phi Mn (kips)	Total Deflect (in)	Rotation (deg)	Ratio
70.00	-23.45	-1.36	0.00	-73.00	0.00	73.00	2,698.18	686.00	2,442	2,187.75	1.11	-0.16	0.04
75.00	-22.53	-1.34	0.00	-66.19	0.00	66.19	2,647.83	666.85	2,307	2,086.52	1.29	-0.17	0.04
80.00	-21.70	-1.32	0.00	-59.48	0.00	59.48	2,596.04	647.70	2,177	1,986.48	1.48	-0.19	0.04
85.00	-20.88	-1.30	0.00	-52.86	0.00	52.86	2,542.81	628.54	2,050	1,887.74	1.68	-0.20	0.04
90.00	-20.31	-1.28	0.00	-46.36	0.00	46.36	2,488.15	609.39	1,927	1,790.40	1.89	-0.21	0.03
93.54	-19.96	-1.27	0.00	-41.82	0.00	41.82	2,448.63	595.85	1,842	1,722.45	2.05	-0.22	0.03
95.00	-19.14	-1.24	0.00	-39.96	0.00	39.96	2,432.06	590.24	1,808	1,694.56	2.12	-0.22	0.03
98.45	-18.92	-1.23	0.00	-35.68	0.00	35.68	1,802.83	469.45	1,429	1,251.05	2.28	-0.23	0.04
100.00	-18.24	-1.21	0.00	-33.77	0.00	33.77	1,791.36	464.71	1,401	1,230.45	2.35	-0.23	0.04
105.00	-14.87	-1.05	0.00	-27.74	0.00	27.74	1,753.33	449.39	1,310	1,164.33	2.60	-0.24	0.03
110.00	-14.22	-1.02	0.00	-22.50	0.00	22.50	1,713.87	434.07	1,222	1,099.03	2.87	-0.25	0.03
115.00	-14.09	-1.01	0.00	-17.42	0.00	17.42	1,672.98	418.74	1,137	1,034.64	3.14	-0.26	0.03
116.00	-11.11	-0.84	0.00	-16.41	0.00	16.41	1,664.63	415.68	1,121	1,021.88	3.19	-0.27	0.02
120.00	-10.58	-0.81	0.00	-13.04	0.00	13.04	1,630.65	403.42	1,056	971.26	3.42	-0.27	0.02
125.00	-10.26	-0.79	0.00	-9.00	0.00	9.00	1,586.89	388.10	977	908.99	3.71	-0.28	0.02
128.00	-6.59	-0.54	0.00	-6.63	0.00	6.63	1,559.94	378.91	931	872.20	3.88	-0.28	0.01
130.00	-6.17	-0.51	0.00	-5.56	0.00	5.56	1,541.69	372.78	901	847.93	4.00	-0.28	0.01
135.00	-6.00	-0.49	0.00	-3.03	0.00	3.03	1,495.06	357.46	829	788.18	4.30	-0.29	0.01
137.00	-5.00	-0.42	0.00	-2.04	0.00	2.04	1,476.01	351.33	801	764.66	4.42	-0.29	0.01
137.50	-2.72	-0.24	0.00	-1.83	0.00	1.83	1,471.21	349.80	794	758.82	4.45	-0.29	0.00
140.00	-2.36	-0.21	0.00	-1.24	0.00	1.24	1,447.00	342.14	759	729.83	4.60	-0.29	0.00
145.00	-2.29	-0.20	0.00	-0.20	0.00	0.20	1,383.54	326.82	693	666.26	4.90	-0.29	0.00
146.00	0.00	-0.19	0.00	0.00	0.00	0.00	1,370.57	323.76	680	653.76	4.96	-0.29	0.00

ANALYSIS SUMMARY

	Reactions						Max Usage	
Load Case	Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)	Elev (ft)	Interaction Ratio
1.2D + 1.0W Normal	27.53	0.00	56.26	0.00	0.00	3040.01	53.08	0.66
0.9D + 1.0W Normal	27.51	0.00	42.18	0.00	0.00	2994.26	53.08	0.65
1.2D + 1.0Di + 1.0Wi Normal	7.09	0.00	75.36	0.00	0.00	774.05	53.08	0.18
1.2D + 1.0Ev + 1.0Eh Normal	1.45	0.00	56.37	0.00	0.00	175.47	53.08	0.05
0.9D - 1.0Ev + 1.0Eh Normal	1.43	0.00	39.14	0.00	0.00	172.17	53.08	0.05
1.0D + 1.0W Service Normal	6.16	0.00	46.92	0.00	0.00	673.83	53.08	0.15

Base Plate & Anchor Rod Analysis

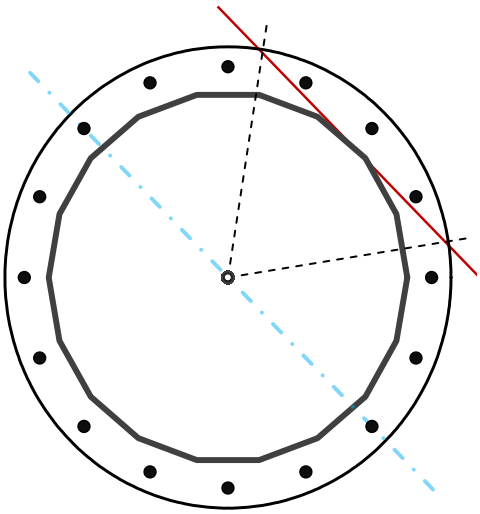
Pole Dimensions		
Number of Sides	18	-
Diameter	54.5	in
Thickness	3/8	in
Orientation Offset		°

Base Reactions		
Moment, Mu	3,040.0	k-ft
Axial, Pu	56.3	k
Shear, Vu	27.5	k
Neutral Axis	315	°

Report Capacities		
Component	Capacity	Result
Base Plate	40%	Pass
Anchor Rods	64%	Pass
Dwyidag	-	-

Base Plate		
Shape	Round	-
Diameter, ø	69	in
Thickness	1 3/4	in
Grade	A572-60	
Yield Strength, Fy	60	ksi
Tensile Strength, Fu	75	ksi
Clip	N/A	in
Orientation Offset		°
Anchor Rod Detail	d	η=0.5
Clear Distance	3 3/8	in
Applied Moment, Mu	659.2	k
Bending Stress, ϕMn	1639.0	k

Original Anchor Rods		
Arrangement	Radial	-
Quantity	16	-
Diameter, ø	2 1/4	in
Bolt Circle	63	in
Grade	A615-75	
Yield Strength, Fy	75	ksi
Tensile Strength, Fu	100	ksi
Spacing	12.4	in
Orientation Offset		°
Applied Force, Pu	153.9	k
Anchor Rods, ϕPn	243.6	k



Calculations for Monopole Base Plate & Anchor Rod Analysis

Reaction Distribution

Reaction	Shear Vu	Moment Mu	Factor
-	k	k-ft	-
Base Forces	27.5	3040.0	1.00
Anchor Rod Forces	27.5	3040.0	1.00
Additional Bolt (Grp1) Forces	0.0	0.0	0.00
Additional Bolt (Grp2) Forces	0.0	0.0	0.00
Dywidag Forces	0.0	0.0	0.00
Stiffener Forces	0.0	0.0	0.00

Geometric Properties

Section	Gross Area	Net Area	Individual Inertia	Threads per Inch	Moment of Inertia
-	in^2	in^2	in^4	#	in^4
Pole	63.4413	3.5245	0.1658		23234.51
Bolt	3.9761	3.2477	0.8393	4.5	23886.48
Bolt1	0.0000	0.0000	0.0000	0	0.00
Bolt2	0.0000	0.0000	0.0000	0	0.00
Dywidag	0.0000	0.0000	0.0000		0.00
Stiffener	0.0000	0.0000	0.0000		0.00

Base Plate		
Shape	Round	-
Diameter, D	69	in
Thickness, t	1.75	in
Yield Strength, Fy	60	ksi
Tensile Strength, Fu	75	ksi
Base Plate Chord	42.317	in
Detail Type	d	-
Detail Factor	0.50	-
Clear Distance	3.375	-

Anchor Rods		
Anchor Rod Quantity, N	16	-
Rod Diameter, d	2.25	in
Bolt Circle, BC	63	in
Yield Strength, Fy	75	ksi
Tensile Strength, Fu	100	ksi
Applied Axial, Pu	153.9	k
Applied Shear, Vu	1.0	k
Compressive Capacity, ϕPn	243.6	k
Tensile Capacity, ϕRnt	0.632	OK
Interaction Capacity	0.641	OK

External Base Plate		
Chord Length AA	36.144	in
Additional AA	3.500	in
Section Modulus, Z	30.352	in^3
Applied Moment, Mu	659.2	k-ft
Bending Capacity, ϕMn	1639.0	k-ft
Capacity, Mu/ϕMn	0.402	OK
Chord Length AB	34.837	in
Additional AB	3.500	in
Section Modulus, Z	29.351	in^3
Applied Moment, Mu	474.2	k-ft
Bending Capacity, ϕMn	1585.0	k-ft
Capacity, Mu/ϕMn	0.299	OK
Bend Line Length	40.677	in
Additional Bend Line	0.000	in
Section Modulus, Z	31.143	in^3
Applied Moment, Mu	659.2	k-ft
Bending Capacity, ϕMn	1681.7	k-ft
Capacity, Mu/ϕMn	0.392	OK

Internal Base Plate		
Arc Length	0.000	in
Section Modulus, Z	0.000	in^3
Moment Arm	0.000	in
Applied Moment, Mu	0.0	k-ft
Bending Capacity, ϕMn	0.0	k-ft
Capacity, Mu/ϕMn		

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