



Northeast Site Solutions
Victoria Masse
420 Main St Unit 1 Box 2
Sturbridge, MA 01566
victoria@northeastitesolutions.com

January 31, 2022

Members of the Siting Council
Connecticut Siting Council
Ten Franklin Square
New Britain, CT 06051

RE: Tower Share Application
780 Prospect Hill Road (a/k/a 800 Prospect Hill Rd), Windsor, CT
Latitude: 41.882914 N
Longitude: -72.70811388 W
Site#: BOBDL00150A

Dear Ms. Bachman:

This letter and attachments are submitted on behalf of Dish Wireless LLC. Dish Wireless LLC plans to install antennas and related equipment to the tower site located at 780 Prospect Hill Road (a/k/a 800 Prospect Hill Rd), Windsor, Connecticut.

Dish Wireless LLC proposes to install three (3) 600/1900/2100 5G MHz antenna and six (6) RRUs, at the 115-foot level of the existing 135-foot monopole tower, one (1) Fiber cable will also be installed. Dish Wireless LLC equipment cabinets will be placed within 7x5 lease area. Included are plans by Infinigy, dated January 10, 2022, Exhibit C. Also included is a structural analysis prepared by Tarpon Towers, dated July 9, 2021 confirming that the existing tower is structurally capable of supporting the proposed equipment. Attached as Exhibit D. This facility was approved by the Connecticut Siting Council, Docket No. 496 on June 3, 2021. Please see attached Exhibit A.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies 16-50aa, of Dish Wireless LLC intent to share a telecommunications facility pursuant to R.C.S.A. 16-50j-88. In accordance with R.C.S.A., a copy of this letter is being sent to Donald S. Trinks, Mayor for the Town of Windsor, Eric Barz, Town Planner for the Town of Windsor, as well as the property owner The Ferraina Company LLC and Tarpon Towers, tower owner.

The planned modifications of the facility fall squarely within those activities explicitly provided for in R.C.S.A. 16-50j-89.

1. The proposed modifications will not result in an increase in the height of the existing structure. The top of the tower is 135-feet; Dish Wireless LLC proposed antennas will be located at a center line height of 115-feet.
2. The proposed modification will not result in the increase of the site boundary as depicted on the attached site plan.
3. The proposed modification will not increase the noise levels at the facility by six decibels or more, or to levels that exceed local and state criteria. The incremental effect of the proposed changes will be negligible.

420 Main Street, Unit 1 Box 2, Sturbridge, MA 01566



4. The operation of the proposed antennas will not increase radio frequency emissions at the facility to a level at or above the Federal Communications Commission safety standard. As indicated in the attached power density calculations, the combined site operations will result in a total density of 11.51% as evidenced by Exhibit F.

Connecticut General Statutes 16-50-aa 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 Wireless LLC 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 Wireless LLC proposed loading. The structural analysis is included in Exhibit D.

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 such as this monopole in Windsor. Under the authority granted to the Council, an order of the Council approving the requested shared use would permit Dish Wireless LLC to obtain a building permit for the proposed installation. Further, a letter of Authorization is included as Exhibit G, authorizing Dish Wireless LLC 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 Wireless LLC equipment at the 115-foot level of the existing 135-foot tower would have an insignificant visual impact on the area around the monopole. Dish Wireless LLC ground equipment would be installed within the existing facility compound. Dish Wireless LLC shared use would therefore not cause any significant alteration in the physical or environmental characteristics of the existing site. Additionally, as evidenced by Exhibit F, 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 Wireless LLC 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 Wireless LLC with this tower share application.

E. **Public Safety Concerns.** As discussed above, the tower is structurally capable of supporting Dish Wireless LLC proposed loading. Dish Wireless LLC is not aware of any public safety concerns relative to the proposed sharing of the existing tower. Dish Wireless LLC 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 Windsor.

Sincerely,

Victoria Masse
Mobile: 860-306-2326
Fax: 413-521-0558
Office: 420 Main Street, Unit 1 Box 2, Sturbridge, MA 01566
Email: victoria@northeastsitesolutions.com



Attachments

Cc:

Donald S. Trinks, Mayor

Town of Windsor

275 Broad Street

Windsor, CT 06095

Eric Barz

Town Planner

Town of Windsor

275 Broad Street

Windsor, CT 06095

The Ferraina Company LLC, Property Owner

810 Prospect Hill Rd

Windsor, CT 06095

Tarpon Towers II, LLC, Tower Owners

8916 77th Terrace East, Suite 103

Lakewood Ranch, FL 34202

Exhibit A

Original Facility Approval

DOCKET NO. 496 – Tarpon Towers II, LLC application for a } Connecticut
Certificate of Environmental Compatibility and Public Need for }
the construction, maintenance, and operation of a } Siting
telecommunications facility located at 800 Prospect Hill Road, }
Windsor, Connecticut. } Council

June 3, 2021

Decision and Order

Pursuant to Connecticut General Statutes §16-50p, and the foregoing Findings of Fact and Opinion, the Connecticut Siting Council (Council) finds that the effects associated with the construction, maintenance, and operation of a telecommunications facility, including effects on the natural environment, ecological balance, public health and safety, scenic, historic, and recreational values, agriculture, forests and parks, air and water purity, and fish, aquaculture and wildlife are not disproportionate, either alone or cumulatively with other effects, when compared to need, are not in conflict with the policies of the State concerning such effects, and are not sufficient reason to deny the application, and therefore directs that a Certificate of Environmental Compatibility and Public Need, as provided by General Statutes §16-50k, be issued to Tarpon Towers II, LLC, hereinafter referred to as the Certificate Holder, for a telecommunications facility located at 800 Prospect Hill Road, Windsor, Connecticut.

Unless otherwise approved by the Council, the facility shall be constructed, operated, and maintained substantially as specified in the Council’s record in this matter, and subject to the following conditions:

1. The tower shall be constructed as a monopole at a height of 135 feet above ground level to provide the proposed wireless services, sufficient to accommodate the antennas of T-Mobile Northeast LLC, and other entities, both public and private. The height of the tower may be extended after the date of this Decision and Order pursuant to regulations of the Federal Communications Commission.
2. The Certificate Holder shall prepare a Development and Management (D&M) Plan for this site in compliance with Sections 16-50j-75 through 16-50j-77 of the Regulations of Connecticut State Agencies. The D&M Plan shall be submitted to and approved by the Council prior to the commencement of facility construction and shall include:
 - a) a certified letter from a wireless telecommunications carrier with a firm commitment to install associated wireless equipment at the facility upon completion of construction;
 - b) final site plan(s) for development of the facility that employ the governing standard in the State of Connecticut for tower design in accordance with the currently adopted International Building Code and include specifications for the tower, tower foundation, antennas and equipment compound including, but not limited to, fence design, landscaping, ground equipment, access road, utility installation and emergency backup power;
 - c) the tower shall be designed with a yield point to ensure that the tower setback radius remains within the boundaries of the subject property;
 - d) construction plans for site clearing, grading, landscaping, water drainage and stormwater control, and erosion and sedimentation controls consistent with the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control, as amended; and
 - e) construction schedule including hours and days of the week for construction activities.

3. Prior to the commencement of operation, the Certificate Holder shall provide the Council worst-case modeling of the electromagnetic radio frequency power density of all proposed entities' antennas at the closest point of uncontrolled access to the tower base, consistent with Federal Communications Commission, Office of Engineering and Technology, Bulletin No. 65, August 1997. The Certificate Holder shall ensure a recalculated report of the electromagnetic radio frequency power density be submitted to the Council if and when circumstances in operation cause a change in power density above the levels calculated and provided pursuant to this Decision and Order.
4. Upon the establishment of any new federal radio frequency standards applicable to frequencies of this facility, the facility granted herein shall be brought into compliance with such standards.
5. The Certificate Holder shall provide the Council with a copy of necessary permits from any other state or federal agency with concurrent jurisdiction prior to the commencement of construction.
6. The Certificate Holder shall permit public or private entities to share space on the proposed tower for fair consideration, or shall provide any requesting entity with specific legal, technical, environmental, or economic reasons precluding such tower sharing.
7. Unless otherwise approved by the Council, if the facility authorized herein is not fully constructed with at least one fully operational wireless telecommunications carrier providing wireless service within eighteen months from the date of the mailing of the Council's Findings of Fact, Opinion, and Decision and Order (collectively called "Final Decision"), this Decision and Order shall be void, and the Certificate Holder shall dismantle the tower and remove all associated equipment or reapply for any continued or new use to the Council before any such use is made. The time between the filing and resolution of any appeals of the Council's Final Decision shall not be counted in calculating this deadline. Authority to monitor and modify this schedule, as necessary, is delegated to the Executive Director. The Certificate Holder shall provide written notice to the Executive Director of any schedule changes as soon as is practicable.
8. Any request for extension of the time period referred to in Condition 7 shall be filed with the Council not later than 60 days prior to the expiration date of this Certificate and shall be served on all parties and intervenors, as listed in the service list, and the Town Windsor.
9. If the facility ceases to provide wireless services for a period of one year, this Decision and Order shall be void, and the Certificate Holder shall dismantle the tower and remove all associated equipment or reapply for any continued or new use to the Council within 90 days from the one year period of cessation of service. The Certificate Holder may submit a written request to the Council for an extension of the 90 day period not later than 60 days prior to the expiration of the 90 day period.
10. Any nonfunctioning antenna, and associated antenna mounting equipment, on this facility shall be removed within 60 days of the date the antenna ceased to function.
11. In accordance with Section 16-50j-77 of the Regulations of Connecticut State Agencies, the Certificate Holder shall provide the Council with written notice two weeks prior to the commencement of site construction activities. In addition, the Certificate Holder shall provide the Council with written notice of the completion of site construction, and the commencement of site operation.

12. The Certificate Holder shall remit timely payments associated with annual assessments and invoices submitted by the Council for expenses attributable to the facility under Conn. Gen. Stat. §16-50v.
13. This Certificate may be transferred in accordance with Conn. Gen. Stat. §16-50k(b), provided both the Certificate Holder/transferor and the transferee are current with payments to the Council for their respective annual assessments and invoices under Conn. Gen. Stat. §16-50v. In addition, both the Certificate Holder/transferor and the transferee shall provide the Council a written agreement as to the entity responsible for any quarterly assessment charges under Conn. Gen. Stat. §16-50v(b)(2) that may be associated with this facility. If construction has not been completed in accordance with Condition 7 of this Decision and Order at the time the Certificate is requested to be transferred, a certified letter from a wireless telecommunications carrier with a firm commitment to install associated wireless equipment at the facility upon completion of construction shall also be provided.
14. The Certificate Holder shall maintain the facility and associated equipment, including but not limited to, the tower, tower foundation, antennas, equipment compound, radio equipment, access road, utility line and landscaping in a reasonable physical and operational condition that is consistent with this Decision and Order and a Development and Management Plan to be approved by the Council.
15. If the Certificate Holder is a wholly-owned subsidiary of a corporation or other entity and is sold/transferred to another corporation or other entity, the Council shall be notified of such sale and/or transfer and of any change in contact information for the individual or representative responsible for management and operations of the Certificate Holder within 30 days of the sale and/or transfer.
16. This Certificate may be surrendered by the Certificate Holder upon written notification and acknowledgment by the Council.

We hereby direct that a copy of the Findings of Fact, Opinion, and Decision and Order be served on each person listed in the Service List, dated February 25, 2021, and notice of issuance published in the Hartford Courant.

By this Decision and Order, the Council disposes of the legal rights, duties, and privileges of each party named or admitted to the proceeding in accordance with Section 16-50j-17 of the Regulations of Connecticut State Agencies.

Exhibit B

Property Card

CURRENT OWNER		TOPO	UTILITIES	STRT / ROAD	LOCATION	CURRENT ASSESSMENT			
FERRAINA COMPANY LLC THE		1 Level	2 Public Water	1 Paved		Description	Code	Appraised	Assessed
810 PROSPECT HILL RD						IND LAND	3-1	513,400	359,380
WINDSOR CT 06095						IND BLDG	3-2	1,794,800	1,256,360
						IND IMPR	3-3	101,000	70,700
SUPPLEMENTAL DATA									
Alt Prcl ID 8300		INC: GH		CTRACT 4735.01 CBLOCK 113 DIST MULTI HEART GL YEAR					
2007 1685040		GIS ID 8300		Assoc Pid#					
Total							2,409,200	1,686,440	

VISION

RECORD OF OWNERSHIP		BK-VOL/PAGE	SALE DATE	Q/U	V/I	SALE PRICE	VC	PREVIOUS ASSESSMENTS (HISTORY)					
FERRAINA COMPANY LLC THE	1212	0001	10-21-1999	U	I	0	4	Year	Code	Assessed	Year	Code	Assessed
FERRAINA COMPANY LLC THE	1195	0196	05-17-1999	U	I	0	4	2019	3-1	359,380	2018	3-1	359,380
FERRAINA COMPANY LLC THE	1187	0447	02-26-1999	U	I	0	4		3-2	1,256,360		3-2	1,233,190
DMAC LIMITED PARTNERSHIP	0471	0322	03-22-1984			0			3-3	70,700		3-3	49,280
Total							1686440	Total	1686370	Total	1641850		

EXEMPTIONS			OTHER ASSESSMENTS					
Year	Code	Description	Amount	Code	Description	Number	Amount	Comm Int
		Total	0.00					

This signature acknowledges a visit by a Data Collector or Assessor

ASSESSING NEIGHBORHOOD			
Nbhd	Sub	Nbhd Name	Batch
200	A		

APPRAISED VALUE SUMMARY	
Appraised Bldg. Value (Card)	1,784,900
Appraised Xf (B) Value (Bldg)	9,900
Appraised Ob (B) Value (Bldg)	101,000
Appraised Land Value (Bldg)	513,400
Special Land Value	0
Total Appraised Parcel Value	2,409,200
Valuation Method	I
Total Appraised Parcel Value	2,409,200

NOTES
 08300.00
 17-135-1B
 780-840 PROSPECT HILL RD
 CHANGED CARD SEQUENCE TO
 MATCH STREET ADDRESSES
 NCCJ

BUILDING PERMIT RECORD									VISIT / CHANGE HISTORY					
Permit Id	Issue Date	Type	Description	Amount	Insp Date	% Comp	Date Comp	Comments	Date	Id	Type	Is	Cd	Purpost/Result
E-180985	05-01-2018	EL	Electric	3,900	10-01-2018	100	10-01-2018	LOW VOLTAGE SECURITY S	07-13-2006	SK			60	I&E Returned
E-173244	12-26-2017	EL	Electric	1,000	10-01-2018	100	10-01-2018	ELECTRICAL CHANGES FOR	07-01-2006	SK			62	2nd I&E Sent
P-172666	11-22-2017	PL	Plumbing	8,000	10-01-2018	100	10-01-2018	PLUMBING FOR TENANT FO	05-01-2006	SK			61	1st I&E Sent
E-172685	11-22-2017	EL	Electric	15,000	10-01-2018	100	10-01-2018	UPGRADE TO 400 AMP	10-01-1999	SK				
B-172661	11-22-2017	FO	Tenant Fit Out	25,000	10-01-2018	100	10-01-2018	1,000 SF TENANT FIT OUT -	08-02-1994	SK		X		
B-171422	06-07-2017	RF	Roofing	60,000	08-17-2017	100	10-01-2017	ROOFING REPLACEMENT						
B-170581	03-13-2017	CM	Commercial	2,000	08-17-2017	100	10-01-2017	MINOR ELEC WORK - PEDI-						

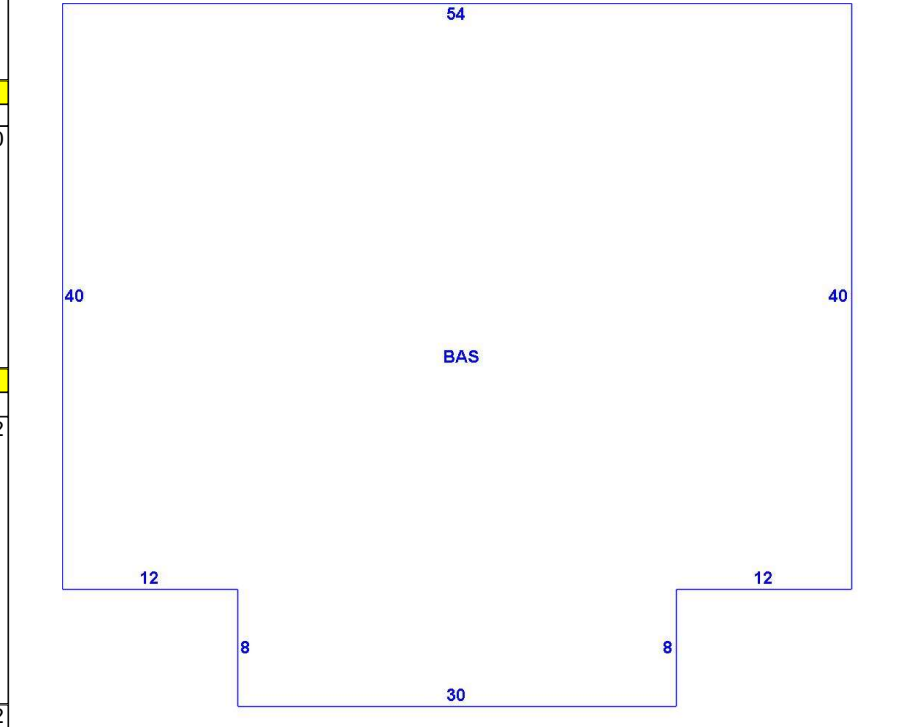
LAND LINE VALUATION SECTION															
B	Use Code	Description	Zone	Land Type	Land Units	Unit Price	I. Factor	Site Index	Cond.	Nbhd.	Nbhd Adj	Notes	Location Adjustment	Adj Unit Pric	Land Value
1	4020	Ind Office	I		3.250	AC	82,000	1.00000	I	1.00	200	1.400		0	373,100
1	4020	Ind Office	I1		1.460	AC	82,000	1.00000	0	0.70	200	1.400		0	117,300
1	4020	Ind Office	I1		1.000	AC	82,000	1.00000	0	0.20	200	1.400		0	23,000
Total Card Land Units					5.710	AC	Parcel Total Land Area: 5.7100					Total Land Value		513,400	

CONSTRUCTION DETAIL			CONSTRUCTION DETAIL (CONTINUED)		
Element	Cd	Description	Element	Cd	Description
Style:	18	Office Bldg			
Model	94	Comm/Ind			
Grade	03	Average			
Stories:	1				
Occupancy			MIXED USE		
Exterior Wall 1	19	Brick Veneer	Code	Description	Percentage
Exterior Wall 2			4020	Ind Office	100
Roof Structure	03	Gable			0
Roof Cover	03	Asphalt			0
Interior Wall 1	05	Drywall	COST / MARKET VALUATION		
Interior Wall 2			RCN		242,952
Interior Floor 1	14	Carpet	Year Built		1994
Interior Floor 2			Effective Year Built		
Heating Fuel	03	Gas	Depreciation Code		A
Heating Type	04	Forced Air	Remodel Rating		
AC Type	03	Central	Year Remodeled		
Bldg Use	4020	Ind Office	Depreciation %		16
Total Rooms			Functional Obsol		0
Total Bedrms	00		External Obsol		10
Total Baths	2		Trend Factor		1
Heat/AC	01	Heat/AC Pkgs	Condition		
Frame Type	02	Wood Frame	Condition %		
Baths/Plumbing	02	Average	Percent Good		74
Ceiling/Wall	05	Sus-Ceil & WI	Cns Sect Rcndld		179,800
Rooms/Prtns	02	Average	Dep % Ovr		
Wall Height	9.00		Dep Ovr Comment		
% Conn Wall	0.00		Misc Imp Ovr		
1st Floor Use:	401C		Misc Imp Ovr Comment		
			Cost to Cure Ovr		
			Cost to Cure Ovr Comment		



OB - OUTBUILDING & YARD ITEMS(L) / XF - BUILDING EXTRA FEATURES(B)												
Code	Descripti	Sub	Sub Ty	L/B	Units	Unit Price	Yr Blt	Cond. Cd	% Gd	Grade	Grade Ad	Appr. V
LT1	LIGHTS-			L	9	1625.00	2003		75		0.00	11,000

BUILDING SUB-AREA SUMMARY SECTION							
Code	Description	Living Area	Floor Area	Eff Area	Unit Cost	Undeprec Value	
BAS	First Floor	2,400	2,400		101.23	242,952	
Ttl Gross Liv / Lease Area		2,400	2,400			242,952	



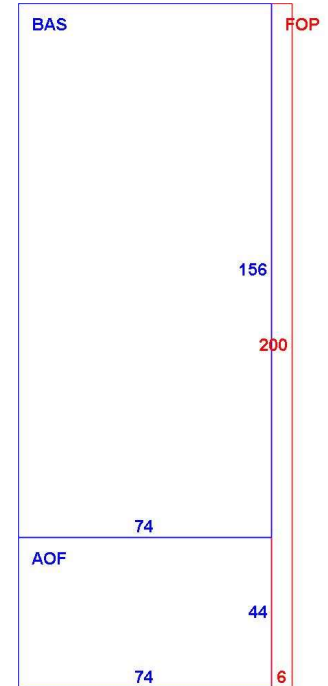
CURRENT OWNER		TOPO	UTILITIES	STRT / ROAD	LOCATION	CURRENT ASSESSMENT				6164 WINDSOR, CT VISION						
FERRAINA COMPANY LLC THE		1 Level	2 Public Water	1 Paved		Description	Code	Appraised	Assessed							
810 PROSPECT HILL RD					IND LAND	3-1	513,400	359,380								
WINDSOR CT 06095					IND BLDG	3-2	1,794,800	1,256,360								
						IND IMPR	3-3	101,000	70,700							
SUPPLEMENTAL DATA																
Alt Prcl ID 8300		INC: GH		CTRACT 4735.01 CBLOCK 113 DIST MULTI HEART GL YEAR												
2007 1685040		GIS ID 8300		Assoc Pid#												
						Total	2,409,200	1,686,440								
RECORD OF OWNERSHIP		BK-VOL/PAGE	SALE DATE	Q/U	V/I	SALE PRICE	VC	PREVIOUS ASSESSMENTS (HISTORY)								
FERRAINA COMPANY LLC THE	1212	0001	10-21-1999	U	I	0	4	Year	Code	Assessed	Year	Code	Assessed			
FERRAINA COMPANY LLC THE	1195	0196	05-17-1999	U	I	0	4	2019	3-1	359,380	2018	3-1	359,380			
FERRAINA COMPANY LLC THE	1187	0447	02-26-1999	U	I	0	4		3-2	1,256,360		3-2	1,233,190			
DMAC LIMITED PARTNERSHIP	0471	0322	03-22-1984			0			3-3	70,700		3-3	49,280			
						Total	1686440	Total	1686370	Total	1641850					
EXEMPTIONS			OTHER ASSESSMENTS					This signature acknowledges a visit by a Data Collector or Assessor								
Year	Code	Description	Amount	Code	Description	Number	Amount	Comm	Int							
		Total	0.00													
ASSESSING NEIGHBORHOOD																
Nbhd	Sub	Nbhd Name	B		Tracing			Batch								
200	A															
NOTES																
3 TENANTS																
BUILDING PERMIT RECORD																
Permit Id	Issue Date	Type	Description	Amount	Insp Date	% Comp	Date Comp	Comments								
VISIT / CHANGE HISTORY																
Date	Id	Type	Is	Cd	Purpost/Result											
LAND LINE VALUATION SECTION																
B	Use Code	Description	Zone	Land Type	Land Units	Unit Price	I. Factor	Site Index	Cond.	Nbhd.	Nbhd Adj	Notes	Location Adjustment	Adj Unit Pric	Land Value	
2	4010	Ind Whses	I1		0 SF	0	1.00000	0	1.00		1.000		0		0	
Total Card Land Units					0.000	AC	Parcel Total Land Area: 5.7100					Total Land Value 513,400				

CONSTRUCTION DETAIL			CONSTRUCTION DETAIL (CONTINUED)		
Element	Cd	Description	Element	Cd	Description
Style:	96	Office/Warehs			
Model	96	Ind/Comm			
Grade	03	Average			
Stories:	1				
Occupancy			MIXED USE		
Exterior Wall 1	15	Concrete/Block	Code	Description	Percentage
Exterior Wall 2			4010	Ind Whses	100
Roof Structure	01	Flat			0
Roof Cover	04	T&G/Rubber			0
Interior Wall 1	05	Drywall	COST / MARKET VALUATION		
Interior Wall 2			RCN		963,031
Interior Floor 1	03	Concrete	Year Built		1987
Interior Floor 2			Effective Year Built		
Heating Fuel	03	Gas	Depreciation Code		A
Heating Type	03	Hot Air-no Duc	Remodel Rating		
AC Type	01	None	Year Remodeled		
Bldg Use	4010	Ind Whses	Depreciation %		19
Total Rooms			Functional Obsol		0
Total Bedrms	00		External Obsol		10
Total Baths	2		Trend Factor		1
Heat/AC	00	None	Condition		
Frame Type	03	Masonry	Condition %		
Baths/Plumbing	02	Average	Percent Good		71
Ceiling/Wall	03	Sus-Ceil/Mn Wl	Cns Sect Rcndd		683,800
Rooms/Prtns	02	Average	Dep % Ovr		
Wall Height	16.00		Dep Ovr Comment		
% Conn Wall	0.00		Misc Imp Ovr		
1st Floor Use:	4022		Misc Imp Ovr Comment		
			Cost to Cure Ovr		
			Cost to Cure Ovr Comment		



OB - OUTBUILDING & YARD ITEMS(L) / XF - BUILDING EXTRA FEATURES(B)												
Code	Descripti	Sub	Sub Ty	L/B	Units	Unit Price	Yr Blt	Cond. Cd	% Gd	Grade	Grade Ad	Appr. V
A/C	AIR CO			B	5,810	2.40	1999		71		0.00	9,900
PAV1	PAVING-			L	60,00	2.50	2003		60		0.00	90,000

BUILDING SUB-AREA SUMMARY SECTION							
Code	Description	Living Area	Floor Area	Eff Area	Unit Cost	Undeprec Value	
AOF	Office	3,256	3,256		86.36	281,172	
BAS	First Floor	11,544	11,544		57.57	664,588	
FOP	Porch, Open	0	1,200		14.39	17,271	
Ttl Gross Liv / Lease Area		14,800	16,000			963,031	



CURRENT OWNER		TOPO	UTILITIES	STRT / ROAD	LOCATION	CURRENT ASSESSMENT				
FERRAINA COMPANY LLC THE		1 Level	2 Public Water	1 Paved		Description	Code	Appraised	Assessed	6164 WINDSOR, CT
810 PROSPECT HILL RD						IND LAND	3-1	513,400	359,380	
WINDSOR CT 06095						IND BLDG	3-2	1,794,800	1,256,360	
						IND IMPR	3-3	101,000	70,700	
SUPPLEMENTAL DATA										VISION
Alt Prcl ID 8300				CTRACT 4735.01						
INC: GH				CBLOCK 113						
2007 1685040				DIST MULTI						
GIS ID 8300				HEART GL YEAR						
				Assoc Pid#						
						Total		2,409,200	1,686,440	

RECORD OF OWNERSHIP		BK-VOL/PAGE	SALE DATE	Q/U	V/I	SALE PRICE	VC	PREVIOUS ASSESSMENTS (HISTORY)									
FERRAINA COMPANY LLC THE	1212	0001	10-21-1999	U	I	0	4	Year	Code	Assessed	Year	Code	Assessed	Year	Code	Assessed	
FERRAINA COMPANY LLC THE	1195	0196	05-17-1999	U	I	0	4	2019	3-1	359,380	2018	3-1	359,380	2017	3-1	359,380	
FERRAINA COMPANY LLC THE	1187	0447	02-26-1999	U	I	0	4		3-2	1,256,360		3-2	1,256,290		3-2	1,233,190	
DMAC LIMITED PARTNERSHIP	0471	0322	03-22-1984			0			3-3	70,700		3-3	70,700		3-3	49,280	
Total								1686440		Total		1686370		Total		1641850	

EXEMPTIONS				OTHER ASSESSMENTS				This signature acknowledges a visit by a Data Collector or Assessor					
Year	Code	Description	Amount	Code	Description	Number	Amount	Comm	Int				
Total			0.00										

ASSESSING NEIGHBORHOOD				APPRAISED VALUE SUMMARY						
Nbhd	Sub	Nbhd Name	B	Tracing	Batch					
200	A					Appraised Bldg. Value (Card)				1,784,900
						Appraised Xf (B) Value (Bldg)				9,900
						Appraised Ob (B) Value (Bldg)				101,000
						Appraised Land Value (Bldg)				513,400
						Special Land Value				0
						Total Appraised Parcel Value				2,409,200
						Valuation Method				I
						Total Appraised Parcel Value				2,409,200

BUILDING PERMIT RECORD							VISIT / CHANGE HISTORY							
Permit Id	Issue Date	Type	Description	Amount	Insp Date	% Comp	Date Comp	Comments	Date	Id	Type	Is	Cd	Purpost/Result

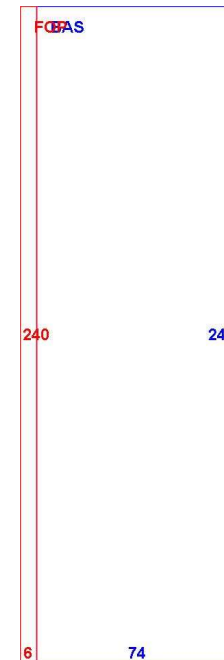
LAND LINE VALUATION SECTION																
B	Use Code	Description	Zone	Land Type	Land Units	Unit Price	I. Factor	Site Index	Cond.	Nbhd.	Nbhd Adj	Notes	Location Adjustment	Adj Unit Pric	Land Value	
3	4010	Ind Whses	I1		0 SF	0	1.00000	0	1.00		1.000		0		0	
Total Card Land Units					0.000	AC	Parcel Total Land Area: 5.7100					Total Land Value				513,400

CONSTRUCTION DETAIL			CONSTRUCTION DETAIL (CONTINUED)		
Element	Cd	Description	Element	Cd	Description
Style:	96	Office/Warehs			
Model	96	Ind/Comm			
Grade	03	Average			
Stories:	1				
Occupancy			MIXED USE		
Exterior Wall 1	15	Concrete/Block	Code	Description	Percentage
Exterior Wall 2			4010	Ind Whses	100
Roof Structure	01	Flat			0
Roof Cover	04	T&G/Rubber			0
Interior Wall 1	01	Minim/Masonry	COST / MARKET VALUATION		
Interior Wall 2	05	Drywall	RCN		1,035,920
Interior Floor 1	03	Concrete			
Interior Floor 2	05	Vinyl			
Heating Fuel	03	Gas	Year Built		1987
Heating Type	03	Hot Air-no Duc	Effective Year Built		
AC Type	01	None	Depreciation Code		A
Bldg Use	4010	Ind Whses	Remodel Rating		
Total Rooms			Year Remodeled		
Total Bedrms	00		Depreciation %		19
Total Baths	2		Functional Obsol		0
Heat/AC	00	None	External Obsol		10
Frame Type	03	Masonry	Trend Factor		1
Baths/Plumbing	02	Average	Condition		
Ceiling/Wall	03	Sus-Ceil/Mn Wl	Condition %		
Rooms/Prtns	02	Average	Percent Good		71
Wall Height	16.00		Cns Sect Rcndld		735,500
% Conn Wall	0.00		Dep % Ovr		
1st Floor Use:	4022		Dep Ovr Comment		
			Misc Imp Ovr		
			Misc Imp Ovr Comment		
			Cost to Cure Ovr		
			Cost to Cure Ovr Comment		



OB - OUTBUILDING & YARD ITEMS(L) / XF - BUILDING EXTRA FEATURES(B)												
Code	Descripti	Sub	Sub Ty	L/B	Units	Unit Price	Yr Blt	Cond. Cd	% Gd	Grade	Grade Ad	Appr. V

BUILDING SUB-AREA SUMMARY SECTION						
Code	Description	Living Area	Floor Area	Eff Area	Unit Cost	Undeprec Value
BAS	First Floor	17,760	17,760		57.17	1,015,339
FOP	Porch, Open	0	1,440		14.29	20,581
Ttl Gross Liv / Lease Area		17,760	19,200			1,035,920



CURRENT OWNER		TOPO		UTILITIES		STRT / ROAD		LOCATION		CURRENT ASSESSMENT				6164 WINDSOR, CT VISION					
FERRAINA COMPANY LLC THE 810 PROSPECT HILL RD WINDSOR CT 06095		1	Level	2	Public Water	1	Paved			Description	Code	Appraised	Assessed						
										IND LAND	3-1	513,400	359,380						
										IND BLDG	3-2	1,794,800	1,256,360						
SUPPLEMENTAL DATA										IND IMPR	3-3	101,000	70,700						
Alt Prcl ID 8300		INC: GH		2007 1685040		GIS ID 8300		CTRACT 4735.01 CBLOCK 113 DIST MULTI HEART GL YEAR Assoc Pid#		Total		2,409,200	1,686,440						
RECORD OF OWNERSHIP				BK-VOL/PAGE	SALE DATE	Q/U	V/I	SALE PRICE	VC	PREVIOUS ASSESSMENTS (HISTORY)									
FERRAINA COMPANY LLC THE				1212 0001	10-21-1999	U	I	0	4	Year	Code	Assessed	Year	Code	Assessed	Year	Code	Assessed	
FERRAINA COMPANY LLC THE				1195 0196	05-17-1999	U	I	0	4	2019	3-1	359,380	2018	3-1	359,380	2017	3-1	359,380	
FERRAINA COMPANY LLC THE				1187 0447	02-26-1999	U	I	0	4		3-2	1,256,360		3-2	1,256,290		3-2	1,233,190	
DMAC LIMITED PARTNERSHIP				0471 0322	03-22-1984			0			3-3	70,700		3-3	70,700		3-3	49,280	
Total										1686440		Total		1686370		Total		1641850	
EXEMPTIONS				OTHER ASSESSMENTS				This signature acknowledges a visit by a Data Collector or Assessor											
Year	Code	Description		Amount	Code	Description	Number	Amount	Comm Int										
Total				0.00															
ASSESSING NEIGHBORHOOD										APPRAISED VALUE SUMMARY									
Nbhd	Sub	Nbhd Name		B	Tracing		Batch			Appraised Bldg. Value (Card)				1,784,900					
200	A									Appraised Xf (B) Value (Bldg)				9,900					
										Appraised Ob (B) Value (Bldg)				101,000					
										Appraised Land Value (Bldg)				513,400					
										Special Land Value				0					
										Total Appraised Parcel Value				2,409,200					
										Valuation Method				I					
										Total Appraised Parcel Value				2,409,200					
BUILDING PERMIT RECORD										VISIT / CHANGE HISTORY									
Permit Id	Issue Date	Type	Description	Amount	Insp Date	% Comp	Date Comp	Comments		Date	Id	Type	Is	Cd	Purpost/Result				
LAND LINE VALUATION SECTION																			
B	Use Code	Description	Zone	Land Type	Land Units	Unit Price	I. Factor	Site Index	Cond.	Nbhd.	Nbhd Adj	Notes		Location Adjustment	Adj Unit Pric	Land Value			
4	4010	Ind Whses	I1		0 SF	0	1.00000	0	1.00		1.000			0		0			
Total Card Land Units					0.000	AC	Parcel Total Land Area: 5.7100					Total Land Value					513,400		

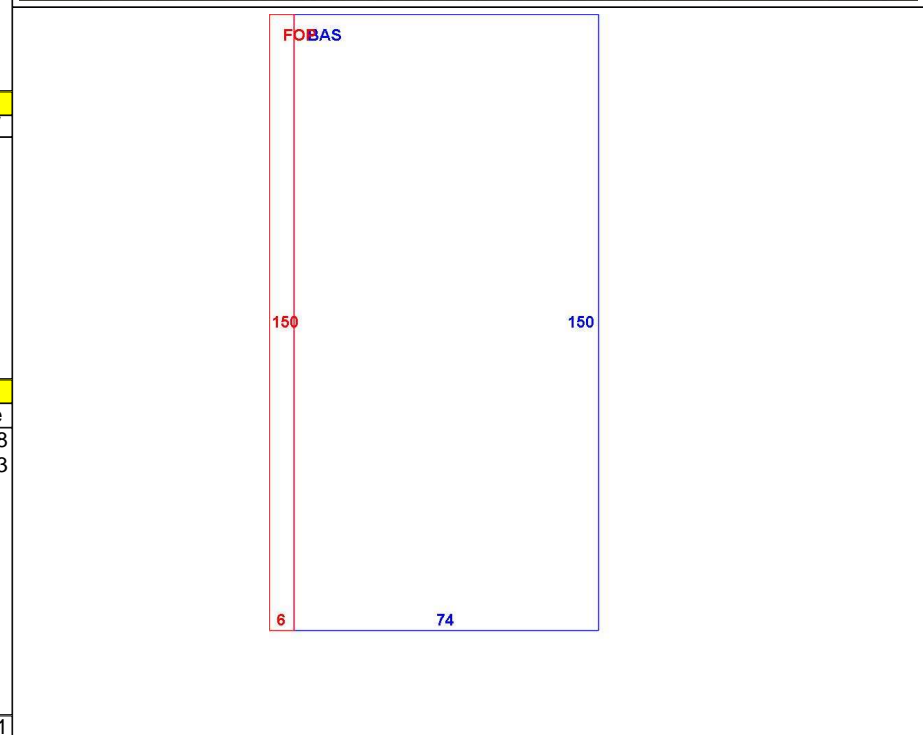
CONSTRUCTION DETAIL			CONSTRUCTION DETAIL (CONTINUED)		
Element	Cd	Description	Element	Cd	Description
Style:	48	Warehouse			
Model	96	Ind/Comm			
Grade	03	Average			
Stories:	1				
Occupancy					
Exterior Wall 1	15	Concrete/Block			
Exterior Wall 2					
Roof Structure	01	Flat			
Roof Cover	04	T&G/Rubber			
Interior Wall 1	01	Minim/Masonry			
Interior Wall 2					
Interior Floor 1	03	Concrete	RCN		428,991
Interior Floor 2					
Heating Fuel	03	Gas	Year Built		1987
Heating Type	03	Hot Air-no Duc	Effective Year Built		
AC Type	01	None	Depreciation Code		A
Bldg Use	4010	Ind Whses	Remodel Rating		
Total Rooms			Year Remodeled		
Total Bedrms	00		Depreciation %		19
Total Baths	2		Functional Obsol		0
Heat/AC	00	None	External Obsol		10
Frame Type	03	Masonry	Trend Factor		1
Baths/Plumbing	02	Average	Condition		
Ceiling/Wall	01	Susp-Ceil Only	Condition %		
Rooms/Prtns	02	Average	Percent Good		71
Wall Height	16.00		Cns Sect Rcnd		304,600
% Comn Wall	0.00		Dep % Ovr		
1st Floor Use:	4022		Dep Ovr Comment		
			Misc Imp Ovr		
			Misc Imp Ovr Comment		
			Cost to Cure Ovr		
			Cost to Cure Ovr Comment		

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

Code	Descripti	Sub	Sub Ty	L/B	Units	Unit Price	Yr Blt	Cond. Cd	% Gd	Grade	Grade Ad	Appr. V

BUILDING SUB-AREA SUMMARY SECTION

Code	Description	Living Area	Floor Area	Eff Area	Unit Cost	Undeprec Value
BAS	First Floor	11,100	11,100		37.88	420,468
FOP	Porch, Open	0	900		9.47	8,523
Ttl Gross Liv / Lease Area		11,100	12,000			428,991

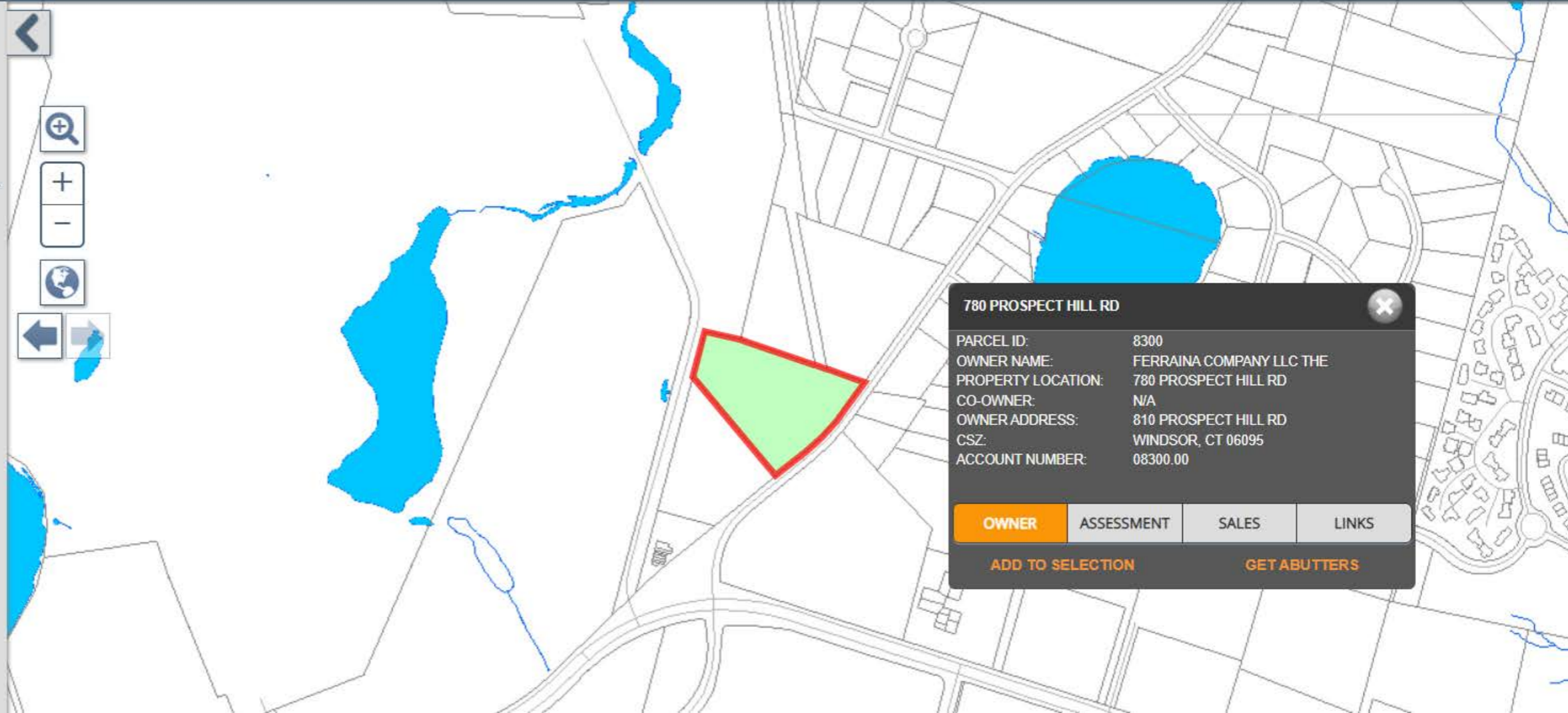


780 prospect hill

Points of Interest:
Select... GO

[*Advanced Search >>](#)

Search Results			Selection Results		
Parcel ID	Address	Owner			
8300	780 PROSPECT HILL RD	FERRAINA COMPANY LLC THE			



780 PROSPECT HILL RD

PARCEL ID: 8300
OWNER NAME: FERRAINA COMPANY LLC THE
PROPERTY LOCATION: 780 PROSPECT HILL RD
CO-OWNER: N/A
OWNER ADDRESS: 810 PROSPECT HILL RD
CSZ: WINDSOR, CT 06095
ACCOUNT NUMBER: 08300.00

OWNER ASSESSMENT SALES LINKS

[ADD TO SELECTION](#) [GET ABUTTERS](#)

Exhibit C

Construction Drawings



DISH Wireless L.L.C. SITE ID:

BOBDL00150A

DISH Wireless L.L.C. SITE ADDRESS:

**780 PROSPECT HILL ROAD
WINDSOR, CT 06095**

CONNECTICUT CODE 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

SHEET INDEX

SHEET NO.	SHEET TITLE
T-1	TITLE SHEET
LS1	SITE SURVEY
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
RF-2	RF PLUMBING DIAGRAM
GN-1	LEGEND AND ABBREVIATIONS
GN-2	GENERAL NOTES
GN-3	GENERAL NOTES
GN-4	GENERAL NOTES

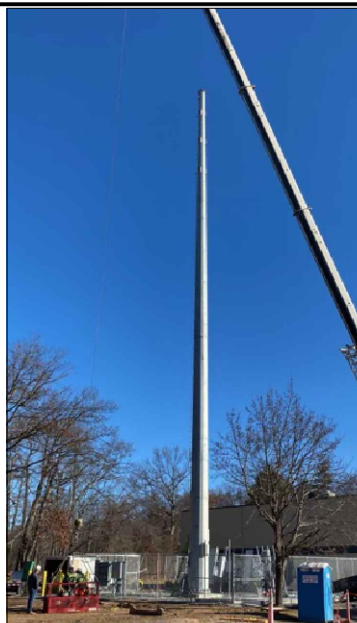
SCOPE OF WORK

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 PLATFORM
 - 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 SAFETY SWITCH (IF REQUIRED)
 - INSTALL (1) PROPOSED CIENA BOX (IF REQUIRED)
 - INSTALL (1) PROPOSED METER SOCKET

SITE PHOTO

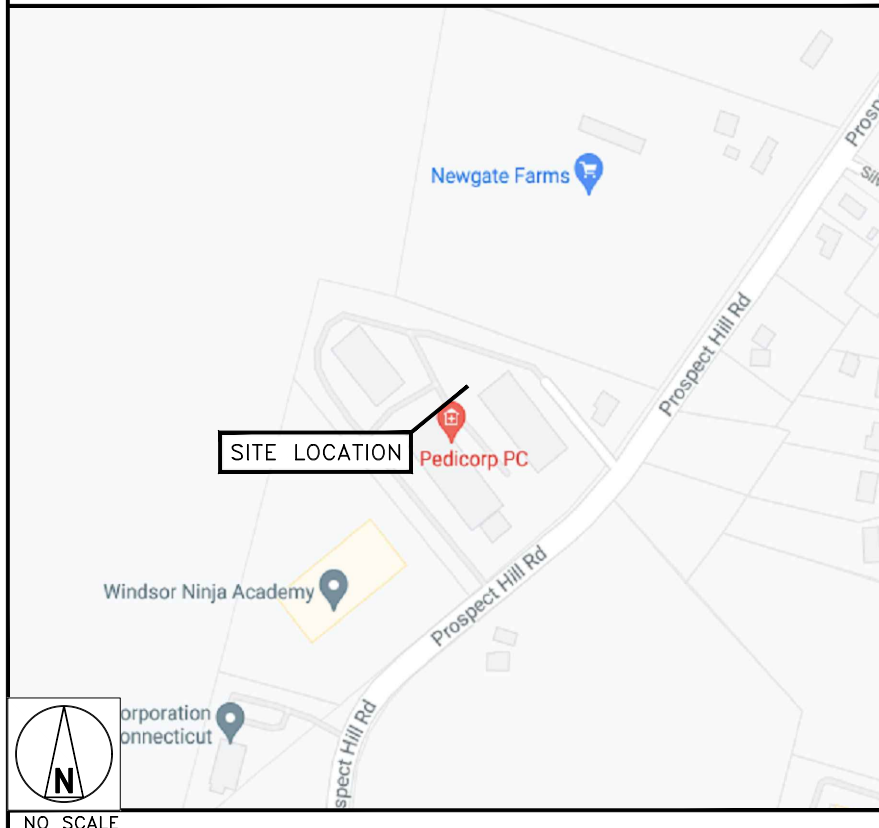


DIRECTIONS

DIRECTIONS FROM TOURS OF DISTINCTION AIRPORT:

DEPART AND HEAD TOWARD MASSACO ST, TURN RIGHT ONTO MASSACO ST, TURN LEFT ONTO US-202 E / CT-10 / HOPMEADOW ST, TURN RIGHT ONTO CT-315 / TARIFFVILLE RD, KEEP RIGHT TO STAY ON CT-315 / ELM ST, TURN RIGHT ONTO CT-189 / STATE HIGHWAY 189, TAKE THE RAMP ON THE RIGHT FOR CT-187 SOUTH AND HEAD TOWARD BLOOMFIELD / HARTFORD, BEAR LEFT ONTO DAY HILL RD, TURN LEFT ONTO PROSPECT HILL RD, TURN LEFT, ARRIVE AT 780 PROSPECT HILL ROAD WINDSOR, CT 06095

VICINITY MAP



**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

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.

SITE INFORMATION

PROPERTY OWNER: N/F THE FERRAINA COMPANY,LLC
ADDRESS: 810 PROSPECT HILL ROAD WINDSOR, CT 06095
TOWER TYPE: MONOPOLE
TOWER CO SITE ID: TBD
TOWER APP NUMBER: TBD
COUNTY: HARTFORD
LATITUDE (NAD 83): 41° 52' 58.5" N 41.882914 N
LONGITUDE (NAD 83): -72° 42' 29.2" W -72.70811388 W
ZONING JURISDICTION: TBD
ZONING DISTRICT: INDUSTRIAL (I)
PARCEL NUMBER: TBD
OCCUPANCY GROUP: U
CONSTRUCTION TYPE: V-B
POWER COMPANY: TBD
TELEPHONE COMPANY: TBD

PROJECT DIRECTORY

APPLICANT: DISH Wireless L.L.C.
5701 SOUTH SANTA FE DRIVE LITTLETON, CO 80120
TOWER OWNER: CROWN CASTLE
2000 CORPORATE DRIVE CANONSBURG, PA 15317 (877) 486-9377
SITE DESIGNER: INFINIGY
2500 W. HIGGINS RD. STE. 500 HOFFMAN ESTATES, IL 60169 (847) 648-4068
SITE ACQUISITION: TIMOTHY SLOAN (303) 706-4606
CONSTRUCTION MANAGER: DAVID HANSON (303) 706-4617
RF ENGINEER: BOSSENER CHARLES (917) 567-9837



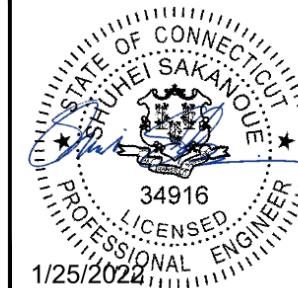
5701 SOUTH SANTA FE DRIVE LITTLETON, CO 80120



2000 CORPORATE DRIVE CANONSBURG, PA 15317



FROM ZERO TO INFINIGY
the solutions are endless
2500 W. HIGGINS RD. SUITE 500 | HOFFMAN ESTATES, IL 60169
PHONE: 847-648-4068 | FAX: 518-690-0793
WWW.INFINIGY.COM



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DRAWN BY:	CHECKED BY:	APPROVED BY:
RCD	SS	CJW

RFDS REV #: N/A

CONSTRUCTION DOCUMENTS

SUBMITTALS		
REV	DATE	DESCRIPTION
0	01/10/2022	ISSUED FOR PERMIT

A&E PROJECT NUMBER
2039-Z5555C

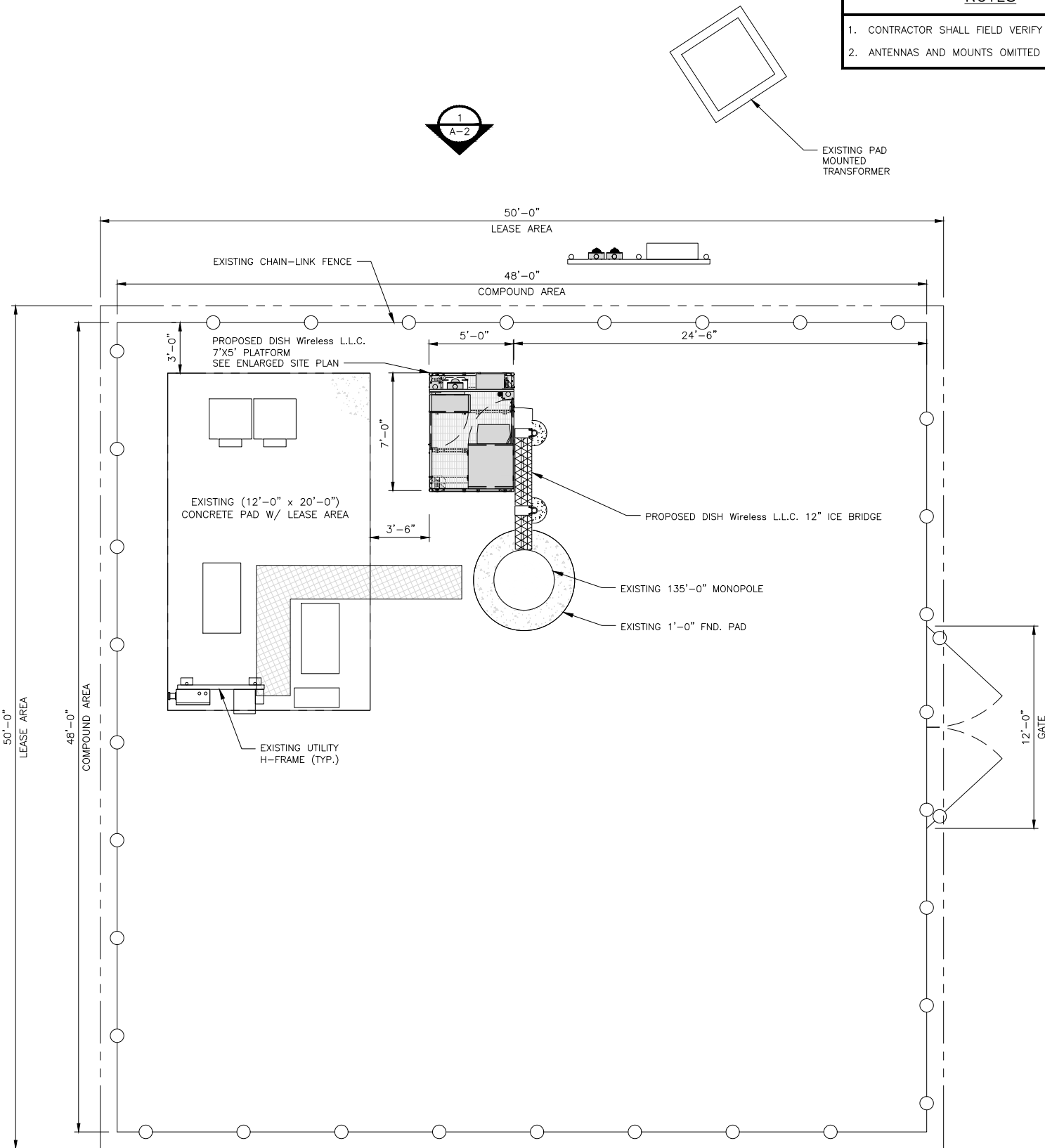
DISH Wireless L.L.C.
PROJECT INFORMATION
BOBDL00150A
TARPON - CT1209
780 PROSPECT HILL ROAD
WINDSOR, CT 06095

SHEET TITLE
TITLE SHEET

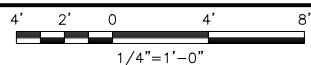
SHEET NUMBER
T-1

NOTES

1. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS.
2. ANTENNAS AND MOUNTS OMITTED FOR CLARITY.



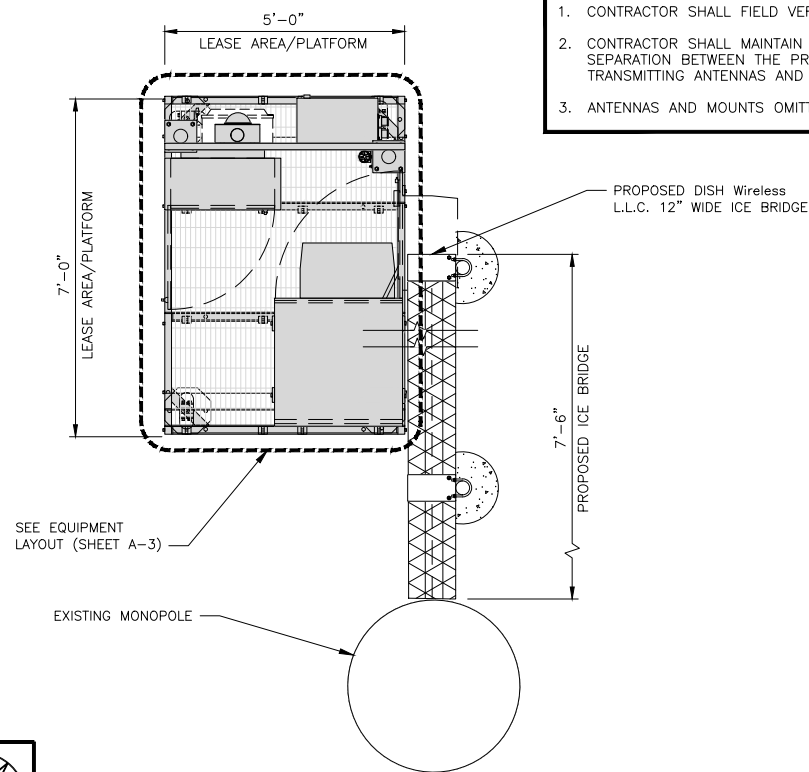
COMPOUND PLAN



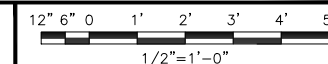
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NOTES

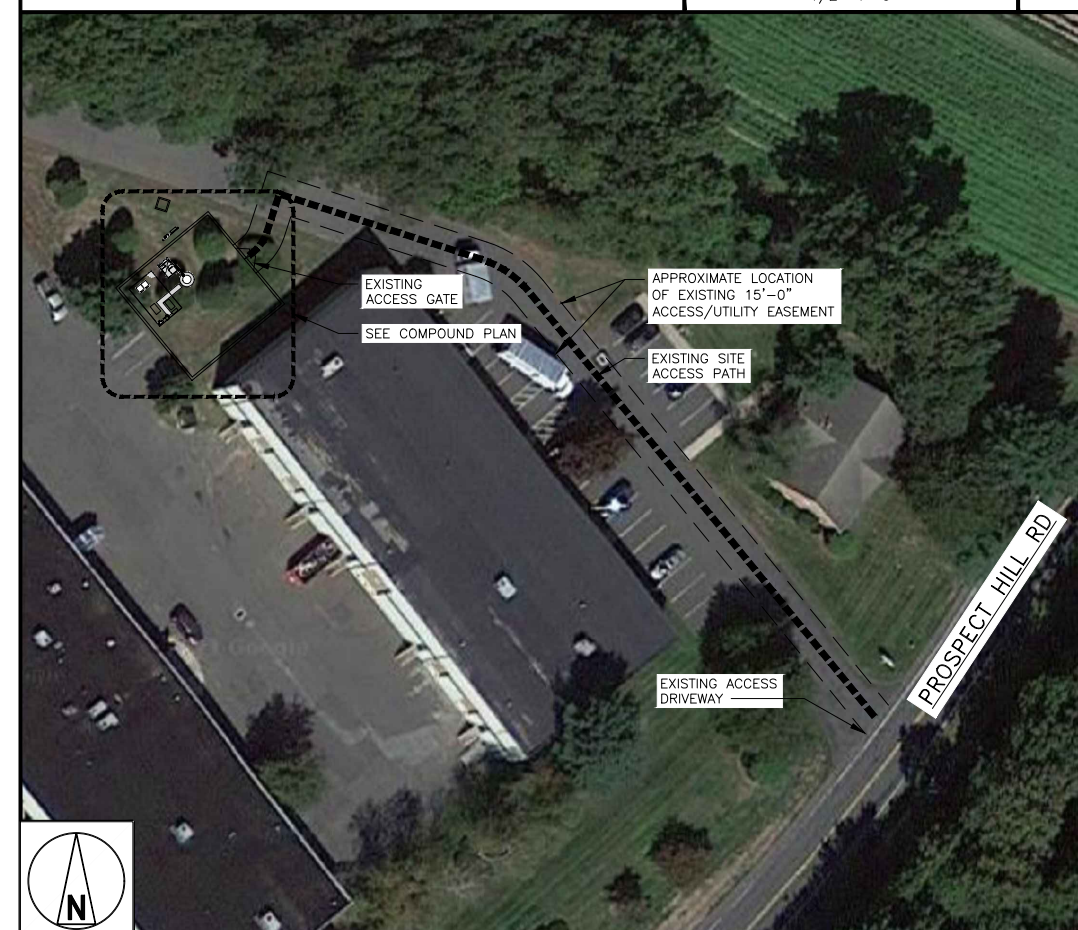
1. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS.
2. CONTRACTOR SHALL MAINTAIN A 10'-0" MINIMUM SEPARATION BETWEEN THE PROPOSED GPS UNIT, TRANSMITTING ANTENNAS AND EXISTING GPS UNITS.
3. ANTENNAS AND MOUNTS OMITTED FOR CLARITY.



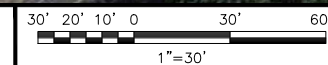
ENLARGED SITE PLAN



2



SITE PLAN



3

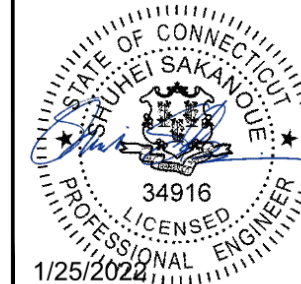
dish
wireless.

5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

CROWN CASTLE

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CANONSBURG, PA 15317

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DRAWN BY: RCD | CHECKED BY: SS | APPROVED BY: CJW

RFDS REV #: N/A

CONSTRUCTION DOCUMENTS

SUBMITTALS		
REV	DATE	DESCRIPTION
0	01/10/2022	ISSUED FOR PERMIT

A&E PROJECT NUMBER
2039-Z5555C

DISH Wireless L.L.C.
PROJECT INFORMATION
BOBDL00150A
TARPON - CT1209
780 PROSPECT HILL ROAD
WINDSOR, CT 06095

SHEET TITLE
OVERALL AND ENLARGED
SITE PLAN

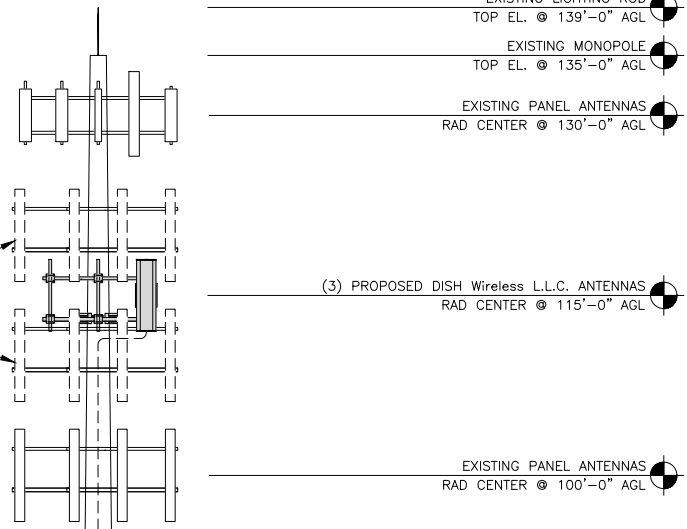
SHEET NUMBER

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.
4. INFINIGY HAS NOT EVALUATED THE TOWER OR MOUNT STRUCTURE AND ASSUMES NO RESPONSIBILITY FOR THEIR STRUCTURAL INTEGRITY REGARDING PROPOSED LOADINGS. FINAL INSTALLATION SHALL COMPLY WITH RESULTS OF PASSING STRUCTURAL ANALYSES PERFORMED BY OTHERS.

EXISTING VACANT CARRIER ANTENNAS AND ASSOCIATED EQUIPMENT TO BE REMOVED BY DISH



(1) PROPOSED DISH Wireless L.L.C. HYBRID CABLE ROUTED INSIDE POLE

EXISTING MONOPOLE

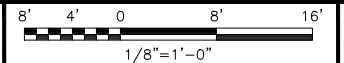
EXISTING ENTRY PORT

PROPOSED DISH Wireless L.L.C. GPS UNIT

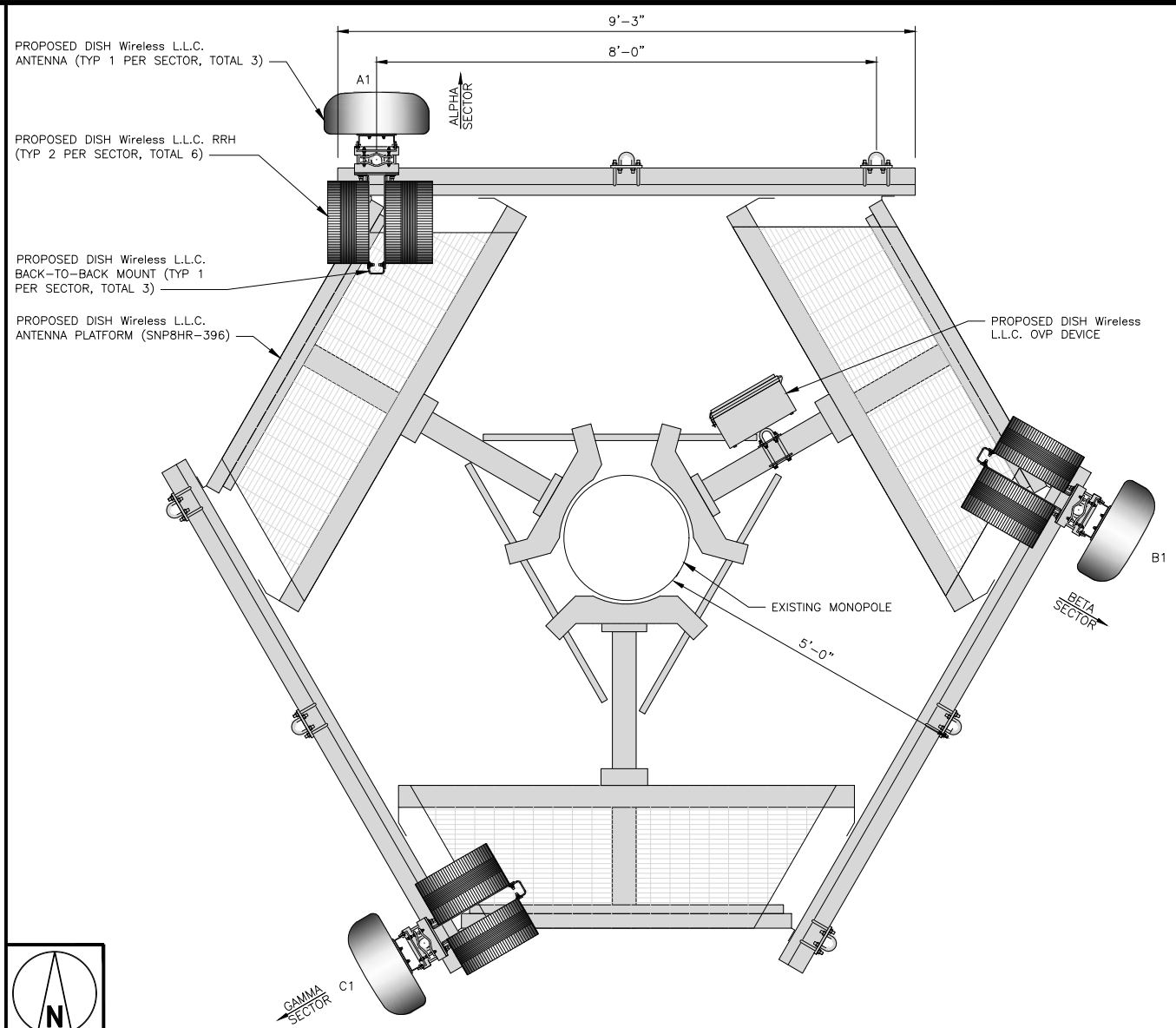
PROPOSED DISH Wireless L.L.C. EQUIPMENT ON PROPOSED STEEL PLATFORM

EXISTING MONOPOLE BOTTOM EL. @ 0'-0" AGL

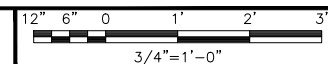
PROPOSED NORTHEAST ELEVATION



1



ANTENNA LAYOUT



2

SECTOR	POSITION	ANTENNA						TRANSMISSION CABLE
		EXISTING OR PROPOSED	MANUFACTURER - MODEL NUMBER	TECHNOLOGY	SIZE (HxW)	AZMUTH	RAD CENTER	FEED LINE TYPE AND LENGTH
ALPHA	A1	PROPOSED	JMA WIRELESS - MX08FRO665-21	5G	72.0" x 20.0"	0°	115'-0"	(1) HIGH-CAPACITY HYBRID CABLE (164' LONG)
BETA	B1	PROPOSED	JMA WIRELESS - MX08FRO665-21	5G	72.0" x 20.0"	120°	115'-0"	
GAMMA	C1	PROPOSED	JMA WIRELESS - MX08FRO665-21	5G	72.0" x 20.0"	240°	115'-0"	

NOTES

1. CONTRACTOR TO REFER TO FINAL CONSTRUCTION RFDS FOR ALL RF DETAILS.
2. ANTENNA OR 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.

SECTOR	POSITION	RRH		NOTES
		MANUFACTURER - MODEL NUMBER	TECHNOLOGY	
ALPHA	A1	FUJITSU - TA08025-B604	5G	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.
	A1	FUJITSU - TA08025-B605	5G	
BETA	B1	FUJITSU - TA08025-B604	5G	
	B1	FUJITSU - TA08025-B605	5G	
GAMMA	C1	FUJITSU - TA08025-B604	5G	
	C1	FUJITSU - TA08025-B605	5G	

ANTENNA SCHEDULE

NO SCALE

3



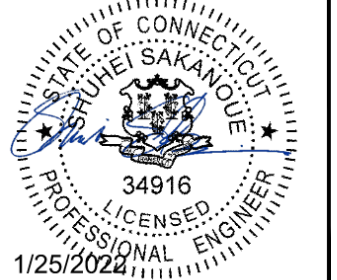
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DRAWN BY: CHECKED BY: APPROVED BY:

RCD SS CJW

RFDS REV #: N/A

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
0	01/10/2022	ISSUED FOR PERMIT

A&E PROJECT NUMBER

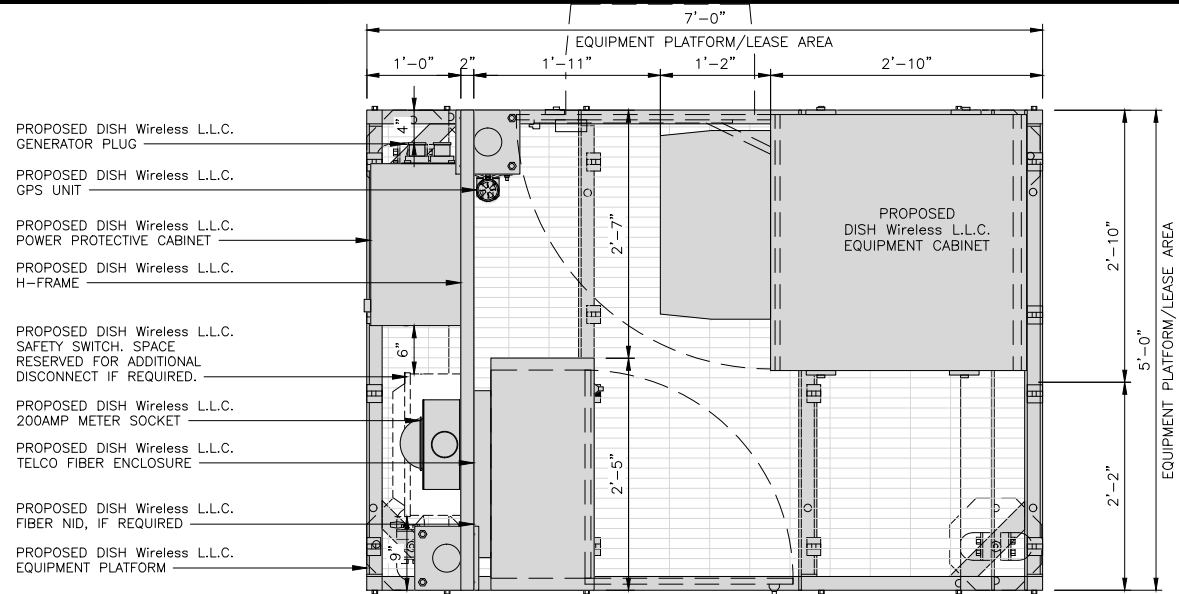
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780 PROSPECT HILL ROAD
WINDSOR, CT 06095

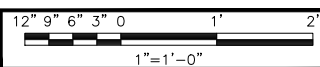
SHEET TITLE
ELEVATION, ANTENNA
LAYOUT AND SCHEDULE

SHEET NUMBER

A-2



PLATFORM EQUIPMENT PLAN

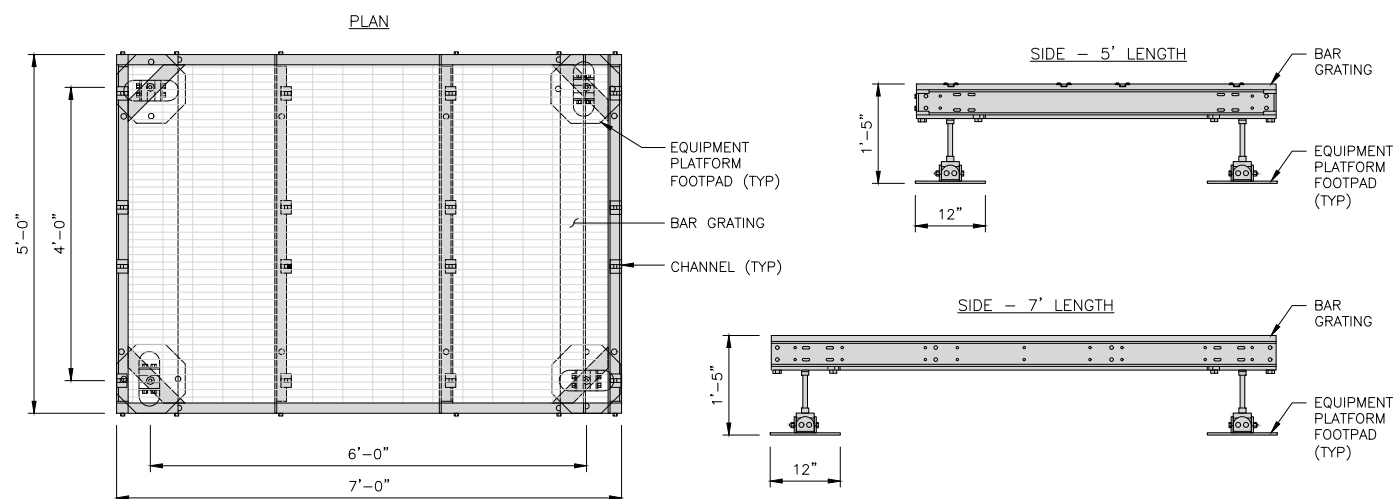


1

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"



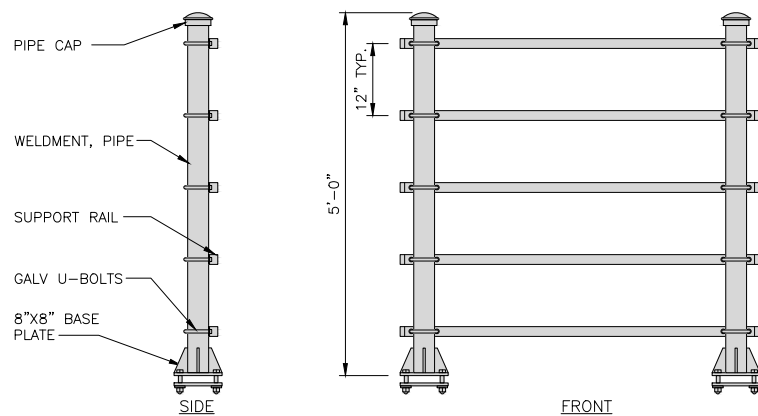
PLATFORM DETAIL

NO SCALE

2

KENWOOD T1701KT5-5S
H-FRAME

UNISTRUT/SUPPORT RAIL	5
WEIGHT/ VOLUME	173.6 LBS



H-FRAME DETAIL

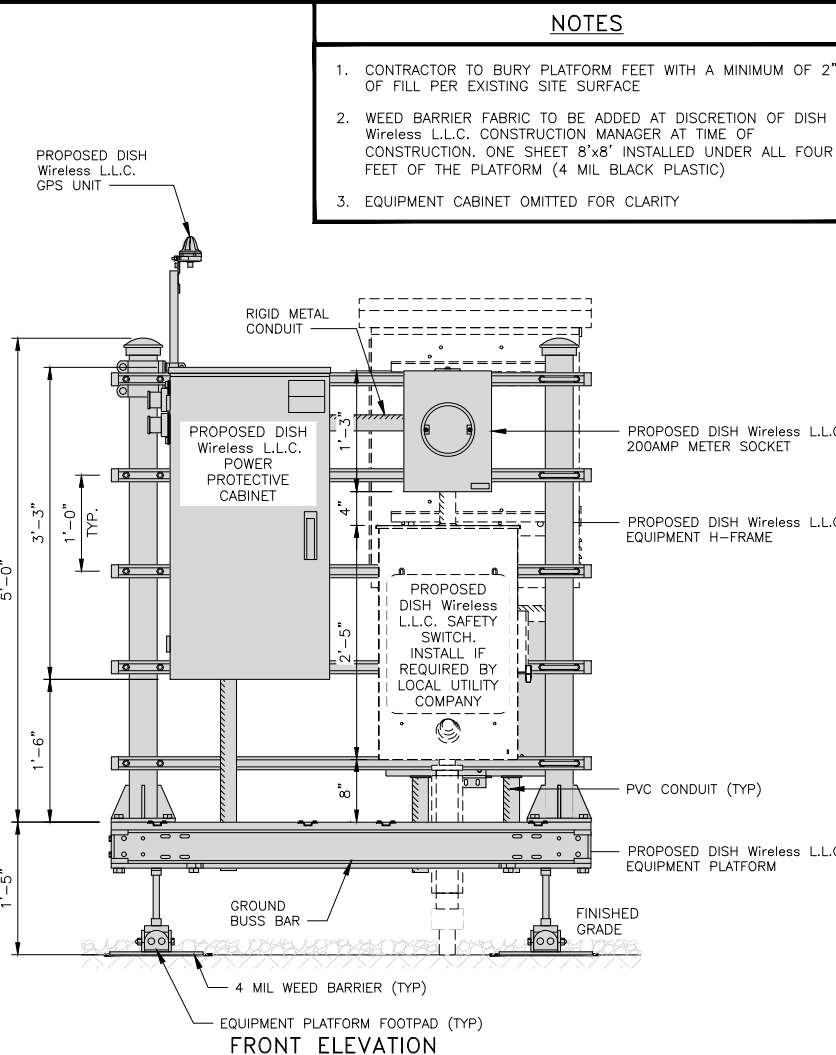
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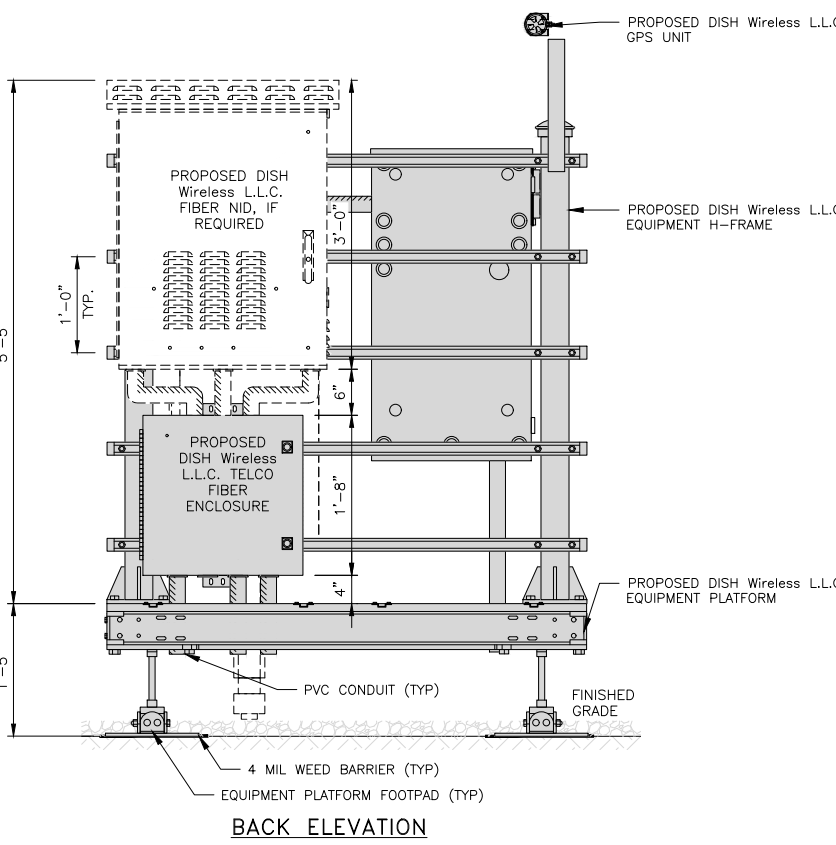
NOT USED

NO SCALE

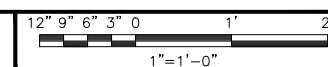
4



FRONT ELEVATION



BACK ELEVATION



5

NOTES

- CONTRACTOR TO BURY PLATFORM FEET WITH A MINIMUM OF 2" OF FILL PER EXISTING SITE SURFACE
- 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)
- EQUIPMENT CABINET OMITTED FOR CLARITY



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CONSTRUCTION
DOCUMENTS

SUBMITTALS		
REV	DATE	DESCRIPTION
0	01/10/2022	ISSUED FOR PERMIT

A&E PROJECT NUMBER
2039-Z5555C

DISH Wireless L.L.C.
PROJECT INFORMATION
BOBDL00150A
TARPON - CT1209
780 PROSPECT HILL ROAD
WINDSOR, CT 06095

SHEET TITLE
EQUIPMENT PLATFORM AND
H-FRAME DETAILS

SHEET NUMBER

A-3

CHARLES INDUSTRY HEX CUBE-PM639155N4	
DIMENSIONS (HxWxD):	74"x32"x32"
POWER PLANT:	-48VDC ABB/600W
TOTAL WEIGHT (EMPTY)	408 LBS

PLAN

SIDE BACK SIDE FRONT

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

TOP

BACK SIDE FRONT SIDE

POWER PROTECTION CABINET (PPC) DETAIL NO SCALE 2

SQUARE D SAFETY SWITCHES D224NRB	
ENCLOSURE DIM (HxWxD)	29.25"x19.00"x8.50"
ENCLOSURE TYPE	NEMA 3R RAINPROOF
UL LISTED	FILE E-2875

TOP

SIDE FRONT

SAFETY SWITCH DETAIL NO SCALE 3

EATON METER SOCKET UNRRS213BEUSE	
METER SOCKET TYPE	RING
ENCLOSURE DIM (HxWxD)	16"x12"x6"
MAIN AMPERE RATING	200A
WEIGHT	18 LBS

PLAN

SIDE BACK FRONT

METER SOCKET DETAIL NO SCALE 4

ZAYO 5RU CABINET ("LIT" SITES)	
DIMENSIONS (HxWxD)	36.115"x29"x12.9"
WEIGHT	85 LBS
POWER INPUT	20A, -48VDC

PLAN

FRONT SIDE BACK

NETWORK INTERFACE UNIT 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

FRONT

SIDE BACK FRONT

FIBER TELCO ENCLOSURE DETAIL NO SCALE 6

COMMSCOPE WB-K110-B WAVEGUIDE BRIDGE KIT		INCLUDED PRODUCTS:	WB-T12-3 TRAPEZE KIT, 3 RUNGS
DIMENSIONS (HxL)	160"x10"	WB-LB12-3 SUPPORT BRACKET	
WEIGHT/ VOLUME	325.0 LBS	MF-130 DIRECT BURIAL PIPE COLUMN, 13'-4"	
CABLE RUN (QTY)	12		

PLAN FRONT SIDE

ICE BRIDGE DETAIL NO SCALE 7

FINISH SLOPE TO DRAIN

A-A

PROPOSED 3.5" DIA. SCH 40 PIPE GALVANIZED

PROPOSED 1'-6" DIA. CONCRETE PIER (TYP)

CONCRETE PIER

3" DIA SCH 40 PIPE

18" DIA DRILLED PIER FOUNDATION

A-A SECTION

TYPICAL ICE BRIDGE CONCRETE PIER DETAIL NO SCALE 8

PROPOSED ICE BRIDGE

PROPOSED X" DIA HYBRID CABLE (OPTION "A")

PROPOSED X" DIA HYBRID CABLE (OPTION "B")

PROPOSED CABLE CLAMP @ 3'-0" O.C.

HYBRID SUPPORT BRACKET AND BANDING @ 4'-0" O.C.

EXISTING ENTRY PORT

EXISTING MONOPOLE

HYBRID CABLE RUN NO SCALE 9

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STATE OF CONNECTICUT
SHUHEI SAKANOUÉ
34916
PROFESSIONAL ENGINEER
1/25/2022

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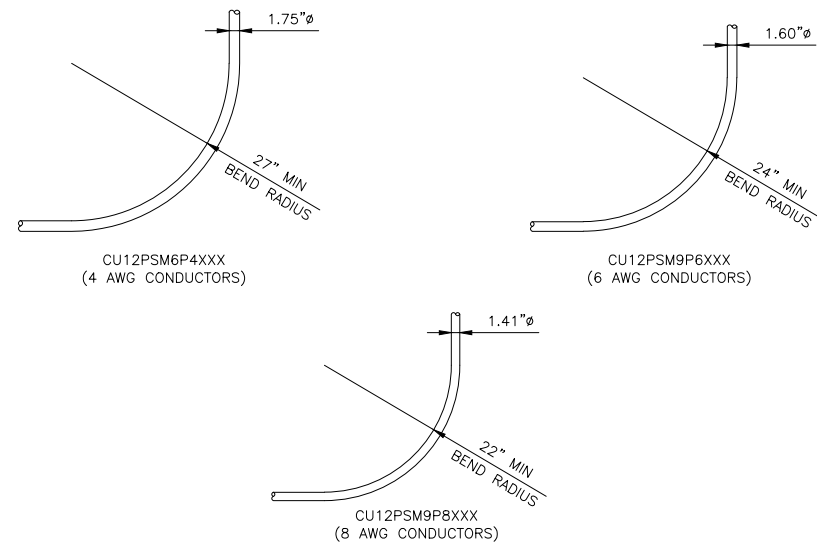
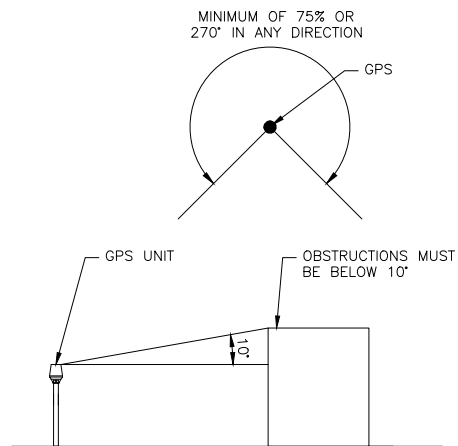
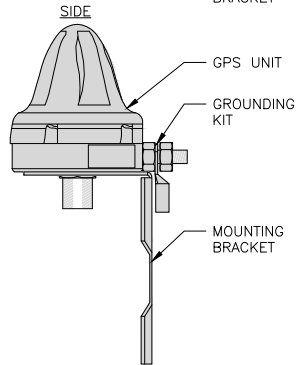
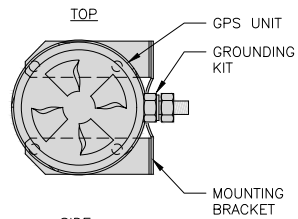
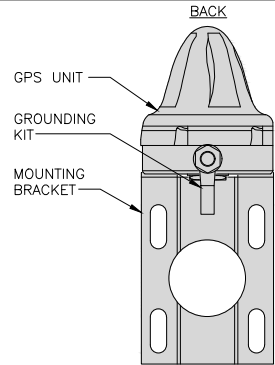
A&E PROJECT NUMBER
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DISH Wireless L.L.C.
PROJECT INFORMATION
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TARPON - CT1209
780 PROSPECT HILL ROAD
WINDSOR, CT 06095

SHEET TITLE
EQUIPMENT DETAILS

SHEET NUMBER
A-4

ROSENBERGER GPSGLONASS-36-N-S	
DIMENSION (DIA x H)	69mm x 98.5mm
WEIGHT (WITH ACCESSORIES)	515.74g
CONNECTOR	N-FEMALE
FREQUENCY RANGE	1559 MHz ~ 1610.5MHz



GPS ANTENNA DETAIL

NO SCALE 1

GPS MINIMUM SKY VIEW REQUIREMENTS

NO SCALE 2

CABLES UNLIMITED HYBRID CABLE
MINIMUM BEND RADIUS

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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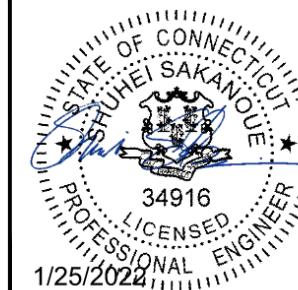
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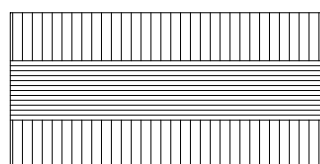
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PROJECT INFORMATION
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SHEET TITLE
EQUIPMENT DETAILS

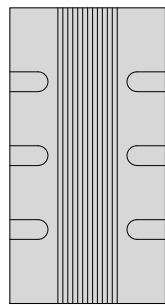
SHEET NUMBER

A-5

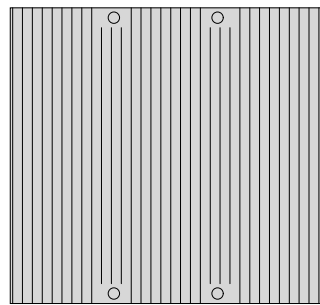
FUJITSU TA08025-B604 RRH	
DIMENSIONS (HxWxD) (KG/IN)	380x400x200/14.9"x15.7"x7.8"
WEIGHT(KG,LB)/ VOLUME	29kg,63.9lb/ 30L
POWER SUPPLY	DC-58~-36V



PLAN



SIDE



FRONT

NOTES

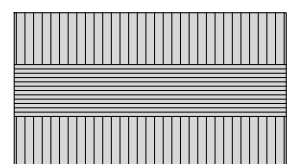
FINAL RRH SPECIFICATIONS TO BE CONFIRMED BY GC

REMOTE RADIO HEAD DETAIL

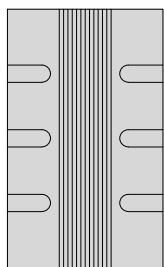
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1

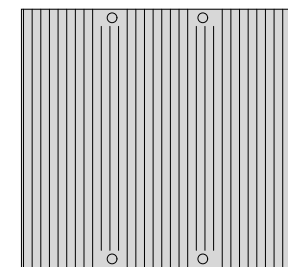
FUJITSU TA08025-B605 RRH	
DIMENSIONS (HxWxD) (KG/IN)	380x400x230/14.9"x15.7"x9.0"
WEIGHT(KG,LB)/ VOLUME	34kg,74.9lb/ 35L
POWER SUPPLY	DC-58~-36V



PLAN



SIDE



FRONT

NOTES

FINAL RRH SPECIFICATIONS TO BE CONFIRMED BY GC

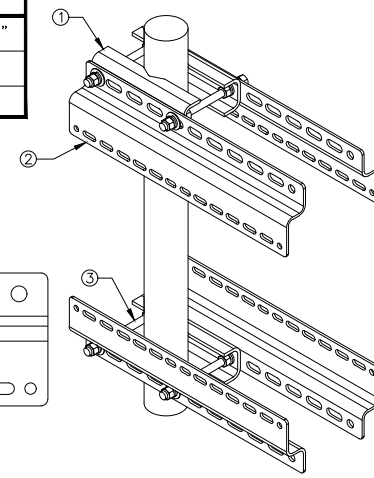
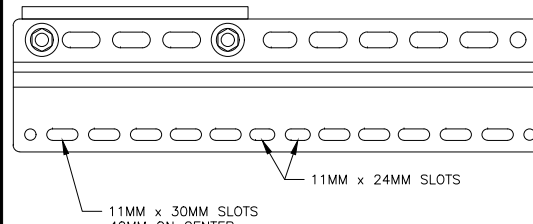
REMOTE RADIO HEAD DETAIL

NO SCALE

2

SABRE INDUSTRIES RRU BRACKET MOUNT C10123155	
DIMENSIONS (HxWxD) (1 BRACKET)	5"x20"x1-13/16"
WEIGHT (FULL ASSEMBLY)	35.79 lbs
PACKAGE QUANTITY	4

ITEM#	DESCRIPTION
1	PLATE, CHANNEL BRACKET
2	RRH Z BRACKET, 3/16"
3	THREADED ROD ASSEMBLY 1/2"x12"



REMOTE RADIO MOUNT DETAIL

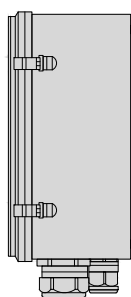
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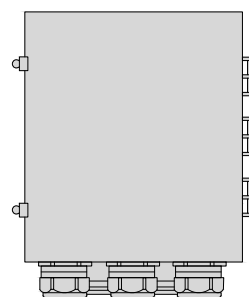
RAYCAP RDIDC-9181-PF-48 DC SURGE PROTECTION	
DIMENSIONS (HxWxD)	18.98"x14.39"x8.15"
WEIGHT	21.82 LBS



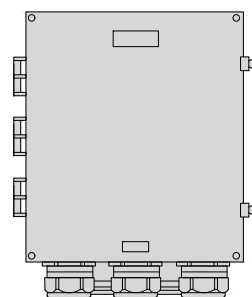
PLAN



SIDE



BACK



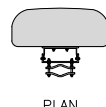
FRONT

SURGE SUPPRESSION DETAIL

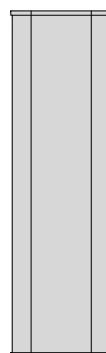
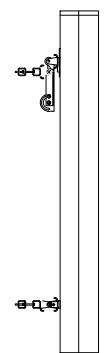
NO SCALE

4

JMA WIRELESS MX08FR0665-21 ANTENNA	
DIMENSIONS (HxWxD)	72.0"x20.0"x8.0"
TOTAL WEIGHT	54 LB
RF PORTS, CONNECTOR TYPE	8 x 4.3-10 FEMALE



PLAN



NOTES

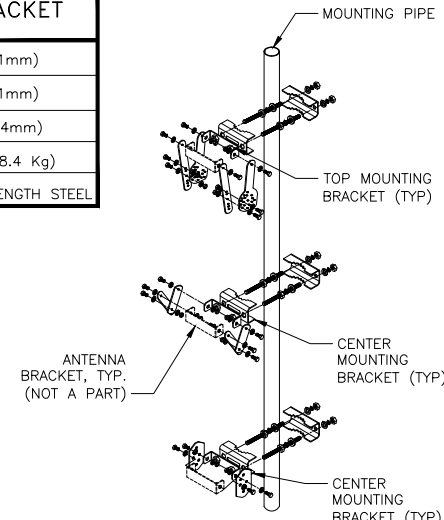
FINAL ANTENNA SPECIFICATIONS TO BE CONFIRMED BY GC

ANTENNA DETAIL

NO SCALE

5

JMA 91900318 MOUNTING BRACKET	
WIDTH	8.3" (211mm)
DEPTH	7.5" (191mm)
HEIGHT	11.2" (284mm)
TOTAL WEIGHT (WITH BRACKETS)	18.5 LBS (8.4 Kg)
HOUSING MATERIAL	GALV. HIGH STRENGTH STEEL

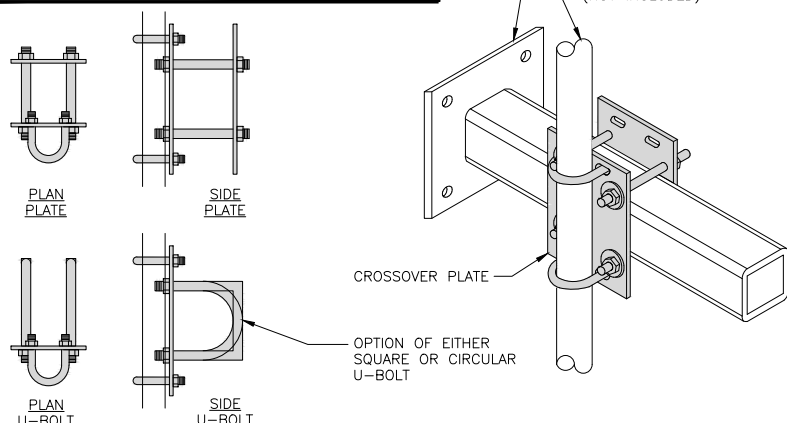


ANTENNA MOUNTING DETAIL

NO SCALE

6

COMMSCOPE XP-2040 CROSSOVER PLATE	
DIMENSIONS (HxW)	10"x12"
WEIGHT	11.023 LBS

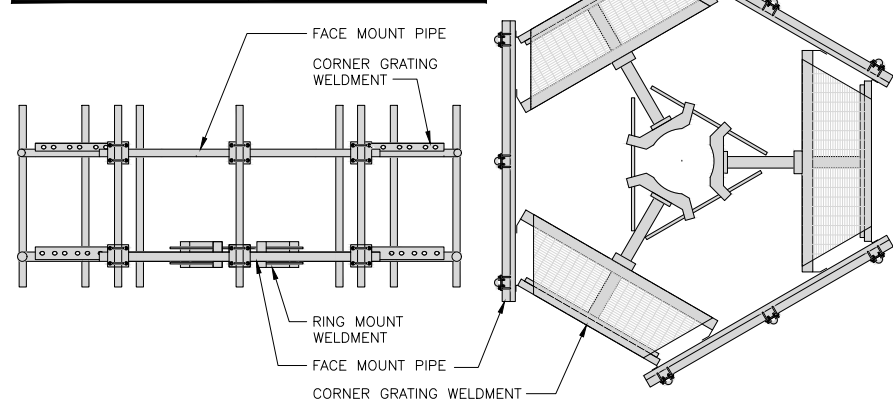


RRH/OVP MOUNT DETAIL

NO SCALE

7

SITEPRO1 SNP8HR-396 SNUB-NOSE PLATFORM	
FACE SIZE	8'-0"
WEIGHT	1786.28 LB
ANTENNA PIPE MOUNTS	(6) 2-3/8" O.D.



ANTENNA PLATFORM DETAIL

NO SCALE

8

NOT USED

NO SCALE

9

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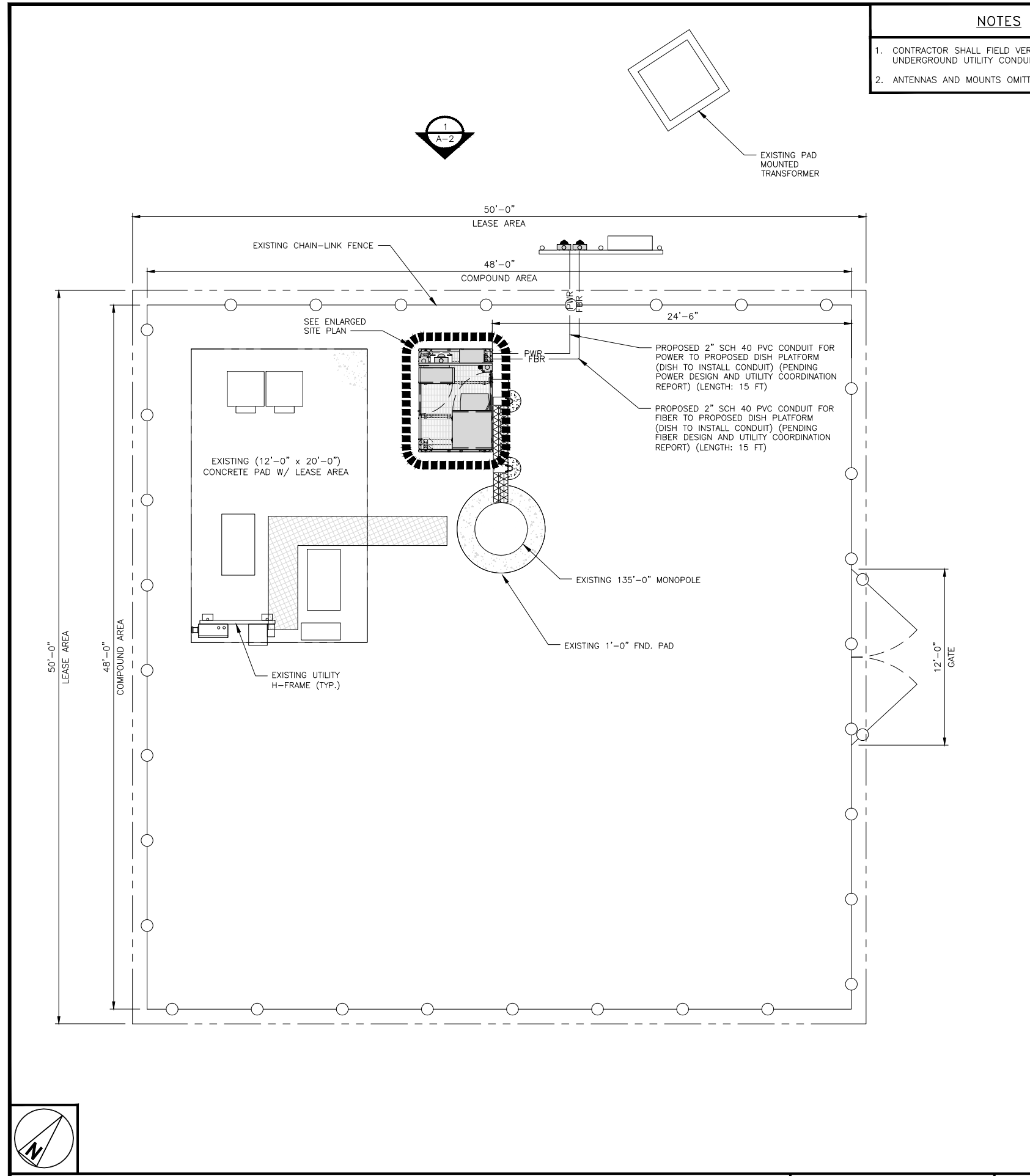
A&E PROJECT NUMBER
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DISH Wireless L.L.C.
PROJECT INFORMATION
BOBDL00150A
TARPON - CT1209
780 PROSPECT HILL ROAD
WINDSOR, CT 06095

SHEET TITLE
EQUIPMENT DETAILS

SHEET NUMBER

A-6



NOTES

1. CONTRACTOR SHALL FIELD VERIFY ALL PROPOSED UNDERGROUND UTILITY CONDUIT ROUTE.
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.

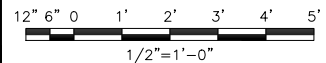
1. CONTRACTOR SHALL INSPECT THE EXISTING CONDITIONS PRIOR TO SUBMITTING A BID. ANY QUESTIONS ARISING DURING THE BID PERIOD IN REGARDS TO THE CONTRACTOR'S FUNCTIONS, THE SCOPE OF WORK, OR ANY OTHER ISSUE RELATED TO THIS PROJECT SHALL BE BROUGHT UP DURING THE BID PERIOD WITH THE PROJECT MANAGER FOR CLARIFICATION, 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. FIBER ROUTE IS PRELIMINARY, FINAL FIBER ROUTE TO BE DETERMINED ONCE UCR (UTILITY COORDINATION REPORT) HAS BEEN FINALIZED.

ELECTRICAL NOTES

2

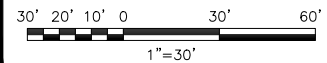


UTILITY ROUTE PLAN



1

OVERALL UTILITY ROUTE PLAN



3



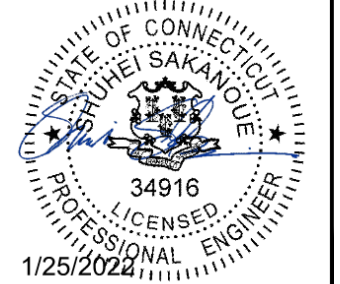
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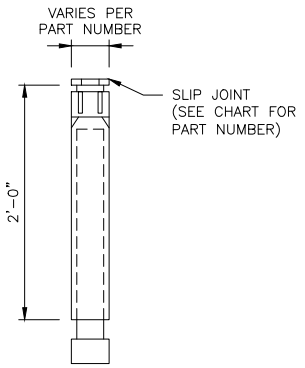
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DISH Wireless L.L.C.
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SHEET TITLE
ELECTRICAL/FIBER ROUTE
PLAN AND NOTES

SHEET NUMBER
E-1

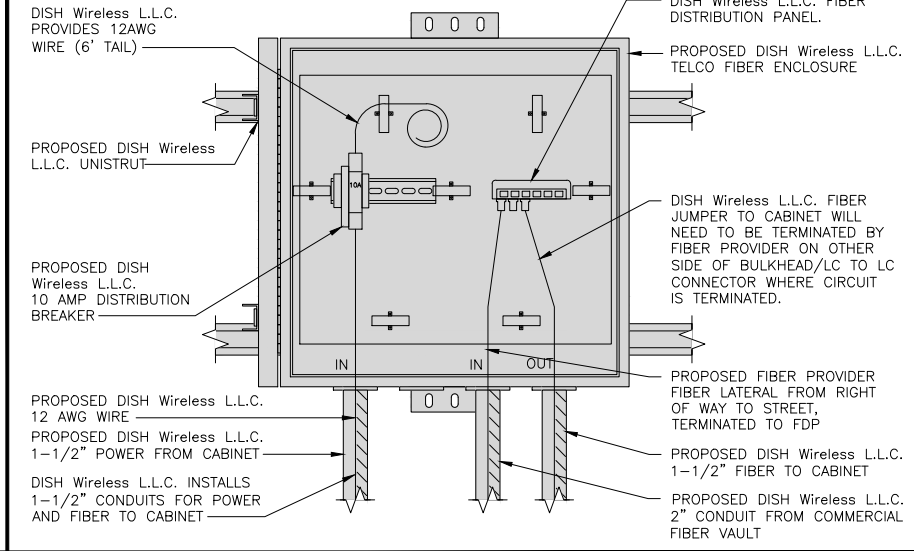
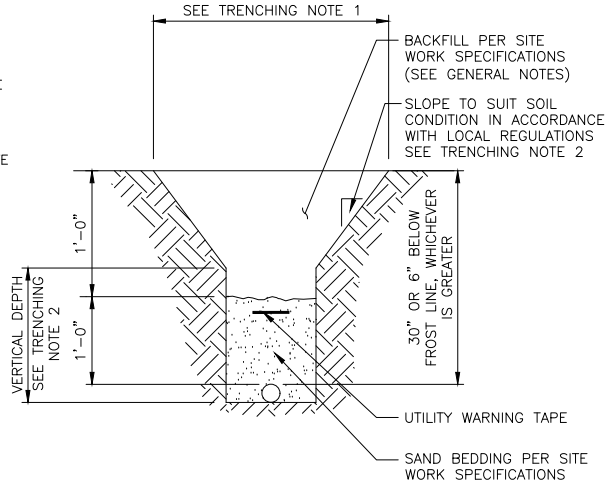
CARLON EXPANSION FITTINGS				
COUPLING END PART#	MALE TERMINAL ADAPTER END PART#	SIZE	STD CTN QTY.	TRAVEL LENGTH
E945D	E945DX	1/2"	20	4"
E945E	E945EX	3/4"	15	4"
E945F	E945FX	1"	10	4"
E945G	E945GX	1 1/4"	5	4"
E945H	E945HX	1 1/2"	5	4"
E945J	E945JX	2"	15	8"
E945K	E945KX	2 1/2"	10	8"
E945L	E945LX	3"	10	8"
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.

TRENCHING NOTES

- 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.
- TRENCHING SAFETY; INCLUDING, BUT NOT LIMITED TO SOIL CLASSIFICATION, SLOPING, AND SHORING, SHALL BE GOVERNED BY THE CURRENT OSHA TRENCHING AND EXCAVATION SAFETY STANDARDS.
- 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.



EXPANSION JOINT DETAIL

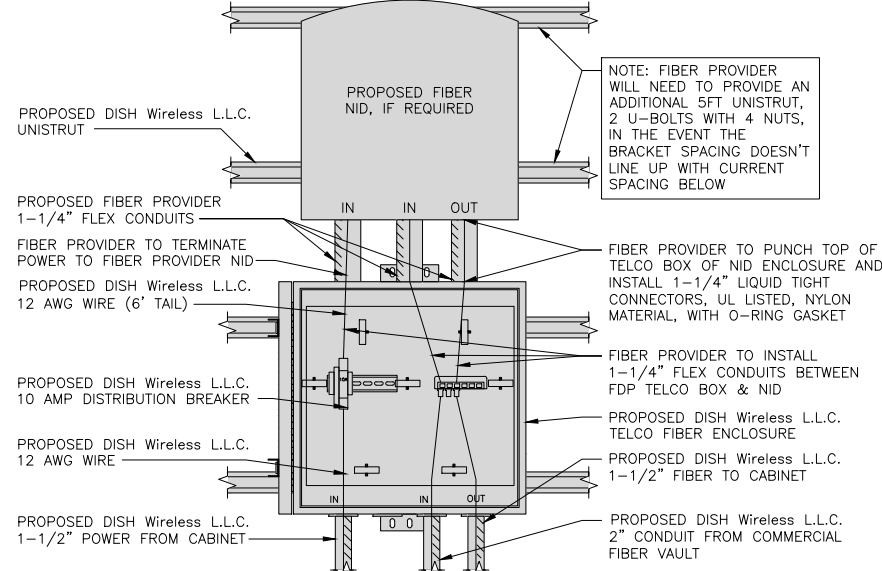
NO SCALE 1

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 8

NOT USED

NO SCALE 9



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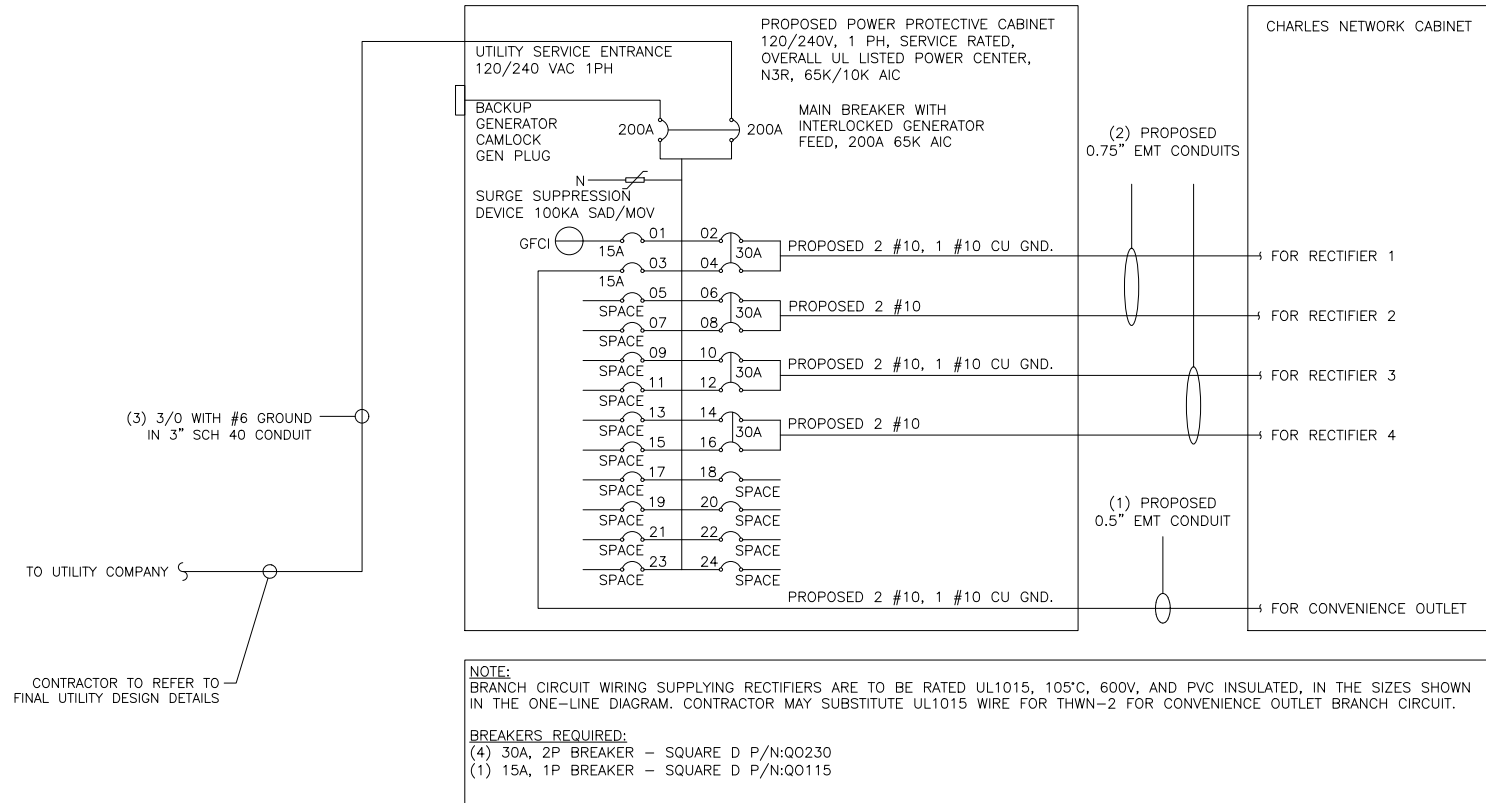
SUBMITTALS		
REV	DATE	DESCRIPTION
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A&E PROJECT NUMBER
2039-Z5555C

DISH Wireless L.L.C.
PROJECT INFORMATION
BOBDL00150A
TARPON – CT1209
780 PROSPECT HILL ROAD
WINDSOR, CT 06095

SHEET TITLE
ELECTRICAL
DETAILS

SHEET NUMBER
E-2



NOTES

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

PANEL SCHEDULE

NO SCALE 2

NOT USED

NO SCALE 3



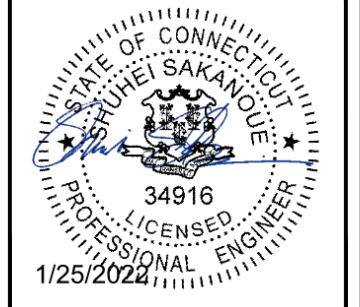
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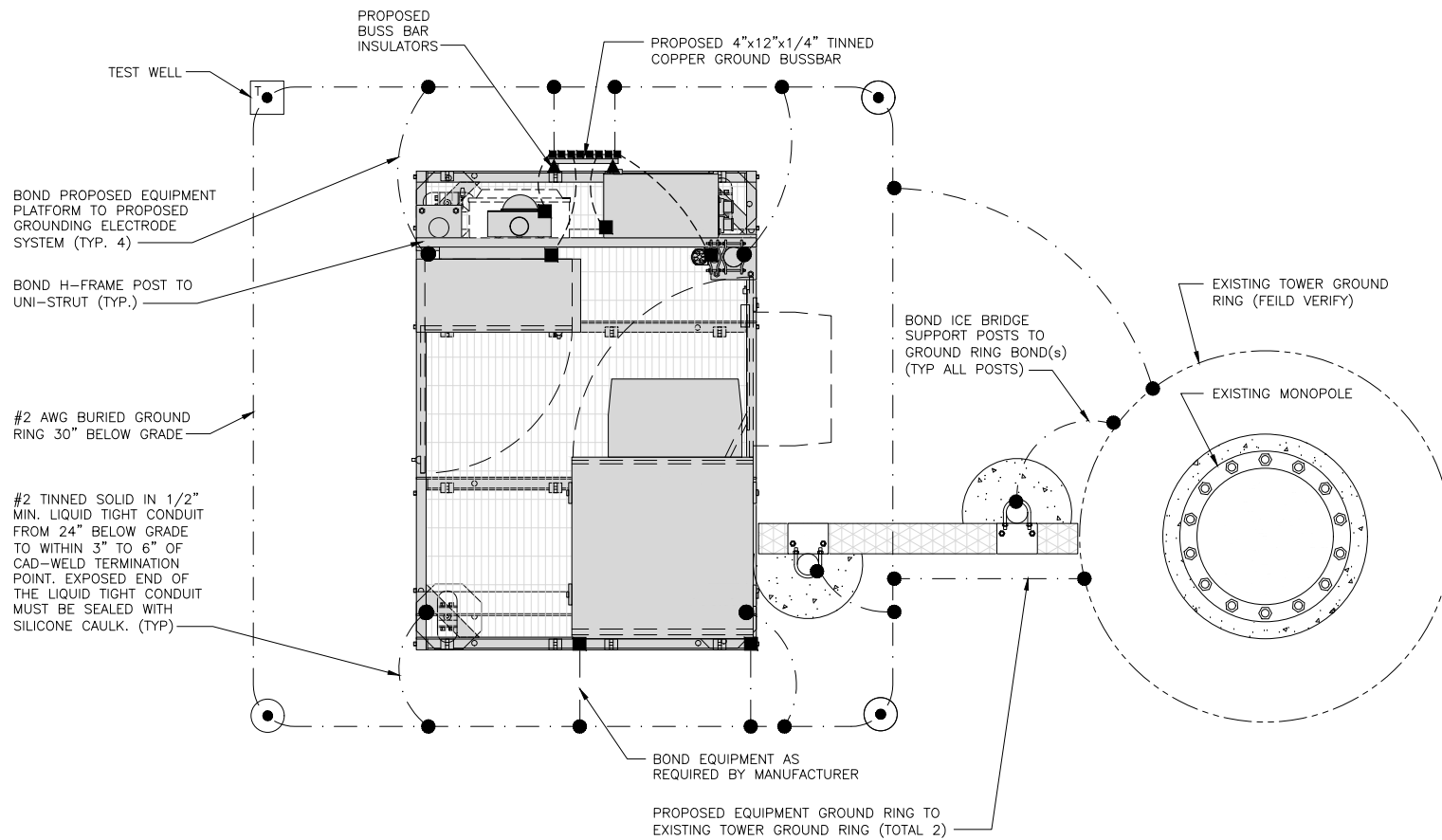
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2039-Z5555C

DISH Wireless L.L.C.
PROJECT INFORMATION
BOBDL00150A
TARPON - CT1209
780 PROSPECT HILL ROAD
WINDSOR, CT 06095

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

SHEET NUMBER
E-3

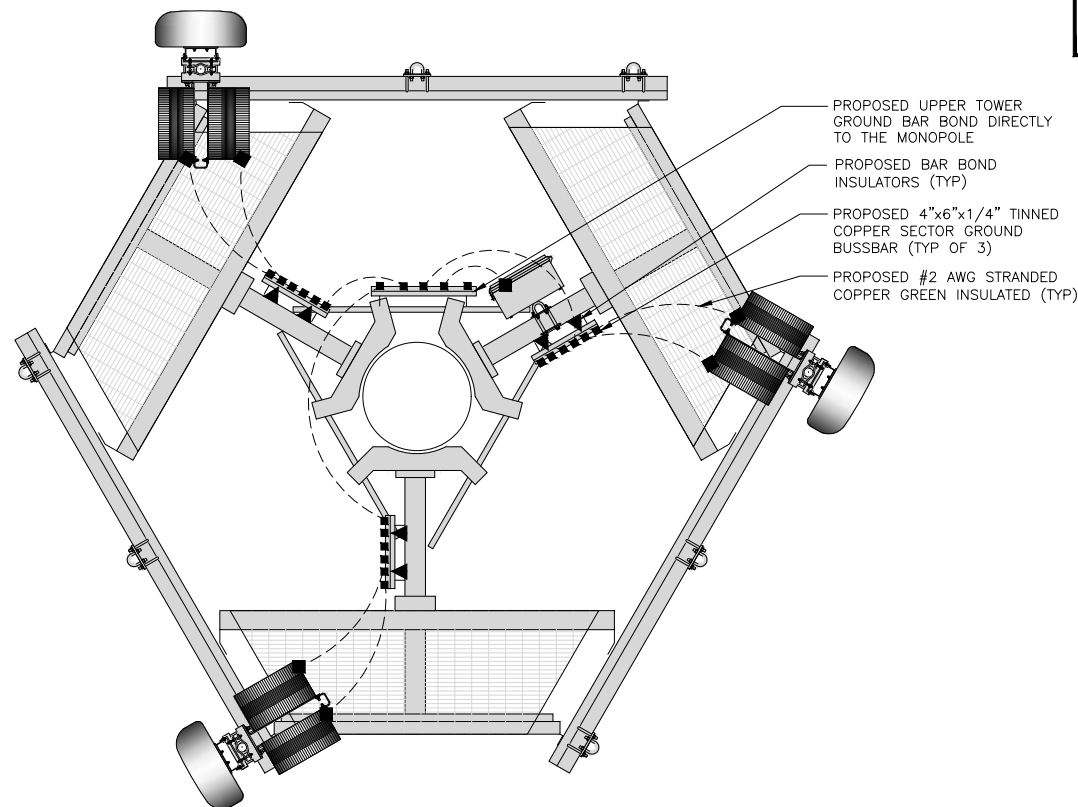


TYPICAL EQUIPMENT GROUNDING PLAN

NO SCALE 1

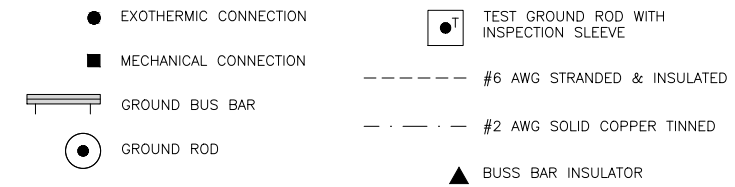
NOTES

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



TYPICAL ANTENNA GROUNDING PLAN

NO SCALE 2



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

- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- TELCO GROUND BAR:** BOND TO BOTH CELL REFERENCE GROUND BAR OR EXTERIOR GROUND RING.
- FRAME BONDING:** THE BONDING POINT FOR TELECOM EQUIPMENT FRAMES SHALL BE THE GROUND BUS THAT IS NOT ISOLATED FROM THE EQUIPMENTS METAL FRAMEWORK.
- 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.
- 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.
- 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
- 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.
- 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
- TOWER TOP COLLECTOR BUSS BAR** IS TO BE MECHANICALLY BONDED TO PROPOSED ANTENNA MOUNT COLLAR. REFER TO DISH Wireless L.L.C. GROUNDING NOTES.

GROUNDING KEY NOTES

NO SCALE 3



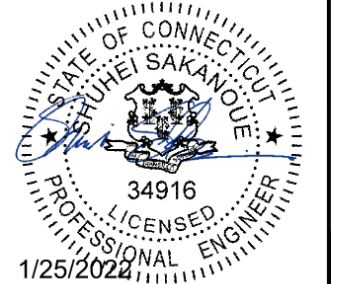
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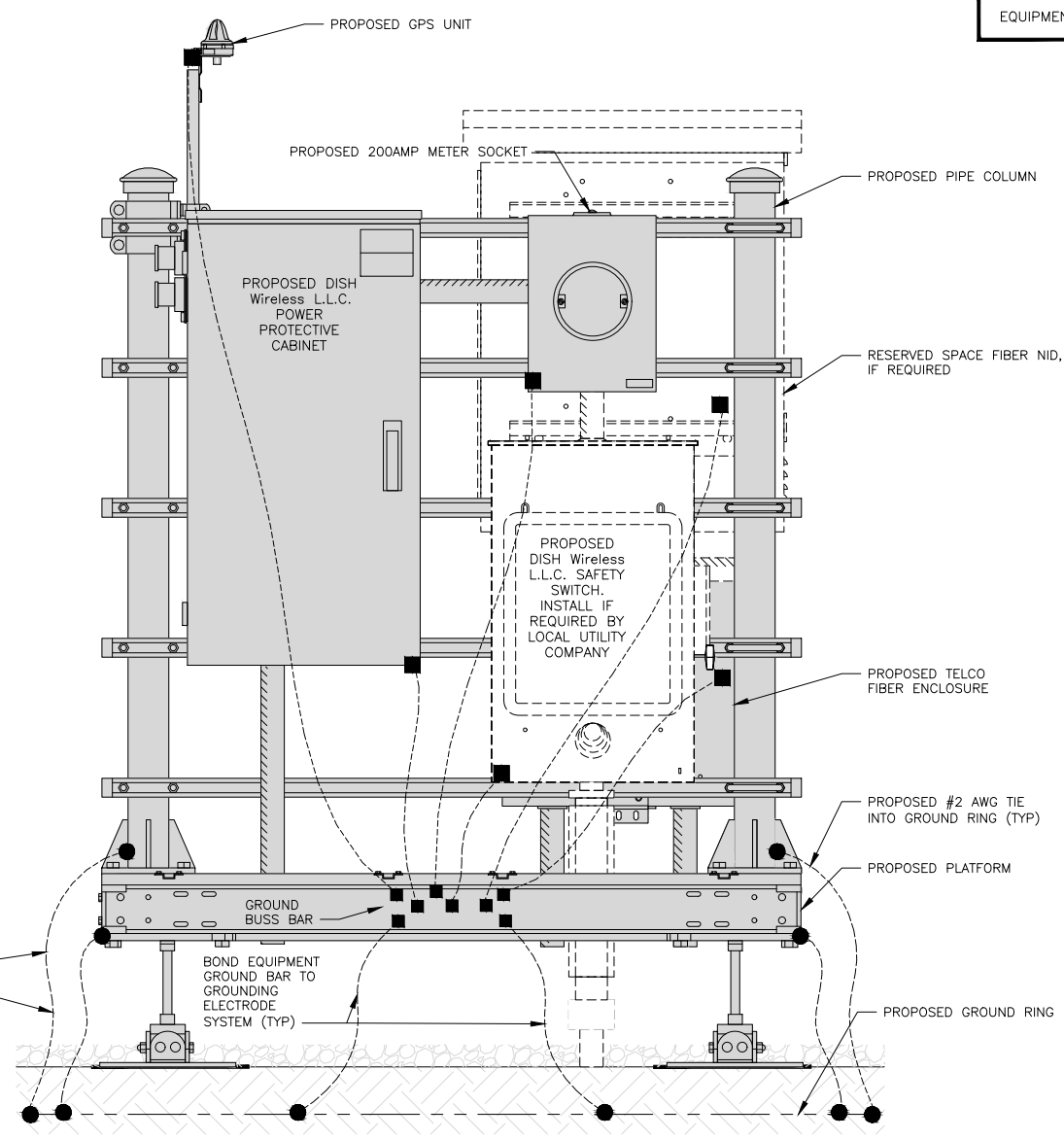
DISH Wireless L.L.C.
PROJECT INFORMATION
BOBDL00150A
TARPON - CT1209
780 PROSPECT HILL ROAD
WINDSOR, CT 06095

SHEET TITLE
GROUNDING PLANS
AND NOTES

SHEET NUMBER

G-1

NOTES
EQUIPMENT CABINET OMITTED FOR CLARITY

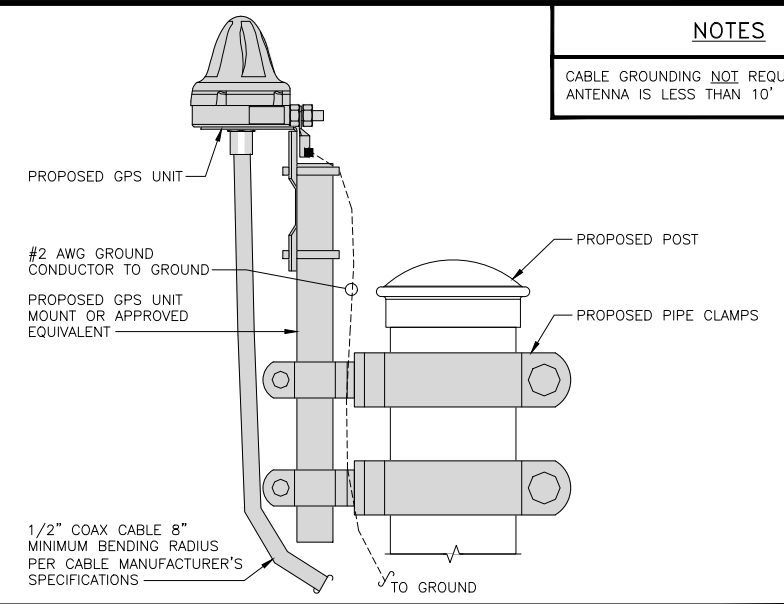


#2 TINNED SOLID IN 1/2" MIN. LIQUID TIGHT CONDUIT FROM 24" BELOW GRADE TO WITHIN 3" TO 6" OF CAD-WELD TERMINATION POINT. EXPOSED END OF THE LIQUID TIGHT CONDUIT MUST BE SEALED WITH SILICONE CAULK. (TYP)

H-FRAME GROUNDING DETAIL

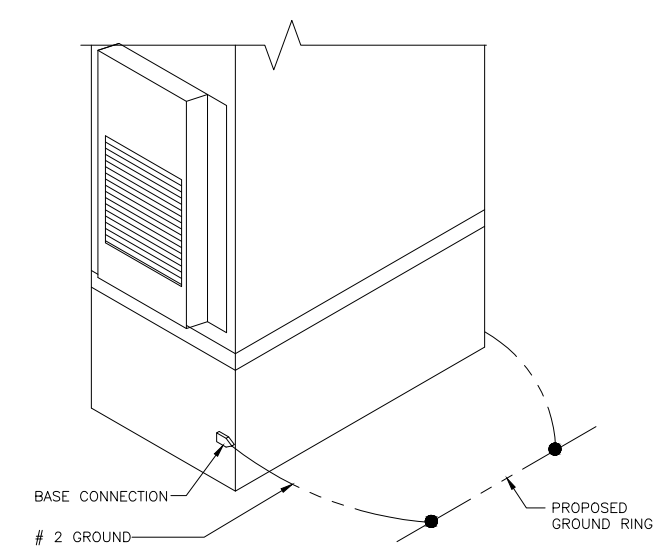
NO SCALE 1

NOTES
CABLE GROUNDING NOT REQUIRED WHEN ANTENNA IS LESS THAN 10' FROM CABINET



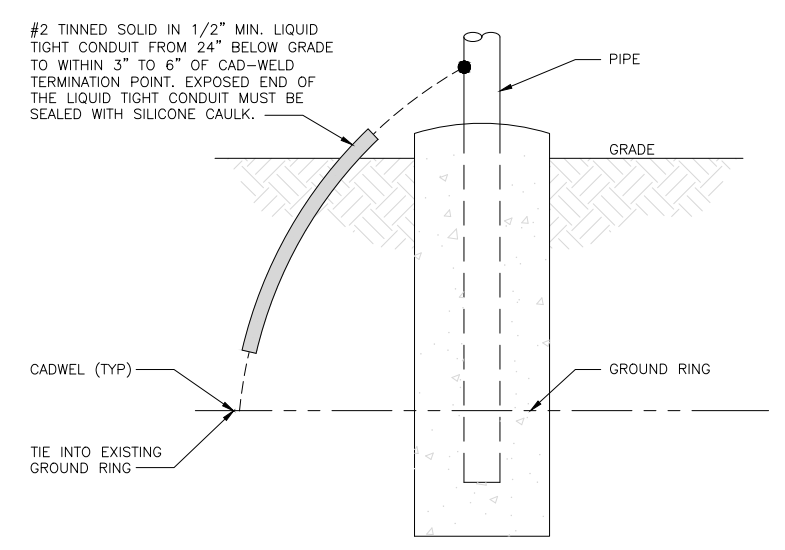
TYPICAL GPS UNIT GROUNDING

NO SCALE 2



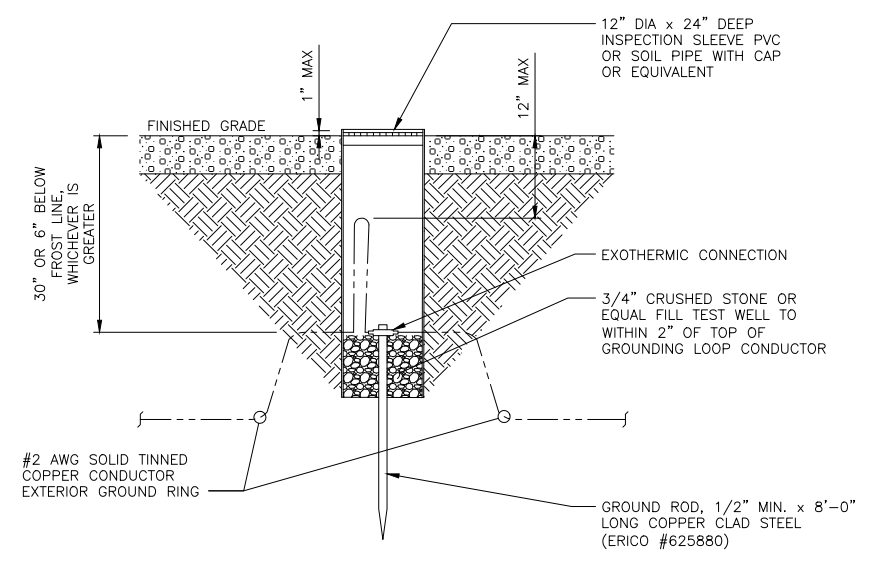
OUTDOOR CABINET GROUNDING

NO SCALE 3



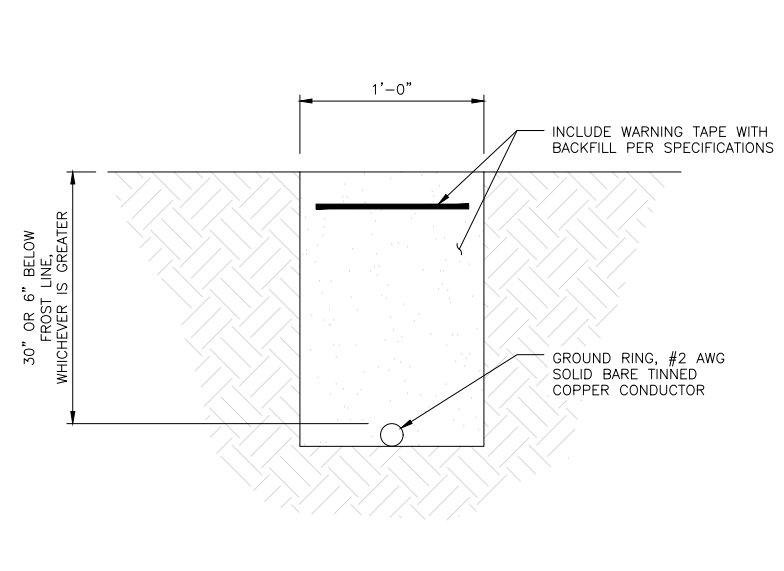
TRANSITIONING GROUND DETAIL

NO SCALE 4



TYPICAL TEST GROUND ROD WITH INSPECTION SLEEVE

NO SCALE 5



TYPICAL GROUND RING TRENCH

NO SCALE 6



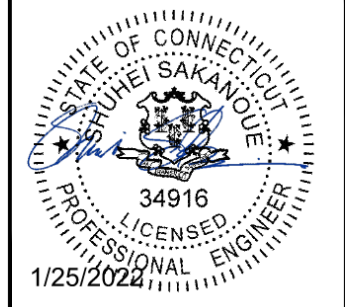
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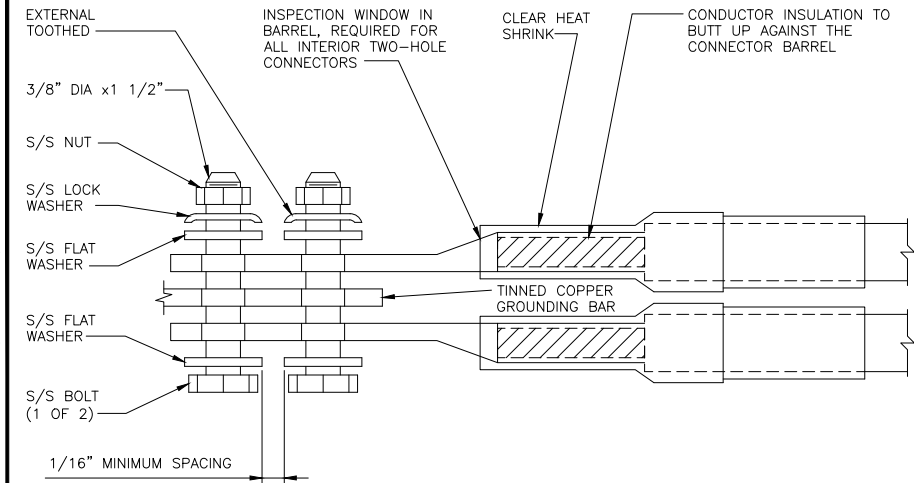
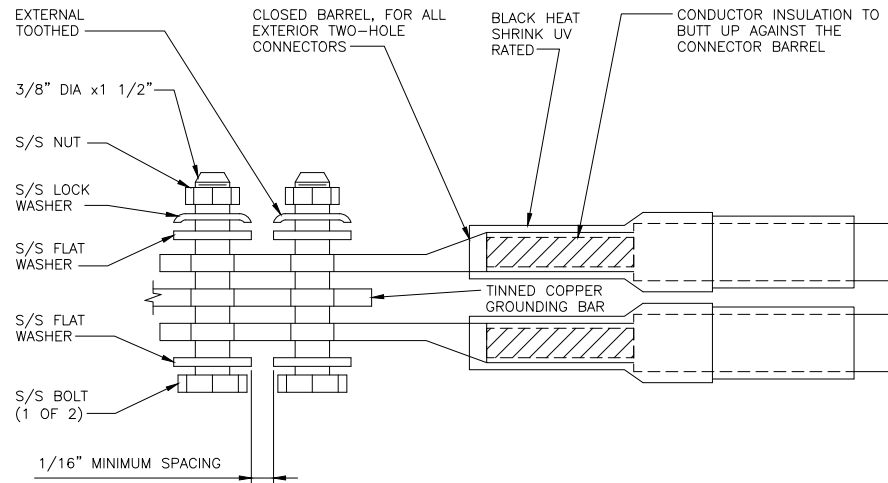
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BOBDL00150A
TARPON - CT1209
780 PROSPECT HILL ROAD
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SHEET TITLE
GROUNDING DETAILS

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.
9. 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

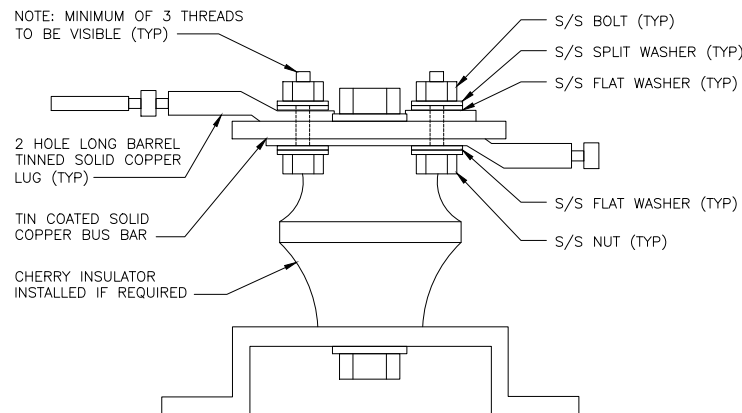
NO SCALE

2

TYPICAL INTERIOR TWO HOLE LUG

NO SCALE

3



LUG DETAIL

NO SCALE

4

NO SCALE

5

NOT USED

NO SCALE

6

NOT USED

NO SCALE

7

NOT USED

NO SCALE

8

NOT USED

NO SCALE

9

dish
wireless.

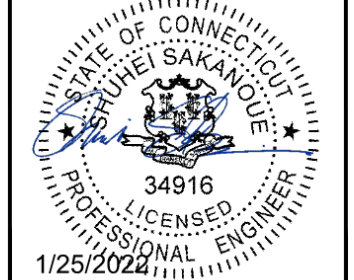
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DISH Wireless L.L.C.
PROJECT INFORMATION
BOBDL00150A
TARPON - CT1209
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WINDSOR, CT 06095

SHEET TITLE
GROUNDING DETAILS

SHEET NUMBER

G-3

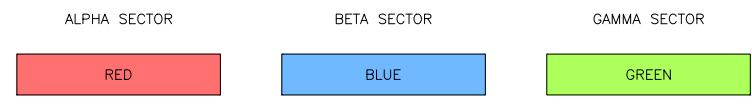
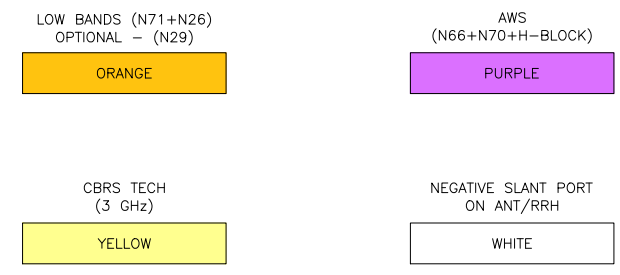
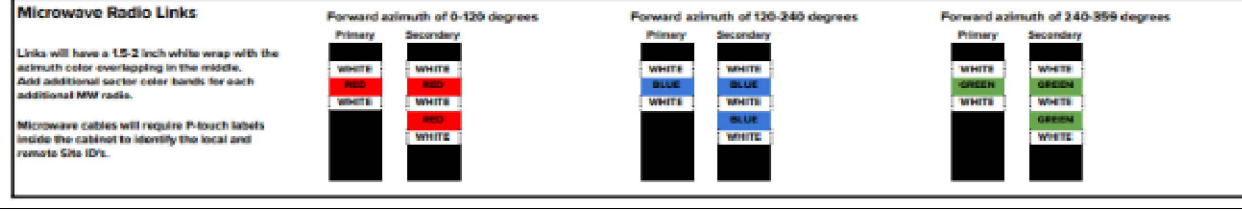
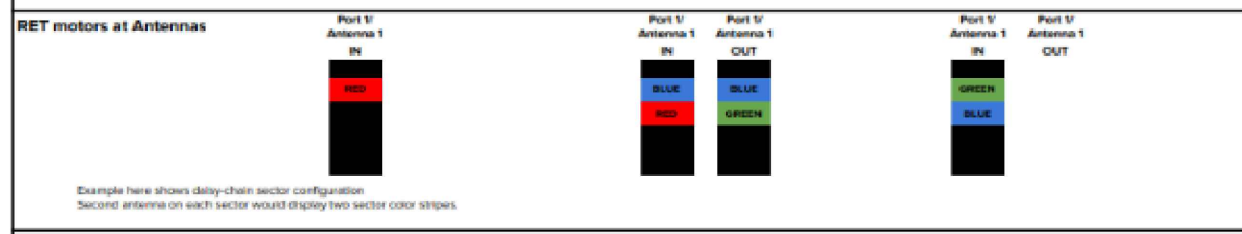
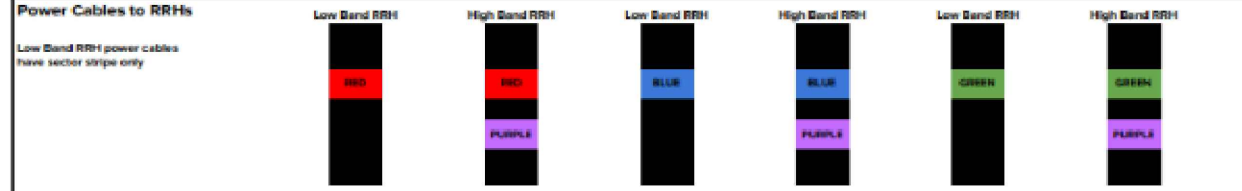
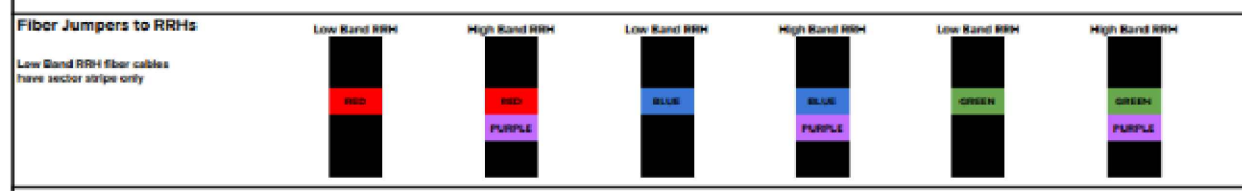
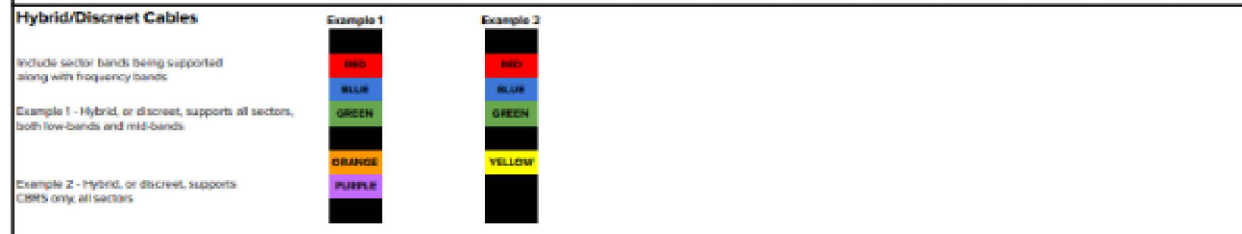
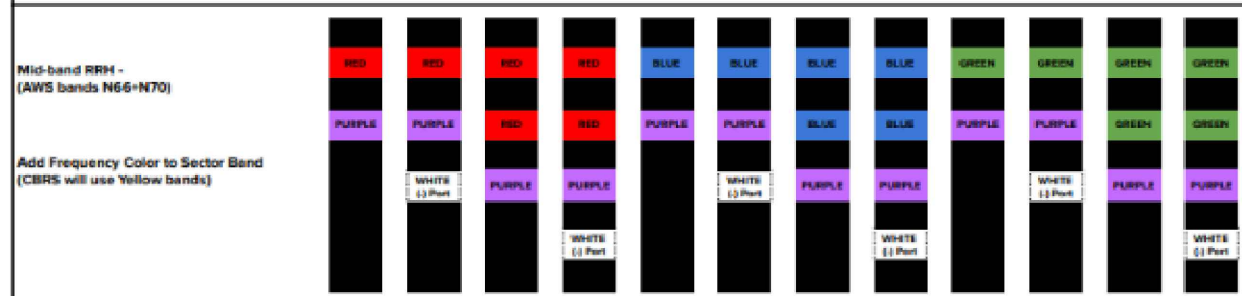
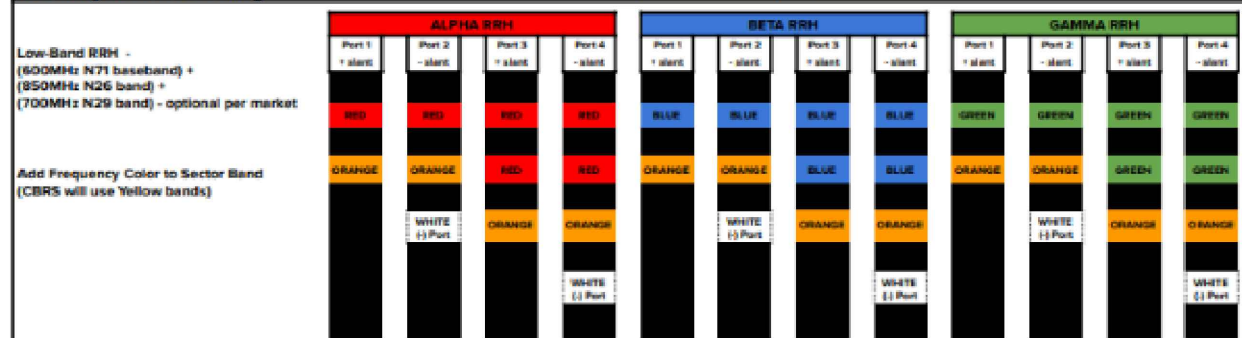
RF COLOR CODING

RF Cable Color Codes



RF Jumper Color Coding

3/4" tape widths with 3/4" spacing



COLOR IDENTIFIER NO SCALE 2

NOT USED NO SCALE 3

NO SCALE 1 NOT USED NO SCALE 4



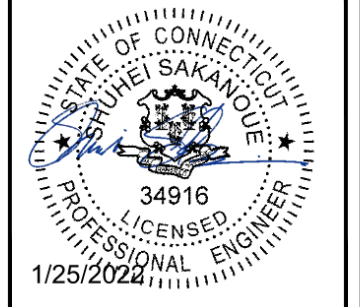
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DRAWN BY: RCD CHECKED BY: SS APPROVED BY: CJW

RFDS REV #: N/A

CONSTRUCTION DOCUMENTS

SUBMITTALS		
REV	DATE	DESCRIPTION
0	01/10/2022	ISSUED FOR PERMIT

A&E PROJECT NUMBER
2039-Z5555C

DISH Wireless L.L.C.
PROJECT INFORMATION
BOBDL00150A
TARPON - CT1209
780 PROSPECT HILL ROAD
WINDSOR, CT 06095

SHEET TITLE
RF
CABLE COLOR CODES

SHEET NUMBER
RF-1



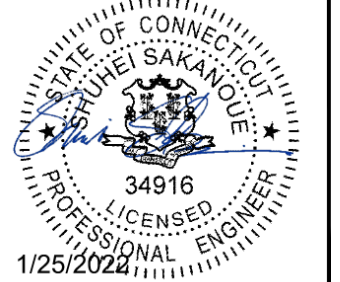
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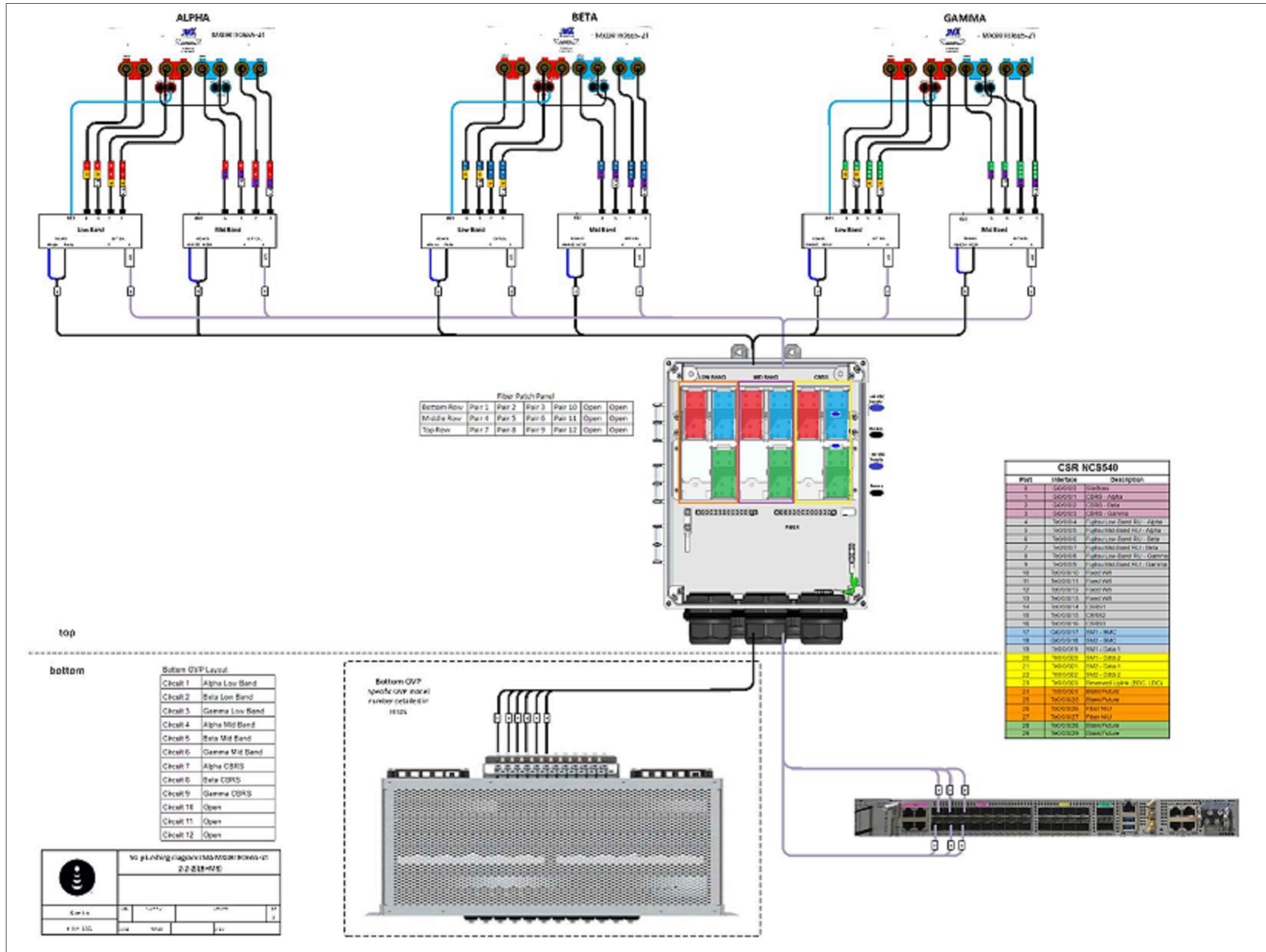
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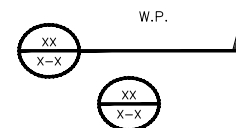
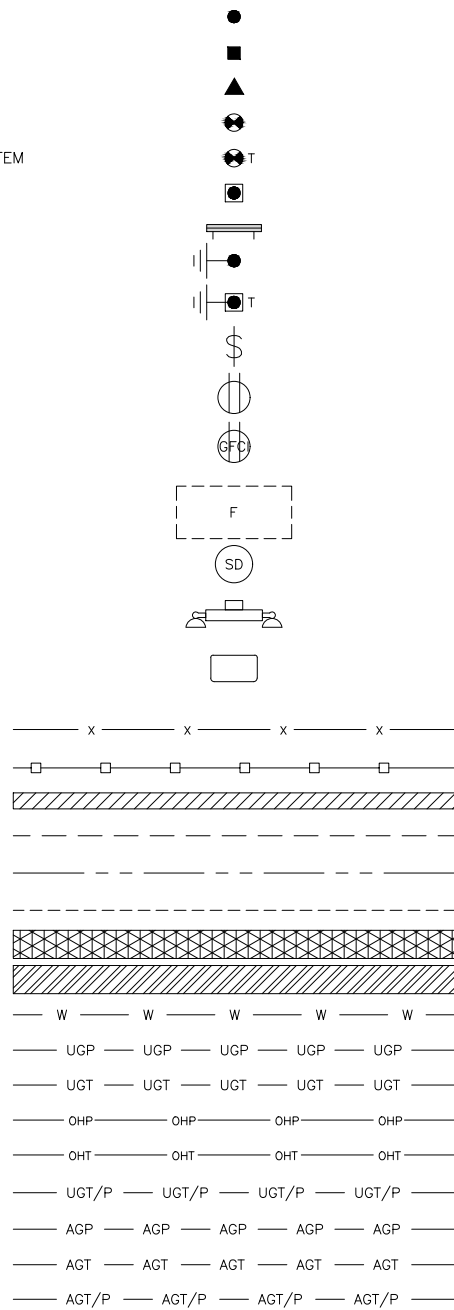
SHEET TITLE
RF
PLUMBING DIAGRAM

SHEET NUMBER

RF-2



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-DEBTDX



LEGEND

AB	ANCHOR BOLT	IN	INCH	INT	INTERIOR
ABV	ABOVE	LB(S)	POUND(S)	LF	LINEAR FEET
AC	ALTERNATING CURRENT	LTE	LONG TERM EVOLUTION	MAS	MASONRY
ADDL	ADDITIONAL	MAX	MAXIMUM	MB	MACHINE BOLT
AFF	ABOVE FINISHED FLOOR	MECH	MECHANICAL	MFR	MANUFACTURER
AFG	ABOVE FINISHED GRADE	MGB	MASTER GROUND BAR	MIN	MINIMUM
AGL	ABOVE GROUND LEVEL	MISC	MISCELLANEOUS	MTL	METAL
AIC	AMPERAGE INTERRUPTION CAPACITY	MTS	MANUAL TRANSFER SWITCH	MW	MICROWAVE
ALUM	ALUMINUM	NEC	NATIONAL ELECTRIC CODE	NM	NEWTON METERS
ALT	ALTERNATE	NO.	NUMBER	#	NUMBER
ANT	ANTENNA	NTS	NOT TO SCALE	OC	ON-CENTER
APPROX	APPROXIMATE	OSHA	OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION	OPNG	OPENING
ARCH	ARCHITECTURAL	P/C	PRECAST CONCRETE	PCS	PERSONAL COMMUNICATION SERVICES
ATS	AUTOMATIC TRANSFER SWITCH	PCU	PRIMARY CONTROL UNIT	PP	POLARIZING PRESERVING
AWG	AMERICAN WIRE GAUGE	PRC	PRIMARY RADIO CABINET	PSF	POUNDS PER SQUARE FOOT
BATT	BATTERY	PP	POLARIZING PRESERVING	PSI	POUNDS PER SQUARE INCH
BLDG	BUILDING	PT	PRESSURE TREATED	PWR	POWER CABINET
BLK	BLOCK	QTY	QUANTITY	RAD	RADIUS
BLKG	BLOCKING	RECT	RECTIFIER	REF	REFERENCE
BM	BEAM	REINF	REINFORCEMENT	REQ'D	REQUIRED
BTC	BARE TINNED COPPER CONDUCTOR	RET	REMOTE ELECTRIC TILT	RF	RADIO FREQUENCY
BOF	BOTTOM OF FOOTING	RMC	RIGID METALLIC CONDUIT	RRH	REMOTE RADIO HEAD
CAB	CABINET	RRU	REMOTE RADIO UNIT	RWY	RACEWAY
CANT	CANTILEVERED	SCH	SCHEDULE	SHT	SHEET
CHG	CHARGING	SIAD	SMART INTEGRATED ACCESS DEVICE	SIM	SIMILAR
CLG	CEILING	SPEC	SPECIFICATION	SQ	SQUARE
CLR	CLEAR	SS	STAINLESS STEEL	STD	STANDARD
COL	COLUMN	STL	STEEL	TEMP	TEMPORARY
COMM	COMMON	THK	THICKNESS	TMA	TOWER MOUNTED AMPLIFIER
CONC	CONCRETE	TOA	TOP OF ANTENNA	TN	TOE NAIL
CONSTR	CONSTRUCTION	TOC	TOP OF CURB	TOF	TOP OF FOUNDATION
DBL	DOUBLE	TOF	TOP OF FOUNDATION	TOP	TOP OF PLATE (PARAPET)
DC	DIRECT CURRENT	TOS	TOP OF STEEL	TOW	TOP OF WALL
DEPT	DEPARTMENT	TOW	TOP OF WALL	TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSION
DF	DOUGLAS FIR	TYP	TYPICAL	UG	UNDERGROUND
DIA	DIAMETER	UL	UNDERWRITERS LABORATORY	UNO	UNLESS NOTED OTHERWISE
DIAG	DIAGONAL	UMTS	UNIVERSAL MOBILE TELECOMMUNICATIONS SYSTEM	UPS	UNINTERRUPTIBLE POWER SYSTEM (DC POWER PLANT)
DIM	DIMENSION	VIF	VERIFIED IN FIELD	W	WIDE
DWG	DRAWING	W	WIDE	W/	WITH
DWL	DOWEL	WD	WOOD	WP	WEATHERPROOF
EA	EACH	WT	WEIGHT		
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				

ABBREVIATIONS



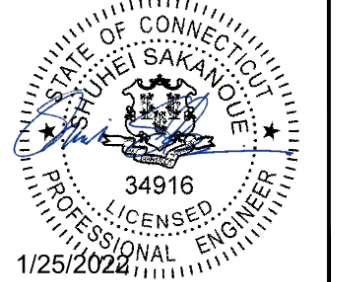
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 2039-Z5555C

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 PROJECT INFORMATION
 BOBDL00150A
 TARPON - CT1209
 780 PROSPECT HILL ROAD
 WINDSOR, CT 06095

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.
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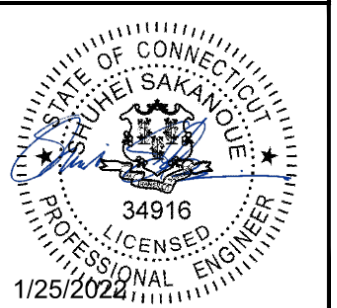
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SHEET TITLE
GENERAL NOTES

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.

5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

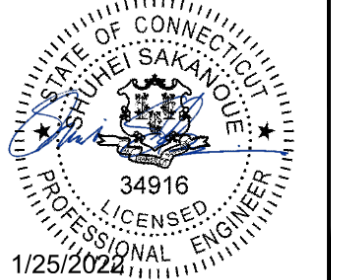
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DRAWN BY: CHECKED BY: APPROVED BY:

RCD SS CJW

RFDS REV #: N/A

CONSTRUCTION
DOCUMENTS

SUBMITTALS		
REV	DATE	DESCRIPTION
0	01/10/2022	ISSUED FOR PERMIT

A&E PROJECT NUMBER
2039-Z5555C

DISH Wireless L.L.C.
PROJECT INFORMATION
BOBDL00150A
TARPON - CT1209
780 PROSPECT HILL ROAD
WINDSOR, CT 06095

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.



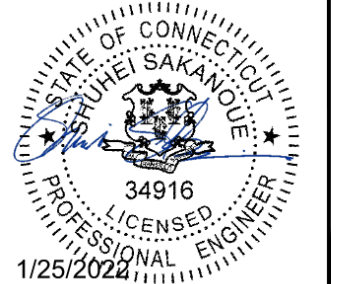
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DRAWN BY: CHECKED BY: APPROVED BY:

RCD SS CJW

RFDS REV #: N/A

CONSTRUCTION DOCUMENTS

SUBMITTALS		
REV	DATE	DESCRIPTION
0	01/10/2022	ISSUED FOR PERMIT

A&E PROJECT NUMBER
2039-Z5555C

DISH Wireless L.L.C.
PROJECT INFORMATION
BOBDL00150A
TARPON - CT1209
780 PROSPECT HILL ROAD
WINDSOR, CT 06095

SHEET TITLE
GENERAL NOTES

SHEET NUMBER
GN-4

Exhibit D

Structural Analysis Report

Structural Analysis 135-ft Monopole

Prepared For:
Tarpon Towers II, LLC
8916 77th Terrace East, Suite 103
Lakewood Ranch, FL 34202

MFP Project #40921-031

Site Location:
CT1209 Windsor
780 Prospect Hill Road
Windsor, Hartford County, CT
Dish Site# BOHVN00150A
Hartford Co., CT
Lat/Long: 41°52'58.5", -72°42'29.2"

Analysis Type:
ANSI/TIA-222-G
Structure Rating - 39.3% (Foundation) Passing

February 1, 2022



Michael F. Plahovinsak, P.E. 2/1/2022
18301 State Route 161 W, Plain City, OH 43064
614-398-6250 - mike@mfpeng.com

Project Summary:

I have completed a structural analysis of the existing monopole for the following new configuration:

- 115' – Dish Wireless:
 - (3) JMA MX08FRO665-20_V0F Antennas
 - (3) Fujitsu TA08025-B604 + (3) Fujitsu TA08025-B605 RRH's
 - (1) Raycap RDIDC-9181-PF-48
 - (1) 1.65" Hybrid
 - Valmont SNP8HR-396 Mount

The pole has been analyzed in accordance with the requirements of the International Building Code per IBC section 3108, and the recommendations of the Telecommunications Industry Association "*Structural Standard for Steel Antenna Supporting Structures*" **ANSI/TIA-222-G**.

This analysis may be considered a "Rigorous Structural Analysis" as defined in ANSI/TIA-222-G 15.5.2.

As indicated in the conclusions of this analysis, I have determined that the existing pole and foundation have *sufficient capacity* to support the existing, reserved and proposed antenna loads as detailed herein. Based on the results of my analysis, structural modifications are not required at this time.

Source of Data:

Resource	Source	Job Number	Date
Pole and Foundation Drawings	Michael F. Plahovinsak, PE	23521-150	06/11/21
Geotechnical Report	Welti Geotechnical	N/A	04/13/21
Erection Book	TAPP	TP-19977	06/15/21

Michael F. Plahovinsak, P.E. - Since 2011

mike@mfpeng.com

Analysis Criteria:

2016 Connecticut Building Code
 Structural Standards for Steel Antenna Supporting Structures **ANSI/TIA-222-G**

- TIA-222-G Wind Speed 94 mph (V_{asd} / 3-Second Gust)
- Equivalent ASCE-7-10 Wind 121 mph (V_{ult})
- TIA-222-G Wind w/ 1" Ice 50 mph (3-Sec Gust)
- Operational Wind Speed 60 mph (3-Sec Gust)

Structure Class	Exposure Category	Topographic Category
II (I = 1.0)	C	I

Appurtenance Listing:

Status	Elev.	Antenna / Mounting	Coax	Owner
Existing	130'	(3) Ericsson AIR3246 B66 Antennas (3) RFS APXVAARR24_43-U-NA20 Antennas (3) RFS APX16DWV16DWVSEA20 Antennas (3) Ericsson 4415 B66A + (3) 4449 B71+B12 + (3) 4415 B25 RRH's (1) Commscope VHLP1-23-CR4B Dish Platform Mount	(4) 6x12 HCS	T-Mobile
Proposed*	115'	(3) JMA MX08FRO665-20_V0F Antennas (3) Fujitsu TA08025-B604 + (3) Fujitsu TA08025-B605 RRH's (1) Raycap RDIDC-9181-PF-48 Valmont SNP8HR-396 Mount	(1) 1.65" Hybrid	Dish Wireless

* Analysis is based on a leased wind area of 11,000 in². The 11,000 in² is greater than the proposed actual equipment wind area.

All antenna lines assumed internally mounted, not exposed to the wind.

Michael F. Plahovinsak, P.E. - Since 2011

mike@mfpeng.com

Foundation Analysis:

The existing monopole foundation design was analyzed in conjunction with site specific geotechnical report. The existing foundation has sufficient capacity to support the pole with the proposed antenna configuration.

Conclusion:

I have completed a structural analysis of the existing monopole and foundation in accordance with the project specifics outlined above. My analysis indicates that the existing monopole and foundation are structurally adequate when considering the existing plus proposed loading. Please refer to the attached calculations for an itemized listing of all member stress ratios. The existing pole is safe and adequate to support the proposed loads, and no structural reinforcing is required to support the above loading.

Recommendations:

As a part of routine maintenance, I recommend periodic inspection of the pole and foundation structure for signs of fatigue or corrosion.

If you have any questions about the contents of this structural report or require any additional information, please feel free to contact my office.

Sincerely,

Michael F. Plahovinsak, P.E.



mike@mpeng.com - 614.398-6250

Michael F. Plahovinsak, P.E. - Since 2011

mike@mpeng.com

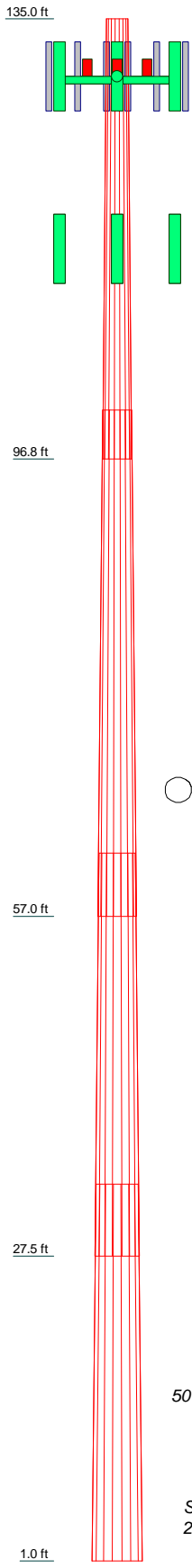
**Standard Conditions for Providing Structural Consulting
Services on Existing Structures**

1. The following standard conditions are a general overview of key issues regarding the work product supplied.
2. If the existing conditions are not as represented in this structural report or attached sketches, I should be contacted to evaluate the significance of the deviation and revise the structural assessment accordingly.
3. The structural analysis has been performed assuming that the structure is in "like new" condition. No allowance was made for excessive corrosion, damaged or missing structural members, loose bolts, etc. If there are any known deficiencies in the structure that potentially compromise structural integrity, I should be made aware of the deficiencies. If I am aware of a deficiency that exists in a structure at the time of my analysis, a general explanation of the structural concern due to the deficiency will be included in the structural report, but the deficiency will not be reflected in capacity calculations.
4. The structural analysis provided is an assessment of the primary load carrying capacity of the structure. I provide a limited scope of service in that I have not verified the capacity of every weld, plate, connection detail, etc. In most cases, structural fabrication details are unknown at the time of my analysis, and the detailed field measurement of this information is beyond the scope of my services. In instances where I have not performed connection capacity calculations, it is assumed that existing manufactured connections develop the full capacity of the primary members being connected.
5. The structural integrity of the existing foundation system can only be verified if exact foundation sizes and soils conditions are known. I will not accept any responsibility for the adequacy of the existing foundations unless this site-specific data is supplied.
6. Miscellaneous items such as antenna mounts, coax supports, etc. have not been designed, detailed, or specified as part of my work. It is assumed that material of adequate size and strength will be purchased from a reputable component manufacturer. The attached report and sketches are schematic in nature and should not be used to fabricate or purchase hardware and accessories to be attached to the structure. I recommend field measurement of the structure before fabricating or purchasing new hardware and accessories. I am not responsible for proper fit and clearance of hardware and accessory items in the field.
7. The structural analysis has been performed considering minimum code requirements or recommendations. If alternate wind, ice, or deflection criteria are to be considered, then I shall be made aware of the alternate criteria.

Michael F. Plahovinsak, P.E. - Since 2011

mike@mfpeng.com

Section	1	2	3	4	
Length (ft)	38.25	44.00	35.00	32.75	23.2
Number of Sides	18	18	18	18	
Thickness (in)	0.1875	0.3750	0.4375	0.5000	
Socket Length (ft)	4.25	5.50	6.25	43.4235	
Top Dia (in)	22.0000	29.4907	37.6474	51.0000	
Bot Dia (in)	30.8489	39.6698	45.7444		
Grade			A572-65		
Weight (K)	2.0	6.1	6.8	8.3	



DESIGNED APPURTENANCE LOADING

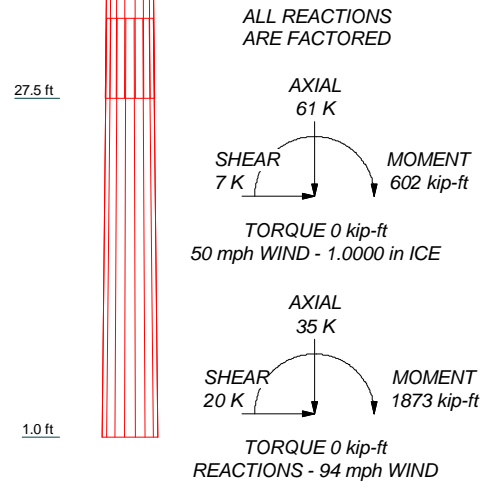
TYPE	ELEVATION	TYPE	ELEVATION
Ericsson AIR 3246 B66 (T-Mobile)	130	RFS - APXVAARR24_43-U-NA20 (T-Mobile)	130
RFS - APXVAARR24_43-U-NA20 (T-Mobile)	130	RFS APX16VDWV-16DWVS (T-Mobile)	130
RFS APX16VDWV-16DWVS (T-Mobile)	130	(3) Ericsson 4415 B66A (T-Mobile)	130
Ericsson AIR 3246 B66 (T-Mobile)	130	(3) Ericsson 4449 B12+B71 (T-Mobile)	130
RFS - APXVAARR24_43-U-NA20 (T-Mobile)	130	(3) Ericsson 4415 B25 (T-Mobile)	130
RFS APX16VDWV-16DWVS (T-Mobile)	130	12' Platform w/ Handrail (T-Mobile)	130
Ericsson AIR 3246 B66 (T-Mobile)	130	Commscope VHLP1-23 (T-Mobile)	130
		Antennas + Equipment (EPA 11,000 in2 / 2,000 lbs) (Dish)	115

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A572-65	65 ksi	80 ksi			

TOWER DESIGN NOTES

1. Tower is located in Hartford County, Connecticut.
2. Tower designed for Exposure C to the TIA-222-G Standard.
3. Tower designed for a 94 mph basic wind in accordance with the TIA-222-G Standard.
4. Tower is also designed for a 50 mph basic wind with 1.00 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60 mph wind.
6. Tower Structure Class II.
7. Topographic Category 1 with Crest Height of 0.00 ft
8. TOWER RATING: 38.2%



Michael Plahovinsak, P.E.		
18301 State Route 161 Plain City, OH 43064 Phone: 614-398-6250 FAX: mike@mfpeng.com		
Job: 135' Monopole - MFP #40921-031 r1	Project: CT1209 Windsor	
Client: Tarpon Towers	Drawn by: JC	App'd:
Code: TIA-222-G	Date: 02/01/22	Scale: NTS
Path:	Dwg No. E-1	

tnxTower Michael Plahovinsak, P.E. 18301 State Route 161 Plain City, OH 43064 Phone: 614-398-6250 FAX: mike@mfpeng.com	Job 135' Monopole - MFP #40921-031 r1	Page 1 of 7
	Project CT1209 Windsor	Date 16:47:33 07/09/21
	Client Tarpon Towers	Designed by JC

Tower Input Data

The tower is a monopole.

This tower is designed using the TIA-222-G standard.

The following design criteria apply:

Tower is located in Hartford County, Connecticut.

Basic wind speed of 94 mph.

Structure Class II.

Exposure Category C.

Topographic Category 1.

Crest Height 0.00 ft.

Nominal ice thickness of 1.0000 in.

Ice thickness is considered to increase with height.

Ice density of 56 pcf.

A wind speed of 50 mph is used in combination with ice.

Temperature drop of 50 °F.

Deflections calculated using a wind speed of 60 mph.

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

Pressures are calculated at each section.

Stress ratio used in pole design is 1.

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

Tapered Pole Section Geometry

Section	Elevation ft	Section Length ft	Splice Length ft	Number of Sides	Top Diameter in	Bottom Diameter in	Wall Thickness in	Bend Radius in	Pole Grade
L1	135.00-96.75	38.25	4.25	18	22.0000	30.8489	0.1875	0.7500	A572-65 (65 ksi)
L2	96.75-57.00	44.00	5.50	18	29.4907	39.6698	0.3750	1.5000	A572-65 (65 ksi)
L3	57.00-27.50	35.00	6.25	18	37.6474	45.7444	0.4375	1.7500	A572-65 (65 ksi)
L4	27.50-1.00	32.75		18	43.4235	51.0000	0.5000	2.0000	A572-65 (65 ksi)

Tapered Pole Properties

Section	Tip Dia. in	Area in ²	I in ⁴	r in	C in	I/C in ³	J in ⁴	It/Q in ²	w in	w/t
L1	22.3105	12.9812	780.3007	7.7434	11.1760	69.8193	1561.6281	6.4918	3.5420	18.891
	31.2958	18.2474	2167.3087	10.8848	15.6712	138.2986	4337.4693	9.1254	5.0994	27.197
L2	30.8861	34.6549	3711.5567	10.3361	14.9813	247.7466	7427.9971	17.3308	4.5304	12.081
	40.2239	46.7706	9123.8911	13.9496	20.1522	452.7481	18259.7876	23.3897	6.3219	16.858
L3	39.4527	51.6706	9038.5241	13.2095	19.1249	472.6057	18088.9412	25.8402	5.8559	13.385
	46.3826	62.9143	16316.0700	16.0840	23.2382	702.1241	32653.6091	31.4631	7.2810	16.642
L4	45.4845	68.1196	15856.2318	15.2378	22.0591	718.8055	31733.3276	34.0663	6.7625	13.525
	51.7096	80.1435	25821.9188	17.9275	25.9080	996.6774	51677.8148	40.0794	8.0960	16.192

Tower Elevation	Gusset Area (per face)	Gusset Thickness	Gusset Grade	Adjust. Factor A _f	Adjust. Factor A _r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals	Double Angle Stitch Bolt Spacing Horizontals	Double Angle Stitch Bolt Spacing Redundants
ft	ft ²	in					in	in	in
L1				1	1	1			

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Tower Elevation	Gusset Area (per face)	Gusset Thickness	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals	Double Angle Stitch Bolt Spacing Horizontals	Double Angle Stitch Bolt Spacing Redundants
ft	ft ²	in					in	in	in
135.00-96.75									
L2 96.75-57.00				1	1	1			
L3 57.00-27.50				1	1	1			
L4 27.50-1.00				1	1	1			

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number		$C_A A_A$ ft ² /ft	Weight plf
1 1/4" (T-Mobile)	C	No	Yes	Inside Pole	130.00 - 1.00	4	No Ice	0.00	0.66
							1/2" Ice	0.00	0.66
							1" Ice	0.00	0.66
1.65" (Dish)	C	No	Yes	Inside Pole	115.00 - 1.00	1	No Ice	0.00	0.92
							1/2" Ice	0.00	0.92
							1" Ice	0.00	0.92

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A_R ft ²	A_F ft ²	$C_A A_A$ In Face ft ²	$C_A A_A$ Out Face ft ²	Weight K
L1	135.00-96.75	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.10
L2	96.75-57.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.14
L3	57.00-27.50	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.10
L4	27.50-1.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.09

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft ²	A_F ft ²	$C_A A_A$ In Face ft ²	$C_A A_A$ Out Face ft ²	Weight K
L1	135.00-96.75	A	2.266	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.10
L2	96.75-57.00	A	2.175	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.14
L3	57.00-27.50	A	2.048	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.10
L4	27.50-1.00	A	1.835	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.09

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Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _{AA} Front	C _{AA} Side	Weight
			Horz	Lateral Vert					
			ft	ft	°	ft	ft ²	ft ²	K
Ericsson AIR 3246 B66 (T-Mobile)	A	From Face	3.00	0.0000	130.00	No Ice	8.04	6.41	0.24
			0.00			1/2" Ice	8.45	7.09	0.31
			0.00			1" Ice	8.87	7.78	0.38
RFS - APXVAARR24_43-U-NA20 (T-Mobile)	A	From Face	3.00	0.0000	130.00	No Ice	20.24	10.79	0.16
			0.00			1/2" Ice	20.89	12.21	0.29
			0.00			1" Ice	21.55	13.49	0.44
RFS - APX16VDWV-16DWVS (T-Mobile)	A	From Face	3.00	0.0000	130.00	No Ice	6.67	3.34	0.06
			0.00			1/2" Ice	7.06	3.99	0.11
			0.00			1" Ice	7.47	4.64	0.16
Ericsson AIR 3246 B66 (T-Mobile)	B	From Face	3.00	0.0000	130.00	No Ice	8.04	6.41	0.24
			0.00			1/2" Ice	8.45	7.09	0.31
			0.00			1" Ice	8.87	7.78	0.38
RFS - APXVAARR24_43-U-NA20 (T-Mobile)	B	From Face	3.00	0.0000	130.00	No Ice	20.24	10.79	0.16
			0.00			1/2" Ice	20.89	12.21	0.29
			0.00			1" Ice	21.55	13.49	0.44
RFS - APX16VDWV-16DWVS (T-Mobile)	B	From Face	3.00	0.0000	130.00	No Ice	6.67	3.34	0.06
			0.00			1/2" Ice	7.06	3.99	0.11
			0.00			1" Ice	7.47	4.64	0.16
Ericsson AIR 3246 B66 (T-Mobile)	C	From Face	3.00	0.0000	130.00	No Ice	8.04	6.41	0.24
			0.00			1/2" Ice	8.45	7.09	0.31
			0.00			1" Ice	8.87	7.78	0.38
RFS - APXVAARR24_43-U-NA20 (T-Mobile)	C	From Face	3.00	0.0000	130.00	No Ice	20.24	10.79	0.16
			0.00			1/2" Ice	20.89	12.21	0.29
			0.00			1" Ice	21.55	13.49	0.44
RFS - APX16VDWV-16DWVS (T-Mobile)	C	From Face	3.00	0.0000	130.00	No Ice	6.67	3.34	0.06
			0.00			1/2" Ice	7.06	3.99	0.11
			0.00			1" Ice	7.47	4.64	0.16
(3) Ericsson 4415 B66A (T-Mobile)	A	From Face	2.00	0.0000	130.00	No Ice	1.64	0.68	0.05
			0.00			1/2" Ice	1.80	0.79	0.06
			0.00			1" Ice	1.97	0.91	0.07
(3) Ericsson 4449 B12+B71 (T-Mobile)	B	From Face	2.00	0.0000	130.00	No Ice	1.64	1.02	0.07
			0.00			1/2" Ice	1.80	1.15	0.09
			0.00			1" Ice	1.97	1.29	0.11
(3) Ericsson 4415 B25 (T-Mobile)	C	From Face	2.00	0.0000	130.00	No Ice	1.64	0.68	0.05
			0.00			1/2" Ice	1.80	0.79	0.06
			0.00			1" Ice	1.97	0.91	0.07
12' Platform w/ Handrail (T-Mobile)	C	None		0.0000	130.00	No Ice	30.00	30.00	1.80
						1/2" Ice	35.00	35.00	2.60
						1" Ice	40.00	40.00	3.40
**									
Antennas + Equipment (EPA 11,000 in2 / 2,000 lbs) (Dish)	C	None		0.0000	115.00	No Ice	76.39	76.39	2.00
						1/2" Ice	81.39	81.39	2.50
						1" Ice	86.39	86.39	3.00

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Dishes

Description	Face or Leg	Dish Type	Offset Type	Offsets: Horz Lateral Vert	Azimuth Adjustment	3 dB Beam Width	Elevation	Outside Diameter	Aperture Area	Weight	
				ft	°	°	ft	ft	ft ²	K	
Commscope VHLP1-23 (T-Mobile)	C	Paraboloid w/Radome	From Face	1.00 0.00 0.00	0.0000		130.00	1.00	No Ice 1/2" Ice 1" Ice	0.79 0.92 1.06	0.02 0.02 0.03

Load Combinations

Comb. No.	Description
1	Dead Only
2	1.2 Dead+1.6 Wind 0 deg - No Ice
3	0.9 Dead+1.6 Wind 0 deg - No Ice
4	1.2 Dead+1.6 Wind 90 deg - No Ice
5	0.9 Dead+1.6 Wind 90 deg - No Ice
6	1.2 Dead+1.6 Wind 180 deg - No Ice
7	0.9 Dead+1.6 Wind 180 deg - No Ice
8	1.2 Dead+1.0 Ice+1.0 Temp
9	1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp
10	1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp
11	1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp
12	Dead+Wind 0 deg - Service
13	Dead+Wind 90 deg - Service
14	Dead+Wind 180 deg - Service

Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L1	135 - 96.75	Pole	Max Tension	2	0.00	0.00	-0.00
			Max. Compression	8	-22.73	-0.39	0.13
			Max. Mx	4	-8.64	-255.03	-0.32
			Max. My	2	-8.64	0.36	256.07
			Max. Vy	4	11.83	-255.03	-0.32
			Max. Vx	2	-11.87	0.36	256.07
			Max. Torque	6			0.11
L2	96.75 - 57	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	8	-33.67	-0.39	0.13
			Max. Mx	4	-15.51	-773.07	-0.83
			Max. My	2	-15.50	1.07	775.67
			Max. Vy	4	15.13	-773.07	-0.83
			Max. Vx	2	-15.17	1.07	775.67
			Max. Torque	6			0.11
L3	57 - 27.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	8	-45.21	-0.39	0.13
			Max. Mx	4	-23.41	-1244.83	-1.21
			Max. My	2	-23.41	1.61	1248.59
			Max. Vy	4	17.67	-1244.83	-1.21
			Max. Vx	2	-17.71	1.61	1248.59
			Max. Torque	6			0.11
L4	27.5 - 1	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	8	-61.24	-0.39	0.13
			Max. Mx	4	-35.24	-1867.63	-1.64

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Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. My	2	-35.24	2.21	1872.68
			Max. Vy	4	20.27	-1867.63	-1.64
			Max. Vx	2	-20.31	2.21	1872.68
			Max. Torque	6			0.11

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	135 - 96.75	9.294	12	0.6278	0.0003
L2	101 - 57	5.104	12	0.4957	0.0001
L3	62.5 - 27.5	1.875	12	0.2893	0.0000
L4	33.75 - 1	0.533	12	0.1451	0.0000

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
130.00	Commscope VHLP1-23	12	8.640	0.6103	0.0003	59855
115.00	Antennas + Equipment (EPA 11,000 in2 / 2,000 lbs)	12	6.728	0.5552	0.0002	14963

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	135 - 96.75	40.946	2	2.7665	0.0013
L2	101 - 57	22.485	2	2.1846	0.0004
L3	62.5 - 27.5	8.258	2	1.2749	0.0001
L4	33.75 - 1	2.346	2	0.6390	0.0001

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
130.00	Commscope VHLP1-23	2	38.065	2.6894	0.0011	13636
115.00	Antennas + Equipment (EPA 11,000 in2 / 2,000 lbs)	2	29.642	2.4469	0.0007	3408

Pole Design Data

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
L1	135 - 96.75 (1)	TP30.8489x22x0.1875	38.25	0.00	0.0	17.6622	-8.64	1120.64	0.008

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Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
L2	96.75 - 57 (2)	TP39.6698x29.4907x0.375	44.00	0.00	0.0	45.2561	-15.50	3351.08	0.005
L3	57 - 27.5 (3)	TP45.7444x37.6474x0.4375	35.00	0.00	0.0	60.9065	-23.41	4522.87	0.005
L4	27.5 - 1 (4)	TP51x43.4235x0.5	32.75	0.00	0.0	80.1435	-35.24	5940.26	0.006

Pole Bending Design Data

Section No.	Elevation ft	Size	M _{ux} kip-ft	φM _{ux} kip-ft	Ratio $\frac{M_{ux}}{\phi M_{ux}}$	M _{uy} kip-ft	φM _{uy} kip-ft	Ratio $\frac{M_{uy}}{\phi M_{uy}}$
L1	135 - 96.75 (1)	TP30.8489x22x0.1875	256.07	684.95	0.374	0.00	684.95	0.000
L2	96.75 - 57 (2)	TP39.6698x29.4907x0.375	775.67	2614.90	0.297	0.00	2614.90	0.000
L3	57 - 27.5 (3)	TP45.7444x37.6474x0.4375	1248.59	4070.75	0.307	0.00	4070.75	0.000
L4	27.5 - 1 (4)	TP51x43.4235x0.5	1872.68	6156.17	0.304	0.00	6156.17	0.000

Pole Shear Design Data

Section No.	Elevation ft	Size	Actual V _u K	φV _n K	Ratio $\frac{V_u}{\phi V_n}$	Actual T _u kip-ft	φT _n kip-ft	Ratio $\frac{T_u}{\phi T_n}$
L1	135 - 96.75 (1)	TP30.8489x22x0.1875	11.87	560.32	0.021	0.11	1372.88	0.000
L2	96.75 - 57 (2)	TP39.6698x29.4907x0.375	15.17	1675.54	0.009	0.11	5243.98	0.000
L3	57 - 27.5 (3)	TP45.7444x37.6474x0.4375	17.71	2261.44	0.008	0.11	8163.72	0.000
L4	27.5 - 1 (4)	TP51x43.4235x0.5	20.31	2970.13	0.007	0.11	12345.75	0.000

Pole Interaction Design Data

Section No.	Elevation ft	Ratio $\frac{P_u}{\phi P_n}$	Ratio $\frac{M_{ux}}{\phi M_{ux}}$	Ratio $\frac{M_{uy}}{\phi M_{uy}}$	Ratio $\frac{V_u}{\phi V_n}$	Ratio $\frac{T_u}{\phi T_n}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L1	135 - 96.75 (1)	0.008	0.374	0.000	0.021	0.000	0.382	1.000	4.8.2 ✓
L2	96.75 - 57 (2)	0.005	0.297	0.000	0.009	0.000	0.301	1.000	4.8.2 ✓
L3	57 - 27.5 (3)	0.005	0.307	0.000	0.008	0.000	0.312	1.000	4.8.2 ✓
L4	27.5 - 1 (4)	0.006	0.304	0.000	0.007	0.000	0.310	1.000	4.8.2 ✓

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Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail	
L1	135 - 96.75	Pole	TP30.8489x22x0.1875	1	-8.64	1120.64	38.2	Pass	
L2	96.75 - 57	Pole	TP39.6698x29.4907x0.375	2	-15.50	3351.08	30.1	Pass	
L3	57 - 27.5	Pole	TP45.7444x37.6474x0.4375	3	-23.41	4522.87	31.2	Pass	
L4	27.5 - 1	Pole	TP51x43.4235x0.5	4	-35.24	5940.26	31.0	Pass	
							Summary		
							Pole (L1)	38.2	Pass
							RATING =	38.2	Pass

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Anchor Rod and Base Plate Calculation

ANSI/TIA-222-G

<i>Factored Base Reactions:</i>	<i>Pole Shape:</i>	<i>Anchor Rods:</i>	<i>Base Plate:</i>
Moment: 1873 ft-kips	18-Sided	(18) 2.25 in. A615 GR. 75	2.5 in. x 64.5 in. Round
Shear: 20 kips	<i>Pole Dia. (D_f):</i>	Anchor Rods Evenly Spaced	fy = 50 ksi
Axial: 35 kips	51.00 in	On a 58.5 in Bolt Circle	

Anchor Rod Calculation According to TIA-222-G section 4.9.9

$\phi_t, \phi_v =$	0.80	TIA 4.9.9
$I_{bolts} =$	7700.06 in ²	Moment of Inertia
$P_u =$	87 kips	Compr Force
$V_u =$	1.1 kips	Shear Force
$R_{nt} =$	325.00 kips	Nominal Tensile Strength
n	0.50	for detail type (d)
Stress Rating =	34.4%	Satisfies TIA-G 4.9.9

Base Plate Calculation According to TIA-222-G

$\phi =$	0.90	TIA 4.7
$M_{PL} =$	203.1 in-kip	Plate Moment
$L =$	8.9 in	Section Length
$Z =$	13.9	Plastic Section Modulus
$M_P =$	695.4 in-kip	Plastic Moment
$\phi M_n =$	625.9 in-kip	Factored Resistance
<i>Calculated Moment vs Factored Resistance</i>		
	203.09 in-kip	\leq 626 in-kip
Stress Rating =	32.5%	

Anchor Rods Are Adequate	34.4%	<input checked="" type="checkbox"/>
Base Plate is Adequate	32.5%	<input checked="" type="checkbox"/>

Exhibit E

Mount Analysis

INFINIGY

FROM ZERO TO INFINIGY
the solutions are endless

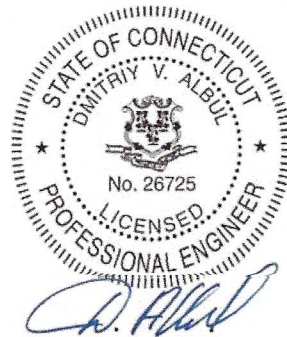
1033 WATERVLIET SHAKER RD, ALBANY, NY 12205

Mount Analysis Report

August 6, 2021

Dish Wireless Site Number	BOBDL00150A
Infinigy Job Number	2039-Z5555C
Client	Northeast Site Solutions
Carrier	Dish Wireless
Site Location	780 Prospect Hill Road, Windsor, CT 06095 41. 882914 N NAD83 72.70811388 W NAD83
Mount Centerline EL.	115 ft
Mount Classification	Platform
Structural Usage Ratio	81%
Overall Result	Pass

Upon reviewing the results of this analysis, it is our opinion that the structure meets the specified TIA and ASCE code requirements. The proposed platform for the proposed carrier is therefore deemed **adequate** to support the final loading configuration as listed in this report.



08-06-21

Dmitriy Albul, P.E.
Engineering Consultant to Infinigy

AZ CA CO FL GA MD NC NH NJ NY TX WA

INFINIGY

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Supporting Documentation.....	3
Analysis Code Requirements.....	3
Conclusion.....	3
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Structure Usages.....	4
Assumptions and Limitations.....	4
Calculations.....	Appended

Introduction

Infinigy Engineering has been requested to perform a mount analysis of proposed antenna mount from the Dish Wireless equipment. All 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 19.0 analysis software.

Supporting Documentation

Platform Drawings	Site Pro 1 Assembly Drawings No. SNP8HR-3XX
Construction Drawings	Infinigy Engineering PLLC, Job No. 2039-Z5555C, dated June 9, 2021
RF Design Sheet	Dish Wireless, dated June 3, 2021

Analysis Code Requirements

Wind Speed	125 mph (3-second Gust, Vult.)
Wind Speed w/ ice	50 mph (3-Second Gust) w/ 1" ice
TIA Revision	ANSI/TIA-222-G / 2018 Connecticut State Building Code (2015 IBC)
Structure Class	II
Exposure Category	C
Topographic Method	Method 2
Topographic Category	1
Spectral Response	S _s =0.179, S ₁ =0.064
Site Class	D – Stiff Soil
HMSL	56.31 ft.

Conclusion

Upon reviewing the results of this analysis, it is our opinion that the structure meets the specified TIA code requirements. The proposed platform is therefore deemed adequate to support the final loading configuration as listed in this report.

If you have any questions, require additional information, or actual conditions differ from those as detailed in this report please contact me via the information below:

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www.infinigy.com

Mount Analysis Report

August 6, 2021

Final Configuration Loading

Mount CL (ft)	Rad. HT (ft)	Vert. O/S (ft)	Horiz. O/S (ft)*	Qty	Appurtenance	Carrier
115.0	115.0	-	7.5	3	JMA MX08FRO665-21	Dish Wireless
			7.5	3	Fujitsu TA08025-B605	
			7.5	3	Fujitsu TA08025-B604	
			-	1	Raycap RDIDC-9181-PF-48	

*Horizontal Offset is defined as the distance from the left most edge of the mount face horizontal when viewed facing the tower.

Structure Usages

Plates	81%	Fail
Mount Pipes	45%	Pass
Arms	36%	Pass
Cross Arms	36%	Pass
Connections	31%	Pass
Frame Rails	13%	Pass
Handrails	15%	Pass
Rating	81%	Fail

Assumptions and Limitations

Our structural calculations are completed assuming all information provided to Infinigy Engineering is accurate and applicable to this site. For the purposes of calculations, we assume an overall structure condition of “like new” 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 Engineering should be notified immediately to complete a revised evaluation.

Our evaluation is completed using standard TIA, AISC, ACI, and ASCE methods and procedures. Our structural results are proprietary and should not be used by others as their own. Infinigy Engineering is not responsible for decisions made by others that are or are not based on our supplied assumptions and conclusions.

This report is an evaluation of the proposed carriers mount structure only and does not reflect adequacy of the existing tower, other mounts, or coax mounting attachments. These elements are assumed to be adequate for the purposes of this analysis and are assumed to have been installed per their manufacturer requirements.

INFINIGY8

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Date:	8/6/2021
Site Name:	BOB0100130A
Project Engineer:	DVA
Project No:	2039-Z555C
Customer:	Northeast Site Solutions
Carrier:	Dish Wireless

Building Code:	2015
ASCE Standard:	ASCE 7-10
TIA Standard:	G
Mount Type:	Platform
Proposet:	Proposet
Mount Centerline:	115
Superstructure Height:	135
Structure Type:	Tower

Factors	
Gh:	1.000
K _{zmin} :	0.850
K _z :	1.303
K _d :	0.950
K _{z1} :	1.000
K _a :	0.900
I wind:	1.000
I ice:	1.000

q _z :	29.72	psf
Surface Wind Pressure:	0.00	psf

Site Information		
Exposure Category:	C	
Risk Category:	II	
Ultimate Wind Speed:	125	mph
Design Wind Speed:	97	mph
Ice Thickness:	1.00	in
Ice Wind Speed:	50.0	mph
Escalated Ice Thickness:	2.27	in
Topographic Method:	2	
Topographic Category:	1	

Run Seismic?	
Site Soil:	D (Default)
Short-Period Accel. (Ss):	0.1790
1-Second Accel. (S1):	0.0640
Short-Period Design (SDS):	0.1900
1-Second Design (SD1):	0.1030
Short-Period Coeff. (Fa):	1.6000
1-Second Coeff. (Fv):	2.4000
Cs	0.0950
Cs min	0.0300
Amplification Factor (ap):	1.00
Response Mod. (Rp):	2.50
Overstrength (Ob):	1.00

Service Wind:	30.0	mph
Lm (man live load):	500.0	lb
Lv (man live load):	250.0	lb

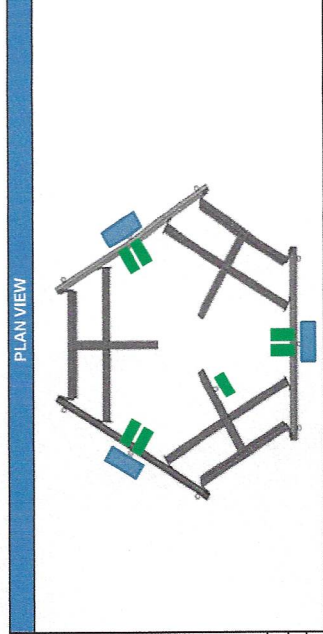
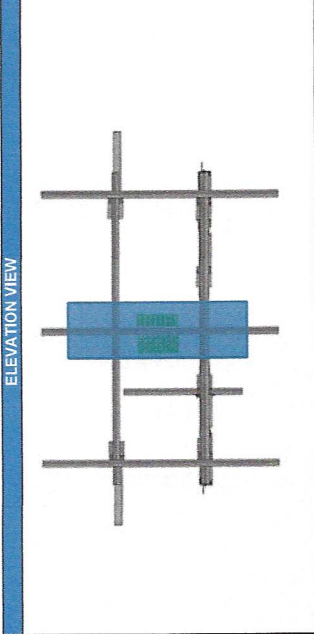


Table 1. Equipment Specifications and Wind Pressure

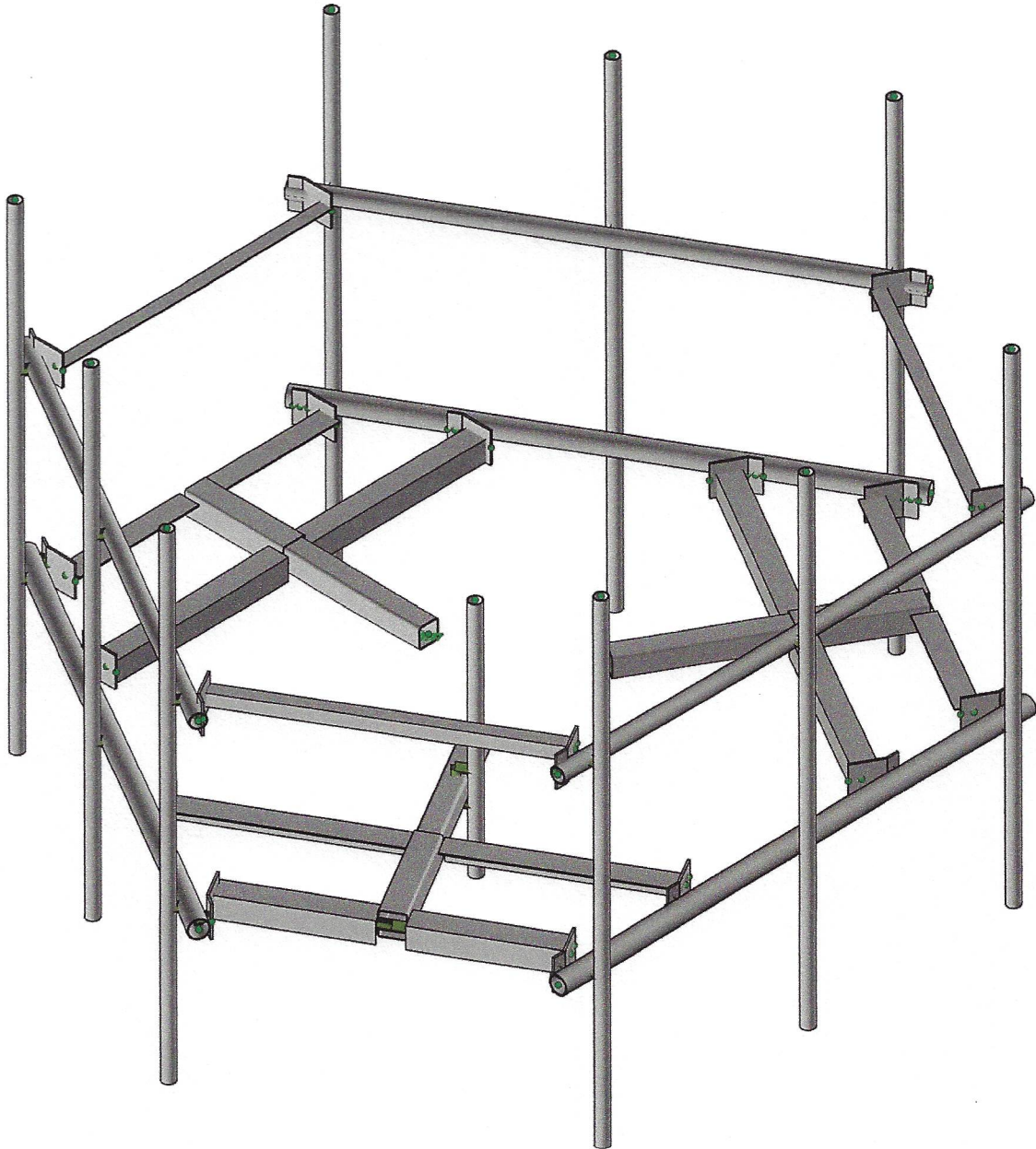
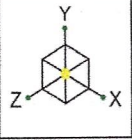
Manufacturer	Model	Elevation	Pipe Label	Weight (lb)	Height (in)	Width (in)	Depth (in)	EPA _N	EPA _T	EPA _{N+T}	EPA _{T+V}	EPA _{N+V}	q _z	q _{z,ice}
JMA	MX08FR065-21	115	35,74,42	64.50	72	20	8	8.01	3.21	9.08	4.15	9.08	29.72	7.92
Fujitsu	TA08025-B005	115	35,74,42	74.95	15.75	14.96	9.06	1.86	1.16	3.12	2.21	3.12	29.72	2.85
Fujitsu	TA08025-B004	115	35,74,42	63.93	15.75	14.96	7.87	1.86	1.01	3.12	2.03	3.12	29.72	2.85
Raycap	RD1DC-9181-PF-48	115	35,74,42	21.85	18.98	14.39	8.15	2.18	1.28	3.53	2.43	3.53	29.72	2.85

Table 2. Equipment Wind and Seismic Loads

Manufacturer	Model	Wind Load (F _w), lb	Wind Load Ice Case (F _{w,i}), lb	Seismic
JMA	MX08FR065-21	214	86	404
Fujitsu	TA08025-B005	60	31	73
Fujitsu	TA08025-B004	60	27	71
Raycap	RD1DC-9181-PF-48	36	34	84

Table 3. Member Capacities

Member Name	Member Slope	Wind load (plf)	Wind Load Ice (plf)	Weight Ice (plf)	Bending Check	Shear Check	Total Capacity	Controlling Capacity
Arm	HSS4X4.4	19.81	5.28	2.01	36%	13%	36%	81%
Arm 2	HSS4.5X4.5X3	22.29	5.94	2.13	6%	9%	9%	
Cross Arm	L4X4X4	19.81	5.28	2.01	23%	23%	36%	
Frame Rail	PIPE 3J	10.40	2.77	1.89	13%	12%	13%	
Handrail	PIPE 2J	8.54	2.28	1.75	15%	13%	15%	
Mount Pipe	PIPE 2J	7.06	1.88	1.63	45%	13%	45%	
Plate	6" x 0.375" Plate	29.72	7.92	2.48	38%	81%	81%	
Angle	L2.5x2.5x3	12.38	3.30	1.66	16%	15%	16%	



Envelope Only Solution

Infinigy Engineering, PLLC

DVA

2039-Z5555C

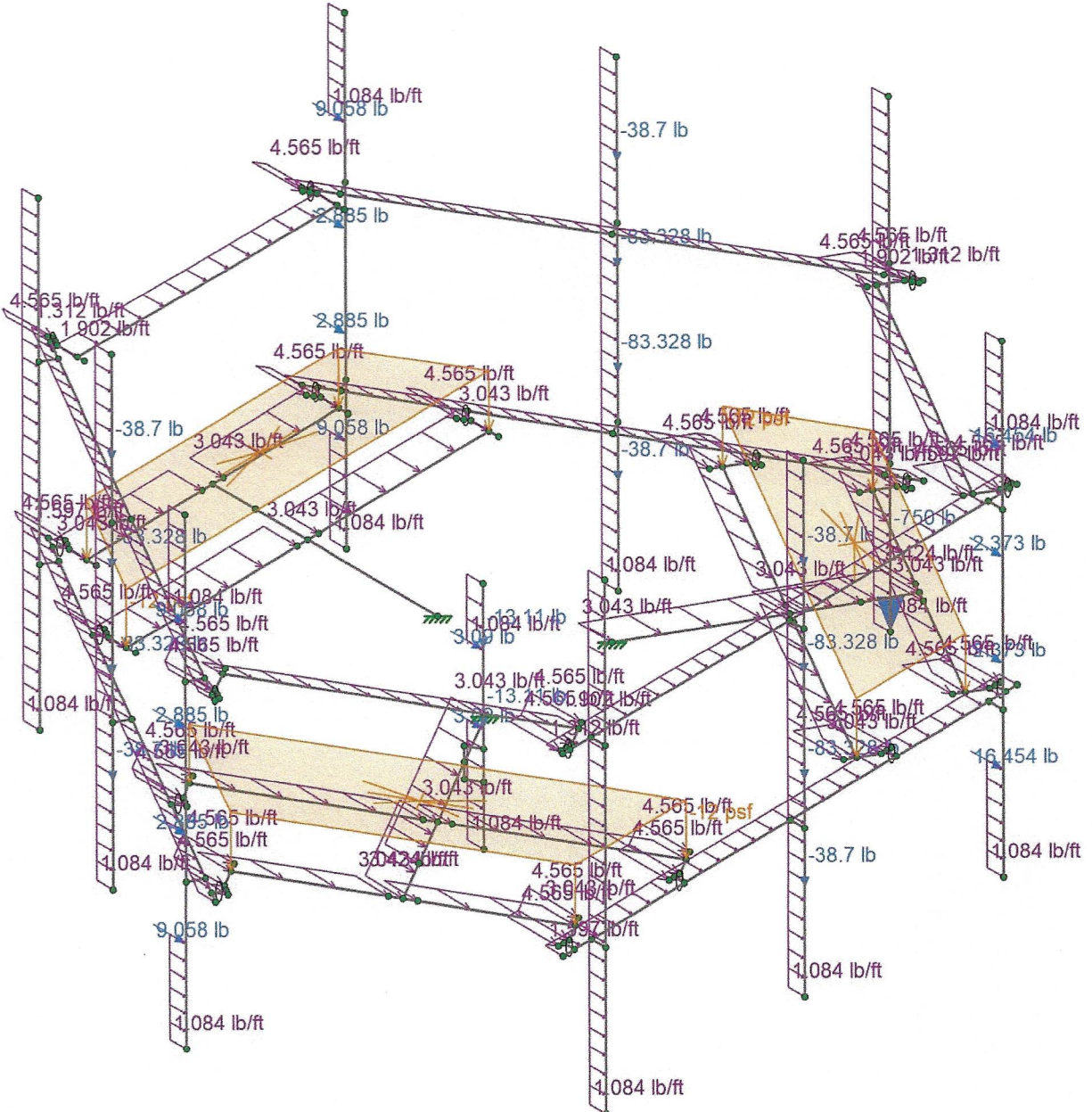
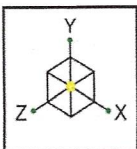
BOBDL00150A

Proposed Configuration Model

SK-1

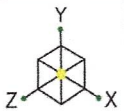
Aug 06, 2021

BOBDL00150A.R3D

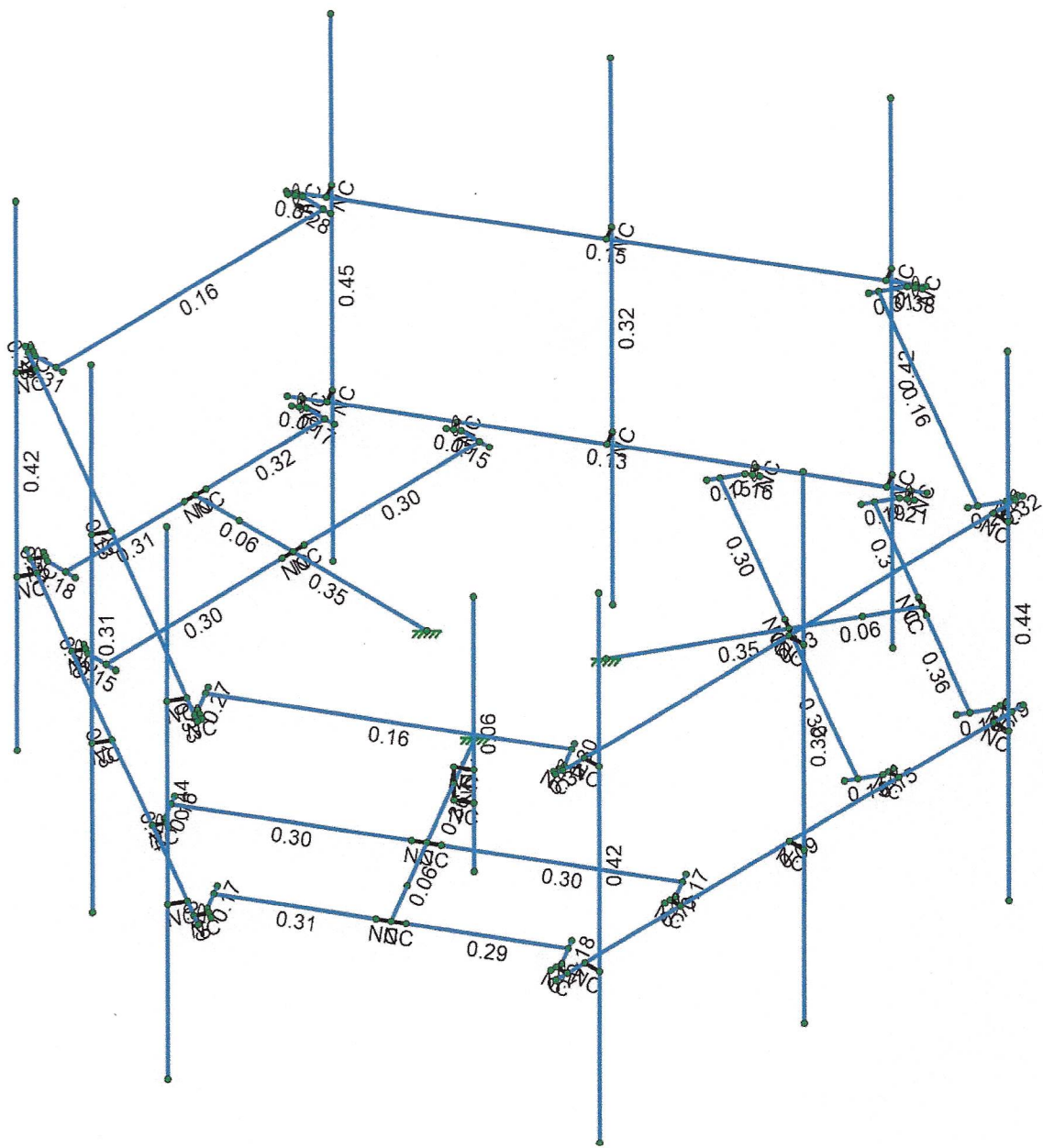


Loads: LC 129, 1.2DL + 1.5LM5 + 1.6SWL (30 mph) AZI 180
Envelope Only Solution

Infinigy Engineering, PLLC	BOBDL00150A	SK-2
DVA		Aug 06, 2021
2039-Z5555C	Controlling Load Case	BOBDL00150A.R3D



Code Check (Env)	
Black	No Calc
Red	> 1.0
Purple	.90-1.0
Green	.75-.90
Light Blue	.50-.75
Dark Blue	0.-.50



Member Code Checks Displayed (Enveloped)
Envelope Only Solution

Infinigy Engineering, PLLC
DVA
2039-Z5555C

BOBDL00150A
Member Bending Check

SK-3
Aug 06, 2021
BOBDL00150A.R3D

Model Settings

Solution

Members

Number of Reported Sections	5
Number of Internal Sections	100
Member Area Load Mesh Size (in ²)	144
Consider Shear Deformation	Yes
Consider Torsional Warping	Yes

Wall Panels

Approximate Mesh Size (in)	12
Transfer Forces Between Intersecting Wood Walls	Yes
Increase Wood Wall Nailing Capacity for Wind Loads	Yes
Include P-Delta for Walls	Yes
Optimize Masonry and Wood Walls	Yes
Maximum Number of Iterations	3

Processor Core Utilization

Single	No
Multiple (Optimum)	Yes
Maximum	No

Axis

Vertical Global Axis

Global Axis corresponding to vertical direction	Y
Convert Existing Data	Yes

Default Member Orientation

Default Global Plane for z-axis	XZ
---------------------------------	----

Plate Axis

Plate Local Axis Orientation	Nodal
------------------------------	-------

Codes

Hot Rolled Steel	AISC 14th (360-10): LRFD
Stiffness Adjustment	Yes (Iterative)
Notional Annex	None
Connections	AISC 14th (360-10): LRFD
Cold Formed Steel	AISI S100-12: LRFD
Stiffness Adjustment	Yes (Iterative)
Wood	AWC NDS-12: ASD
Temperature	< 100F
Concrete	ACI 318-11
Masonry	ACI 530-11: Strength
Aluminum	AAADM1-10: LRFD
Structure Type	Building
Stiffness Adjustment	Yes (Iterative)
Stainless	AISC 14th (360-10): LRFD
Stiffness Adjustment	Yes (Iterative)

Concrete

Column Design

Analysis Methodology	Exact Integration Method
Parame Beta Factor	0.65

Compression Stress Block	Rectangular Stress Block
Analyze using Cracked Sections	Yes
Leave room for horizontal rebar splices (2*d bar spacing)	No

Model Settings (Continued)

List forces which were ignored for design in the Detail Report	Yes
--	-----

Rebar

Column Min Steel	1
Column Max Steel	8
Rebar Material Spec	ASTM A615
Warn if beam-column framing arrangement is not understood	No

Shear Reinforcement

Number of Shear Regions	4
Region 2 & 3 Spacing Increase Increment (in)	4

Seismic

RISA-3D Seismic Load Options

Code	ASCE 7-10
Risk Category	I or II
Drift Cat	Other
Base Elevation (ft)	
Include the weight of the structure in base shear calcs	Yes

Site Parameters

S_s (g)	1
SD_1 (g)	1
SD_s (g)	1
T_L (sec)	5

Structure Characteristics

T Z (sec)	
T X (sec)	
C_x	0.02
$C_{Exp. Z}$	0.75
$C_{Exp. X}$	0.75
R Z	3
R X	3
Ω_z	1
Ω_x	1
C_z	4
C_x	4
ρ_z	1
ρ_x	1

Member Primary Data

	Label	I Node	J Node	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule
1	M1	N1	N2		Arm	Beam	Tube	A500 Gr.B Rect	Typical
2	M2	N5	N6		Frame Rail	Beam	Pipe	A53 Gr.B	Typical
3	M3	N7	N8		Handrail	HBrace	Pipe	A53 Gr.B	Typical
4	M4	N10	N11		Mount Pipe	Column	Pipe	A53 Gr.B	Typical
5	M5	N4	N3		Arm 2	Beam	Tube	A500 Gr.B Rect	Typical
6	M6	N15	N35	90	Cross Arm	Beam	Single Angle	A36 Gr.36	Typical
7	M7	N33	N13	90	Cross Arm	Beam	Single Angle	A36 Gr.36	Typical
8	M8	N12	N34	90	Cross Arm	Beam	Single Angle	A36 Gr.36	Typical
9	M9	N36	N14	90	Cross Arm	Beam	Single Angle	A36 Gr.36	Typical
10	M10	N18	N20		Plate	Beam	BAR	A36 Gr.36	Typical
11	M11	N17	N19		Plate	Beam	BAR	A36 Gr.36	Typical
12	M12	N21	N22		Plate	Beam	BAR	A36 Gr.36	Typical
13	M13	N23	N24		Plate	Beam	BAR	A36 Gr.36	Typical
14	M14	N28	N25	90	Angle	HBrace	Single Angle	A36 Gr.36	Typical
15	M15	N26	N27		Plate	Beam	BAR	A36 Gr.36	Typical
16	M16	N29	N30		Plate	Beam	BAR	A36 Gr.36	Typical
17	M17	N31	N9		RIGID	None	None	RIGID	Typical
18	M18	N32	N16		RIGID	None	None	RIGID	Typical
19	M19	N4	N35		RIGID	None	None	RIGID	Typical
20	M20	N4	N33		RIGID	None	None	RIGID	Typical
21	M21	N3	N34		RIGID	None	None	RIGID	Typical
22	M22	N36	N3		RIGID	None	None	RIGID	Typical
23	M23	N19	N37		Plate	Beam	BAR	A36 Gr.36	Typical
24	M24	N22	N38		Plate	Beam	BAR	A36 Gr.36	Typical
25	M25	N39	N41		RIGID	None	None	RIGID	Typical
26	M26	N40	N42		RIGID	None	None	RIGID	Typical
27	M27	N27	N43		Plate	Beam	BAR	A36 Gr.36	Typical
28	M28	N44	N45		RIGID	None	None	RIGID	Typical
29	M29	N20	N46		Plate	Beam	BAR	A36 Gr.36	Typical
30	M30	N24	N47		Plate	Beam	BAR	A36 Gr.36	Typical
31	M31	N48	N50		RIGID	None	None	RIGID	Typical
32	M32	N49	N51		RIGID	None	None	RIGID	Typical
33	M33	N30	N52		Plate	Beam	BAR	A36 Gr.36	Typical
34	M34	N53	N54		RIGID	None	None	RIGID	Typical
35	M35	N56	N57		Mount Pipe	Column	Pipe	A53 Gr.B	Typical
36	M36	N59	N55		RIGID	None	None	RIGID	Typical
37	M37	N60	N58		RIGID	None	None	RIGID	Typical
38	M38	N62	N63		Mount Pipe	Column	Pipe	A53 Gr.B	Typical
39	M39	N65	N61		RIGID	None	None	RIGID	Typical
40	M40	N66	N64		RIGID	None	None	RIGID	Typical
41	M41	N67	N68		Arm	Beam	Tube	A500 Gr.B Rect	Typical
42	M42	N72	N73		Mount Pipe	Column	Pipe	A53 Gr.B	Typical
43	M43	N70	N69		Arm 2	Beam	Tube	A500 Gr.B Rect	Typical
44	M44	N77	N97	90	Cross Arm	Beam	Single Angle	A36 Gr.36	Typical
45	M45	N95	N75	90	Cross Arm	Beam	Single Angle	A36 Gr.36	Typical
46	M46	N74	N96	90	Cross Arm	Beam	Single Angle	A36 Gr.36	Typical
47	M47	N98	N76	90	Cross Arm	Beam	Single Angle	A36 Gr.36	Typical
48	M48	N80	N82		Plate	Beam	BAR	A36 Gr.36	Typical
49	M49	N79	N81		Plate	Beam	BAR	A36 Gr.36	Typical
50	M50	N83	N84		Plate	Beam	BAR	A36 Gr.36	Typical
51	M51	N85	N86		Plate	Beam	BAR	A36 Gr.36	Typical
52	M52	N90	N87	90	Angle	HBrace	Single Angle	A36 Gr.36	Typical
53	M53	N88	N89		Plate	Beam	BAR	A36 Gr.36	Typical
54	M54	N91	N92		Plate	Beam	BAR	A36 Gr.36	Typical
55	M55	N93	N71		RIGID	None	None	RIGID	Typical
56	M56	N94	N78		RIGID	None	None	RIGID	Typical
57	M57	N70	N97		RIGID	None	None	RIGID	Typical
58	M58	N70	N95		RIGID	None	None	RIGID	Typical

Member Primary Data (Continued)

	Label	I Node	J Node	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule
59	M59	N69	N96		RIGID	None	None	RIGID	Typical
60	M60	N98	N69		RIGID	None	None	RIGID	Typical
61	M61	N81	N99		Plate	Beam	BAR	A36 Gr.36	Typical
62	M62	N84	N100		Plate	Beam	BAR	A36 Gr.36	Typical
63	M63	N101	N103		RIGID	None	None	RIGID	Typical
64	M64	N102	N104		RIGID	None	None	RIGID	Typical
65	M65	N89	N105		Plate	Beam	BAR	A36 Gr.36	Typical
66	M66	N106	N107		RIGID	None	None	RIGID	Typical
67	M67	N82	N108		Plate	Beam	BAR	A36 Gr.36	Typical
68	M68	N86	N109		Plate	Beam	BAR	A36 Gr.36	Typical
69	M69	N110	N112		RIGID	None	None	RIGID	Typical
70	M70	N111	N113		RIGID	None	None	RIGID	Typical
71	M71	N92	N114		Plate	Beam	BAR	A36 Gr.36	Typical
72	M72	N115	N116		RIGID	None	None	RIGID	Typical
73	M73	N117	N118		Arm	Beam	Tube	A500 Gr.B Rect	Typical
74	M74	N122	N123		Mount Pipe	Column	Pipe	A53 Gr.B	Typical
75	M75	N120	N119		Arm 2	Beam	Tube	A500 Gr.B Rect	Typical
76	M76	N127	N147	90	Cross Arm	Beam	Single Angle	A36 Gr.36	Typical
77	M77	N145	N125	90	Cross Arm	Beam	Single Angle	A36 Gr.36	Typical
78	M78	N124	N146	90	Cross Arm	Beam	Single Angle	A36 Gr.36	Typical
79	M79	N148	N126	90	Cross Arm	Beam	Single Angle	A36 Gr.36	Typical
80	M80	N130	N132		Plate	Beam	BAR	A36 Gr.36	Typical
81	M81	N129	N131		Plate	Beam	BAR	A36 Gr.36	Typical
82	M82	N133	N134		Plate	Beam	BAR	A36 Gr.36	Typical
83	M83	N135	N136		Plate	Beam	BAR	A36 Gr.36	Typical
84	M84	N140	N137	90	Angle	HBrace	Single Angle	A36 Gr.36	Typical
85	M85	N138	N139		Plate	Beam	BAR	A36 Gr.36	Typical
86	M86	N141	N142		Plate	Beam	BAR	A36 Gr.36	Typical
87	M87	N143	N121		RIGID	None	None	RIGID	Typical
88	M88	N144	N128		RIGID	None	None	RIGID	Typical
89	M89	N120	N147		RIGID	None	None	RIGID	Typical
90	M90	N120	N145		RIGID	None	None	RIGID	Typical
91	M91	N119	N146		RIGID	None	None	RIGID	Typical
92	M92	N148	N119		RIGID	None	None	RIGID	Typical
93	M93	N131	N149		Plate	Beam	BAR	A36 Gr.36	Typical
94	M94	N134	N150		Plate	Beam	BAR	A36 Gr.36	Typical
95	M95	N151	N153		RIGID	None	None	RIGID	Typical
96	M96	N152	N154		RIGID	None	None	RIGID	Typical
97	M97	N139	N155		Plate	Beam	BAR	A36 Gr.36	Typical
98	M98	N156	N157		RIGID	None	None	RIGID	Typical
99	M99	N132	N158		Plate	Beam	BAR	A36 Gr.36	Typical
100	M100	N136	N159		Plate	Beam	BAR	A36 Gr.36	Typical
101	M101	N160	N162		RIGID	None	None	RIGID	Typical
102	M102	N161	N163		RIGID	None	None	RIGID	Typical
103	M103	N142	N164		Plate	Beam	BAR	A36 Gr.36	Typical
104	M104	N165	N166		RIGID	None	None	RIGID	Typical
105	M105	N107	N108		Frame Rail	Beam	Pipe	A53 Gr.B	Typical
106	M106	N169	N170		Handrail	HBrace	Pipe	A53 Gr.B	Typical
107	M107	N172	N173		Mount Pipe	Column	Pipe	A53 Gr.B	Typical
108	M108	N175	N171		RIGID	None	None	RIGID	Typical
109	M109	N176	N174		RIGID	None	None	RIGID	Typical
110	M110	N178	N179		Mount Pipe	Column	Pipe	A53 Gr.B	Typical
111	M111	N181	N177		RIGID	None	None	RIGID	Typical
112	M112	N182	N180		RIGID	None	None	RIGID	Typical
113	M113	N183	N184		Frame Rail	Beam	Pipe	A53 Gr.B	Typical
114	M114	N185	N186		Handrail	HBrace	Pipe	A53 Gr.B	Typical
115	M115	N188	N189		Mount Pipe	Column	Pipe	A53 Gr.B	Typical
116	M116	N191	N187		RIGID	None	None	RIGID	Typical

Member Primary Data (Continued)

	Label	I Node	J Node	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule
117	M117	N192	N190		RIGID	None	None	RIGID	Typical
118	M118	N194	N195		Mount Pipe	Column	Pipe	A53 Gr.B	Typical
119	M119	N197	N193		RIGID	None	None	RIGID	Typical
120	M120	N198	N196		RIGID	None	None	RIGID	Typical
121	M121	N199	N200		RIGID	None	None	RIGID	Typical
122	M122	N201	N199		RIGID	None	None	RIGID	Typical
123	M123	N200	N202		RIGID	None	None	RIGID	Typical
124	M124	N201	N203		RIGID	None	None	RIGID	Typical
125	M125	N204	N205		Mount Pipe	Column	Pipe	A53 Gr.B	Typical

Material Takeoff

	Material	Size	Pieces	Length[in]	Weight[LB]
1	General				
2	RIGID		52	123.7	0
3	Total General		52	123.7	0
4					
5	Hot Rolled Steel				
6	A36 Gr.36	6" x 0.375" Plate	36	144	91.875
7	A36 Gr.36	L4X4X4	12	363	198.663
8	A36 Gr.36	L2.5x2.5x3	3	165	42.156
9	A500 Gr.B Rect	HSS4.5X4.5X3	3	60	53.615
10	A500 Gr.B Rect	HSS4X4X4	3	115.4	118.563
11	A53 Gr.B	PIPE 2.0	10	912	263.783
12	A53 Gr.B	PIPE 2.5	3	288	131.483
13	A53 Gr.B	PIPE 3.0	3	288	169.05
14	Total HR Steel		73	2335.4	1069.189

Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Point	Distributed	Area(Member)
1	Self Weight	DL		-1		20		3
2	Wind Load AZI 0	WLX				40	258	
3	Wind Load AZI 30	None				40	258	
4	Wind Load AZI 60	None				40	258	
5	Wind Load AZI 90	WLZ				40	258	
6	Wind Load AZI 120	None				40	258	
7	Wind Load AZI 150	None				40	258	
8	Wind Load AZI 180	None				40	258	
9	Wind Load AZI 210	None				40	258	
10	Wind Load AZI 240	None				40	258	
11	Wind Load AZI 270	None				40	258	
12	Wind Load AZI 300	None				40	258	
13	Wind Load AZI 330	None				40	258	
14	Ice Weight	OL1				20	125	3
15	Ice Wind Load AZI 0	OL2				40	258	
16	Ice Wind Load AZI 30	None				40	258	
17	Ice Wind Load AZI 60	None				40	258	
18	Ice Wind Load AZI 90	OL3				40	258	
19	Ice Wind Load AZI 120	None				40	258	
20	Ice Wind Load AZI 150	None				40	258	
21	Ice Wind Load AZI 180	None				40	258	
22	Ice Wind Load AZI 210	None				40	258	
23	Ice Wind Load AZI 240	None				40	258	
24	Ice Wind Load AZI 270	None				40	258	
25	Ice Wind Load AZI 300	None				40	258	
26	Ice Wind Load AZI 330	None				40	258	
27	Seismic Load X	ELX			-0.095	20		
28	Seismic Load Z	ELZ	-0.095			20		

Basic Load Cases (Continued)

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Point	Distributed	Area(Member)
29	Service Live Loads	LL						
30	Maintenance Load 1	LL				1		
31	Maintenance Load 2	LL				1		
32	Maintenance Load 3	LL				1		
33	Maintenance Load 4	LL				1		
34	Maintenance Load 5	LL				1		
35	Maintenance Load 6	LL				1		
36	Maintenance Load 7	LL				1		
37	Maintenance Load 8	LL				1		
38	Maintenance Load 9	LL				1		
39	Maintenance Load 10	LL				1		
40	Maintenance Load 11	LL				1		
41	Maintenance Load 12	LL				1		
42	Maintenance Load 13	LL				1		
43	Maintenance Load 14	LL				1		
44	Maintenance Load 15	LL				1		
45	Maintenance Load 16	LL				1		
46	Maintenance Load 17	LL				1		
47	Maintenance Load 18	LL				1		
52	BLC 1 Transient Area Loads	None					141	
53	BLC 14 Transient Area Loads	None					141	

Load Combinations

	Description	Solve	PDelta	BLC	Factor	BLC	Factor	BLC	Factor
1	1.4DL	Yes	Y	1	1.4				
2	1.2DL + 1.6WL AZI 0	Yes	Y	1	1.2	2	1.6		
3	1.2DL + 1.6WL AZI 30	Yes	Y	1	1.2	3	1.6		
4	1.2DL + 1.6WL AZI 60	Yes	Y	1	1.2	4	1.6		
5	1.2DL + 1.6WL AZI 90	Yes	Y	1	1.2	5	1.6		
6	1.2DL + 1.6WL AZI 120	Yes	Y	1	1.2	6	1.6		
7	1.2DL + 1.6WL AZI 150	Yes	Y	1	1.2	7	1.6		
8	1.2DL + 1.6WL AZI 180	Yes	Y	1	1.2	8	1.6		
9	1.2DL + 1.6WL AZI 210	Yes	Y	1	1.2	9	1.6		
10	1.2DL + 1.6WL AZI 240	Yes	Y	1	1.2	10	1.6		
11	1.2DL + 1.6WL AZI 270	Yes	Y	1	1.2	11	1.6		
12	1.2DL + 1.6WL AZI 300	Yes	Y	1	1.2	12	1.6		
13	1.2DL + 1.6WL AZI 330	Yes	Y	1	1.2	13	1.6		
14	0.9DL + 1.6WL AZI 0	Yes	Y	1	0.9	2	1.6		
15	0.9DL + 1.6WL AZI 30	Yes	Y	1	0.9	3	1.6		
16	0.9DL + 1.6WL AZI 60	Yes	Y	1	0.9	4	1.6		
17	0.9DL + 1.6WL AZI 90	Yes	Y	1	0.9	5	1.6		
18	0.9DL + 1.6WL AZI 120	Yes	Y	1	0.9	6	1.6		
19	0.9DL + 1.6WL AZI 150	Yes	Y	1	0.9	7	1.6		
20	0.9DL + 1.6WL AZI 180	Yes	Y	1	0.9	8	1.6		
21	0.9DL + 1.6WL AZI 210	Yes	Y	1	0.9	9	1.6		
22	0.9DL + 1.6WL AZI 240	Yes	Y	1	0.9	10	1.6		
23	0.9DL + 1.6WL AZI 270	Yes	Y	1	0.9	11	1.6		
24	0.9DL + 1.6WL AZI 300	Yes	Y	1	0.9	12	1.6		
25	0.9DL + 1.6WL AZI 330	Yes	Y	1	0.9	13	1.6		
26	1.2D + 1.0Di	Yes	Y	1	1.2	14	1		
27	1.2D + 1.0Di + 1.0Wi AZI 0	Yes	Y	1	1.2	14	1	15	1
28	1.2D + 1.0Di + 1.0Wi AZI 30	Yes	Y	1	1.2	14	1	16	1
29	1.2D + 1.0Di + 1.0Wi AZI 60	Yes	Y	1	1.2	14	1	17	1
30	1.2D + 1.0Di + 1.0Wi AZI 90	Yes	Y	1	1.2	14	1	18	1
31	1.2D + 1.0Di + 1.0Wi AZI 120	Yes	Y	1	1.2	14	1	19	1
32	1.2D + 1.0Di + 1.0Wi AZI 150	Yes	Y	1	1.2	14	1	20	1
33	1.2D + 1.0Di + 1.0Wi AZI 180	Yes	Y	1	1.2	14	1	21	1
34	1.2D + 1.0Di + 1.0Wi AZI 210	Yes	Y	1	1.2	14	1	22	1

Load Combinations (Continued)

	Description	Solve	PDelta	BLC	Factor	BLC	Factor	BLC	Factor
35	1.2D + 1.0Di + 1.0Wi AZI 240	Yes	Y	1	1.2	14	1	23	1
36	1.2D + 1.0Di + 1.0Wi AZI 270	Yes	Y	1	1.2	14	1	24	1
37	1.2D + 1.0Di + 1.0Wi AZI 300	Yes	Y	1	1.2	14	1	25	1
38	1.2D + 1.0Di + 1.0Wi AZI 330	Yes	Y	1	1.2	14	1	26	1
39	(1.2 + 0.2Sds)DL + 1.0E AZI 0	Yes	Y	1	1.238	27	1	28	
40	(1.2 + 0.2Sds)DL + 1.0E AZI 30	Yes	Y	1	1.238	27	0.866	28	0.5
41	(1.2 + 0.2Sds)DL + 1.0E AZI 60	Yes	Y	1	1.238	27	0.5	28	0.866
42	(1.2 + 0.2Sds)DL + 1.0E AZI 90	Yes	Y	1	1.238	27		28	1
43	(1.2 + 0.2Sds)DL + 1.0E AZI 120	Yes	Y	1	1.238	27	-0.5	28	0.866
44	(1.2 + 0.2Sds)DL + 1.0E AZI 150	Yes	Y	1	1.238	27	-0.866	28	0.5
45	(1.2 + 0.2Sds)DL + 1.0E AZI 180	Yes	Y	1	1.238	27	-1	28	
46	(1.2 + 0.2Sds)DL + 1.0E AZI 210	Yes	Y	1	1.238	27	-0.866	28	-0.5
47	(1.2 + 0.2Sds)DL + 1.0E AZI 240	Yes	Y	1	1.238	27	-0.5	28	-0.866
48	(1.2 + 0.2Sds)DL + 1.0E AZI 270	Yes	Y	1	1.238	27		28	-1
49	(1.2 + 0.2Sds)DL + 1.0E AZI 300	Yes	Y	1	1.238	27	0.5	28	-0.866
50	(1.2 + 0.2Sds)DL + 1.0E AZI 330	Yes	Y	1	1.238	27	0.866	28	-0.5
51	(0.9 - 0.2Sds)DL + 1.0E AZI 0	Yes	Y	1	0.862	27	1	28	
52	(0.9 - 0.2Sds)DL + 1.0E AZI 30	Yes	Y	1	0.862	27	0.866	28	0.5
53	(0.9 - 0.2Sds)DL + 1.0E AZI 60	Yes	Y	1	0.862	27	0.5	28	0.866
54	(0.9 - 0.2Sds)DL + 1.0E AZI 90	Yes	Y	1	0.862	27		28	1
55	(0.9 - 0.2Sds)DL + 1.0E AZI 120	Yes	Y	1	0.862	27	-0.5	28	0.866
56	(0.9 - 0.2Sds)DL + 1.0E AZI 150	Yes	Y	1	0.862	27	-0.866	28	0.5
57	(0.9 - 0.2Sds)DL + 1.0E AZI 180	Yes	Y	1	0.862	27	-1	28	
58	(0.9 - 0.2Sds)DL + 1.0E AZI 210	Yes	Y	1	0.862	27	-0.866	28	-0.5
59	(0.9 - 0.2Sds)DL + 1.0E AZI 240	Yes	Y	1	0.862	27	-0.5	28	-0.866
60	(0.9 - 0.2Sds)DL + 1.0E AZI 270	Yes	Y	1	0.862	27		28	-1
61	(0.9 - 0.2Sds)DL + 1.0E AZI 300	Yes	Y	1	0.862	27	0.5	28	-0.866
62	(0.9 - 0.2Sds)DL + 1.0E AZI 330	Yes	Y	1	0.862	27	0.866	28	-0.5
63	1.0DL + 1.5LL + 1.0SWL (30 mph) AZI 0	Yes	Y	1	1	2	0.096	29	1.5
64	1.0DL + 1.5LL + 1.0SWL (30 mph) AZI 30	Yes	Y	1	1	3	0.096	29	1.5
65	1.0DL + 1.5LL + 1.0SWL (30 mph) AZI 60	Yes	Y	1	1	4	0.096	29	1.5
66	1.0DL + 1.5LL + 1.0SWL (30 mph) AZI 90	Yes	Y	1	1	5	0.096	29	1.5
67	1.0DL + 1.5LL + 1.0SWL (30 mph) AZI 120	Yes	Y	1	1	6	0.096	29	1.5
68	1.0DL + 1.5LL + 1.0SWL (30 mph) AZI 150	Yes	Y	1	1	7	0.096	29	1.5
69	1.0DL + 1.5LL + 1.0SWL (30 mph) AZI 180	Yes	Y	1	1	8	0.096	29	1.5
70	1.0DL + 1.5LL + 1.0SWL (30 mph) AZI 210	Yes	Y	1	1	9	0.096	29	1.5
71	1.0DL + 1.5LL + 1.0SWL (30 mph) AZI 240	Yes	Y	1	1	10	0.096	29	1.5
72	1.0DL + 1.5LL + 1.0SWL (30 mph) AZI 270	Yes	Y	1	1	11	0.096	29	1.5
73	1.0DL + 1.5LL + 1.0SWL (30 mph) AZI 300	Yes	Y	1	1	12	0.096	29	1.5
74	1.0DL + 1.5LL + 1.0SWL (30 mph) AZI 330	Yes	Y	1	1	13	0.096	29	1.5
75	1.2DL + 1.5LM1 + 1.6SWL (30 mph) AZI 0	Yes	Y	1	1.2	34	1.5	2	0.154
76	1.2DL + 1.5LM1 + 1.6SWL (30 mph) AZI 30	Yes	Y	1	1.2	34	1.5	3	0.154
77	1.2DL + 1.5LM1 + 1.6SWL (30 mph) AZI 60	Yes	Y	1	1.2	34	1.5	4	0.154
78	1.2DL + 1.5LM1 + 1.6SWL (30 mph) AZI 90	Yes	Y	1	1.2	34	1.5	5	0.154
79	1.2DL + 1.5LM1 + 1.6SWL (30 mph) AZI 120	Yes	Y	1	1.2	34	1.5	6	0.154
80	1.2DL + 1.5LM1 + 1.6SWL (30 mph) AZI 150	Yes	Y	1	1.2	34	1.5	7	0.154
81	1.2DL + 1.5LM1 + 1.6SWL (30 mph) AZI 180	Yes	Y	1	1.2	34	1.5	8	0.154
82	1.2DL + 1.5LM1 + 1.6SWL (30 mph) AZI 210	Yes	Y	1	1.2	34	1.5	9	0.154
83	1.2DL + 1.5LM1 + 1.6SWL (30 mph) AZI 240	Yes	Y	1	1.2	34	1.5	10	0.154
84	1.2DL + 1.5LM1 + 1.6SWL (30 mph) AZI 270	Yes	Y	1	1.2	34	1.5	11	0.154
85	1.2DL + 1.5LM1 + 1.6SWL (30 mph) AZI 300	Yes	Y	1	1.2	34	1.5	12	0.154
86	1.2DL + 1.5LM1 + 1.6SWL (30 mph) AZI 330	Yes	Y	1	1.2	34	1.5	13	0.154
87	1.2DL + 1.5LM2 + 1.6SWL (30 mph) AZI 0	Yes	Y	1	1.2	35	1.5	2	0.154
88	1.2DL + 1.5LM2 + 1.6SWL (30 mph) AZI 30	Yes	Y	1	1.2	35	1.5	3	0.154
89	1.2DL + 1.5LM2 + 1.6SWL (30 mph) AZI 60	Yes	Y	1	1.2	35	1.5	4	0.154
90	1.2DL + 1.5LM2 + 1.6SWL (30 mph) AZI 90	Yes	Y	1	1.2	35	1.5	5	0.154
91	1.2DL + 1.5LM2 + 1.6SWL (30 mph) AZI 120	Yes	Y	1	1.2	35	1.5	6	0.154
92	1.2DL + 1.5LM2 + 1.6SWL (30 mph) AZI 150	Yes	Y	1	1.2	35	1.5	7	0.154

Load Combinations (Continued)

	Description	Solve	PDelta	BLC	Factor	BLC	Factor	BLC	Factor
93	1.2DL + 1.5LM2 + 1.6SWL (30 mph) AZI 180	Yes	Y	1	1.2	35	1.5	8	0.154
94	1.2DL + 1.5LM2 + 1.6SWL (30 mph) AZI 210	Yes	Y	1	1.2	35	1.5	9	0.154
95	1.2DL + 1.5LM2 + 1.6SWL (30 mph) AZI 240	Yes	Y	1	1.2	35	1.5	10	0.154
96	1.2DL + 1.5LM2 + 1.6SWL (30 mph) AZI 270	Yes	Y	1	1.2	35	1.5	11	0.154
97	1.2DL + 1.5LM2 + 1.6SWL (30 mph) AZI 300	Yes	Y	1	1.2	35	1.5	12	0.154
98	1.2DL + 1.5LM2 + 1.6SWL (30 mph) AZI 330	Yes	Y	1	1.2	35	1.5	13	0.154
99	1.2DL + 1.5LM3 + 1.6SWL (30 mph) AZI 0	Yes	Y	1	1.2	36	1.5	2	0.154
100	1.2DL + 1.5LM3 + 1.6SWL (30 mph) AZI 30	Yes	Y	1	1.2	36	1.5	3	0.154
101	1.2DL + 1.5LM3 + 1.6SWL (30 mph) AZI 60	Yes	Y	1	1.2	36	1.5	4	0.154
102	1.2DL + 1.5LM3 + 1.6SWL (30 mph) AZI 90	Yes	Y	1	1.2	36	1.5	5	0.154
103	1.2DL + 1.5LM3 + 1.6SWL (30 mph) AZI 120	Yes	Y	1	1.2	36	1.5	6	0.154
104	1.2DL + 1.5LM3 + 1.6SWL (30 mph) AZI 150	Yes	Y	1	1.2	36	1.5	7	0.154
105	1.2DL + 1.5LM3 + 1.6SWL (30 mph) AZI 180	Yes	Y	1	1.2	36	1.5	8	0.154
106	1.2DL + 1.5LM3 + 1.6SWL (30 mph) AZI 210	Yes	Y	1	1.2	36	1.5	9	0.154
107	1.2DL + 1.5LM3 + 1.6SWL (30 mph) AZI 240	Yes	Y	1	1.2	36	1.5	10	0.154
108	1.2DL + 1.5LM3 + 1.6SWL (30 mph) AZI 270	Yes	Y	1	1.2	36	1.5	11	0.154
109	1.2DL + 1.5LM3 + 1.6SWL (30 mph) AZI 300	Yes	Y	1	1.2	36	1.5	12	0.154
110	1.2DL + 1.5LM3 + 1.6SWL (30 mph) AZI 330	Yes	Y	1	1.2	36	1.5	13	0.154
111	1.2DL + 1.5LM4 + 1.6SWL (30 mph) AZI 0	Yes	Y	1	1.2	37	1.5	2	0.154
112	1.2DL + 1.5LM4 + 1.6SWL (30 mph) AZI 30	Yes	Y	1	1.2	37	1.5	3	0.154
113	1.2DL + 1.5LM4 + 1.6SWL (30 mph) AZI 60	Yes	Y	1	1.2	37	1.5	4	0.154
114	1.2DL + 1.5LM4 + 1.6SWL (30 mph) AZI 90	Yes	Y	1	1.2	37	1.5	5	0.154
115	1.2DL + 1.5LM4 + 1.6SWL (30 mph) AZI 120	Yes	Y	1	1.2	37	1.5	6	0.154
116	1.2DL + 1.5LM4 + 1.6SWL (30 mph) AZI 150	Yes	Y	1	1.2	37	1.5	7	0.154
117	1.2DL + 1.5LM4 + 1.6SWL (30 mph) AZI 180	Yes	Y	1	1.2	37	1.5	8	0.154
118	1.2DL + 1.5LM4 + 1.6SWL (30 mph) AZI 210	Yes	Y	1	1.2	37	1.5	9	0.154
119	1.2DL + 1.5LM4 + 1.6SWL (30 mph) AZI 240	Yes	Y	1	1.2	37	1.5	10	0.154
120	1.2DL + 1.5LM4 + 1.6SWL (30 mph) AZI 270	Yes	Y	1	1.2	37	1.5	11	0.154
121	1.2DL + 1.5LM4 + 1.6SWL (30 mph) AZI 300	Yes	Y	1	1.2	37	1.5	12	0.154
122	1.2DL + 1.5LM4 + 1.6SWL (30 mph) AZI 330	Yes	Y	1	1.2	37	1.5	13	0.154
123	1.2DL + 1.5LM5 + 1.6SWL (30 mph) AZI 0	Yes	Y	1	1.2	38	1.5	2	0.154
124	1.2DL + 1.5LM5 + 1.6SWL (30 mph) AZI 30	Yes	Y	1	1.2	38	1.5	3	0.154
125	1.2DL + 1.5LM5 + 1.6SWL (30 mph) AZI 60	Yes	Y	1	1.2	38	1.5	4	0.154
126	1.2DL + 1.5LM5 + 1.6SWL (30 mph) AZI 90	Yes	Y	1	1.2	38	1.5	5	0.154
127	1.2DL + 1.5LM5 + 1.6SWL (30 mph) AZI 120	Yes	Y	1	1.2	38	1.5	6	0.154
128	1.2DL + 1.5LM5 + 1.6SWL (30 mph) AZI 150	Yes	Y	1	1.2	38	1.5	7	0.154
129	1.2DL + 1.5LM5 + 1.6SWL (30 mph) AZI 180	Yes	Y	1	1.2	38	1.5	8	0.154
130	1.2DL + 1.5LM5 + 1.6SWL (30 mph) AZI 210	Yes	Y	1	1.2	38	1.5	9	0.154
131	1.2DL + 1.5LM5 + 1.6SWL (30 mph) AZI 240	Yes	Y	1	1.2	38	1.5	10	0.154
132	1.2DL + 1.5LM5 + 1.6SWL (30 mph) AZI 270	Yes	Y	1	1.2	38	1.5	11	0.154
133	1.2DL + 1.5LM5 + 1.6SWL (30 mph) AZI 300	Yes	Y	1	1.2	38	1.5	12	0.154
134	1.2DL + 1.5LM5 + 1.6SWL (30 mph) AZI 330	Yes	Y	1	1.2	38	1.5	13	0.154
135	1.2DL + 1.5LM6 + 1.6SWL (30 mph) AZI 0	Yes	Y	1	1.2	39	1.5	2	0.154
136	1.2DL + 1.5LM6 + 1.6SWL (30 mph) AZI 30	Yes	Y	1	1.2	39	1.5	3	0.154
137	1.2DL + 1.5LM6 + 1.6SWL (30 mph) AZI 60	Yes	Y	1	1.2	39	1.5	4	0.154
138	1.2DL + 1.5LM6 + 1.6SWL (30 mph) AZI 90	Yes	Y	1	1.2	39	1.5	5	0.154
139	1.2DL + 1.5LM6 + 1.6SWL (30 mph) AZI 120	Yes	Y	1	1.2	39	1.5	6	0.154
140	1.2DL + 1.5LM6 + 1.6SWL (30 mph) AZI 150	Yes	Y	1	1.2	39	1.5	7	0.154
141	1.2DL + 1.5LM6 + 1.6SWL (30 mph) AZI 180	Yes	Y	1	1.2	39	1.5	8	0.154
142	1.2DL + 1.5LM6 + 1.6SWL (30 mph) AZI 210	Yes	Y	1	1.2	39	1.5	9	0.154
143	1.2DL + 1.5LM6 + 1.6SWL (30 mph) AZI 240	Yes	Y	1	1.2	39	1.5	10	0.154
144	1.2DL + 1.5LM6 + 1.6SWL (30 mph) AZI 270	Yes	Y	1	1.2	39	1.5	11	0.154
145	1.2DL + 1.5LM6 + 1.6SWL (30 mph) AZI 300	Yes	Y	1	1.2	39	1.5	12	0.154
146	1.2DL + 1.5LM6 + 1.6SWL (30 mph) AZI 330	Yes	Y	1	1.2	39	1.5	13	0.154
147	1.2DL + 1.5LM7 + 1.6SWL (30 mph) AZI 0	Yes	Y	1	1.2	40	1.5	2	0.154
148	1.2DL + 1.5LM7 + 1.6SWL (30 mph) AZI 30	Yes	Y	1	1.2	40	1.5	3	0.154
149	1.2DL + 1.5LM7 + 1.6SWL (30 mph) AZI 60	Yes	Y	1	1.2	40	1.5	4	0.154
150	1.2DL + 1.5LM7 + 1.6SWL (30 mph) AZI 90	Yes	Y	1	1.2	40	1.5	5	0.154

Load Combinations (Continued)

	Description	Solve	PDelta	BLC	Factor	BLC	Factor	BLC	Factor
151	1.2DL + 1.5LM7 + 1.6SWL (30 mph) AZI 120	Yes	Y	1	1.2	40	1.5	6	0.154
152	1.2DL + 1.5LM7 + 1.6SWL (30 mph) AZI 150	Yes	Y	1	1.2	40	1.5	7	0.154
153	1.2DL + 1.5LM7 + 1.6SWL (30 mph) AZI 180	Yes	Y	1	1.2	40	1.5	8	0.154
154	1.2DL + 1.5LM7 + 1.6SWL (30 mph) AZI 210	Yes	Y	1	1.2	40	1.5	9	0.154
155	1.2DL + 1.5LM7 + 1.6SWL (30 mph) AZI 240	Yes	Y	1	1.2	40	1.5	10	0.154
156	1.2DL + 1.5LM7 + 1.6SWL (30 mph) AZI 270	Yes	Y	1	1.2	40	1.5	11	0.154
157	1.2DL + 1.5LM7 + 1.6SWL (30 mph) AZI 300	Yes	Y	1	1.2	40	1.5	12	0.154
158	1.2DL + 1.5LM7 + 1.6SWL (30 mph) AZI 330	Yes	Y	1	1.2	40	1.5	13	0.154
159	1.2DL + 1.5LM8 + 1.6SWL (30 mph) AZI 0	Yes	Y	1	1.2	41	1.5	2	0.154
160	1.2DL + 1.5LM8 + 1.6SWL (30 mph) AZI 30	Yes	Y	1	1.2	41	1.5	3	0.154
161	1.2DL + 1.5LM8 + 1.6SWL (30 mph) AZI 60	Yes	Y	1	1.2	41	1.5	4	0.154
162	1.2DL + 1.5LM8 + 1.6SWL (30 mph) AZI 90	Yes	Y	1	1.2	41	1.5	5	0.154
163	1.2DL + 1.5LM8 + 1.6SWL (30 mph) AZI 120	Yes	Y	1	1.2	41	1.5	6	0.154
164	1.2DL + 1.5LM8 + 1.6SWL (30 mph) AZI 150	Yes	Y	1	1.2	41	1.5	7	0.154
165	1.2DL + 1.5LM8 + 1.6SWL (30 mph) AZI 180	Yes	Y	1	1.2	41	1.5	8	0.154
166	1.2DL + 1.5LM8 + 1.6SWL (30 mph) AZI 210	Yes	Y	1	1.2	41	1.5	9	0.154
167	1.2DL + 1.5LM8 + 1.6SWL (30 mph) AZI 240	Yes	Y	1	1.2	41	1.5	10	0.154
168	1.2DL + 1.5LM8 + 1.6SWL (30 mph) AZI 270	Yes	Y	1	1.2	41	1.5	11	0.154
169	1.2DL + 1.5LM8 + 1.6SWL (30 mph) AZI 300	Yes	Y	1	1.2	41	1.5	12	0.154
170	1.2DL + 1.5LM8 + 1.6SWL (30 mph) AZI 330	Yes	Y	1	1.2	41	1.5	13	0.154
171	1.2DL + 1.5LM9 + 1.6SWL (30 mph) AZI 0	Yes	Y	1	1.2	42	1.5	2	0.154
172	1.2DL + 1.5LM9 + 1.6SWL (30 mph) AZI 30	Yes	Y	1	1.2	42	1.5	3	0.154
173	1.2DL + 1.5LM9 + 1.6SWL (30 mph) AZI 60	Yes	Y	1	1.2	42	1.5	4	0.154
174	1.2DL + 1.5LM9 + 1.6SWL (30 mph) AZI 90	Yes	Y	1	1.2	42	1.5	5	0.154
175	1.2DL + 1.5LM9 + 1.6SWL (30 mph) AZI 120	Yes	Y	1	1.2	42	1.5	6	0.154
176	1.2DL + 1.5LM9 + 1.6SWL (30 mph) AZI 150	Yes	Y	1	1.2	42	1.5	7	0.154
177	1.2DL + 1.5LM9 + 1.6SWL (30 mph) AZI 180	Yes	Y	1	1.2	42	1.5	8	0.154
178	1.2DL + 1.5LM9 + 1.6SWL (30 mph) AZI 210	Yes	Y	1	1.2	42	1.5	9	0.154
179	1.2DL + 1.5LM9 + 1.6SWL (30 mph) AZI 240	Yes	Y	1	1.2	42	1.5	10	0.154
180	1.2DL + 1.5LM9 + 1.6SWL (30 mph) AZI 270	Yes	Y	1	1.2	42	1.5	11	0.154
181	1.2DL + 1.5LM9 + 1.6SWL (30 mph) AZI 300	Yes	Y	1	1.2	42	1.5	12	0.154
182	1.2DL + 1.5LM9 + 1.6SWL (30 mph) AZI 330	Yes	Y	1	1.2	42	1.5	13	0.154
183	1.2DL + 1.5LM10 + 1.6SWL (30 mph) AZI 0	Yes	Y	1	1.2	43	1.5	2	0.154
184	1.2DL + 1.5LM10 + 1.6SWL (30 mph) AZI 30	Yes	Y	1	1.2	43	1.5	3	0.154
185	1.2DL + 1.5LM10 + 1.6SWL (30 mph) AZI 60	Yes	Y	1	1.2	43	1.5	4	0.154
186	1.2DL + 1.5LM10 + 1.6SWL (30 mph) AZI 90	Yes	Y	1	1.2	43	1.5	5	0.154
187	1.2DL + 1.5LM10 + 1.6SWL (30 mph) AZI 120	Yes	Y	1	1.2	43	1.5	6	0.154
188	1.2DL + 1.5LM10 + 1.6SWL (30 mph) AZI 150	Yes	Y	1	1.2	43	1.5	7	0.154
189	1.2DL + 1.5LM10 + 1.6SWL (30 mph) AZI 180	Yes	Y	1	1.2	43	1.5	8	0.154
190	1.2DL + 1.5LM10 + 1.6SWL (30 mph) AZI 210	Yes	Y	1	1.2	43	1.5	9	0.154
191	1.2DL + 1.5LM10 + 1.6SWL (30 mph) AZI 240	Yes	Y	1	1.2	43	1.5	10	0.154
192	1.2DL + 1.5LM10 + 1.6SWL (30 mph) AZI 270	Yes	Y	1	1.2	43	1.5	11	0.154
193	1.2DL + 1.5LM10 + 1.6SWL (30 mph) AZI 300	Yes	Y	1	1.2	43	1.5	12	0.154
194	1.2DL + 1.5LM10 + 1.6SWL (30 mph) AZI 330	Yes	Y	1	1.2	43	1.5	13	0.154
195	1.2DL + 1.5LM11 + 1.6SWL (30 mph) AZI 0	Yes	Y	1	1.2	44	1.5	2	0.154
196	1.2DL + 1.5LM11 + 1.6SWL (30 mph) AZI 30	Yes	Y	1	1.2	44	1.5	3	0.154
197	1.2DL + 1.5LM11 + 1.6SWL (30 mph) AZI 60	Yes	Y	1	1.2	44	1.5	4	0.154
198	1.2DL + 1.5LM11 + 1.6SWL (30 mph) AZI 90	Yes	Y	1	1.2	44	1.5	5	0.154
199	1.2DL + 1.5LM11 + 1.6SWL (30 mph) AZI 120	Yes	Y	1	1.2	44	1.5	6	0.154
200	1.2DL + 1.5LM11 + 1.6SWL (30 mph) AZI 150	Yes	Y	1	1.2	44	1.5	7	0.154
201	1.2DL + 1.5LM11 + 1.6SWL (30 mph) AZI 180	Yes	Y	1	1.2	44	1.5	8	0.154
202	1.2DL + 1.5LM11 + 1.6SWL (30 mph) AZI 210	Yes	Y	1	1.2	44	1.5	9	0.154
203	1.2DL + 1.5LM11 + 1.6SWL (30 mph) AZI 240	Yes	Y	1	1.2	44	1.5	10	0.154
204	1.2DL + 1.5LM11 + 1.6SWL (30 mph) AZI 270	Yes	Y	1	1.2	44	1.5	11	0.154
205	1.2DL + 1.5LM11 + 1.6SWL (30 mph) AZI 300	Yes	Y	1	1.2	44	1.5	12	0.154
206	1.2DL + 1.5LM11 + 1.6SWL (30 mph) AZI 330	Yes	Y	1	1.2	44	1.5	13	0.154
207	1.2DL + 1.5LM12 + 1.6SWL (30 mph) AZI 0	Yes	Y	1	1.2	45	1.5	2	0.154
208	1.2DL + 1.5LM12 + 1.6SWL (30 mph) AZI 30	Yes	Y	1	1.2	45	1.5	3	0.154

Load Combinations (Continued)

	Description	Solve	PDelta	BLC	Factor	BLC	Factor	BLC	Factor
209	1.2DL + 1.5LM12 + 1.6SWL (30 mph) AZI 60	Yes	Y	1	1.2	45	1.5	4	0.154
210	1.2DL + 1.5LM12 + 1.6SWL (30 mph) AZI 90	Yes	Y	1	1.2	45	1.5	5	0.154
211	1.2DL + 1.5LM12 + 1.6SWL (30 mph) AZI 120	Yes	Y	1	1.2	45	1.5	6	0.154
212	1.2DL + 1.5LM12 + 1.6SWL (30 mph) AZI 150	Yes	Y	1	1.2	45	1.5	7	0.154
213	1.2DL + 1.5LM12 + 1.6SWL (30 mph) AZI 180	Yes	Y	1	1.2	45	1.5	8	0.154
214	1.2DL + 1.5LM12 + 1.6SWL (30 mph) AZI 210	Yes	Y	1	1.2	45	1.5	9	0.154
215	1.2DL + 1.5LM12 + 1.6SWL (30 mph) AZI 240	Yes	Y	1	1.2	45	1.5	10	0.154
216	1.2DL + 1.5LM12 + 1.6SWL (30 mph) AZI 270	Yes	Y	1	1.2	45	1.5	11	0.154
217	1.2DL + 1.5LM12 + 1.6SWL (30 mph) AZI 300	Yes	Y	1	1.2	45	1.5	12	0.154
218	1.2DL + 1.5LM12 + 1.6SWL (30 mph) AZI 330	Yes	Y	1	1.2	45	1.5	13	0.154
219	1.2DL + 1.5LM13 + 1.6SWL (30 mph) AZI 0	Yes	Y	1	1.2	46	1.5	2	0.154
220	1.2DL + 1.5LM13 + 1.6SWL (30 mph) AZI 30	Yes	Y	1	1.2	46	1.5	3	0.154
221	1.2DL + 1.5LM13 + 1.6SWL (30 mph) AZI 60	Yes	Y	1	1.2	46	1.5	4	0.154
222	1.2DL + 1.5LM13 + 1.6SWL (30 mph) AZI 90	Yes	Y	1	1.2	46	1.5	5	0.154
223	1.2DL + 1.5LM13 + 1.6SWL (30 mph) AZI 120	Yes	Y	1	1.2	46	1.5	6	0.154
224	1.2DL + 1.5LM13 + 1.6SWL (30 mph) AZI 150	Yes	Y	1	1.2	46	1.5	7	0.154
225	1.2DL + 1.5LM13 + 1.6SWL (30 mph) AZI 180	Yes	Y	1	1.2	46	1.5	8	0.154
226	1.2DL + 1.5LM13 + 1.6SWL (30 mph) AZI 210	Yes	Y	1	1.2	46	1.5	9	0.154
227	1.2DL + 1.5LM13 + 1.6SWL (30 mph) AZI 240	Yes	Y	1	1.2	46	1.5	10	0.154
228	1.2DL + 1.5LM13 + 1.6SWL (30 mph) AZI 270	Yes	Y	1	1.2	46	1.5	11	0.154
229	1.2DL + 1.5LM13 + 1.6SWL (30 mph) AZI 300	Yes	Y	1	1.2	46	1.5	12	0.154
230	1.2DL + 1.5LM13 + 1.6SWL (30 mph) AZI 330	Yes	Y	1	1.2	46	1.5	13	0.154
231	1.2DL + 1.5LM14 + 1.6SWL (30 mph) AZI 0	Yes	Y	1	1.2	47	1.5	2	0.154
232	1.2DL + 1.5LM14 + 1.6SWL (30 mph) AZI 30	Yes	Y	1	1.2	47	1.5	3	0.154
233	1.2DL + 1.5LM14 + 1.6SWL (30 mph) AZI 60	Yes	Y	1	1.2	47	1.5	4	0.154
234	1.2DL + 1.5LM14 + 1.6SWL (30 mph) AZI 90	Yes	Y	1	1.2	47	1.5	5	0.154
235	1.2DL + 1.5LM14 + 1.6SWL (30 mph) AZI 120	Yes	Y	1	1.2	47	1.5	6	0.154
236	1.2DL + 1.5LM14 + 1.6SWL (30 mph) AZI 150	Yes	Y	1	1.2	47	1.5	7	0.154
237	1.2DL + 1.5LM14 + 1.6SWL (30 mph) AZI 180	Yes	Y	1	1.2	47	1.5	8	0.154
238	1.2DL + 1.5LM14 + 1.6SWL (30 mph) AZI 210	Yes	Y	1	1.2	47	1.5	9	0.154
239	1.2DL + 1.5LM14 + 1.6SWL (30 mph) AZI 240	Yes	Y	1	1.2	47	1.5	10	0.154
240	1.2DL + 1.5LM14 + 1.6SWL (30 mph) AZI 270	Yes	Y	1	1.2	47	1.5	11	0.154
241	1.2DL + 1.5LM14 + 1.6SWL (30 mph) AZI 300	Yes	Y	1	1.2	47	1.5	12	0.154
242	1.2DL + 1.5LM14 + 1.6SWL (30 mph) AZI 330	Yes	Y	1	1.2	47	1.5	13	0.154
243	1.2DL + 1.5LM15 + 1.6SWL (30 mph) AZI 0	Yes	Y	1	1.2	48	1.5	2	0.154
244	1.2DL + 1.5LM15 + 1.6SWL (30 mph) AZI 30	Yes	Y	1	1.2	48	1.5	3	0.154
245	1.2DL + 1.5LM15 + 1.6SWL (30 mph) AZI 60	Yes	Y	1	1.2	48	1.5	4	0.154
246	1.2DL + 1.5LM15 + 1.6SWL (30 mph) AZI 90	Yes	Y	1	1.2	48	1.5	5	0.154
247	1.2DL + 1.5LM15 + 1.6SWL (30 mph) AZI 120	Yes	Y	1	1.2	48	1.5	6	0.154
248	1.2DL + 1.5LM15 + 1.6SWL (30 mph) AZI 150	Yes	Y	1	1.2	48	1.5	7	0.154
249	1.2DL + 1.5LM15 + 1.6SWL (30 mph) AZI 180	Yes	Y	1	1.2	48	1.5	8	0.154
250	1.2DL + 1.5LM15 + 1.6SWL (30 mph) AZI 210	Yes	Y	1	1.2	48	1.5	9	0.154
251	1.2DL + 1.5LM15 + 1.6SWL (30 mph) AZI 240	Yes	Y	1	1.2	48	1.5	10	0.154
252	1.2DL + 1.5LM15 + 1.6SWL (30 mph) AZI 270	Yes	Y	1	1.2	48	1.5	11	0.154
253	1.2DL + 1.5LM15 + 1.6SWL (30 mph) AZI 300	Yes	Y	1	1.2	48	1.5	12	0.154
254	1.2DL + 1.5LM15 + 1.6SWL (30 mph) AZI 330	Yes	Y	1	1.2	48	1.5	13	0.154
255	1.2DL + 1.5LM16 + 1.6SWL (30 mph) AZI 0	Yes	Y	1	1.2	49	1.5	2	0.154
256	1.2DL + 1.5LM16 + 1.6SWL (30 mph) AZI 30	Yes	Y	1	1.2	49	1.5	3	0.154
257	1.2DL + 1.5LM16 + 1.6SWL (30 mph) AZI 60	Yes	Y	1	1.2	49	1.5	4	0.154
258	1.2DL + 1.5LM16 + 1.6SWL (30 mph) AZI 90	Yes	Y	1	1.2	49	1.5	5	0.154
259	1.2DL + 1.5LM16 + 1.6SWL (30 mph) AZI 120	Yes	Y	1	1.2	49	1.5	6	0.154
260	1.2DL + 1.5LM16 + 1.6SWL (30 mph) AZI 150	Yes	Y	1	1.2	49	1.5	7	0.154
261	1.2DL + 1.5LM16 + 1.6SWL (30 mph) AZI 180	Yes	Y	1	1.2	49	1.5	8	0.154
262	1.2DL + 1.5LM16 + 1.6SWL (30 mph) AZI 210	Yes	Y	1	1.2	49	1.5	9	0.154
263	1.2DL + 1.5LM16 + 1.6SWL (30 mph) AZI 240	Yes	Y	1	1.2	49	1.5	10	0.154
264	1.2DL + 1.5LM16 + 1.6SWL (30 mph) AZI 270	Yes	Y	1	1.2	49	1.5	11	0.154
265	1.2DL + 1.5LM16 + 1.6SWL (30 mph) AZI 300	Yes	Y	1	1.2	49	1.5	12	0.154
266	1.2DL + 1.5LM16 + 1.6SWL (30 mph) AZI 330	Yes	Y	1	1.2	49	1.5	13	0.154

Load Combinations (Continued)

	Description	Solve	PDelta	BLC	Factor	BLC	Factor	BLC	Factor
267	1.2DL + 1.5LM17 + 1.6SWL (30 mph) AZI 0	Yes	Y	1	1.2	50	1.5	2	0.154
268	1.2DL + 1.5LM17 + 1.6SWL (30 mph) AZI 30	Yes	Y	1	1.2	50	1.5	3	0.154
269	1.2DL + 1.5LM17 + 1.6SWL (30 mph) AZI 60	Yes	Y	1	1.2	50	1.5	4	0.154
270	1.2DL + 1.5LM17 + 1.6SWL (30 mph) AZI 90	Yes	Y	1	1.2	50	1.5	5	0.154
271	1.2DL + 1.5LM17 + 1.6SWL (30 mph) AZI 120	Yes	Y	1	1.2	50	1.5	6	0.154
272	1.2DL + 1.5LM17 + 1.6SWL (30 mph) AZI 150	Yes	Y	1	1.2	50	1.5	7	0.154
273	1.2DL + 1.5LM17 + 1.6SWL (30 mph) AZI 180	Yes	Y	1	1.2	50	1.5	8	0.154
274	1.2DL + 1.5LM17 + 1.6SWL (30 mph) AZI 210	Yes	Y	1	1.2	50	1.5	9	0.154
275	1.2DL + 1.5LM17 + 1.6SWL (30 mph) AZI 240	Yes	Y	1	1.2	50	1.5	10	0.154
276	1.2DL + 1.5LM17 + 1.6SWL (30 mph) AZI 270	Yes	Y	1	1.2	50	1.5	11	0.154
277	1.2DL + 1.5LM17 + 1.6SWL (30 mph) AZI 300	Yes	Y	1	1.2	50	1.5	12	0.154
278	1.2DL + 1.5LM17 + 1.6SWL (30 mph) AZI 330	Yes	Y	1	1.2	50	1.5	13	0.154
279	1.2DL + 1.5LM18 + 1.6SWL (30 mph) AZI 0	Yes	Y	1	1.2	51	1.5	2	0.154
280	1.2DL + 1.5LM18 + 1.6SWL (30 mph) AZI 30	Yes	Y	1	1.2	51	1.5	3	0.154
281	1.2DL + 1.5LM18 + 1.6SWL (30 mph) AZI 60	Yes	Y	1	1.2	51	1.5	4	0.154
282	1.2DL + 1.5LM18 + 1.6SWL (30 mph) AZI 90	Yes	Y	1	1.2	51	1.5	5	0.154
283	1.2DL + 1.5LM18 + 1.6SWL (30 mph) AZI 120	Yes	Y	1	1.2	51	1.5	6	0.154
284	1.2DL + 1.5LM18 + 1.6SWL (30 mph) AZI 150	Yes	Y	1	1.2	51	1.5	7	0.154
285	1.2DL + 1.5LM18 + 1.6SWL (30 mph) AZI 180	Yes	Y	1	1.2	51	1.5	8	0.154
286	1.2DL + 1.5LM18 + 1.6SWL (30 mph) AZI 210	Yes	Y	1	1.2	51	1.5	9	0.154
287	1.2DL + 1.5LM18 + 1.6SWL (30 mph) AZI 240	Yes	Y	1	1.2	51	1.5	10	0.154
288	1.2DL + 1.5LM18 + 1.6SWL (30 mph) AZI 270	Yes	Y	1	1.2	51	1.5	11	0.154
289	1.2DL + 1.5LM18 + 1.6SWL (30 mph) AZI 300	Yes	Y	1	1.2	51	1.5	12	0.154
290	1.2DL + 1.5LM18 + 1.6SWL (30 mph) AZI 330	Yes	Y	1	1.2	51	1.5	13	0.154

Envelope Node Reactions

Node Label	X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [lb-in]	LC	MY [lb-in]	LC	MZ [lb-in]	LC		
1	N1	max	1282.599	14	1747.274	27	1311.069	16	14983.549	108	24978.719	16	10977.314	20
2		min	-1494.429	8	-84.835	20	-1310.727	22	-14977.849	90	-25010.614	22	-62752.28	87
3	N67	max	1467.954	2	1881.733	35	1605.228	6	10662.548	16	29895.834	25	30593.867	143
4		min	-1360.723	20	-51.451	16	-1449.488	24	-60764.324	35	-26310.921	18	-5597.87	16
5	N117	max	1631.17	2	1747.902	31	1124.925	17	61598.167	127	25082.883	20	39872.717	31
6		min	-1527.251	20	-104.873	24	-1480.049	12	-10169.192	24	-25110.465	14	-6317.548	24
7	Totals:	max	4350.534	14	5012.611	35	3812.908	4						
8		min	-4350.534	20	1699.901	52	-4026.159	12						

Envelope AISC 14th (360-10): LRFD Steel Code Checks

Member	Shape	Code Check	Loc[in]	LC	Shear	Check	Loc[in]	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y-y [lb-in]	phi*Mn z-z [lb-in]	Cb	Eqn
1	M100	6" x 0.375" Plate	0.21	1.125	6	0.805	0	y	129	71110.261	72900	6834.391	109350	3	H1-1b
2	M30	6" x 0.375" Plate	0.21	1.125	2	0.805	0	y	89	71110.261	72900	6834.391	109350	3	H1-1b
3	M24	6" x 0.375" Plate	0.194	1.125	2	0.802	0	y	109	71110.261	72900	6834.391	109350	3	H1-1b
4	M83	6" x 0.375" Plate	0.186	2.036	6	0.763	2.036	y	129	62722.329	72900	6834.391	109350	2.581	H1-1b
5	M13	6" x 0.375" Plate	0.185	2.036	2	0.763	2.036	y	89	62722.329	72900	6834.391	109350	2.582	H1-1b
6	M12	6" x 0.375" Plate	0.174	2.036	13	0.761	2.036	y	109	62722.329	72900	6834.391	109350	2.979	H1-1b
7	M94	6" x 0.375" Plate	0.193	1.125	6	0.698	0	y	29	71110.261	72900	6834.391	109350	3	H1-1b
8	M62	6" x 0.375" Plate	0.195	1.125	10	0.697	0	y	33	71110.261	72900	6834.391	109350	3	H1-1b
9	M82	6" x 0.375" Plate	0.16	2.036	5	0.659	2.036	y	29	62722.329	72900	6834.391	109350	2.967	H1-1b
10	M50	6" x 0.375" Plate	0.166	2.036	10	0.657	2.036	y	33	62722.329	72900	6834.391	109350	2.358	H1-1b
11	M61	6" x 0.375" Plate	0.144	1.125	2	0.645	0	y	33	71110.261	72900	6834.391	109350	3	H1-1b
12	M93	6" x 0.375" Plate	0.147	1.125	10	0.644	0	y	29	71110.261	72900	6834.391	109350	3	H1-1b
13	M23	6" x 0.375" Plate	0.15	1.125	24	0.643	0	y	37	71110.261	72900	6834.391	109350	3	H1-1b
14	M68	6" x 0.375" Plate	0.208	1.125	10	0.631	0	y	12	71110.261	72900	6834.391	109350	3	H1-1b
15	M99	6" x 0.375" Plate	0.163	1.125	20	0.628	0	y	129	71110.261	72900	6834.391	109350	3	H1-1b
16	M29	6" x 0.375" Plate	0.162	1.125	16	0.628	0	y	89	71110.261	72900	6834.391	109350	3	H1-1b
17	M49	6" x 0.375" Plate	0.165	2.036	25	0.605	2.036	y	33	62722.329	72900	6834.391	109350	1.745	H1-1b
18	M81	6" x 0.375" Plate	0.151	2.036	3	0.603	2.036	y	29	62722.329	72900	6834.391	109350	2.142	H1-1b
19	M11	6" x 0.375" Plate	0.146	2.036	11	0.603	2.036	y	37	62722.329	72900	6834.391	109350	2.158	H1-1b

Envelope AISC 14th (360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[in]	LC Shear Check	Loc[in]	Dir	LC phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y-y [lb-in]	phi*Mn z-z [lb-in]	Cb	Eqn			
20	M80	6" x 0.375" Plate	0.153	2.036	9	0.592	2.036	y	129	62722.329	72900	6834.391	109350	2.079	H1-1b
21	M67	6" x 0.375" Plate	0.172	1.125	24	0.592	0	y	37	71110.261	72900	6834.391	109350	3	H1-1b
22	M10	6" x 0.375" Plate	0.149	2.036	5	0.591	2.036	y	89	62722.329	72900	6834.391	109350	2.091	H1-1b
23	M51	6" x 0.375" Plate	0.179	2.036	10	0.585	2.036	y	12	62722.329	72900	6834.391	109350	2.582	H1-1b
24	M48	6" x 0.375" Plate	0.167	2.036	13	0.555	2.036	y	37	62722.329	72900	6834.391	109350	2.048	H1-1b
25	M7	L4X4X4	0.323	0	21	0.23	0	z	100	54411.715	62532	37651.159	80578.632	1.5	H2-1
26	M6	L4X4X4	0.314	24.375	25	0.23	24.375	z	98	54411.715	62532	37651.159	82764.473	1.5	H2-1
27	M76	L4X4X4	0.307	24.375	24	0.228	24.375	z	125	54411.715	62532	37651.159	80578.632	1.5	H2-1
28	M77	L4X4X4	0.364	0	25	0.199	0	y	7	54411.715	62532	37651.159	80578.632	1.5	H2-1
29	M45	L4X4X4	0.313	0	16	0.192	0	y	11	54411.715	62532	37651.159	80578.632	1.5	H2-1
30	M44	L4X4X4	0.294	24.375	16	0.174	24.375	y	9	54411.715	62532	37651.159	80578.632	1.5	H2-1
31	M52	L2.5x2.5x3	0.158	55	12	0.147	55	z	13	14632.678	29192.4	10470.885	20247.481	1.106	H2-1
32	M65	6" x 0.375" Plate	0.332	1.125	9	0.144	1.125	y	13	71110.261	72900	6834.391	109350	2.971	H1-1b
33	M14	L2.5x2.5x3	0.158	55	4	0.137	0	y	4	14632.678	29192.4	10470.885	20265.493	1.109	H2-1
34	M84	L2.5x2.5x3	0.158	55	8	0.136	0	y	8	14632.678	29192.4	10470.885	20263.943	1.109	H2-1
35	M9	L4X4X4	0.298	0	27	0.136	0	z	97	51466.784	62532	37651.159	80578.632	1.5	H2-1
36	M79	L4X4X4	0.298	0	31	0.136	0	z	125	51466.784	62532	37651.159	80578.632	1.5	H2-1
37	M8	L4X4X4	0.303	36.125	27	0.135	36.125	z	101	51466.784	62532	37651.159	80578.632	1.5	H2-1
38	M1	HSS4X4X4	0.348	0	4	0.134	0	y	109	133649.326	139518	194166	194166	1.759	H1-1b
39	M73	HSS4X4X4	0.349	0	8	0.134	0	y	129	133649.326	139518	194166	194166	1.76	H1-1b
40	M33	6" x 0.375" Plate	0.377	1.125	3	0.133	1.125	y	10	71110.261	72900	6834.391	109350	2.951	H1-1b
41	M103	6" x 0.375" Plate	0.377	1.125	7	0.133	1.125	y	2	71110.261	72900	6834.391	109350	2.951	H1-1b
42	M71	6" x 0.375" Plate	0.369	1.125	11	0.133	1.125	y	6	71110.261	72900	6834.391	109350	2.968	H1-1b
43	M27	6" x 0.375" Plate	0.348	1.125	13	0.132	1.125	y	4	71110.261	72900	6834.391	109350	2.955	H1-1b
44	M97	6" x 0.375" Plate	0.323	1.125	5	0.132	1.125	y	8	71110.261	72900	6834.391	109350	2.983	H1-1b
45	M46	L4X4X4	0.304	36.125	35	0.132	36.125	z	85	51466.784	62532	37651.159	80578.632	1.5	H2-1
46	M53	6" x 0.375" Plate	0.267	5.75	9	0.129	5.75	y	13	62722.329	72900	6834.391	109350	1.408	H1-1b
47	M42	PIPE 2.0	0.324	30	13	0.128	30	z	13	14916.096	32130	22459.5	22459.5	3	H1-1b
48	M47	L4X4X4	0.298	0	35	0.127	0	z	8	51466.784	62532	37651.159	80578.632	1.5	H2-1
49	M78	L4X4X4	0.304	36.125	31	0.126	36.125	z	8	51466.784	62532	37651.159	80578.632	1.5	H2-1
50	M106	PIPE 2.5	0.146	90	13	0.126	90	z	13	30038.461	50715	43155	43155	1.821	H1-1b
51	M114	PIPE 2.5	0.133	90	10	0.124	6	z	2	30038.461	50715	43155	43155	1.849	H1-1b
52	M3	PIPE 2.5	0.133	90	6	0.124	6	z	10	30038.461	50715	43155	43155	1.848	H1-1b
53	M105	PIPE 3.0	0.126	48	122	0.12	93	z	110	60482.561	65205	68985	68985	1	H1-1b
54	M113	PIPE 3.0	0.125	48	77	0.12	3	z	89	60482.561	65205	68985	68985	1	H1-1b
55	M16	6" x 0.375" Plate	0.311	5.75	3	0.119	5.75	y	10	62722.329	72900	6834.391	109350	1.33	H1-1b
56	M86	6" x 0.375" Plate	0.311	5.75	7	0.119	5.75	y	2	62722.329	72900	6834.391	109350	1.33	H1-1b
57	M54	6" x 0.375" Plate	0.304	5.75	11	0.119	5.75	y	6	62722.329	72900	6834.391	109350	1.338	H1-1b
58	M4	PIPE 2.0	0.318	30	12	0.118	30	z	4	14916.096	32130	22459.5	22459.5	2.642	H1-1b
59	M15	6" x 0.375" Plate	0.278	5.75	13	0.118	5.75	y	4	62722.329	72900	6834.391	109350	1.358	H1-1b
60	M74	PIPE 2.0	0.311	30	4	0.118	30	z	8	14916.096	32130	22459.5	22459.5	3	H1-1b
61	M85	6" x 0.375" Plate	0.26	5.75	5	0.118	5.75	y	8	62722.329	72900	6834.391	109350	1.419	H1-1b
62	M41	HSS4X4X4	0.364	0	12	0.108	12.017	y	33	133649.326	139518	194166	194166	1.775	H1-1b
63	M2	PIPE 3.0	0.086	26	12	0.102	93	z	29	60482.561	65205	68985	68985	1.637	H1-1b
64	M107	PIPE 2.0	0.452	30	13	0.101	38	z	13	14916.096	32130	22459.5	22459.5	2.413	H1-1b
65	M110	PIPE 2.0	0.417	30	8	0.098	30	z	6	14916.096	32130	22459.5	22459.5	3	H1-1b
66	M38	PIPE 2.0	0.42	30	12	0.098	30	z	10	14916.096	32130	22459.5	22459.5	3	H1-1b
67	M118	PIPE 2.0	0.417	30	4	0.098	30	z	2	14916.096	32130	22459.5	22459.5	2.727	H1-1b
68	M115	PIPE 2.0	0.443	30	8	0.095	38	z	9	14916.096	32130	22459.5	22459.5	3	H1-1b
69	M35	PIPE 2.0	0.444	30	4	0.093	38	z	5	14916.096	32130	22459.5	22459.5	3	H1-1b
70	M5	HSS4.5X4.5X3	0.061	8.958	3	0.089	8.958	y	109	120246.398	121302	194994	194994	1.44	H1-1b
71	M75	HSS4.5X4.5X3	0.061	8.958	7	0.088	8.958	y	129	120246.398	121302	194994	194994	1.44	H1-1b
72	M43	HSS4.5X4.5X3	0.061	8.958	12	0.077	8.958	y	33	120246.398	121302	194994	194994	1.451	H1-1b
73	M125	PIPE 2.0	0.058	18	10	0.011	18	z	10	26521.424	32130	22459.5	22459.5	2.402	H1-1b

INFINIGY

FROM ZERO TO INFINIGY
the solutions are endless

BOLT CONNECTION CALCULATION

BOLT PROPERTIES

Date:	8/6/2021
Site:	BOBDL00150A
Engineer:	DVA
Project No:	2039-Z5555C
Connection Location:	Arm to Collar

Bolt Capacity Equation	TIA-222-G	
Connection Type	Steel	
Bolt Size, d	5/8	in
Threads per Inch, n	11	
Steel Grade	A325	
Bolt Ultimate Tensile Stress, F_u	120	ksi
Threads Exclusion	N	
Shear Plane	1	
Net Bolt Cross-Sectional Area, A_n	0.226	in ²
Gross Bolt Cross-Sectional Area, A_g	0.307	in ²
Tensile Steel Strength (per bolt), ϕR_{nt}	20340	lbs
Shear Steel Strength (per bolt), ϕR_{nv}	12425	lbs

INFINIGY8

FROM ZERO TO INFINITY
the solutions are endless

BOLTI CONNECTION CALCULATION

BOLT GROUP CHECK

Date:	8/6/2021
Site:	BOBDL00150A
Engineer:	DVA
Project No.:	2039-Z5555C
Connection Location:	Arm to Collar

Loads Properties	
Controlling LC:	31
Load Point Number:	N117
X-Coordinate (in.)	4.00
Y-Coordinate (in.)	4.00
Z-Coordinate (in.)	0.00
Shear Load, Px (lbs)	0
Shear Load, Py (lbs)	0
Axial Load, Pz (lbs)	0
Moment, Mx (lb-in)	0
Moment, My (lb-in)	0
Moment, Mz (lb-in)	0

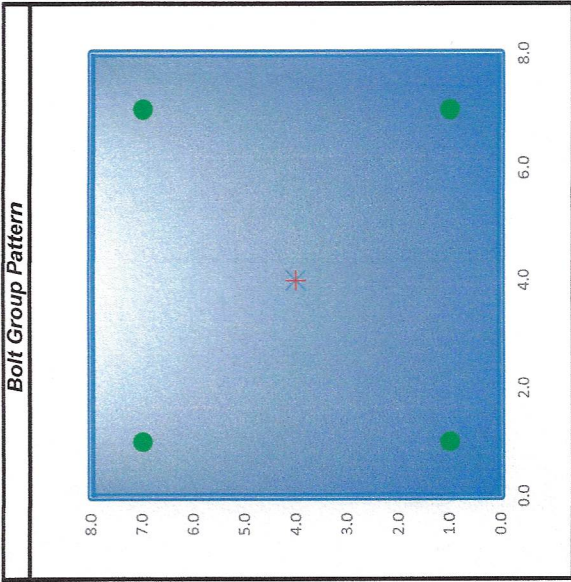
Member Properties	
X	Y
0.0	0.0
8.0	8.0

Number of Bolts: 4

No.	Bolt Type	Bolt Coordinates		Bolt Loads		Steel Bolt Usage		Max. Capacity
		Xo (in)	Yo (in)	Axial (lbs)	Shear (lbs)	Tension	Shear	
1	Main Type	1.0	1.0	1889.33	3812.86	9.3%	30.7%	30.7%
2	Main Type	7.0	1.0	1918.33	3197.21	9.4%	25.7%	25.7%
3	Main Type	1.0	7.0	-1925.33	3813.50	0.0%	30.7%	30.7%
4	Main Type	7.0	7.0	-1896.33	3197.98	0.0%	25.7%	25.7%

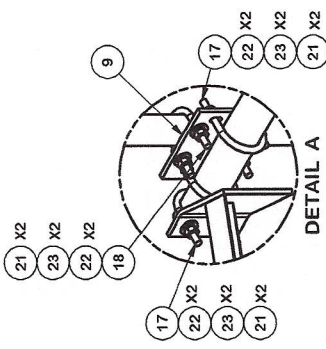
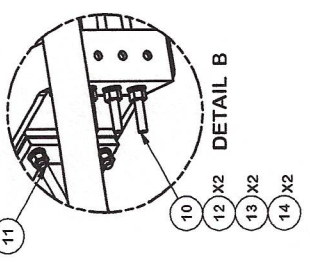
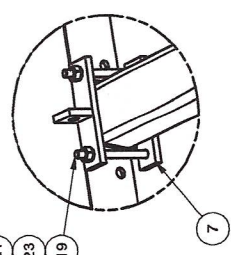
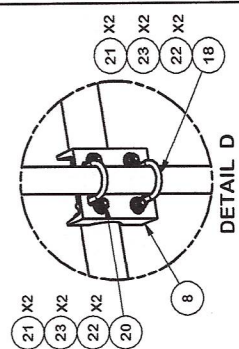
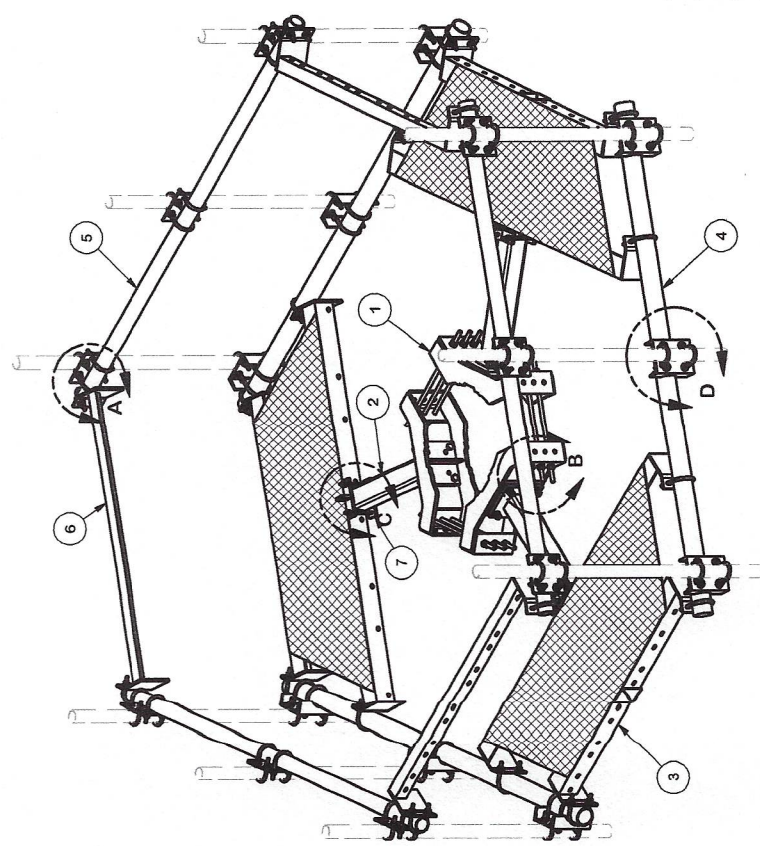
Bolt Group Properties:	
Xc =	4.00 in.
Yc =	4.00 in.
Ic.y =	11.04 in.^2
Ic.x =	11.04 in.^2
Ic.xy =	22.09 in.^2

Loads at Center of Gravity of Bolt Group:	
Pz =	-14.00 lbs
Px =	-2.00 lbs
Py =	-1748.00 lbs
Mx =	-22888.00 lb-in
My =	-174.00 lb-in
Mz =	-59255.00 lb-in



Total Capacity of Bolt Group: 30.7%

ITEM	QTY	PART NO.	PART DESCRIPTION	LENGTH	UNIT WT.	NET WT.
1	3	X-LWRM	RING MOUNT WELDMENT		68.81	206.42
2	3	X-SNP-ST8	SNB8 TELESCOPING ARM FOR GRATING		60.39	181.16
3	3	X-SNPC	CORNER GRATING WELDMENT		194.33	582.99
4	3	P396	3" SCH. 40 PIPE (3.5" O.D. x 0.216" WALL) A500	96.000 in	60.75	182.25
5	3	P3096	2-7/8" OD X 96" 5ch. 40 Galvanized Pipe		46.45	139.36
6	3	X-SNP-HRA	CORNER BRACKET FOR SNPX PLATFORMS		25.95	77.86
7	3	X-SNPP1G	CLAMP PLATE	7.250 in	2.03	6.10
8	9	X-SP219	SMALL SUPPORT CROSS PLATE	8.250 in	8.61	77.50
9	9	SCX2	CROSSOVER PLATE	7.000 in	4.80	43.17
10	9	G58R-48	5/8" x 48" THREADED ROD (HDG.)		0.55	4.94
10	9	G58R-24	5/8" x 24" THREADED ROD (HDG.)		0.55	4.94
11	12	A58234	5/8" x 2-3/4" HDG A325 HEX BOLT	2.75	0.36	4.27
12	30	A58FW	5/8" HDG A325 FLATWASHER		0.03	1.02
13	30	G58LW	5/8" HDG LOCKWASHER		0.03	0.78
14	18	A58NUT	5/8" HDG A325 HEX NUT		0.13	2.34
15	12	G58NUT	5/8" HDG HEAVY 2H HEX NUT		0.13	1.56
16	12	X-UB1358	1/2" X 3-5/8" X 5-1/2" X 3" U-BOLT (HDG.)		0.73	8.78
17	24	X-UB1300	1/2" X 3" X 5" X 2" U-BOLT (HDG.)		0.73	17.56
18	36	X-UB1212	1/2" X 2-1/2" X 4-1/2" X 2" U-BOLT (HDG.)		0.73	26.34
19	6	G12065	1/2" x 6-1/2" HDG HEX BOLT GR5 FULL THREAD	7-1/2	0.41	2.46
20	18	X-UB1306	1/2" X 3-5/8" X 6" X 3" U-BOLT (HDG.)		0.73	13.17
21	186	G12NUT	1/2" HDG HEAVY 2H HEX NUT		0.07	13.32
22	180	G12FW	1/2" HDG USS FLATWASHER		0.03	6.13
23	186	G12LW	1/2" HDG LOCKWASHER		0.01	2.59
24	9	A	2" SCH. 40 PIPE (2.375" O.D. x 0.154" WALL) A500	B	C	D



ASSEMBLY NO.	PART NO.	"A"	"B"	"C"	"D"	TOTAL WEIGHT
SNP8HR-372	P272	6'-0"	23.97	207.63	1717.07	
SNP8HR-384	P284	7'-0"	26.91	242.19	1751.63	
SNP8HR-396	P296	8'-0"	30.76	276.84	1786.28	
SNP8HR-3126	P2126	10'-6"	40.75	366.75	1876.19	

TOLERANCE NOTES

TOLERANCES ON DIMENSIONS, UNLESS OTHERWISE NOTED ARE:
 SAWED, SHEARED AND GAS CUT EDGES ($\pm 0.030"$)
 DRILLED AND GAS CUT HOLES ($\pm 0.030"$) - NO CONING OF HOLES
 LASER CUT EDGES AND HOLES ($\pm 0.010"$) - NO CONING OF HOLES
 BENDS ARE $\pm 1/2$ DEGREE
 ALL OTHER MACHINING ($\pm 0.030"$)
 ALL OTHER ASSEMBLY ($\pm 0.060"$)

SITE PRO
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 1-888-7-63-7446

DESCRIPTION
 8' SNUB NOSE PLATFORM WITH HANDRAIL

ENG. APPROVAL
 CEK 11/19/2014

DRAWN BY
 CEK

DRAWING USAGE
 CUSTOMER

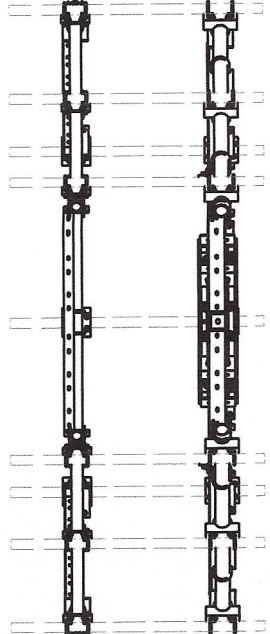
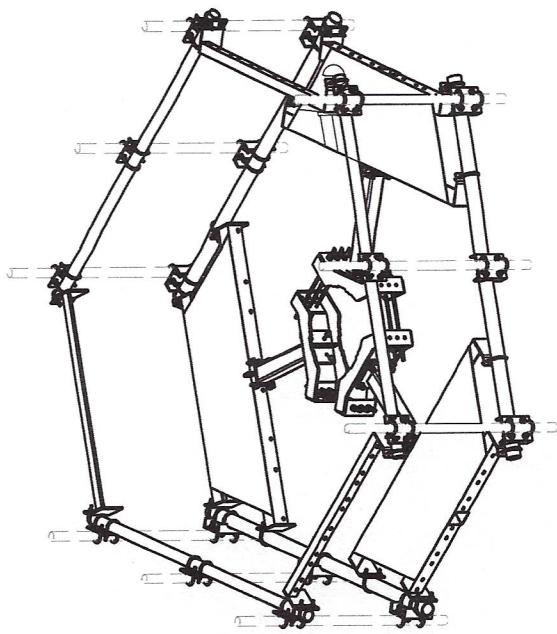
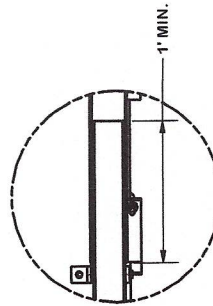
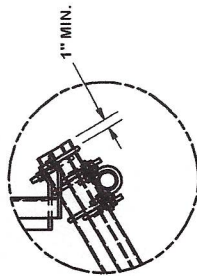
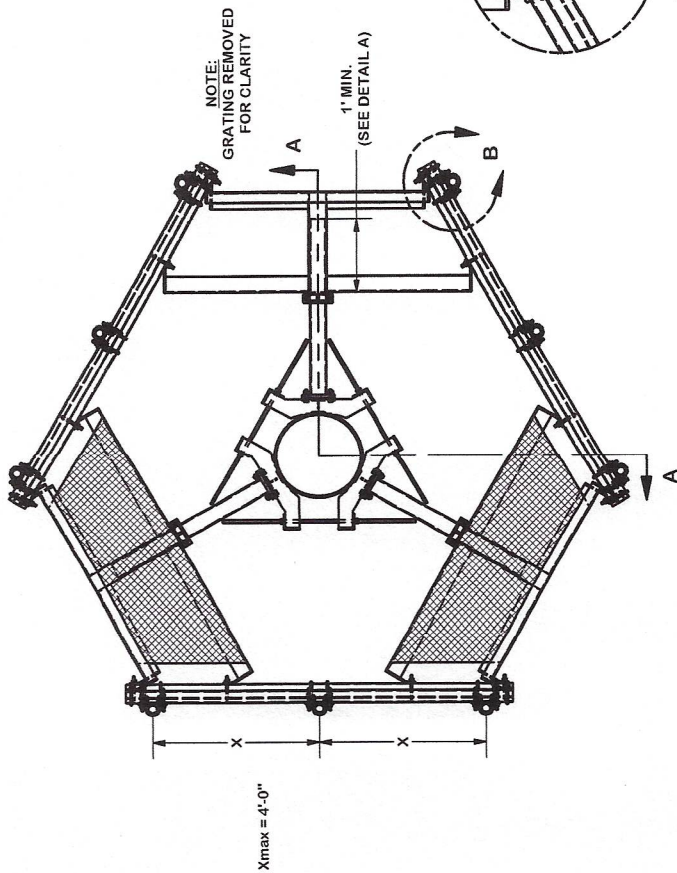
CHECKED BY
 BMC 11/21/2014

CPD NO.
 81 02

PART NO.
 SEE ASSEMBLY NO.

DWG. NO.
 SNP8HR-3XX

PROPRIETARY NOTE:
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DESCRIPTION 8' SNUB NOSE PLATFORM WITH HANDRAIL		ENG. APPROVAL CHECKED BY BMC 11/21/2014	
CPD NO. 81	DRAWN BY CEK 11/19/2014	PART NO. SEE ASSEMBLY NO.	DWG. NO. SNP8HR-3XX
CLASS SUB 81 02	DRAWING USAGE CUSTOMER	PAGE 2 OF 2	

TOLERANCE NOTES
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 DRILLED AND GAS CUT HOLES (± 0.030 ") - NO CONING OF HOLES
 LASER CUT EDGES AND HOLES (± 0.010 ") - NO CONING OF HOLES
 BENDS ARE $\pm 1/2$ DEGREE
 ALL OTHER MACHINING (± 0.030 ")
 ALL OTHER ASSEMBLY (± 0.060 ")

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Engineering Services:
 1-888-753-7446

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Mount Analysis Report

August 6, 2021

Final Configuration Loading

Mount CL (ft)	Rad. HT (ft)	Vert. O/S (ft)	Horiz. O/S (ft)*	Qty	Appurtenance	Carrier
115.0	115.0	-	7.5	3	JMA MX08FRO665-21	Dish Wireless
			7.5	3	Fujitsu TA08025-B605	
			7.5	3	Fujitsu TA08025-B604	
			-	1	Raycap RDIDC-9181-PF-48	

*Horizontal Offset is defined as the distance from the left most edge of the mount face horizontal when viewed facing the tower.

Structure Usages

Plates	81%	Fail
Mount Pipes	45%	Pass
Arms	36%	Pass
Cross Arms	36%	Pass
Connections	31%	Pass
Frame Rails	13%	Pass
Handrails	15%	Pass
Rating	81%	Fail

Assumptions and Limitations

Our structural calculations are completed assuming all information provided to Infinigy Engineering is accurate and applicable to this site. For the purposes of calculations, we assume an overall structure condition of “like new” 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 Engineering should be notified immediately to complete a revised evaluation.

Our evaluation is completed using standard TIA, AISC, ACI, and ASCE methods and procedures. Our structural results are proprietary and should not be used by others as their own. Infinigy Engineering is not responsible for decisions made by others that are or are not based on our supplied assumptions and conclusions.

This report is an evaluation of the proposed carriers mount structure only and does not reflect adequacy of the existing tower, other mounts, or coax mounting attachments. These elements are assumed to be adequate for the purposes of this analysis and are assumed to have been installed per their manufacturer requirements.

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the solutions are endless

Date:	8/6/2021
Site Name:	BOBDC00190A
Project Engineer:	DVA
Project No.:	2039-25555C
Customer:	Northeast Site Solutions
Carrier:	Dish Wireless

Building Code:	2015
ASCE Standard:	ASCE 7-10
TIA Standard:	G
Mount Type:	Platform
Propose:	
Mount Centerline:	115
Superstructure Height:	135
Structure Type:	Tower

Factors	
Gh:	1.000
K _{zmin} :	0.850
K _z :	1.303
K _d :	0.950
K _{z1} :	1.000
K _a :	0.900
I _{wind} :	1.000
I _{ice} :	1.000

q _z :	29.72	psf
Surface Wind Pressure:	0.00	psf

Site Information		
Exposure Category:	G	
Risk Category:	II	
Ultimate Wind Speed:	125	mph
Design Wind Speed:	97	mph
Ice Thickness:	1.00	in
Ice Wind Speed:	50.0	mph
Escalated Ice Thickness:	2.27	in
Topographic Method:	2	
Topographic Category:	1	

Run Seismic?	
Site Soil:	D (Default)
Short-Period Accel. (Ss):	0.1790
1-Second Accel. (S1):	0.0640
Short-Period Design (SDS):	0.1900
1-Second Design (SD1):	0.1030
Short-Period Coeff. (Fa):	1.6000
1-Second Coeff. (Fv):	2.4000
Cs min	0.0950
Cs max	0.0300
Amplification Factor (ap):	1.00
Response Mod. (Rp):	2.50
Overstrength (Do):	1.00

Service Wind:	30.0	mph
L _m (man live load) =	500.0	lb
L _v (man live load) =	250.0	lb

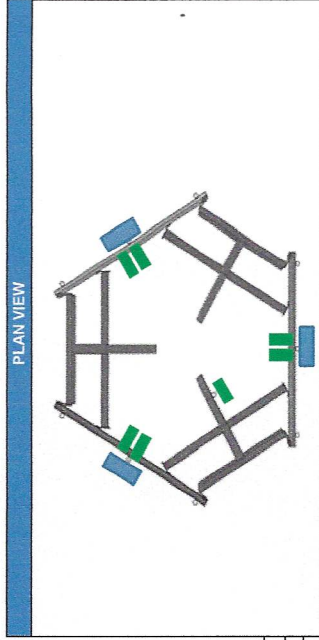
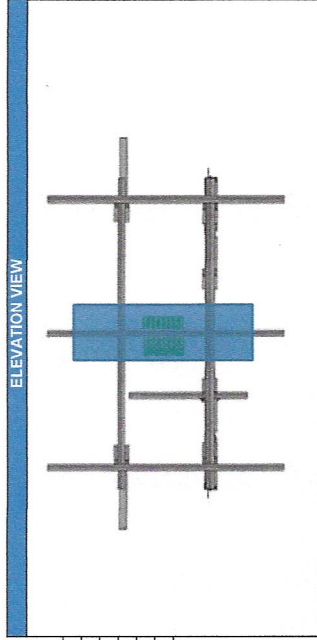


Table 1. Equipment Specifications and Wind Pressure

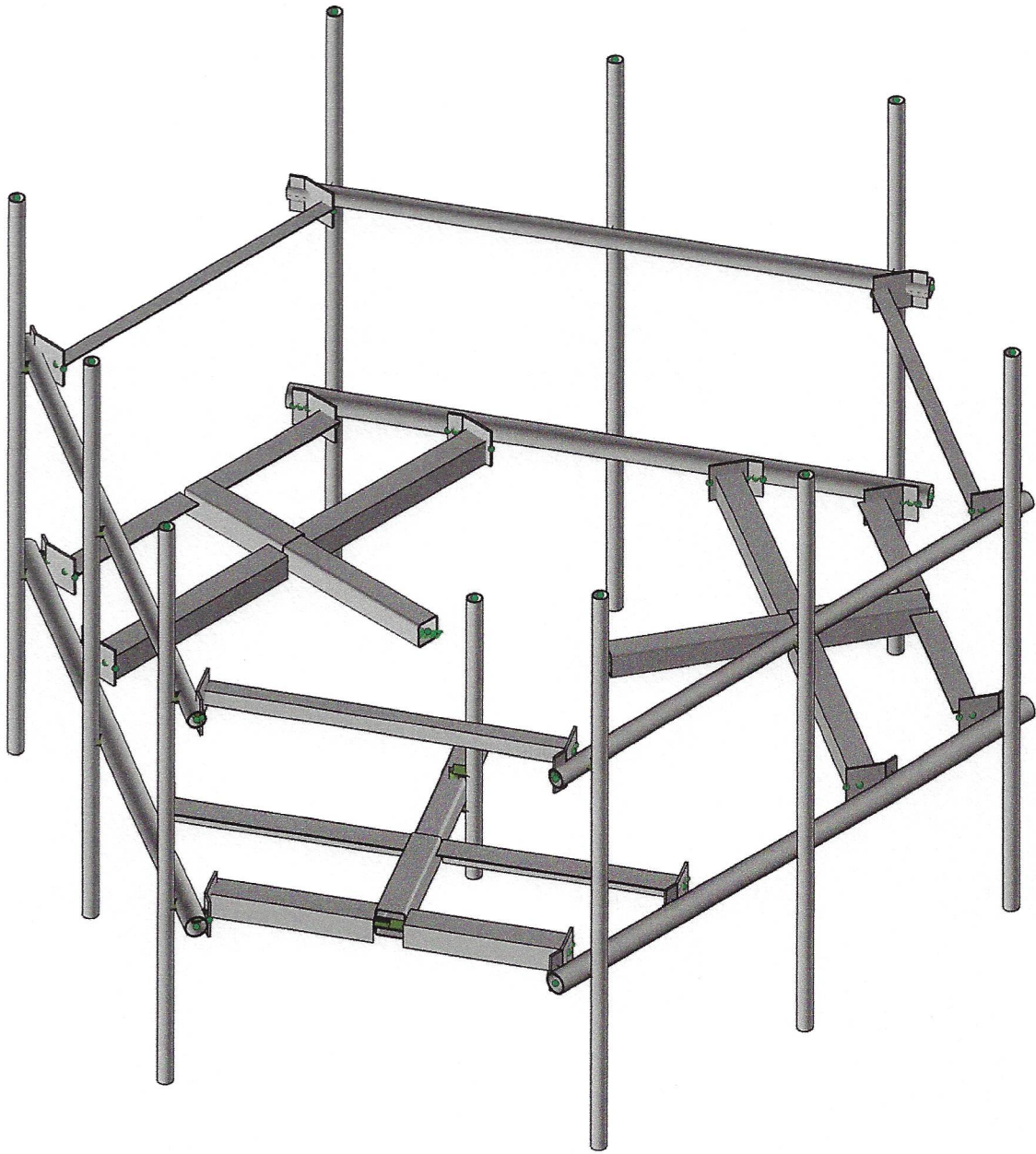
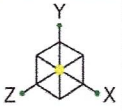
Manufacturer	Model	Elevation	Pipe Label	Weight (lb)	Height (in)	Width (in)	Depth (in)	EPA _N	EPA _T	EPA _{N of bob}	EPA _{T of bob}	q _z	q _{z (bob)}	q _{z (top)}
JMA	MX08FR0665-21	115	35.74.42	64.50	72	20	8	8.01	3.21	9.08	4.15	29.72	7.92	2.85
Fujitsu	TA08025-B05	115	35.74.42	74.95	15.75	14.96	9.06	1.86	1.16	3.12	2.21	29.72	7.92	2.85
Fujitsu	TA08025-B04	115	35.74.42	63.93	15.75	14.96	7.87	1.86	1.01	3.12	2.03	29.72	7.92	2.85
Raycap	RDIDC-9181-PF-48	115	35.74.42	21.85	18.98	14.39	8.15	2.18	1.28	3.53	2.43	29.72	7.92	2.85

Table 2. Equipment Wind and Seismic Loads

Manufacturer	Model	Wind Load (F _w), lb	Wind Load Ice Case (F _w), lb	Wind Load Service Case	Seismic
JMA	MX08FR0665-21	214	86	30	404
Fujitsu	TA08025-B05	50	31	16	73
Fujitsu	TA08025-B04	50	27	14	71
Raycap	RDIDC-9181-PF-48	58	34	17	84

Table 3. Member Capacities

Member Name	Member Shape	Wind load (plf)	Wind Load Ice (plf)	Weight/Ice (nlf)	Bending Check	Shear Check	Total Capacity	Controlling Capacity
Arm	HSS4X4	19.81	5.28	2.01	36%	13%	36%	81%
Arm 2	HSS4.5X4.5X3	22.29	5.94	2.13	6%	9%	9%	
Cross Arm	L4X4X4	19.81	5.28	2.01	36%	23%	36%	
Frame Rail	PIPE 3.1	10.40	2.77	1.89	13%	12%	13%	
Handrail	PIPE 2.1	8.54	2.28	1.75	15%	13%	15%	
Mount Pipe	PIPE 2.1	7.06	1.88	1.63	45%	13%	45%	
Plate	6" x 0.375" Plate	29.72	7.92	2.48	38%	81%	81%	
Angle	L2.5x2.5x3	12.38	3.30	1.66	16%	15%	16%	



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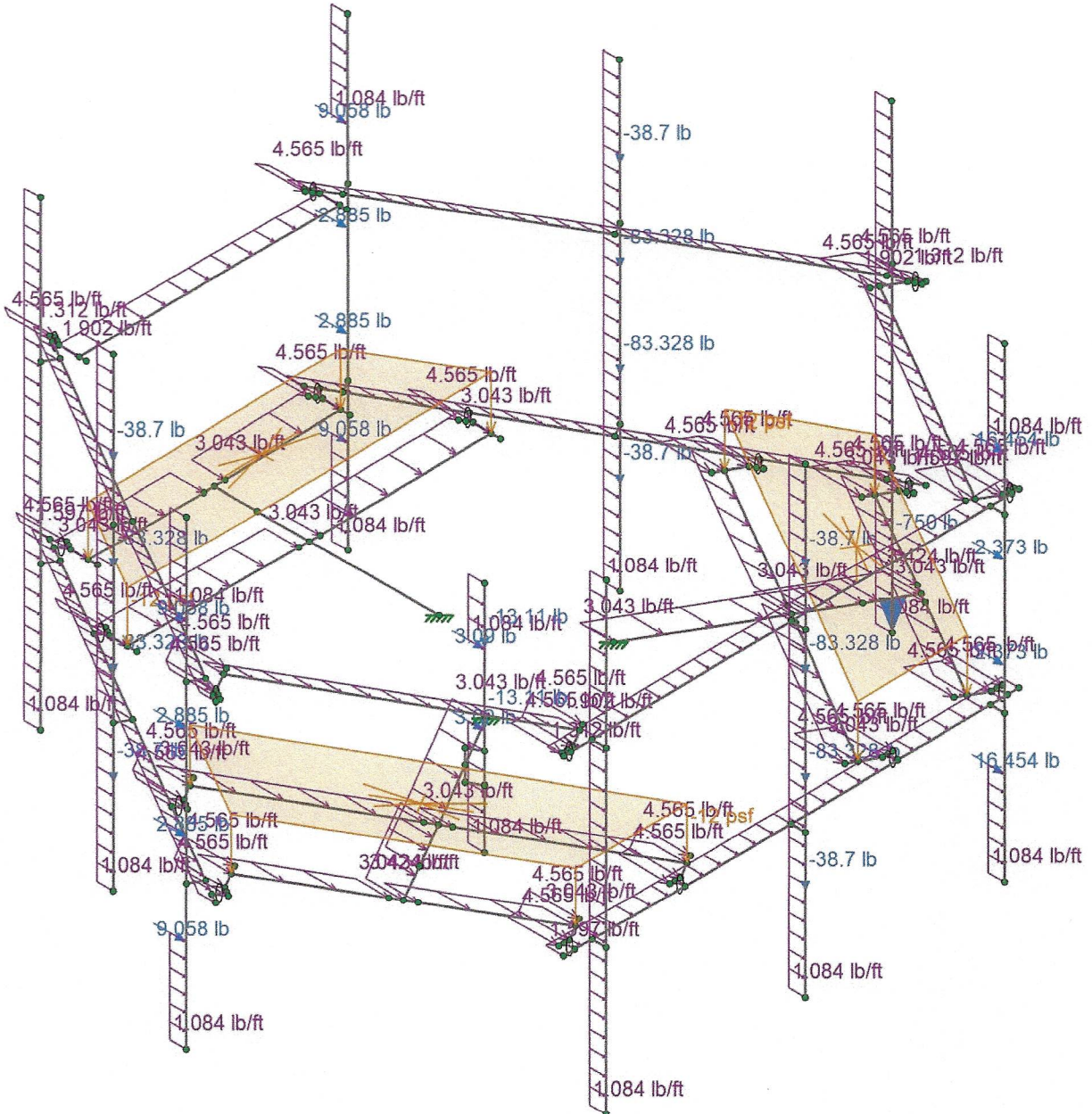
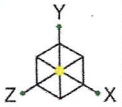
BOBDL00150A

Proposed Configuration Model

SK-1

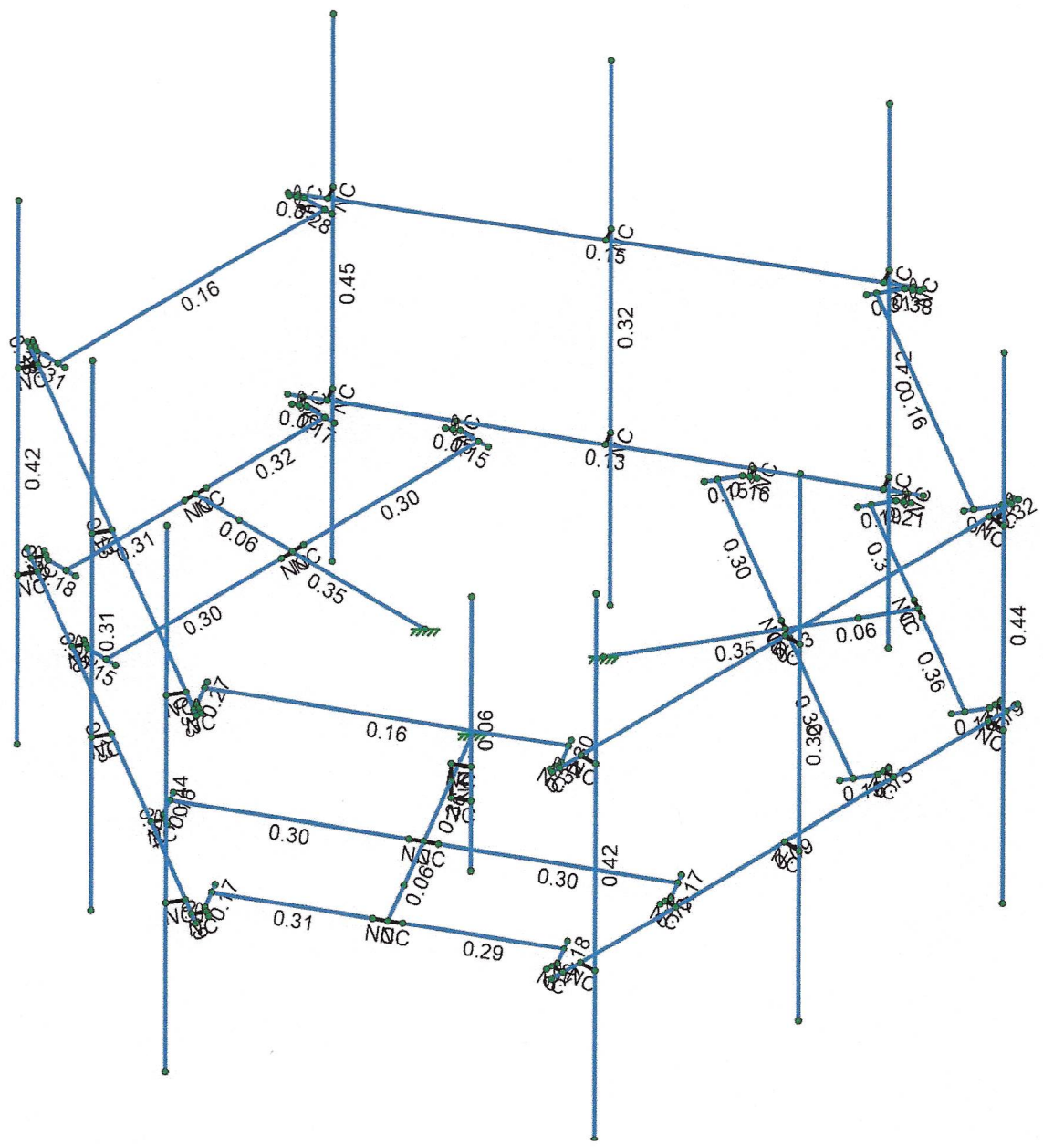
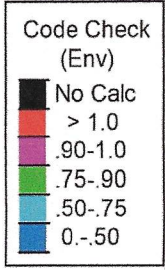
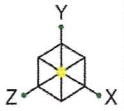
Aug 06, 2021

BOBDL00150A.R3D



Loads: LC 129, 1.2DL + 1.5LM5 + 1.6SWL (30 mph) AZI 180
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Infinigy Engineering, PLLC	BOBDL00150A	SK-2
DVA		Aug 06, 2021
2039-Z5555C	Controlling Load Case	BOBDL00150A.R3D

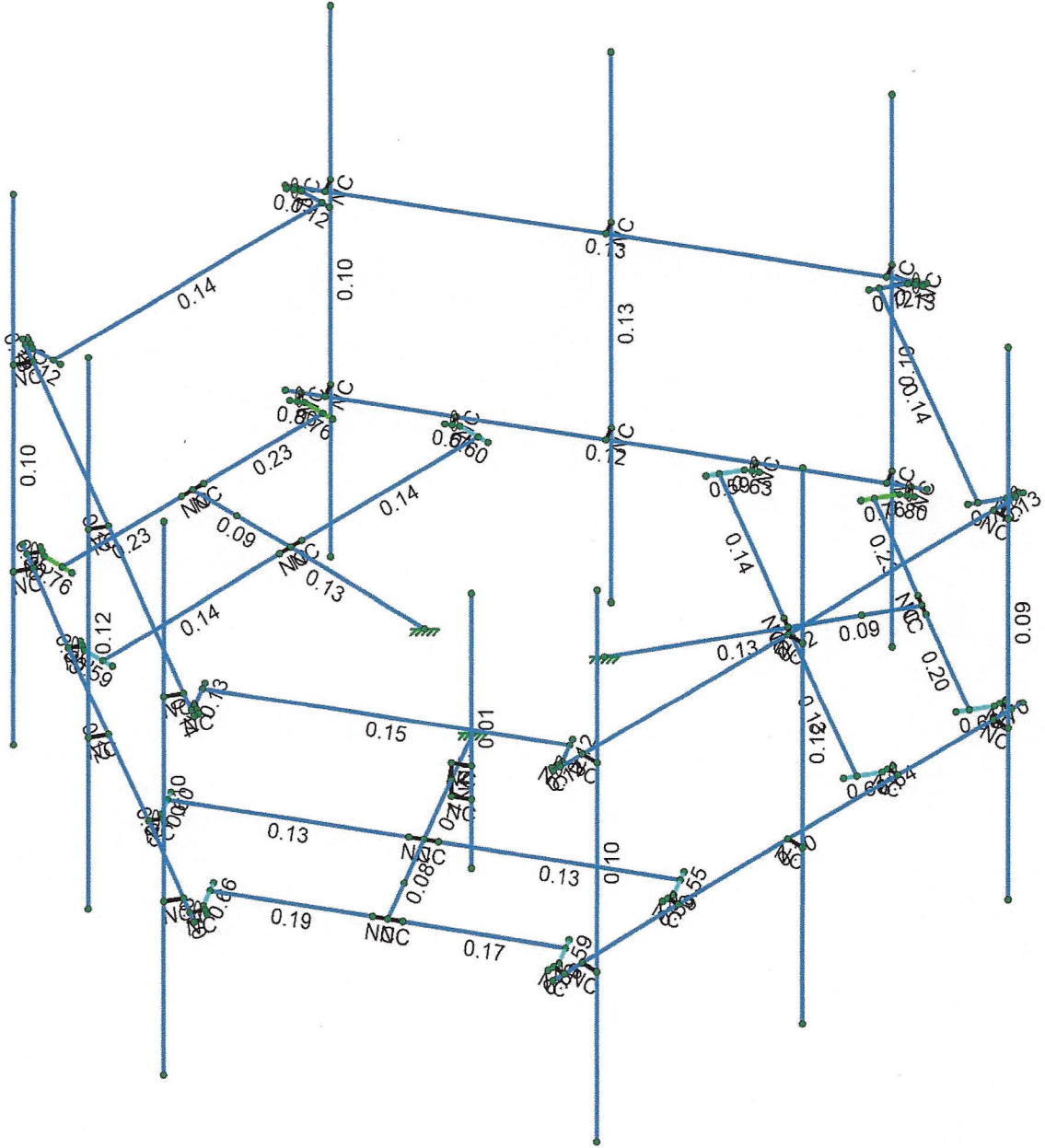
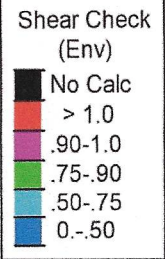
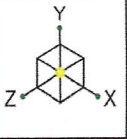


Member Code Checks Displayed (Enveloped)
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2039-Z5555C

BOBDL00150A
Member Bending Check

SK-3
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BOBDL00150A.R3D



Member Shear Checks Displayed (Enveloped)
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DVA
2039-Z5555C

BOBDL00150A
Member Shear Check

SK-4
Aug 06, 2021
BOBDL00150A.R3D

Model Settings

Solution

Members

Number of Reported Sections	5
Number of Internal Sections	100
Member Area Load Mesh Size (in ²)	144
Consider Shear Deformation	Yes
Consider Torsional Warping	Yes

Wall Panels

Approximate Mesh Size (in)	12
Transfer Forces Between Intersecting Wood Walls	Yes
Increase Wood Wall Nailing Capacity for Wind Loads	Yes
Include P-Delta for Walls	Yes
Optimize Masonry and Wood Walls	Yes
Maximum Number of Iterations	3

Processor Core Utilization

Single	No
Multiple (Optimum)	Yes
Maximum	No

Axis

Vertical Global Axis

Global Axis corresponding to vertical direction	Y
Convert Existing Data	Yes

Default Member Orientation

Default Global Plane for z-axis	XZ
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Plate Axis

Plate Local Axis Orientation	Nodal
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Codes

Hot Rolled Steel	AISC 14th (360-10): LRFD
Stiffness Adjustment	Yes (Iterative)
Notional Annex	None
Connections	AISC 14th (360-10): LRFD
Cold Formed Steel	AISI S100-12: LRFD
Stiffness Adjustment	Yes (Iterative)
Wood	AWC NDS-12: ASD
Temperature	< 100F
Concrete	ACI 318-11
Masonry	ACI 530-11: Strength
Aluminum	AAADM1-10: LRFD
Structure Type	Building
Stiffness Adjustment	Yes (Iterative)
Stainless	AISC 14th (360-10): LRFD
Stiffness Adjustment	Yes (Iterative)

Concrete

Column Design

Analysis Methodology	Exact Integration Method
Parme Beta Factor	0.65

Compression Stress Block	Rectangular Stress Block
Analyze using Cracked Sections	Yes
Leave room for horizontal rebar splices (2*d bar spacing)	No

Model Settings (Continued)

List forces which were ignored for design in the Detail Report	Yes
--	-----

Rebar

Column Min Steel	1
Column Max Steel	8
Rebar Material Spec	ASTM A615
Warn if beam-column framing arrangement is not understood	No

Shear Reinforcement

Number of Shear Regions	4
Region 2 & 3 Spacing Increase Increment (in)	4

Seismic

RISA-3D Seismic Load Options

Code	ASCE 7-10
Risk Category	I or II
Drift Cat	Other
Base Elevation (ft)	
Include the weight of the structure in base shear calcs	Yes

Site Parameters

S _s (g)	1
SD ₁ (g)	1
SD _s (g)	1
T _L (sec)	5

Structure Characteristics

T _Z (sec)	
T _X (sec)	
C _i X	0.02
C _i Exp. Z	0.75
C _i Exp. X	0.75
R _Z	3
R _X	3
Ω _g Z	1
Ω _g X	1
C _s Z	4
C _s X	4
ρ _Z	1
ρ _X	1

Member Primary Data

	Label	I Node	J Node	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule
1	M1	N1	N2		Arm	Beam	Tube	A500 Gr.B Rect	Typical
2	M2	N5	N6		Frame Rail	Beam	Pipe	A53 Gr.B	Typical
3	M3	N7	N8		Handrail	HBrace	Pipe	A53 Gr.B	Typical
4	M4	N10	N11		Mount Pipe	Column	Pipe	A53 Gr.B	Typical
5	M5	N4	N3		Arm 2	Beam	Tube	A500 Gr.B Rect	Typical
6	M6	N15	N35	90	Cross Arm	Beam	Single Angle	A36 Gr.36	Typical
7	M7	N33	N13	90	Cross Arm	Beam	Single Angle	A36 Gr.36	Typical
8	M8	N12	N34	90	Cross Arm	Beam	Single Angle	A36 Gr.36	Typical
9	M9	N36	N14	90	Cross Arm	Beam	Single Angle	A36 Gr.36	Typical
10	M10	N18	N20		Plate	Beam	BAR	A36 Gr.36	Typical
11	M11	N17	N19		Plate	Beam	BAR	A36 Gr.36	Typical
12	M12	N21	N22		Plate	Beam	BAR	A36 Gr.36	Typical
13	M13	N23	N24		Plate	Beam	BAR	A36 Gr.36	Typical
14	M14	N28	N25	90	Angle	HBrace	Single Angle	A36 Gr.36	Typical
15	M15	N26	N27		Plate	Beam	BAR	A36 Gr.36	Typical
16	M16	N29	N30		Plate	Beam	BAR	A36 Gr.36	Typical
17	M17	N31	N9		RIGID	None	None	RIGID	Typical
18	M18	N32	N16		RIGID	None	None	RIGID	Typical
19	M19	N4	N35		RIGID	None	None	RIGID	Typical
20	M20	N4	N33		RIGID	None	None	RIGID	Typical
21	M21	N3	N34		RIGID	None	None	RIGID	Typical
22	M22	N36	N3		RIGID	None	None	RIGID	Typical
23	M23	N19	N37		Plate	Beam	BAR	A36 Gr.36	Typical
24	M24	N22	N38		Plate	Beam	BAR	A36 Gr.36	Typical
25	M25	N39	N41		RIGID	None	None	RIGID	Typical
26	M26	N40	N42		RIGID	None	None	RIGID	Typical
27	M27	N27	N43		Plate	Beam	BAR	A36 Gr.36	Typical
28	M28	N44	N45		RIGID	None	None	RIGID	Typical
29	M29	N20	N46		Plate	Beam	BAR	A36 Gr.36	Typical
30	M30	N24	N47		Plate	Beam	BAR	A36 Gr.36	Typical
31	M31	N48	N50		RIGID	None	None	RIGID	Typical
32	M32	N49	N51		RIGID	None	None	RIGID	Typical
33	M33	N30	N52		Plate	Beam	BAR	A36 Gr.36	Typical
34	M34	N53	N54		RIGID	None	None	RIGID	Typical
35	M35	N56	N57		Mount Pipe	Column	Pipe	A53 Gr.B	Typical
36	M36	N59	N55		RIGID	None	None	RIGID	Typical
37	M37	N60	N58		RIGID	None	None	RIGID	Typical
38	M38	N62	N63		Mount Pipe	Column	Pipe	A53 Gr.B	Typical
39	M39	N65	N61		RIGID	None	None	RIGID	Typical
40	M40	N66	N64		RIGID	None	None	RIGID	Typical
41	M41	N67	N68		Arm	Beam	Tube	A500 Gr.B Rect	Typical
42	M42	N72	N73		Mount Pipe	Column	Pipe	A53 Gr.B	Typical
43	M43	N70	N69		Arm 2	Beam	Tube	A500 Gr.B Rect	Typical
44	M44	N77	N97	90	Cross Arm	Beam	Single Angle	A36 Gr.36	Typical
45	M45	N95	N75	90	Cross Arm	Beam	Single Angle	A36 Gr.36	Typical
46	M46	N74	N96	90	Cross Arm	Beam	Single Angle	A36 Gr.36	Typical
47	M47	N98	N76	90	Cross Arm	Beam	Single Angle	A36 Gr.36	Typical
48	M48	N80	N82		Plate	Beam	BAR	A36 Gr.36	Typical
49	M49	N79	N81		Plate	Beam	BAR	A36 Gr.36	Typical
50	M50	N83	N84		Plate	Beam	BAR	A36 Gr.36	Typical
51	M51	N85	N86		Plate	Beam	BAR	A36 Gr.36	Typical
52	M52	N90	N87	90	Angle	HBrace	Single Angle	A36 Gr.36	Typical
53	M53	N88	N89		Plate	Beam	BAR	A36 Gr.36	Typical
54	M54	N91	N92		Plate	Beam	BAR	A36 Gr.36	Typical
55	M55	N93	N71		RIGID	None	None	RIGID	Typical
56	M56	N94	N78		RIGID	None	None	RIGID	Typical
57	M57	N70	N97		RIGID	None	None	RIGID	Typical
58	M58	N70	N95		RIGID	None	None	RIGID	Typical

Member Primary Data (Continued)

	Label	I Node	J Node	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule
59	M59	N69	N96		RIGID	None	None	RIGID	Typical
60	M60	N98	N69		RIGID	None	None	RIGID	Typical
61	M61	N81	N99		Plate	Beam	BAR	A36 Gr.36	Typical
62	M62	N84	N100		Plate	Beam	BAR	A36 Gr.36	Typical
63	M63	N101	N103		RIGID	None	None	RIGID	Typical
64	M64	N102	N104		RIGID	None	None	RIGID	Typical
65	M65	N89	N105		Plate	Beam	BAR	A36 Gr.36	Typical
66	M66	N106	N107		RIGID	None	None	RIGID	Typical
67	M67	N82	N108		Plate	Beam	BAR	A36 Gr.36	Typical
68	M68	N86	N109		Plate	Beam	BAR	A36 Gr.36	Typical
69	M69	N110	N112		RIGID	None	None	RIGID	Typical
70	M70	N111	N113		RIGID	None	None	RIGID	Typical
71	M71	N92	N114		Plate	Beam	BAR	A36 Gr.36	Typical
72	M72	N115	N116		RIGID	None	None	RIGID	Typical
73	M73	N117	N118		Arm	Beam	Tube	A500 Gr.B Rect	Typical
74	M74	N122	N123		Mount Pipe	Column	Pipe	A53 Gr.B	Typical
75	M75	N120	N119		Arm 2	Beam	Tube	A500 Gr.B Rect	Typical
76	M76	N127	N147	90	Cross Arm	Beam	Single Angle	A36 Gr.36	Typical
77	M77	N145	N125	90	Cross Arm	Beam	Single Angle	A36 Gr.36	Typical
78	M78	N124	N146	90	Cross Arm	Beam	Single Angle	A36 Gr.36	Typical
79	M79	N148	N126	90	Cross Arm	Beam	Single Angle	A36 Gr.36	Typical
80	M80	N130	N132		Plate	Beam	BAR	A36 Gr.36	Typical
81	M81	N129	N131		Plate	Beam	BAR	A36 Gr.36	Typical
82	M82	N133	N134		Plate	Beam	BAR	A36 Gr.36	Typical
83	M83	N135	N136		Plate	Beam	BAR	A36 Gr.36	Typical
84	M84	N140	N137	90	Angle	HBrace	Single Angle	A36 Gr.36	Typical
85	M85	N138	N139		Plate	Beam	BAR	A36 Gr.36	Typical
86	M86	N141	N142		Plate	Beam	BAR	A36 Gr.36	Typical
87	M87	N143	N121		RIGID	None	None	RIGID	Typical
88	M88	N144	N128		RIGID	None	None	RIGID	Typical
89	M89	N120	N147		RIGID	None	None	RIGID	Typical
90	M90	N120	N145		RIGID	None	None	RIGID	Typical
91	M91	N119	N146		RIGID	None	None	RIGID	Typical
92	M92	N148	N119		RIGID	None	None	RIGID	Typical
93	M93	N131	N149		Plate	Beam	BAR	A36 Gr.36	Typical
94	M94	N134	N150		Plate	Beam	BAR	A36 Gr.36	Typical
95	M95	N151	N153		RIGID	None	None	RIGID	Typical
96	M96	N152	N154		RIGID	None	None	RIGID	Typical
97	M97	N139	N155		Plate	Beam	BAR	A36 Gr.36	Typical
98	M98	N156	N157		RIGID	None	None	RIGID	Typical
99	M99	N132	N158		Plate	Beam	BAR	A36 Gr.36	Typical
100	M100	N136	N159		Plate	Beam	BAR	A36 Gr.36	Typical
101	M101	N160	N162		RIGID	None	None	RIGID	Typical
102	M102	N161	N163		RIGID	None	None	RIGID	Typical
103	M103	N142	N164		Plate	Beam	BAR	A36 Gr.36	Typical
104	M104	N165	N166		RIGID	None	None	RIGID	Typical
105	M105	N167	N168		Frame Rail	Beam	Pipe	A53 Gr.B	Typical
106	M106	N169	N170		Handrail	HBrace	Pipe	A53 Gr.B	Typical
107	M107	N172	N173		Mount Pipe	Column	Pipe	A53 Gr.B	Typical
108	M108	N175	N171		RIGID	None	None	RIGID	Typical
109	M109	N176	N174		RIGID	None	None	RIGID	Typical
110	M110	N178	N179		Mount Pipe	Column	Pipe	A53 Gr.B	Typical
111	M111	N181	N177		RIGID	None	None	RIGID	Typical
112	M112	N182	N180		RIGID	None	None	RIGID	Typical
113	M113	N183	N184		Frame Rail	Beam	Pipe	A53 Gr.B	Typical
114	M114	N185	N186		Handrail	HBrace	Pipe	A53 Gr.B	Typical
115	M115	N188	N189		Mount Pipe	Column	Pipe	A53 Gr.B	Typical
116	M116	N191	N187		RIGID	None	None	RIGID	Typical

Member Primary Data (Continued)

Label	I Node	J Node	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule
117	M117	N192	N190		RIGID	None	RIGID	Typical
118	M118	N194	N195		Mount Pipe	Column	A53 Gr.B	Typical
119	M119	N197	N193		RIGID	None	RIGID	Typical
120	M120	N198	N196		RIGID	None	RIGID	Typical
121	M121	N199	N200		RIGID	None	RIGID	Typical
122	M122	N201	N199		RIGID	None	RIGID	Typical
123	M123	N200	N202		RIGID	None	RIGID	Typical
124	M124	N201	N203		RIGID	None	RIGID	Typical
125	M125	N204	N205		Mount Pipe	Column	A53 Gr.B	Typical

Material Takeoff

	Material	Size	Pieces	Length[in]	Weight[LB]
1	General				
2	RIGID		52	123.7	0
3	Total General		52	123.7	0
4					
5	Hot Rolled Steel				
6	A36 Gr.36	6" x 0.375" Plate	36	144	91.875
7	A36 Gr.36	L4X4X4	12	363	198.663
8	A36 Gr.36	L2.5x2.5x3	3	165	42.156
9	A500 Gr.B Rect	HSS4.5X4.5X3	3	60	53.615
10	A500 Gr.B Rect	HSS4X4X4	3	115.4	118.563
11	A53 Gr.B	PIPE 2.0	10	912	263.783
12	A53 Gr.B	PIPE 2.5	3	288	131.483
13	A53 Gr.B	PIPE 3.0	3	288	169.05
14	Total HR Steel		73	2335.4	1069.189

Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Point	Distributed	Area(Member)
1	Self Weight	DL		-1		20		3
2	Wind Load AZI 0	WLX				40	258	
3	Wind Load AZI 30	None				40	258	
4	Wind Load AZI 60	None				40	258	
5	Wind Load AZI 90	WLZ				40	258	
6	Wind Load AZI 120	None				40	258	
7	Wind Load AZI 150	None				40	258	
8	Wind Load AZI 180	None				40	258	
9	Wind Load AZI 210	None				40	258	
10	Wind Load AZI 240	None				40	258	
11	Wind Load AZI 270	None				40	258	
12	Wind Load AZI 300	None				40	258	
13	Wind Load AZI 330	None				40	258	
14	Ice Weight	OL1				20	125	3
15	Ice Wind Load AZI 0	OL2				40	258	
16	Ice Wind Load AZI 30	None				40	258	
17	Ice Wind Load AZI 60	None				40	258	
18	Ice Wind Load AZI 90	OL3				40	258	
19	Ice Wind Load AZI 120	None				40	258	
20	Ice Wind Load AZI 150	None				40	258	
21	Ice Wind Load AZI 180	None				40	258	
22	Ice Wind Load AZI 210	None				40	258	
23	Ice Wind Load AZI 240	None				40	258	
24	Ice Wind Load AZI 270	None				40	258	
25	Ice Wind Load AZI 300	None				40	258	
26	Ice Wind Load AZI 330	None				40	258	
27	Seismic Load X	ELX			-0.095	20		
28	Seismic Load Z	ELZ	-0.095			20		

Basic Load Cases (Continued)

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Point	Distributed	Area(Member)
29	Service Live Loads	LL						
30	Maintenance Load 1	LL				1		
31	Maintenance Load 2	LL				1		
32	Maintenance Load 3	LL				1		
33	Maintenance Load 4	LL				1		
34	Maintenance Load 5	LL				1		
35	Maintenance Load 6	LL				1		
36	Maintenance Load 7	LL				1		
37	Maintenance Load 8	LL				1		
38	Maintenance Load 9	LL				1		
39	Maintenance Load 10	LL				1		
40	Maintenance Load 11	LL				1		
41	Maintenance Load 12	LL				1		
42	Maintenance Load 13	LL				1		
43	Maintenance Load 14	LL				1		
44	Maintenance Load 15	LL				1		
45	Maintenance Load 16	LL				1		
46	Maintenance Load 17	LL				1		
47	Maintenance Load 18	LL				1		
52	BLC 1 Transient Area Loads	None					141	
53	BLC 14 Transient Area Loads	None					141	

Load Combinations

	Description	Solve	PDelta	BLC	Factor	BLC	Factor	BLC	Factor
1	1.4DL	Yes	Y	1	1.4				
2	1.2DL + 1.6WL AZI 0	Yes	Y	1	1.2	2	1.6		
3	1.2DL + 1.6WL AZI 30	Yes	Y	1	1.2	3	1.6		
4	1.2DL + 1.6WL AZI 60	Yes	Y	1	1.2	4	1.6		
5	1.2DL + 1.6WL AZI 90	Yes	Y	1	1.2	5	1.6		
6	1.2DL + 1.6WL AZI 120	Yes	Y	1	1.2	6	1.6		
7	1.2DL + 1.6WL AZI 150	Yes	Y	1	1.2	7	1.6		
8	1.2DL + 1.6WL AZI 180	Yes	Y	1	1.2	8	1.6		
9	1.2DL + 1.6WL AZI 210	Yes	Y	1	1.2	9	1.6		
10	1.2DL + 1.6WL AZI 240	Yes	Y	1	1.2	10	1.6		
11	1.2DL + 1.6WL AZI 270	Yes	Y	1	1.2	11	1.6		
12	1.2DL + 1.6WL AZI 300	Yes	Y	1	1.2	12	1.6		
13	1.2DL + 1.6WL AZI 330	Yes	Y	1	1.2	13	1.6		
14	0.9DL + 1.6WL AZI 0	Yes	Y	1	0.9	2	1.6		
15	0.9DL + 1.6WL AZI 30	Yes	Y	1	0.9	3	1.6		
16	0.9DL + 1.6WL AZI 60	Yes	Y	1	0.9	4	1.6		
17	0.9DL + 1.6WL AZI 90	Yes	Y	1	0.9	5	1.6		
18	0.9DL + 1.6WL AZI 120	Yes	Y	1	0.9	6	1.6		
19	0.9DL + 1.6WL AZI 150	Yes	Y	1	0.9	7	1.6		
20	0.9DL + 1.6WL AZI 180	Yes	Y	1	0.9	8	1.6		
21	0.9DL + 1.6WL AZI 210	Yes	Y	1	0.9	9	1.6		
22	0.9DL + 1.6WL AZI 240	Yes	Y	1	0.9	10	1.6		
23	0.9DL + 1.6WL AZI 270	Yes	Y	1	0.9	11	1.6		
24	0.9DL + 1.6WL AZI 300	Yes	Y	1	0.9	12	1.6		
25	0.9DL + 1.6WL AZI 330	Yes	Y	1	0.9	13	1.6		
26	1.2D + 1.0Di	Yes	Y	1	1.2	14	1		
27	1.2D + 1.0Di + 1.0Wi AZI 0	Yes	Y	1	1.2	14	1	15	1
28	1.2D + 1.0Di + 1.0Wi AZI 30	Yes	Y	1	1.2	14	1	16	1
29	1.2D + 1.0Di + 1.0Wi AZI 60	Yes	Y	1	1.2	14	1	17	1
30	1.2D + 1.0Di + 1.0Wi AZI 90	Yes	Y	1	1.2	14	1	18	1
31	1.2D + 1.0Di + 1.0Wi AZI 120	Yes	Y	1	1.2	14	1	19	1
32	1.2D + 1.0Di + 1.0Wi AZI 150	Yes	Y	1	1.2	14	1	20	1
33	1.2D + 1.0Di + 1.0Wi AZI 180	Yes	Y	1	1.2	14	1	21	1
34	1.2D + 1.0Di + 1.0Wi AZI 210	Yes	Y	1	1.2	14	1	22	1

Load Combinations (Continued)

	Description	Solve	PDelta	BLC	Factor	BLC	Factor	BLC	Factor
35	1.2D + 1.0Di + 1.0Wi AZI 240	Yes	Y	1	1.2	14	1	23	1
36	1.2D + 1.0Di + 1.0Wi AZI 270	Yes	Y	1	1.2	14	1	24	1
37	1.2D + 1.0Di + 1.0Wi AZI 300	Yes	Y	1	1.2	14	1	25	1
38	1.2D + 1.0Di + 1.0Wi AZI 330	Yes	Y	1	1.2	14	1	26	1
39	(1.2 + 0.2Sds)DL + 1.0E AZI 0	Yes	Y	1	1.238	27	1	28	
40	(1.2 + 0.2Sds)DL + 1.0E AZI 30	Yes	Y	1	1.238	27	0.866	28	0.5
41	(1.2 + 0.2Sds)DL + 1.0E AZI 60	Yes	Y	1	1.238	27	0.5	28	0.866
42	(1.2 + 0.2Sds)DL + 1.0E AZI 90	Yes	Y	1	1.238	27		28	1
43	(1.2 + 0.2Sds)DL + 1.0E AZI 120	Yes	Y	1	1.238	27	-0.5	28	0.866
44	(1.2 + 0.2Sds)DL + 1.0E AZI 150	Yes	Y	1	1.238	27	-0.866	28	0.5
45	(1.2 + 0.2Sds)DL + 1.0E AZI 180	Yes	Y	1	1.238	27	-1	28	
46	(1.2 + 0.2Sds)DL + 1.0E AZI 210	Yes	Y	1	1.238	27	-0.866	28	-0.5
47	(1.2 + 0.2Sds)DL + 1.0E AZI 240	Yes	Y	1	1.238	27	-0.5	28	-0.866
48	(1.2 + 0.2Sds)DL + 1.0E AZI 270	Yes	Y	1	1.238	27		28	-1
49	(1.2 + 0.2Sds)DL + 1.0E AZI 300	Yes	Y	1	1.238	27	0.5	28	-0.866
50	(1.2 + 0.2Sds)DL + 1.0E AZI 330	Yes	Y	1	1.238	27	0.866	28	-0.5
51	(0.9 - 0.2Sds)DL + 1.0E AZI 0	Yes	Y	1	0.862	27	1	28	
52	(0.9 - 0.2Sds)DL + 1.0E AZI 30	Yes	Y	1	0.862	27	0.866	28	0.5
53	(0.9 - 0.2Sds)DL + 1.0E AZI 60	Yes	Y	1	0.862	27	0.5	28	0.866
54	(0.9 - 0.2Sds)DL + 1.0E AZI 90	Yes	Y	1	0.862	27		28	1
55	(0.9 - 0.2Sds)DL + 1.0E AZI 120	Yes	Y	1	0.862	27	-0.5	28	0.866
56	(0.9 - 0.2Sds)DL + 1.0E AZI 150	Yes	Y	1	0.862	27	-0.866	28	0.5
57	(0.9 - 0.2Sds)DL + 1.0E AZI 180	Yes	Y	1	0.862	27	-1	28	
58	(0.9 - 0.2Sds)DL + 1.0E AZI 210	Yes	Y	1	0.862	27	-0.866	28	-0.5
59	(0.9 - 0.2Sds)DL + 1.0E AZI 240	Yes	Y	1	0.862	27	-0.5	28	-0.866
60	(0.9 - 0.2Sds)DL + 1.0E AZI 270	Yes	Y	1	0.862	27		28	-1
61	(0.9 - 0.2Sds)DL + 1.0E AZI 300	Yes	Y	1	0.862	27	0.5	28	-0.866
62	(0.9 - 0.2Sds)DL + 1.0E AZI 330	Yes	Y	1	0.862	27	0.866	28	-0.5
63	1.0DL + 1.5LL + 1.0SWL (30 mph) AZI 0	Yes	Y	1	1	2	0.096	29	1.5
64	1.0DL + 1.5LL + 1.0SWL (30 mph) AZI 30	Yes	Y	1	1	3	0.096	29	1.5
65	1.0DL + 1.5LL + 1.0SWL (30 mph) AZI 60	Yes	Y	1	1	4	0.096	29	1.5
66	1.0DL + 1.5LL + 1.0SWL (30 mph) AZI 90	Yes	Y	1	1	5	0.096	29	1.5
67	1.0DL + 1.5LL + 1.0SWL (30 mph) AZI 120	Yes	Y	1	1	6	0.096	29	1.5
68	1.0DL + 1.5LL + 1.0SWL (30 mph) AZI 150	Yes	Y	1	1	7	0.096	29	1.5
69	1.0DL + 1.5LL + 1.0SWL (30 mph) AZI 180	Yes	Y	1	1	8	0.096	29	1.5
70	1.0DL + 1.5LL + 1.0SWL (30 mph) AZI 210	Yes	Y	1	1	9	0.096	29	1.5
71	1.0DL + 1.5LL + 1.0SWL (30 mph) AZI 240	Yes	Y	1	1	10	0.096	29	1.5
72	1.0DL + 1.5LL + 1.0SWL (30 mph) AZI 270	Yes	Y	1	1	11	0.096	29	1.5
73	1.0DL + 1.5LL + 1.0SWL (30 mph) AZI 300	Yes	Y	1	1	12	0.096	29	1.5
74	1.0DL + 1.5LL + 1.0SWL (30 mph) AZI 330	Yes	Y	1	1	13	0.096	29	1.5
75	1.2DL + 1.5LM1 + 1.6SWL (30 mph) AZI 0	Yes	Y	1	1.2	34	1.5	2	0.154
76	1.2DL + 1.5LM1 + 1.6SWL (30 mph) AZI 30	Yes	Y	1	1.2	34	1.5	3	0.154
77	1.2DL + 1.5LM1 + 1.6SWL (30 mph) AZI 60	Yes	Y	1	1.2	34	1.5	4	0.154
78	1.2DL + 1.5LM1 + 1.6SWL (30 mph) AZI 90	Yes	Y	1	1.2	34	1.5	5	0.154
79	1.2DL + 1.5LM1 + 1.6SWL (30 mph) AZI 120	Yes	Y	1	1.2	34	1.5	6	0.154
80	1.2DL + 1.5LM1 + 1.6SWL (30 mph) AZI 150	Yes	Y	1	1.2	34	1.5	7	0.154
81	1.2DL + 1.5LM1 + 1.6SWL (30 mph) AZI 180	Yes	Y	1	1.2	34	1.5	8	0.154
82	1.2DL + 1.5LM1 + 1.6SWL (30 mph) AZI 210	Yes	Y	1	1.2	34	1.5	9	0.154
83	1.2DL + 1.5LM1 + 1.6SWL (30 mph) AZI 240	Yes	Y	1	1.2	34	1.5	10	0.154
84	1.2DL + 1.5LM1 + 1.6SWL (30 mph) AZI 270	Yes	Y	1	1.2	34	1.5	11	0.154
85	1.2DL + 1.5LM1 + 1.6SWL (30 mph) AZI 300	Yes	Y	1	1.2	34	1.5	12	0.154
86	1.2DL + 1.5LM1 + 1.6SWL (30 mph) AZI 330	Yes	Y	1	1.2	34	1.5	13	0.154
87	1.2DL + 1.5LM2 + 1.6SWL (30 mph) AZI 0	Yes	Y	1	1.2	35	1.5	2	0.154
88	1.2DL + 1.5LM2 + 1.6SWL (30 mph) AZI 30	Yes	Y	1	1.2	35	1.5	3	0.154
89	1.2DL + 1.5LM2 + 1.6SWL (30 mph) AZI 60	Yes	Y	1	1.2	35	1.5	4	0.154
90	1.2DL + 1.5LM2 + 1.6SWL (30 mph) AZI 90	Yes	Y	1	1.2	35	1.5	5	0.154
91	1.2DL + 1.5LM2 + 1.6SWL (30 mph) AZI 120	Yes	Y	1	1.2	35	1.5	6	0.154
92	1.2DL + 1.5LM2 + 1.6SWL (30 mph) AZI 150	Yes	Y	1	1.2	35	1.5	7	0.154

Load Combinations (Continued)

	Description	Solve	PDelta	BLC	Factor	BLC	Factor	BLC	Factor
93	1.2DL + 1.5LM2 + 1.6SWL (30 mph) AZI 180	Yes	Y	1	1.2	35	1.5	8	0.154
94	1.2DL + 1.5LM2 + 1.6SWL (30 mph) AZI 210	Yes	Y	1	1.2	35	1.5	9	0.154
95	1.2DL + 1.5LM2 + 1.6SWL (30 mph) AZI 240	Yes	Y	1	1.2	35	1.5	10	0.154
96	1.2DL + 1.5LM2 + 1.6SWL (30 mph) AZI 270	Yes	Y	1	1.2	35	1.5	11	0.154
97	1.2DL + 1.5LM2 + 1.6SWL (30 mph) AZI 300	Yes	Y	1	1.2	35	1.5	12	0.154
98	1.2DL + 1.5LM2 + 1.6SWL (30 mph) AZI 330	Yes	Y	1	1.2	35	1.5	13	0.154
99	1.2DL + 1.5LM3 + 1.6SWL (30 mph) AZI 0	Yes	Y	1	1.2	36	1.5	2	0.154
100	1.2DL + 1.5LM3 + 1.6SWL (30 mph) AZI 30	Yes	Y	1	1.2	36	1.5	3	0.154
101	1.2DL + 1.5LM3 + 1.6SWL (30 mph) AZI 60	Yes	Y	1	1.2	36	1.5	4	0.154
102	1.2DL + 1.5LM3 + 1.6SWL (30 mph) AZI 90	Yes	Y	1	1.2	36	1.5	5	0.154
103	1.2DL + 1.5LM3 + 1.6SWL (30 mph) AZI 120	Yes	Y	1	1.2	36	1.5	6	0.154
104	1.2DL + 1.5LM3 + 1.6SWL (30 mph) AZI 150	Yes	Y	1	1.2	36	1.5	7	0.154
105	1.2DL + 1.5LM3 + 1.6SWL (30 mph) AZI 180	Yes	Y	1	1.2	36	1.5	8	0.154
106	1.2DL + 1.5LM3 + 1.6SWL (30 mph) AZI 210	Yes	Y	1	1.2	36	1.5	9	0.154
107	1.2DL + 1.5LM3 + 1.6SWL (30 mph) AZI 240	Yes	Y	1	1.2	36	1.5	10	0.154
108	1.2DL + 1.5LM3 + 1.6SWL (30 mph) AZI 270	Yes	Y	1	1.2	36	1.5	11	0.154
109	1.2DL + 1.5LM3 + 1.6SWL (30 mph) AZI 300	Yes	Y	1	1.2	36	1.5	12	0.154
110	1.2DL + 1.5LM3 + 1.6SWL (30 mph) AZI 330	Yes	Y	1	1.2	36	1.5	13	0.154
111	1.2DL + 1.5LM4 + 1.6SWL (30 mph) AZI 0	Yes	Y	1	1.2	37	1.5	2	0.154
112	1.2DL + 1.5LM4 + 1.6SWL (30 mph) AZI 30	Yes	Y	1	1.2	37	1.5	3	0.154
113	1.2DL + 1.5LM4 + 1.6SWL (30 mph) AZI 60	Yes	Y	1	1.2	37	1.5	4	0.154
114	1.2DL + 1.5LM4 + 1.6SWL (30 mph) AZI 90	Yes	Y	1	1.2	37	1.5	5	0.154
115	1.2DL + 1.5LM4 + 1.6SWL (30 mph) AZI 120	Yes	Y	1	1.2	37	1.5	6	0.154
116	1.2DL + 1.5LM4 + 1.6SWL (30 mph) AZI 150	Yes	Y	1	1.2	37	1.5	7	0.154
117	1.2DL + 1.5LM4 + 1.6SWL (30 mph) AZI 180	Yes	Y	1	1.2	37	1.5	8	0.154
118	1.2DL + 1.5LM4 + 1.6SWL (30 mph) AZI 210	Yes	Y	1	1.2	37	1.5	9	0.154
119	1.2DL + 1.5LM4 + 1.6SWL (30 mph) AZI 240	Yes	Y	1	1.2	37	1.5	10	0.154
120	1.2DL + 1.5LM4 + 1.6SWL (30 mph) AZI 270	Yes	Y	1	1.2	37	1.5	11	0.154
121	1.2DL + 1.5LM4 + 1.6SWL (30 mph) AZI 300	Yes	Y	1	1.2	37	1.5	12	0.154
122	1.2DL + 1.5LM4 + 1.6SWL (30 mph) AZI 330	Yes	Y	1	1.2	37	1.5	13	0.154
123	1.2DL + 1.5LM5 + 1.6SWL (30 mph) AZI 0	Yes	Y	1	1.2	38	1.5	2	0.154
124	1.2DL + 1.5LM5 + 1.6SWL (30 mph) AZI 30	Yes	Y	1	1.2	38	1.5	3	0.154
125	1.2DL + 1.5LM5 + 1.6SWL (30 mph) AZI 60	Yes	Y	1	1.2	38	1.5	4	0.154
126	1.2DL + 1.5LM5 + 1.6SWL (30 mph) AZI 90	Yes	Y	1	1.2	38	1.5	5	0.154
127	1.2DL + 1.5LM5 + 1.6SWL (30 mph) AZI 120	Yes	Y	1	1.2	38	1.5	6	0.154
128	1.2DL + 1.5LM5 + 1.6SWL (30 mph) AZI 150	Yes	Y	1	1.2	38	1.5	7	0.154
129	1.2DL + 1.5LM5 + 1.6SWL (30 mph) AZI 180	Yes	Y	1	1.2	38	1.5	8	0.154
130	1.2DL + 1.5LM5 + 1.6SWL (30 mph) AZI 210	Yes	Y	1	1.2	38	1.5	9	0.154
131	1.2DL + 1.5LM5 + 1.6SWL (30 mph) AZI 240	Yes	Y	1	1.2	38	1.5	10	0.154
132	1.2DL + 1.5LM5 + 1.6SWL (30 mph) AZI 270	Yes	Y	1	1.2	38	1.5	11	0.154
133	1.2DL + 1.5LM5 + 1.6SWL (30 mph) AZI 300	Yes	Y	1	1.2	38	1.5	12	0.154
134	1.2DL + 1.5LM5 + 1.6SWL (30 mph) AZI 330	Yes	Y	1	1.2	38	1.5	13	0.154
135	1.2DL + 1.5LM6 + 1.6SWL (30 mph) AZI 0	Yes	Y	1	1.2	39	1.5	2	0.154
136	1.2DL + 1.5LM6 + 1.6SWL (30 mph) AZI 30	Yes	Y	1	1.2	39	1.5	3	0.154
137	1.2DL + 1.5LM6 + 1.6SWL (30 mph) AZI 60	Yes	Y	1	1.2	39	1.5	4	0.154
138	1.2DL + 1.5LM6 + 1.6SWL (30 mph) AZI 90	Yes	Y	1	1.2	39	1.5	5	0.154
139	1.2DL + 1.5LM6 + 1.6SWL (30 mph) AZI 120	Yes	Y	1	1.2	39	1.5	6	0.154
140	1.2DL + 1.5LM6 + 1.6SWL (30 mph) AZI 150	Yes	Y	1	1.2	39	1.5	7	0.154
141	1.2DL + 1.5LM6 + 1.6SWL (30 mph) AZI 180	Yes	Y	1	1.2	39	1.5	8	0.154
142	1.2DL + 1.5LM6 + 1.6SWL (30 mph) AZI 210	Yes	Y	1	1.2	39	1.5	9	0.154
143	1.2DL + 1.5LM6 + 1.6SWL (30 mph) AZI 240	Yes	Y	1	1.2	39	1.5	10	0.154
144	1.2DL + 1.5LM6 + 1.6SWL (30 mph) AZI 270	Yes	Y	1	1.2	39	1.5	11	0.154
145	1.2DL + 1.5LM6 + 1.6SWL (30 mph) AZI 300	Yes	Y	1	1.2	39	1.5	12	0.154
146	1.2DL + 1.5LM6 + 1.6SWL (30 mph) AZI 330	Yes	Y	1	1.2	39	1.5	13	0.154
147	1.2DL + 1.5LM7 + 1.6SWL (30 mph) AZI 0	Yes	Y	1	1.2	40	1.5	2	0.154
148	1.2DL + 1.5LM7 + 1.6SWL (30 mph) AZI 30	Yes	Y	1	1.2	40	1.5	3	0.154
149	1.2DL + 1.5LM7 + 1.6SWL (30 mph) AZI 60	Yes	Y	1	1.2	40	1.5	4	0.154
150	1.2DL + 1.5LM7 + 1.6SWL (30 mph) AZI 90	Yes	Y	1	1.2	40	1.5	5	0.154

Load Combinations (Continued)

	Description	Solve	PDelta	BLC	Factor	BLC	Factor	BLC	Factor
151	1.2DL + 1.5LM7 + 1.6SWL (30 mph) AZI 120	Yes	Y	1	1.2	40	1.5	6	0.154
152	1.2DL + 1.5LM7 + 1.6SWL (30 mph) AZI 150	Yes	Y	1	1.2	40	1.5	7	0.154
153	1.2DL + 1.5LM7 + 1.6SWL (30 mph) AZI 180	Yes	Y	1	1.2	40	1.5	8	0.154
154	1.2DL + 1.5LM7 + 1.6SWL (30 mph) AZI 210	Yes	Y	1	1.2	40	1.5	9	0.154
155	1.2DL + 1.5LM7 + 1.6SWL (30 mph) AZI 240	Yes	Y	1	1.2	40	1.5	10	0.154
156	1.2DL + 1.5LM7 + 1.6SWL (30 mph) AZI 270	Yes	Y	1	1.2	40	1.5	11	0.154
157	1.2DL + 1.5LM7 + 1.6SWL (30 mph) AZI 300	Yes	Y	1	1.2	40	1.5	12	0.154
158	1.2DL + 1.5LM8 + 1.6SWL (30 mph) AZI 330	Yes	Y	1	1.2	40	1.5	13	0.154
159	1.2DL + 1.5LM8 + 1.6SWL (30 mph) AZI 0	Yes	Y	1	1.2	41	1.5	2	0.154
160	1.2DL + 1.5LM8 + 1.6SWL (30 mph) AZI 30	Yes	Y	1	1.2	41	1.5	3	0.154
161	1.2DL + 1.5LM8 + 1.6SWL (30 mph) AZI 60	Yes	Y	1	1.2	41	1.5	4	0.154
162	1.2DL + 1.5LM8 + 1.6SWL (30 mph) AZI 90	Yes	Y	1	1.2	41	1.5	5	0.154
163	1.2DL + 1.5LM8 + 1.6SWL (30 mph) AZI 120	Yes	Y	1	1.2	41	1.5	6	0.154
164	1.2DL + 1.5LM8 + 1.6SWL (30 mph) AZI 150	Yes	Y	1	1.2	41	1.5	7	0.154
165	1.2DL + 1.5LM8 + 1.6SWL (30 mph) AZI 180	Yes	Y	1	1.2	41	1.5	8	0.154
166	1.2DL + 1.5LM8 + 1.6SWL (30 mph) AZI 210	Yes	Y	1	1.2	41	1.5	9	0.154
167	1.2DL + 1.5LM8 + 1.6SWL (30 mph) AZI 240	Yes	Y	1	1.2	41	1.5	10	0.154
168	1.2DL + 1.5LM8 + 1.6SWL (30 mph) AZI 270	Yes	Y	1	1.2	41	1.5	11	0.154
169	1.2DL + 1.5LM8 + 1.6SWL (30 mph) AZI 300	Yes	Y	1	1.2	41	1.5	12	0.154
170	1.2DL + 1.5LM8 + 1.6SWL (30 mph) AZI 330	Yes	Y	1	1.2	41	1.5	13	0.154
171	1.2DL + 1.5LM9 + 1.6SWL (30 mph) AZI 0	Yes	Y	1	1.2	42	1.5	2	0.154
172	1.2DL + 1.5LM9 + 1.6SWL (30 mph) AZI 30	Yes	Y	1	1.2	42	1.5	3	0.154
173	1.2DL + 1.5LM9 + 1.6SWL (30 mph) AZI 60	Yes	Y	1	1.2	42	1.5	4	0.154
174	1.2DL + 1.5LM9 + 1.6SWL (30 mph) AZI 90	Yes	Y	1	1.2	42	1.5	5	0.154
175	1.2DL + 1.5LM9 + 1.6SWL (30 mph) AZI 120	Yes	Y	1	1.2	42	1.5	6	0.154
176	1.2DL + 1.5LM9 + 1.6SWL (30 mph) AZI 150	Yes	Y	1	1.2	42	1.5	7	0.154
177	1.2DL + 1.5LM9 + 1.6SWL (30 mph) AZI 180	Yes	Y	1	1.2	42	1.5	8	0.154
178	1.2DL + 1.5LM9 + 1.6SWL (30 mph) AZI 210	Yes	Y	1	1.2	42	1.5	9	0.154
179	1.2DL + 1.5LM9 + 1.6SWL (30 mph) AZI 240	Yes	Y	1	1.2	42	1.5	10	0.154
180	1.2DL + 1.5LM9 + 1.6SWL (30 mph) AZI 270	Yes	Y	1	1.2	42	1.5	11	0.154
181	1.2DL + 1.5LM9 + 1.6SWL (30 mph) AZI 300	Yes	Y	1	1.2	42	1.5	12	0.154
182	1.2DL + 1.5LM9 + 1.6SWL (30 mph) AZI 330	Yes	Y	1	1.2	42	1.5	13	0.154
183	1.2DL + 1.5LM10 + 1.6SWL (30 mph) AZI 0	Yes	Y	1	1.2	43	1.5	2	0.154
184	1.2DL + 1.5LM10 + 1.6SWL (30 mph) AZI 30	Yes	Y	1	1.2	43	1.5	3	0.154
185	1.2DL + 1.5LM10 + 1.6SWL (30 mph) AZI 60	Yes	Y	1	1.2	43	1.5	4	0.154
186	1.2DL + 1.5LM10 + 1.6SWL (30 mph) AZI 90	Yes	Y	1	1.2	43	1.5	5	0.154
187	1.2DL + 1.5LM10 + 1.6SWL (30 mph) AZI 120	Yes	Y	1	1.2	43	1.5	6	0.154
188	1.2DL + 1.5LM10 + 1.6SWL (30 mph) AZI 150	Yes	Y	1	1.2	43	1.5	7	0.154
189	1.2DL + 1.5LM10 + 1.6SWL (30 mph) AZI 180	Yes	Y	1	1.2	43	1.5	8	0.154
190	1.2DL + 1.5LM10 + 1.6SWL (30 mph) AZI 210	Yes	Y	1	1.2	43	1.5	9	0.154
191	1.2DL + 1.5LM10 + 1.6SWL (30 mph) AZI 240	Yes	Y	1	1.2	43	1.5	10	0.154
192	1.2DL + 1.5LM10 + 1.6SWL (30 mph) AZI 270	Yes	Y	1	1.2	43	1.5	11	0.154
193	1.2DL + 1.5LM10 + 1.6SWL (30 mph) AZI 300	Yes	Y	1	1.2	43	1.5	12	0.154
194	1.2DL + 1.5LM10 + 1.6SWL (30 mph) AZI 330	Yes	Y	1	1.2	43	1.5	13	0.154
195	1.2DL + 1.5LM11 + 1.6SWL (30 mph) AZI 0	Yes	Y	1	1.2	44	1.5	2	0.154
196	1.2DL + 1.5LM11 + 1.6SWL (30 mph) AZI 30	Yes	Y	1	1.2	44	1.5	3	0.154
197	1.2DL + 1.5LM11 + 1.6SWL (30 mph) AZI 60	Yes	Y	1	1.2	44	1.5	4	0.154
198	1.2DL + 1.5LM11 + 1.6SWL (30 mph) AZI 90	Yes	Y	1	1.2	44	1.5	5	0.154
199	1.2DL + 1.5LM11 + 1.6SWL (30 mph) AZI 120	Yes	Y	1	1.2	44	1.5	6	0.154
200	1.2DL + 1.5LM11 + 1.6SWL (30 mph) AZI 150	Yes	Y	1	1.2	44	1.5	7	0.154
201	1.2DL + 1.5LM11 + 1.6SWL (30 mph) AZI 180	Yes	Y	1	1.2	44	1.5	8	0.154
202	1.2DL + 1.5LM11 + 1.6SWL (30 mph) AZI 210	Yes	Y	1	1.2	44	1.5	9	0.154
203	1.2DL + 1.5LM11 + 1.6SWL (30 mph) AZI 240	Yes	Y	1	1.2	44	1.5	10	0.154
204	1.2DL + 1.5LM11 + 1.6SWL (30 mph) AZI 270	Yes	Y	1	1.2	44	1.5	11	0.154
205	1.2DL + 1.5LM11 + 1.6SWL (30 mph) AZI 300	Yes	Y	1	1.2	44	1.5	12	0.154
206	1.2DL + 1.5LM11 + 1.6SWL (30 mph) AZI 330	Yes	Y	1	1.2	44	1.5	13	0.154
207	1.2DL + 1.5LM12 + 1.6SWL (30 mph) AZI 0	Yes	Y	1	1.2	45	1.5	2	0.154
208	1.2DL + 1.5LM12 + 1.6SWL (30 mph) AZI 30	Yes	Y	1	1.2	45	1.5	3	0.154

Load Combinations (Continued)

	Description	Solve	PDelta	BLC	Factor	BLC	Factor	BLC	Factor
209	1.2DL + 1.5LM12 + 1.6SWL (30 mph) AZI 60	Yes	Y	1	1.2	45	1.5	4	0.154
210	1.2DL + 1.5LM12 + 1.6SWL (30 mph) AZI 90	Yes	Y	1	1.2	45	1.5	5	0.154
211	1.2DL + 1.5LM12 + 1.6SWL (30 mph) AZI 120	Yes	Y	1	1.2	45	1.5	6	0.154
212	1.2DL + 1.5LM12 + 1.6SWL (30 mph) AZI 150	Yes	Y	1	1.2	45	1.5	7	0.154
213	1.2DL + 1.5LM12 + 1.6SWL (30 mph) AZI 180	Yes	Y	1	1.2	45	1.5	8	0.154
214	1.2DL + 1.5LM12 + 1.6SWL (30 mph) AZI 210	Yes	Y	1	1.2	45	1.5	9	0.154
215	1.2DL + 1.5LM12 + 1.6SWL (30 mph) AZI 240	Yes	Y	1	1.2	45	1.5	10	0.154
216	1.2DL + 1.5LM12 + 1.6SWL (30 mph) AZI 270	Yes	Y	1	1.2	45	1.5	11	0.154
217	1.2DL + 1.5LM12 + 1.6SWL (30 mph) AZI 300	Yes	Y	1	1.2	45	1.5	12	0.154
218	1.2DL + 1.5LM12 + 1.6SWL (30 mph) AZI 330	Yes	Y	1	1.2	45	1.5	13	0.154
219	1.2DL + 1.5LM13 + 1.6SWL (30 mph) AZI 0	Yes	Y	1	1.2	46	1.5	2	0.154
220	1.2DL + 1.5LM13 + 1.6SWL (30 mph) AZI 30	Yes	Y	1	1.2	46	1.5	3	0.154
221	1.2DL + 1.5LM13 + 1.6SWL (30 mph) AZI 60	Yes	Y	1	1.2	46	1.5	4	0.154
222	1.2DL + 1.5LM13 + 1.6SWL (30 mph) AZI 90	Yes	Y	1	1.2	46	1.5	5	0.154
223	1.2DL + 1.5LM13 + 1.6SWL (30 mph) AZI 120	Yes	Y	1	1.2	46	1.5	6	0.154
224	1.2DL + 1.5LM13 + 1.6SWL (30 mph) AZI 150	Yes	Y	1	1.2	46	1.5	7	0.154
225	1.2DL + 1.5LM13 + 1.6SWL (30 mph) AZI 180	Yes	Y	1	1.2	46	1.5	8	0.154
226	1.2DL + 1.5LM13 + 1.6SWL (30 mph) AZI 210	Yes	Y	1	1.2	46	1.5	9	0.154
227	1.2DL + 1.5LM13 + 1.6SWL (30 mph) AZI 240	Yes	Y	1	1.2	46	1.5	10	0.154
228	1.2DL + 1.5LM13 + 1.6SWL (30 mph) AZI 270	Yes	Y	1	1.2	46	1.5	11	0.154
229	1.2DL + 1.5LM13 + 1.6SWL (30 mph) AZI 300	Yes	Y	1	1.2	46	1.5	12	0.154
230	1.2DL + 1.5LM13 + 1.6SWL (30 mph) AZI 330	Yes	Y	1	1.2	46	1.5	13	0.154
231	1.2DL + 1.5LM14 + 1.6SWL (30 mph) AZI 0	Yes	Y	1	1.2	47	1.5	2	0.154
232	1.2DL + 1.5LM14 + 1.6SWL (30 mph) AZI 30	Yes	Y	1	1.2	47	1.5	3	0.154
233	1.2DL + 1.5LM14 + 1.6SWL (30 mph) AZI 60	Yes	Y	1	1.2	47	1.5	4	0.154
234	1.2DL + 1.5LM14 + 1.6SWL (30 mph) AZI 90	Yes	Y	1	1.2	47	1.5	5	0.154
235	1.2DL + 1.5LM14 + 1.6SWL (30 mph) AZI 120	Yes	Y	1	1.2	47	1.5	6	0.154
236	1.2DL + 1.5LM14 + 1.6SWL (30 mph) AZI 150	Yes	Y	1	1.2	47	1.5	7	0.154
237	1.2DL + 1.5LM14 + 1.6SWL (30 mph) AZI 180	Yes	Y	1	1.2	47	1.5	8	0.154
238	1.2DL + 1.5LM14 + 1.6SWL (30 mph) AZI 210	Yes	Y	1	1.2	47	1.5	9	0.154
239	1.2DL + 1.5LM14 + 1.6SWL (30 mph) AZI 240	Yes	Y	1	1.2	47	1.5	10	0.154
240	1.2DL + 1.5LM14 + 1.6SWL (30 mph) AZI 270	Yes	Y	1	1.2	47	1.5	11	0.154
241	1.2DL + 1.5LM14 + 1.6SWL (30 mph) AZI 300	Yes	Y	1	1.2	47	1.5	12	0.154
242	1.2DL + 1.5LM14 + 1.6SWL (30 mph) AZI 330	Yes	Y	1	1.2	47	1.5	13	0.154
243	1.2DL + 1.5LM15 + 1.6SWL (30 mph) AZI 0	Yes	Y	1	1.2	48	1.5	2	0.154
244	1.2DL + 1.5LM15 + 1.6SWL (30 mph) AZI 30	Yes	Y	1	1.2	48	1.5	3	0.154
245	1.2DL + 1.5LM15 + 1.6SWL (30 mph) AZI 60	Yes	Y	1	1.2	48	1.5	4	0.154
246	1.2DL + 1.5LM15 + 1.6SWL (30 mph) AZI 90	Yes	Y	1	1.2	48	1.5	5	0.154
247	1.2DL + 1.5LM15 + 1.6SWL (30 mph) AZI 120	Yes	Y	1	1.2	48	1.5	6	0.154
248	1.2DL + 1.5LM15 + 1.6SWL (30 mph) AZI 150	Yes	Y	1	1.2	48	1.5	7	0.154
249	1.2DL + 1.5LM15 + 1.6SWL (30 mph) AZI 180	Yes	Y	1	1.2	48	1.5	8	0.154
250	1.2DL + 1.5LM15 + 1.6SWL (30 mph) AZI 210	Yes	Y	1	1.2	48	1.5	9	0.154
251	1.2DL + 1.5LM15 + 1.6SWL (30 mph) AZI 240	Yes	Y	1	1.2	48	1.5	10	0.154
252	1.2DL + 1.5LM15 + 1.6SWL (30 mph) AZI 270	Yes	Y	1	1.2	48	1.5	11	0.154
253	1.2DL + 1.5LM15 + 1.6SWL (30 mph) AZI 300	Yes	Y	1	1.2	48	1.5	12	0.154
254	1.2DL + 1.5LM15 + 1.6SWL (30 mph) AZI 330	Yes	Y	1	1.2	48	1.5	13	0.154
255	1.2DL + 1.5LM16 + 1.6SWL (30 mph) AZI 0	Yes	Y	1	1.2	49	1.5	2	0.154
256	1.2DL + 1.5LM16 + 1.6SWL (30 mph) AZI 30	Yes	Y	1	1.2	49	1.5	3	0.154
257	1.2DL + 1.5LM16 + 1.6SWL (30 mph) AZI 60	Yes	Y	1	1.2	49	1.5	4	0.154
258	1.2DL + 1.5LM16 + 1.6SWL (30 mph) AZI 90	Yes	Y	1	1.2	49	1.5	5	0.154
259	1.2DL + 1.5LM16 + 1.6SWL (30 mph) AZI 120	Yes	Y	1	1.2	49	1.5	6	0.154
260	1.2DL + 1.5LM16 + 1.6SWL (30 mph) AZI 150	Yes	Y	1	1.2	49	1.5	7	0.154
261	1.2DL + 1.5LM16 + 1.6SWL (30 mph) AZI 180	Yes	Y	1	1.2	49	1.5	8	0.154
262	1.2DL + 1.5LM16 + 1.6SWL (30 mph) AZI 210	Yes	Y	1	1.2	49	1.5	9	0.154
263	1.2DL + 1.5LM16 + 1.6SWL (30 mph) AZI 240	Yes	Y	1	1.2	49	1.5	10	0.154
264	1.2DL + 1.5LM16 + 1.6SWL (30 mph) AZI 270	Yes	Y	1	1.2	49	1.5	11	0.154
265	1.2DL + 1.5LM16 + 1.6SWL (30 mph) AZI 300	Yes	Y	1	1.2	49	1.5	12	0.154
266	1.2DL + 1.5LM16 + 1.6SWL (30 mph) AZI 330	Yes	Y	1	1.2	49	1.5	13	0.154

Load Combinations (Continued)

	Description	Solve	PDelta	BLC	Factor	BLC	Factor	BLC	Factor
267	1.2DL + 1.5LM17 + 1.6SWL (30 mph) AZI 0	Yes	Y	1	1.2	50	1.5	2	0.154
268	1.2DL + 1.5LM17 + 1.6SWL (30 mph) AZI 30	Yes	Y	1	1.2	50	1.5	3	0.154
269	1.2DL + 1.5LM17 + 1.6SWL (30 mph) AZI 60	Yes	Y	1	1.2	50	1.5	4	0.154
270	1.2DL + 1.5LM17 + 1.6SWL (30 mph) AZI 90	Yes	Y	1	1.2	50	1.5	5	0.154
271	1.2DL + 1.5LM17 + 1.6SWL (30 mph) AZI 120	Yes	Y	1	1.2	50	1.5	6	0.154
272	1.2DL + 1.5LM17 + 1.6SWL (30 mph) AZI 150	Yes	Y	1	1.2	50	1.5	7	0.154
273	1.2DL + 1.5LM17 + 1.6SWL (30 mph) AZI 180	Yes	Y	1	1.2	50	1.5	8	0.154
274	1.2DL + 1.5LM17 + 1.6SWL (30 mph) AZI 210	Yes	Y	1	1.2	50	1.5	9	0.154
275	1.2DL + 1.5LM17 + 1.6SWL (30 mph) AZI 240	Yes	Y	1	1.2	50	1.5	10	0.154
276	1.2DL + 1.5LM17 + 1.6SWL (30 mph) AZI 270	Yes	Y	1	1.2	50	1.5	11	0.154
277	1.2DL + 1.5LM17 + 1.6SWL (30 mph) AZI 300	Yes	Y	1	1.2	50	1.5	12	0.154
278	1.2DL + 1.5LM17 + 1.6SWL (30 mph) AZI 330	Yes	Y	1	1.2	50	1.5	13	0.154
279	1.2DL + 1.5LM18 + 1.6SWL (30 mph) AZI 0	Yes	Y	1	1.2	51	1.5	2	0.154
280	1.2DL + 1.5LM18 + 1.6SWL (30 mph) AZI 30	Yes	Y	1	1.2	51	1.5	3	0.154
281	1.2DL + 1.5LM18 + 1.6SWL (30 mph) AZI 60	Yes	Y	1	1.2	51	1.5	4	0.154
282	1.2DL + 1.5LM18 + 1.6SWL (30 mph) AZI 90	Yes	Y	1	1.2	51	1.5	5	0.154
283	1.2DL + 1.5LM18 + 1.6SWL (30 mph) AZI 120	Yes	Y	1	1.2	51	1.5	6	0.154
284	1.2DL + 1.5LM18 + 1.6SWL (30 mph) AZI 150	Yes	Y	1	1.2	51	1.5	7	0.154
285	1.2DL + 1.5LM18 + 1.6SWL (30 mph) AZI 180	Yes	Y	1	1.2	51	1.5	8	0.154
286	1.2DL + 1.5LM18 + 1.6SWL (30 mph) AZI 210	Yes	Y	1	1.2	51	1.5	9	0.154
287	1.2DL + 1.5LM18 + 1.6SWL (30 mph) AZI 240	Yes	Y	1	1.2	51	1.5	10	0.154
288	1.2DL + 1.5LM18 + 1.6SWL (30 mph) AZI 270	Yes	Y	1	1.2	51	1.5	11	0.154
289	1.2DL + 1.5LM18 + 1.6SWL (30 mph) AZI 300	Yes	Y	1	1.2	51	1.5	12	0.154
290	1.2DL + 1.5LM18 + 1.6SWL (30 mph) AZI 330	Yes	Y	1	1.2	51	1.5	13	0.154

Envelope Node Reactions

Node Label	X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [lb-in]	LC	MY [lb-in]	LC	MZ [lb-in]	LC		
1	N1	max	1282.599	14	1747.274	27	1311.069	16	14983.549	108	24978.719	16	10977.314	20
2		min	-1494.429	8	-84.835	20	-1310.727	22	-14977.849	90	-25010.614	22	-62752.28	87
3	N67	max	1467.954	2	1881.733	35	1605.228	6	10662.548	16	29895.834	25	30593.867	143
4		min	-1360.723	20	-51.451	16	-1449.488	24	-60764.324	35	-26310.921	18	-5597.87	16
5	N117	max	1631.17	2	1747.902	31	1124.925	17	61598.167	127	25082.883	20	39872.717	31
6		min	-1527.251	20	-104.873	24	-1480.049	12	-10169.192	24	-25110.465	14	-6317.548	24
7	Totals:	max	4350.534	14	5012.611	35	3812.908	4						
8		min	-4350.534	20	1699.901	52	-4026.159	12						

Envelope AISC 14th (360-10): LRFD Steel Code Checks

Member	Shape	Code Check	Loc[in]	LC	Shear	Check	Loc[in]	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y-y [lb-in]	phi*Mn z-z [lb-in]	Cb	Eqn
1	M100	6" x 0.375" Plate	0.21	1.125	6	0.805	0	y	129	71110.261	72900	6834.391	109350	3	H1-1b
2	M30	6" x 0.375" Plate	0.21	1.125	2	0.805	0	y	89	71110.261	72900	6834.391	109350	3	H1-1b
3	M24	6" x 0.375" Plate	0.194	1.125	2	0.802	0	y	109	71110.261	72900	6834.391	109350	3	H1-1b
4	M83	6" x 0.375" Plate	0.186	2.036	6	0.763	2.036	y	129	62722.329	72900	6834.391	109350	2.581	H1-1b
5	M13	6" x 0.375" Plate	0.185	2.036	2	0.763	2.036	y	89	62722.329	72900	6834.391	109350	2.582	H1-1b
6	M12	6" x 0.375" Plate	0.174	2.036	13	0.761	2.036	y	109	62722.329	72900	6834.391	109350	2.979	H1-1b
7	M94	6" x 0.375" Plate	0.193	1.125	6	0.698	0	y	29	71110.261	72900	6834.391	109350	3	H1-1b
8	M62	6" x 0.375" Plate	0.195	1.125	10	0.697	0	y	33	71110.261	72900	6834.391	109350	3	H1-1b
9	M82	6" x 0.375" Plate	0.16	2.036	5	0.659	2.036	y	29	62722.329	72900	6834.391	109350	2.967	H1-1b
10	M50	6" x 0.375" Plate	0.166	2.036	10	0.657	2.036	y	33	62722.329	72900	6834.391	109350	2.358	H1-1b
11	M61	6" x 0.375" Plate	0.144	1.125	2	0.645	0	y	33	71110.261	72900	6834.391	109350	3	H1-1b
12	M93	6" x 0.375" Plate	0.147	1.125	10	0.644	0	y	29	71110.261	72900	6834.391	109350	3	H1-1b
13	M23	6" x 0.375" Plate	0.15	1.125	24	0.643	0	y	37	71110.261	72900	6834.391	109350	3	H1-1b
14	M68	6" x 0.375" Plate	0.208	1.125	10	0.631	0	y	12	71110.261	72900	6834.391	109350	3	H1-1b
15	M99	6" x 0.375" Plate	0.163	1.125	20	0.628	0	y	129	71110.261	72900	6834.391	109350	3	H1-1b
16	M29	6" x 0.375" Plate	0.162	1.125	16	0.628	0	y	89	71110.261	72900	6834.391	109350	3	H1-1b
17	M49	6" x 0.375" Plate	0.165	2.036	25	0.605	2.036	y	33	62722.329	72900	6834.391	109350	1.745	H1-1b
18	M81	6" x 0.375" Plate	0.151	2.036	3	0.603	2.036	y	29	62722.329	72900	6834.391	109350	2.142	H1-1b
19	M11	6" x 0.375" Plate	0.146	2.036	11	0.603	2.036	y	37	62722.329	72900	6834.391	109350	2.158	H1-1b

Envelope AISC 14th (360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[in]	LC	Shear	Check	Loc[in]	Dir	LC	phi*	Pnc [lb]	phi*	Pnt [lb]	phi*	Mn y-y [lb-in]	phi*	Mn z-z [lb-in]	Cb	Eqn
20	M80	6" x 0.375" Plate	0.153	2.036	9	0.592	2.036	y	129	62722.329	72900	6834.391	109350	2.079	H1-1b				
21	M67	6" x 0.375" Plate	0.172	1.125	24	0.592	0	y	37	71110.261	72900	6834.391	109350	3	H1-1b				
22	M10	6" x 0.375" Plate	0.149	2.036	5	0.591	2.036	y	89	62722.329	72900	6834.391	109350	2.091	H1-1b				
23	M51	6" x 0.375" Plate	0.179	2.036	10	0.585	2.036	y	12	62722.329	72900	6834.391	109350	2.582	H1-1b				
24	M48	6" x 0.375" Plate	0.167	2.036	13	0.555	2.036	y	37	62722.329	72900	6834.391	109350	2.048	H1-1b				
25	M7	L4X4X4	0.323	0	21	0.23	0	z	100	54411.715	62532	37651.159	80578.632	1.5	H2-1				
26	M6	L4X4X4	0.314	24.375	25	0.23	24.375	z	98	54411.715	62532	37651.159	82764.473	1.5	H2-1				
27	M76	L4X4X4	0.307	24.375	24	0.228	24.375	z	125	54411.715	62532	37651.159	80578.632	1.5	H2-1				
28	M77	L4X4X4	0.364	0	25	0.199	0	y	7	54411.715	62532	37651.159	80578.632	1.5	H2-1				
29	M45	L4X4X4	0.313	0	16	0.192	0	y	11	54411.715	62532	37651.159	80578.632	1.5	H2-1				
30	M44	L4X4X4	0.294	24.375	16	0.174	24.375	y	9	54411.715	62532	37651.159	80578.632	1.5	H2-1				
31	M52	L2.5x2.5x3	0.158	55	12	0.147	55	z	13	14632.678	29192.4	10470.885	20247.481	1.106	H2-1				
32	M65	6" x 0.375" Plate	0.332	1.125	9	0.144	1.125	y	13	71110.261	72900	6834.391	109350	2.971	H1-1b				
33	M14	L2.5x2.5x3	0.158	55	4	0.137	0	y	4	14632.678	29192.4	10470.885	20265.493	1.109	H2-1				
34	M84	L2.5x2.5x3	0.158	55	8	0.136	0	y	8	14632.678	29192.4	10470.885	20263.943	1.109	H2-1				
35	M9	L4X4X4	0.298	0	27	0.136	0	z	97	51466.784	62532	37651.159	80578.632	1.5	H2-1				
36	M79	L4X4X4	0.298	0	31	0.136	0	z	125	51466.784	62532	37651.159	80578.632	1.5	H2-1				
37	M8	L4X4X4	0.303	36.125	27	0.135	36.125	z	101	51466.784	62532	37651.159	80578.632	1.5	H2-1				
38	M1	HSS4X4X4	0.348	0	4	0.134	0	y	109	133649.326	139518	194166	194166	1.759	H1-1b				
39	M73	HSS4X4X4	0.349	0	8	0.134	0	y	129	133649.326	139518	194166	194166	1.76	H1-1b				
40	M33	6" x 0.375" Plate	0.377	1.125	3	0.133	1.125	y	10	71110.261	72900	6834.391	109350	2.951	H1-1b				
41	M103	6" x 0.375" Plate	0.377	1.125	7	0.133	1.125	y	2	71110.261	72900	6834.391	109350	2.951	H1-1b				
42	M71	6" x 0.375" Plate	0.369	1.125	11	0.133	1.125	y	6	71110.261	72900	6834.391	109350	2.968	H1-1b				
43	M27	6" x 0.375" Plate	0.348	1.125	13	0.132	1.125	y	4	71110.261	72900	6834.391	109350	2.955	H1-1b				
44	M97	6" x 0.375" Plate	0.323	1.125	5	0.132	1.125	y	8	71110.261	72900	6834.391	109350	2.983	H1-1b				
45	M46	L4X4X4	0.304	36.125	35	0.132	36.125	z	85	51466.784	62532	37651.159	80578.632	1.5	H2-1				
46	M53	6" x 0.375" Plate	0.267	5.75	9	0.129	5.75	y	13	62722.329	72900	6834.391	109350	1.408	H1-1b				
47	M42	PIPE 2.0	0.324	30	13	0.128	30	z	13	14916.096	32130	22459.5	22459.5	3	H1-1b				
48	M47	L4X4X4	0.298	0	35	0.127	0	z	8	51466.784	62532	37651.159	80578.632	1.5	H2-1				
49	M78	L4X4X4	0.304	36.125	31	0.126	36.125	z	8	51466.784	62532	37651.159	80578.632	1.5	H2-1				
50	M106	PIPE 2.5	0.146	90	13	0.126	90	z	13	30038.461	50715	43155	43155	1.821	H1-1b				
51	M114	PIPE 2.5	0.133	90	10	0.124	6	z	2	30038.461	50715	43155	43155	1.849	H1-1b				
52	M3	PIPE 2.5	0.133	90	6	0.124	6	z	10	30038.461	50715	43155	43155	1.848	H1-1b				
53	M105	PIPE 3.0	0.126	48	122	0.12	93	z	110	60482.561	65205	68985	68985	1	H1-1b				
54	M113	PIPE 3.0	0.125	48	77	0.12	3	z	89	60482.561	65205	68985	68985	1	H1-1b				
55	M16	6" x 0.375" Plate	0.311	5.75	3	0.119	5.75	y	10	62722.329	72900	6834.391	109350	1.33	H1-1b				
56	M86	6" x 0.375" Plate	0.311	5.75	7	0.119	5.75	y	2	62722.329	72900	6834.391	109350	1.33	H1-1b				
57	M54	6" x 0.375" Plate	0.304	5.75	11	0.119	5.75	y	6	62722.329	72900	6834.391	109350	1.338	H1-1b				
58	M4	PIPE 2.0	0.318	30	12	0.118	30	z	4	14916.096	32130	22459.5	22459.5	2.642	H1-1b				
59	M15	6" x 0.375" Plate	0.278	5.75	13	0.118	5.75	y	4	62722.329	72900	6834.391	109350	1.358	H1-1b				
60	M74	PIPE 2.0	0.311	30	4	0.118	30	z	8	14916.096	32130	22459.5	22459.5	3	H1-1b				
61	M85	6" x 0.375" Plate	0.26	5.75	5	0.118	5.75	y	8	62722.329	72900	6834.391	109350	1.419	H1-1b				
62	M41	HSS4X4X4	0.364	0	12	0.108	12.017	y	33	133649.326	139518	194166	194166	1.775	H1-1b				
63	M2	PIPE 3.0	0.086	26	12	0.102	93	z	29	60482.561	65205	68985	68985	1.637	H1-1b				
64	M107	PIPE 2.0	0.452	30	13	0.101	38	z	13	14916.096	32130	22459.5	22459.5	2.413	H1-1b				
65	M110	PIPE 2.0	0.417	30	8	0.098	30	z	6	14916.096	32130	22459.5	22459.5	3	H1-1b				
66	M38	PIPE 2.0	0.42	30	12	0.098	30	z	10	14916.096	32130	22459.5	22459.5	3	H1-1b				
67	M118	PIPE 2.0	0.417	30	4	0.098	30	z	2	14916.096	32130	22459.5	22459.5	2.727	H1-1b				
68	M115	PIPE 2.0	0.443	30	8	0.095	38	z	9	14916.096	32130	22459.5	22459.5	3	H1-1b				
69	M35	PIPE 2.0	0.444	30	4	0.093	38	z	5	14916.096	32130	22459.5	22459.5	3	H1-1b				
70	M5	HSS4.5X4.5X3	0.061	8.958	3	0.089	8.958	y	109	120246.398	121302	194994	194994	1.44	H1-1b				
71	M75	HSS4.5X4.5X3	0.061	8.958	7	0.088	8.958	y	129	120246.398	121302	194994	194994	1.44	H1-1b				
72	M43	HSS4.5X4.5X3	0.061	8.958	12	0.077	8.958	y	33	120246.398	121302	194994	194994	1.451	H1-1b				
73	M125	PIPE 2.0	0.058	18	10	0.011	18	z	10	26521.424	32130	22459.5	22459.5	2.402	H1-1b				

INFINIGY

FROM ZERO TO INFINIGY
the solutions are endless

BOLT CONNECTION CALCULATION

BOLT PROPERTIES

Date:	8/6/2021
Site:	BOBDL00150A
Engineer:	DVA
Project No:	2039-Z5555C
Connection Location:	Arm to Collar

Bolt Capacity Equation	TIA-222-G	
Connection Type	Steel	
Bolt Size, d	5/8	in
Threads per Inch, n	11	
Steel Grade	A325	
Bolt Ultimate Tensile Stress, F_u	120	ksi
Threads Exclusion	N	
Shear Plane	1	
Net Bolt Cross-Sectional Area, A_n	0.226	in ²
Gross Bolt Cross-Sectional Area, A_g	0.307	in ²
Tensile Steel Strength (per bolt), ϕR_{nt}	20340	lbs
Shear Steel Strength (per bolt), ϕR_{nv}	12425	lbs

INFINIGY8

FROM ZERO TO INFINIGY
the solutions are endless

BOLT CONNECTION CALCULATION

BOLT GROUP CHECK

Date:	8/6/2021
Site:	BOBDL00150A
Engineer:	DVA
Project No.:	2039-Z5555C
Connection Location:	Arm to Collar

Loads Properties	
Controlling LC:	31
Load Point Number:	N117
X-Coordinate (in.)	4.00
Y-Coordinate (in.)	4.00
Z-Coordinate (in.)	0.00
Shear Load, Px (lbs)	0
Shear Load, Py (lbs)	0
Axial Load, Pz (lbs)	0
Moment, Mx (lb-in)	0
Moment, My (lb-in)	0
Moment, Mz (lb-in)	0

Member Properties	
X	Y
0.0	0.0
8.0	8.0

Number of Bolts: 4

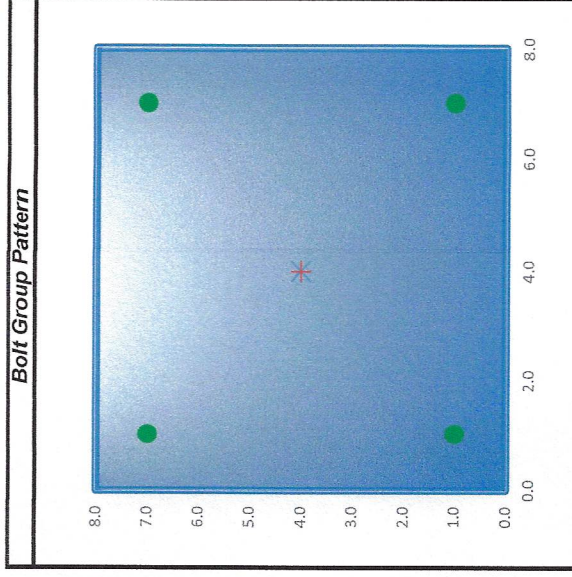
No.	Bolt Type	Bolt Coordinates		Bolt Loads		Steel Bolt Usage		Max. Capacity
		Xo (in)	Yo (in)	Axial (lbs)	Shear (lbs)	Shear	Combined	
1	Main Type	1.0	1.0	1889.33	3812.86	30.7%	30.7%	30.7%
2	Main Type	7.0	1.0	1918.33	3197.21	25.7%	25.7%	25.7%
3	Main Type	1.0	7.0	-1925.33	3813.50	0.0%	30.7%	30.7%
4	Main Type	7.0	7.0	-1896.33	3197.98	25.7%	25.7%	25.7%

Bolt Group Properties:

Xc =	4.00	in.
Yc =	4.00	in.
Ic.x =	11.04	in.^2
Ic.y =	11.04	in.^2
Ic.xy =	22.09	in.^2

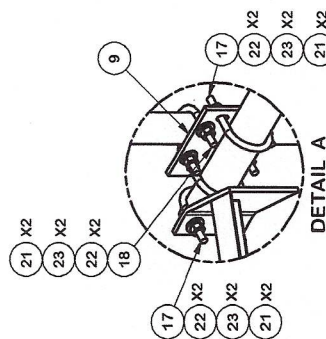
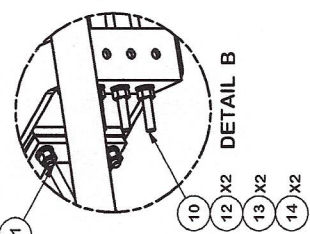
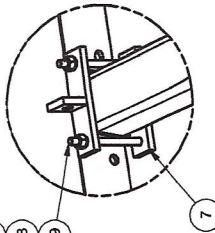
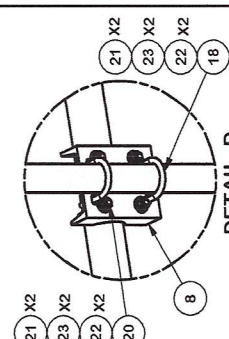
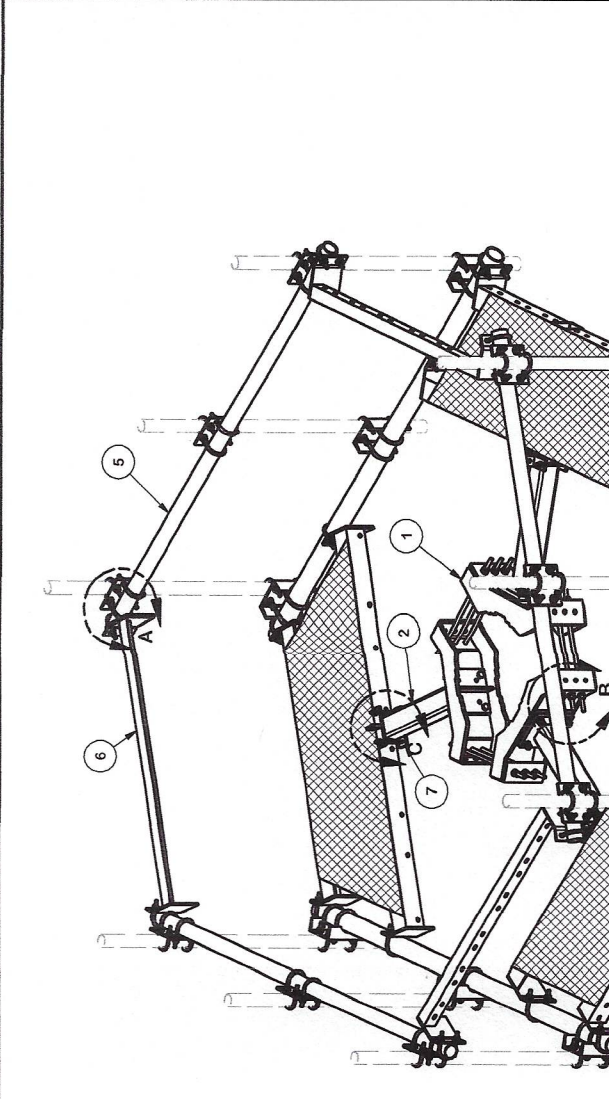
Loads at Center of Gravity of Bolt Group:

Pz =	-14.00	lbs
Px =	-2.00	lbs
Py =	-1748.00	lbs
Mx =	-22888.00	lb-in
My =	-174.00	lb-in
Mz =	-59255.00	lb-in



Total Capacity of Bolt Group: 30.7%

ITEM	QTY	PART NO.	PART DESCRIPTION	LENGTH	UNIT WT.	NET WT.
1	3	X-LWRM	RING MOUNT WELDMENT		68.81	206.42
2	3	X-SNP-ST8	SNB8 TELESCOPING ARM FOR GRATING		60.39	181.16
3	3	X-SNPC	CORNER GRATING WELDMENT		194.33	582.99
4	3	P396	3" SCH. 40 PIPE (3.5" O.D. x 0.216" WALL) A500	96.000 in	60.75	182.25
5	3	P3096	2-7/8" OD X 96" Sch 40 Galvanized Pipe		46.45	139.36
6	3	X-SNP-HRA	CORNER BRACKET FOR SNPX PLATFORMS		25.95	77.86
7	3	X-SNPP1G	CLAMP PLATE	7.250 in	2.03	6.10
8	9	X-SP219	SMALL SUPPORT CROSS PLATE	8.250 in	8.61	77.50
9	9	SCX2	CROSSOVER PLATE	7.000 in	4.80	43.17
10	9	G58R-48	5/8" x 48" THREADED ROD (HDG.)		0.55	4.94
10	9	G58R-24	5/8" x 24" THREADED ROD (HDG.)		0.55	4.94
11	12	A58234	5/8" x 2-3/4" HDG A325 HEX BOLT		0.36	4.27
12	30	A58FW	5/8" HDG A325 FLATWASHER	2.75	0.03	1.02
13	30	G58LW	5/8" HDG LOCKWASHER		0.03	0.78
14	18	A58NUT	5/8" HDG A325 HEX NUT		0.13	2.34
15	12	G58NUT	5/8" HDG HEAVY 2H HEX NUT		0.13	1.56
16	12	X-UB1358	1/2" X 3-5/8" X 5-1/2" X 3" U-BOLT (HDG.)		0.73	8.78
17	24	X-UB1300	1/2" X 3" X 5" X 2" U-BOLT (HDG.)		0.73	17.56
18	36	X-UB1212	1/2" X 2-1/2" X 4-1/2" X 2" U-BOLT (HDG.)		0.73	26.34
19	6	G12065	1/2" x 6-1/2" HDG HEX BOLT GR5 FULL THREAD	7-1/2	0.41	2.46
20	18	X-UB1306	1/2" X 3-5/8" X 6" X 3" U-BOLT (HDG.)		0.73	13.17
21	186	G12NUT	1/2" HDG HEAVY 2H HEX NUT		0.07	13.32
22	180	G12FW	1/2" HDG USS FLATWASHER		0.03	6.13
23	186	G12LW	1/2" HDG LOCKWASHER		0.01	2.59
24	9	A	2" SCH. 40 PIPE (2.375" O.D. x 0.154" WALL) A500	B	C	D



ASSEMBLY NO.	PART NO. "A"	LENGTH "B"	UNIT WEIGHT "C"	NET WEIGHT "D"	TOTAL WEIGHT
SNP8HR-372	P272	6'-0"	23.17	207.63	1717.07
SNP8HR-384	P284	7'-0"	26.11	242.19	1751.63
SNP8HR-396	P296	8'-0"	30.18	276.84	1786.28
SNP8HR-3126	P2126	10'-6"	40.15	366.75	1876.19

TOLERANCE NOTES
 TOLERANCES ON DIMENSIONS, UNLESS OTHERWISE NOTED ARE:
 SAWED, SHEARED AND GAS CUT EDGES ($\pm 0.030"$)
 DRILLED AND GAS CUT HOLES ($\pm 0.030"$) - NO CONING OF HOLES
 LASER CUT EDGES AND HOLES ($\pm 0.010"$) - NO CONING OF HOLES
 BENDS ARE $\pm 1/2$ DEGREE
 ALL OTHER MACHINING ($\pm 0.030"$)
 ALL OTHER ASSEMBLY ($\pm 0.060"$)
 PROPRIETARY NOTE:
 THE DATA AND TECHNIQUES CONTAINED IN THIS DRAWING ARE PROPRIETARY INFORMATION OF VALMONT
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 INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM, WITHOUT THE
 EXPRESS WRITTEN PERMISSION OF VALMONT INDUSTRIES, INC.

DESCRIPTION	8' SNUB NOSE PLATFORM WITH HANDRAIL
CPD NO.	CEK 11/19/2014
CLASS	81 02
DRAWN BY	CUSTOMER
ENG. APPROVAL	BMC 11/21/2014
CHECKED BY	BMC 11/21/2014

SITE PRO
 A Valmont COMPANY

Locations:
 New York, NY
 Atlanta, GA
 Los Angeles, CA
 Phoenix, AZ
 Dallas, TX

Engineering Support Team:
 1-888-753-7446

PART NO. SEE ASSEMBLY NO.
 DWG. NO. SNP8HR-3XX

PAGE 1 OF 2

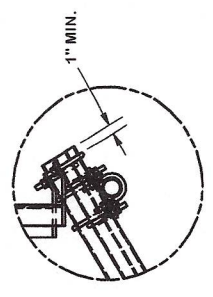
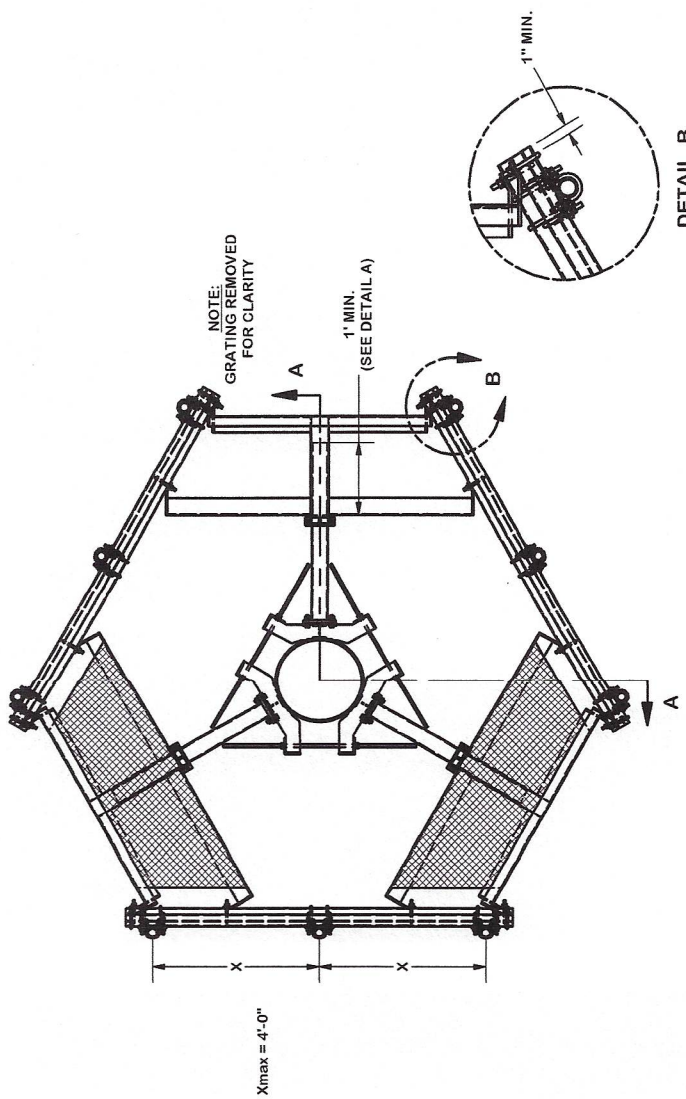
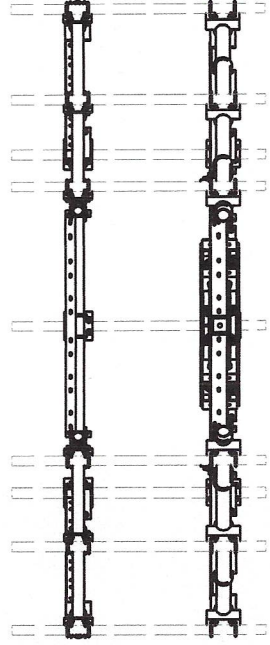
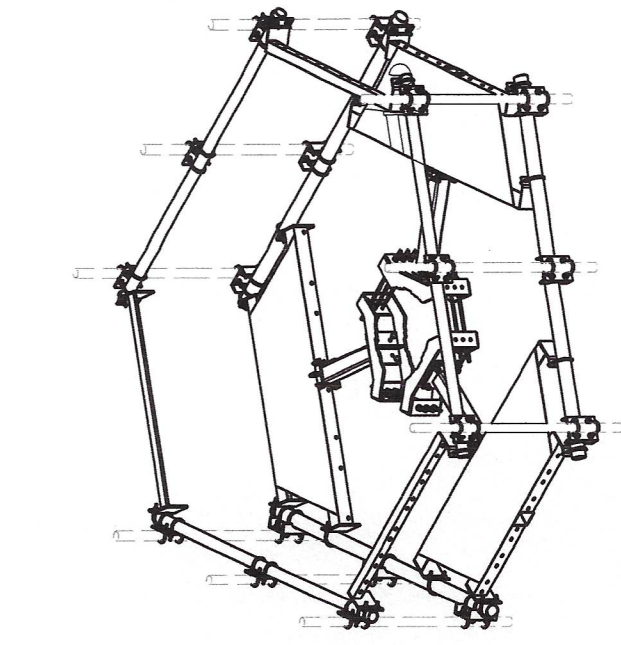
Locations:
New York, NY
Atlanta, GA
Los Angeles, CA
Phoenix, AZ
Salem, OR
Dallas, TX

Engineering
Support Team:
1-888-755-7446

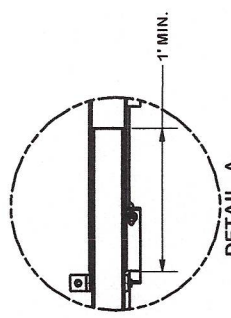
SITE PRO
A valmont COMPANY

PART NO. SEE ASSEMBLY NO.
DWG. NO. SNP8HR-3XX

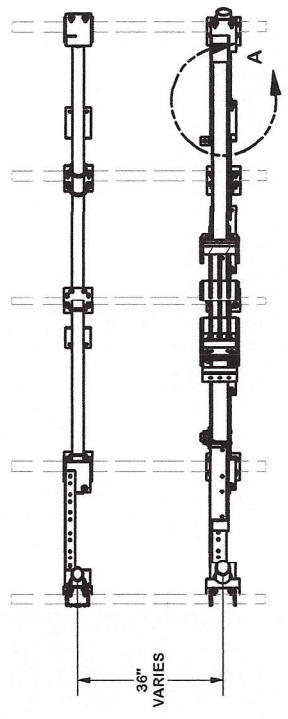
DESCRIPTION 8' SNUB NOSE PLATFORM WITH HANDRAIL		ENG. APPROVAL	CHECKED BY
OPD NO.	DRAWN BY	11/19/2014	BMC
CLASS	SUB	DRAWING USAGE	DATE
81	02	CUSTOMER	11/21/2014



DETAIL B



DETAIL A



SECTION A-A

TOLERANCE NOTES
TOLERANCES ON DIMENSIONS, UNLESS OTHERWISE NOTED ARE:
SAWED, SHEARED AND GAS CUT EDGES (± 0.030 ")
DRILLED AND GAS CUT HOLES (± 0.030 ") - NO CONING OF HOLES
LASER CUT EDGES AND HOLES (± 0.010 ") - NO CONING OF HOLES
BENDS ARE $\pm 1/2$ DEGREE
ALL OTHER MACHINING (± 0.030 ")
ALL OTHER ASSEMBLY (± 0.060 ")

PROPRIETARY AND TRADE INFORMATION:
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Exhibit F

Power Density/RF Emissions Report



Radio Frequency Emissions Analysis Report



Site ID: BOBDL00150A

780 Prospect Hill Road
Windsor, CT 06095

January 11, 2022

Fox Hill Telecom Project Number: 210851

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general population allowable limit:	11.51 %



January 11, 2022

Dish Wireless
5701 South Santa Fe Drive
Littleton, CO 80120

Emissions Analysis for Site: **BOBDL00150A**

Fox Hill Telecom, Inc (“Fox Hill”) was directed to analyze the proposed radio installation for Dish Wireless, LLC (Dish) facility located at **780 Prospect Hill Road, Windsor, CT**, for the purpose of determining whether the emissions from the Proposed Dish radio and 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 97-01 and ANSI/IEEE Std C95.1. The FCC regulates Maximum Permissible Exposure in units of microwatts per square centimeter ($\mu\text{W}/\text{cm}^2$). The number of $\mu\text{W}/\text{cm}^2$ calculated at each sample point is called the power density. The exposure limit for power density varies depending upon the frequencies being utilized. Wireless Carriers and Paging Services use different frequency bands each with different exposure limits, therefore it is necessary to report results and limits in terms of percent MPE rather than power density.

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

General population/uncontrolled exposure limits apply to situations in which the general 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.

Population exposure to radio frequencies is regulated and enforced in units of microwatts per square centimeter ($\mu\text{W}/\text{cm}^2$). The general population exposure limits for the 600 MHz & 700 MHz bands are approximately $400 \mu\text{W}/\text{cm}^2$ and $467 \mu\text{W}/\text{cm}^2$ respectively. The general population exposure limit for the 1900 MHz (PCS) and 2100 MHz (AWS / AWS-4) bands is $1000 \mu\text{W}/\text{cm}^2$. Because each carrier will be using different frequency bands, and each frequency band has different exposure limits, it is necessary to report percent of MPE rather than power density.



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

Additional details can be found in FCC OET 65.



CALCULATIONS

Calculations were performed for the proposed radio system installation for **Dish** on the subject site located at **780 Prospect Hill Road, Windsor, CT**, using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since **Dish** 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 manufactures supplied specifications, minus 10 dB for directional panel antennas, 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.

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. All power values expressed and analyzed are maximum power levels expected to be used on all radios.

All emissions values for additional carriers were taken from the Connecticut Siting Council (CSC) active MPE database. Values in this database are provided by the individual carriers themselves

For each sector the following channel counts, frequency bands and power levels were utilized as shown in *Table 1*:

Technology	Frequency Band	Channel Count	Transmit Power per Channel (W)
5G	n71 (600 MHz)	4	61.5
5G	n70 (AWS-4 / 1995-2020)	4	40
5G	n66 (AWS-4 / 2180-2200)	4	40

Table 1: Channel Data Table



The following antennas listed in *Table 2* were used in the modeling for transmission in the 600 MHz (n71) frequency band, and the 2100 MHz (AWS 4) frequency bands at 1995-2020 MHz (n70) and 2180-2200 MHz (n66). This is based on feedback from the carrier with regards to anticipated antenna selection. Maximum gain values for all antennas are listed in the Inventory and Power Data table below. The maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB for directional panel antennas, 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.

Sector	Antenna Number	Antenna Make / Model	Antenna Centerline (ft)
A	1	JMA MX08FRO665-21	115
B	1	JMA MX08FRO665-21	115
C	1	JMA MX08FRO665-21	115

Table 2: Antenna Data

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



RESULTS

Per the calculations completed for the proposed **Dish** configurations *Table 3* shows resulting emissions power levels and percentages of the FCC’s allowable general population limit.

Antenna ID	Antenna Make / Model	Frequency Bands	Antenna Gain (dBd)	Channel Count	Total TX Power (W)	ERP (W)	MPE %
Antenna A1	JMA MX08FRO665-21	n71 (600 MHz) / n70 (AWS-4 / 1995-2020) / n66 (AWS-4 / 2180-2200)	11.45 / 16.15 / 16.65	12	566	17,426.72	6.84
Sector A Composite MPE%							6.84
Antenna B1	JMA MX08FRO665-21	n71 (600 MHz) / n70 (AWS-4 / 1995-2020) / n66 (AWS-4 / 2180-2200)	11.45 / 16.15 / 16.65	12	566	17,426.72	6.84
Sector B Composite MPE%							6.84
Antenna C1	JMA MX08FRO665-21	n71 (600 MHz) / n70 (AWS-4 / 1995-2020) / n66 (AWS-4 / 2180-2200)	11.45 / 16.15 / 16.65	12	566	17,426.72	6.84
Sector C Composite MPE%							6.84

Table 3: Dish Emissions Levels



The Following table (*table 4*) shows all additional carriers on site and their MPE% as recorded in the CSC active MPE database for this facility along with the newly calculated maximum **Dish** MPE contributions per this report. FCC OET 65 specifies that for carriers utilizing directional antennas that the highest recorded sector value be used for composite site MPE values due to their greatly reduced emissions contributions in the directions of the adjacent sectors. For this site, all three sectors have the same configuration yielding the same results on all three sectors. *Table 5* below shows a summary for each **Dish** Sector as well as the composite MPE value for the site.

Site Composite MPE%	
Carrier	MPE%
Dish – Max Per Sector Value	6.84 %
T-Mobile	4.67 %
Site Total MPE %:	11.51 %

Table 4: All Carrier MPE Contributions

Dish Sector A Total:	6.84 %
Dish Sector B Total:	6.84 %
Dish Sector C Total:	6.84 %
Site Total:	11.51 %

Table 5: Site MPE Summary



FCC OET 65 specifies that for carriers utilizing directional antennas that the highest recorded sector value be used for composite site MPE values due to their greatly reduced emissions contributions in the directions of the adjacent sectors. *Table 6* below details a breakdown by frequency band and technology for the MPE power values for the maximum calculated **Dish** sector(s). For this site, all three sectors have the same configuration yielding the same results on all three sectors.

Dish _ Frequency Band / Technology Max Power Values (Per Sector)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density ($\mu\text{W}/\text{cm}^2$)	Frequency (MHz)	Allowable MPE ($\mu\text{W}/\text{cm}^2$)	Calculated % MPE
Dish n71 (600 MHz) 5G	4	858.77	115	10.39	n71 (600 MHz)	400	2.60%
Dish n70 (AWS-4 / 1995-2020) 5G	4	1,648.39	115	19.95	n70 (AWS-4 / 1995-2020)	1000	2.00%
Dish n66 (AWS-4 / 2180-2200) 5G	4	1,849.52	115	22.39	n66 (AWS-4 / 2180-2200)	1000	2.24%
						Total:	6.84%

Table 6: Dish Maximum Sector MPE Power Values



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 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 Sector	Power Density Value (%)
Sector A:	6.84 %
Sector B:	6.84 %
Sector C:	6.84 %
Dish Maximum Total (per sector):	6.84 %
Site Total:	11.51 %
Site Compliance Status:	COMPLIANT

The anticipated composite MPE value for this site assuming all carriers present is **11.51 %** 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.

Scott Heffernan
Principal RF Engineer
Fox Hill Telecom, Inc
Holden, MA 01520
(978)660-3998

Exhibit G

Letter of Authorization



January 31, 2022

Re: Dish Site#: BOBDL00150A / Tarpon Site ID: CT1209 Windsor
Site Address: 800 Prospect Hill Road, Windsor, CT
Application for CT Siting Council

To whom it may concern:

This letter authorizes Dish Wireless, LLC and its authorized agents from Northeast Site Solutions, LLC to file all necessary administrative approvals, zoning approvals and building permits for the purposes of installing and maintaining telecommunications equipment located at 800 Prospect Hill Road, Windsor, CT on behalf of Dish.


A handwritten signature in black ink, appearing to read "Brett Buggeln", is written over a horizontal line.

Print: Brett Buggeln

Title: COO

Exhibit H

Recipient Mailings



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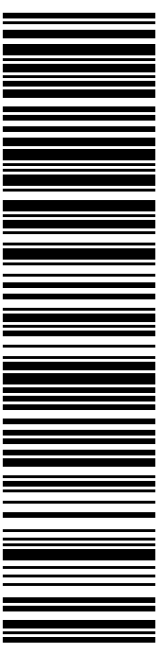
01/31/2022 Mailed from 01566

PRIORITY MAIL 2-DAY™

Expected Delivery Date: 02/03/22
 Ref#: DD-00150A
0006

SHIP TO: DONALD S TRINKS
 MAYOR OF WINDSOR
 275 BROAD ST
 WINDSOR CT 06095-2940

USPS TRACKING #



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Trans. #: 555438269	Priority Mail® Postage: \$8.95
Print Date: 01/31/2022	Total: \$8.95
Ship Date: 01/31/2022	
Expected Delivery Date: 02/03/2022	

From: DEBORAH CHASE
 NORTHEAST SITE SOLUTIONS
 420 MAIN ST
 STE 1
 STURBRIDGE MA 01566-1359

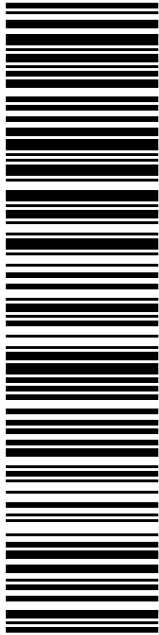
Ref#: DD-00150A

To: DONALD S TRINKS
 MAYOR OF WINDSOR
 275 BROAD ST
 WINDSOR CT 06095-2940

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TO: ERIC BARZ
WINDSOR-TOWN PLANNER
275 BROAD ST
WINDSOR CT 06095-2940

Expected Delivery Date: 02/03/22

Re#: DD-00150A
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Ship Date: 01/31/2022	
Expected Delivery Date: 02/03/2022	

From: DEBORAH CHASE
NORTHEAST SITE SOLUTIONS
420 MAIN ST
STE 1
STURBRIDGE MA 01566-1359


Re#: DD-00150A

To: ERIC BARZ
WINDSOR-TOWN PLANNER
275 BROAD ST
WINDSOR CT 06095-2940

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 THE FERRAINA COMPANY
 810 PROSPECT HILL RD
 WINDSOR CT 06095-1570

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Print Date: 01/31/2022	Total: \$8.95
Ship Date: 01/31/2022	
Expected Delivery Date: 02/03/2022	

From: DEBORAH CHASE
 NORTHEAST SITE SOLUTIONS
 420 MAIN ST
 STE 1
 STURBRIDGE MA 01566-1359

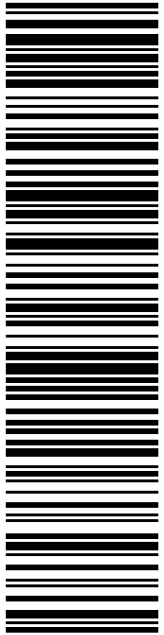
Ref#: DD-00150A

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 810 PROSPECT HILL RD
 WINDSOR CT 06095-1570

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8916 77TH TER E
UNIT 103
LAKEWOOD RCH FL 34202-6415

DEBORAH CHASE
NORTHEAST SITE SOLUTIONS
420 MAIN ST
STE 1
STURBRIDGE MA 01566-1359



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Trans. #: 555438269	Priority Mail® Postage: \$8.95
Print Date: 01/31/2022	Total: \$8.95
Ship Date: 01/31/2022	
Expected Delivery Date: 02/04/2022	

From: DEBORAH CHASE
NORTHEAST SITE SOLUTIONS
420 MAIN ST
STE 1
STURBRIDGE MA 01566-1359

Ref#: DD-00150A

To: TARPON TOWERS
8916 77TH TER E
UNIT 103
LAKEWOOD RCH FL 34202-6415

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Product	Qty	Unit Price	Price
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Prepaid Mail	1		\$0.00
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Weight: 0 lb 9.50 oz			
Acceptance Date:			
Mon 01/31/2022			
Tracking #:			
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Tracking #:			
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Mon 01/31/2022			
Tracking #:			
9405 5036 9930 0152 3976 37			

Prepaid Mail	1		\$0.00
Bradenton, FL 34202			
Weight: 0 lb 9.50 oz			
Acceptance Date:			
Mon 01/31/2022			
Tracking #:			