



PROJECT NAME: MIMIA00378A

Reviewed By: _____

Date: _____

Fee Paid: _____

Town Receipt No: _____

SUBMITTAL CHECKLIST

All submittals must include ten (10) paper sets (folded & sorted into complete packet sets) and an electronic copy (on cd or thumb drive) of the following:

- ☒ Completed **Development Application** (complete all fields, use N/A when not applicable).
 - ☒ Architectural & Aesthetic Review Request (pg. 11, all submittals)
 - ☐ Variance Request (pg. 13, if applicable)
 - ☒ Special Exception Request (pg. 14, if applicable)
- ☒ **Boundary Survey** (Dated to within 6 months of application submission).
- ☒ **Signed and Sealed Schematics** depicting building on site, setbacks, grading, drainage and elevations, as well as the relationship of the site to the neighboring sites (e.g. Site Plan, Drainage and Grading Plan, Roof Plan, Landscape Plan, Elevations).
- ☒ **Tabular Data** showing compliance with all lot coverage, floor area, building height, grade and landscaping requirements.

SITE PLAN CHECKLIST

Please be sure to include the following on the Site Plan:

- ☒ Depict and label 10' Town Strip (front of property) and 5' utility easement (rear of property), and all other applicable easements.
- ☒ Depict and label all setbacks and Code required setback lines (front, rear, side, pool, etc.).
- ☒ Provide a tabular data table reflecting data from the tables on pgs. 7-8 of this development application.
- ☒ For renovations and/or additions, please shade proposed addition area(s) to differentiate from existing.
- ☒ Include all a/c equipment, pool equipment and emergency generators and label as proposed or existing.
- ☒ Ensure that beam height and top of roof are dimensioned on all elevation drawings submitted.
- ☒ Provide a construction schedule for the proposed project (including calendar dates).

LANDSCAPE PLAN CHECKLIST

Please be sure to include the following on the Landscape Plan:

- ☒ Depict and label the 10' Town Strip (front of property) and 5' utility easement (rear of property).
- ☒ Include and label both existing (to remain) and proposed landscaping on the subject property.
- ☒ Provide a species legend/key including the height of all landscaping to be provided at installation.
- ☒ Ensure that the requirements for 10' Town Strip and front yard trees are met.
- ☒ For multi-story construction, ensure that the requirements for privacy screening are met.
- ☒ Ensure screening is provided for all ground mounted mechanical equipment (e.g. a/c compressors, pool equipment, emergency generators).

NOTE: Checklists are not comprehensive. They are provided solely to remind Applicants to include items commonly omitted from plans submitted to the Town.



DEVELOPMENT APPLICATION

TOWN OF PALM BEACH SHORES
247 EDWARDS LANE
PALM BEACH SHORES, FL 33404
(561) 844-3457

OWNER/APPLICANT: DISH Wireless, LLC

PROJECT ADDRESS: 125 S. Ocean Ave., Palm Beach Shores, FL 33404

APPLICATION NO.: _____ SUBMITTAL DATE: _____

TYPE OF APPROVAL(S) REQUESTED (Check box(es) ☒)

ADMINISTRATIVE APPEAL	N/A	SITE PLAN MODIFICATION (14-62)	N/A
ARCHITECTURAL AND AESTHETIC REVIEW (Pf. 14-86)	N/A	SITE PLAN REVIEW (14-62)	N/A
COMPREHENSIVE PLAN AMENDMENT (Pf. 17.3(B))	N/A	SPECIAL EXCEPTION (Pf. 15.8)	X
PLAT APPROVAL	N/A	VARIANCE (Pf. 15.4)	N/A
REZONING (Pf. 17.3(B))	N/A	ZONING TEXT AMENDMENT (Pf. 17.3(B))	N/A

	PROPERTY OWNER(S)	APPLICANT (If different than Owner(s))
NAME:	Mayan Towers Condominium I, Inc.	DISH Wireless, LLC
ADDRESS:	125 S. Ocean Ave., Palm Beach Shores, FL 33404	5906 Breckenridge Pkwy., Suite A, Tampa, FL 33610
PHONE:	(561) 844-4550	(980) 202-5553
EMAIL:	mayantowerssouth@4hassociationmanagement.com	bjones@tepgroup.net

	AGENT (If different than Owner(s))	CURRENT OCCUPANT (If different than Owner(s))
NAME:	N/A	N/A
ADDRESS:	N/A	N/A
PHONE:	N/A	N/A
EMAIL:	N/A	N/A

	PLANNER	DEVELOPER
NAME:	N/A	N/A
ADDRESS:	N/A	N/A
PHONE:	N/A	N/A
EMAIL:	N/A	N/A

	ARCHITECT	LANDSCAPE ARCHITECT
NAME:	N/A	N/A
ADDRESS:	N/A	N/A
PHONE:	N/A	N/A
EMAIL:	N/A	N/A

	SURVEYOR	ATTORNEY
NAME:	N/A	N/A
ADDRESS:	N/A	N/A
PHONE:	N/A	N/A
EMAIL:	N/A	N/A

	ENGINEER (USE ADD'L. SHEET FOR MULTIPLE ENGINEERS)	
NAME:	Tower Engineering Professionals	
ADDRESS:	1095 Windward Ridge Pkwy., Suite 140, Alpharetta, GA 30005	
PHONE:	(704) 369-1826	
EMAIL:	www.tepgroup.net	

OWNER ACKNOWLEDGMENT & CERTIFICATION

I (We) affirm and certify that I (We) understand and will comply with all provisions and regulations of the Town of Palm Beach Shores, Florida. I (We) understand that if this Application is approved by the Town, the aforementioned real property described herein will be considered, in every respect, to be a part of the Town of Palm Beach Shores and will be subjected to all applicable laws, regulations, taxes and police powers of the Town including the Comprehensive Plan and Zoning Ordinance. I (We) further certify that all statements and diagrams submitted herewith are true and accurate to the best of my (our) knowledge and belief. Further, I (We) understand that this Application and attachments become part of the Official Records of the Town of Palm Beach Shores, Florida and are not returnable. I (We) acknowledge that no permit will be issued before all fees associated with Application are paid.

1. Owner acknowledges and understands that the fee for site plan review, architectural/aesthetic review, variance, special exception, rezoning, etc. **may not cover all review costs**. A final statement of any outstanding costs (covering advertising costs, legal, architectural and other consultant costs) will be sent to the applicant upon completion of the review process. Owner accepts financial responsibility for all costs incurred as a result of this Application.
2. A construction schedule is required of all developers during the development process. The Planning and Zoning Board must approve your proposed construction schedule.
3. The Town requires payment of impact fees for floor area added during the development, re-development or renovation of a property. These impact fees will be used to pay for capital improvements relative to Fire Protection, Police Protection, Parks & Recreation and Public Buildings. Impact fees must be paid to the Town before a Certificate of Occupancy will be issued.
4. Roll-off dumpsters for construction/demolition debris and solid waste must be rented through the Town's contracted solid waste hauler, Waste Management.
5. Final as-built plans must be submitted to the Town in digital form, preferably in PDF format.

By signing below, I acknowledge that I have read and understand the five (5) items listed above.

Kathleen T McGahran
FOR Mayan Towers Condominium #1
Signature of Owner

9/22/2022
Date

KATHLEEN T MCGAHRAN FOR
Printed Name of Owner
MAYAN TOWERS CONDOMINIUM 1

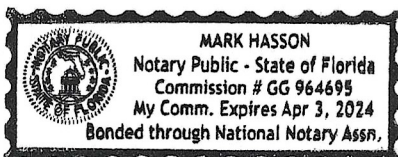
STATE OF FLORIDA PALM BEACH COUNTY:

The foregoing instrument was acknowledged before me by means of ☒ physical presence or ☐ online notarization this 22 day of September 2022,

by Kathleen T. McGahran who is personally known to me or has produced _____ (type of identification) as identification.

Mark Hasson
(Name - type, stamp or print clearly)

[Signature]
(Signature)



NOTARY'S SEAL

AUTHORIZATION OF AGENT & ACKNOWLEDGEMENT OF FINANCIAL RESPONSIBILITY

Consent to an agent is required from the property owner(s) and contract purchaser, if applicable, if the property owner(s) or contract purchaser does not intend to attend all meetings and public hearings and submit it person all material pertaining to the Application. Consent to a firm shall be deemed consent for the entire firm, unless otherwise specified.

This form shall serve as consent for the agent identified below to prepare or have prepared all documents for the Application affecting property I (We) have an ownership interest in.

I (We) hereby designate and authorize the below-signed person to act as my (our) agent in regard to this Application and accept financial responsibility for any costs incurred by the agent as a result of this Application. Further, I (We) acknowledge that no permit will be issued before all fees associated with Application are paid.

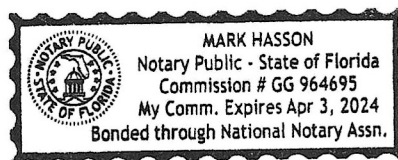
KATHLEEN T. McBahian
For MAYAN Towers Condominium 1 9/23/2022
Signature of Owner or Trustee Date

STATE OF FLORIDA PALM BEACH COUNTY:

The foregoing instrument was acknowledged before me by means of ☒ physical presence or ☐ online notarization this 23 day of September 2022,
by Kathleen T. McBahian who is personally known to me or has produced _____ (type of identification) as identification.

Mark Hasson
(Name - type, stamp or print clearly)

[Signature]
(Signature)



NOTARY'S SEAL

Agent Information:

Printed Name of Agent

Name of Firm

Signature of Agent

Date

PROCEDURES AND TIMELINES

All development applications required to be submitted to the Planning and Zoning Board for review (Site Plan Review, Site Plan Modification, Architectural and Aesthetic Review, Special Exceptions and Variances) will be subject to the following procedures:

1. Development Review Committee (“DRC”) review is regularly scheduled for the first Wednesday of each month at 2:00 pm. In order to be placed on the DRC agenda, a complete application must be submitted to the Town Clerk by the close of business on Monday of the week prior to the regularly scheduled DRC meeting. **Incomplete applications and late submittals will not be placed on a DRC agenda.**
2. If, as a result of the initial DRC review, it is determined by the DRC that a subsequent DRC meeting is necessary, the complete revised application must be submitted to the Town Clerk by the close of business on Monday of the week prior to the regularly scheduled DRC meeting. **Applications that fail to include all revisions required by the DRC, or that are submitted late will not be placed on a DRC agenda until they have been corrected and are timely.**
3. If, as a result of the initial DRC review, it is determined by the DRC that the project can proceed to the Planning and Zoning Board, a complete Planning and Zoning Board application must be submitted to the Town Clerk including all revisions noted by the DRC. A sufficiency review will be performed by the Town to confirm that all comments provided by the DRC have been addressed and a complete revised application submitted. Once all DRC comments have been adequately addressed and a complete revised application submitted, the submittal will be placed on the agenda for the next available Planning and Zoning Board, subject to legal advertising requirements. Planning and Zoning Board review is regularly scheduled for the fourth Wednesday of each month. **Applications that fail to include all revisions required by the DRC or that are incomplete will not be placed on a Planning and Zoning Board agenda.**

APPLICATION FEE INFORMATION

Administrative Appeal	\$250.00
Site Plan Review	\$350.00
Site Plan Modification Review	\$350.00
Variance Request	\$350.00
Special Exception Request	\$250.00
Telecom Site Plan Review or Modification	\$500.00
Plat Approval Request	\$600.00
Comprehensive Plan Amendment	\$750.00
Zoning Text Amendment / Rezoning	\$750.00
Sufficiency Review	Zoning Official (rate per hour)

NUMBER OF COPIES REQUIRED

Development Review Committee	Ten (10) paper sets (folded & sorted into complete packet sets), including one (1) sealed original with original signatures and nine (9) copies, three (3) of which are sealed by a licensed engineer, architect and/or surveyor, <u>and</u> an electronic copy of all documents (on cd or thumb drive).
Planning and Zoning Board	Ten (10) paper sets (folded & sorted into complete packet sets), including one (1) sealed original with original signatures and nine (9) copies, three (3) of which are sealed by a licensed engineer, architect and/or surveyor, <u>and</u> an electronic copy of all documents (on cd or thumb drive).
Local Planning Agency	Ten (10) copies (folded & sorted into complete packet sets).
Town Commission	Ten (10) paper sets (folded & sorted into complete packet sets), including one (1) sealed original with original signatures and nine (9) copies, three (3) of which are sealed by a licensed engineer, architect and/or surveyor (as applicable), <u>and</u> an electronic copy of all documents (on cd or thumb drive).

Applicant acknowledges and understands that the fee for Site Plan Review, Architectural/aesthetic Review, Variance, Special Exception, Rezoning, etc. *may not cover all review costs*. A final statement of any outstanding costs (covering advertising costs, legal, architectural, and other consultants) will be sent to the Applicant upon completion of the review process.

Tabular data showing compliance with all lot coverage, floor area, building height, grade and landscaping requirements must be provided on all submitted plans (Town Code § 14-62).

PROJECT NAME: MIMIA00378A

PROJECT ADDRESS: 125 S. Ocean Ave., Palm Beach Shores, FL 33404

PROJECT LEGAL DESCRIPTION: _____

***** All boxes must be completed, use N/A where appropriate *****

GENERAL DATA	CODE REQUIREMENT	EXISTING	PROPOSED
COMPREHENSIVE PLAN DESIGNATION: (SF-5, MF-21, MF-30, MF-42, P, ROS)	None	N/A	N/A
LAND USE: (Residential, Commercial, Recreational, Marina, Public, etc.)	None	Residential	Residential
ZONING DISTRICT: (A, B, C, D, P, ROS, designated at Pf. 3.1, Zoning Ordinance)	None	D	D
FLOOD ZONE CATEGORY:	None		
LOT COVERAGE, LANDSCAPING & PARKING	CODE REQUIREMENT	EXISTING	PROPOSED
TOTAL LOT SIZE: (sq. ft.)	None		
TOTAL COVERAGE OF A LOT BY BUILDINGS: (Pf. 5.4, 6.4, 7.5 or 8.5, Zoning Ordinance)	N/A	N/A	N/A
TOTAL LANDSCAPE COVERAGE: (Pf. 5.4.3, Zoning Ordinance)	N/A	N/A	N/A
OFF-STREET PARKING: (Pf. 5.13, 6.12, 7.13 or 8.14, Zoning Ordinance)	N/A	N/A	N/A
SETBACKS	CODE REQUIREMENT	EXISTING	PROPOSED
FRONT YARD: (Pf. 5.5, 6.6, 7.7 or 8.7, Zoning Ordinance)	N/A	N/A	N/A
REAR YARD: (Pf. 5.6, 6.7, 7.9 or 8.9, Zoning Ordinance)	N/A	N/A	N/A
SIDE YARD: (Pf. 5.7, 6.8, 7.8 or 8.8, Zoning Ordinance)	N/A	N/A	N/A

FLOOR AREA	CODE REQUIREMENT	EXISTING	PROPOSED
FIRST FLOOR AREA (sq. ft.):	None	N/A	N/A
SECOND FLOOR AREA (sq. ft.): (Pf. 5.4.2, Zoning Ordinance)	N/A	N/A	N/A
TOTAL FLOOR AREA (sq. ft.): (Pf.2.23, Zoning Ordinance)	None	N/A	N/A
FLOOR AREA RATIO: (Pf. 5.4.2, Zoning Ordinance)	N/A	N/A	N/A
DWELLING UNIT DENSITY: (Pf. 6.5, 7.6 or 8.6, Zoning Ordinance)	N/A	N/A	N/A
IMPERVIOUS AREA	NET INCREASE	EXISTING	PROPOSED
BUILDING FIRST FLOOR AREA (sq. ft.):	N/A	N/A	N/A
OTHER IMPERVIOUS AREA (sq. ft.): (Decks, Patios, Walkways, Driveways, Pool Deck & Pool Surface Areas)	N/A	N/A	N/A
TOTAL IMPERVIOUS AREA (sq. ft.):	N/A	N/A	N/A
ELEVATIONS	CODE REQUIREMENT	EXISTING	PROPOSED
GRADE ELEVATION (NAVD): (Pf. 4.6, Zoning Code)	N/A	N/A	N/A
ESTABLISHED 1 ST FLOOR ELEVATION (NAVD): (Pf. 4.6, Zoning Code)	N/A	N/A	N/A
MEAN CROWN OF ROAD ELEVATION (NAVD):	None	N/A	N/A
BUILDING HEIGHT	CODE REQUIREMENT	EXISTING	PROPOSED
TOTAL BUILDING HEIGHT (NAVD): (Pf. 5.2, 6.2, 7.3 or 8.3, Zoning Ordinance)	N/A	79'5" - Building height	79'5" Building Height and proposed new equipment will be @ 91'
TOP OF BEAM HEIGHT (NAVD): (Pf. 5.2, 6.2, 7.3 or 8.3, Zoning Ordinance)	N/A	N/A	N/A
ROOF PITCH: (Pf. 5.2, 6.2 or 7.3, Zoning Ordinance)	N/A	N/A	N/A
FLAT ROOF PERCENTAGE: (Pf. 5.2, Zoning Ordinance)	N/A	N/A	N/A

JUSTIFICATION STATEMENT

Provide a summary of the proposed project, describing in detail the construction, phasing and proposed development to occur as part of this application (attach additional sheets if needed):

Addition of antennas, radios, and ancillary equipment to be mounted on the existing rooftop.

Note: Construction Schedule is due as part of site plan review and before building permit issuance. (Town Code §14-63). A signed and notarized contract (signed by owner) must be provided before building permit issuance. (Town Code §14-108).

Provide an estimate of construction costs:

\$49,000.00

Describe the existing improvements located on the subject property (attach additional sheets if needed):

There is an existing wireless telecommunication facility on the rooftop. Proposing adding additional antennas, radios and ancillary

equipment for DISH Wireless.

Provide a project history for the subject property, including any prior development approvals filed within the last year in connection with the subject property. Please include the date of previous site plan approval by the Planning and Zoning Board for this property (attach additional sheets if needed):

N/A

Provide the justification, special reasons, or basis for the approval of this application. Explain why this application is consistent with good planning and zoning practice, will not be contrary to the Town's Comprehensive Development Plan, and will not be detrimental to the promotion of public appearance, comfort, convenience, general welfare, good order, health, morals, prosperity, and safety of the Town. Additionally, all standards set forth in the Town Code of Ordinances for Special Exceptions, Variances, Administrative Appeals, etc. must be addressed. (attach additional sheets if needed):

The proposed wireless telecommunication facility will be designed to be architecturally compatible with the existing structure.

Provide any other pertinent information related to the subject property to support the proposed request.

N/A

DRAINAGE REQUIREMENTS

(For projects proposing additional on-site impervious area)

For proposed renovations/modifications to existing projects that result in LESS THAN a 50% increase in total site imperviousness, retain 1" of stormwater volume from the total additional impervious area.

For proposed new construction, or renovations/modifications to existing projects that result in a GREATER THAN a 50% increase in total site imperviousness, retain 1" of stormwater volume over the entire site.

Submit a Survey with topographic elevations and existing improvements.

A Drainage and Grading Plan and drainage calculations are required to be submitted with the application package for new construction projects and substantial modifications to existing projects. The Drainage Plan must show the following:

- a. Existing and proposed elevations.
- b. Location of sodded swales, sodded depressed retention areas, underground exfiltration trench and/or other proposed stormwater treatment/retention methods.
- c. Underground piping and inlets and other drainage system improvements proposed.
- d. Drainage calculations showing the retention of the volume of 1" of stormwater from addition impervious areas (or overall site).
- e. Show drainage improvements and underground piping, including water and sewer services, on the Landscape Plans to show no conflicts exist.
- f. Include note that no runoff may be directed to adjacent properties and all storm flows and runoff must be retained on-site prior to discharge into the adjacent roadway right-of-way following retention of required stormwater volume.
- g. Provide engineering details of gutter and downspout dry wells, if proposed.
- h. Provide engineering detail of exfiltration trench, if proposed.
- i. Provide engineering detail of sodded swales, if proposed.
- j. Provide engineering detail of depressed dry retention areas, if proposed.
- k. Provide Geotechnical Report or engineering assumptions/justification for coefficient of permeability (K Factor) for exfiltration trench design, if proposed.
- l. Engineering details/cross sections at property lines demonstrating no runoff will flow to adjacent properties may be required.

Project Engineer or Architect shall be responsible for insuring the drainage improvements are completed in substantial accordance with the approved plan.

Prior to C.O., Project Engineer or Architect to provide final signed and sealed certification that the drainage improvements and grading have been completed in substantial accordance with the approved plan.

Upon receipt of final Certification from Project Engineer or Architect, Town Engineer to visit site and ensure conformance of Town requirements prior to issuance of final C.O.

REQUEST FOR ARCHITECTURAL AND AESTHETIC REVIEW

Please be advised that pursuant to Sec. 14-86 and 14-87 of the Town Code of Ordinances, the Town Planning and Zoning Board uses the following criteria in order to complete its Architectural and Aesthetic Review. Each criteria must be addressed by the applicant prior to the application being processed.

1. Relationship of building to site: (Explain transition from streetscape; placement of parking and service areas; and compatibility of building height and scale with site):

The proposed project consists of adding antennas and equipment to an existing structure rooftop with existing wireless telecommunication facility. The project will have no impact on the existing ground infrastructure of the property.

2. Relationship of building and site to adjoining area(s): (Explain how structures and landscaping are consistent with established neighborhood character and will enhance the surrounding area. Include description of architectural style, as well as textures, materials and colors to be utilized):

The proposed project consists of adding antennas and equipment to an existing structure rooftop with existing wireless telecommunication facility. The project will paint all equipment to match the existing aesthetic of the building.

3. Landscape and site treatment: (Explain how landscaping, exterior lighting and other site elements will be used to enhance architectural features, buffer the mass of buildings as appropriate, and enhance the privacy of the owner and neighbors. Describe the use of native species and xeriscaping as appropriate.):

The proposed project consists of adding antennas and equipment to an existing telecommunications facility. The project will have no impact on the existing ground infrastructure or landscaping on the property.

4. Building design: (Explain proposed building design and style, and how components such as roofs, windows, doors, eaves and parapets are balanced in proportion to each other; address harmoniousness of colors, visual interest and compatibility):

The proposed project consists of adding antennas and equipment to an existing structure rooftop with existing wireless telecommunication facility. The project will paint all equipment to match the existing aesthetic of the building.

Please provide all documentation and/or samples necessary to address all architectural review criteria as applicable. Attach additional pages as necessary.

N/A

REQUEST FOR SITE PLAN MODIFICATION

1. Previously approved (Original) site plan information:

a. Original Project Name: N/A

b. Original Site Plan Application No.: N/A

c. Original Site Plan Approval Date: N/A

d. List of all other relevant information on file with original application: N/A

2. Requested Modification(s): N/A

Please provide all documentation necessary to describe the proposed modification and to explain the reason(s) for the proposed modification(s), including a survey, if applicable. Attach additional pages as necessary.

REQUEST FOR VARIANCE

The Applicant is requesting a variance from the Town Code Section(s)_____to permit the following:

Please be advised that a variance from the terms of the Zoning Code shall not be recommended by the Planning and Zoning Board, nor granted by the Town Commission, unless the Applicant is able to demonstrate the following:

1. Explain the special conditions and circumstances which exist that are peculiar to the land, structure, or building involved and which are not applicable to other lands, structures, or building in the same zoning district:

2. Explain how the special conditions and circumstances that exist do not result from the actions of the Applicant:

3. Explain how the literal interpretation of the provisions of the Zoning Ordinance would deprive the applicant of rights commonly enjoyed by other properties in the same zoning district under the terms of the Zoning Code and would work unnecessary and undue hardship on the Applicant:

4. Explain how the variance requested is the minimum variance that will make possible a reasonable use of the land, building or structure:

5. Explain how the granting of the requested variance will not confer on the Applicant any special privilege that is denied by the Zoning Code to other lands, structures, or buildings in the same zoning district:

6. Explain how the grant of the requested variance will be in harmony with the general intent and purpose of the Zoning Code and will not be injurious to the neighborhood or otherwise detrimental to the public welfare:

The burden of meeting the standards as set forth above is upon the Applicant. Please provide all documentation necessary to prove your case, including a survey, if applicable. Attach additional pages as necessary.

REQUEST FOR SPECIAL EXCEPTION

The Applicant is requesting a special exception pursuant to Town Code Section(s) Pf.8.2 (3) to permit the following:

Installation of antennas and radios on an existing rooftop telecommunication site.

A Special Exception shall not be recommended by the Town Planning and Zoning Board, nor granted by the Town Commission, unless the Applicant is able to demonstrate the following:

1. Explain how all structures will be separated from adjacent and nearby uses by appropriate screening devices:

The project will paint all equipment to match the existing aesthetic of the building.

2. Explain whether or not excessive vehicular traffic will be generated on surrounding residential streets:

The proposed project consists of adding antennas and equipment to an existing structure rooftop with existing rooftop telecommunication facility. The project will not create excessive vehicular traffic on surrounding residential streets.

3. Explain whether or not a vehicular parking or traffic problem is created:

The proposed project consists of adding antennas and equipment to an existing structure rooftop with existing rooftop telecommunication facility. The project will not create a vehicular or traffic problem.

4. Explain where on the site appropriate drives, walkways and buffers will be installed:

N/A

5. Explain how the proposed use will make a substantial contribution to the neighborhood environment and will not infringe on the rights of properties in the vicinity:

The proposed project consists of adding antennas and equipment to an existing structure rooftop with existing rooftop telecommunication facility. The project will only impact the rooftop of the subject property.

6. Explain how the proposed use will not endanger, restrict or impair public safety:

The proposed project consists of adding antennas and equipment to an existing structure rooftop with existing rooftop telecommunication facility. The project will only impact the rooftop of the subject property.

The initial burden of meeting the standards as set forth above is upon the Applicant. Please provide all documentation necessary to prove your case, including a survey, if applicable. Attach additional pages as necessary.



dish wireless™

RF Justification: MIMIA00378A

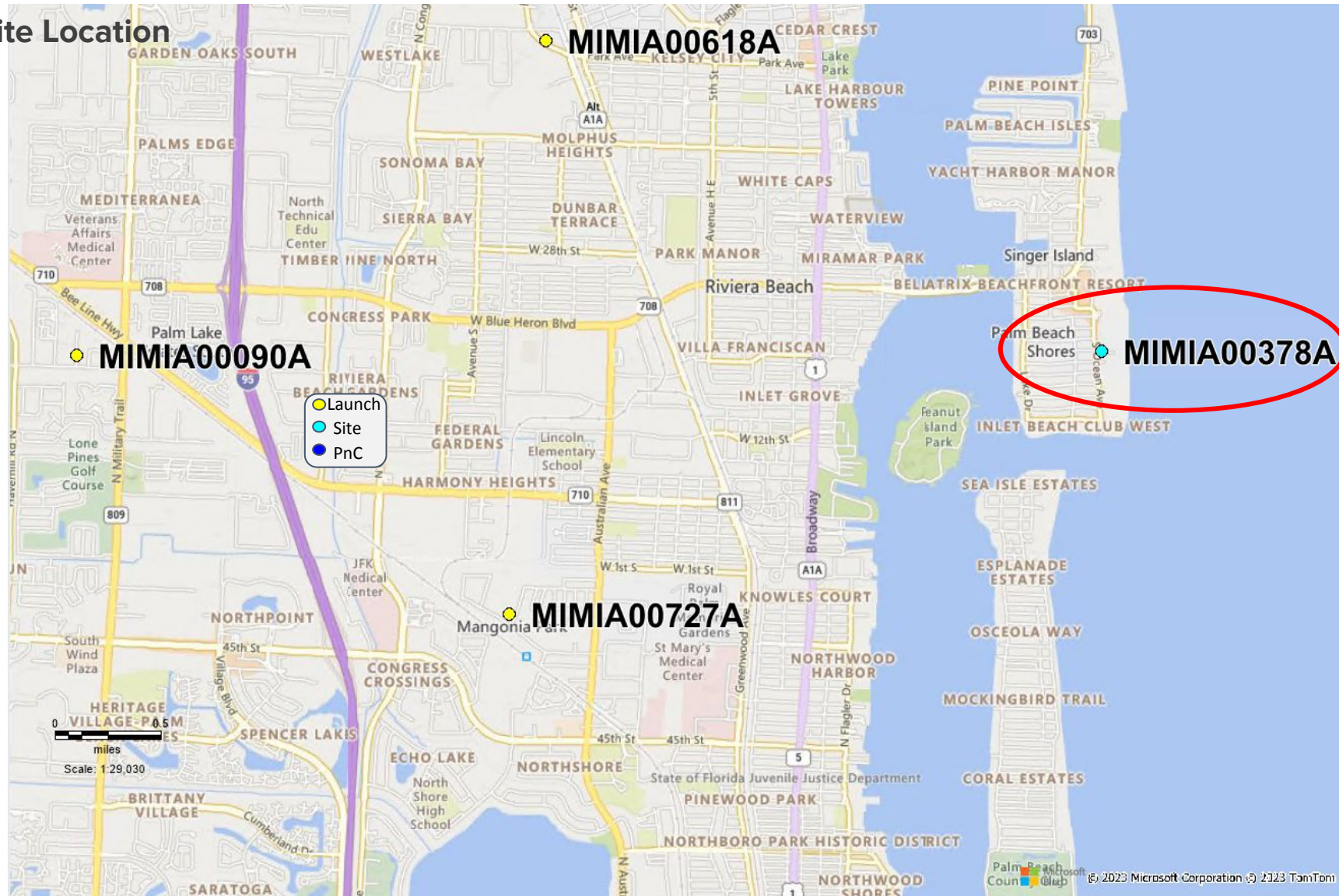
04/18/23

Palm Beach Shores, FL



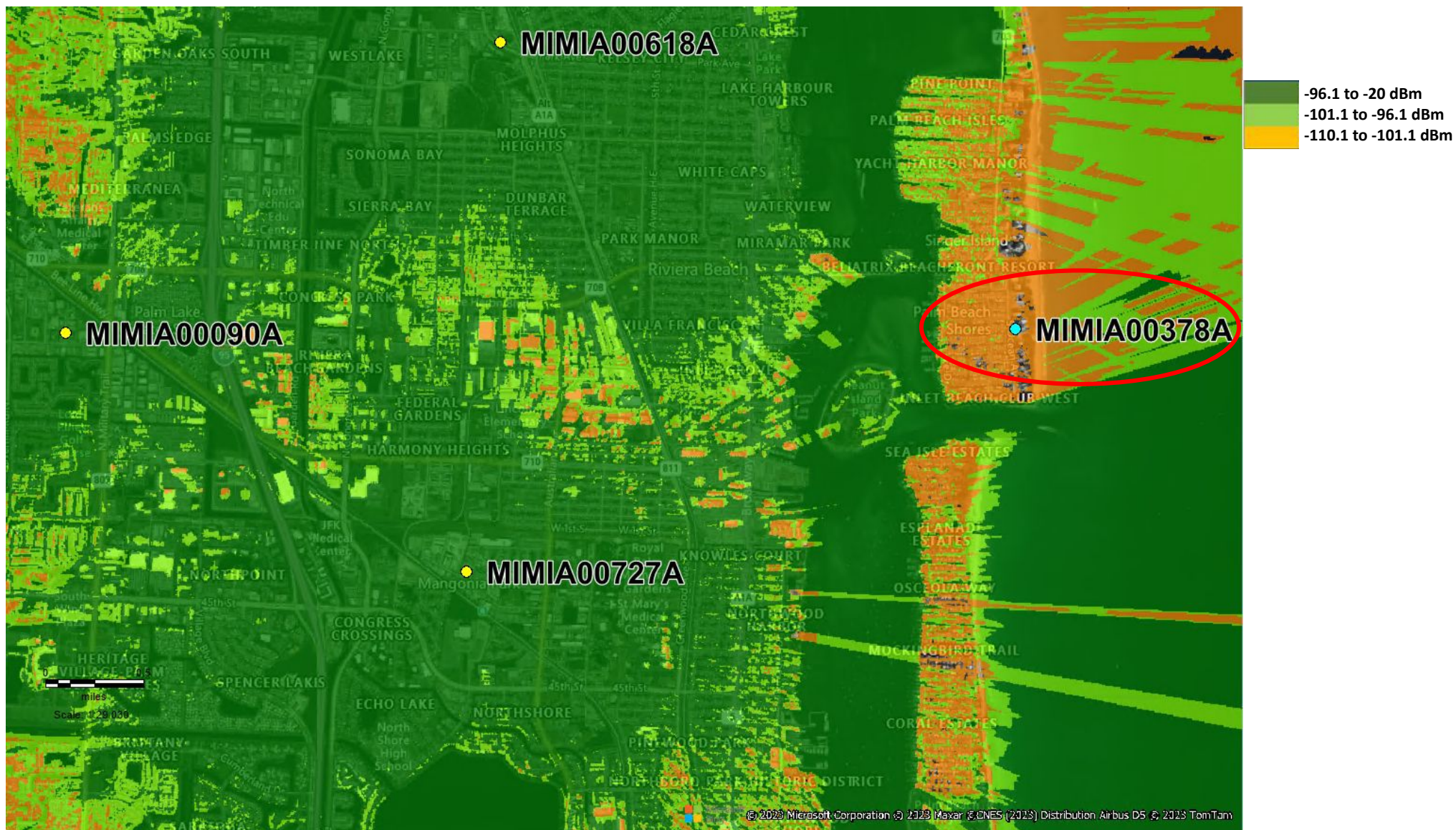
MIMIA00378A - Site location

Site Location



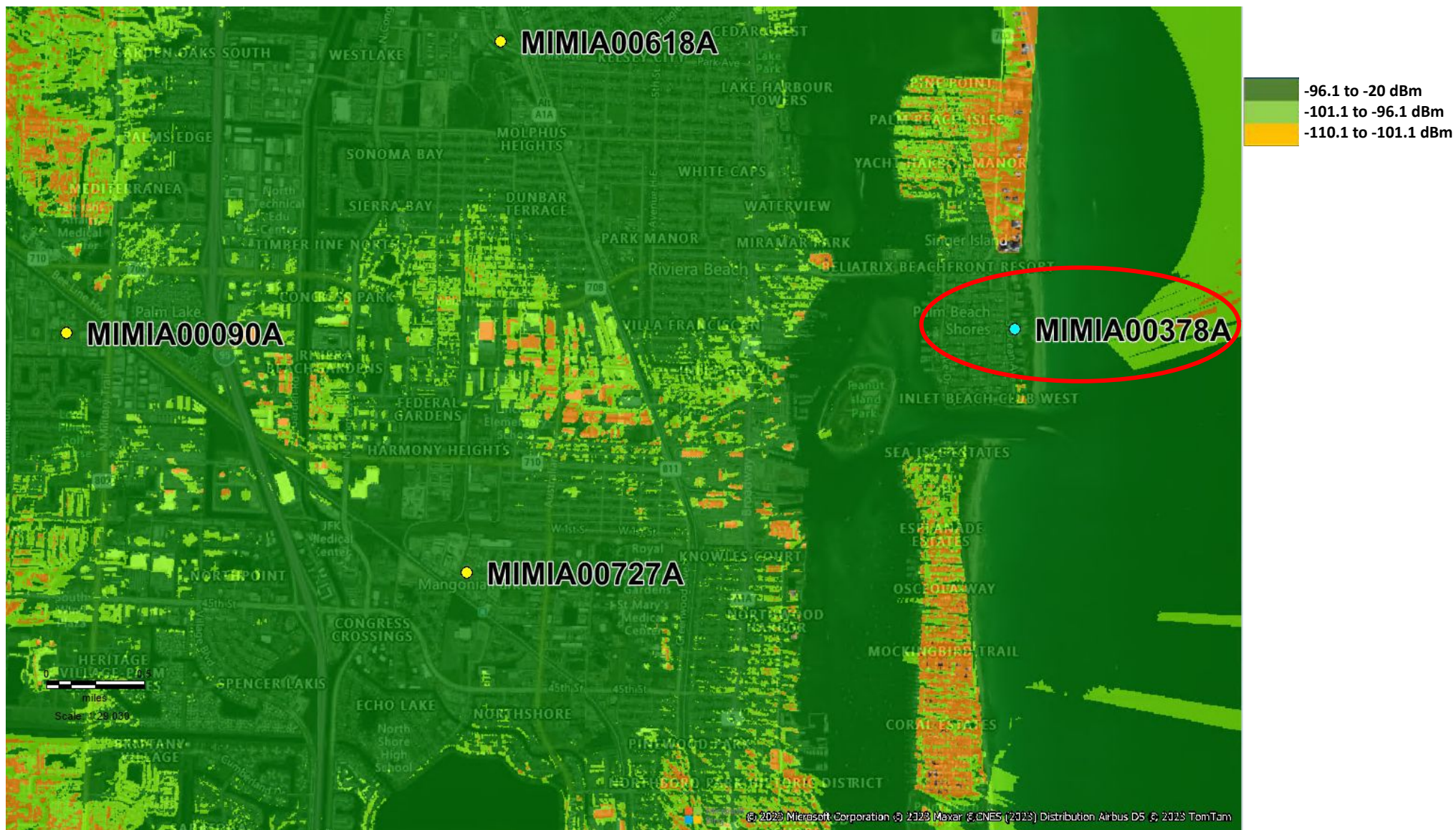


Area coverage without requested site





Area coverage with requested site



Thank You





DISH Wireless L.L.C. SITE ID:

MIMIA00378A

DISH Wireless L.L.C. SITE ADDRESS:

125 S OCEAN AVE
PALM BEACH SHORES, FL 33404

FLORIDA 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	2020 FLORIDA BUILDING CODE 6TH EDITION/2018 IBC
MECHANICAL	2020 FLORIDA BUILDING CODE 6TH EDITION/2018 IMC
ELECTRICAL	2020 FLORIDA BUILDING CODE 6TH EDITION/2017 NEC

SHEET INDEX

SHEET NO.	SHEET TITLE
T-1	TITLE SHEET
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A-3	ANTENNA PLAN, ELEVATION AND SCHEDULE
A-4	NORTH AND WEST ELEVATIONS
A-5	EQUIPMENT AREA DETAILS
A-6	EQUIPMENT DETAILS
A-7	EQUIPMENT DETAILS
E-1	ELECTRICAL/FIBER ROUTE PLAN AND NOTES
E-1A	ELECTRICAL/FIBER ROUTE PLAN AND NOTES
E-2	ELECTRICAL DETAILS
E-3	ELECTRICAL ONE-LINE, FAULT CALCS & PANEL SCHEDULE
G-1	GROUNDING PLANS AND NOTES
G-2	GROUNDING DETAILS
G-3	GROUNDING DETAILS
RF-1	RF CABLE COLOR CODE
GN-1	LEGEND AND ABBREVIATIONS
GN-2	RF SIGNAGE
GN-3	GENERAL NOTES
GN-4	GENERAL NOTES
GN-5	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:

- SECTOR SCOPE OF WORK:
- INSTALL (3) PROPOSED PANEL ANTENNAS (1 PER SECTOR)
 - INSTALL (6) PROPOSED ANTENNA MOUNTS (2 PER SECTOR, 6 TOTAL)
 - INSTALL PROPOSED JUMPERS
 - INSTALL (6) PROPOSED RRUs (2 PER SECTOR, 6 TOTAL)
 - INSTALL (3) PROPOSED OVER VOLTAGE PROTECTION DEVICE (OVP) (1 PER SECTOR, 3 TOTAL)
 - INSTALL (3) PROPOSED POWER CABLE
 - INSTALL (3) PROPOSED FIBER TRUNKS

- ROOFTOP SCOPE OF WORK:
- INSTALL (1) PROPOSED CUSTOM METAL ANTENNA MOUNT
 - INSTALL (1) PROPOSED PENETRATING CABLE SUPPORTS
 - INSTALL (1) PROPOSED BBU IN CABINET
 - INSTALL (1) PROPOSED EQUIPMENT CABINET
 - INSTALL (1) PROPOSED POWER CONDUIT
 - INSTALL (1) PROPOSED TELCO CONDUIT
 - INSTALL (1) PROPOSED NEMA 3 TELCO-FIBER BOX
 - INSTALL (1) PROPOSED GPS UNIT
 - INSTALL (1) CAM-LOCK
 - INSTALL (1) ATS

SITE PHOTO



UNDERGROUND SERVICE ALERT - SUNSHINE 811
UTILITY NOTIFICATION CENTER OF FLORIDA
(800) 432-4770
WWW.SUNSHINE811.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: MAYAN TOWERS CONDOMINIUMS
ADDRESS: 125 S OCEAN AVE
PALM BEACH SHORES, FL 33404

TOWER TYPE: ROOFTOP

TOWER CO SITE ID: N/A

TOWER APP NUMBER: N/A

COUNTY: PALM BEACH

LATITUDE: 26° 46' 45.01" N
26.779169 N

LONGITUDE: 80° 01' 59.21" W
80.033114 W

ZONING JURISDICTION: CITY OF PALM BEACH

ZONING DISTRICT: UNKNOWN

PARCEL NUMBER: 5443422708000

OCCUPANCY GROUP: U

CONSTRUCTION TYPE: V-B

POWER COMPANY: FPL

TELEPHONE COMPANY: UNKNOWN

PROJECT DIRECTORY

APPLICANT: DISH Wireless L.L.C.
5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

TOWER OWNER: PRIVATE OWNER

SITE DESIGNER: TOWER ENGINEERING PROFESSIONALS
326 TRYON RD
RALEIGH, NC 27603
(919) 661-6351

SITE ACQUISITION: JESSICA ROSS
JESSICA.ROSS@DISH.COM

CONSTRUCTION MANAGER: JOSHUA VEGA
JOSHUA.VEGA@DISH.COM

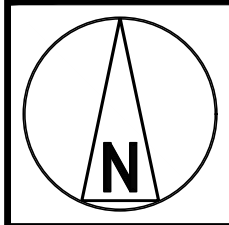
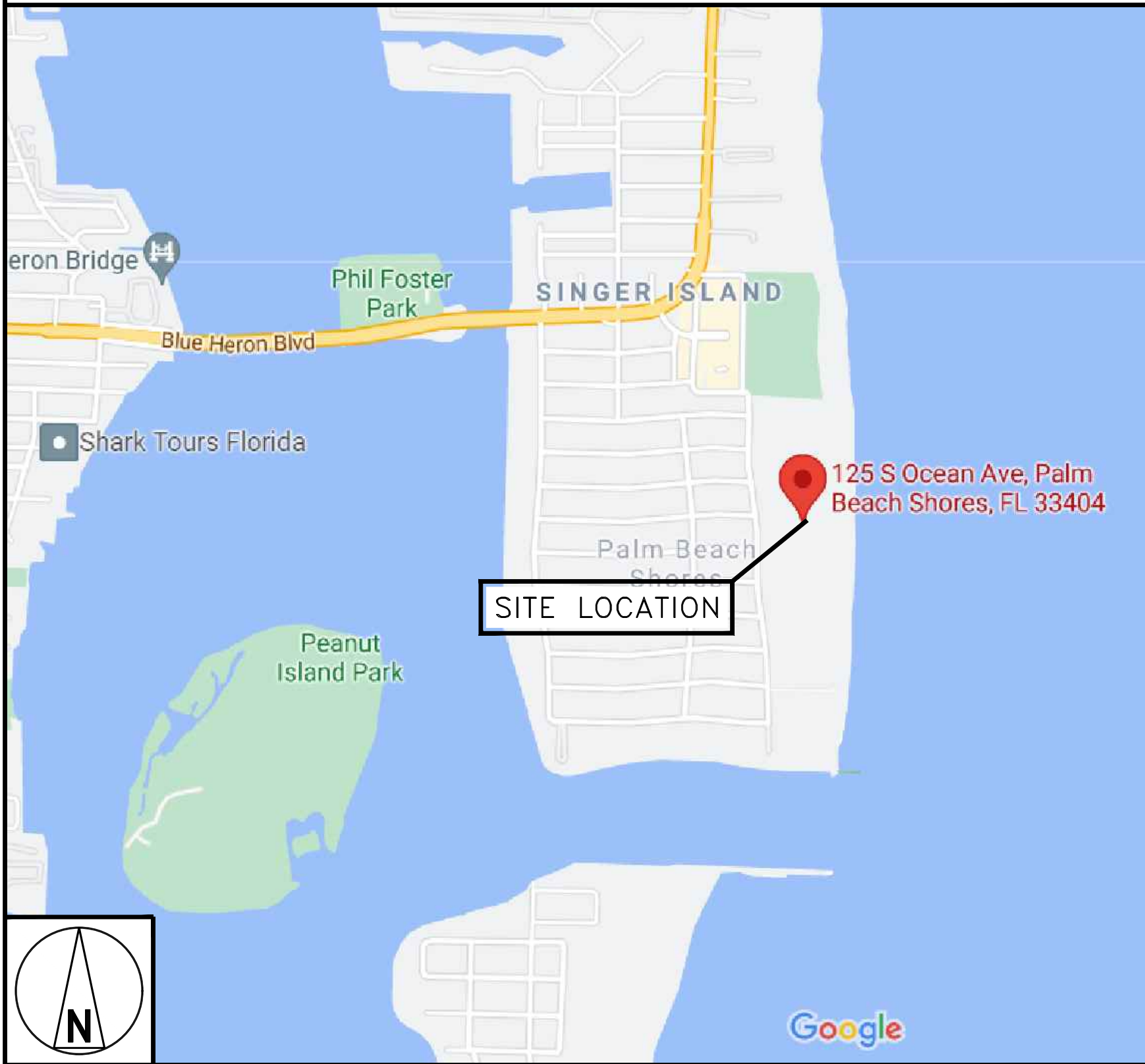
RF ENGINEER: GUILLERMO AROCHA
RODRIGUEZ

DIRECTIONS

DIRECTIONS FROM PALM BEACH INTERNATIONAL AIRPORT:

HEAD WEST ON JAMES L TURNAGE BLVD. KEEP LEFT TO STAY ON JAMES L TURNAGE BLVD. TAKE THE RAMP ONTO I-95 N. MERGE ONTO I-95 N. IN 6.2 MI USE THE RIGHT LANE TO TAKE EXIT 76 FOR FL-708/BLUE HERON BLVD. KEEP RIGHT AT THE FORK, FOLLOW SIGNS FOR RIVIERA BCH/PORT OF PALM BCH/PALM BCH SHORES AND MERGE ONTO FL-708 E/W BLUE HERON BLVD. IN 3.7 MI TURN RIGHT ONTO LAKE DR. TURN LEFT ONTO SANDAL LN. TURN RIGHT ONTO S OCEAN AVE. DESTINATION WILL BE ON THE LEFT.

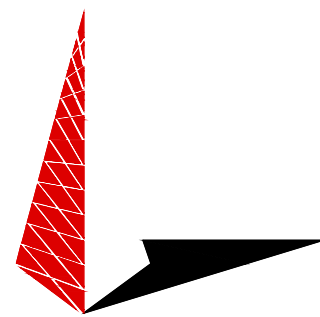
VICINITY MAP



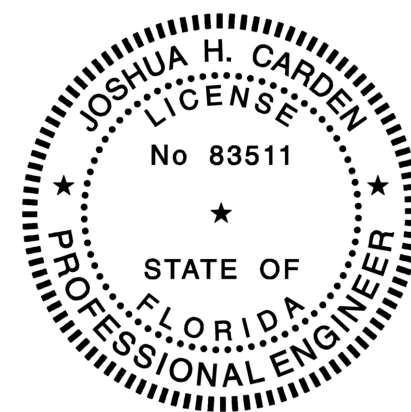
NO SCALE



5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120



TOWER ENGINEERING PROFESSIONALS
326 TRYON RD. RALEIGH, NC 27603
27603 OFFICE: (919) 661-6351
FL COA# 31011



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DRAWN BY: CHECKED BY: APPROVED BY:

RJB CC CC

RFDS REV #: 6

CONSTRUCTION DOCUMENTS

SUBMITTALS		
REV	DATE	DESCRIPTION
0	05/17/2021	PRELIMINARY
1	06/03/2021	PRELIMINARY
2	08/06/2021	PRELIMINARY
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6	01/09/2023	CONSTRUCTION

A&E PROJECT NUMBER
250655

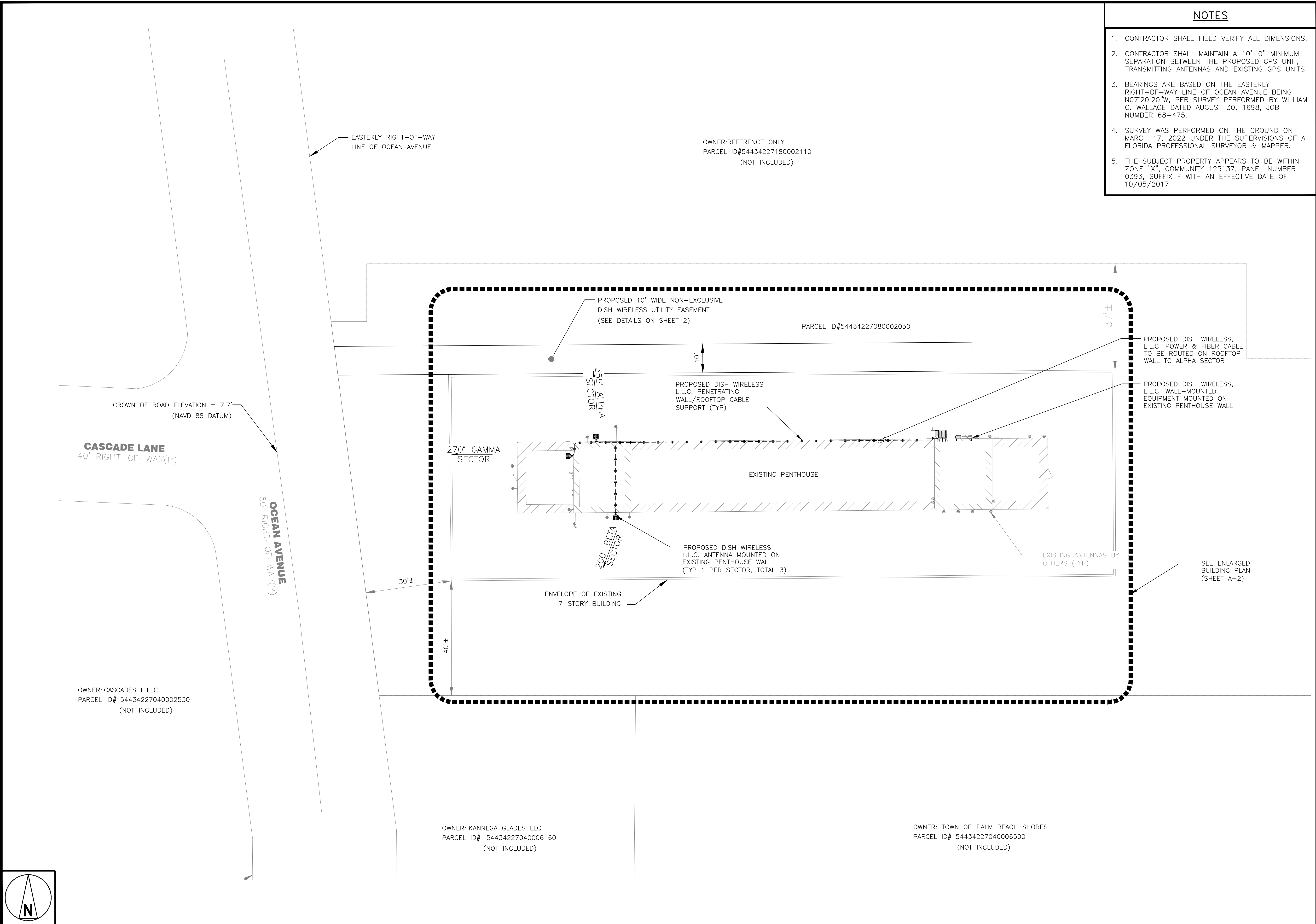
DISH Wireless L.L.C.
PROJECT INFORMATION

MIMIA00378A
125 S OCEAN AVE
PALM BEACH SHORES, FL 33404

SHEET TITLE
TITLE SHEET

SHEET NUMBER

T-1



- NOTES
1. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS.

2. CONTRACTOR SHALL MAINTAIN A 10'-0" MINIMUM SEPARATION BETWEEN THE PROPOSED GPS UNIT, TRANSMITTING ANTENNAS AND EXISTING GPS UNITS.

3. BEARINGS ARE BASED ON THE EASTERLY RIGHT-OF-WAY LINE OF OCEAN AVENUE BEING N07°20'20"W, PER SURVEY PERFORMED BY WILLIAM G. WALLACE DATED AUGUST 30, 1698, JOB NUMBER 68-475.

4. SURVEY WAS PERFORMED ON THE GROUND ON MARCH 17, 2022 UNDER THE SUPERVISIONS OF A FLORIDA PROFESSIONAL SURVEYOR & MAPPER.

5. THE SUBJECT PROPERTY APPEARS TO BE WITHIN ZONE "X", COMMUNITY 125137, PANEL NUMBER 0393, SUFFIX F WITH AN EFFECTIVE DATE OF 10/05/2017.

dish

wireless™

5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

TOWER ENGINEERING PROFESSIONALS
326 TRYON RD. RALEIGH, NC
27603 OFFICE: (919) 661-6351
FL COA# 31011

JOSHUA H. CARDEN
LICENSE
No 83511
STATE OF
FLORIDA
PROFESSIONAL ENGINEER

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A&E PROJECT NUMBER
250655

DISH Wireless L.L.C.
PROJECT INFORMATION
MIMIA00378A
125 S OCEAN AVE
PALM BEACH SHORES, FL
33404

SHEET TITLE
OVERALL
SITE PLAN

SHEET NUMBER
A-1

OVERALL SITE PLAN

1

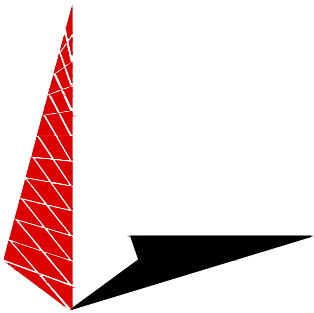
	Total Impact to Rooftop (Roof Structure Code Pf. 8.3 (e) per Town of Palm Beach Shores)
Carrier	Total Square Footage (calculated from a plan view and only considering equipment spanning off of the penthouse)
Verizon	12,728 sq.ft.
T-Mobile	23,472 sq.ft.
Sprint	14,295 sq.ft.
Omni Point	3,781 sq.ft.
QXC Communications	0,827 sq.ft.
Dish Wireless (Proposed)	35,340 sq.ft.
6 Existing Ladders to access equipment	8,620 sq.ft.
Total Carrier Square Footage	99,063 sq.ft.
Total Rooftop Square Footage	16394.3125 sq.ft.
Percentage Impact to Rooftop	0.0000604%

NOTES

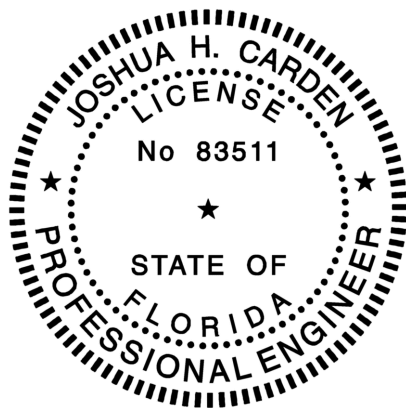
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3. CONTRACTOR TO VERIFY WITH DISH Wireless L.L.C. C.M. THE LOCATION OF THE POWER AND FIBER SOURCE PRIOR TO CONSTRUCTION.
4. UTILITY RUBBER MAT TO BE INSTALLED UNDER ALL DISH Wireless L.L.C. EQUIPMENT THAT IS RESTING ON OR AFFIXED TO ROOF MEMBRANE.
5. CONTRACTOR TO PAINT ALL EQUIPMENT TO MATCH THE EXISTING AESTHETIC OF THE BUILDING.
6. PROPOSED DISH WIRELESS L.L.C. ANTENNA TO NOT EXCEED EXISTING HORIZONTAL DISTANCE OF EXISTING CARRIER ANTENNAS ON PENTHOUSE.



5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120



TOWER ENGINEERING PROFESSIONALS
326 TRYON RD. RALEIGH, NC
27603 OFFICE: (919) 661-6351
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A&E PROJECT NUMBER
250655

DISH Wireless L.L.C.
PROJECT INFORMATION

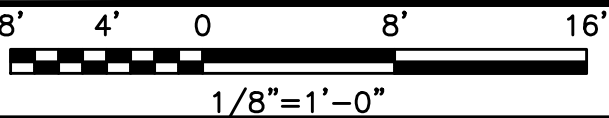
MIMIA00378A
125 S OCEAN AVE
PALM BEACH SHORES, FL
33404

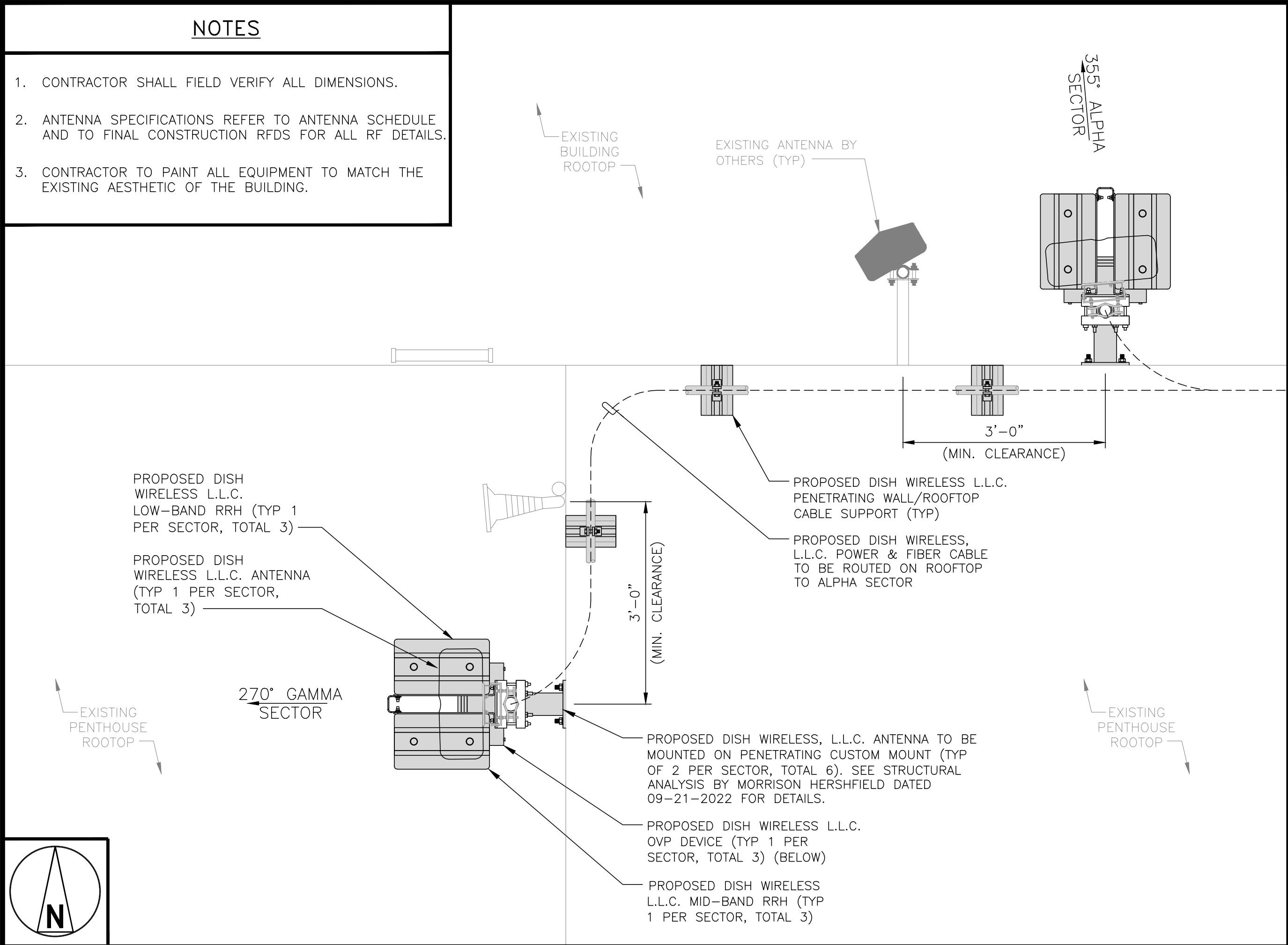
SHEET TITLE
ENLARGED BUILDING
PLAN

SHEET NUMBER

A-2

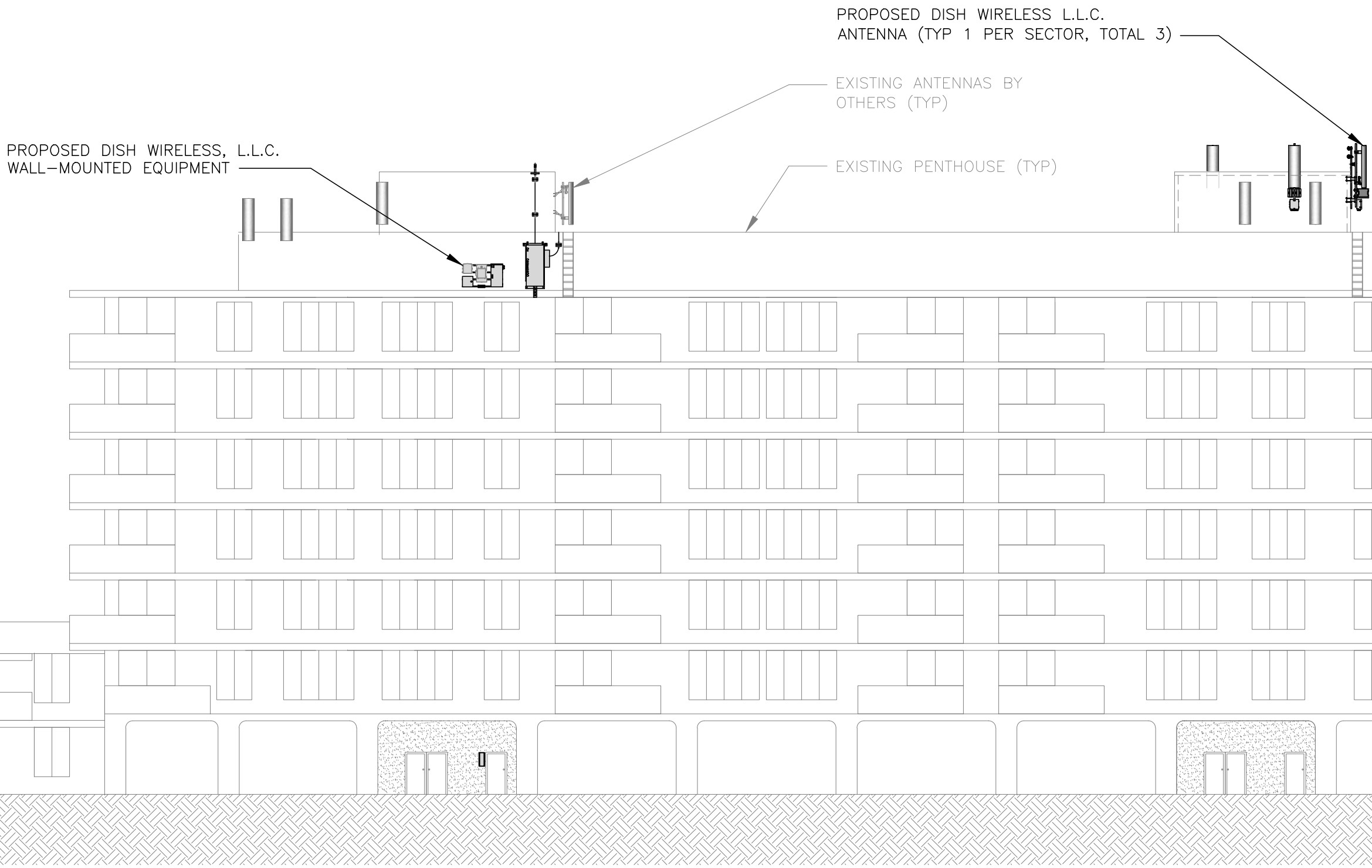
ENLARGED BUILDING PLAN



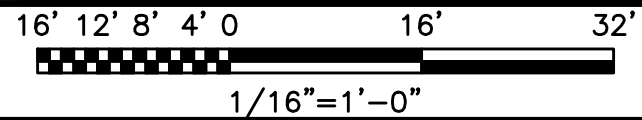


- PROPOSED DISH WIRELESS, LLC. ANTENNA (TYP OF (1) PER SECTOR, (3) TOTAL)
RAD CENTER @ 89'-2" AGL
- EXISTING PENTHOUSE FLOOR 2
88'-5" AGL
- EXISTING PENTHOUSE FLOOR 1
79'-10" AGL
- EXISTING BUILDING ROOF
70'-7" AGL

GROUND ELEVATION
REFERENCE @ 0'-0" AGL



BUILDING NORTH ELEVATION



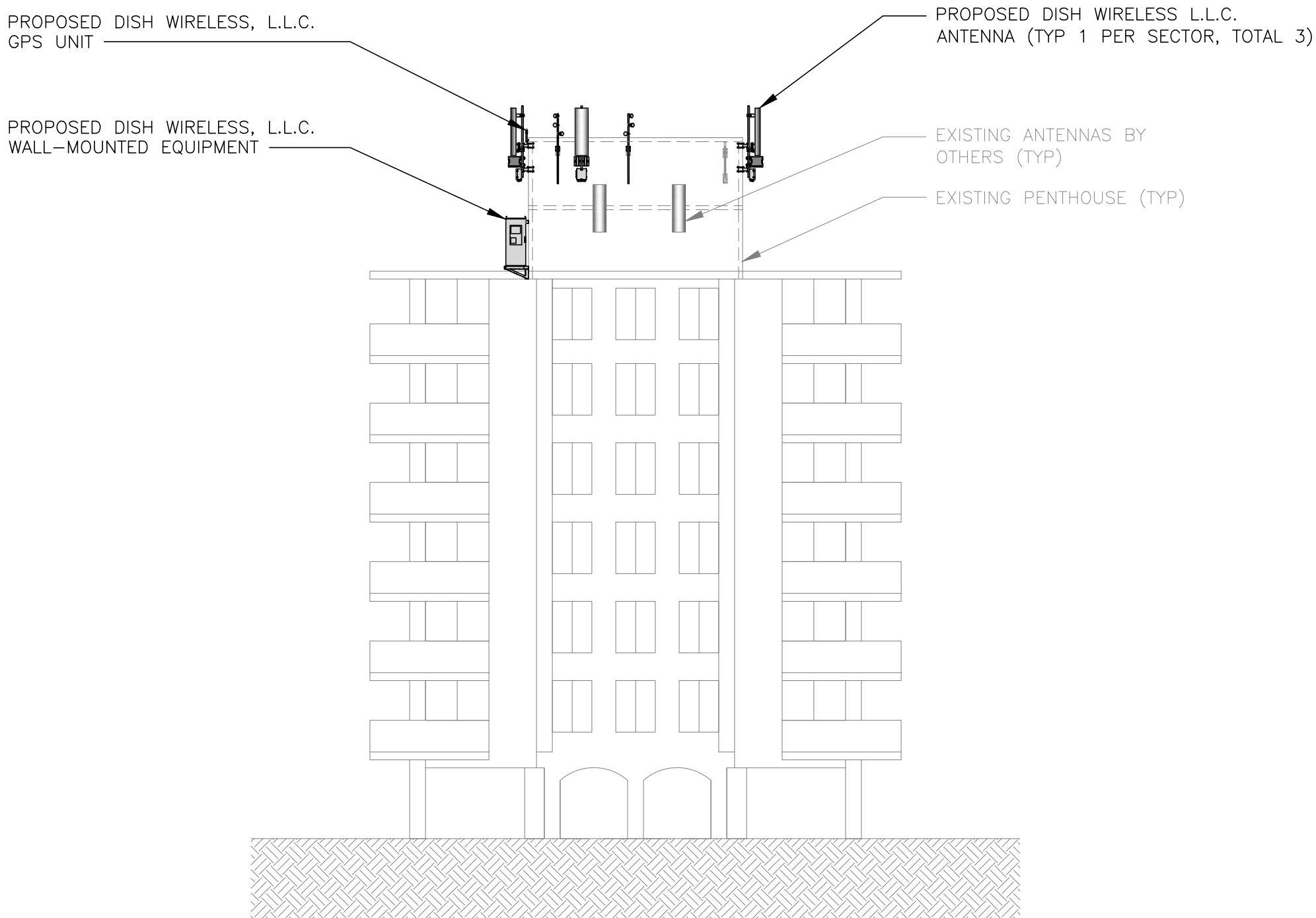
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NOTES

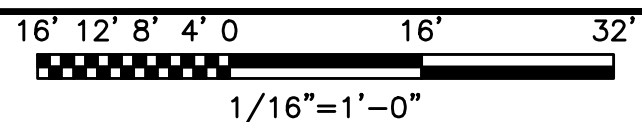
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3. BUILDING ELEVATION INFORMATION OBTAINED FROM ROOFTOP MAPPING PERFORMED BY TEP DATED 11-30-2021.
4. CONTRACTOR TO PAINT ALL EQUIPMENT TO MATCH THE EXISTING AESTHETIC OF THE BUILDING.

- PROPOSED DISH WIRELESS, LLC. ANTENNA (TYP OF (1) PER SECTOR, (3) TOTAL)
RAD CENTER @ 89'-2" AGL
- EXISTING PENTHOUSE FLOOR 2
88'-5" AGL
- EXISTING PENTHOUSE FLOOR 1
79'-10" AGL
- EXISTING BUILDING ROOF
70'-7" AGL

GROUND ELEVATION
REFERENCE @ 0'-0" AGL



BUILDING WEST ELEVATION



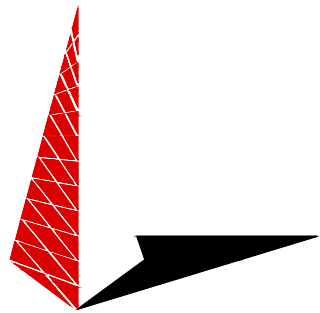
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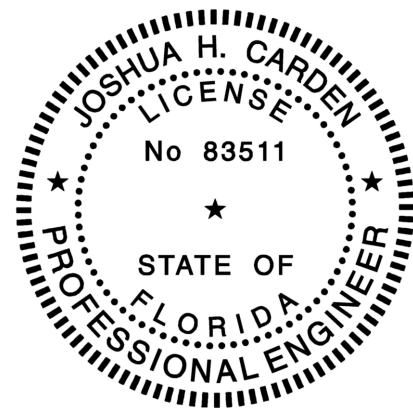
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5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120



TOWER ENGINEERING PROFESSIONALS
326 TRYON RD. RALEIGH, NC
27603 OFFICE: (919) 661-6351
FL COA# 31011



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RJB	CC	CC

RFDS REV #: 6

CONSTRUCTION
DOCUMENTS

SUBMITTALS		
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A&E PROJECT NUMBER
250655

DISH Wireless L.L.C.
PROJECT INFORMATION

MIMIA00378A
125 S OCEAN AVE
PALM BEACH SHORES, FL
33404

SHEET TITLE
NORTH AND SOUTH
ELEVATIONS

SHEET NUMBER

A-4

ENERSYS HEX CABINET
2000005996

DIMENSIONS (HxWxD):	73"x30"x32"
WEIGHT EMPTY:	376 lbs
HEATER	800W
POWER SYSTEM	-48V ALPHA/600A

BACK

FRONT

SIDE

PLAN

SQUARE D FUSED SAFETY SWITCHES
D224NRB

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

SIDE

FRONT

TOP

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

BACK

SIDE

FRONT

SIDE

TOP

CABINET DETAIL

NO SCALE

1

SAFETY SWITCH DETAIL

NO SCALE

2

POWER PROTECTION CABINET (PPC) DETAIL

NO SCALE

3

CIENA 3931
FIBER NID ENCLOSURE

DIMENSIONS (HxWxD)	17"x16.8"x7"
WEIGHT	28.6 lbs

SIDE

FRONT

TOP

PCTEL
GPSGL-TMG-SPI-40NCB

DIMENSIONS (DIAxH) MM/INCH	81x184mm 3.2"x7.25"
WEIGHT W/ACCESSORIES	075 lbs
CONNECTOR	N-FEMALE
FREQUENCY RANGE	1590 ± 30MHz

BACK

SIDE

TOP

GPS MINIMUM SKY VIEW REQUIREMENTS

MINIMUM OF 75° OR 270° IN ANY DIRECTION

GPS

GPS UNIT

OBSTRUCTIONS MUST BE BELOW 10°

FIBER NID ENCLOSURE DETAIL

NO SCALE

4

GPS DETAIL

NO SCALE

5

GPS MINIMUM SKY VIEW REQUIREMENTS

NO SCALE

6

COMMSCOPE ANTENNA BRACKET
BSAMNT-3

DIAMETER COMPATIBILITY	2.362" - 4.528"
NET WEIGHT	13.669 lbs

6.6"

5.6"

8.4"

0 MIN.
14" MAX.

1.65"

2.1" MIN.
4.4" MAX.

6.3"

7.24"

1.9" MIN.
2" MAX.

5"

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

RAYCAP RDIDC-3045-PF-48
SURGE PROTECTION DEVICE (OVP)

DIMENSIONS (HxWxD)	19"x16.21"x9.64"
WEIGHT	21 lbs

BACK

SIDE

FRONT

PLAN

CABLE WALL MOUNT SUPPORT

UNISTRUT TYPE	GRAINGER P1000T
UNISTRUT DIMENSIONS (HxWxL)	1 5/8"x 1 5/8"x 12"
WEIGHT/ VOLUME	1.85 LB PER FOOT
ULTIMATE LOAD CAPACITY	718.5 LB

NOTES:
1. ALL HARDWARE AND PARTS SHALL BE HOT DIPPED GALVANIZED WITH LOCK WASHERS AND HEAVY HEX NUTS.
2. VERTICAL CABLE MOUNT: 4'-0" MAX. UNISTRUT SEPARATION
3. HORIZONTAL CABLE MOUNT: 3'-0" MAX UNISTRUT SEPARATION

EXISTING WALL

PLAN

EXISTING WALL

SIDE

CABLE CLAMP OR APPROVED EQUAL

EMT/PVC OR APPROVED EQUAL

CABLE

CABLE SUPPORT STEEL CHANNEL OR APPROVED EQUAL

EXPANSION ANCHOR OR APPROVED EQUAL

ANTENNA BRACKET DETAIL

NO SCALE

7

SURGE PROTECTION DEVICE (OVP) DETAIL

NO SCALE

8

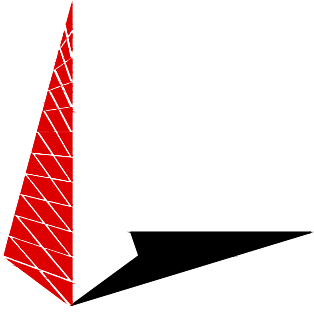
CABLE WALL MOUNT SUPPORT DETAIL

NO SCALE

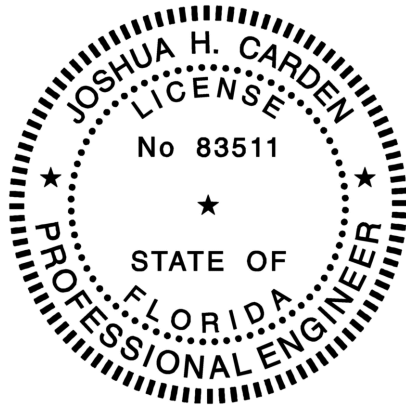
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5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120



TOWER ENGINEERING PROFESSIONALS
326 TRYON RD. RALEIGH, NC
27603 OFFICE: (919) 661-6351
FL COA# 31011



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RFDS REV #: 6

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A&E PROJECT NUMBER
250655

DISH Wireless L.L.C.
PROJECT INFORMATION

MIMIA00378A
125 S OCEAN AVE
PALM BEACH SHORES, FL 33404

SHEET TITLE
EQUIPMENT DETAILS

SHEET NUMBER
A-6

MTI TB RRH
G060708-50-02B

DIMENSIONS (HxWxD)	13.9"x16.9"x9.8"
WEIGHT	97 lbs
DC POWER IN	-40.5V to -57V
POWER SUPPLY VOLTAGE	-48Vdc (NOMINAL)

SIDE

FRONT

PLAN

RRH DETAIL

NO SCALE

1

MTI DB RRH
G2021-49-02B

DIMENSIONS (HxWxD)	13.9"x16.9"x9.8"
WEIGHT	86 lbs
DC POWER IN	-40.5V to -57V
POWER SUPPLY VOLTAGE	-48Vdc (NOMINAL)

SIDE

FRONT

PLAN

RRH 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"

11MM x 30MM SLOTS
40MM ON CENTER

11MM x 24MM SLOTS

1

2

3

REMOTE RADIO MOUNT DETAIL

NO SCALE

3

RAYCAP RDIDC-3045-PF-48
SURGE PROTECTION DEVICE (OVP)

DIMENSIONS (HxWxD)	14" x 16" x 8"
WEIGHT	21.85 LBS

SIDE

BACK

FRONT

PLAN

SURGE PROTECTION DEVICE DETAIL (OVP)

NO SCALE

4

COMMSCOPE
FFVV-65B-R2

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

BACK

SIDE

FRONT

PLAN

ANTENNA 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

SIDE

BACK

FRONT

FRONT

FIBER TELCO ENCLOSURE DETAIL

NO SCALE

6

GENERAC TX301
AUTOMATIC TRANSFER SWITCH

ENCLOSURE DIM (HxWxD)	31.7"x21.4"x14.1"
TOTAL WEIGHT (EMPTY)	121.3 LBS
MAX VOLTAGE/RATED CURRENT	480VAC/ 200A
ENCLOSURE RATING	NEMA 3R

SIDE

FRONT

PLAN

AUTOMATIC TRANSFER SWITCH DETAIL

NO SCALE

7

INTERSECT
CAM-LOK GENERATOR CONNECTOR

DIMENSIONS (HxWxD)	23"x10"x9.5"
WEIGHT	14 LB

TOP

FRONT

CAM-LOCK GENERATOR CONNECTOR DETAIL

NO SCALE

8

SITE-PRO1 8" STAND-OFF WALL
MOUNT WWM01

DIMENSIONS (HxWxD)	VARIES
WEIGHT	24.95 lbs

2-3/8" OD PIPE, 2-7/8" OD
PIPE TO 3-1/2" OD PIPE,
PIPE NOT INCLUDED

STAND-OFF ANTENNA WALL MOUNT

NO SCALE

9

dish
wireless™

5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

TOWER ENGINEERING PROFESSIONALS
326 TRYON RD. RALEIGH, NC
27603 OFFICE: (919) 661-6351
FL COA# 31011

JOSHUA H. CARDEN
LICENSE
No 83511
STATE OF
FLORIDA
PROFESSIONAL ENGINEER

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CHECKED BY: CC

APPROVED BY: CC

RFDS REV #: 6

CONSTRUCTION
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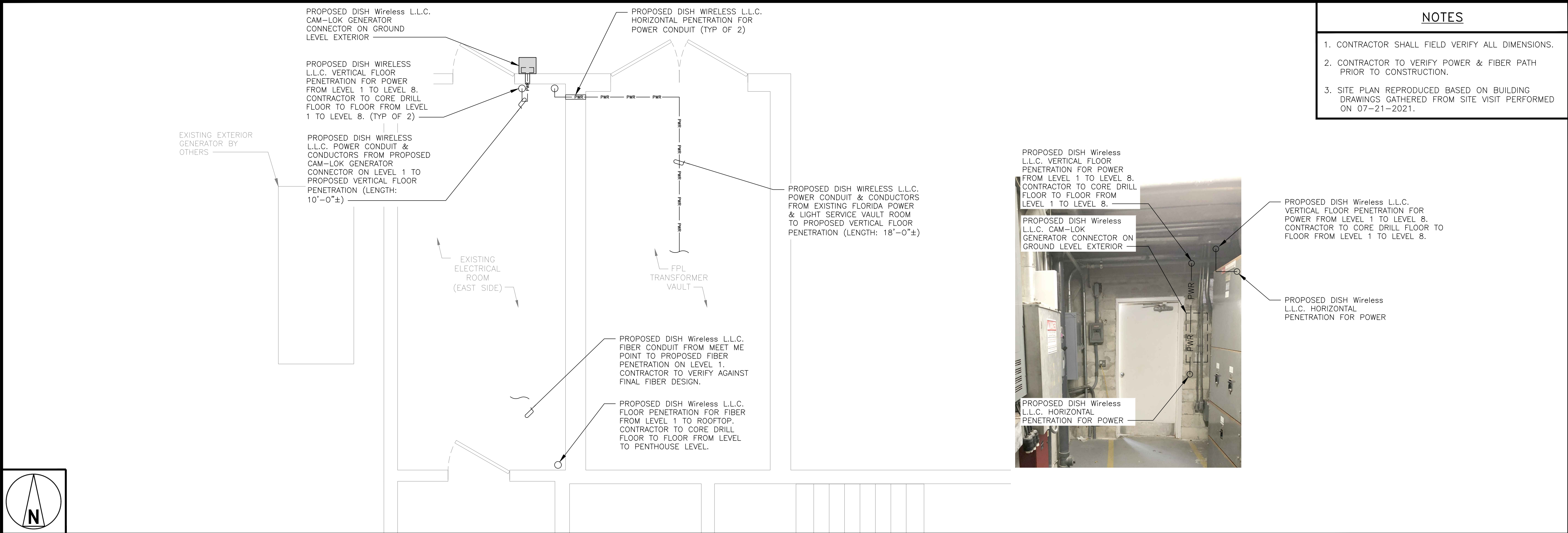
A&E PROJECT NUMBER
250655

DISH Wireless L.L.C.
PROJECT INFORMATION

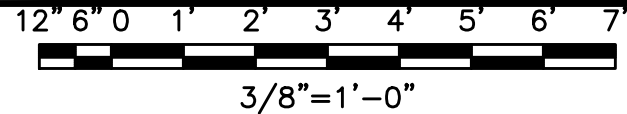
MIMIA00378A
125 S OCEAN AVE
PALM BEACH SHORES, FL
33404

SHEET TITLE
EQUIPMENT DETAILS

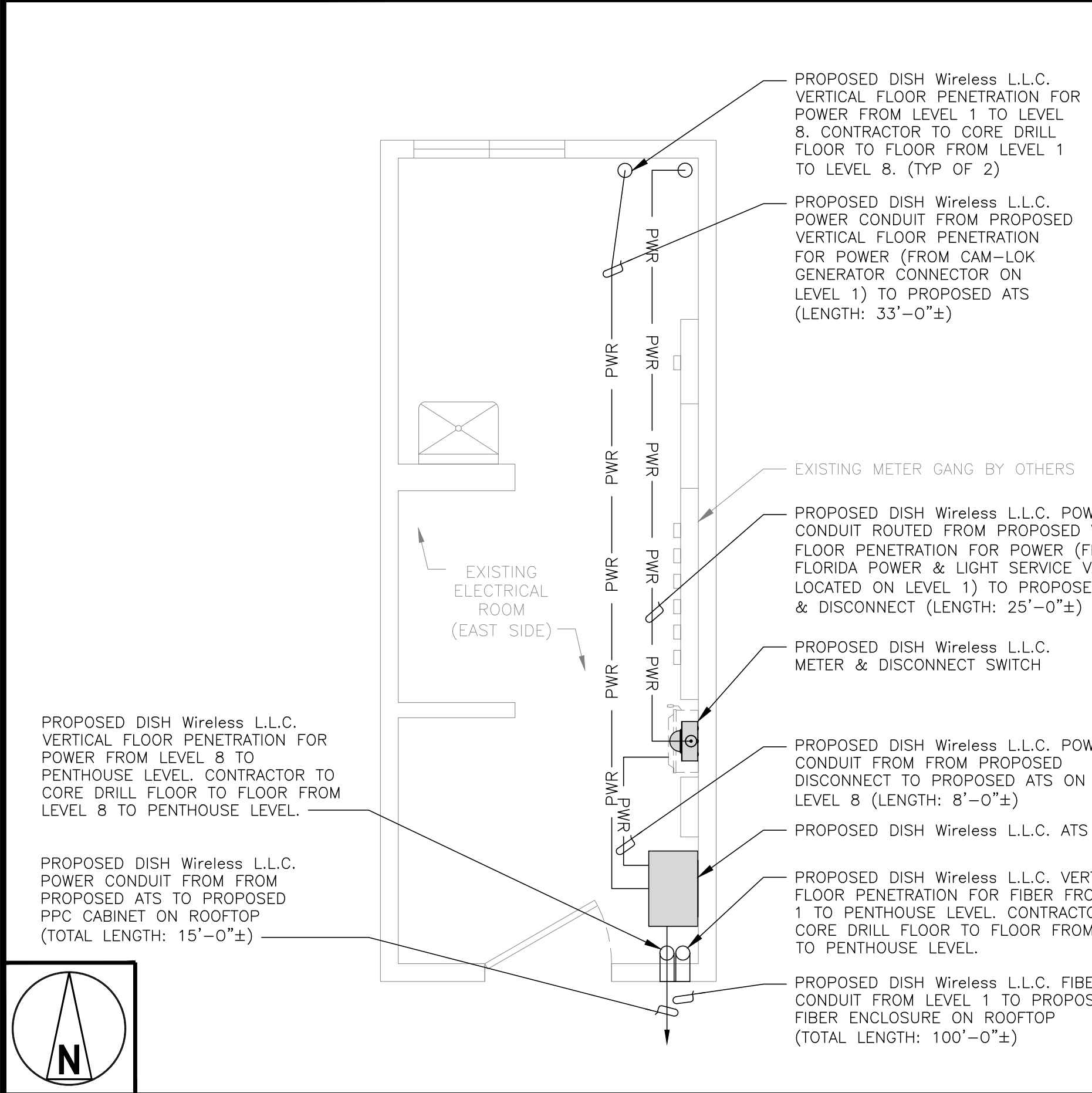
SHEET NUMBER
A-7



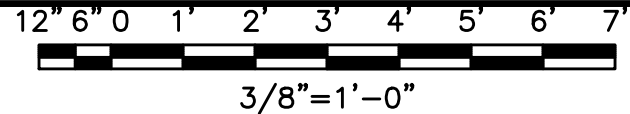
UTILITY ROUTE PLAN (LEVEL 1)



1

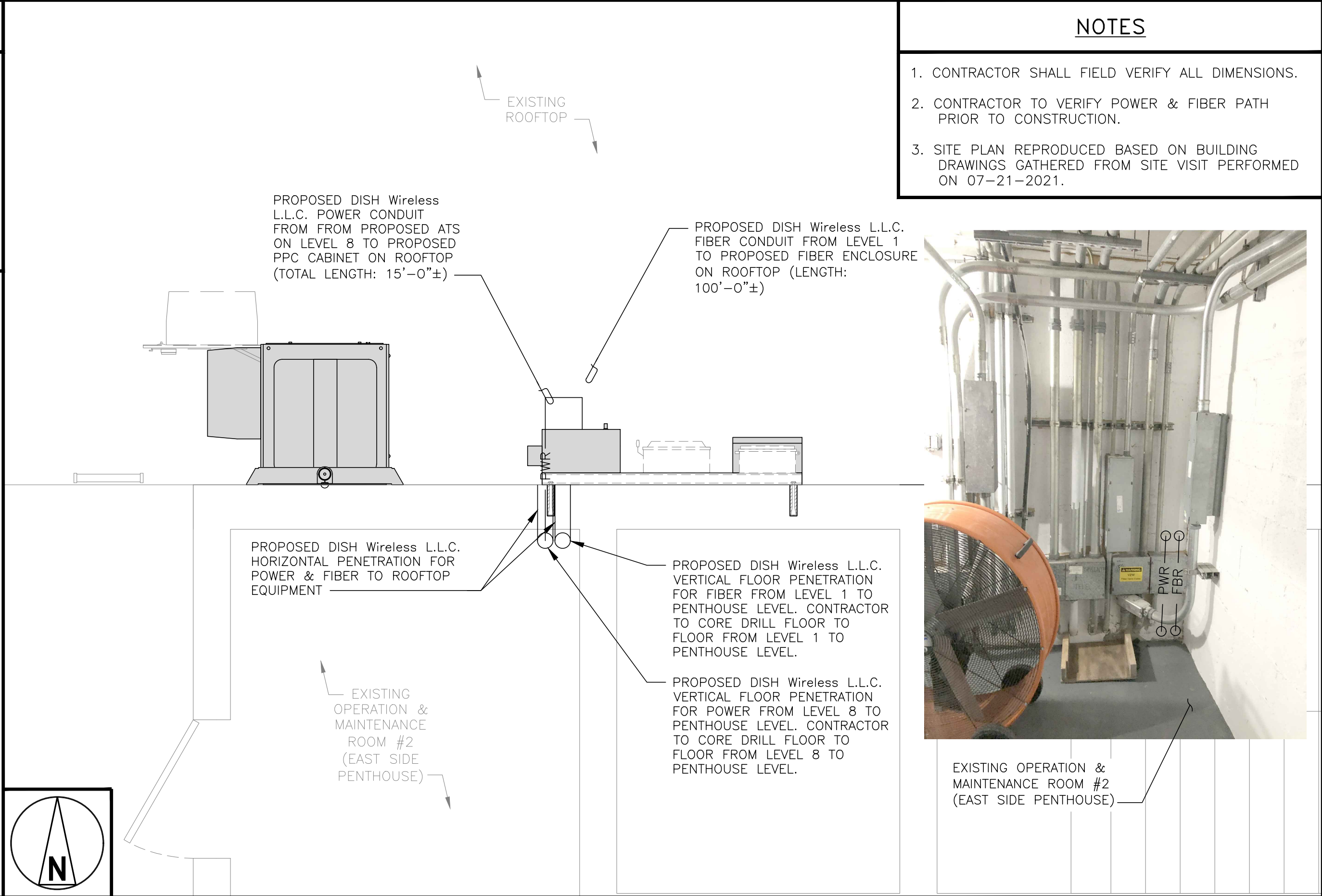


UTILITY ROUTE PLAN (LEVEL 8)

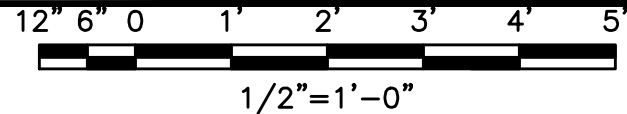


2

- NOTES**
1. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS.
 2. CONTRACTOR TO VERIFY POWER & FIBER PATH PRIOR TO CONSTRUCTION.
 3. SITE PLAN REPRODUCED BASED ON BUILDING DRAWINGS GATHERED FROM SITE VISIT PERFORMED ON 07-21-2021.
 4. METER MOUNTED IN THE ELECTRICAL ROOM LOCATED IN THE 8TH FLOOR NEXT TO EAST ELEVATOR. WILL NEED BUILDING MAINTENANCE FOR ROOM ACCESS.



UTILITY ROUTE PLAN (PENTHOUSE & ROOFTOP)

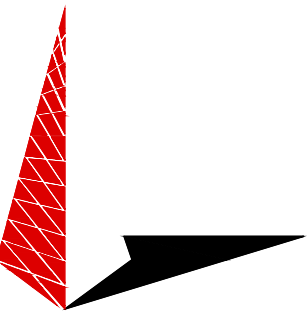


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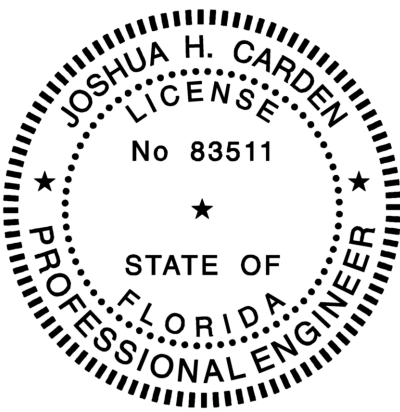
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 2. CONTRACTOR TO VERIFY POWER & FIBER PATH PRIOR TO CONSTRUCTION.
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5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120



TOWER ENGINEERING PROFESSIONALS
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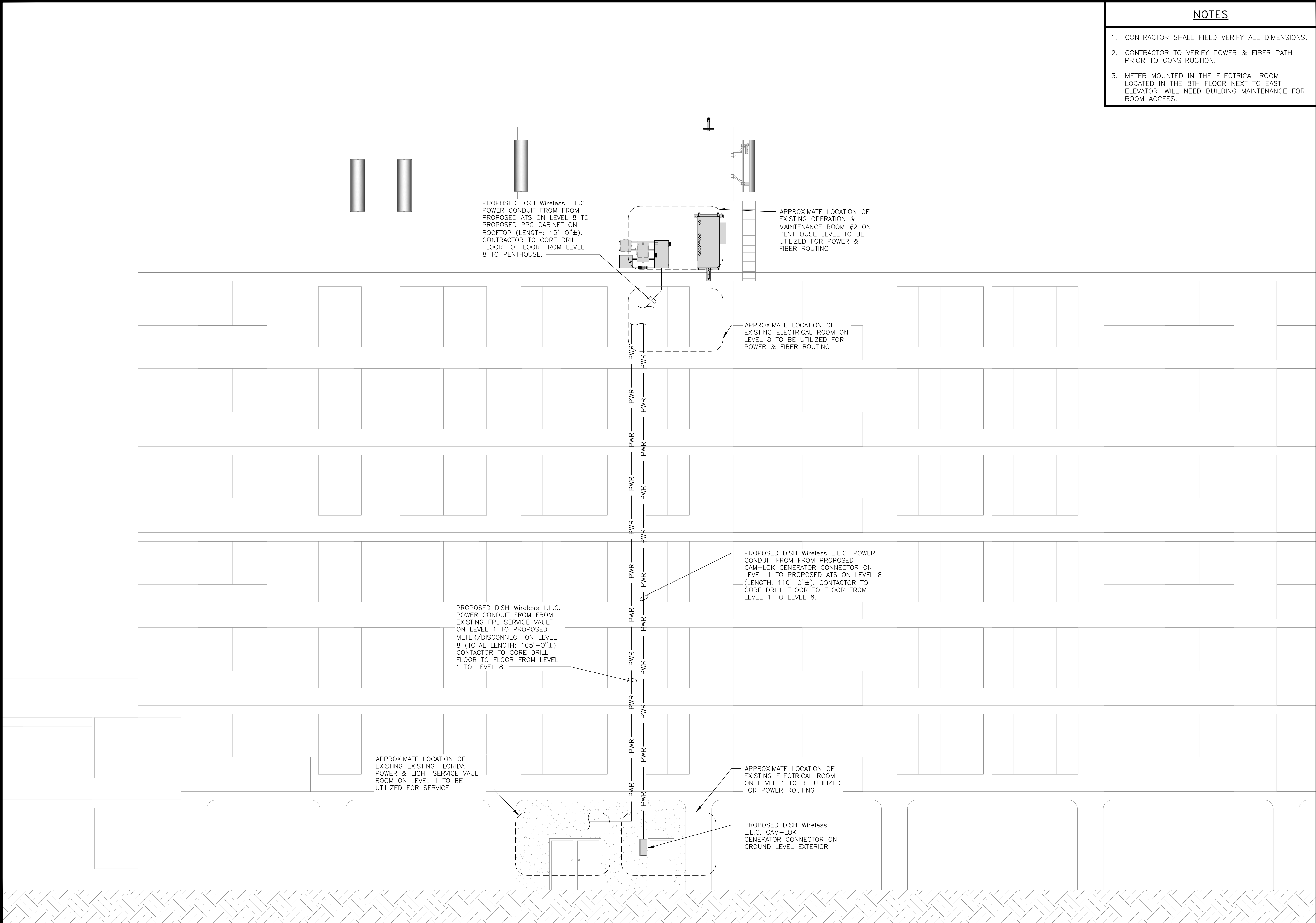
A&E PROJECT NUMBER
250655

DISH Wireless L.L.C.
PROJECT INFORMATION
MIMIA00378A
125 S OCEAN AVE
PALM BEACH SHORES, FL
33404

SHEET TITLE
ELECTRICAL/FIBER ROUTE
PLAN AND NOTES

SHEET NUMBER

E-1

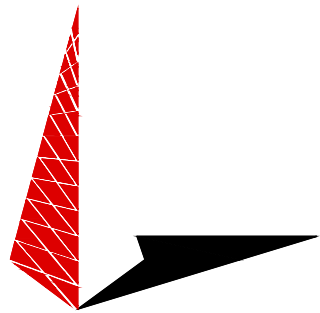


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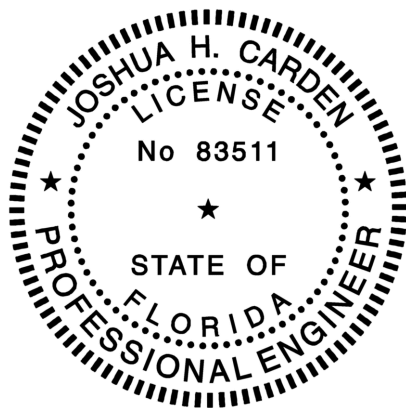
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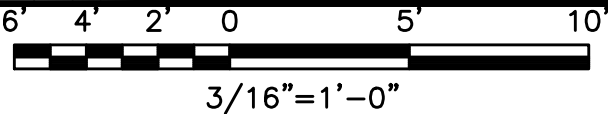
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SHEET NUMBER
E-1A

UTILITY ROUTE NORTH ELEVATION



F. CONTRACTOR SHALL BE RESPONSIBLE FOR AS-BUILT PANEL SCHEDULE AND SITE DRAWINGS.



1

4

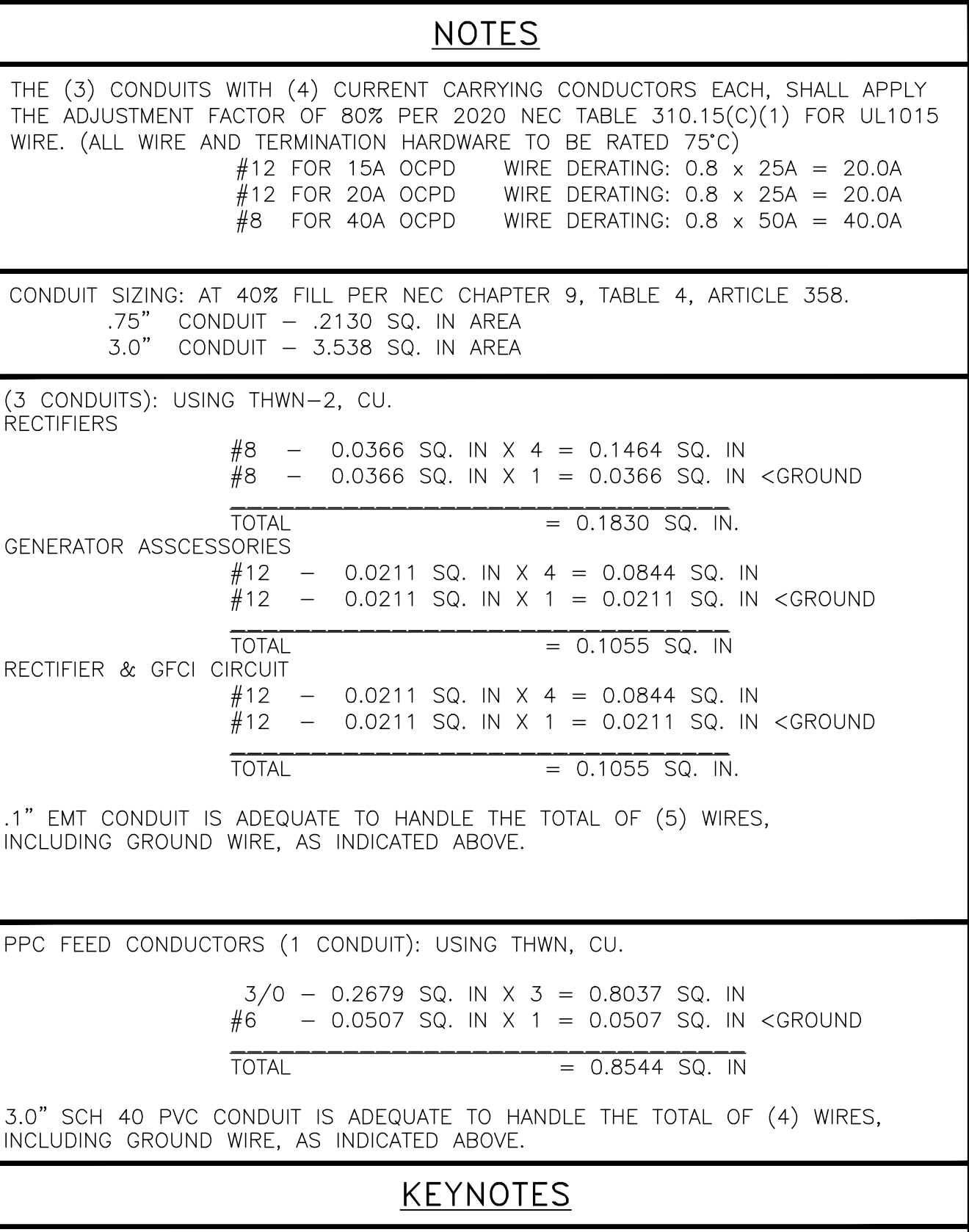
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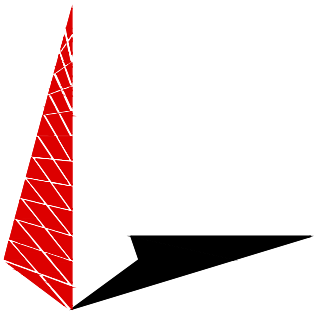
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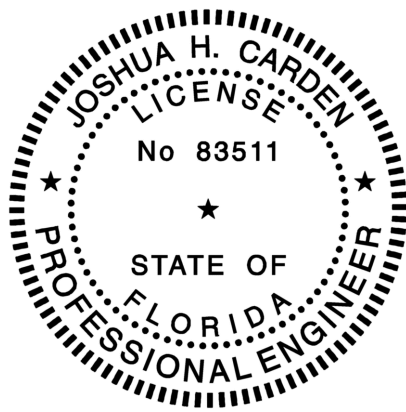




- ① GENERALC GTS 200A TRANSFER SWITCH, OPTIONAL EMERGENCY SYSTEM IS "NOT" SEPARATELY DERIVED. DO NOT BOND NEUTRAL AT GENERATOR.
- ② OPTIONAL ALUMINUM SERVICE CONDUCTOR:
 - 250 KCMIL AL #2 GRD MAY BE USED INSTEAD OF 3/0 CU + #6 GRD IF THE TOTAL LENGTH OF THE CONDUCTOR IS LESS THAN 300 FT FROM THE TRANSFORMER.
 - ALUMINUM TO COPPER BUSS CONNECTIONS MUST MEET AND CONFORM TO ANSI AND BE U/L LISTED. USE ANTI CORROSION CONDUCTIVE LUBRICANT ON CONNECTIONS



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A&E PROJECT NUMBER
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DISH Wireless L.L.C.
PROJECT INFORMATION

MIMIA00378A
125 S OCEAN AVE
PALM BEACH SHORES, FL
33404

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

SHEET NUMBER

E-3

PPC ONE-LINE DIAGRAM

LOAD SERVED	VOLT AMPS (WATTS)		TRIP	CKT #	PHASE	CKT #	TRIP	VOLT AMPS (WATTS)		LOAD SERVED
	L1	L2						L1	L2	
PPC GFCI OUTLET	180		15A	1	A	2		3840		ENERSYS ALPHA CORDEX RECTIFIERS 1 & 2
ENERSYS GFCI OUTLET		180	15A	3	B	4	40A		3840	
-SPACE-				5	A	6		3840		ENERSYS ALPHA CORDEX RECTIFIER 3 & 4
-SPACE-				7	B	8	40A		3840	
-SPACE-				9	A	10		1920		ENERSYS ALPHA CORDEX RECTIFIER 5
-SPACE-				11	B	12	20A		1920	
-SPACE-				13	A	14				-SPACE-
-SPACE-				15	B	16				-SPACE-
-SPACE-				17	A	18				-SPACE-
-SPACE-				19	B	20				-SPACE-
-SPACE-				21	A	22				-SPACE-
-SPACE-				23	B	24				-SPACE-
VOLTAGE AMPS	180	180						9500	9500	
200A MCB, 1ø, 24 SPACE, 120/240V				L1	L2					
MB RATING: 65,000 AIC				9680	9680			VOLTAGE AMPS		
				82	81			AMPS		
				82				MAX AMPS		
				102				MAX 125%		

PANEL SCHEDULE

NO SCALE

2

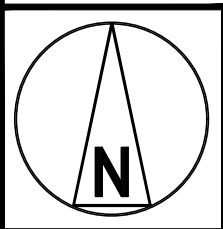
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NO SCALE

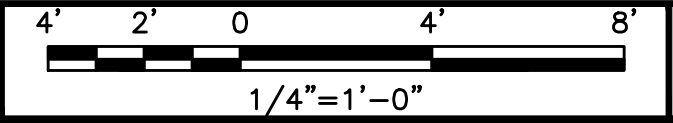
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<u>NOTE</u>
CONTRACTOR TO CONFIRM THE BUILDING STEEL IS GROUNDED IN COMPLIANCE WITH NEC 250.68(C).




The floor plan shows a rectangular room layout. A dashed line indicates the boundary of the proposed equipment room. Inside this room, there is a large rectangular area labeled "PROPOSED DISH Wireless L.L.C. EQUIPMENT ROOM". A dashed line extends from the top of the equipment room to a point on the ceiling, labeled "PROPOSED DISH Wireless L.L.C. GROUNDING TO EXISTING BUILDING STEEL". The room is surrounded by walls and has several doors. A north arrow is located in the bottom left corner.



GROUNDING PLAN



1

- | | | | |
|---|-----------------------|---|--|
| ● | EXOTHERMIC CONNECTION |  | TEST GROUND ROD WITH INSPECTION SLEEVE |
| ■ | MECHANICAL CONNECTION | ----- | #2 AWG STRANDED & INSULATED |
|  | GROUND BUS BAR | - . - . - . | #2 AWG SOLID COPPER TINNED |
|  | GROUND ROD | ▲ | BUSS BAR INSULATOR |

GROUNDING LEGEND


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

GROUNDING ROOFTOP KEY NOTES

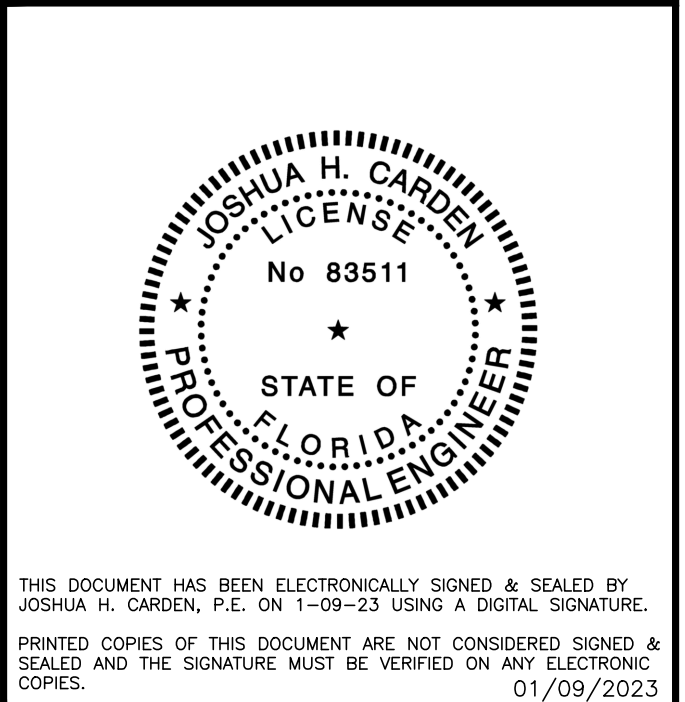
- (A) EXTERIOR GROUND RING: #2 AWG SOLID COPPER, BURIED AT A DEPTH OF AT LEAST 30 INCHES BELOW GRADE, OR 6 INCHES BELOW THE FROST LINE AND APPROXIMATELY 24 INCHES FROM THE EXTERIOR WALL OR FOOTING.
- (B) ROOFTOP GROUND SYSTEM: THE GROUND SYSTEM USING MINIMUM #2 AWG SOLID COPPER CONDUCTORS.
- (C) INTERIOR GROUND RING: #2 AWG STRANDED GREEN INSULATED COPPER CONDUCTOR EXTENDED AROUND THE PERIMETER OF THE EQUIPMENT AREA. ALL NON-TELECOMMUNICATIONS RELATED METALLIC OBJECTS FOUND WITHIN A SITE SHALL BE GROUNDED TO THE INTERIOR GROUND RING WITH #6 AWG STRANDED GREEN INSULATED CONDUCTOR.
- (D) BOND TO INTERIOR GROUND RING: #2 AWG SOLID TINNED COPPER WIRE PRIMARY BONDS SHALL BE PROVIDED AT LEAST AT FOUR POINTS ON THE INTERIOR GROUND RING, LOCATED AT THE CORNERS OF THE BUILDING OR ROOM.
- (E) GROUND ROD: UL LISTED COPPER CLAD STEEL. MINIMUM 1/2" DIAMETER BY EIGHT FEET LONG. GROUND RODS SHALL BE INSTALLED WITH INSPECTION SLEEVES. GROUND RODS SHALL BE DRIVEN TO THE DEPTH OF GROUND RING CONDUCTOR.
- (F) CELL REFERENCE GROUND BAR (CRGB): 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 COMMON BUILDING GROUND SYSTEM WITH (2) #2 SOLID TINNED COPPER CONDUCTORS.
- (G) HATCH PLATE GROUND BAR: BOND TO THE COMMON BUILDING GROUND SYSTEM WITH TWO #2 AWG STRANDED GREEN INSULATED COPPER CONDUCTORS. WHEN A HATCH-PLATE AND A CELL REFERENCE GROUND BAR ARE BOTH PRESENT, THE CRGB MUST BE CONNECTED TO THE HATCH-PLATE AND TO THE INTERIOR GROUND RING USING (2) TWO #2 AWG STRANDED GREEN INSULATED COPPER CONDUCTORS EACH.
- (H) EXTERIOR CABLE ENTRY PORT GROUND BARS: LOCATED AT THE ENTRANCE TO THE CELL SITE ROOM. BOND TO GROUND RING WITH A #2 AWG SOLID TINNED COPPER CONDUCTORS WITH MECHANICAL CONNECTIONS.
- (I) TELCO GROUND BAR: BOND TO BOTH CELL REFERENCE GROUND BAR OR EXTERIOR GROUND RING.
- (J) FRAME BONDING: THE BONDING POINT FOR TELECOM EQUIPMENT FRAMES SHALL BE THE GROUND BUS THAT IS NOT ISOLATED FROM THE EQUIPMENTS METAL FRAMEWORK.
- (K) INTERIOR UNIT BONDS: METAL FRAMES, CABINETS AND INDIVIDUAL METALLIC UNITS LOCATED WITH THE AREA OF THE INTERIOR GROUND RING REQUIRE A #6 AWG STRANDED GREEN INSULATED COPPER BOND TO THE INTERIOR GROUND RING.
- (L) FENCE AND GATE GROUNDING: METAL FENCES SHALL BE BONDED TO THE COMMON BUILDING GROUND SYSTEM WITH A #2 AWG SOLID TINNED COPPER CONDUCTOR AT AN INTERVAL NOT EXCEEDING 25 FEET. BONDS SHALL BE MADE AT EACH GATE POST AND ACROSS GATE OPENINGS.
- (M) EXTERIOR UNIT BONDS: METALLIC OBJECTS, EXTERNAL TO OR MOUNTED TO THE BUILDING, SHALL BE BONDED TO THE COMMON BUILDING GROUND SYSTEM. USING #2 TINNED SOLID COPPER WIRE
- (N) ICE BRIDGE SUPPORTS: EACH ICE BRIDGE LEG SHALL BE BONDED TO THE GROUND RING WITH #2 AWG BARE TINNED COPPER CONDUCTOR. PROVIDE EXOTHERMIC WELDS AT BOTH THE ICE BRIDGE LEG AND BURIED GROUND RING.
- (O) DURING ALL DC POWER SYSTEM CHANGES INCLUDING DC SYSTEM CHANGE OUTS, RECTIFIER REPLACEMENTS OR ADDITIONS, BREAKER DISTRIBUTION CHANGES, BATTERY ADDITIONS, BATTERY REPLACEMENTS AND INSTALLATIONS OR CHANGES TO DC CONVERTER SYSTEMS IT SHALL BE REQUIRED THAT SERVICE CONTRACTORS VERIFY ALL DC POWER SYSTEMS ARE EQUIPPED WITH A MASTER DC SYSTEM RETURN GROUND CONDUCTOR FROM THE DC POWER SYSTEM COMMON RETURN BUS DIRECTLY CONNECTED TO THE CELL SITE REFERENCE GROUND BAR
- (P) ROOFTOP COLLECTOR BUSS BAR IS TO BE MECHANICALLY BONDED TO COMMON BUILDING GROUND SYSTEM. REFER TO DISH Wireless L.L.C. GROUNDING NOTES.

NO SCALE

2



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PALM BEACH SHORES, FL
33404

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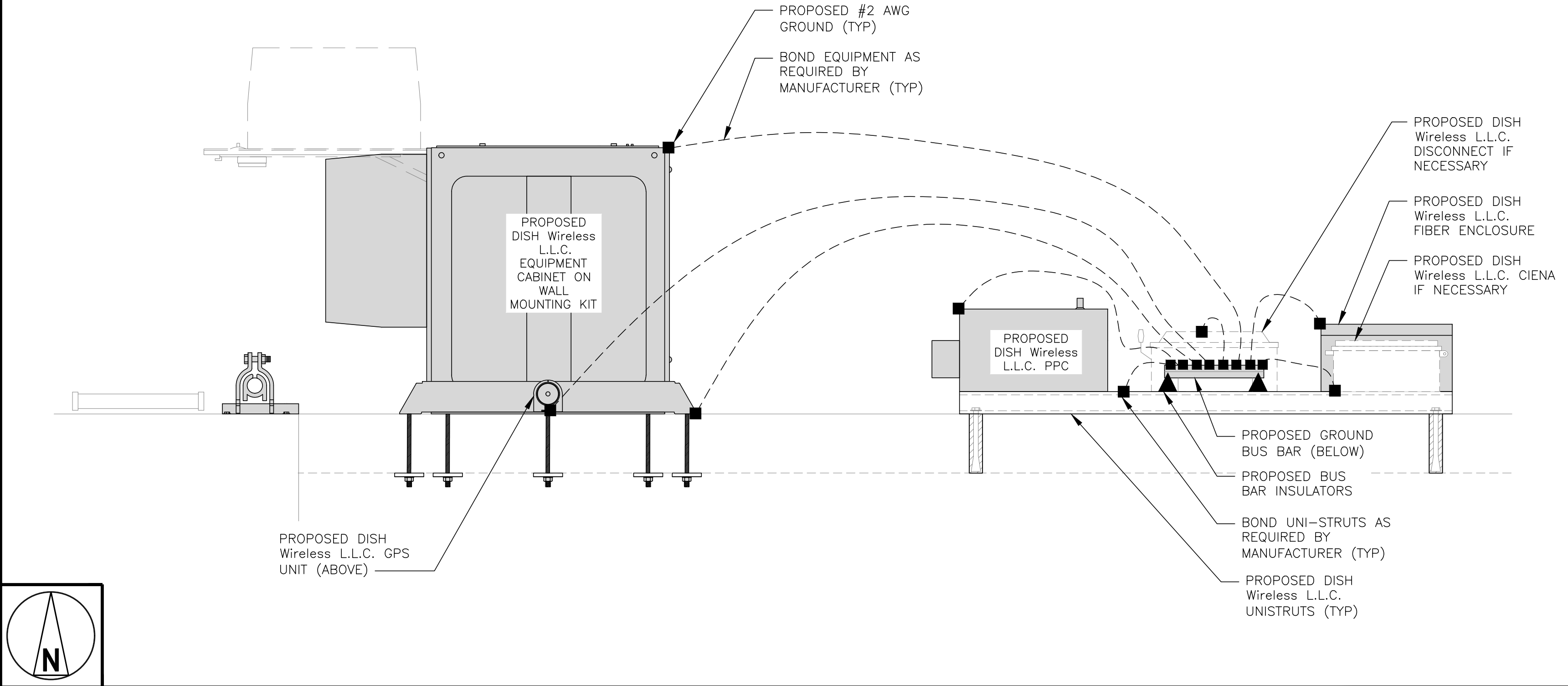
GROUNDING PLANS AND NOTES

SHEET NUMBER

G-1

NOTE

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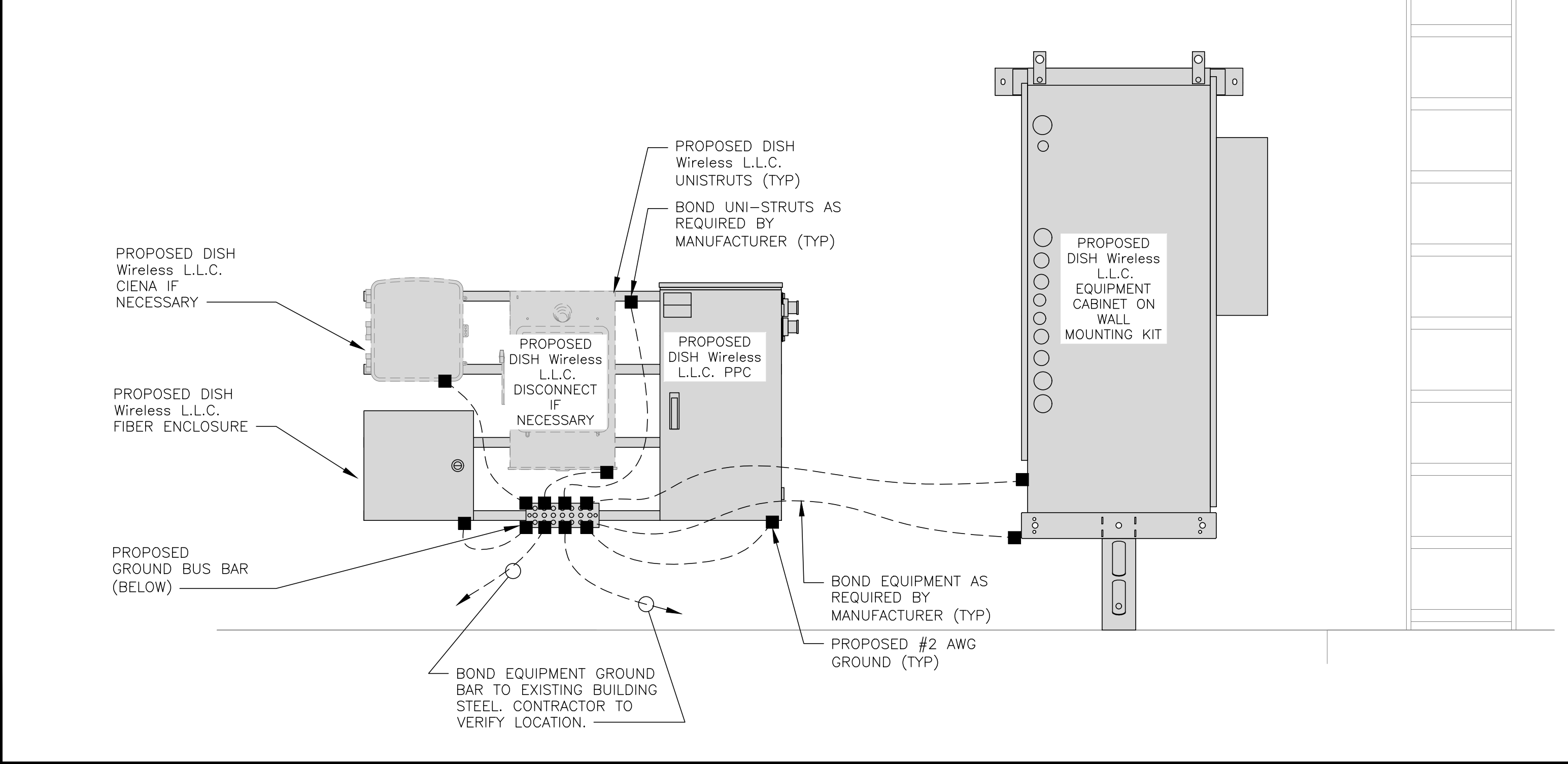


EQUIPMENT GROUNDING DETAIL – PLAN VIEW

NO SCALE 1

NOTE

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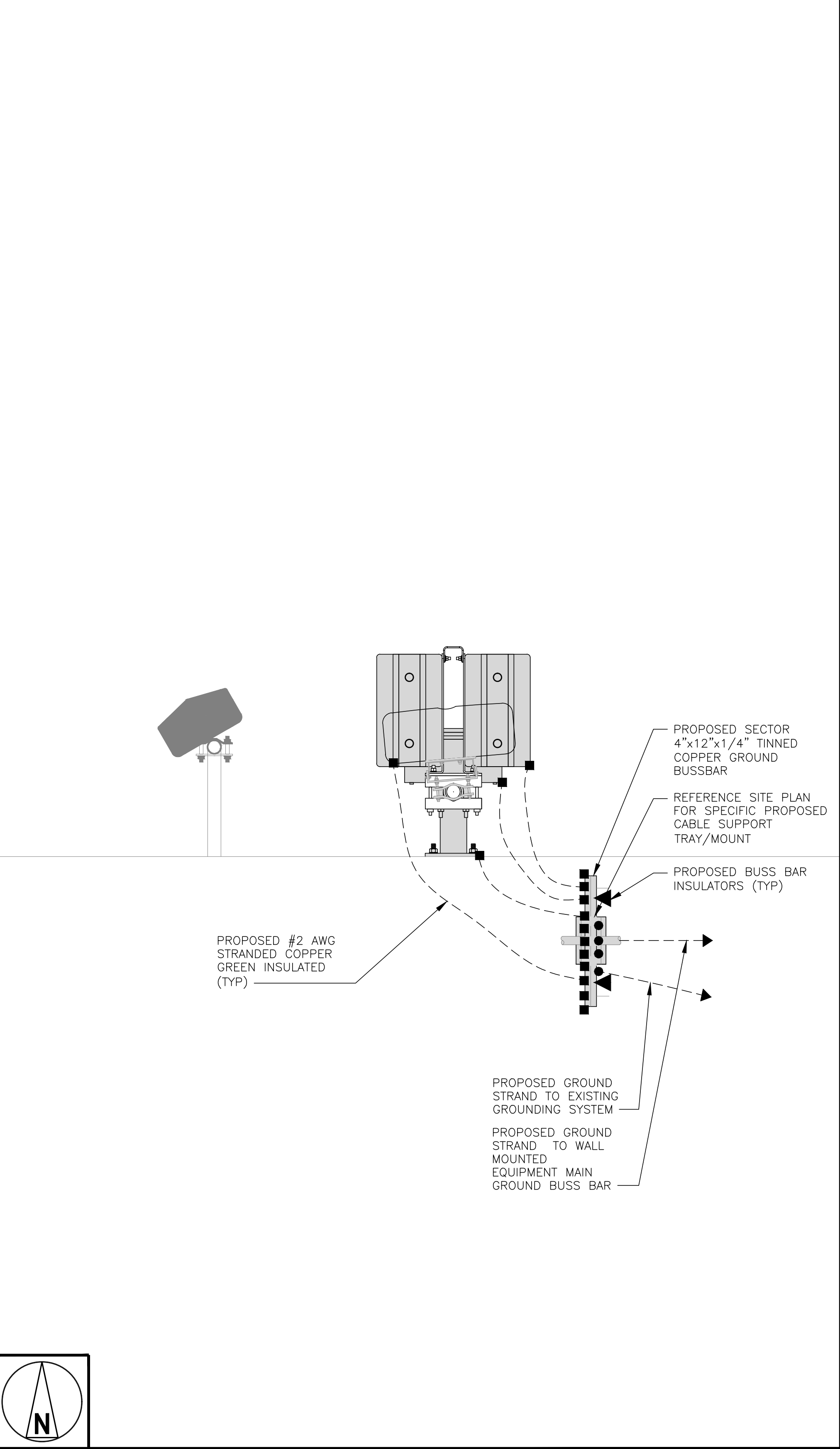


EQUIPMENT GROUNDING DETAIL – ELEVATION

NO SCALE 2

NOTE

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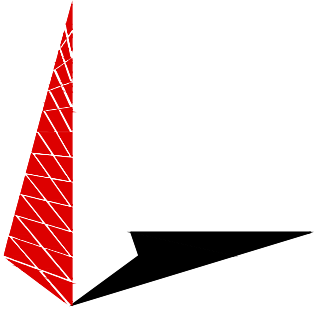


ANTENNA GROUNDING DETAIL – PLAN VIEW

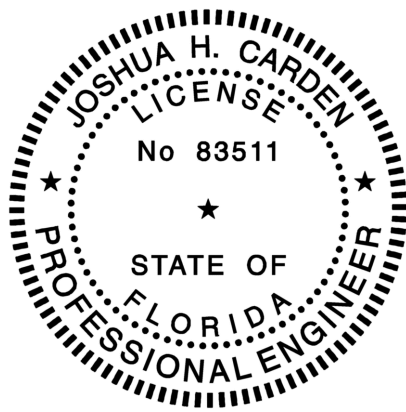
NO SCALE 3



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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.

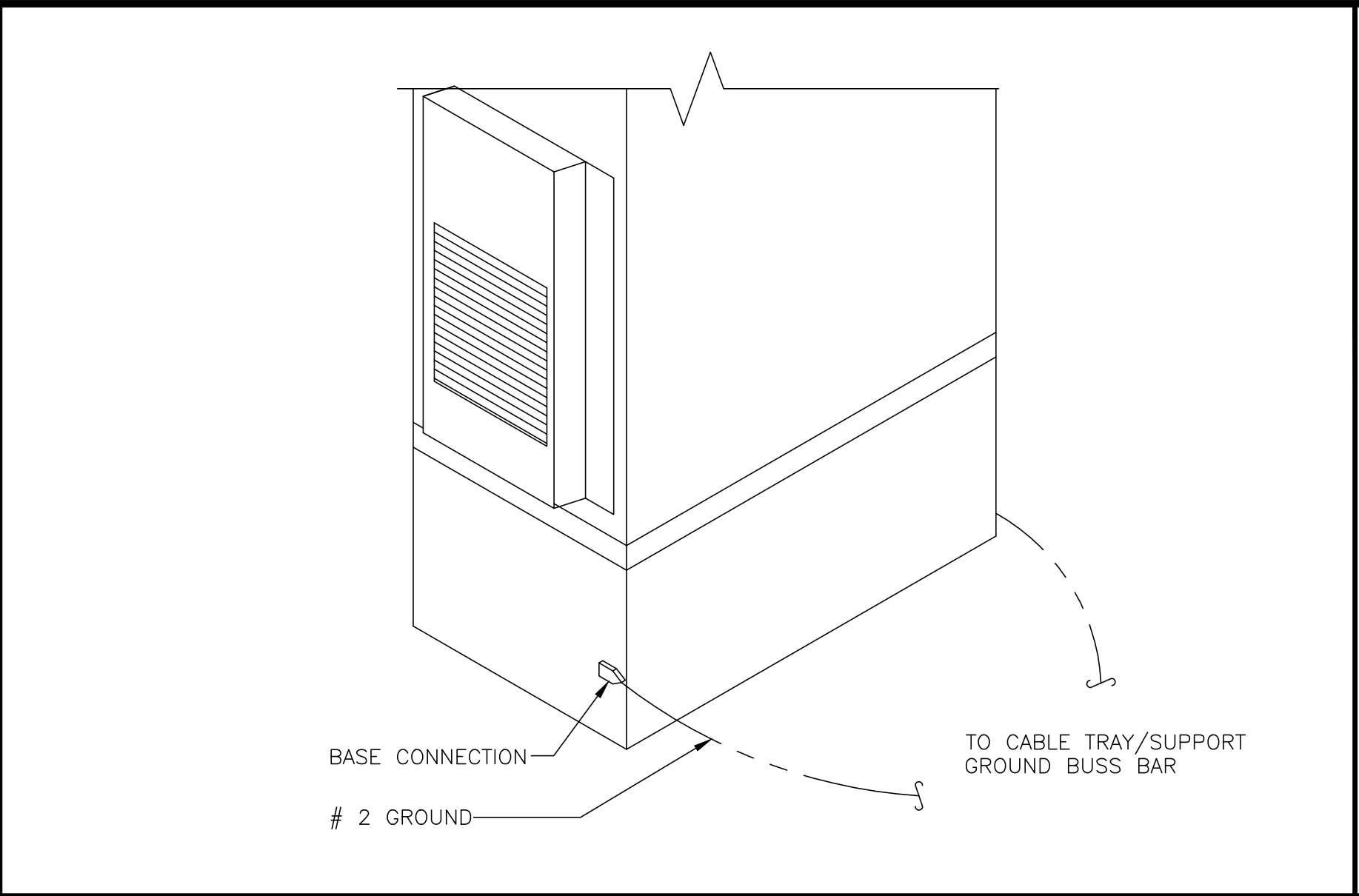
4. DO NOT INSTALL CABLE GROUNDING KIT AT A BEND AND ALWAYS DIRECT GROUND CONDUCTOR DOWN TO GROUNDING BUS.

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.

8. ENSURE THE WIRE INSULATION TERMINATION IS WITHIN 1/8" OF THE BARREL (NO SHINERS).



PANDUIT GUBC500-6
UNIVERSAL BEAM GROUNDING, CLAMP

COPPER CONDUCTOR SIZE RANGE AWG	#6-500
FLANGE THICKNESS INCHES	0.250-0.675
STUD SIZE INCHES	1/2"
THREAD SIZE	1/2"-13
DIMENSIONS (LxWxH)	3.15"x 2.13"x 2.50"

NOTE:
1. UNIVERSAL, FITS ON A WIDE RANGE OF STANDARD (ANGLED) AND WIDE FLANGE (PARALLEL) STRUCTURAL STEEL BEAMS.
2. UL 467 LISTED FOR GROUNDING AND BONDING ONLY

TYPICAL GROUNDING NOTES

NO SCALE

1

OUTDOOR CABINET GROUNDING

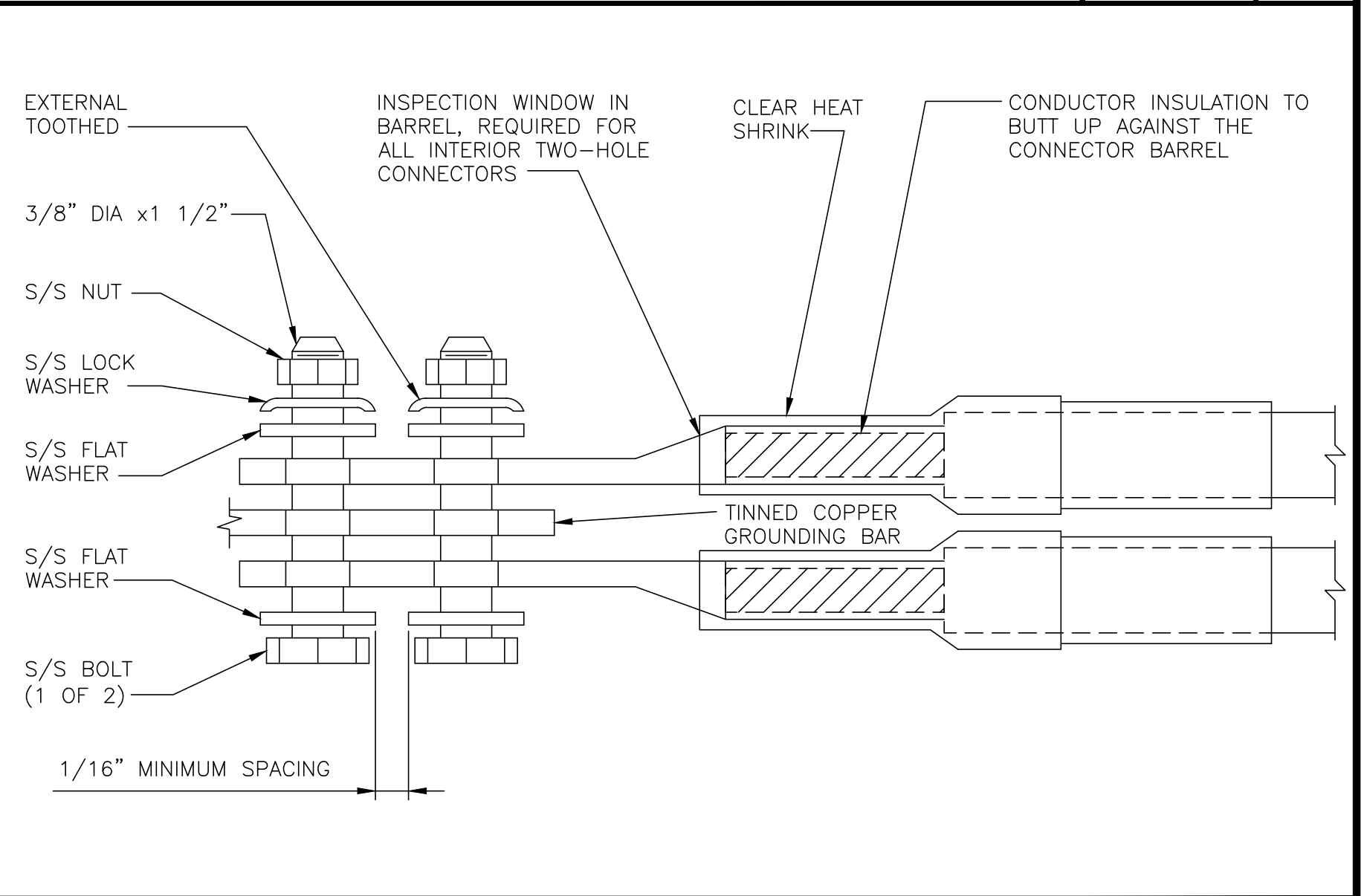
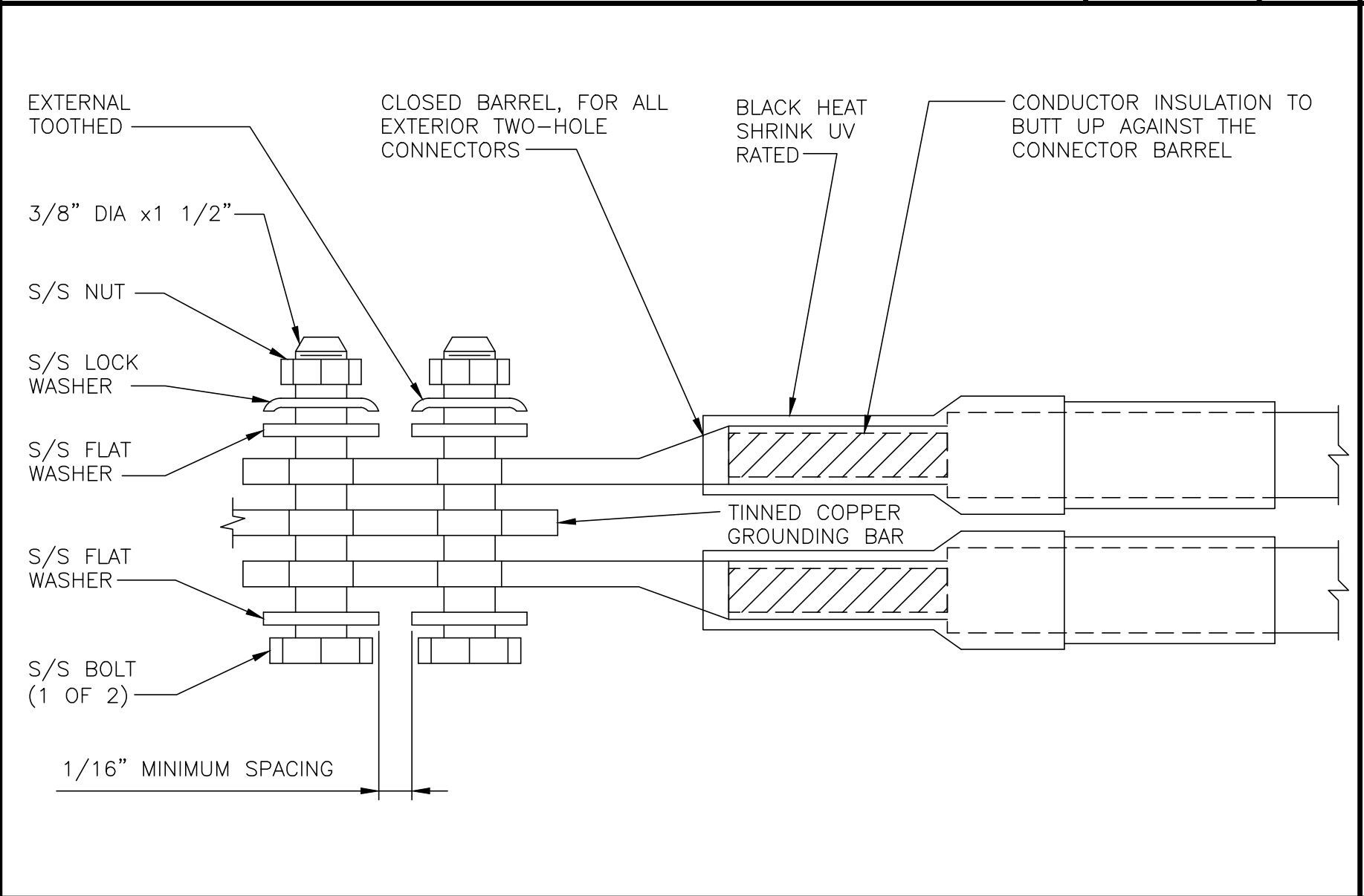
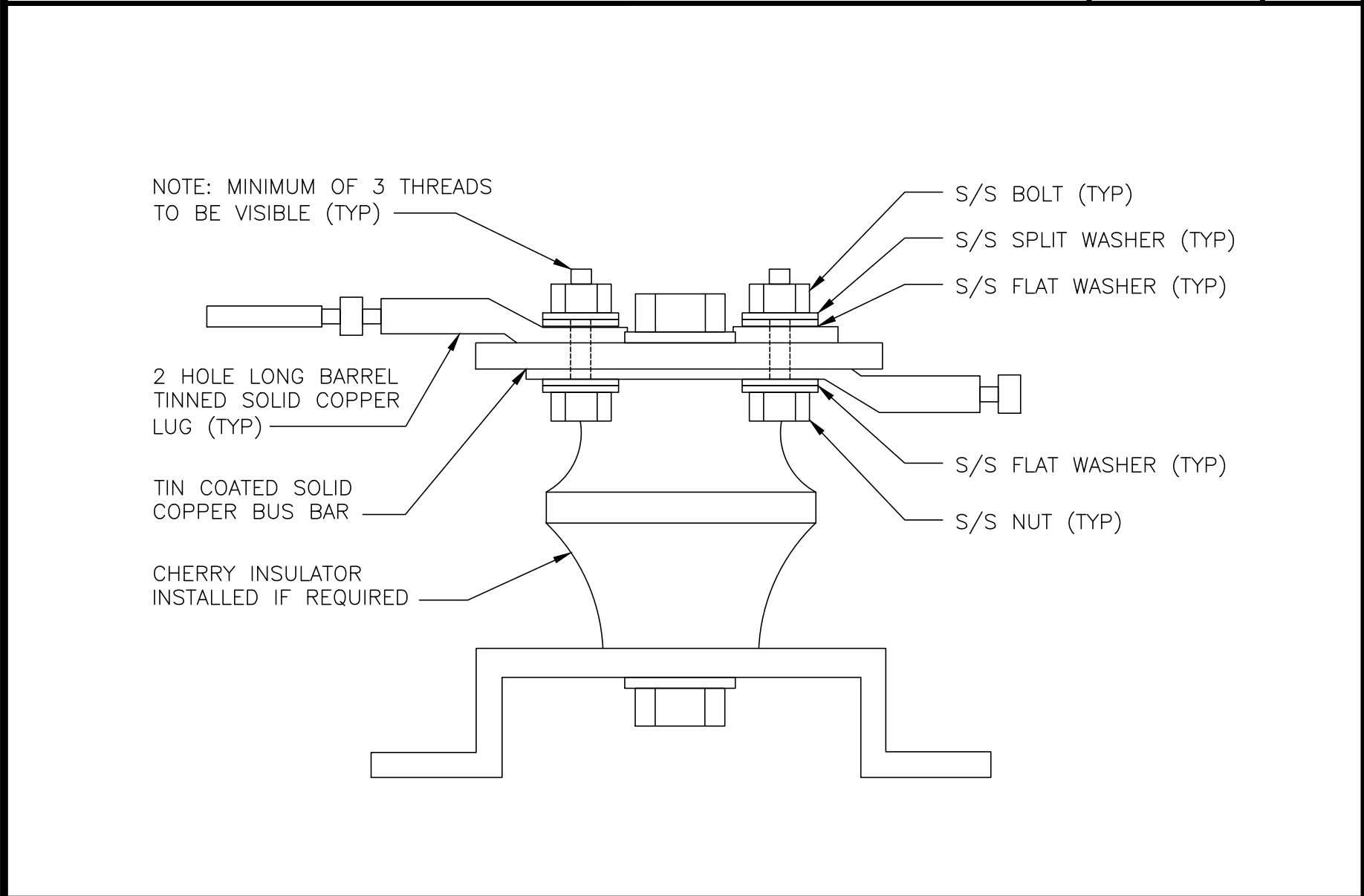
NO SCALE

2

BUILDING STEEL GROUNDING DETAIL

NO SCALE

3



LUG DETAIL

NO SCALE

4

TYPICAL EXTERIOR TWO HOLE LUG

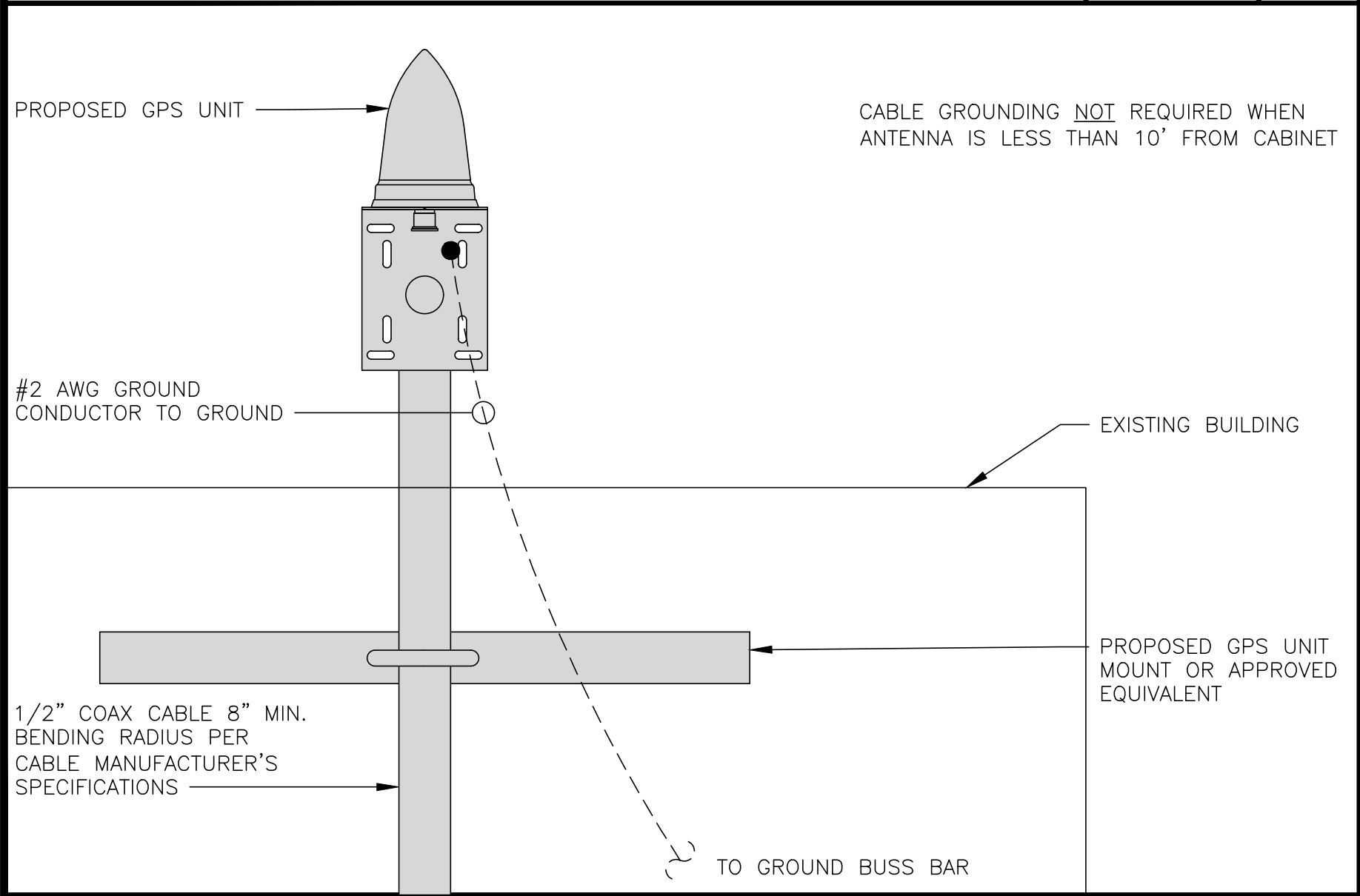
NO SCALE

5

TYPICAL INTERIOR TWO HOLE LUG

NO SCALE

6



WALL MOUNT GPS UNIT GROUNDING

NO SCALE

7

NOT USED

NO SCALE

8

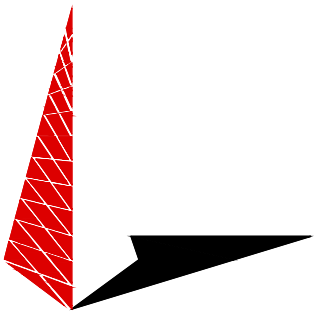
NOT USED

NO SCALE

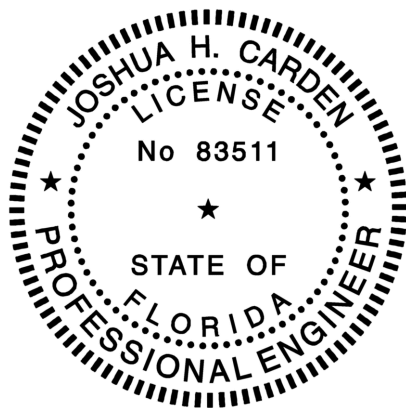
9



5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120



TOWER ENGINEERING PROFESSIONALS
326 TRYON RD. RALEIGH, NC
27603 OFFICE: (919) 661-6351
FL COA# 31011



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RJB	CC	CC

RFDS REV #: 6

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
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A&E PROJECT NUMBER
250655

DISH Wireless L.L.C.
PROJECT INFORMATION

MIMIA00378A
125 S OCEAN AVE
PALM BEACH SHORES, FL 33404

SHEET TITLE
GROUNDING DETAILS

SHEET NUMBER
G-3

RF JUMPER COLOR CODING

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

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

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

ALPHA RRH				BETA RRH				GAMMA RRH			
PORT 1 + SLANT	PORT 2 + SLANT	PORT 3 + SLANT	PORT 4 + SLANT	PORT 1 + SLANT	PORT 2 + SLANT	PORT 3 + SLANT	PORT 4 + SLANT	PORT 1 + SLANT	PORT 2 + SLANT	PORT 3 + SLANT	PORT 4 + SLANT
RED	RED	RED	RED	BLUE	BLUE	BLUE	BLUE	GREEN	GREEN	GREEN	GREEN
ORANGE	ORANGE	RED	RED	ORANGE	ORANGE	BLUE	BLUE	ORANGE	ORANGE	GREEN	GREEN
	WHITE (1) PORT	ORANGE	ORANGE		WHITE (1) PORT	ORANGE	ORANGE		WHITE (1) PORT	ORANGE	ORANGE
			WHITE (1) PORT				WHITE (1) PORT				WHITE (1) PORT

MID-BAND RRH –
(AWS BANDS N66+N70)

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

RED	RED	RED	RED	BLUE	BLUE	BLUE	BLUE	GREEN	GREEN	GREEN	GREEN
PURPLE	PURPLE	RED	RED	PURPLE	PURPLE	BLUE	BLUE	PURPLE	PURPLE	GREEN	GREEN
	WHITE (1) PORT	PURPLE	PURPLE		WHITE (1) PORT	PURPLE	PURPLE		WHITE (1) PORT	PURPLE	PURPLE
			WHITE (1) PORT				WHITE (1) PORT				WHITE (1) PORT

HYBRID/DISCREET CABLES

INCLUDE SECTOR BANDS BEING SUPPORTED AM
LONG WITH FREQUENCY BANDS

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

EXAMPLE 2 – HYBRID, OR DISCREET, SUPPORTS
CBRS ONLY, ALL SECTORS

EXAMPLE 1	EXAMPLE 2
RED	RED
BLUE	BLUE
GREEN	GREEN
ORANGE	YELLOW
PURPLE	

HYBRID/DISCREET CABLES

LOW-BAND RRH FIBER CABLES HAVE SECTOR
STRIPE ONLY

LOW BAND RRH	HIGH BAND RRH	LOW BAND RRH	LOW BAND RRH	LOW BAND RRH	LOW BAND RRH
RED	RED	BLUE	BLUE	GREEN	GREEN
	PURPLE		PURPLE		PURPLE

POWER CABLES TO RRHs

LOW-BAND RRH POWER CABLES HAVE SECTOR
STRIPE ONLY

LOW BAND RRH	HIGH BAND RRH	LOW BAND RRH	LOW BAND RRH	LOW BAND RRH	LOW BAND RRH
RED	RED	BLUE	BLUE	GREEN	GREEN
	PURPLE		PURPLE		PURPLE

RET MOTORS AT ANTENNAS

PORT 1/ ANTENNA 1 "IN"	PORT 1/ ANTENNA 1 "IN"	PORT 1/ ANTENNA 1 "IN"
RED	BLUE	GREEN

MICROWAVE RADIO LINKS

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

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

PRIMARY	SECONDARY
WHITE	WHITE
RED	RED
WHITE	WHITE
	RED
	WHITE

RF CABLE COLOR CODES

NO SCALE

1

LOW BANDS (N71–N28)
OPTIONAL – (N29)

ORANGE

AWS
(N65+N70+H–BLOCK)

PURPLE

CBRS TECH
(3 GHz)

YELLOW

NEGATIVE SLANT PORT
ON ANTRRH

WHITE

ALPHA SECTOR

RED

BETA SECTOR

BLUE

GAMMA SECTOR

GREEN

COLOR IDENTIFIER

NO SCALE

2

NOT USED

NO SCALE

3

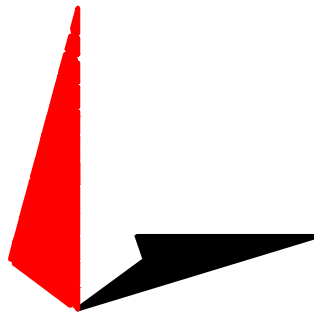
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NO SCALE

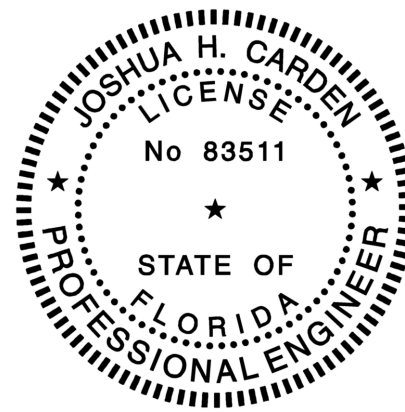
4

dish
wireless.

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LITTLETON, CO 80120



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RJB

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CC

RFDS REV #: 6

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A&E PROJECT NUMBER

250655

DISH Wireless L.L.C.
PROJECT INFORMATION

MIMIA00378A
125 S OCEAN AVE
PALM BEACH SHORES, FL
33404

SHEET TITLE
RF
CABLE COLOR CODE

SHEET NUMBER

RF-1

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

ABBREVIATIONS

SIGN TYPES		
TYPE	COLOR	COLOR CODE PURPOSE
INFORMATION	GREEN	"INFORMATIONAL SIGN" TO NOTIFY OTHERS OF SITE OWNERSHIP & CONTACT NUMBER AND POTENTIAL RF EXPOSURE.
NOTICE	BLUE	"NOTICE BEYOND THIS POINT" RF FIELDS BEYOND THIS POINT MAY EXCEED THE FCC GENERAL PUBLIC EXPOSURE LIMIT. OBEY ALL POSTED SIGNS AND SITE GUIDELINES FOR WORKING IN RF ENVIRONMENTS. IN ACCORDANCE WITH FEDERAL COMMUNICATIONS COMMISSION RULES ON RADIO FREQUENCY EMISSIONS 47 CFR-1.1307(b)
CAUTION	YELLOW	"CAUTION BEYOND THIS POINT" RF FIELDS BEYOND THIS POINT MAY EXCEED THE FCC GENERAL PUBLIC EXPOSURE LIMIT. OBEY ALL POSTED SIGNS AND SITE GUIDELINES FOR WORKING IN RF ENVIRONMENTS. IN ACCORDANCE WITH FEDERAL COMMUNICATIONS COMMISSION RULES ON RADIO FREQUENCY EMISSIONS 47 CFR-1.1307(b)
WARNING	ORANGE/RED	"WARNING BEYOND THIS POINT" RF FIELDS AT THIS SITE EXCEED FCC RULES FOR HUMAN EXPOSURE. FAILURE TO OBEY ALL POSTED SIGNS AND SITE GUIDELINES FOR WORKING IN RF ENVIRONMENTS COULD RESULT IN SERIOUS INJURY. IN ACCORDANCE WITH FEDERAL COMMUNICATIONS COMMISSION RULES ON RADIO FREQUENCY EMISSIONS 47 CFR-1.1307(b)

SIGN PLACEMENT:

- RF SIGNAGE PLACEMENT SHALL FOLLOW THE RECOMMENDATIONS OF AN EXISTING EME REPORT, CREATED BY A THIRD PARTY PREVIOUSLY AUTHORIZED BY DISH Wireless L.L.C.
- INFORMATION SIGN (GREEN) SHALL BE LOCATED ON EXISTING DISH Wireless L.L.C EQUIPMENT.
 - A) IF THE INFORMATION SIGN IS A STICKER, IT SHALL BE PLACED ON EXISTING DISH Wireless L.L.C EQUIPMENT CABINET.
 - B) IF THE INFORMATION SIGH IS A METAL SIGN IT SHALL BE PLACED ON EXISTING DISH Wireless L.L.C H-FRAME WITH A SECURE ATTACH METHOD.
- IF EME REPORT IS NOT AVAILABLE AT THE TIME OF CREATION OF CONSTRUCTION DOCUMENTS; PLEASE CONTACT DISH Wireless L.L.C. CONSTRUCTION MANAGER FOR FURTHER INSTRUCTION ON HOW TO PROCEED.

NOTES:

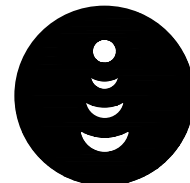
1. FOR DISH Wireless L.L.C. LOGO, SEE DISH Wireless L.L.C. DESIGN SPECIFICATIONS (PROVIDED BY DISH Wireless L.L.C.)
2. SITE ID SHALL BE APPLIED TO SIGNS USING "LASER ENGRAVING" OR ANY OTHER WEATHER RESISTANT METHOD (DISH Wireless L.L.C. APPROVAL REQUIRED)
3. TEXT FOR SIGNAGE SHALL INDICATE CORRECT SITE NAME AND NUMBER AS PER DISH Wireless L.L.C. CONSTRUCTION MANAGER RECOMMENDATIONS.
4. CABINET/SHELTER MOUNTING APPLICATION REQUIRES ANOTHER PLATE APPLIED TO THE FACE OF THE CABINET WITH WATER PROOF POLYURETHANE ADHESIVE
5. ALL SIGNS WILL BE SECURED WITH EITHER STAINLESS STEEL ZIP TIES OR STAINLESS STEEL TECH SCREWS
6. ALL SIGNS TO BE 8.5"x11" AND MADE WITH 0.04" OF ALUMINUM MATERIAL

INFORMATION

This is an access point to an area with transmitting antennas.

Obey all signs and barriers beyond this point.
Call the DISH Wireless L.L.C. NOC at 1-866-624-6874

Site ID: _____



THIS SIGN IS FOR REFERENCE PURPOSES ONLY

NOTICE



Transmitting Antenna(s)

Radio frequency fields beyond this point **MAY EXCEED** the FCC Occupational exposure limit.

Obey all posted signs and site guidelines for working in radio frequency environments.

Call the DISH Wireless L.L.C. NOC at 1-866-624-6874 prior to working beyond this point.

Site ID: _____



THIS SIGN IS FOR REFERENCE PURPOSES ONLY

CAUTION



Transmitting Antenna(s)

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WARNING



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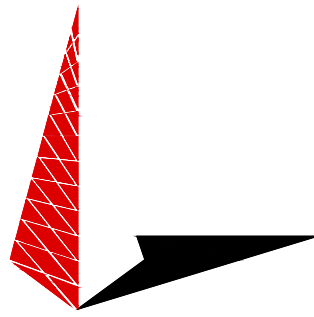
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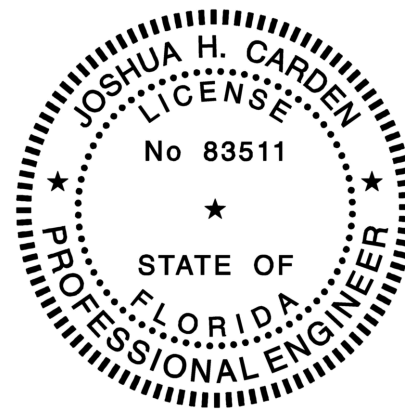
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RJB	CC	CC

RFDS REV #: 6

CONSTRUCTION DOCUMENTS

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A&E PROJECT NUMBER
250655

DISH Wireless L.L.C.
PROJECT INFORMATION
MIMIA00378A
125 S OCEAN AVE
PALM BEACH SHORES, FL
33404

SHEET TITLE
RF SIGNAGE

SHEET NUMBER
GN-2

SITE ACTIVITY REQUIREMENTS:

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

THE INTEGRITY OF THE SAFETY CLIMB AND ALL COMPONENTS OF THE CLIMBING FACILITY SHALL BE CONSIDERED DURING ALL STAGES OF DESIGN, INSTALLATION, AND INSPECTION. TOWER MODIFICATION, MOUNT REINFORCEMENTS, AND/OR EQUIPMENT INSTALLATIONS SHALL NOT COMPROMISE THE INTEGRITY OR FUNCTIONAL USE OF THE SAFETY CLIMB OR ANY COMPONENTS OF THE CLIMBING FACILITY ON THE STRUCTURE. THIS SHALL INCLUDE, BUT NOT BE LIMITED TO: PINCHING OF THE WIRE ROPE, BENDING OF THE WIRE ROPE FROM ITS SUPPORTS, DIRECT CONTACT OR CLOSE PROXIMITY TO THE WIRE ROPE WHICH MAY CAUSE FRICTIONAL WEAR, IMPACT TO THE ANCHORAGE POINTS IN ANY WAY, OR TO IMPEDE/BLOCK ITS INTENDED USE. ANY COMPROMISED SAFETY CLIMB, INCLUDING EXISTING CONDITIONS MUST BE TAGGED OUT AND REPORTED TO YOUR DISH Wireless L.L.C. AND DISH Wireless L.L.C. AND TOWER OWNER POC OR CALL THE NOC TO GENERATE A SAFETY CLIMB MAINTENANCE AND CONTRACTOR NOTICE TICKET.
3. PRIOR TO THE START OF CONSTRUCTION, ALL REQUIRED JURISDICTIONAL PERMITS SHALL BE OBTAINED. THIS INCLUDES, BUT IS NOT LIMITED TO, BUILDING, ELECTRICAL, MECHANICAL, FIRE, FLOOD ZONE, ENVIRONMENTAL, AND ZONING. AFTER ONSITE ACTIVITIES AND CONSTRUCTION ARE COMPLETED, ALL REQUIRED PERMITS SHALL BE SATISFIED AND CLOSED OUT ACCORDING TO LOCAL JURISDICTIONAL REQUIREMENTS.
4. ALL CONSTRUCTION MEANS AND METHODS; INCLUDING BUT NOT LIMITED TO, ERECTION PLANS, RIGGING PLANS, CLIMBING PLANS, AND RESCUE PLANS SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR RESPONSIBLE FOR THE EXECUTION OF THE WORK CONTAINED HEREIN, AND SHALL MEET ANSI/ASSE A10.48 (LATEST EDITION); FEDERAL, STATE, AND LOCAL REGULATIONS; AND ANY APPLICABLE INDUSTRY CONSENSUS STANDARDS RELATED TO THE CONSTRUCTION ACTIVITIES BEING PERFORMED. ALL RIGGING PLANS SHALL ADHERE TO ANSI/ASSE A10.48 (LATEST EDITION) AND DISH Wireless L.L.C. AND TOWER OWNER STANDARDS, INCLUDING THE REQUIRED INVOLVEMENT OF A QUALIFIED ENGINEER FOR CLASS IV CONSTRUCTION, TO CERTIFY THE SUPPORTING STRUCTURE(S) IN ACCORDANCE WITH ANSI/TIA–322 (LATEST EDITION).
5. ALL SITE WORK TO COMPLY WITH DISH Wireless L.L.C. AND TOWER OWNER INSTALLATION STANDARDS FOR CONSTRUCTION ACTIVITIES ON DISH Wireless L.L.C. AND TOWER OWNER TOWER SITE AND LATEST VERSION OF ANSI/TIA–1019–A–2012 ”STANDARD FOR INSTALLATION, ALTERATION, AND MAINTENANCE OF ANTENNA SUPPORTING STRUCTURES AND ANTENNAS.”
6. IF THE SPECIFIED EQUIPMENT CAN NOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION FOR APPROVAL BY DISH Wireless L.L.C. AND TOWER OWNER PRIOR TO PROCEEDING WITH ANY SUCH CHANGE OF INSTALLATION.
7. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS AND ORDINANCES. CONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.
8. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER’S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
9. THE CONTRACTOR SHALL CONTACT UTILITY LOCATING SERVICES INCLUDING PRIVATE LOCATES SERVICES PRIOR TO THE START OF CONSTRUCTION.
10. ALL EXISTING ACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES WHERE ENCOUNTERED IN THE WORK, SHALL BE PROTECTED AT ALL TIMES AND WHERE REQUIRED FOR THE PROPER EXECUTION OF THE WORK, SHALL BE RELOCATED AS DIRECTED BY CONTRACTOR. EXTREME CAUTION SHOULD BE USED BY THE CONTRACTOR WHEN EXCAVATING OR DRILLING PIERS AROUND OR NEAR UTILITIES. CONTRACTOR SHALL PROVIDE SAFETY TRAINING FOR THE WORKING CREW. THIS WILL INCLUDE BUT NOT BE LIMITED TO A) FALL PROTECTION B) CONFINED SPACE C) ELECTRICAL SAFETY D) TRENCHING AND EXCAVATION E) CONSTRUCTION SAFETY PROCEDURES.
11. ALL SITE WORK SHALL BE AS INDICATED ON THE STAMPED CONSTRUCTION DRAWINGS AND DISH PROJECT SPECIFICATIONS, LATEST APPROVED REVISION.
12. CONTRACTOR SHALL KEEP THE SITE FREE FROM ACCUMULATING WASTE MATERIAL, DEBRIS, AND TRASH AT THE COMPLETION OF THE WORK. IF NECESSARY, RUBBISH, STUMPS, DEBRIS, STICKS, STONES AND OTHER REFUSE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF LEGALLY.
13. ALL EXISTING INACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES, WHICH INTERFERE WITH THE EXECUTION OF THE WORK, SHALL BE REMOVED AND/OR CAPPED, PLUGGED OR OTHERWISE DISCONTINUED AT POINTS WHICH WILL NOT INTERFERE WITH THE EXECUTION OF THE WORK, SUBJECT TO THE APPROVAL OF DISH Wireless L.L.C. AND TOWER OWNER, AND/OR LOCAL UTILITIES.
14. THE CONTRACTOR SHALL PROVIDE SITE SIGNAGE IN ACCORDANCE WITH THE TECHNICAL SPECIFICATION FOR SITE SIGNAGE REQUIRED BY LOCAL JURISDICTION AND SIGNAGE REQUIRED ON INDIVIDUAL PIECES OF EQUIPMENT, ROOMS, AND SHELTERS.
15. THE SITE SHALL BE GRADED TO CAUSE SURFACE WATER TO FLOW AWAY FROM THE CARRIER’S EQUIPMENT AND TOWER AREAS.
16. THE SUB GRADE SHALL BE COMPACTED AND BROUGHT TO A SMOOTH UNIFORM GRADE PRIOR TO FINISHED SURFACE APPLICATION.
17. THE AREAS OF THE OWNERS PROPERTY DISTURBED BY THE WORK AND NOT COVERED BY THE TOWER, EQUIPMENT OR DRIVEWAY, SHALL BE GRADED TO A UNIFORM SLOPE, AND STABILIZED TO PREVENT EROSION AS SPECIFIED ON THE CONSTRUCTION DRAWINGS AND/OR PROJECT SPECIFICATIONS.
18. CONTRACTOR SHALL MINIMIZE DISTURBANCE TO EXISTING SITE DURING CONSTRUCTION. EROSION CONTROL MEASURES, IF REQUIRED DURING CONSTRUCTION, SHALL BE IN CONFORMANCE WITH THE LOCAL GUIDELINES FOR EROSION AND SEDIMENT CONTROL.
19. THE CONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT CONTRACTOR’S EXPENSE TO THE SATISFACTION OF OWNER.
20. CONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS AND RADIOS REMOVED SHALL BE RETURNED TO THE OWNER’S DESIGNATED LOCATION.
21. CONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION. TRASH AND DEBRIS SHOULD BE REMOVED FROM SITE ON A DAILY BASIS.
22. NO FILL OR EMBANKMENT MATERIAL SHALL BE PLACED ON FROZEN GROUND. FROZEN MATERIALS, SNOW OR ICE SHALL NOT BE PLACED IN ANY FILL OR EMBANKMENT.

GENERAL NOTES:

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

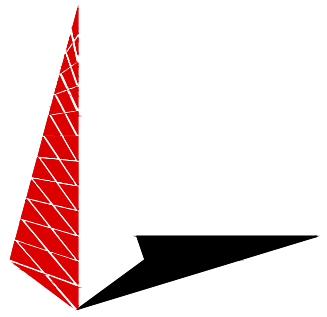
CONTRACTOR:GENERAL CONTRACTOR RESPONSIBLE FOR CONSTRUCTION

CARRIER:DISH Wireless L.L.C.

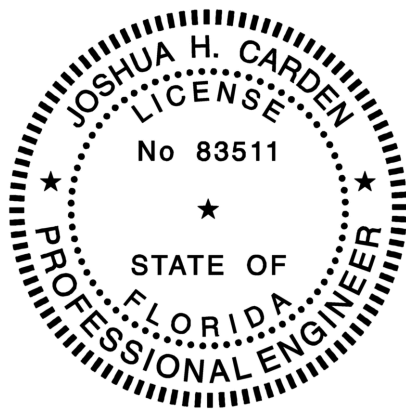
TOWER OWNER:TOWER OWNER
2. THESE DRAWINGS HAVE BEEN PREPARED USING STANDARDS OF PROFESSIONAL CARE AND COMPLETENESS NORMALLY EXERCISED UNDER SIMILAR CIRCUMSTANCES BY REPUTABLE ENGINEERS IN THIS OR SIMILAR LOCALITIES. IT IS ASSUMED THAT THE WORK DEPICTED WILL BE PERFORMED BY AN EXPERIENCED CONTRACTOR AND/OR WORKPEOPLE WHO HAVE A WORKING KNOWLEDGE OF THE APPLICABLE CODE STANDARDS AND REQUIREMENTS AND OF INDUSTRY ACCEPTED STANDARD GOOD PRACTICE. AS NOT EVERY CONDITION OR ELEMENT IS (OR CAN BE) EXPLICITLY SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL USE INDUSTRY ACCEPTED STANDARD GOOD PRACTICE FOR MISCELLANEOUS WORK NOT EXPLICITLY SHOWN.
3. THESE DRAWINGS REPRESENT THE FINISHED STRUCTURE. THEY DO NOT INDICATE THE MEANS OR METHODS OF CONSTRUCTION. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES. THE CONTRACTOR SHALL PROVIDE ALL MEASURES NECESSARY FOR PROTECTION OF LIFE AND PROPERTY DURING CONSTRUCTION. SUCH MEASURES SHALL INCLUDE, BUT NOT BE LIMITED TO, BRACING, FORMWORK, SHORING, ETC. SITE VISITS BY THE ENGINEER OR HIS REPRESENTATIVE WILL NOT INCLUDE INSPECTION OF THESE ITEMS AND IS FOR STRUCTURAL OBSERVATION OF THE FINISHED STRUCTURE ONLY.
4. NOTES AND DETAILS IN THE CONSTRUCTION DRAWINGS SHALL TAKE PRECEDENCE OVER GENERAL NOTES AND TYPICAL DETAILS. WHERE NO DETAILS ARE SHOWN, CONSTRUCTION SHALL CONFORM TO SIMILAR WORK ON THE PROJECT, AND/OR AS PROVIDED FOR IN THE CONTRACT DOCUMENTS. WHERE DISCREPANCIES OCCUR BETWEEN PLANS, DETAILS, GENERAL NOTES, AND SPECIFICATIONS, THE GREATER, MORE STRICT REQUIREMENTS, SHALL GOVERN. IF FURTHER CLARIFICATION IS REQUIRED CONTACT THE ENGINEER OF RECORD.
5. SUBSTANTIAL EFFORT HAS BEEN MADE TO PROVIDE ACCURATE DIMENSIONS AND MEASUREMENTS ON THE DRAWINGS TO ASSIST IN THE FABRICATION AND/OR PLACEMENT OF CONSTRUCTION ELEMENTS BUT IT IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO FIELD VERIFY THE DIMENSIONS, MEASUREMENTS, AND/OR CLEARANCES SHOWN IN THE CONSTRUCTION DRAWINGS PRIOR TO FABRICATION OR CUTTING OF ANY NEW OR EXISTING CONSTRUCTION ELEMENTS. IF IT IS DETERMINED THAT THERE ARE DISCREPANCIES AND/OR CONFLICTS WITH THE CONSTRUCTION DRAWINGS THE ENGINEER OF RECORD IS TO BE NOTIFIED AS SOON AS POSSIBLE.
6. PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING CONTRACTOR SHALL VISIT THE CELL SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS AND TO CONFIRM THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF CARRIER POC AND TOWER OWNER.
7. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS AND ORDINANCES. CONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.
8. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
9. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER’S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
10. IF THE SPECIFIED EQUIPMENT CAN NOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION FOR APPROVAL BY THE CARRIER AND TOWER OWNER PRIOR TO PROCEEDING WITH ANY SUCH CHANGE OF INSTALLATION.
11. CONTRACTOR IS TO PERFORM A SITE INVESTIGATION, BEFORE SUBMITTING BIDS, TO DETERMINE THE BEST ROUTING OF ALL CONDUITS FOR POWER, AND TELCO AND FOR GROUNDING CABLES AS SHOWN IN THE POWER, TELCO, AND GROUNDING PLAN DRAWINGS.
12. THE CONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT CONTRACTOR’S EXPENSE TO THE SATISFACTION OF DISH Wireless L.L.C. AND TOWER OWNER
13. CONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS REMOVED SHALL BE RETURNED TO THE OWNER’S DESIGNATED LOCATION.
14. CONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION. TRASH AND DEBRIS SHOULD BE REMOVED FROM SITE ON A DAILY BASIS.



5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120



TOWER ENGINEERING PROFESSIONALS
326 TRYON RD. RALEIGH, NC
27603 OFFICE: (919) 661–6351
FL COA# 31011



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RFDS REV #: 6

CONSTRUCTION DOCUMENTS

SUBMITTALS		
REV	DATE	DESCRIPTION
0	05/17/2021	PRELIMINARY
1	06/03/2021	PRELIMINARY
2	08/06/2021	PRELIMINARY
3	04/22/2022	CONSTRUCTION
4	09/28/2022	CONSTRUCTION
5	10/20/2022	CONSTRUCTION
6	01/09/2023	CONSTRUCTION

A&E PROJECT NUMBER
250655

DISH Wireless L.L.C.
PROJECT INFORMATION

MIMIA00378A
125 S OCEAN AVE
PALM BEACH SHORES, FL
33404

SHEET TITLE
GENERAL NOTES

SHEET NUMBER
GN-3

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
- TOWER ENGINEERING PROFESSIONALS
326 TRYON RD. RALEIGH, NC
27603 OFFICE: (919) 661-6351
FL COA# 31011
- JOSHUA H. CARDEN
LICENSE
No 83511
★
STATE OF
FLORIDA
PROFESSIONAL ENGINEER

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RJB	CC	CC
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CONSTRUCTION
DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
0	05/17/2021	PRELIMINARY
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5	10/20/2022	CONSTRUCTION
6	01/09/2023	CONSTRUCTION

A&E PROJECT NUMBER
250655

DISH Wireless L.L.C.
PROJECT INFORMATION

MIMIA00378A
125 S OCEAN AVE
PALM BEACH SHORES, FL
33404

SHEET TITLE
GENERAL NOTES

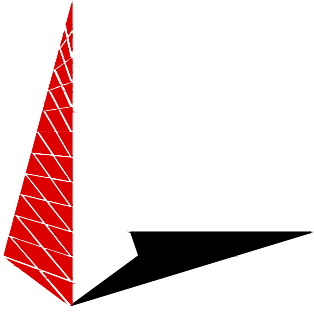
SHEET NUMBER
GN-4

GROUNDING NOTES:

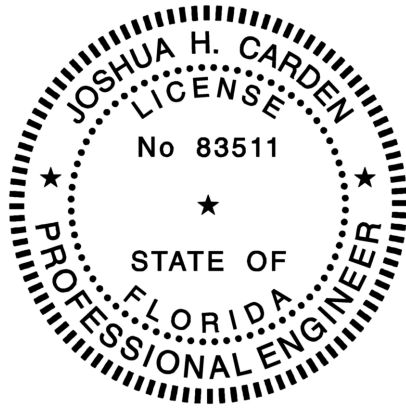
1. ALL GROUND ELECTRODE SYSTEMS (INCLUDING TELECOMMUNICATION, RADIO, LIGHTNING PROTECTION AND AC POWER GES’S) SHALL BE BONDED TOGETHER AT OR BELOW GRADE, BY TWO OR MORE COPPER BONDING CONDUCTORS IN ACCORDANCE WITH THE NEC.
2. THE CONTRACTOR SHALL PERFORM IEEE FALL-OF-POTENTIAL RESISTANCE TO EARTH TESTING (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.



5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120



TOWER ENGINEERING PROFESSIONALS
326 TRYON RD. RALEIGH, NC
27603 OFFICE: (919) 661-6351
FL COA# 31011



THIS DOCUMENT HAS BEEN ELECTRONICALLY SIGNED & SEALED BY JOSHUA H. CARDEN, P.E. ON 1-09-23 USING A DIGITAL SIGNATURE. PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED & SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES. 01/09/2023

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

DRAWN BY:	CHECKED BY:	APPROVED BY:
RJB	CC	CC

RFDS REV #: 6

CONSTRUCTION DOCUMENTS

SUBMITTALS		
REV	DATE	DESCRIPTION
0	05/17/2021	PRELIMINARY
1	06/03/2021	PRELIMINARY
2	08/06/2021	PRELIMINARY
3	04/22/2022	CONSTRUCTION
4	09/28/2022	CONSTRUCTION
5	10/20/2022	CONSTRUCTION
6	01/09/2023	CONSTRUCTION

A&E PROJECT NUMBER
250655

DISH Wireless L.L.C.
PROJECT INFORMATION

MIMIA00378A
125 S OCEAN AVE
PALM BEACH SHORES, FL
33404

SHEET TITLE
GENERAL NOTES

SHEET NUMBER

GN-5

AUTHORIZATION OF AGENT & ACKNOWLEDGEMENT OF FINANCIAL RESPONSIBILITY

Consent to an agent is required from the property owner(s) and contract purchaser, if applicable, if the property owner(s) or contract purchaser does not intend to attend all meetings and public hearings and submit it person all material pertaining to the Application. Consent to a firm shall be deemed consent for the entire firm, unless otherwise specified.

This form shall serve as consent for the agent identified below to prepare or have prepared all documents for the Application affecting property I (We) have an ownership interest in.

I (We) hereby designate and authorize the below-signed person to act as my (our) agent in regard to this Application and accept financial responsibility for any costs incurred by the agent as a result of this Application. Further, I (We) acknowledge that no permit will be issued before all fees associated with Application are paid.

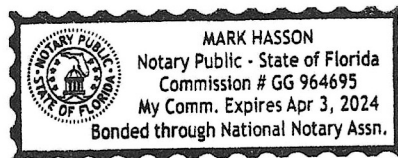
KATHLEEN T. McBahian
For MAYAN Towers Condominium 1 9/23/2022
Signature of Owner or Trustee Date

STATE OF FLORIDA PALM BEACH COUNTY:

The foregoing instrument was acknowledged before me by means of ☒ physical presence or ☐ online notarization this 23 day of September 2022,
by Kathleen T. McBahian who is personally known to me or has
produced _____ (type of identification) as identification.

Mark Hasson
(Name - type, stamp or print clearly)

[Signature]
(Signature)



NOTARY'S SEAL

Agent Information:

Printed Name of Agent

Name of Firm

Signature of Agent

Date

OWNER ACKNOWLEDGMENT & CERTIFICATION

I (We) affirm and certify that I (We) understand and will comply with all provisions and regulations of the Town of Palm Beach Shores, Florida. I (We) understand that if this Application is approved by the Town, the aforementioned real property described herein will be considered, in every respect, to be a part of the Town of Palm Beach Shores and will be subjected to all applicable laws, regulations, taxes and police powers of the Town including the Comprehensive Plan and Zoning Ordinance. I (We) further certify that all statements and diagrams submitted herewith are true and accurate to the best of my (our) knowledge and belief. Further, I (We) understand that this Application and attachments become part of the Official Records of the Town of Palm Beach Shores, Florida and are not returnable. I (We) acknowledge that no permit will be issued before all fees associated with Application are paid.

1. Owner acknowledges and understands that the fee for site plan review, architectural/aesthetic review, variance, special exception, rezoning, etc. **may not cover all review costs**. A final statement of any outstanding costs (covering advertising costs, legal, architectural and other consultant costs) will be sent to the applicant upon completion of the review process. Owner accepts financial responsibility for all costs incurred as a result of this Application.
2. A construction schedule is required of all developers during the development process. The Planning and Zoning Board must approve your proposed construction schedule.
3. The Town requires payment of impact fees for floor area added during the development, re-development or renovation of a property. These impact fees will be used to pay for capital improvements relative to Fire Protection, Police Protection, Parks & Recreation and Public Buildings. Impact fees must be paid to the Town before a Certificate of Occupancy will be issued.
4. Roll-off dumpsters for construction/demolition debris and solid waste must be rented through the Town's contracted solid waste hauler, Waste Management.
5. Final as-built plans must be submitted to the Town in digital form, preferably in PDF format.

By signing below, I acknowledge that I have read and understand the five (5) items listed above.

Kathleen T McGahran
FOR Mayan Towers Condominium #1
Signature of Owner

9/22/2022
Date

KATHLEEN T MCGAHRAN FOR
Printed Name of Owner
MAYAN TOWERS CONDOMINIUM 1

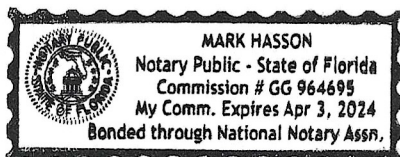
STATE OF FLORIDA PALM BEACH COUNTY:

The foregoing instrument was acknowledged before me by means of ☒ physical presence or ☐ online notarization this 22 day of September 2022,

by Kathleen T. McGahran who is personally known to me or has produced _____ (type of identification) as identification.

Mark Hasson
(Name - type, stamp or print clearly)

[Signature]
(Signature)



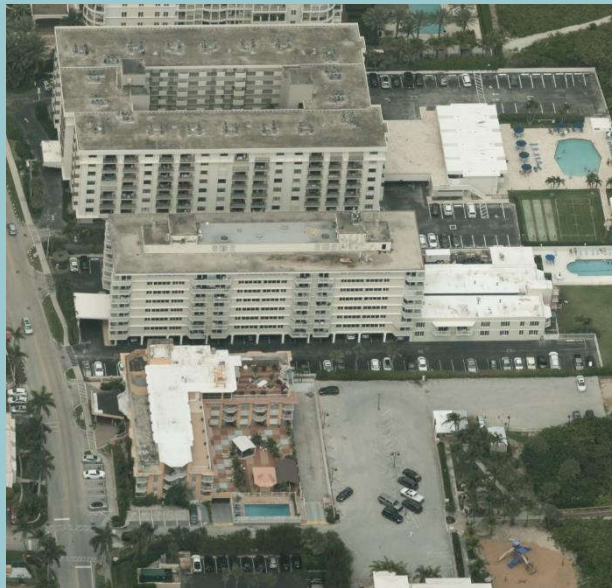
NOTARY'S SEAL

Radio Frequency - Electromagnetic Energy (RF-EME) Jurisdictional Report

Site No. MIMIA00378A

125 S. Ocean Avenue
Palm Beach Shores, Florida 33404
26° 46' 45.12" N, -80° 2' 0.07" W NAD83

EBI Project No. 6222001414
May 27, 2022



Prepared for:
Dish Wireless

Prepared by:
 **EBI Consulting**
environmental | engineering | due diligence

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APPENDICES

APPENDIX A CERTIFICATIONS

APPENDIX B RADIO FREQUENCY ELECTROMAGNETIC ENERGY SAFETY / SIGNAGE PLANS

APPENDIX C FEDERAL COMMUNICATIONS COMMISSION (FCC) REQUIREMENTS

REFERENCE DOCUMENTS (NOT ATTACHED)

CDs: MIMIA00378A_PRELIMCD_20210517164652_JV_05.20.2021_REVIEWED WITH
REDLINES_20210527100033

RFDS: RFDS-MIMIA00378A-PRELIMINARY-20220506-v.5_20220506150257

EXECUTIVE SUMMARY

Purpose of Report

EnviroBusiness Inc. (dba EBI Consulting) has been contracted by Dish Wireless to conduct radio frequency electromagnetic (RF-EME) modeling for Dish Wireless Site MIMIA00378A located at 125 S. Ocean Avenue in Palm Beach Shores, Florida to determine RF-EME exposure levels from proposed Dish Wireless communications equipment at this site. As described in greater detail in Appendix C of this report, the Federal Communications Commission (FCC) has developed Maximum Permissible Exposure (MPE) Limits for the general public and for occupational activities. This report summarizes the results of RF-EME modeling in relation to relevant FCC RF-EME compliance standards for limiting human exposure to RF-EME fields.

Statement of Compliance

A site is considered out of compliance with FCC regulations if there are areas that exceed the FCC exposure limits and there are no RF hazard mitigation measures in place. Any carrier which has an installation that contributes more than 5% of the applicable MPE must participate in mitigating these RF hazards.

As presented in the sections below, based on worst-case predictive modeling, there are no modeled areas on any accessible rooftop or ground-level walking/working surface related to the proposed antennas that exceed the FCC's occupational or general public exposure limits at this site.

At the nearest walking/working surfaces to the Dish Wireless antennas, the maximum power density generated by the DISH antennas is approximately **65.38** percent of the FCC's general public limit (**13.08** percent of the FCC's occupational limit).

The composite exposure level from all carriers on this site is approximately **65.80** percent of the FCC's general public limit (**13.16** percent of the FCC's occupational limit) at the nearest walking/working surface to each antenna.

Recommended control measures are outlined in Section 4.0 and within the Site Safety Plan (attached); Dish Wireless should also provide procedures to shut down and lockout/tagout this wireless equipment in accordance with their own standard operating protocol. Non-telecom workers who will be working in areas of exceedance are required to contact Dish Wireless since only DISH has the ability to lockout/tagout the facility, or to authorize others to do so.

1.0 INTRODUCTION

Radio frequency waves are electromagnetic waves from the portion of the electromagnetic spectrum at frequencies lower than visible light and microwaves. The wavelengths of radio waves range from thousands of meters to around 30 centimeters. These wavelengths correspond to frequencies as low as 3 cycles per second (or hertz [Hz]) to as high as one gigahertz (one billion cycles per second).

Personal Communication (PCS) facilities used by Dish Wireless in this area will potentially operate within a frequency range of 600 to 5000 MHz. Facilities typically consist of: 1) electronic transceivers (the radios or cabinets) connected to wired telephone lines; and 2) antennas that send the wireless signals created by the transceivers to be received by individual subscriber units (PCS telephones). Transceivers are typically connected to antennas by coaxial cables.

Because of the short wavelength of PCS services, the antennas require line-of-site paths for good propagation, and are typically installed a distance above ground level. Antennas are constructed to concentrate energy towards the horizon, with as little energy as possible scattered towards the ground or the sky. This design, combined with the low power of PCS facilities, generally results in no possibility for exposure to approach Maximum Permissible Exposure (MPE) levels, with the exception of in areas in the immediate vicinity of the antennas.

MPE limits do not represent levels where a health risk exists, since they are designed to provide a substantial margin of safety. These limits apply for continuous exposures and are intended to provide a prudent margin of safety for all persons, regardless of age, gender, size or health.

2.0 SITE DESCRIPTION

This project site includes the following proposed wireless telecommunication antennas on a rooftop located at 125 S. Ocean Avenue in Palm Beach Shores, Florida.

Ant #	Operator	Antenna Make	Antenna Model	Frequency (MHz)	Azimuth (deg.)	Mechanical Downtilt (deg.)	Horizontal Beamwidth (Degrees)	Aperture (feet)	Total Power Input (Watts)	Gain (dBd)*	Total ERP (Watts)	Total EIRP (Watts)
1	Dish	Commscope	FFVV-65B-R2 02DT 600 PRELIM	600	355	0	67	6.0	120	11.1	1377.78	2259.57
1	Dish	Commscope	FFVV-65B-R2 02DT 700 PRELIM	700	355	0	61	6.0	120	11.81	1622.49	2660.88
1	Dish	Commscope	FFVV-65B-R2 02DT 1900 PRELIM	1900	355	0	70	6.0	160	15.52	5083.00	8336.12
1	Dish	Commscope	FFVV-65B-R2 02DT 2100 PRELIM	2100	355	0	65	6.0	160	16.04	5729.54	9396.45
2	Dish	Commscope	FFVV-65B-R2 02DT 600 PRELIM	600	200	0	67	6.0	120	11.1	1377.78	2259.57
2	Dish	Commscope	FFVV-65B-R2 02DT 700 PRELIM	700	200	0	61	6.0	120	11.81	1622.49	2660.88
2	Dish	Commscope	FFVV-65B-R2 02DT 1900 PRELIM	1900	200	0	70	6.0	160	15.52	5083.00	8336.12
2	Dish	Commscope	FFVV-65B-R2 02DT 2100 PRELIM	2100	200	0	65	6.0	160	16.04	5729.54	9396.45
3	Dish	Commscope	FFVV-65B-R2 02DT 600 PRELIM	600	270	0	67	6.0	120	11.1	1377.78	2259.57
3	Dish	Commscope	FFVV-65B-R2 02DT 700 PRELIM	700	270	0	61	6.0	120	11.81	1622.49	2660.88
3	Dish	Commscope	FFVV-65B-R2 02DT 1900 PRELIM	1900	270	0	70	6.0	160	15.52	5083.00	8336.12
3	Dish	Commscope	FFVV-65B-R2 02DT 2100 PRELIM	2100	270	0	65	6.0	160	16.04	5729.54	9396.45
4	Unknown	GENERIC	PANEL 4FT 00DT 850	850	0	0	61	4.0	100	11.52	1419.06	2327.25
5	Unknown	GENERIC	PANEL 4FT 00DT 1900	1900	0	0	65	4.0	100	14.65	2917.43	4784.58
6	Unknown	GENERIC	PANEL 4FT 00DT 850	850	0	0	61	4.0	100	11.52	1419.06	2327.25
7	Unknown	GENERIC	PANEL 4FT 00DT 850	850	180	0	61	4.0	100	11.52	1419.06	2327.25
8	Unknown	GENERIC	PANEL 4FT 00DT 1900	1900	180	0	65	4.0	100	14.65	2917.43	4784.58

Ant #	Operator	Antenna Make	Antenna Model	Frequency (MHz)	Azimuth (deg.)	Mechanical Downtilt (deg.)	Horizontal Beamwidth (Degrees)	Aperture (feet)	Total Power Input (Watts)	Gain (dBd)*	Total ERP (Watts)	Total EIRP (Watts)
9	Unknown	GENERIC	PANEL 4FT 00DT 850	850	180	0	61	4.0	100	11.52	1419.06	2327.25
10	Unknown	GENERIC	PANEL 4FT 00DT 850	850	270	0	61	4.0	100	11.52	1419.06	2327.25
11	Unknown	GENERIC	PANEL 4FT 00DT 850	850	0	0	61	4.0	100	11.52	1419.06	2327.25
12	Unknown	GENERIC	PANEL 4FT 00DT 1900	1900	0	0	65	4.0	100	14.65	2917.43	4784.58
13	Unknown	GENERIC	PANEL 4FT 00DT 850	850	180	0	61	4.0	100	11.52	1419.06	2327.25
14	Unknown	GENERIC	PANEL 4FT 00DT 1900	1900	180	0	65	4.0	100	14.65	2917.43	4784.58
15	Unknown	GENERIC	PANEL 4FT 00DT 850	850	180	0	61	4.0	100	11.52	1419.06	2327.25
16	Unknown	GENERIC	PANEL 4FT 00DT 1900	1900	270	0	65	4.0	100	14.65	2917.43	4784.58

- Note there is 1 Dish Wireless antenna per sector at this site. For clarity, the different frequencies for each antenna are entered on separate lines.
- Gain includes antenna and combiner.

Ant #	NAME	X	Y	Antenna Radiation Centerline	Z-Height Penthouse Roof	Z-Height Upper Roof	Z-Height Main Roof	Z-Height Adjacent Building	Z-Height Lower Roof	Z-Height Entrance Cover	Z-Height Ground
1	Dish	71.0	140.6	106.0	11.0	21.0	31.0	63.0	86.0	94.0	106.0
2	Dish	70.7	131.6	106.0	11.0	21.0	31.0	63.0	86.0	94.0	106.0
3	Dish	70.2	136.1	106.0	11.0	21.0	31.0	63.0	86.0	94.0	106.0
4	Unknown	209.1	151.3	82.0	-13.0	-3.0	7.0	39.0	62.0	70.0	82.0
5	Unknown	213.0	151.3	82.0	-13.0	-3.0	7.0	39.0	62.0	70.0	82.0
6	Unknown	219.8	151.3	82.0	-13.0	-3.0	7.0	39.0	62.0	70.0	82.0
7	Unknown	186.9	120.7	92.0	-3.0	7.0	17.0	49.0	72.0	80.0	92.0
8	Unknown	183.6	120.4	92.0	-3.0	7.0	17.0	49.0	72.0	80.0	92.0
9	Unknown	179.4	120.4	92.0	-3.0	7.0	17.0	49.0	72.0	80.0	92.0
10	Unknown	175.4	125.7	92.0	-3.0	7.0	17.0	49.0	72.0	80.0	92.0
11	Unknown	64.8	151.6	92.0	-3.0	7.0	17.0	49.0	72.0	80.0	92.0
12	Unknown	75.2	151.6	92.0	-3.0	7.0	17.0	49.0	72.0	80.0	92.0
13	Unknown	81.4	120.7	92.0	-3.0	7.0	17.0	49.0	72.0	80.0	92.0
14	Unknown	72.1	120.4	92.0	-3.0	7.0	17.0	49.0	72.0	80.0	92.0
15	Unknown	63.7	120.4	92.0	-3.0	7.0	17.0	49.0	72.0	80.0	92.0
16	Unknown	60.6	123.8	92.0	-3.0	7.0	17.0	49.0	72.0	80.0	92.0

• Note the Z-Height represents the distance from the antenna centerline in feet.

The above tables contain an inventory of proposed Dish Wireless antennas and other carrier antennas if sufficient information was available to model them. Note that EBI uses an assumed set of antenna specifications and powers for unknown and other carrier antennas for modeling purposes. The FCC guidelines incorporate two separate tiers of exposure limits that are based upon occupational/controlled exposure limits (for workers) and general population/uncontrolled exposure limits for members of the general public that may be exposed to antenna fields. While access to this site is considered uncontrolled, the analysis has considered exposures with respect to both controlled and uncontrolled limits as an untrained worker may access adjacent rooftop locations. Additional information regarding controlled/uncontrolled exposure limits is provided in Appendix C. Appendix B presents a site safety plan that provides a plan view of the rooftop with antenna locations.

3.0 WORST-CASE PREDICTIVE MODELING

EBI has performed theoretical MPE modeling using RoofMaster™ software to estimate the worst-case power density at the site's nearby broadcast levels resulting from operation of the antennas. RoofMaster™ is a widely-used predictive modeling program that has been developed by Waterford Consultants to predict RF power density values for rooftop and tower telecommunications sites produced by vertical collinear antennas that are typically used in the cellular, PCS, paging and other communications services. Using the computational methods set forth in Federal Communications Commission (FCC) Office of Engineering & Technology (OET) Bulletin 65, "Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields" (OET-65), RoofMaster™ calculates predicted power density in a scalable grid based on the contributions of all RF sources characterized in the study scenario. At each grid location, the cumulative power density is expressed as a percentage of the FCC limits. Manufacturer antenna pattern data is utilized in these calculations. RoofMaster™ models consist of the Far Field model as specified in OET-65 and an implementation of the OET-65 Cylindrical Model (Sula9). The models utilize several operational specifications for different types of antennas to produce a plot of spatially-averaged power densities that can be expressed as a percentage of the applicable exposure limit.

For this report, EBI utilized antenna and power data provided by Dish Wireless and compared the resultant worst-case MPE levels to the FCC's occupational/controlled exposure limits outlined in OET Bulletin 65. The assumptions used in the modeling are based upon information provided by Dish Wireless and information gathered from other sources. Elevations of walking/working surfaces were estimated based on elevations provided and available aerial imagery. Sector orientation assignments were made assuming coverage is directed to areas of site. Changes to antenna mount heights or placement will impact site compliance. The parameters used for modeling are summarized in the Site Description antenna inventory table in Section 2.0.

Two Unknown Carriers also have antennas on the rooftop. Information about these antennas was included in the modeling analysis.

Based on worst-case predictive modeling, there are no modeled areas on any accessible rooftop or ground-level walking/working surface related to the proposed Dish Wireless antennas that exceed the FCC's occupational or general public exposure limits at this site. At the nearest walking/working surfaces to the Dish Wireless antennas, the maximum power density generated by the Dish Wireless antennas is approximately 65.38 percent of the FCC's general public limit (13.08 percent of the FCC's occupational limit). The composite exposure level from all carriers on this site is approximately 65.80 percent of the FCC's general public limit (13.16 percent of the FCC's occupational limit) at the nearest walking/working surface to each antenna.

The Site Safety Plan also presents areas where Dish Wireless antennas contribute greater than 5% of the applicable MPE limit for a site. A site is considered out of compliance with FCC regulations if there are areas that exceed the FCC exposure limits and there are no RF hazard mitigation measures in place. Any carrier which has an installation that contributes more than 5% of the applicable MPE must participate in mitigating these RF hazards.

There are no modeled areas on the rooftop and ground that exceed the FCC's limits for general public or occupational exposure in front of the other carrier antennas.

The inputs used in the modeling are summarized in the Site Description antenna inventory table in Section 2.0. A graphical representation of the RoofMaster™ modeling results is presented in Appendix B. Microwave dish antennas are designed for point-to-point operations at the elevations of the installed equipment rather than ground level coverage. The maximum power density generated by all carrier antennas, including microwaves and panel antennas, is included in the modeling results presented within this report.

4.0 MITIGATION/SITE CONTROL OPTIONS

EBI's modeling indicates that there are no areas in front of the Dish Wireless antennas that exceed the FCC standards for occupational or general public exposure. All exposures above the FCC's safe limits require that individuals be elevated above the rooftop and ground. In order to alert people accessing the rooftop, a Guidelines sign and an NOC Information sign are recommended for installation at each access point to the rooftop. Additionally, Blue Notice signs are recommended for installation on the front and back of the antenna mount at each Dish Wireless Sector. These signs must be placed in a conspicuous manner so that they are visible to any person approaching the antennas from any direction.

Barriers are recommended for installation when possible to block access to the areas in front of the antennas that exceed the FCC general public and/or occupational limits. Barriers may consist of rope, chain, or fencing. Painted stripes should only be used as a last resort. There are no barriers recommended at this site. Barriers are not recommended for installation because exceedances are into free space over lower walking/working surfaces. There are no exceedances on any rooftop and/or ground walking/working surface.

These protocols and recommended control measures have been summarized and included with a graphic representation of the antennas and associated signage and control areas in a RF-EME Site Safety Plan, which is included as Appendix B. Individuals and workers accessing the rooftop should be provided with a copy of the attached Site Safety Plan, made aware of the posted signage, and signify their understanding of the Site Safety Plan.

To reduce the risk of exposure, EBI recommends that access to areas associated with the active antenna installation be restricted and secured where possible.

Implementation of the signage recommended in the Site Safety Plan and in this report will bring this site into compliance with the FCC's rules and regulations.

5.0 SUMMARY AND CONCLUSIONS

EBI has prepared a Radiofrequency – Electromagnetic Energy (RF-EME) Compliance Report for telecommunications equipment installed by Dish Wireless Site Number MIMIA00378A located at 125 S. Ocean Avenue in Palm Beach Shores, Florida to determine worst-case predicted RF-EME exposure levels from wireless communications equipment installed at this site. This report summarizes the results of RF-EME modeling in relation to relevant Federal Communications Commission (FCC) RF-EME compliance standards for limiting human exposure to RF-EME fields.

As presented in the sections above, based on the FCC criteria, there are no modeled areas on any accessible rooftop or ground-level walking/working surface related to the proposed antennas that exceed the FCC's occupational or general public exposure limits at this site.

Workers should be informed about the presence and locations of antennas and their associated fields. Recommended control measures are outlined in Section 4.0 and within the Site Safety Plan (attached); Dish Wireless should also provide procedures to shut down and lockout/tagout this wireless equipment in accordance with their own standard operating protocol. Non-telecom workers who will be working in areas of exceedance are required to contact Dish Wireless since only Dish Wireless has the ability to lockout/tagout the facility, or to authorize others to do so.

6.0 LIMITATIONS

This report was prepared for the use of Dish Wireless. It was performed in accordance with generally accepted practices of other consultants undertaking similar studies at the same time and in the same locale under like circumstances. The conclusions provided by EBI are based solely on the information provided by the client. The observations in this report are valid on the date of the investigation. Any additional information that becomes available concerning the site should be provided to EBI so that our conclusions may be revised and modified, if necessary. This report has been prepared in accordance with Standard Conditions for Engagement and authorized proposal, both of which are integral parts of this report. No other warranty, expressed or implied, is made.

Appendix A

Certifications

Preparer Certification

I, Lindsay Clark, state that:

- I am an employee of EnviroBusiness Inc. (d/b/a EBI Consulting), which provides RF-EME safety and compliance services to the wireless communications industry.
- I have successfully completed RF-EME safety training, and I am aware of the potential hazards from RF-EME and would be classified “occupational” under the FCC regulations.
- I am fully aware of and familiar with the Rules and Regulations of both the Federal Communications Commissions (FCC) and the Occupational Safety and Health Administration (OSHA) with regard to Human Exposure to Radio Frequency Radiation.
- I have reviewed the data provided by the client and incorporated it into this Site Compliance Report such that the information contained in this report is true and accurate to the best of my knowledge.



Reviewed and Approved by:



sealed 27may2022 mike@h2dc.com
H2DC PLLC FL CoA#: 32201

Michael McGuire
Electrical Engineer
mike@h2dc.com

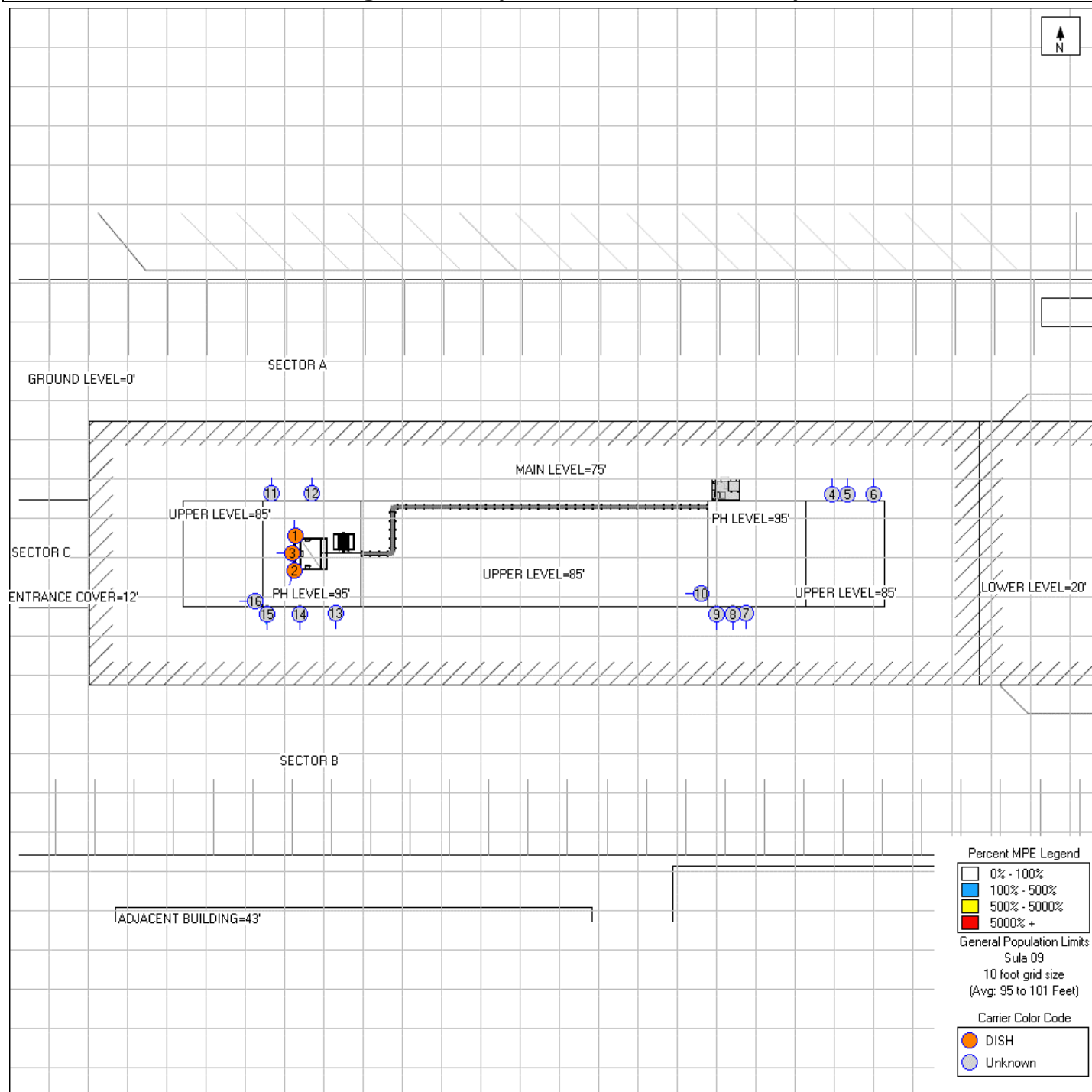
Note that EBI's scope of work is limited to an evaluation of the Radio Frequency – Electromagnetic Energy (RF-EME) field generated by the antennas and broadcast equipment noted in this report. The engineering and design of the building and related structures, as well as the impact of the antennas and broadcast equipment on the structural integrity of the building, are specifically excluded from EBI's scope of work.

Appendix B

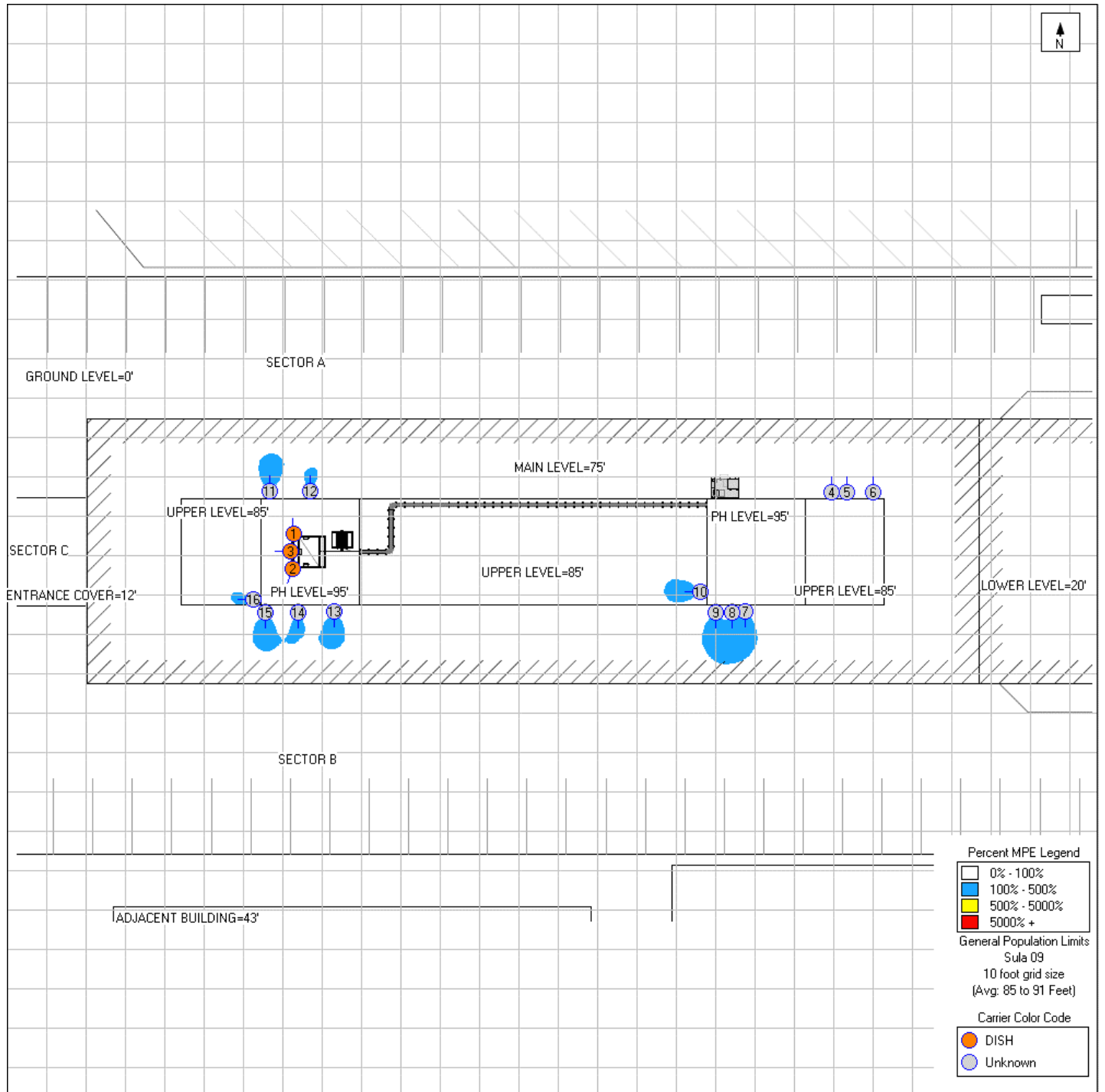
Radio Frequency Electromagnetic Energy

Safety Information and Signage Plans

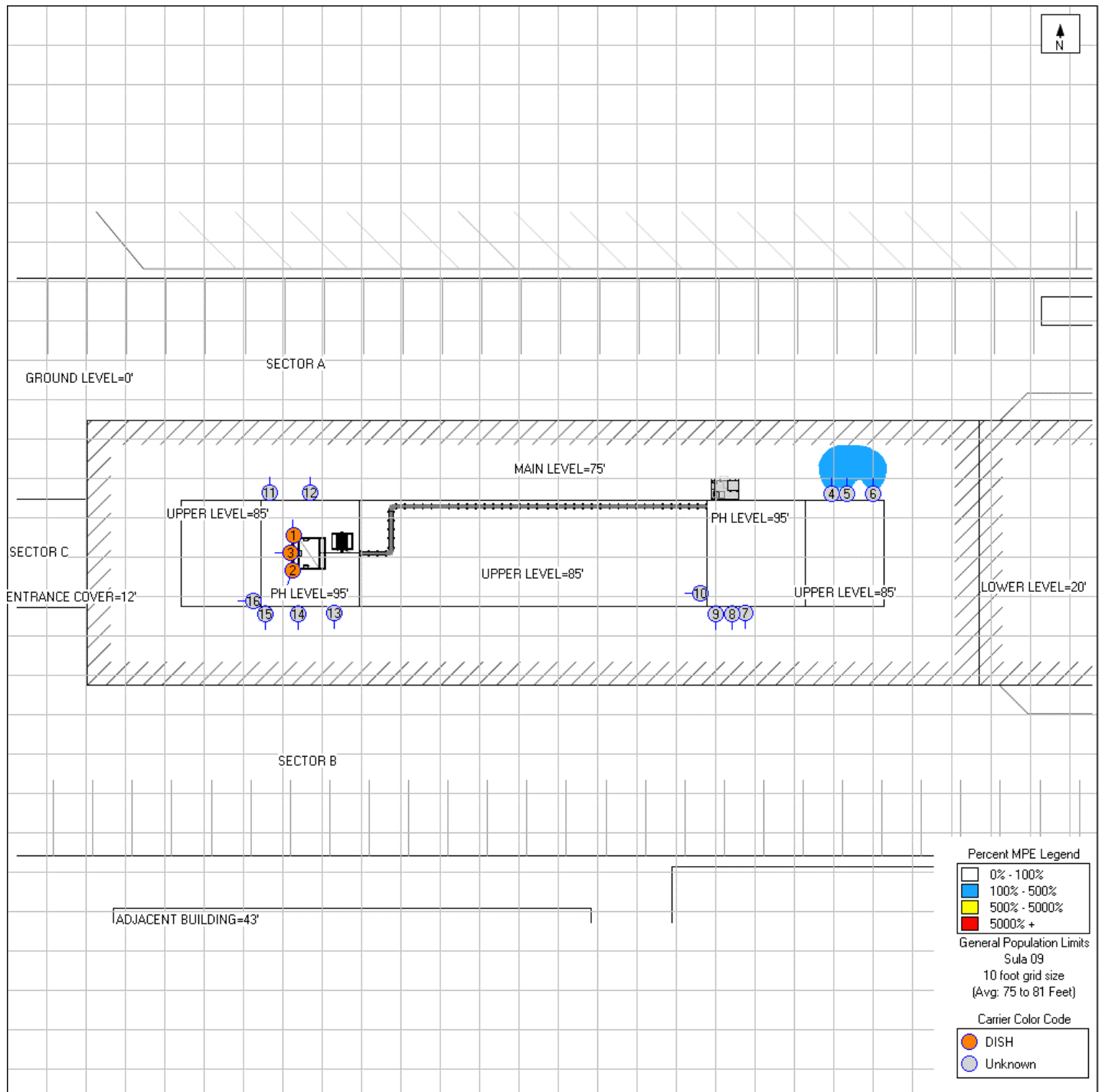
Nearest Walking Surface (Penthouse Roof Level) Simulation



Upper Roof Level Simulation



Main Roof Level Simulation



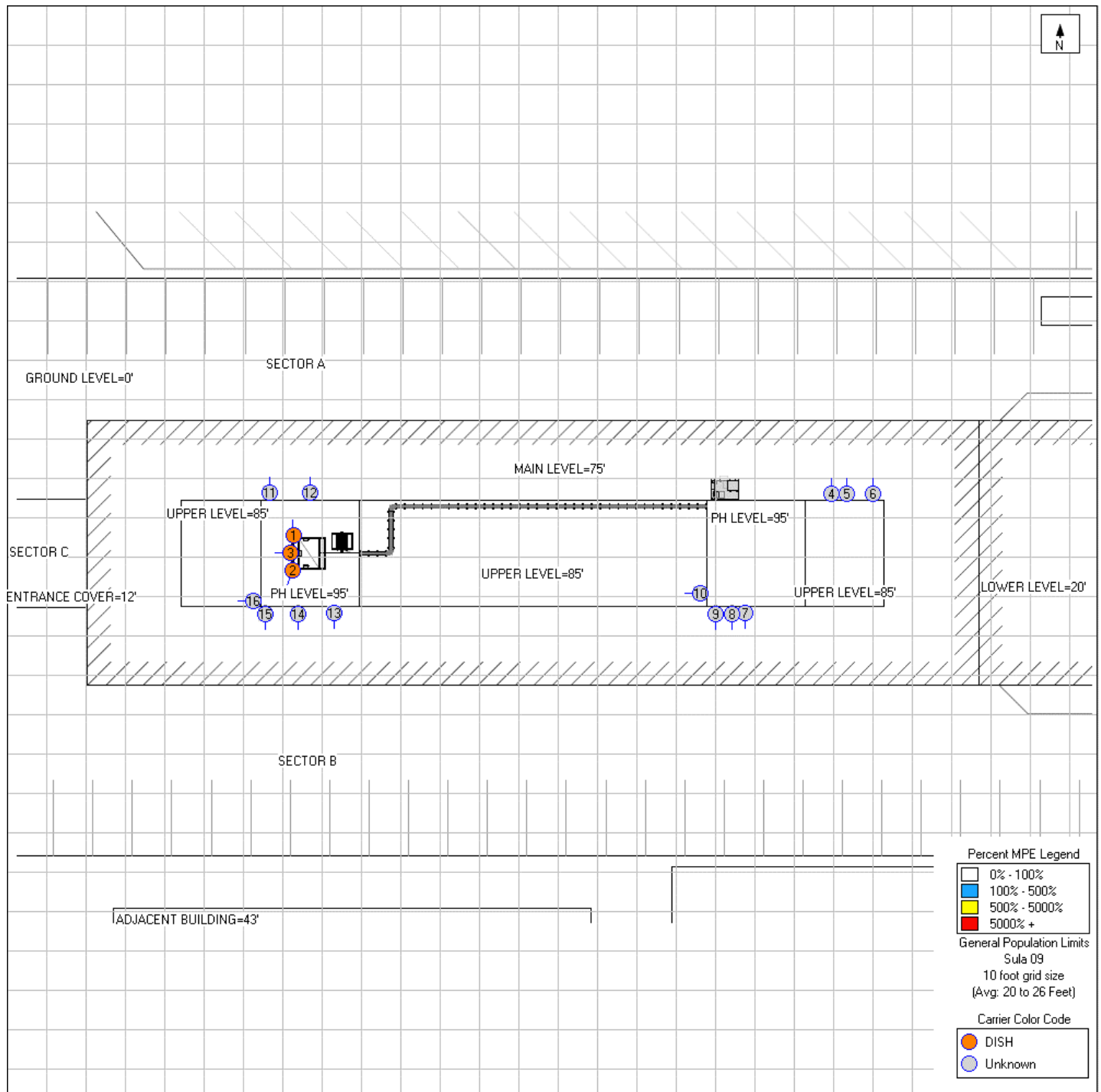
The diagram is a site plan for the Sula 09 facility, overlaid on a 10-foot grid. The plan shows several levels and sectors:

- GROUND LEVEL=0'**: The top boundary of the facility.
- SECTOR A**: The upper portion of the facility, containing the **MAIN LEVEL=75'**.
- SECTOR B**: The lower portion of the facility, containing the **UPPER LEVEL=85'** and **LOWER LEVEL=20'**.
- SECTOR C**: The leftmost portion of the facility, containing the **ENTRANCE COVER=12'**.
- UPPER LEVEL=85'**: A large area on the left side of the facility, containing a **PH LEVEL=95'** and several numbered points (1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16).
- MAIN LEVEL=75'**: A central horizontal corridor or area.
- PH LEVEL=95'**: A point on the right side of the facility.
- ADJACENT BUILDING=43'**: A building located to the right of the facility.

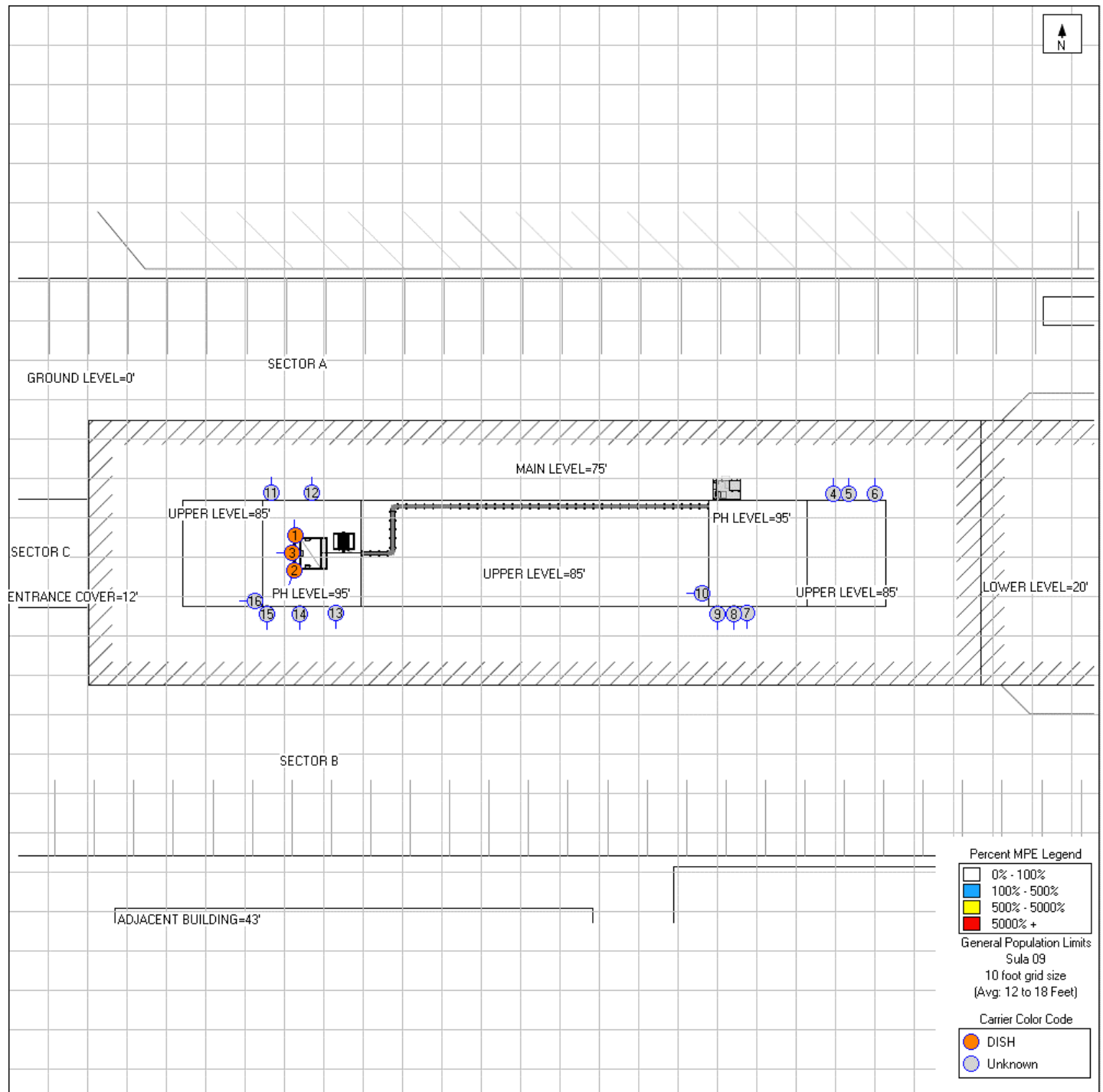
Legend:

- Percent MPE Legend**:
 - 0% - 100% (White)
 - 100% - 500% (Blue)
 - 500% - 5000% (Yellow)
 - 5000% + (Red)
- General Population Limits**:
 - Sula 09
 - 10 foot grid size (Avg: 43 to 49 Feet)
- Carrier Color Code**:
 - DISH (Orange)
 - Unknown (Blue)

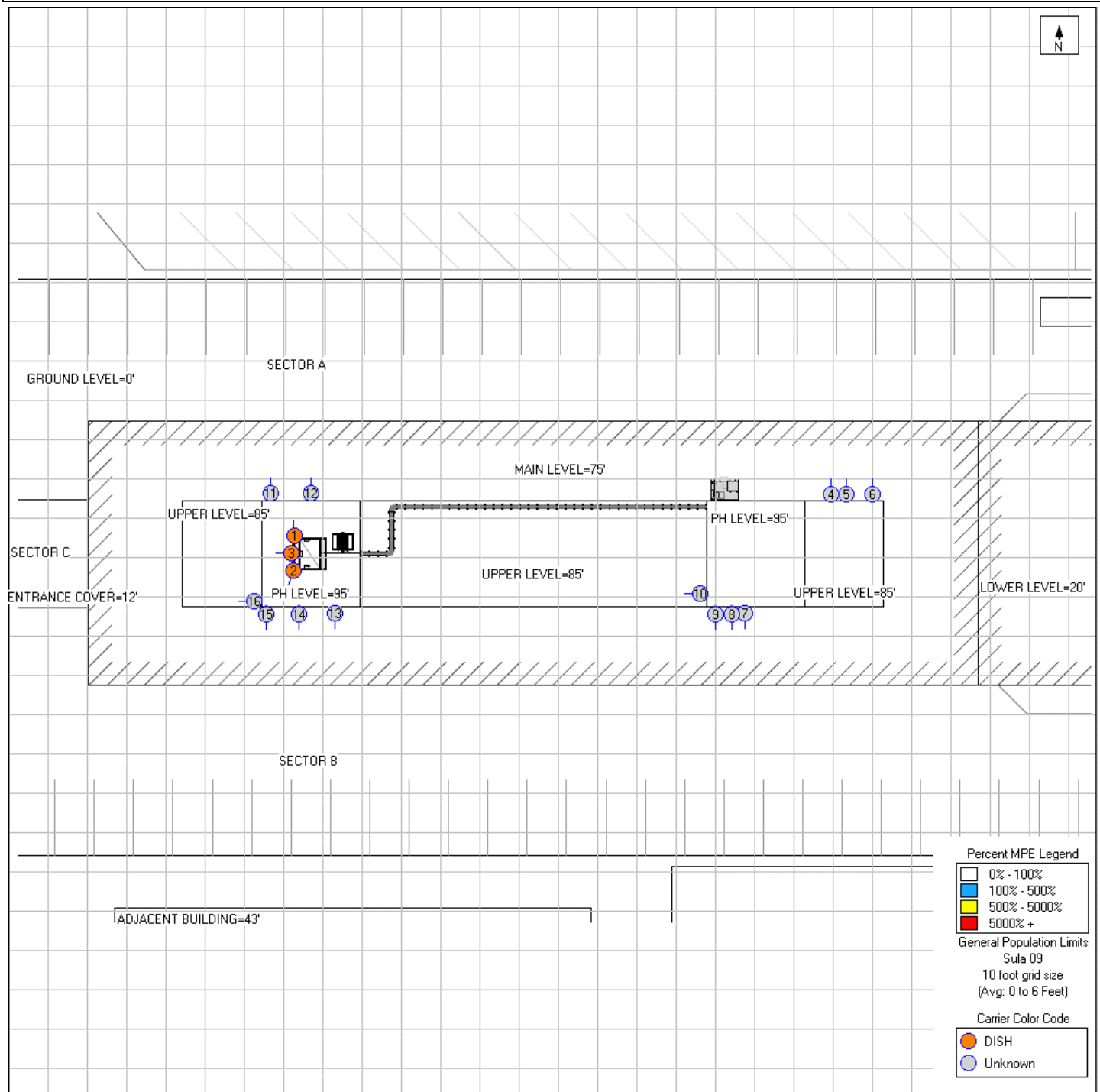
Lower Roof Level Simulation








Entrance Cover Level Simulation



Ground Level Simulation



[illegible]

Sign	Posting Instructions	Required Signage / Mitigation
	<p>NOC Information</p> <p>Information signs are used to provide contact information for any questions or concerns for personnel accessing the site.</p>	Securely post at the main rooftop access door and every point of access to the site in a manner conspicuous to all individuals entering thereon as indicated in the signage plan.
	<p>Guidelines</p> <p>Informational sign used to notify workers that there are active antennas installed and provide guidelines for working in RF environments.</p>	Securely post at the main rooftop access door and every point of access to the site in a manner conspicuous to all individuals entering thereon as indicated in the signage plan.
	<p>Notice</p> <p>Used to notify individuals they are entering an area where the power density emitted from transmitting antennas may exceed the FCC's MPE limit for the general public or occupational exposures.</p>	Securely post on the front and back of the antenna mount at each Dish Wireless Sector.
	<p>Caution</p> <p>Used to notify individuals that they are entering a hot spot where either the general public or occupational FCC's MPE limit is or could be exceeded.</p>	Signage not required.
	<p>Warning</p> <p>Used to notify individuals that they are entering a hot zone where the occupational FCC's MPE limit has been exceeded by 10x.</p>	Signage not required.

Appendix C

Federal Communications Commission (FCC) Requirements

The FCC has established Maximum Permissible Exposure (MPE) limits for human exposure to Radiofrequency Electromagnetic (RF-EME) energy fields, based on exposure limits recommended by the National Council on Radiation Protection and Measurements (NCRP) and, over a wide range of frequencies, the exposure limits developed by the Institute of Electrical and Electronics Engineers, Inc. (IEEE) and adopted by the American National Standards Institute (ANSI) to replace the 1982 ANSI guidelines. Limits for localized absorption are based on recommendations of both ANSI/IEEE and NCRP.

The FCC guidelines incorporate two separate tiers of exposure limits that are based upon occupational/controlled exposure limits (for workers) and general public/uncontrolled exposure limits for members of the general public.

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 public/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.

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

Table I and Figure I (below), which are included within the FCC's OET Bulletin 65, summarize the MPE limits for RF emissions. These limits are designed to provide a substantial margin of safety. They vary by frequency to take into account the different types of equipment that may be in operation at a particular facility and are "time-averaged" limits to reflect different durations resulting from controlled and uncontrolled exposures.

The FCC's MPEs are measured in terms of power (mW) over a unit surface area (cm²). Known as the power density, the FCC has established an occupational MPE of 5 milliwatts per square centimeter (mW/cm²) and an uncontrolled MPE of 1 mW/cm² for equipment operating in the 1900 MHz frequency range. For the Dish Wireless equipment operating at 600 MHz or 850 MHz, the FCC's occupational MPE is 2.83 mW/cm² and an uncontrolled MPE of 0.57 mW/cm². For the Dish Wireless equipment operating at 1900 MHz, the FCC's occupational MPE is 5.0 mW/cm² and an uncontrolled MPE limit of 1.0 mW/cm². These limits are considered protective of these populations.

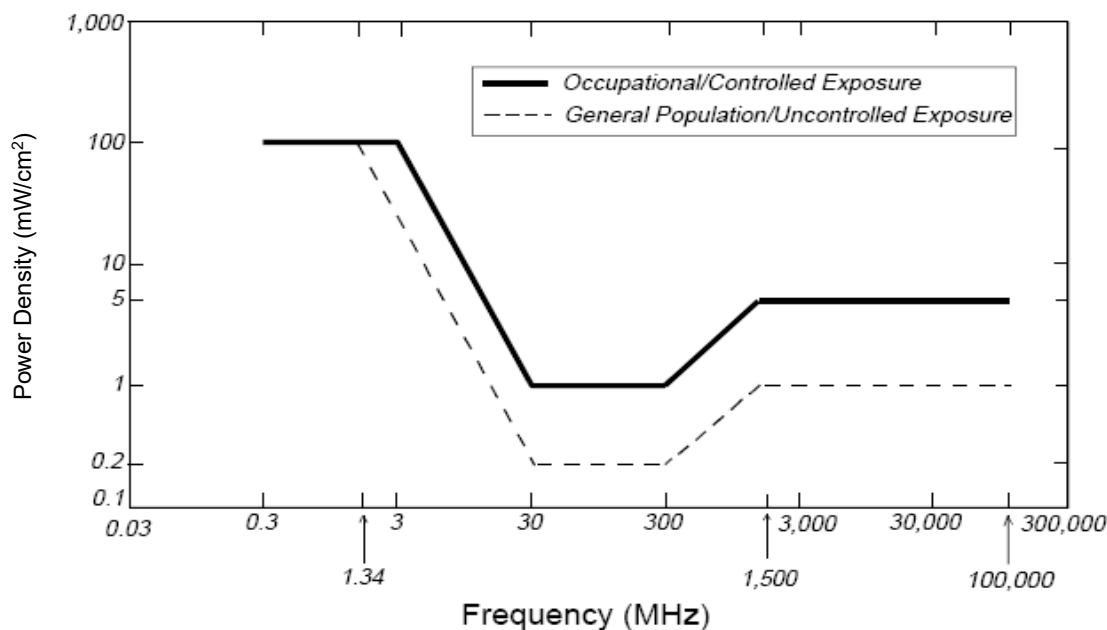
Table 1: Limits for Maximum Permissible Exposure (MPE)				
(A) Limits for Occupational/Controlled Exposure				
Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm ²)	Averaging Time [E] ² , [H] ² , or S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842/f	4.89/f	(900/f ²)*	6
30-300	61.4	0.163	1.0	6
300-1,500	--	--	f/300	6
1,500-100,000	--	--	5	6
(B) Limits for General Public/Uncontrolled Exposure				
Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm ²)	Averaging Time [E] ² , [H] ² , or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	(180/f ²)*	30
30-300	27.5	0.073	0.2	30
300-1,500	--	--	f/1,500	30
1,500-100,000	--	--	1.0	30

f = Frequency in (MHz)

* Plane-wave equivalent power density

Figure 1. FCC Limits for Maximum Permissible Exposure (MPE)

Plane-wave Equivalent Power Density



Based on the above, the most restrictive thresholds for exposures of unlimited duration to RF energy for several personal wireless services are summarized below:

Personal Wireless Service	Approximate Frequency	Occupational MPE	Public MPE
Microwave (Point-to-Point)	5,000 - 80,000 MHz	5.00 mW/cm ²	1.00 mW/cm ²
Broadband Radio (BRS)	2,600 MHz	5.00 mW/cm ²	1.00 mW/cm ²
Wireless Communication (WCS)	2,300 MHz	5.00 mW/cm ²	1.00 mW/cm ²
Advanced Wireless (AWS)	2,100 MHz	5.00 mW/cm ²	1.00 mW/cm ²
Personal Communication (PCS)	1,950 MHz	5.00 mW/cm ²	1.00 mW/cm ²
Cellular Telephone	870 MHz	2.90 mW/cm ²	0.58 mW/cm ²
Specialized Mobile Radio (SMR)	855 MHz	2.85 mW/cm ²	0.57 mW/cm ²
Long Term Evolution (LTE)	700 MHz	2.33 mW/cm ²	0.47 mW/cm ²
Most Restrictive Frequency Range	30-300 MHz	1.00 mW/cm ²	0.20 mW/cm ²

MPE limits are designed to provide a substantial margin of safety. These limits apply for continuous exposures and are intended to provide a prudent margin of safety for all persons, regardless of age, gender, size, or health.

Personal Communication (PCS) facilities used by Dish Wireless in this area will potentially operate within a frequency range of 600 to 2100 MHz. Facilities typically consist of: 1) electronic transceivers (the radios or cabinets) connected to wired telephone lines; and 2) antennas that send the wireless signals created by the transceivers to be received by individual subscriber units (PCS telephones). Transceivers are typically connected to antennas by coaxial cables.

Because of the short wavelength of PCS services, the antennas require line-of-site paths for good propagation, and are typically installed above ground level. Antennas are constructed to concentrate energy towards the horizon, with as little energy as possible scattered towards the ground or the sky. This design, combined with the low power of PCS facilities, generally results in no possibility for exposure to approach Maximum Permissible Exposure (MPE) levels, with the exception of areas directly in front of the antennas.

FCC Compliance Requirement

A site is considered out of compliance with FCC regulations if there are areas that exceed the FCC exposure limits and there are no RF hazard mitigation measures in place. Any carrier which has an installation that contributes more than 5% of the applicable MPE must participate in mitigating these RF hazards.



Ms. Jessica Ross
Dish Wireless, LLC.
5701 South Santa FE Drive
Littleton, CO 80120
(206) 523-1941



Morrison Hershfield
1455 Lincoln Parkway, Suite 500
Atlanta, GA 30346
(770) 379-8500

Date: September 21, 2022

Subject: Rooftop Mount Analysis Report

Site ID: MIMIA00378A

Site Address: 125 S Ocean Avenue, Palm Beach Shores, Palm Beach Co., FL 33404
Site Coordinates: Latitude: 26° 46' 45.01" N, Longitude: 80° 01' 59.21" W

Tower Description: 95 ft – Building w/ Penthouse
Mount Description: FRP Enclosed Antenna Mounts

Morrison Hershfield Project Number: DSH-041R2 / 2101541

Dear Ms. Ross,

Morrison Hershfield is pleased to submit this “**Rooftop Mount Analysis Report**” to determine the structural integrity of proposed antenna mounting system for the proposed antenna and equipment on the above-mentioned supporting structure.

This analysis utilizes an ultimate 3-second gust wind speed of 170 mph as required by the 2020 Florida Building Code 7th Edition. Applicable Standard references and design criteria are listed in Section 2 - Analysis Criteria.

Our analysis demonstrates that the proposed mounts **ARE in conformance** with the requirements of the above noted standards under the effects of loading described.

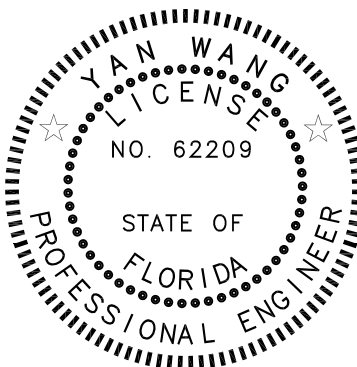
Summary of Results			
Mount Components	Antenna Mounts	34.2%	Sufficient
Connection Checks	Mount to Wall	14.3%	Sufficient

We at *Morrison Hershfield* appreciate the opportunity of providing our continuing professional services to you and Dish Wireless, LLC. If you have any questions or need further assistance on this or any other projects, please give us a call.

Respectfully submitted by:
Morrison Hershfield

Yan Wang, P.E. (FL License No. 62209)
Senior Engineer

Certificate of Authorization No. 8508



THIS ITEM HAS BEEN ELECTRONICALLY SIGNED AND SEALED
BY YAN WANG, PE ON THE DATE AS SHOWN USING A DIGITAL
SIGNATURE. PRINTED COPIES OF THIS DOCUMENT ARE NOT
CONSIDERED SIGNED AND SEALED AND THE SIGNATURE
MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

1.0 INTRODUCTION

This is a 95± ft building w/ penthouse, constructed with concrete and structural steel. Proposed antennas equipment is to be installed at a mount elevation of 91.5± ft on the proposed antenna wall mounts that are attached to building penthouse.

2.0 ANALYSIS CRITERIA

The following design parameters have been used in our analysis:

Design Standard:	2020 Florida Building Code, 7th Edition ASCE 7-16, Minimum Design Loads and Associated Criteria for Building and Other Structures ACI 318-19, Building Code Requirements for Structural Concrete AISC 325-17, Manual of Steel Construction
Design Wind Speed:	170 mph (Ultimate 3-sec gust) with no radial ice
Risk Category:	II
Exposure Category:	D
Topographic Factor, K_{zt} :	1.0
Seismic S_s :	0.045 [Neglected]
Seismic S_1 :	0.024 [Neglected]

The mount analysis was based on the following documentation:

Table 1 – Documentation

Document	Description	Source
Rooftop Mapping Report	Tower Engineering Professionals, Inc., Site ID: MIMIA00378A, dated 11/30/2021	Client
Preliminary Construction Drawings	Tower Engineering Professionals, Inc., Site ID: MIMIA00378A, dated 08/26/2021	Client



3.0 ANALYSIS LOADING

The proposed antennas, transmission lines and other equipment considered in this analysis were provided by the client and are noted in Table 2a.

Table 2a – Antenna Loads

Mount C.L (ft)	Antenna C.L (ft)	Antenna Description	Location	TX-Lines	Note
PROPOSED					
91.5±	91.5±	(3) JMA MX08FRO665-21 Panel	355°/180°/270°	DC & Fiber Trunks	1
		(3) MTI TB GO60708-50-02B RRH	-		
		(3) MTI TB G2021-49-02B RRH			
		(3) Dish OVP Device			

Note: Any discrepancies in loading from this listing should be brought to Morrison Hershfield's attention; results of this assessment cannot be used if the loading is different.

1. Proposed antennas and equipment to be installed on proposed antenna mounts and wall mounts.

The proposed equipment considered in this analysis were provided by the client and are noted in Table 2b.

Table 2b – Equipment Loads

Equipment Description	Weight (lbs.)	Note
PROPOSED		
(1) Enersys HEX 2000005996 Cabinet	1000.0	1
(1) Charles CFIT-PF2020DSH1 Fiber Telco Enclosure	20.0	2
(1) Square D Safety Switches D224NRB	53.51	
(1) Power Protective Cabinet	180.0	
(1) GPS Unit	-	

Note: Any discrepancies in loading from this listing should be brought to Morrison Hershfield's attention; results of this assessment cannot be used if the loading is different.

1. Proposed equipment to installed on the proposed equipment wall mounts.
2. Proposed equipment directly attached to wall.

4.0 ANALYSIS PROCEDURE

RISA-3D (version 20.0.2), a commercially available analysis software package, was used to create a three-dimensional model of the antenna mounting system and calculate member stresses for various loading cases.

Enercalc (Build 20.22.1.27), a commercially available analysis software package, was used to create a three-dimensional model of the concrete masonry wall and calculate stresses for various loading cases.

Wind and seismic loading on equipment for various loading cases were determined in accordance with ASCE 7-16. Select output from the analysis is included in the report.

5.0 ASSUMPTIONS

- 1) The building, foundation, and antenna supporting mounts were constructed according to applicable code.
- 2) The building and antenna supporting mounting system have been maintained according to construction document and manufacturer's specifications.
- 3) The building and its components, including antenna supporting mounts have not been compromised.
- 4) The analysis will be required to be revised if the existing conditions in the field differ from those shown in the above-referenced documents or assumed in this analysis. No allowance was made for any damaged, missing, or rusted members.
- 5) Steel grades have been assumed as follows, unless noted otherwise

Channel, Solid Round, Angle, Plate	ASTM A36 (GR 36)
HSS (Rectangular)	ASTM 500 (GR B-46)
HSS (Round)	ASTM 500 (GR B-42)
Pipe	ASTM A53 (GR 35)
Connection Bolts	ASTM A325
U-Bolts	ASTM A307
Unistrut – P1000	ASTM A570 (GR 33)
- 6) The existing wall geometry are taken from the rooftop mapping report completed by Tower Engineering Professionals, Inc., Site ID: MIMIA00378A, dated 11/30/2021, and is considered to be correct.
- 7) The proposed mount geometry and member sizes are taken from the manufacturer drawings by **Site Pro 1, Part No. WWM01, dated 05/10/2010**, and is considered to be correct
- 8) The proposed loading is taken from the preliminary construction drawings by Tower Engineering Professionals, Inc., Site ID: MIMIA00378A, dated 08/26/2021, and is considered to be correct.

This analysis may be affected if any assumptions are not valid or have been made in error. Morrison Hershfield should be notified to determine the effect on the structural integrity of the antenna mounting system.



6.0 SUMMARY OF RESULTS

The following tables summarize the location and utilized percentage of available capacity for each component of the mount. With consideration to the appropriate safety factors, 100% represents the full capacity of the component. Percentages below 100% indicate available capacity and conformance of the component. Percentages between 100% and 105% indicate an acceptable capacity. Percentages above 105% indicate an overstressed situation requiring structural modification to ensure conformance with the applicable codes and standards.

Based on our analysis results, the antenna wall mounts **ARE within capacity** to support the loads under the current loading scenario.

Table 3a – Mount Component Stresses vs. Capacity (Antenna Wall Mounts)

Notes	Component	Critical Member	Mount Centerline (ft)	% Capacity	Pass / Fail
1	Standoff	M1	91.5	12.8	Pass
1	Mast Pipe	M7	91.5	34.2	Pass
1	Connection Checks	-	91.5	14.3	Pass

Structure Rating (max from all components) =	34.2%
---	--------------

Notes:

- 1) See additional documentation in "Additional Calculations" for calculations supporting the % capacity consumed.

7.0 RECOMMENDATIONS

The proposed antenna mounts have sufficient capacity to support the proposed loading configuration. No modifications are required at this time.

ATTACHMENTS: Software Input Calculations, Wire Frame and Rendered Models, Software Analysis Output Additional Calculations and Structural Design Drawings



SOFTWARE INPUT CALCULATIONS

BUILDING ELEVATION



WIND LOAD CALCULATIONS ON APPURTENANCES:

Code Search

Code: 2020 Florida Building Code

Occupancy:

Occupancy Group = B Business

Risk Category & Importance Factors:

Risk Category: Category II : All bldgs and other structures except those listed in Categories I, III, & IV

Wind Loads - Other Structures: ASCE 7- 16

Ultimate Wind Pressures

Wind Factor = 1.00
Gust Effect Factor (G) = 0.85 Ultimate Wind Speed = 170 mph
Kzt = 1.00 Exposure = D

1. DISH Proposed (1) JMA MX08FRO665-21 Panel (72.8"x20.0"x8.0", Wt. = 64.5 lbs), Total (3)

Front:

A. Solid Freestanding Walls & Solid Signs (& open signs with less than 30% open)

Dist to sign top (h)	91.5 ft	s/h =	0.07	<u>Case A & B</u>
Height (s)	6.1 ft	B/s =	0.28	C _f = 1.85
Width (B)	1.7 ft	Lr/s =	0.00	F = qz G C _f A _s = 139.5 As
Wall Return (Lr) =		Kz =	1.411	A _s = 10.4 sf
Directionality (Kd)	0.85	qz =	88.7 psf	F = 1447 lbs
ASCE7 Load Combinations Used				

Side:

A. Solid Freestanding Walls & Solid Signs (& open signs with less than 30% open)

Dist to sign top (h)	91.5 ft	s/h =	0.07	<u>Case A & B</u>
Height (s)	6.1 ft	B/s =	0.11	C _f = 1.89
Width (B)	0.7 ft	Lr/s =	0.00	F = qz G C _f A _s = 142.7 As
Wall Return (Lr) =		Kz =	1.411	A _s = 4.3 sf
Directionality (Kd)	0.85	qz =	88.7 psf	F = 610 lbs
ASCE7 Load Combinations Used				

2. DISH Proposed (1) MTI TB G060708-50-02B RRRH (13.9"x16.9"x9.8", Wt. = 97.0 lbs), Total (3)

Front:

A. Solid Freestanding Walls & Solid Signs (& open signs with less than 30% open)

Dist to sign top (h)	91.5 ft	s/h =	0.01	<u>Case A & B</u>
Height (s)	1.2 ft	B/s =	1.17	C _f = 1.80
Width (B)	1.4 ft	Lr/s =	0.00	F = qz G C _f A _s = 135.8 As
Wall Return (Lr) =		Kz =	1.411	A _s = 1.7 sf
Directionality (Kd)	0.85	qz =	88.7 psf	F = 228 lbs
ASCE7 Load Combinations Used				

Side:

A. Solid Freestanding Walls & Solid Signs (& open signs with less than 30% open)

Dist to sign top (h)	91.5 ft	s/h =	0.01	<u>Case A & B</u>
Height (s)	1.2 ft	B/s =	0.67	C _f = 1.83
Width (B)	0.8 ft	Lr/s =	0.00	F = qz G C _f A _s = 138.3 As
Wall Return (Lr) =		Kz =	1.411	A _s = 1.0 sf
Directionality (Kd)	0.85	qz =	88.7 psf	F = 133 lbs
ASCE7 Load Combinations Used				



3. DISH Proposed (1) MTI TB G2021-49-02B RRH (13.9"x16.9"x9.8", Wt. = 86.0 lbs), Total (3)

Front:

A. Solid Freestanding Walls & Solid Signs (& open signs with less than 30% open)

		s/h =	0.01	<u>Case A & B</u>	
Dist to sign top (h)	91.5 ft	B/s =	1.17	C _f =	1.80
Height (s)	1.2 ft	Lr/s =	0.00	F = qz G C _f A _s =	135.8 As
Width (B)	1.4 ft	Kz =	1.411	A _s =	1.7 sf
Wall Return (Lr) =		qz =	88.7 psf	F =	228 lbs
Directionality (Kd)	0.85	ASCE7 Load Combinations Used			

Side:

A. Solid Freestanding Walls & Solid Signs (& open signs with less than 30% open)

		s/h =	0.01	<u>Case A & B</u>	
Dist to sign top (h)	91.5 ft	B/s =	0.67	C _f =	1.83
Height (s)	1.2 ft	Lr/s =	0.00	F = qz G C _f A _s =	138.3 As
Width (B)	0.8 ft	Kz =	1.411	A _s =	1.0 sf
Wall Return (Lr) =		qz =	88.7 psf	F =	133 lbs
Directionality (Kd)	0.85	ASCE7 Load Combinations Used			

4. Dish Proposed (1) Enersys HEX 2000005996 Cabinet (73"x30"x32", Wt. = 1000 lb)

Front

A. Solid Freestanding Walls & Solid Signs (& open signs with less than 30% open)

		s/h =	0.06	<u>Case A & B</u>	
Dist to sign top (h)	100.0 ft	B/s =	0.41	C _f =	1.85
Height (s)	6.1 ft	Lr/s =	0.00	F = qz G C _f A _s =	141.7 As
Width (B)	2.5 ft	Kz =	1.433	A _s =	15.2 sf
Wall Return (Lr) =		qz =	90.1 psf	F =	2155 lbs
Directionality (Kd)	0.85	ASCE7 Load Combinations Used			

Side

A. Solid Freestanding Walls & Solid Signs (& open signs with less than 30% open)

		s/h =	0.06	<u>Case A & B</u>	
Dist to sign top (h)	100.0 ft	B/s =	0.44	C _f =	1.85
Height (s)	6.1 ft	Lr/s =	0.00	F = qz G C _f A _s =	141.7 As
Width (B)	2.7 ft	Kz =	1.433	A _s =	16.2 sf
Wall Return (Lr) =		qz =	90.1 psf	F =	2299 lbs
Directionality (Kd)	0.85	ASCE7 Load Combinations Used			

WIND LOAD CALCULATIONS ON MOUNT MEMBERS:

1. Pipe 3.0XX Pipe (3.5" OD)

A. Solid Freestanding Walls & Solid Signs (& open signs with less than 30% open)

		s/h =	0.01	<u>Case A & B</u>	
Dist to sign top (h)	91.5 ft	B/s =	0.30	C _f =	1.85
Height (s)	1.0 ft	Lr/s =	0.00	F = qz G C _f A _s =	139.5 As
Width (B)	0.3 ft	Kz =	1.411	A _s =	0.3 sf
Wall Return (Lr) =		qz =	88.7 psf	F =	42 lbs
Directionality (Kd)	0.85	ASCE7 Load Combinations Used			

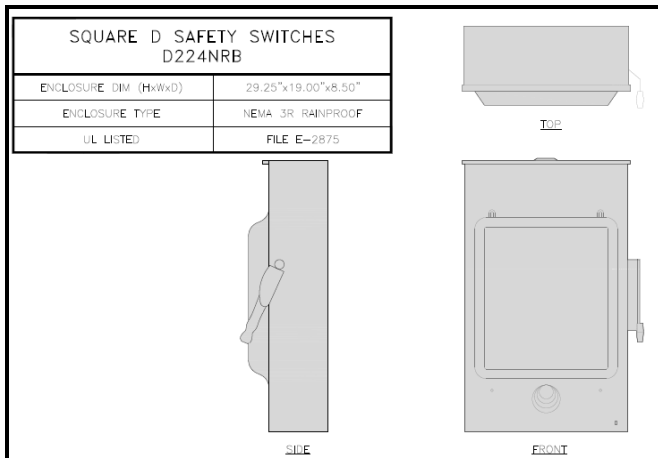
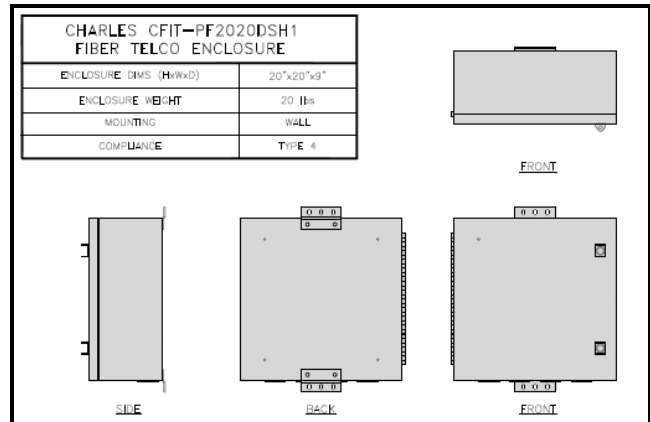
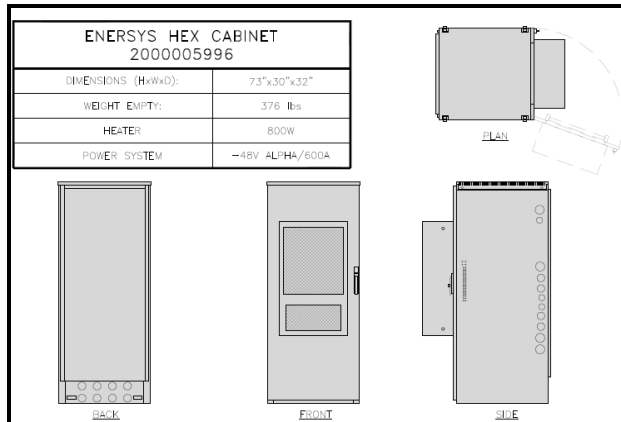


2. HSS4X4X4 (4" Width)

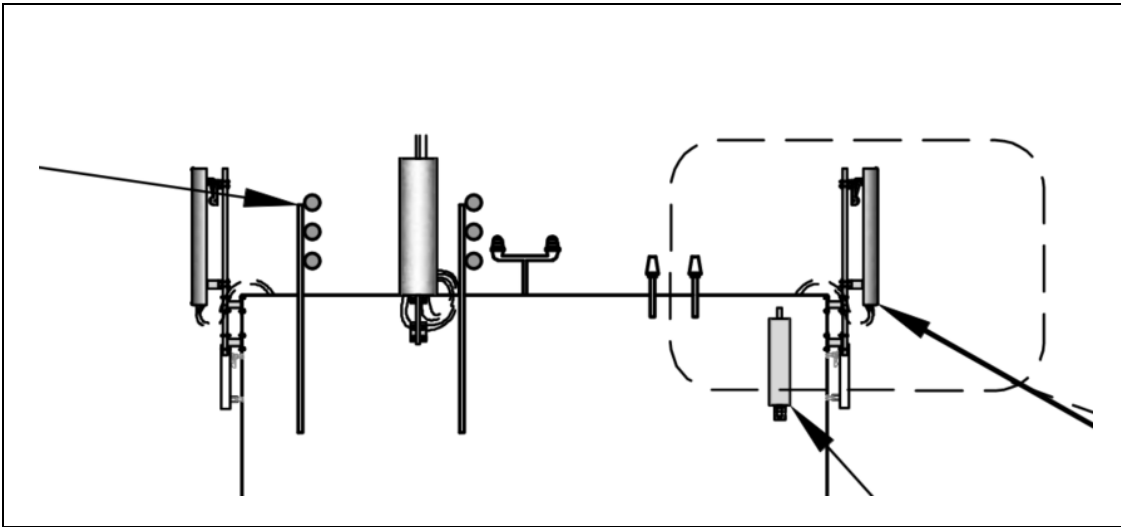
A. Solid Freestanding Walls & Solid Signs (& open signs with less than 30% open)

Dist to sign top (h)	91.5 ft	s/h =	0.01	Case A & B	
Height (s)	1.0 ft	B/s =	0.30	$C_f =$	1.85
Width (B)	0.3 ft	Lr/s =	0.00	$F = q_z G C_f A_s =$	139.5 As
Wall Return (Lr) =		Kz =	1.411	$A_s =$	0.3 sf
Directionality (Kd)	0.85	qz =	88.7 psf	$F =$	42 lbs
ASCE7 Load Combinations Used					

PROPOSED EQUIPMENT DETAILS



Bolt Connection Check (Wall Mounts):



Bolts proposed are (4) 5/8" dia threaded rods per bracket through concrete masonry wall with backing plates:

Resultant reactions from Risa-3D results:

LC	Node Label	X [lb]	Y [lb]	Z [lb]	MY [lb-in]	Tension [lbs]	Shear [lbs]
7	N6	0.0	2803.5	3616.4	0.0	0.0	700.9
8	N6	-2482.3	211.9	-138.0	-17312.5	-1477.2	622.8

Factored Tension per bolt = 1477 lbs

Factored Shear per bolt = 623 lbs

Per AISC -15th Edition, Table 7-1 for A307 bolts:

F_{nt} = 45 ksi and F_{nv} = 27 ksi

ϕR_n = 0.75 R_n (Per Section J6, eq. J3-1)

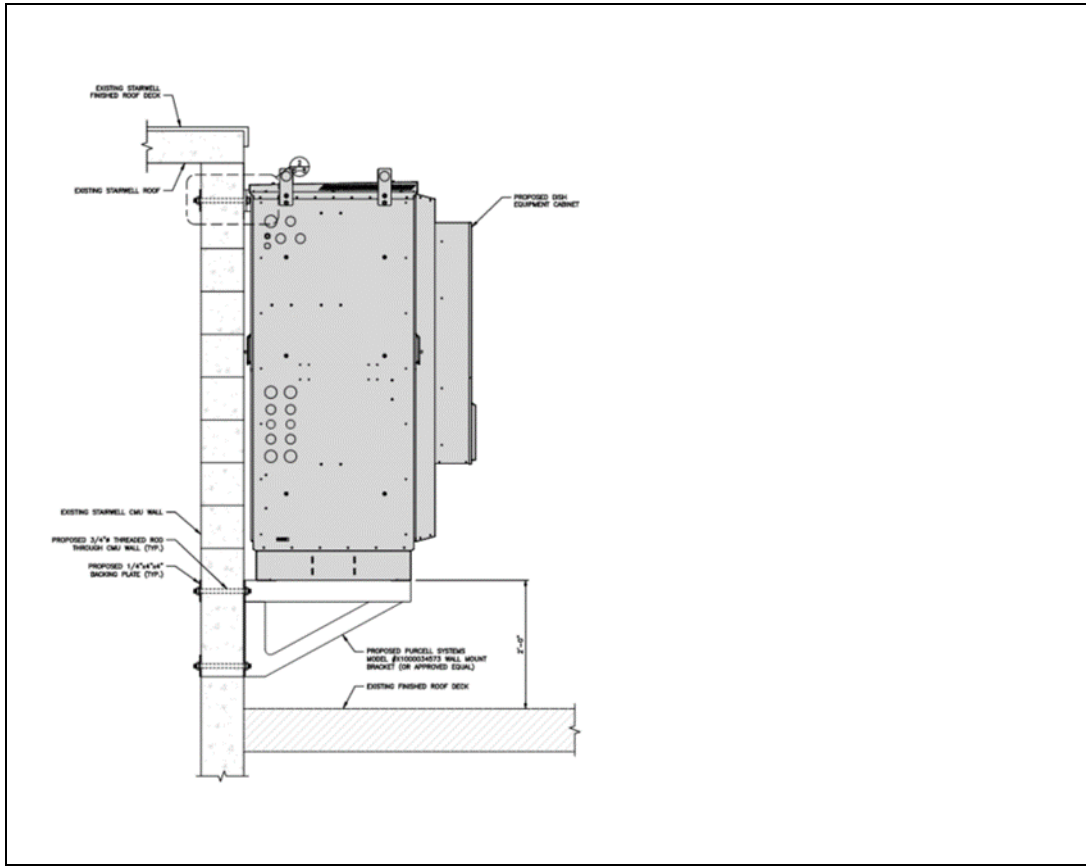
Allowable Tension = 0.75 x 45 A_b = 10354 lbs

Allowable Shear = 0.75 x 27 A_b = 6213 lbs

Tension Capacity = 1477/10354 = 14.3% [OK!]

Shear Capacity = 623/6213 = 10.1% [OK!]

Bolt Connection Check for Cabinet to Penthouse Wall:



Bolts Considered for connection are (2) 3/4" dia threaded rods per connection through concrete masonry wall with backing plates:

Factored Tension: 494 lbs

Factored Shear: 712 lbs

Per AISC -15th Edition, Table 7-1 for A307 bolts:

$F_{nt} = 45 \text{ ksi}$ and $F_{nv} = 27 \text{ ksi}$

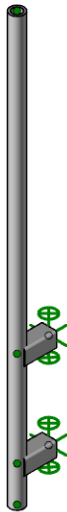
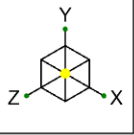
$\phi R_n = 0.75 R_n$ (Per Section J6, eq. J3-1)

Allowable Tension $= 0.75 \times 45 \times A_b = 14910 \text{ lbs}$

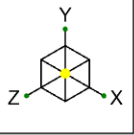
Allowable Shear $= 0.75 \times 27 \times A_b = 8946 \text{ lbs}$

Tension Capacity $= 741/14910 = 4.9\%$ **[OK!]**

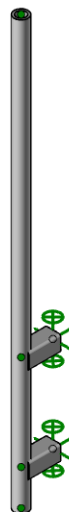
Shear Capacity $= 712/8946 = 7.9\%$ **[OK!]**



Morrison Hershfield	Site#: MIMIA00378A	SK-1
ML		Sep 19, 2022
DSH-041R2 / 2101541		Wall Mount (Site Pro 1 #WWM01)...



Proposed P3.0XXSTD Mast Pipe,
9ft long with Site Pro 1#WWM01
mounting assembly



Envelope Only Solution

Morrison Hershfield

ML

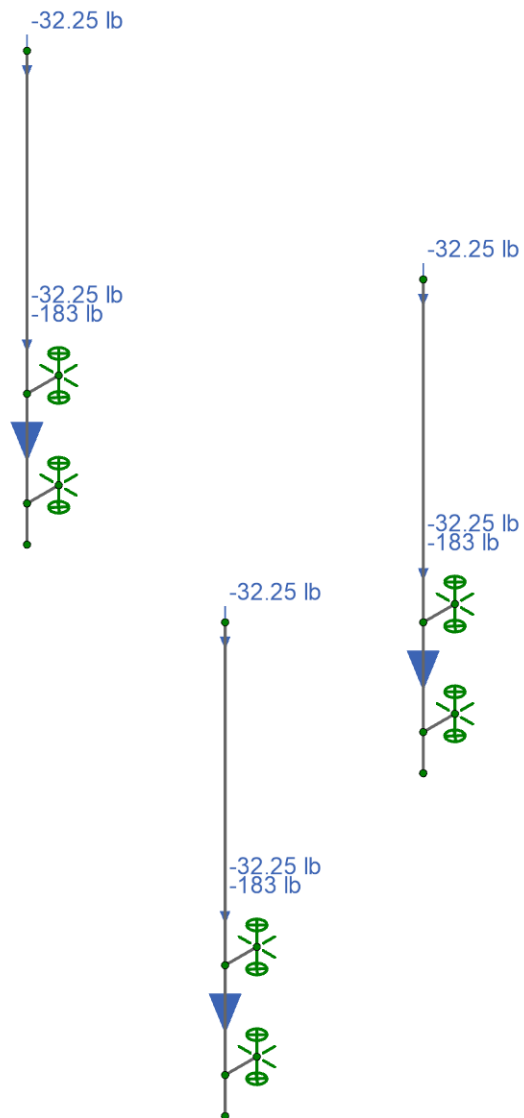
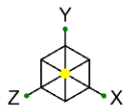
DSH-041R2 / 2101541

Site#: MIMIA00378A

SK-1

Sep 19, 2022

Wall Mount (Site Pro 1 #WWM01)...



Loads: BLC 1, DL

Morrison Hershfield

ML

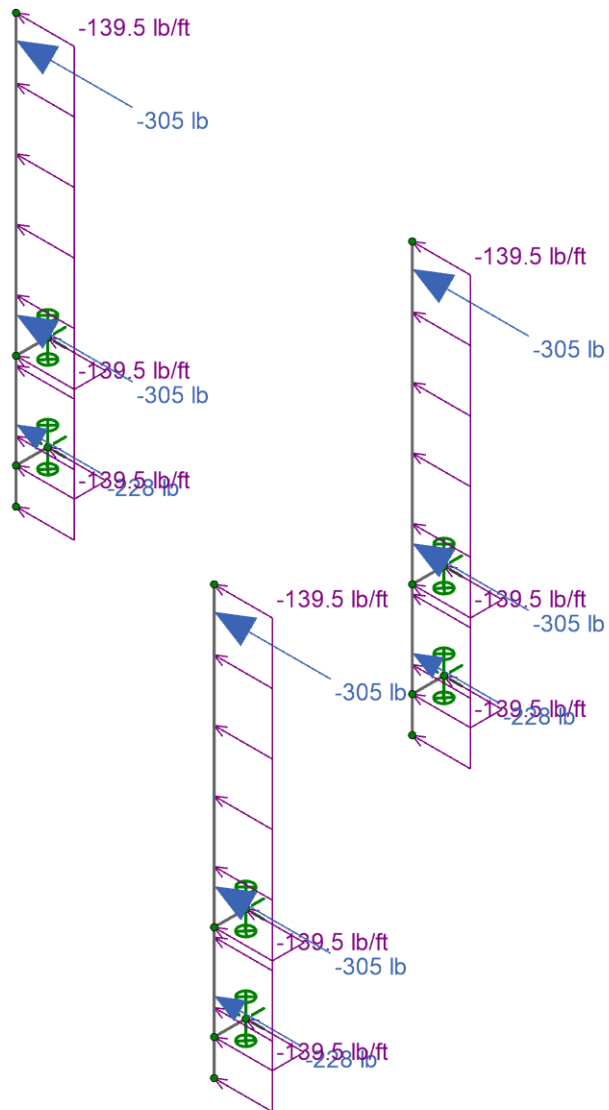
DSH-041R2 / 2101541

Site#: MIMIA00378A

SK-2

Sep 19, 2022

Wall Mount (Site Pro 1 #WWM01)...



Loads: BLC 2, Wind X

Morrison Hershfield

ML

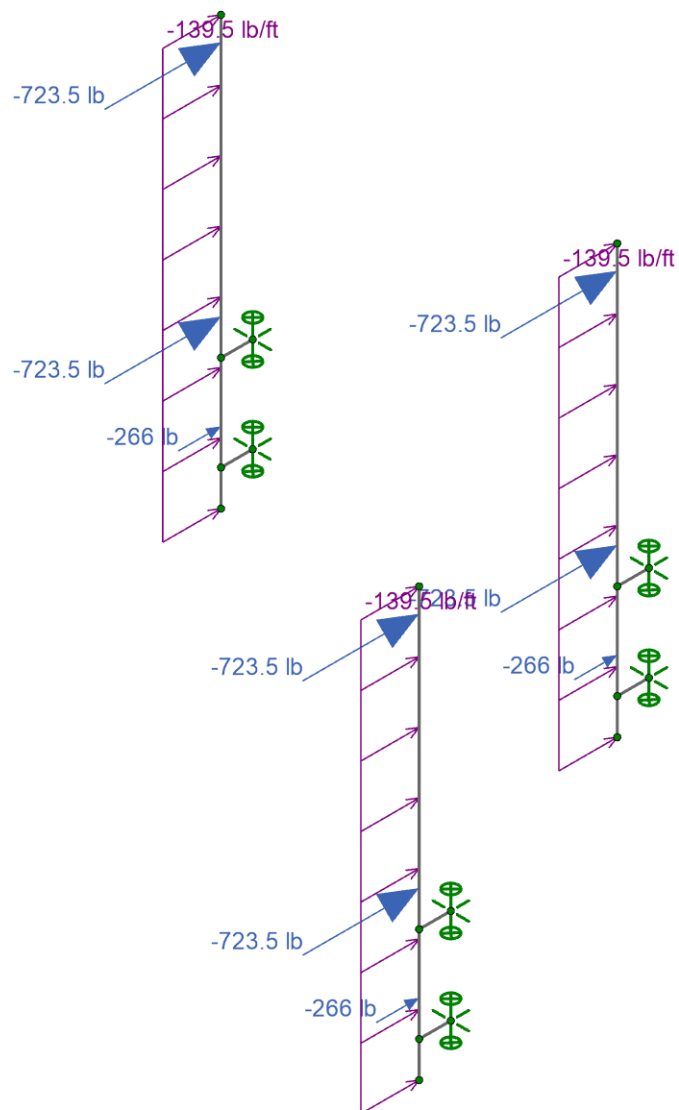
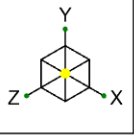
DSH-041R2 / 2101541

Site#: MIMIA00378A

SK-3

Sep 19, 2022

Wall Mount (Site Pro 1 #WWM01)...



Loads: BLC 3, Wind Z

Morrison Hershfield

ML

DSH-041R2 / 2101541

Site#: MIMIA00378A

SK-4

Sep 19, 2022

Wall Mount (Site Pro 1 #WWM01)...

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)	24
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	Global
------------------------------	--------

Codes

Hot Rolled Steel	AISC 15th (360-16): LRFD
Stiffness Adjustment	Yes (Iterative)
Notional Annex	None
Connections	None
Cold Formed Steel	None
Stiffness Adjustment	Yes (Iterative)
Wood	None
Temperature	< 100F
Concrete	None
Masonry	None
Aluminum	None
Structure Type	Building
Stiffness Adjustment	Yes (Iterative)
Stainless	None
Stiffness Adjustment	Yes (Iterative)

Concrete

Compression Stress Block	Rectangular Stress Block
Analyze using Cracked Sections	Yes
Leave room for horizontal rebar splices (2*d bar spacing)	Yes

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	None
Base Elevation (ft)	
Include the weight of the structure in base shear calcs	Yes

Structure Characteristics

T Z (sec)	
T X (sec)	
C _Z	0.02
C _X	0.02
R Z	3
R X	3

Hot Rolled Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm. Coeff. [1e ⁶ F ⁻¹]	Density [k/ft ³]	Yield [ksi]	Ry	Fu [ksi]	Rt
1	A992	29000	11154	0.3	0.65	0.49	50	1.1	65	1.1
2	A36 Gr.36	29000	11154	0.3	0.65	0.49	36	1.5	58	1.2
3	A572 Gr.50	29000	11154	0.3	0.65	0.49	50	1.1	65	1.1
4	A500 Gr.B RND	29000	11154	0.3	0.65	0.527	42	1.4	58	1.3
5	A500 Gr.B RECT	29000	11154	0.3	0.65	0.527	46	1.4	58	1.3
6	A500 Gr.C RND	29000	11154	0.3	0.65	0.527	46	1.4	62	1.3
7	A500 Gr.C RECT	29000	11154	0.3	0.65	0.527	50	1.4	62	1.3
8	A53 Gr.B	29000	11154	0.3	0.65	0.49	35	1.6	60	1.2
9	A1085	29000	11154	0.3	0.65	0.49	50	1.4	65	1.3
10	A913 Gr.65	29000	11154	0.3	0.65	0.49	65	1.1	80	1.1

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design Rule	Area [in ²]	I _{yy} [in ⁴]	I _{zz} [in ⁴]	J [in ⁴]
1	Standoff	HSS4X4X4	Beam	Tube	A500 Gr.B RECT	Typical	3.37	7.8	7.8	12.8
2	Mast Pipe (P)	PIPE 3.0XX	Column	HSS Pipe	A53 Gr.B	Typical	5.17	5.79	5.79	11.6

Node Boundary Conditions

	Node Label	X [lb/in]	Y [lb/in]	Z [lb/in]	Y Rot [k-ft/rad]
1	N5	Reaction	Reaction	Reaction	Reaction
2	N6	Reaction	Reaction	Reaction	Reaction
3	N10	Reaction	Reaction	Reaction	Reaction
4	N12	Reaction	Reaction	Reaction	Reaction
5	N16	Reaction	Reaction	Reaction	Reaction
6	N18	Reaction	Reaction	Reaction	Reaction

Hot Rolled Steel Design Parameters

	Label	Shape	Length [in]	Lb y-y [in]	Lb z-z [in]	Channel Conn.	a [in]	Function
1	M1	Standoff	8			N/A	N/A	Lateral
2	M2	Standoff	8			N/A	N/A	Lateral
3	M7	Mast Pipe (P)	108	Segment	Segment	N/A	N/A	Lateral
4	M4	Mast Pipe (P)	108	Segment	Segment	N/A	N/A	Lateral
5	M5	Standoff	8			N/A	N/A	Lateral
6	M6	Standoff	8			N/A	N/A	Lateral
7	M8	Mast Pipe (P)	108	Segment	Segment	N/A	N/A	Lateral
8	M9	Standoff	8			N/A	N/A	Lateral
9	M10	Standoff	8			N/A	N/A	Lateral

Member Point Loads (BLC 1 : DL)

	Member Label	Direction	Magnitude [lb, kip-in]	Location [(in, %)]
1	M7	Y	-32.25	6
2	M7	Y	-32.25	66
3	M7	Y	-183	90
4	M4	Y	-183	90
5	M4	Y	-32.25	66
6	M4	Y	-32.25	6
7	M8	Y	-183	90
8	M8	Y	-32.25	66
9	M8	Y	-32.25	6

Member Point Loads (BLC 2 : Wind X)

	Member Label	Direction	Magnitude [lb, kip-in]	Location [(in, %)]
1	M7	X	-305	66
2	M7	X	-305	6
3	M7	X	-228	90
4	M4	X	-305	6
5	M4	X	-305	66
6	M4	X	-228	90
7	M8	X	-305	6
8	M8	X	-305	66
9	M8	X	-228	90

Member Point Loads (BLC 3 : Wind Z)

	Member Label	Direction	Magnitude [lb, kip-in]	Location [(in, %)]
1	M7	Z	-723.5	6
2	M7	Z	-723.5	66
3	M7	Z	-266	90
4	M4	Z	-723.5	6
5	M4	Z	-266	90
6	M4	Z	-723.5	66
7	M8	Z	-723.5	6
8	M8	Z	-266	90
9	M8	Z	-723.5	66

Member Distributed Loads (BLC 2 : Wind X)

	Member Label	Direction	Start Magnitude [lb/ft, F, psf, kip-in/in]	End Magnitude [lb/ft, F, psf, kip-in/in]	Start Location [(in, %)]	End Location [(in, %)]
1	M7	PX	-139.5	-139.5	0	%100
2	M1	PX	-139.5	-139.5	0	%100
3	M2	PX	-139.5	-139.5	0	%100
4	M4	PX	-139.5	-139.5	0	%100
5	M5	PX	-139.5	-139.5	0	%100
6	M6	PX	-139.5	-139.5	0	%100
7	M8	PX	-139.5	-139.5	0	%100
8	M9	PX	-139.5	-139.5	0	%100
9	M10	PX	-139.5	-139.5	0	%100

Member Distributed Loads (BLC 3 : Wind Z)

	Member Label	Direction	Start Magnitude [lb/ft, F, psf, kip-in/in]	End Magnitude [lb/ft, F, psf, kip-in/in]	Start Location [(in, %)]	End Location [(in, %)]
1	M7	PZ	-139.5	-139.5	0	%100
2	M4	PZ	-139.5	-139.5	0	%100
3	M8	PZ	-139.5	-139.5	0	%100

Member Area Loads

No Data to Print...

Basic Load Cases

	BLC Description	Category	Y Gravity	Point	Distributed
1	DL	DL	-1	9	
2	Wind X	WLX		9	9
3	Wind Z	WLZ		9	3

Moving Loads

No Data to Print...

Moving Load Patterns

No Data to Print...

Load Combinations

	Description	Solve	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor
1	1.4 DL	Yes	Y	DL	1.4				
2	1.2 DL + 1.0 Wind X	Yes	Y	DL	1.2	WLX	1		
3	1.2 DL - 1.0 Wind X	Yes	Y	DL	1.2	WLX	-1		
4	1.2 DL + 1.0 Wind Z	Yes	Y	DL	1.2	WLZ	1		
5	1.2 DL - 1.0 Wind Z	Yes	Y	DL	1.2	WLZ	-1		
6	0.9 DL + 1.0 Wind X	Yes	Y	DL	0.9	WLX	1		
7	0.9 DL - 1.0 Wind X	Yes	Y	DL	0.9	WLX	-1		
8	0.9 DL + 1.0 Wind Z	Yes	Y	DL	0.9	WLZ	1		
9	0.9 DL - 1.0 Wind Z	Yes	Y	DL	0.9	WLZ	-1		
10	IBC 16-5 (a)	Yes	Y	DL	1.2	Sds*DL	0.2	ELX	1
11	IBC 16-5 (b)	Yes	Y	DL	1.2	Sds*DL	0.2	ELZ	1
12	IBC 16-5 (c)	Yes	Y	DL	1.2	Sds*DL	0.2	ELX	-1
13	IBC 16-5 (d)	Yes	Y	DL	1.2	Sds*DL	0.2	ELZ	-1
14	IBC 16-7 (a)	Yes	Y	DL	0.9	Sds*DL	-0.2	ELX	1
15	IBC 16-7 (b)	Yes	Y	DL	0.9	Sds*DL	-0.2	ELZ	1
16	IBC 16-7 (c)	Yes	Y	DL	0.9	Sds*DL	-0.2	ELX	-1
17	IBC 16-7 (d)	Yes	Y	DL	0.9	Sds*DL	-0.2	ELZ	-1
18	IBC 16-5 (os-a)	Yes	Y	DL	1.2	Sds*DL	0.2	Om*ELX	1
19	IBC 16-5 (os-b)	Yes	Y	DL	1.2	Sds*DL	0.2	Om*ELZ	1
20	IBC 16-5 (os-c)	Yes	Y	DL	1.2	Sds*DL	0.2	Om*ELX	-1
21	IBC 16-5 (os-d)	Yes	Y	DL	1.2	Sds*DL	0.2	Om*ELZ	-1
22	IBC 16-7 (os-a)	Yes	Y	DL	0.9	Sds*DL	-0.2	Om*ELX	1
23	IBC 16-7 (os-b)	Yes	Y	DL	0.9	Sds*DL	-0.2	Om*ELZ	1
24	IBC 16-7 (os-c)	Yes	Y	DL	0.9	Sds*DL	-0.2	Om*ELX	-1
25	IBC 16-7 (os-d)	Yes	Y	DL	0.9	Sds*DL	-0.2	Om*ELZ	-1

Load Combination Design

	Description	Service	Hot Rolled	Cold Formed	Wood	Concrete	Masonry	Aluminum	Stainless	Connection
1	1.4 DL		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
2	1.2 DL + 1.0 Wind X		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
3	1.2 DL - 1.0 Wind X		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
4	1.2 DL + 1.0 Wind Z		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
5	1.2 DL - 1.0 Wind Z		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
6	0.9 DL + 1.0 Wind X		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
7	0.9 DL - 1.0 Wind X		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
8	0.9 DL + 1.0 Wind Z		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
9	0.9 DL - 1.0 Wind Z		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
10	IBC 16-5 (a)		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
11	IBC 16-5 (b)		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
12	IBC 16-5 (c)		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
13	IBC 16-5 (d)		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
14	IBC 16-7 (a)		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
15	IBC 16-7 (b)		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
16	IBC 16-7 (c)		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
17	IBC 16-7 (d)		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
18	IBC 16-5 (os-a)		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
19	IBC 16-5 (os-b)		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Load Combination Design (Continued)

	Description	Service	Hot Rolled	Cold Formed	Wood	Concrete	Masonry	Aluminum	Stainless	Connection
20	IBC 16-5 (os-c)		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
21	IBC 16-5 (os-d)		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
22	IBC 16-7 (os-a)		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
23	IBC 16-7 (os-b)		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
24	IBC 16-7 (os-c)		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
25	IBC 16-7 (os-d)		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Node Reactions

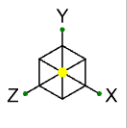
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AISC 15TH (360-16): LRFD Member Steel Code Checks

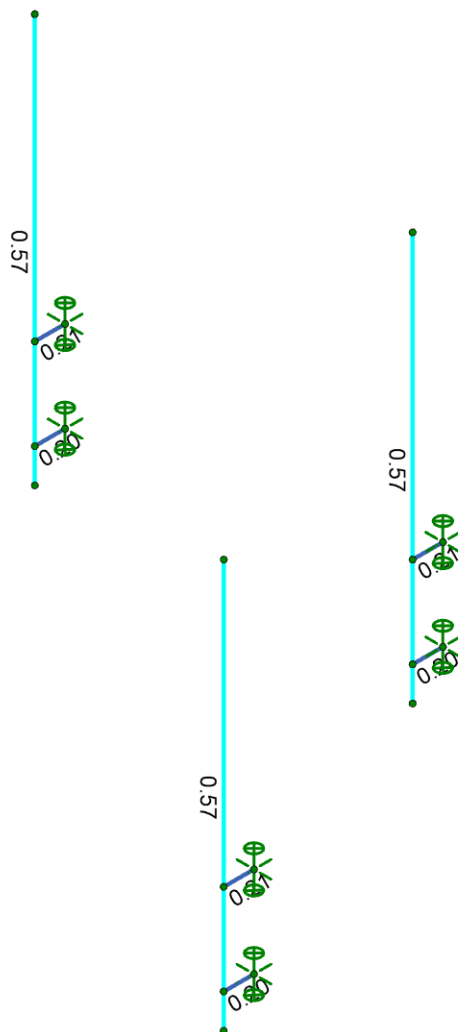
No Data to Print...

Envelope AISC 15TH (360-16): LRFD Member 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 [k-in]	phi*Mn z-z [k-in]	Cb	Eqn
1	M1	HSS4X4X4	0.21	0	4	0.12	8	y	4	139258.732	139518	194.166	194.166	1.666	H1-1b
2	M2	HSS4X4X4	0.2	0	5	0.12	8	y	5	139258.732	139518	194.166	194.166	1.666	H1-1b
3	M7	PIPE 3.0XX	0.569	74.25	5	0.084	75.375		5	125937.981	162855	154.035	154.035	1	H1-1b
4	M4	PIPE 3.0XX	0.569	74.25	5	0.084	75.375		5	125937.981	162855	154.035	154.035	1	H1-1b
5	M5	HSS4X4X4	0.21	0	4	0.12	8	y	4	139258.732	139518	194.166	194.166	1.666	H1-1b
6	M6	HSS4X4X4	0.2	0	5	0.12	8	y	5	139258.732	139518	194.166	194.166	1.666	H1-1b
7	M8	PIPE 3.0XX	0.569	74.25	5	0.084	75.375		5	125937.981	162855	154.035	154.035	1	H1-1b
8	M9	HSS4X4X4	0.21	0	4	0.12	8	y	4	139258.732	139518	194.166	194.166	1.666	H1-1b
9	M10	HSS4X4X4	0.2	0	5	0.12	8	y	5	139258.732	139518	194.166	194.166	1.666	H1-1b



Code Check (Env)	
	No Calc
	> 1.0
	.90-1.0
	.75-.90
	.50-.75
	0-.50

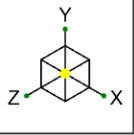


Member Code Checks Displayed (Enveloped)
Envelope Only Solution

Morrison Hershfield
ML
DSH-041R2 / 2101541

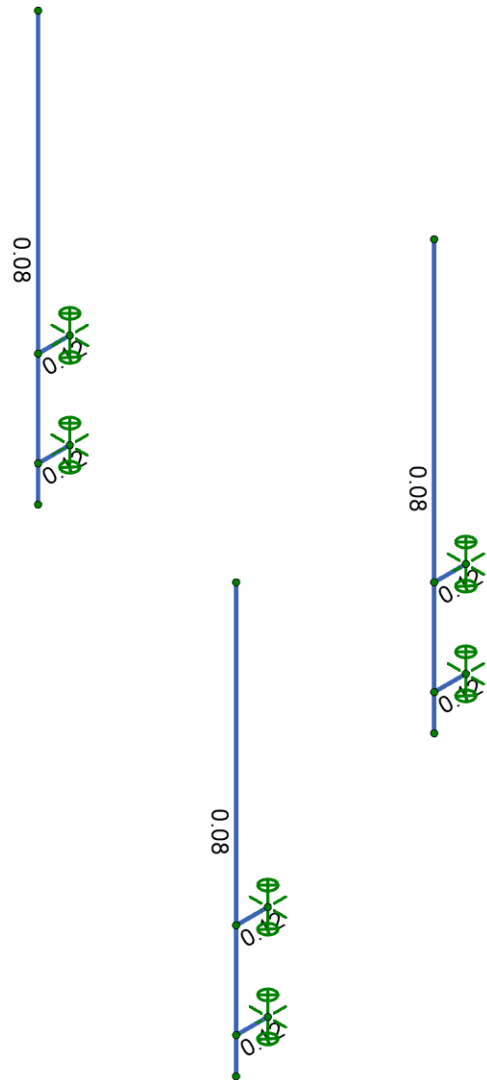
Site#: MIMIA00378A

SK-5
Sep 19, 2022
Wall Mount (Site Pro 1 #WWM0...



Shear Check
(Env)

■	No Calc
■	> 1.0
■	.90-1.0
■	.75-.90
■	.50-.75
■	0-.50



Member Shear Checks Displayed (Enveloped)
Envelope Only Solution

Morrison Hershfield
ML
DSH-041R2 / 2101541

Site#: MIMIA00378A

SK-6
Sep 19, 2022
Wall Mount (Site Pro 1 #WWM0...

ASCE 7 Hazards Report

Address:

No Address at This
Location

Standard:

ASCE/SEI 7-16

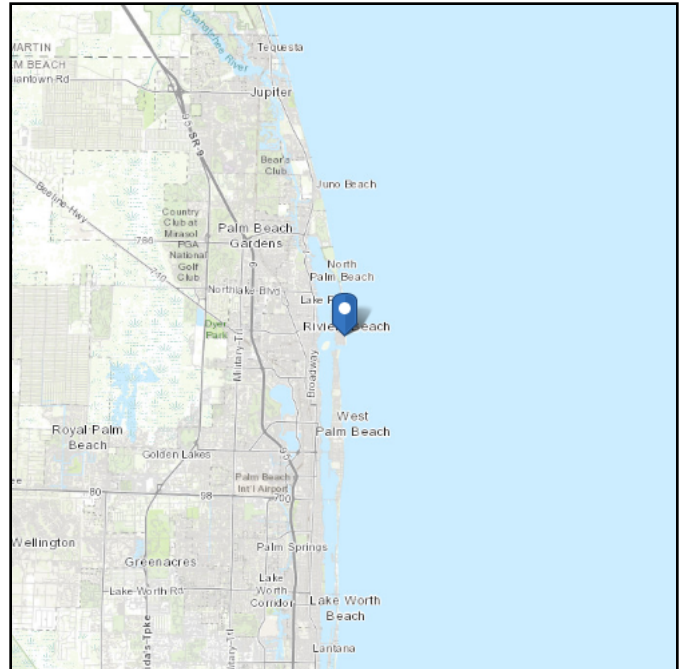
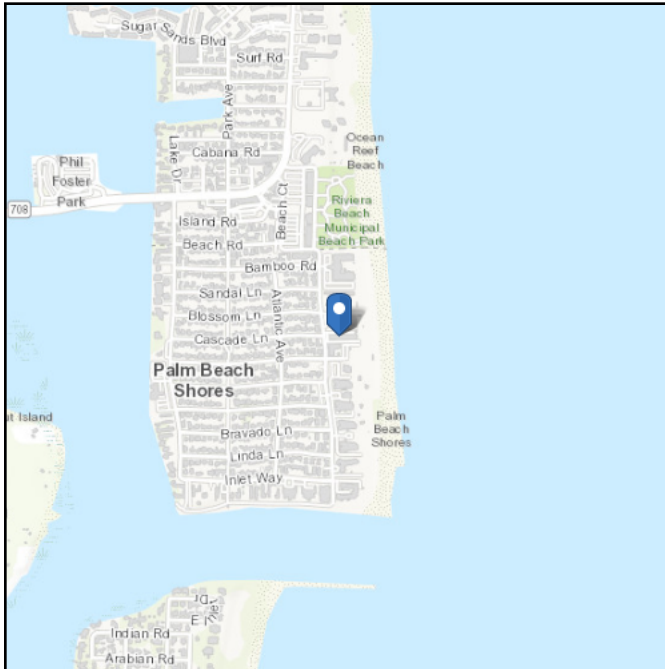
Risk Category: II**Soil Class:**

D - Stiff Soil

Elevation: 6.05 ft (NAVD 88)

Latitude: 26.779169

Longitude: -80.033114



Wind

Results:

Wind Speed	170 Vmph
10-year MRI	89 Vmph
25-year MRI	112 Vmph
50-year MRI	127 Vmph
100-year MRI	138 Vmph

Data Source:

ASCE/SEI 7-16, Fig. 26.5-1B and Figs. CC.2-1–CC.2-4, and Section 26.5.2

Date Accessed:

Sun Feb 27 2022

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

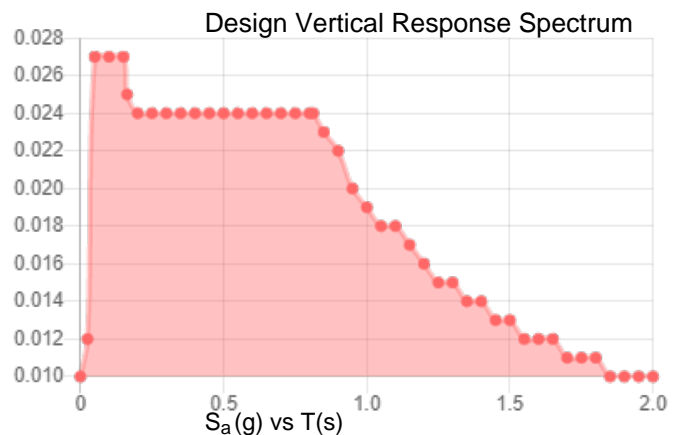
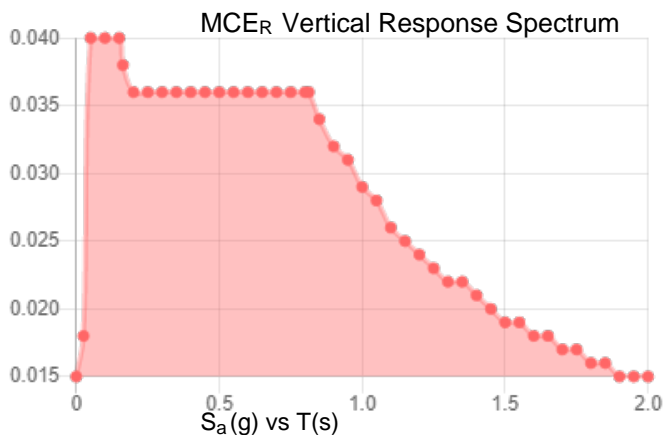
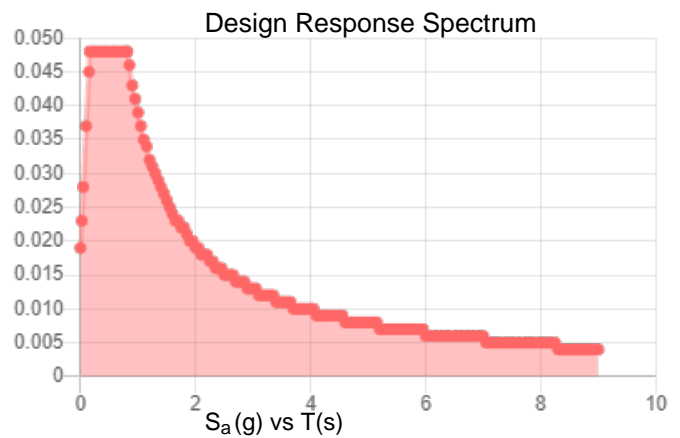
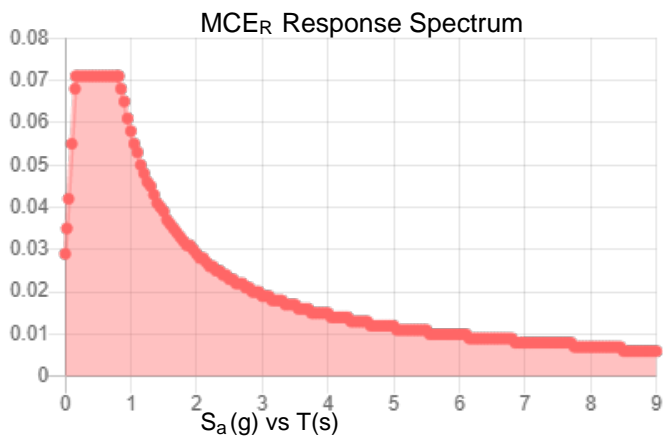
Site is in a hurricane-prone region as defined in ASCE/SEI 7-16 Section 26.2. Glazed openings shall be protected against wind-borne debris as specified in Section 26.12.3.

Site Soil Class: D - Stiff Soil

Results:

S_S :	0.045	S_{D1} :	0.039
S_1 :	0.024	T_L :	8
F_a :	1.6	PGA :	0.021
F_v :	2.4	PGA _M :	0.033
S_{MS} :	0.071	F_{PGA} :	1.6
S_{M1} :	0.058	I_e :	1
S_{DS} :	0.048	C_v :	0.7

Seismic Design Category A



Data Accessed: Sun Feb 27 2022

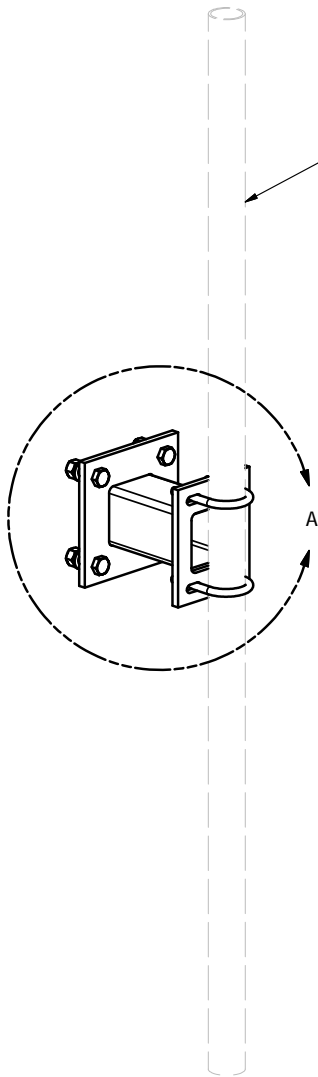
Date Source:

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

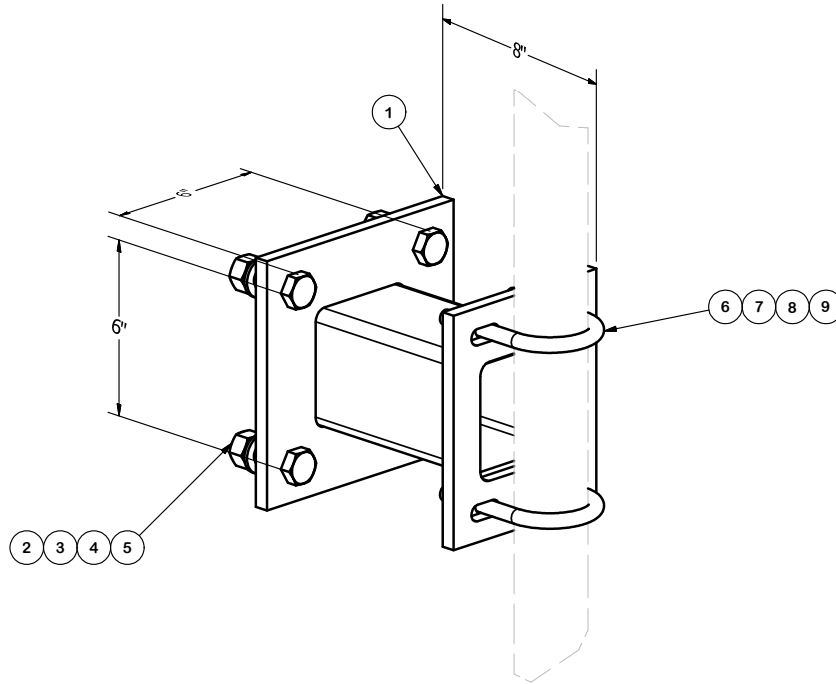
The ASCE 7 Hazard Tool is provided for your convenience, for informational purposes only, and is provided “as is” and without warranties of any kind. The location data included herein has been obtained from information developed, produced, and maintained by third party providers; or has been extrapolated from maps incorporated in the ASCE 7 standard. While ASCE has made every effort to use data obtained from reliable sources or methodologies, ASCE does not make any representations or warranties as to the accuracy, completeness, reliability, currency, or quality of any data provided herein. Any third-party links provided by this Tool should not be construed as an endorsement, affiliation, relationship, or sponsorship of such third-party content by or from ASCE.

ASCE does not intend, nor should anyone interpret, the results provided by this Tool to replace the sound judgment of a competent professional, having knowledge and experience in the appropriate field(s) of practice, nor to substitute for the standard of care required of such professionals in interpreting and applying the contents of this Tool or the ASCE 7 standard.

In using this Tool, you expressly assume all risks associated with your use. Under no circumstances shall ASCE or its officers, directors, employees, members, affiliates, or agents be liable to you or any other person for any direct, indirect, special, incidental, or consequential damages arising from or related to your use of, or reliance on, the Tool or any information obtained therein. To the fullest extent permitted by law, you agree to release and hold harmless ASCE from any and all liability of any nature arising out of or resulting from any use of data provided by the ASCE 7 Hazard Tool.



2-3/8" OD PIPE, 2-7/8" OD PIPE or 3-1/2" OD PIPE,
PIPE NOT INCLUDED.



DETAIL A

PARTS LIST						
ITEM	QTY	PART NO.	PART DESCRIPTION	LENGTH	UNIT WT.	NET WT.
1	1	X-WWM01	8" STAND-OFF ARM / WALL MOUNT		18.12	18.12
2	4	G58LW	5/8" HDG LOCKWASHER		0.03	0.10
3	4	A58FW	5/8" HDG A325 FLATWASHER		0.03	0.14
4	4	A58NUT	5/8" HDG A325 HEX NUT		0.13	0.52
5	4	A582112	5/8" x 2-1/2" HDG A325 HEX BOLT		0.33	1.34
6	2	X-UB1212	1/2" X 2-1/2" X 4-1/2" X 2" GALV. U-BOLT		0.66	1.31
6	2	X-UB1300	1/2" X 3" X 5" X 2" GALV U-BOLT		0.70	1.39
6	2	X-UB1358	1/2" X 3-5/8" X 5-1/2" X 3" GALV U-BOLT		0.77	1.54
7	4	G12FW	1/2" HDG USS FLATWASHER		0.03	0.14
8	4	G12NUT	1/2" HDG HEAVY 2H HEX NUT		0.07	0.29
9	4	G12LW	1/2" HDG LOCKWASHER		0.01	0.06
					TOTAL WT. #	24.95

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 INDUSTRIES AND CONSIDERED A TRADE SECRET. ANY USE OR DISCLOSURE WITHOUT THE CONSENT OF VALMONT INDUSTRIES IS STRICTLY PROHIBITED.

DESCRIPTION

8" STAND-OFF
 WIRELESS WALL MOUNT.
 SITE PRO 1

CPD NO.
4714

DRAWN BY
RH18 3/23/2010

ENG. APPROVAL

CLASS SUB
81 01

DRAWING USAGE
CUSTOMER

CHECKED BY
BMC 5/10/2010



Engineering
 Support Team:
 1-888-753-7446

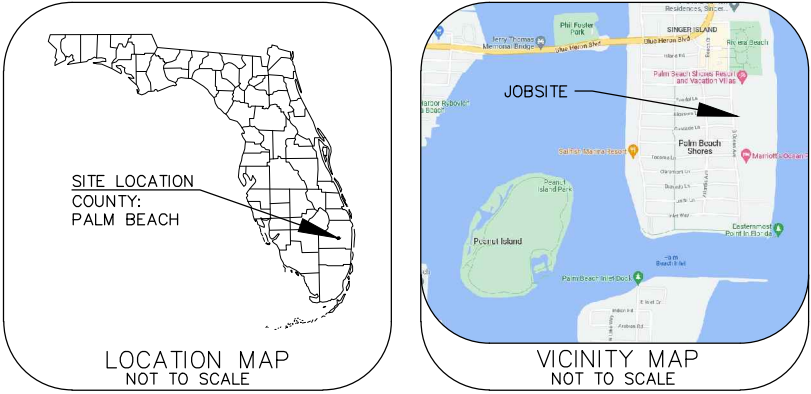
Locations:
 New York, NY
 Atlanta, GA
 Los Angeles, CA
 Plymouth, IN
 Salem, OR
 Dallas, TX

PART NO.

WWM01

DWG. NO.

WWM01



DESCRIPTION: PARENT TRACT (AS PROVIDED BY CLIENT)

LOTS 618, 619, 620 AND 621, TOGETHER WITH ALL LANDS FORMED BY ACCRETION, LYING TO THE EAST OF THE ABOVE DESCRIBED LOTS, ALL IN THE PLAT OF PALM BEACH SHORES, ACCORDING TO THE PLAT THEREOF ON FILE IN THE OFFICE OF THE CLERK OF THE CIRCUIT COURT IN AND FOR PALM BEACH COUNTY, FLORIDA, IN PLAT BOOK 3, PAGES 29-32 INCLUSIVE.

DESCRIPTION: PROPOSED 10' WIDE NON-EXCLUSIVE UTILITY EASEMENT (AS REQUESTED BY CLIENT)

A STRIP OF LAND LYING WITHIN SECTION 26, TOWNSHIP 42 SOUTH, RANGE 43 EAST, PALM BEACH COUNTY, FLORIDA, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCE AT THE SOUTHWEST CORNER OF A PARCEL AS DESCRIBED WITHIN OFFICIAL RECORDS BOOK 1714, PAGE 411, OF THE PUBLIC RECORDS OF PALM BEACH COUNTY, FLORIDA, ALSO BEING A POINT ON THE EASTERLY RIGHT-OF-WAY LINE OF OCEAN AVENUE; THENCE N07°20'20"W, ALONG THE EASTERLY RIGHT-OF-WAY LINE OF SAID OCEAN AVENUE, A DISTANCE OF 112.25 FEET TO THE POINT OF BEGINNING; THENCE CONTINUE N07°20'20"W, ALONG THE EASTERLY RIGHT-OF-WAY LINE OF SAID OCEAN AVENUE, A DISTANCE OF 10.07 FEET; THENCE N89°34'47"E, DEPARTING THE EASTERLY RIGHT-OF-WAY LINE OF SAID OCEAN AVENUE, A DISTANCE OF 221.74 FEET; THENCE S00°25'13"E, A DISTANCE OF 10.00 FEET TO THE NORTH FACE OF AN EXISTING BUILDING; THENCE S89°34'47"W, ALONG THE NORTH FACE OF SAID EXISTING BUILDING AND ITS EXTENDED PROJECTION, A DISTANCE OF 220.52 FEET TO A POINT ON THE EASTERLY RIGHT-OF-WAY LINE OF SAID OCEAN AVENUE, ALSO THE POINT OF BEGINNING.

SAID PROPOSED 10' WIDE NON-EXCLUSIVE UTILITY EASEMENT CONTAINING 2,211 SQUARE FEET, MORE OR LESS.

LEGEND:

- (C) = CALCULATED
(F) = FIELD
(P) = PLAT
(D) = DEED
FIR = FOUND IRON ROD
FIP = FOUND IRON PIPE
F.D.O.T. = FLORIDA DEPARTMENT OF TRANSPORTATION
NO. = NUMBER
LB = LICENSED BUSINESS
RCP = REINFORCED CONCRETE PIPE
INV = INVERT
(*) = PER SURVEY PERFORMED BY WILLIAM G. WALLACE, DATED AUGUST 30, 1968, JOB NUMBER 68-475.
- CONC = CONCRETE
ELEV = ELEVATION
SOIR = SET IRON ROD & CAP
T = TOWNSHIP
R = RANGE
O.R. = OFFICIAL RECORDS
NOFS = NO CORNER FOUND OR SET
ID = IDENTIFICATION
W/ = WITH
MES = MITERED END SECTION
TYP. = TYPICAL
PREFAB = PREFABRICATED
CLF = CHAIN LINK FENCE
OH = OVERHEAD LINE
○ = UTILITY POLE
Ⓣ = TELCO PEDESTAL

SURVEYOR’S NOTES:

1. BEARINGS ARE BASED ON THE EASTERLY RIGHT-OF-WAY LINE OF OCEAN AVENUE BEING N07°20'20"W, PER SURVEY PERFORMED BY WILLIAM G. WALLACE, DATED AUGUST 30, 1968, JOB NUMBER 68-475.

2. THIS SURVEY WAS PERFORMED ON THE GROUND ON MARCH 17, 2022 UNDER THE SUPERVISION OF A FLORIDA PROFESSIONAL SURVEYOR & MAPPER.

3. THE SUBJECT PROPERTY APPEARS TO BE WITHIN ZONE "X", COMMUNITY 125137, PANEL NUMBER 0393, SUFFIX F WITH AN EFFECTIVE DATE OF 10/05/2017.

4. ALL DIMENSIONS SHOWN ARE IN FEET AND DECIMAL PARTS THEREOF.

5. THIS SURVEY DOES NOT REFLECT OR DETERMINE OWNERSHIP.

6. NO UTILITIES (UNDERGROUND OR ABOVE-GROUND) WERE LOCATED EXCEPT AS SHOWN HEREON.

7. NO SEARCH FOR VISIBLE EVIDENCE OF EXISTING OR FORMER AREAS OF FACILITIES WHICH MAY HAVE INVOLVED THE USE OF STORAGE OF HAZARDOUS MATERIALS WAS MADE.

8. NO WETLAND AREAS OR JURISDICTIONAL WETLANDS WERE LOCATED OR ARE SHOWN ON THIS SURVEY.

9. THIS SURVEYOR HAS REVIEWED THE COMMITMENT FOR TITLE INSURANCE PREPARED BY U.S. TITLE SOLUTIONS, COMMITMENT NUMBER UST68523, DATED JUNE 3, 2021 AND HAVE FOUND THE FOLLOWING:

1-3) STANDARD EXCEPTIONS, CONTAINS NO SURVEY MATTERS.

4. EASEMENT, OFFICIAL RECORDS BOOK 84111, PAGE 145. (UNKNOWN IMPACT/ENCUMBRANCES ON PROPOSED DEVELOPMENT).

5.1 MEMORANDUM OF AGREEMENT, OFFICIAL RECORDS BOOK 11563, PAGE 996. (UNKNOWN IMPACT/ENCUMBRANCES ON PROPOSED DEVELOPMENT).

5.2 LEASE AGREEMENT, OFFICIAL RECORDS BOOK 24166, PAGE 861. (UNKNOWN IMPACT/ENCUMBRANCES ON PROPOSED DEVELOPMENT).

5.3 MEMORANDUM OF AGREEMENT, OFFICIAL RECORDS BOOK 9576, PAGE 1192. (UNKNOWN IMPACT/ENCUMBRANCES ON PROPOSED DEVELOPMENT).

5.4 MEMORANDUM OF AGREEMENT, OFFICIAL RECORDS BOOK 9023, PAGE 258. (UNKNOWN IMPACT/ENCUMBRANCES ON PROPOSED DEVELOPMENT).

5.5 PLAT, PLAT BOOK 3, PAGE 29. (UNKNOWN IMPACT/ENCUMBRANCES ON PROPOSED DEVELOPMENT).

10. INFORMATION SHOWN HEREON MAY BE SUBJECT TO EASEMENTS, RESTRICTIONS AND RESERVATIONS OF RECORD.

11. THIS SURVEY REFLECTS THE DESCRIPTION PROVIDED BY THE CLIENT.

12. REPRODUCTIONS OF THIS SURVEY ARE NOT VALID UNLESS SIGNED AND SEALED WITH AN ORIGINAL RAISED SURVEYOR’S SEAL.

13. ADDITIONS OR DELETIONS TO THIS SURVEY MAP BY ANY OTHER THAN THE SIGNING SURVEYOR ARE PROHIBITED WITHOUT THE WRITTEN CONSENT OF THE SURVEYOR OF RECORD.

14. THIS SURVEY WAS CREATED FOR THE PURPOSE OF CREATING A PROPOSED UTILITY EASEMENT AND SHOWING THE TOPOGRAPHIC LOCATION OF IMPROVEMENTS ON THE ROOFTOP OF A 7-STORY BUILDING. IT DOES NOT CONSTITUTE A BOUNDARY SURVEY OF THE PARENT TRACT.

15. THIS SURVEY MAP IS INTENDED TO BE DISPLAYED AT A SCALE AS NOTED.

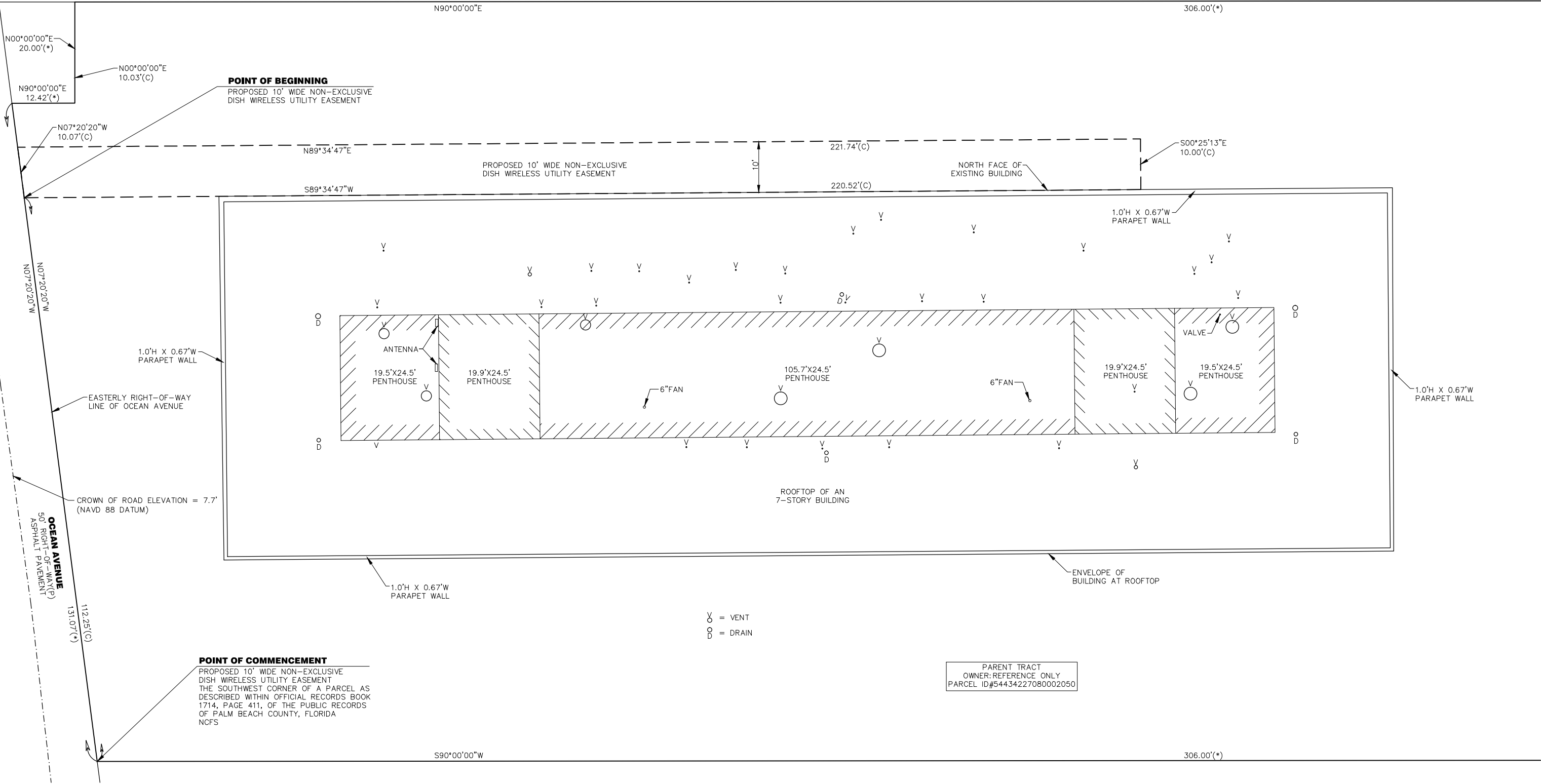
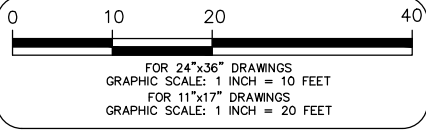
16. THE ELEVATIONS SHOWN HEREON ARE IN NORTH AMERICAN VERTICAL DATUM OF 1988, ARE TO THE THIRD ORDER OF ACCURACY, AND IS BASED ON MULTI FREQUENCY GNSS CORRECTIONS OBTAINED FROM THE FLORIDA DEPARTMENT OF TRANSPORTATIONS FLORIDA PERMANENT REFERENCE NETWORK (FPRN).

THIS SURVEY IS NOT VALID OR COMPLETE WITHOUT SHEETS 1, 2 & 3 BEING BOUND TOGETHER. SEE SHEET TWO FOR SKETCH OF PROPOSED UTILITY EASEMENT, AND TOPOGRAPHIC LOCATION OF IMPROVEMENTS ON ROOFTOP OF BUILDING. SEE SHEET THREE FOR SKETCH OF THE PARENT TRACT.

TOPOGRAPHIC LOCATION OF IMPROVEMENTS ON ROOFTOP OF BUILDING

<div><p>ENGINEERING GROUP, INC.</p><p>12979 N TELECOM PARKWAY TAMPA, FLORIDA 33637 (813) 615-1422 FLORIDA LICENSED BUSINESS 7906</p></div>	REVISIONS			PREPARED FOR: <div><p>5701 SOUTH SANTA FE DRIVE LITTLETON, CO 80120</p></div>	NOT VALID WITHOUT THE SIGNATURE AND ORIGINAL RAISED SEAL OF A FLORIDA LICENSED SURVEYOR & MAPPER.	PRELIMINARY FOR CLIENTS REVIEW	DRAWING INFORMATION:		SITE INFORMATION:	
	1	ADDED PROPOSED 10' NON-EXCLUSIVE UTILITY EASEMENT PER CLIENTS REQUEST. NO FIELD WORK WAS PERFORMED AS PART OF THIS REVISION.	JLF	8/23/22			FIELD DATE:	03-17-2022	MIMIA00378A 125 OCEAN AVENUE PALM BEACH SHORES, FLORIDA 33404 (PALM BEACH COUNTY)	
	2	UPDATED PROPOSED 10' NON-EXCLUSIVE UTILITY EASEMENT PER CLIENTS REQUEST. NO FIELD WORK WAS PERFORMED AS PART OF THIS REVISION.	JLF	10/17/22			DRAWN DATE:	03-24-2022		
							CHECK DATE:	03-24-2022		
							SEC.-TWP.-RGE.:	26-42S-43E	SMW PROJECT NUMBER: 22-5191	SURVEY SHEET 1 OF 3

ROOFTOP DETAIL



TOPOGRAPHIC LOCATION OF IMPROVEMENTS ON ROOFTOP OF BUILDING



12979 N TELECOM PARKWAY
TAMPA, FLORIDA 33637
(813) 615-1422
FLORIDA LICENSED BUSINESS 7906

REVISIONS			
1	ADDED PROPOSED 10' NON-EXCLUSIVE UTILITY EASEMENT PER CLIENTS REQUEST. NO FIELD WORK WAS PERFORMED AS PART OF THIS REVISION.	JLF	8/23/22
2	UPDATED PROPOSED 10' NON-EXCLUSIVE UTILITY EASEMENT PER CLIENTS REQUEST. NO FIELD WORK WAS PERFORMED AS PART OF THIS REVISION.	JLF	10/17/22

PREPARED FOR:



5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

THIS SURVEY IS NOT VALID OR COMPLETE WITHOUT SHEETS 1, 2 & 3 BEING BOUND TOGETHER. SEE SHEET 1 FOR SURVEYORS SIGNATURE AND SEAL, SURVEYORS NOTES, DESCRIPTIONS, LEGEND, AND VICINITY MAP. SEE SHEET THREE FOR SKETCH OF THE PARENT TRACT.

DRAWING INFORMATION:

FIELD DATE:

03-17-2022

DRAWN DATE:

03-24-2022

CHECK DATE:

03-24-2022

SEC.-TWP.-RGE.:

26-42S-43E

SITE INFORMATION:

MIMIA00378A

125 OCEAN AVENUE
PALM BEACH SHORES, FLORIDA 33404
(PALM BEACH COUNTY)

SMW PROJECT NUMBER:

22-5191


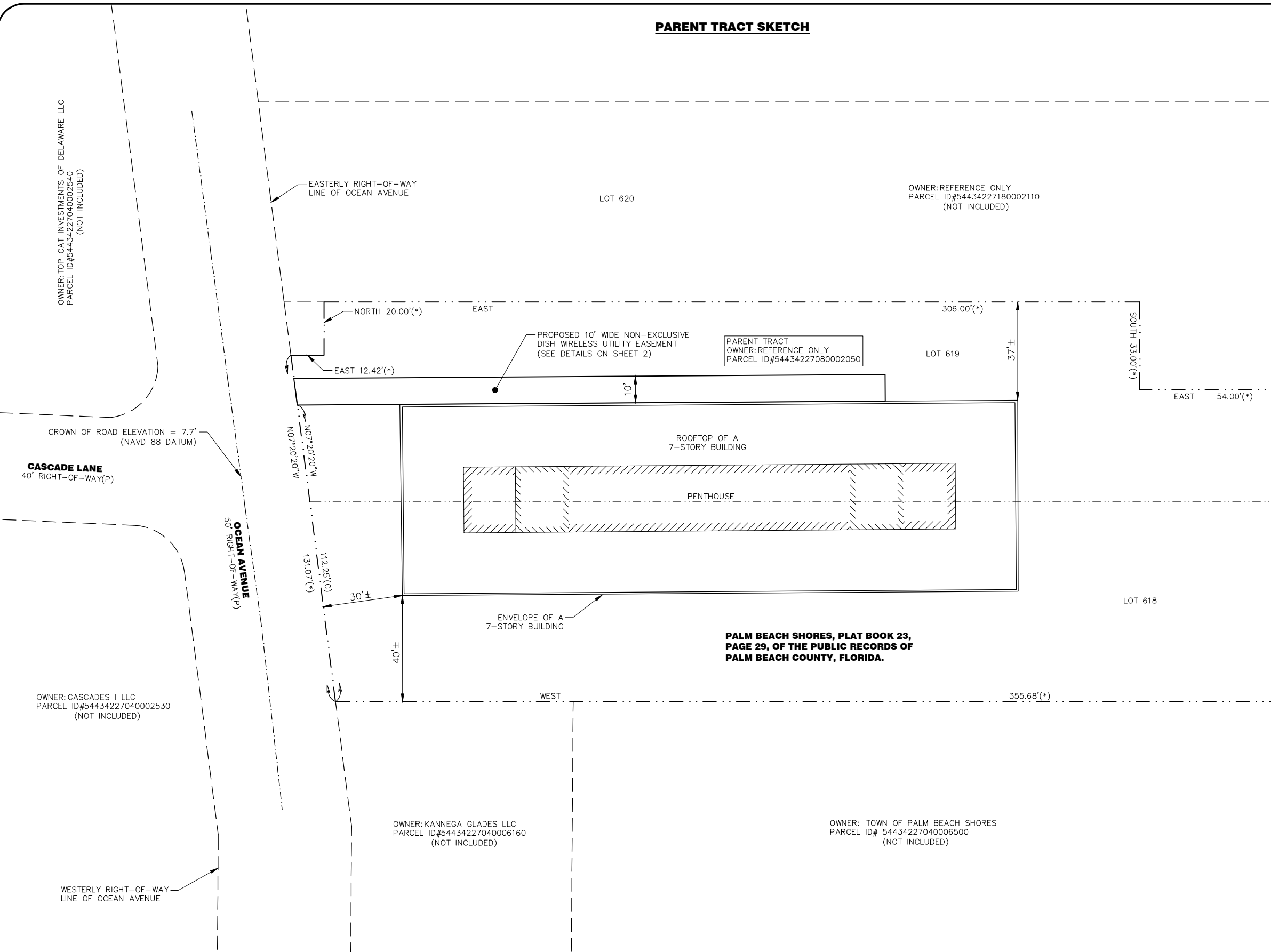
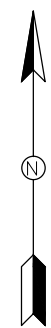
SURVEY

SHEET 2 OF 3

0 20 40 80

FOR 24"x36" DRAWINGS
GRAPHIC SCALE: 1 INCH = 20 FEET

FOR 11"x17" DRAWINGS
GRAPHIC SCALE: 1 INCH = 40 FEET



ENGINEERING GROUP, INC.
12979 N TELECOM PARKWAY
TAMPA, FLORIDA 33637
(813) 615-1422
FLORIDA LICENSED BUSINESS 7906

REVISIONS				
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2	UPDATED PROPOSED 10' NON-EXCLUSIVE UTILITY EASEMENT PER CLIENTS REQUEST. NO FIELD WORK WAS PERFORMED AS PART OF THIS REVISION.	JLF	10/17/22	

dish
wireless
5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

DRAWING INFORMATION:	
FIELD DATE:	03-17-2022
DRAWN DATE:	03-24-2022
CHECK DATE:	03-24-2022
SEC. - TWP. - RGE.:	
	26-42S-43E

SITE INFORMATION:	
MIMIA00378A	
125 OCEAN AVENUE	
PALM BEACH SHORES, FLORIDA 33404	
(PALM BEACH COUNTY)	
SMW PROJECT NUMBER:	SURVEY
22-5191	SHEET 3 OF 3

ADJ	ADJUSTABLE	NIC	NOT IN CONTRACT
APPROX	APPROXIMATE	NTS	NOT TO SCALE
CAB	CABINET	OC	ON CENTER
CLG	CEILING	OPP	OPPOSITE
CONC	CONCRETE	SF	SQUARE FOOT
CONT	CONTINUOUS	SHT	SHEET
CJ	CONSTRUCTION JOINT	SIM	SIMILAR
DIA	DIAMETER	SS	STAINLESS STEEL
DWG	DRAWING	STL	STEEL
EGB	EQUIPMENT GROUND BAR	TOC	TOP OF CONCRETE
EA	EACH	TOM	TOP OF MASONRY
ELEC	ELECTRICAL	TYP	TYPICAL
EL	ELEVATION	VIF	VERIFY IN FIELD
EQ	EQUAL	UON	UNLESS OTHERWISE NOTED
EQUIP	EQUIPMENT	WWF	WELDED WIRE FABRIC
(E)	EXISTING	W/	WITH
EXT	EXTERIOR	BTS	BASE TRANSMISSION STATION
FF	FINISHED FLOOR	PCS	PERSONAL COMMUNICATIONS SERVICES
GA	GAUGE		
GALV	GALVANIZED		
GC	GENERAL CONTRACTOR		
GRND	GROUND		
LG	LONG	A-1	ANTENNA MARK NO.
LNA	LOW NOISE AMPLIFIER		
MAX	MAXIMUM		
MECH	MECHANICAL	CL	CENTERLINE
MFR	MANUFACTURER	PL	PLATE
MGB	MASTER GROUND BAR	&	AND
MIN	MINIMUM	•	AT
MTL	METAL		
(N)	NEW	GPS	GLOBAL POSITIONING SYSTEM

	NEW ANTENNA		GROUT OR PLASTER
	EXISTING ANTENNAS		(E)BRICK
	ASPHALT		(E)MASONRY
	CONCRETE		CONCRETE
	ELECTRIC BOX		EARTH
	LIGHT POLE		GRAVEL
	FND. MONUMENT		PLYWOOD
	SPOT ELEVATION		SAND
	SET POINT		WOOD CONT.
	REVISION		WOOD BLOCKING
	GRID REFERENCE		STEEL
	DETAILS		CENTER LINE
	SECTIONS		PROPERTY LINE
	TRUE NORTH		STEPPED FOOTING
			MATCH LINE
			WORK POINT
			GROUND WIRE
			COAXIAL CABLE
			RAIL ROAD



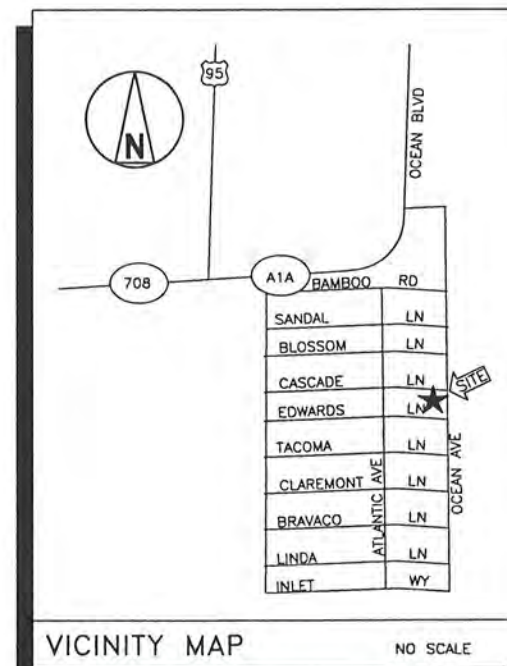
C O M M U N I C A T I O N S
M B O P E R A T I O N S , I N C .

MAYAN TOWERS CONDOMINIUM

125 OCEAN AVENUE
PALM BEACH SHORES, FLORIDA 33404

6WP1009B

ROOF TOP



DRIVING DIRECTIONS

95 SOUTH TO 708 EAST TO OCEAN AVENUE.
MAKE RIGHT AT INTERSECTION OF OCEAN
AND 708 DOWN TO EDWARD LN. GO TO BLDG. 125

LEGAL: (NOT AVAILABLE)

SHT. NO.	DESCRIPTION	REV. NO.
T-1	TITLE SHEET	4
A-1	ROOF PLAN	3
A-2	ELEVATIONS	3
DSD-1	ANTENNA DETAILS	0
DSD-3	SUPPORTS AND PENETRATIONS	1
	(ELECTRICAL DRAWINGS)	
E-1	CONDUIT ROUTING	4
E-2	ELECTRICAL DETAILS	1
ESD-1A	NEW 120/240V SERVICE	1
GSD-1	GROUNDING NOTES & LEGEND	1
GSD-2	GROUNDING RISER & DETAILS	2

SHEET INDEX

OMNIPOINT
COMMUNICATIONS
MB OPERATIONS, INC.
600 ANSIN BLVD.
HALLANDALE, FLORIDA
(954) 457-5700

PROPERTY OWNER

Name WALTER PAGE
MAYAN TWRS CONDO
Address 125 OCEAN AVENUE
PALM BEACH SHORES, FL 33404
Phone (561) 844-4550

APPROVALS

OMNIPONT _____
LANDLORD _____
LEASING _____
R.F. _____
ZONING _____
CONSTRUCTION _____
BSIE _____

PROJECT NO:	36585
-------------	-------

DRAWN BY: CWG

CHECKED BY: RWW

PROFESSIONAL ENGINEER

Name DAVID J. FARLES
Discipline CIVIL/STRUCTURAL
State FLORIDA
Registration No. 35767
Date 11/11/97

4	11/11/97	GENERAL REVISIONS
3	11/03/97	GENERAL REVISIONS
2	09/18/97	GENERAL REVISIONS
1	08/14/97	CONSTRUCTION ISSUE
0	07/17/97	BID/REVIEW ISSUE
REV	DATE	DESCRIPTION



BLACK & VEATCH

11401 LAMAR
OVERLAND PARK, KS. 66211
(913) 458-2000

SHEET TITLE

TITLE SHEET
6WP1009B

SHEET NUMBER

T-1

PLAN CHECKED
FOR CODE
COMPLIANCE

RESULTS	APPROVE <input checked="" type="checkbox"/>	REJECT <input type="checkbox"/>
DATE 12-12-97	OFFICIAL <i>arg.</i>	

OFFICE
COPY

David J. Enles
11/11/97

OMNIPONT
COMMUNICATIONS
MB OPERATIONS, INC.
600 ANSIN BLVD.
HALLANDALE, FLORIDA
(954) 457-5700

PROPERTY OWNER
WALTER PAGE
Name MAYAN TWRS CONDO
Address 125 OCEAN AVENUE
PALM BEACH SHORES, FL 33404
Phone (561) 844-4550

APPROVALS

OMNIPONT _____
LANDLORD _____
LEASING _____
R.F. _____
ZONING _____
CONSTRUCTION _____
BSIE _____

PROJECT NO: 36585

DRAWN BY: JEG

CHECKED BY: RMV

PROFESSIONAL ENGINEER

Name DAVID J. EARLES
Discipline CIVIL/STRUCTURAL
State FLORIDA
Registration No. 35767
Date 11/11/97

REV	DATE	DESCRIPTION
3	11/03/97	GENERAL REVISIONS
2	09/18/97	GENERAL REVISIONS
1	08/14/97	CONSTRUCTION ISSUE
0	07/17/97	BID/REVIEW ISSUE



BLACK & VEATCH

11401 LAMAR
OVERLAND PARK, KS. 66211
(913) 458-2000

SHEET TITLE

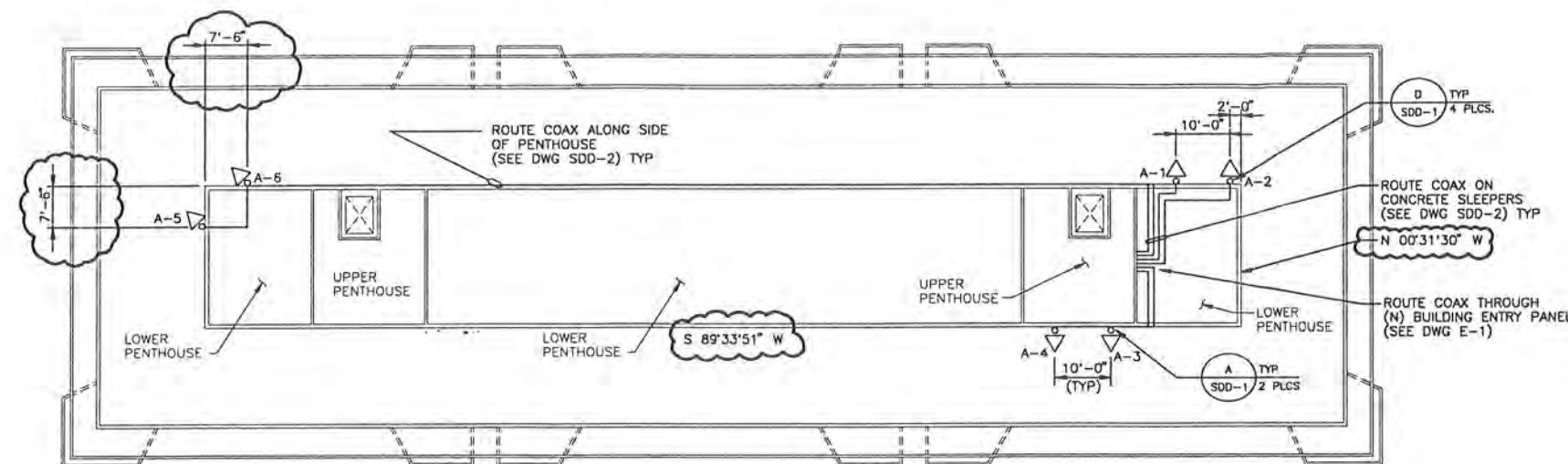
ROOF PLAN
6WP1009B

SHEET NUMBER

A-1

GENERAL NOTES:

- CONTRACTOR SHALL COMPLY WITH ALL BUILDING CODES OF AUTHORITIES HAVING JURISDICTION, AND SHALL BE RESPONSIBLE FOR ALL SPECIAL INSPECTIONS AND ASSOCIATED FEES IN ACCORDANCE WITH LOCAL JURISDICTIONS SUCH AS BUT NOT LIMITED TO, STRUCTURE ERECTION, ELECTRICAL INSPECTION, GROUNDING INSPECTION, EXCAVATION INSPECTION AND REINFORCED CONCRETE INSPECTION.
- BUILDING OWNER AND BUILDING MANAGER SHALL BE NOTIFIED OF START OF CONSTRUCTION BY CONTRACTOR WELL IN ADVANCE OF CONSTRUCTION START DATE (THE BUILDING WILL BE OCCUPIED DURING CONSTRUCTION).
- CONSTRUCTION STAGING AREA SHALL BE COORDINATED WITH BUILDING OWNER AND BUILDING MANAGER WELL IN ADVANCE OF CONSTRUCTION START DATE.
- USE OF SERVICE ELEVATOR SHALL BE COORDINATED WITH BUILDING MANAGER WELL IN ADVANCE OF TIMES NEEDED. ONLY USE ACCESS TO CONSTRUCTION AREAS DESIGNATED BY OWNER AND MANAGER.
- EXISTING FACILITIES SHALL BE PROTECTED AT ALL TIMES. CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING ANY DAMAGE CAUSED BY CONSTRUCTION OPERATIONS.
- THE CONTRACTOR SHALL SUBCONTRACT ALL ROOFING CONSTRUCTION, REPAIR, ETC. TO THE BUILDING MAINTENANCE OR ROOFING COMPANY HOLDING THE WARRANTY ON ROOF. ANY DAMAGE TO ROOF SHALL BE REPORTED TO ENGINEER AND BUILDING OWNER AND IMMEDIATE REPAIRS SHALL BE MADE PER MANUFACTURER'S RECOMMENDATIONS.
- CONFINE OPERATION TO AREAS OF NEW CONSTRUCTION.
- COMPLETE TELEPHONE AND ELECTRICAL SERVICE SHALL BE PROVIDED FOR AS INDICATED ON DRAWINGS. COORDINATE INSTALLATION WITH BUILDING OWNER AND AUTHORITIES HAVING JURISDICTION.
- BUILDING SERVICES SHALL NOT BE INTERRUPTED WITHOUT BUILDING OWNER AND/OR BUILDING MANAGER'S APPROVAL.
- CONTRACTOR SHALL VERIFY EXACT LOCATION OF ALL EXISTING UTILITIES AND COORDINATE INSTALLATION OF NEW UTILITIES WITH LOCAL AUTHORITIES.
- CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS AND PLAN DIMENSIONS, AND SHALL IMMEDIATELY NOTIFY ENGINEER OF ANY DISCREPANCIES.
- CONTRACTOR SHALL REMOVE ALL TRASH AND DEBRIS FROM SITE ON DAILY BASIS.
- INTEGRITY OF ALL EXISTING FIRE RATED WALLS SHALL BE MAINTAINED. FIRE SEAL ANY PENETRATIONS WITH U.L. APPROVED ASSEMBLY MATCHING RATING OF EXISTING BUILDING.
- EQUIPMENT LOCATIONS SHOWN SHALL NOT BE VARIED WITHOUT REVIEW APPROVAL OF THE ENGINEER. AVOID CONCENTRATED LOADS DURING CONSTRUCTION.
- EXISTING BUILDING STRUCTURE SHALL NOT BE MODIFIED OR ATTACHED TO WITHOUT APPROVAL OF ENGINEER.
- ALL EXTERIOR ROOF AND WALL PENETRATIONS SHALL BE WATERTIGHT AND ALL INTERIOR PENETRATIONS SHALL BE VERMIN PROOF. SEE DWG SDD-2.
- PAINT ANTENNAS, MOUNTS, COAX AND JUMPERS TO MATCH BUILDING. USE NON-METALLIC PAINT.
- THE CONTRACTOR SHALL PROVIDE STAND-OFF SUPPORTS FOR JUMPERS AS REQUIRED.
- SEE DWG SDE-5 AND SDG-2 FOR ELECTRICAL AND GROUNDING DETAILS.
- WIND LOADS FOR STRUCTURAL DESIGN ARE PER ASCE 7-95, 150 MPH, EXPOSURE C.
- CONTRACTOR SHALL PERFORM A FDR SWEEP TEST. SEE CONSTRUCTION MANAGER FOR SPECIFICATION.
- THE ENGINEER HAS MADE EVERY EFFORT TO SET FORTH THE COMPLETE SCOPE OF WORK. THE CONTRACTOR IS CAUTIONED THAT MINOR OMISSIONS OR ERRORS IN THESE DRAWINGS SHALL NOT EXCUSE CONTRACTOR FROM COMPLETING THE PROJECT IN ACCORDANCE WITH THE INTENT OF THE DRAWINGS.
- ANCHORAGE AND CORE DRILLS TO SLABS SHALL BE LOCATED BY USE OF REBAR/SLEEVE LOCATOR SCANNER AVOIDING EMBEDDED TENDONS. DRILLING SHALL BE DONE USING GROUND FAULT CIRCUIT INTERRUPTER IN POWER SUPPLY TO DRILL TO ASSURE SAFETY OF ROOF STRESS TENDONS.



ROOF PLAN

16' 12' 8' 4' 0 16' 32'



ANTENNA AND COAXIAL CABLE SCHEDULE

ANTENNA MARK	SECTOR	ANTENNA	ANTENNA TYPE	COAXIAL CABLE FEED LOCATION	JUMPER LENGTH COAX TO LNA	JUMPER LENGTH LNA TO ANTENNA	JUMPER SIZE/TYPE	DOWN-TILT	AZIMUTH	ANTENNA CL HEIGHT AGL	COAXIAL CABLE MARK	MARK	COAXIAL DIAMETER	COAXIAL LENGTH
A-1	1	DAPA 79010	TX	BOTTOM	2 @ 1'-6"	1 @ 3'	1/2" DIA/MICA	0°	60°	84'-6"	COAX 1 RED, WHITE COAX 2 RED, RED, WHITE		(1)	(2) 75'-0"
A-2	1	DAPA 79010	REC	BOTTOM	2 @ 1'-6"	1 @ 3'	1/2" DIA/MICA	0°	60°	84'-6"	COAX 1 RED, RED COAX 2 RED, RED, RED		(1)	(2) 75'-0"
A-3	2	DAPA 59010	TX	BOTTOM	2 @ 1'-6"	1 @ 3'	1/2" DIA/MICA	0°	180°	84'-6"	COAX 1 GREEN, WHITE COAX 2 GREEN, GREEN, WHITE		(1)	(2) 85'-0"
A-4	2	DAPA 59010	REC	BOTTOM	2 @ 1'-6"	1 @ 3'	1/2" DIA/MICA	0°	180°	84'-6"	COAX 1 GREEN, GREEN COAX 2 GREEN, GREEN, GREEN		(1)	(2) 85'-0"
A-5	3	DAPA 59010	TX	BOTTOM	2 @ 1'-6"	1 @ 3'	1/2" DIA/MICA	0°	300°	84'-6"	COAX 1 BLUE, WHITE COAX 2 BLUE, BLUE, WHITE		(1)	(2) 160'-0"
A-6	3	DAPA 59010	REC	BOTTOM	2 @ 1'-6"	1 @ 3'	1/2" DIA/MICA	0°	300°	84'-6"	COAX 1 BLUE, BLUE COAX 2 BLUE, BLUE, BLUE		(1)	(2) 160'-0"

(1) <100' USE 7/8" DIA
101' TO 150 USE 1 1/4" DIA
> 150' USE 1 5/8" DIA

NOTE: COAXIAL CABLE LENGTH MAY VARY DUE TO FIELD ROUTING.

David J. Earles
11/11/97

OMNIPOINT
COMMUNICATIONS
MB OPERATIONS, INC.
600 ANSIN BLVD.
HALLANDALE, FLORIDA
(954) 457-5700

PROPERTY OWNER
Name WALTER PAGE
MAYAN TWRSS CONDO
Address 125 OCEAN AVENUE
PALM BEACH SHORES, FL 33404
Phone (561) 844-4550

APPROVALS

OMNIPOINT _____
LANDLORD _____
LEASING _____
R.F. _____
ZONING _____
CONSTRUCTION _____
BSIE _____

PROJECT NO: 36585

DRAWN BY: JEG

CHECKED BY: RMV

PROFESSIONAL ENGINEER

Name DAVID J. EARLES
Discipline CIVIL/STRUCTURAL
State FLORIDA
Registration No. 35767
Date 11/11/97

REV	DATE	DESCRIPTION
3	11/03/97	GENERAL REVISIONS
2	09/16/97	GENERAL REVISIONS
1	08/14/97	CONSTRUCTION ISSUE
0	07/17/97	BID/REVIEW ISSUE



BLACK & VEATCH

11401 LAMAR
OVERLAND PARK, KS. 66211
(913) 458-2000

SHEET TITLE

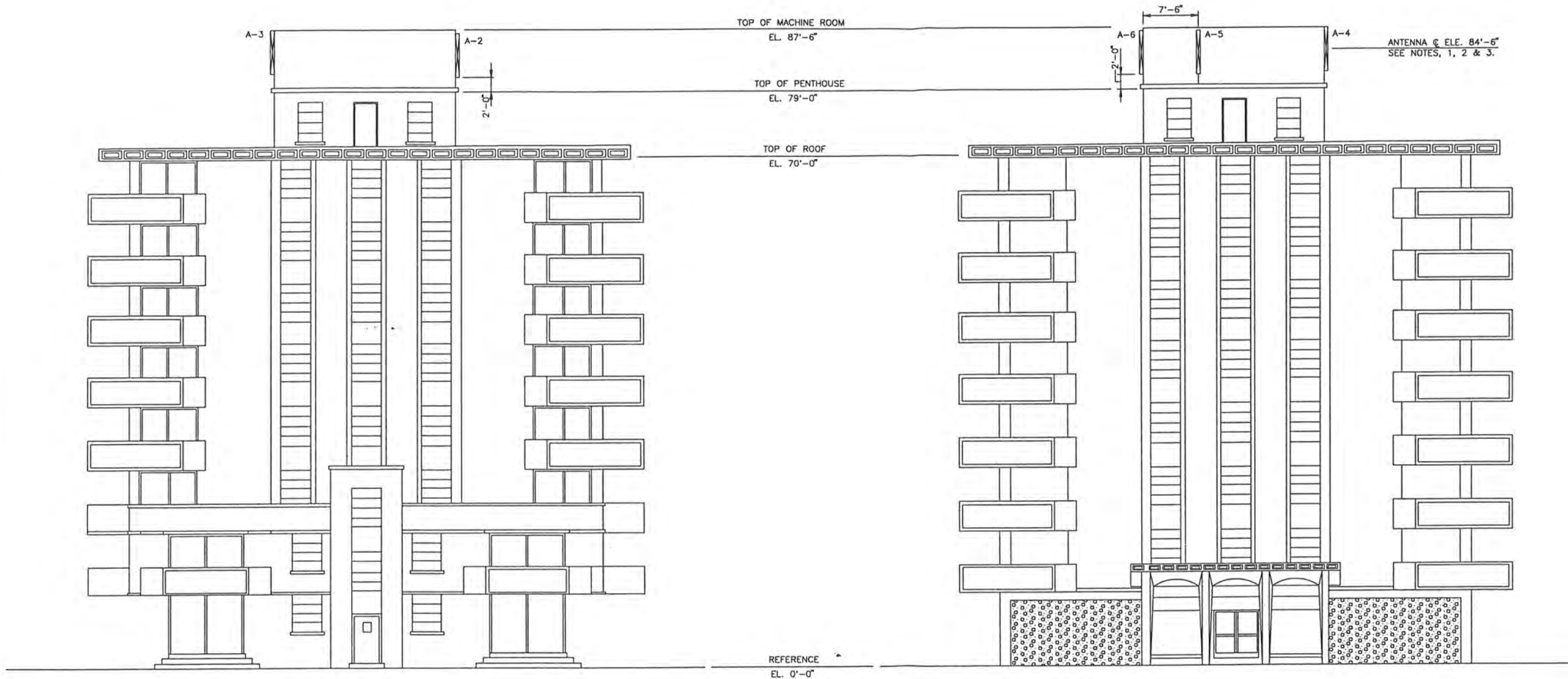
ELEVATIONS
6WP1009B

SHEET NUMBER

A-2

NOTES

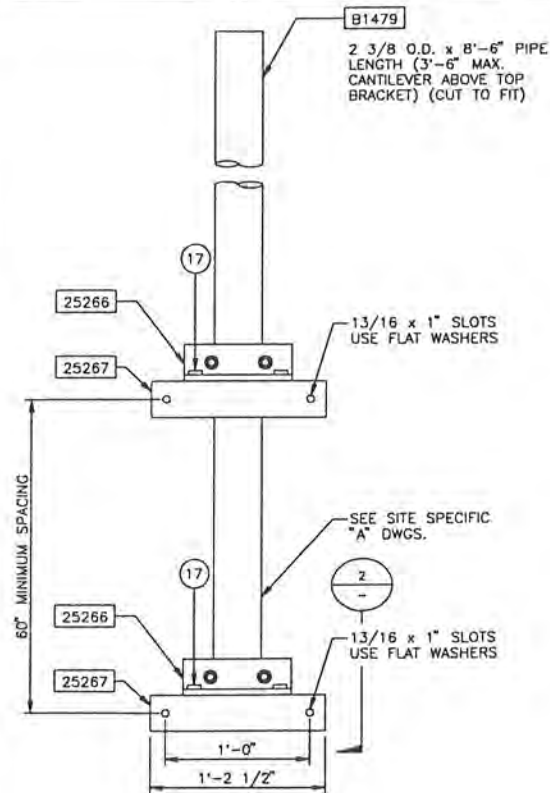
1. CONTRACTOR SHALL MOUNT BOTTOM OF A-1, A-2, A-5, AND A-6 2'-0" ABOVE TOP OF PENTHOUSE.
2. CONTRACTOR SHALL MOUNT TOP OF A-3 AND A-4 FLUSH WITH TOP OF MACHINE ROOM.
3. CONTRACTOR SHALL MEASURE THE VERTICAL DISTANCE FROM CENTERLINE OF ANTENNAS TO GROUNDLINE AND RECORD FOR ASBUILT.



EAST ELEVATION

WEST ELEVATION

David J. Earles
11/11/97



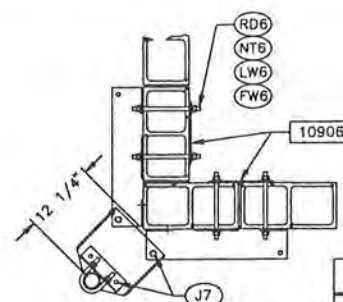
ELEVATION VIEW

DETAIL A
2 3/8" O.D. ANTENNA
BOLT-THROUGH WALL
MOUNT INSTALLATION FOR
WALLS UP TO 20" THICK

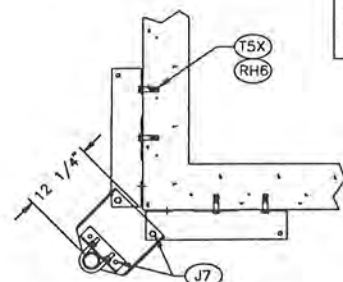
PARTS LIST FOR
MICROFLECT B1479
(2 3/8 OD x 8'-6")
OR EQUIVALENT

MARK	REQ'D
25266 (1/4")	2
25267 (1/4")	4
B1479	1

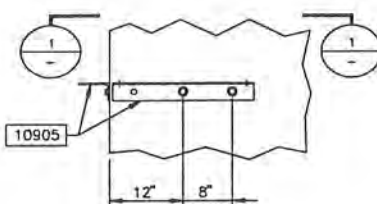
31-B1579 -- TOTAL GALVANIZED WT. = 70#



SECTION 1
FOR BLOCK WALLS



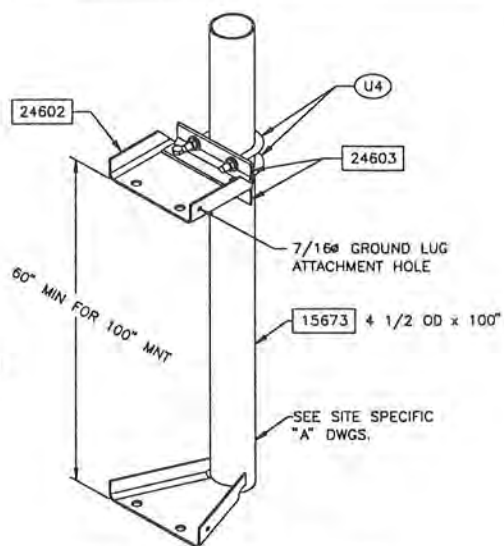
SECTION 1
FOR SOLID CONCRETE WALLS



WALL BRACKET DETAIL
ELEVATION

MARK	REQ'D
15673	1
10905	4
10906	4
24602	1
24603	2

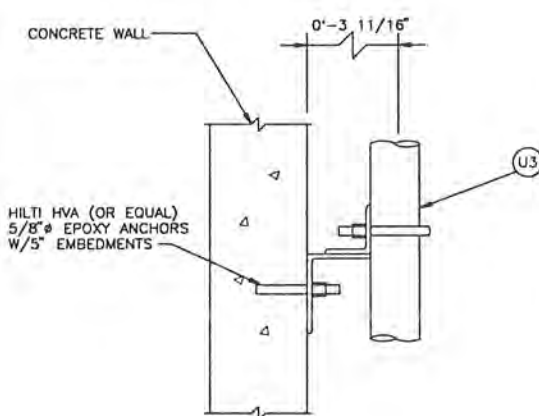
SYM.	REQ'D	DESCRIPTION
J7	6	5/8" x 1 3/4" GS BOLT, NUT & L.W. (ASTM A325)
U4	2	5/8" x 4 5/8" x 7" U-BOLT ASS'Y (ASTM A36)
TSX	8	5/8" x 1 1/4" S.S. BOLT, L.W. & F.W. (TYPE 18-8 STAINLESS)
RH6	8	5/8" REDHEAD CONCRETE INSERT
RD6	8	5/8" x 12" THREADED ROD (ASTM A572 GR50)
NT6	16	5/8" C2 NUT
LW6	16	5/8" MEDIUM LOCK WASHER
FW6	16	5/8" GALVANIZED FLAT WASHER



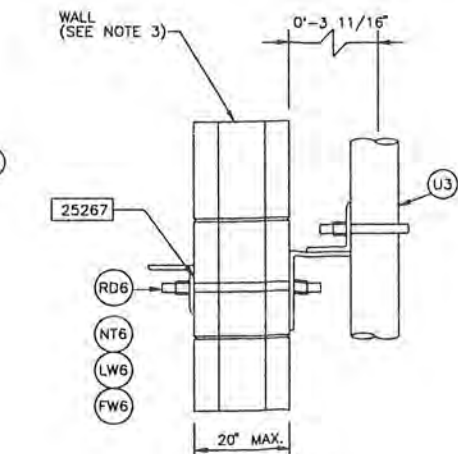
PIPE MOUNT ELEVATION

PRODUCT NO. 31-91149 ... 4 1/2 O.D. x 100" -185#

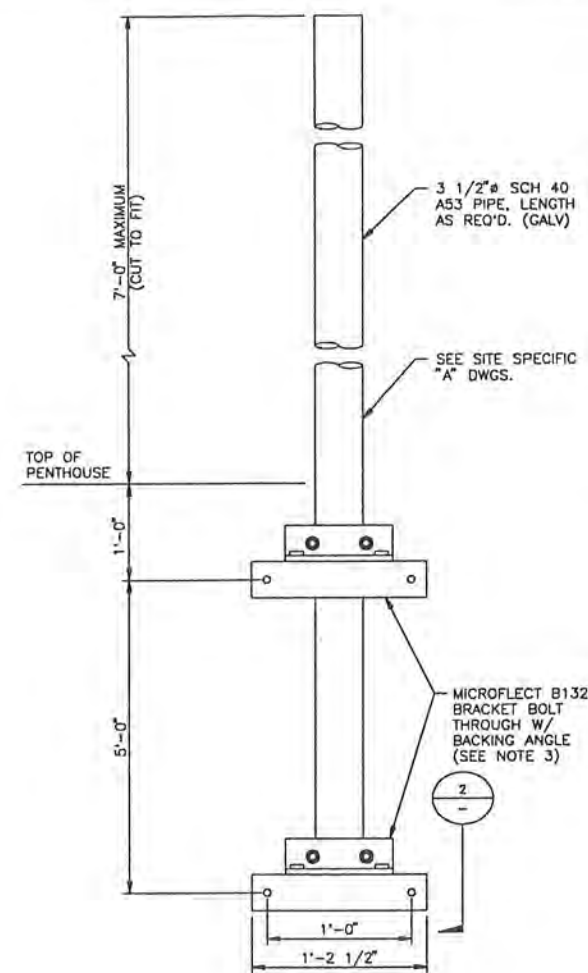
DETAIL B
4 1/2" O.D. CORNER WALL MOUNT
FOR SOLID CONCRETE OR BLOCK WALLS
NTS



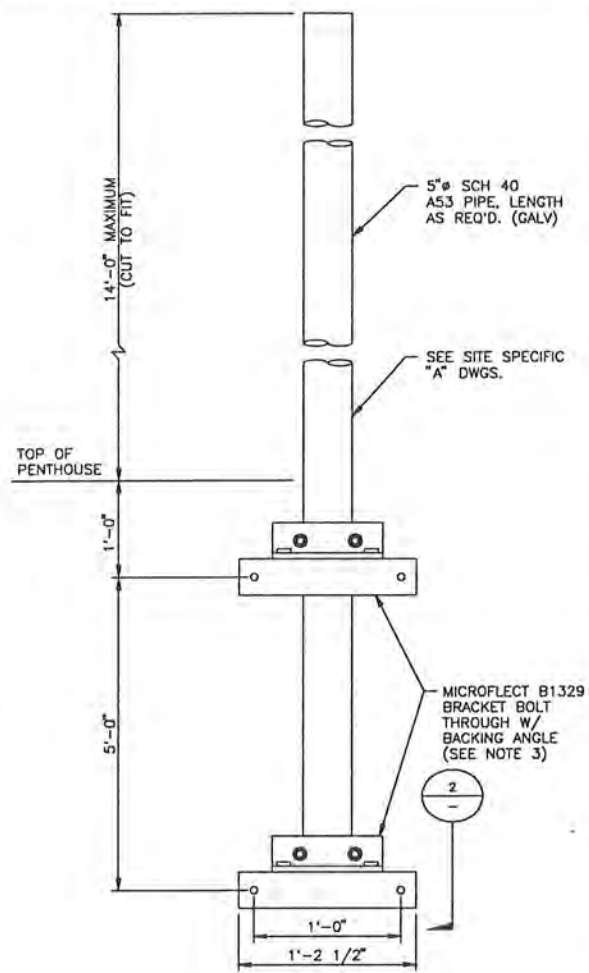
SECTION 2
FOR CONCRETE WALLS OVER 8"
NTS



SECTION 2
FOR BLOCK WALLS UP TO 20" THICK
NTS



DETAIL C
4" O.D. ANTENNA WALL MOUNT
NTS



DETAIL D
5 9/16" O.D. ANTENNA WALL MOUNT
NTS

NOTES:

- ALL FIELD CUTTING SHALL BE COATED WITH ZINC RICH PAINT.
- DESIGN LIMITS:
Z = 140'
EXPOSURE D
ASCE = 7-95 & 7-88
- FOR DETAILS B, C, AND D LOCATED ON BLOCK WALLS, THE CONTRACTOR SHALL GROUT BLOCK WALL SOLID TO FULL HEIGHT IN A 2' WIDTH, USE ASTM C476 GROUT.
- ALL STEEL SHALL BE HOT DIPPED GALVANIZED PER ASTM A123 AND A385. ALL BOLTS AND HARDWARE SHALL BE GALVANIZED PER ASTM A153 AND A385.
- WHERE PIPE DIAMETERS EXCEED THE DIMENSIONS OF ANTENNA MANUFACTURER'S STANDARD BRACKETS, THE CONTRACTOR SHALL PROVIDE A SUITABLE BRACKET TO ATTACH ANTENNAS.
- THE CONTRACTOR SHALL USE ANTENNA MANUFACTURER'S ANTENNA PIPE MOUNTS WHERE POSSIBLE. FOR LARGER DIAMETER PIPE, THE CONTRACTOR SHALL USE A BRACKET MASTER M5100 (OR EQUAL) WITH SMALLER PIPE TO MOUNT ANTENNAS.

OMNIPOINT
COMMUNICATIONS
MB OPERATIONS, INC.
600 ANSIN BLVD.
HALLANDALE, FLORIDA
(954) 457-5700

PROPERTY OWNER
Name WALTER PAGE
Address 125 OCEAN AVENUE
PALM BEACH SHORES, FL 33404
Phone (561) 844-4550

APPROVALS
OMNIPOINT _____
LANDLORD _____
LEASING _____
R.F. _____
ZONING _____
CONSTRUCTION _____
BSIE _____

PROJECT NO: 36585

DRAWN BY: JLG

CHECKED BY: RWW

PROFESSIONAL ENGINEER
Name DAVID J. EARLES
Discipline CIVIL/STRUCTURAL
State FLORIDA
Registration No. 35262
Date 11/11/97

REV	DATE	DESCRIPTION
0	10/27/97	CONSTRUCTION ISSUE

BLACK & VEATCH
11401 LAMAR
OVERLAND PARK, KS. 66211
(913) 458-2000

SHEET TITLE
ANTENNA DETAILS
WALL MOUNT

SHEET NUMBER
DSD-1

David J. Earles
11/11/97

OMNIPONT
COMMUNICATIONS
MB OPERATIONS, INC.
600 ANSIN BLVD.
HALLANDALE, FLORIDA
(954) 457-5700

PROPERTY OWNER
Name WALTER PAGE
Address 125 OCEAN AVENUE
PALM BEACH SHORES, FL 33404
Phone (561) 844-4550

APPROVALS

OMNIPONT _____
LANDLORD _____
LEASING _____
R.F. _____
ZONING _____
CONSTRUCTION _____
BSIE _____

PROJECT NO: 36585

DRAWN BY: JLG

CHECKED BY: DJC

PROFESSIONAL ENGINEER

Name DAVID J. FARLES
Discipline CIVIL/STRUCTURAL
State FLORIDA
Registration No. 35762
Date 11/11/97

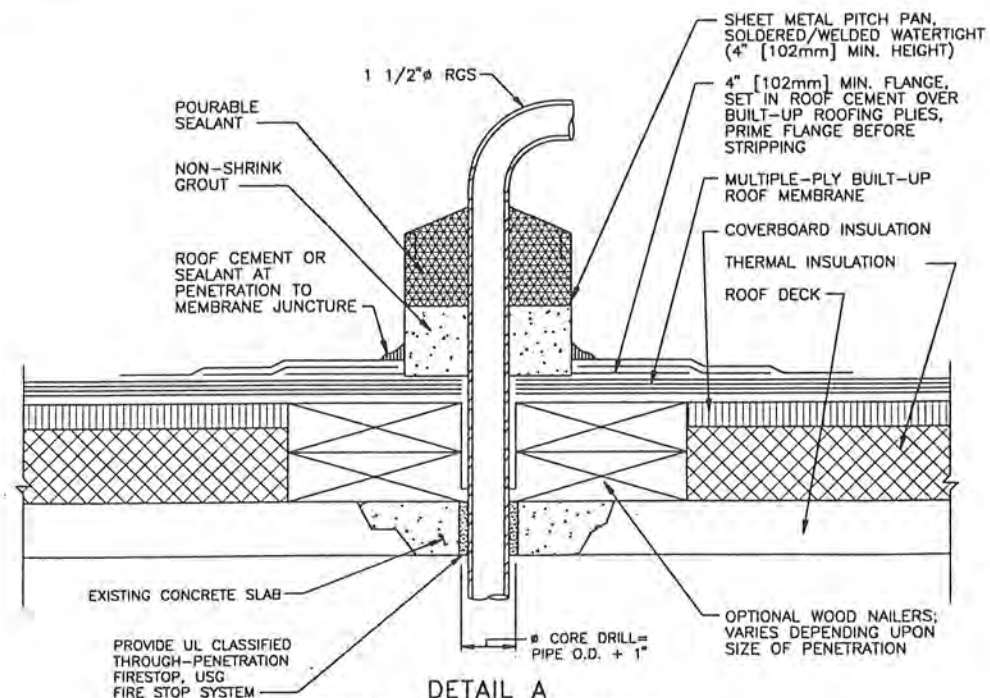
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1	10/29/97	GENERAL REVISIONS
0	10/27/97	CONSTRUCTION ISSUE

BLACK & VEATCH
11401 LAMAR
OVERLAND PARK, KS. 66211
(913) 458-2000

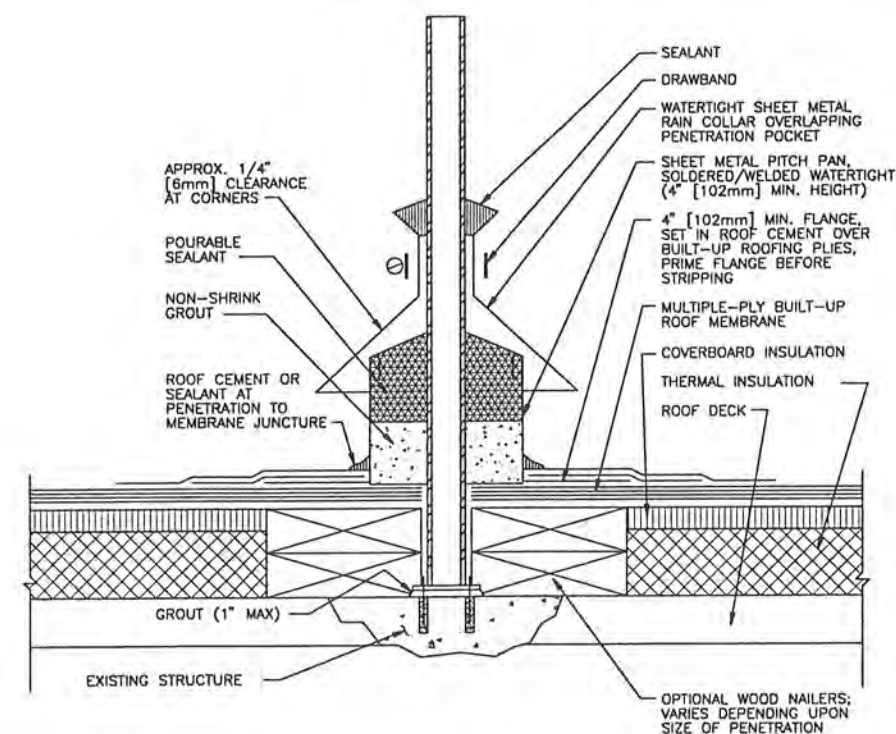
SHEET TITLE
BUILDING DETAILS
SUPPORTS & PENETRATIONS

SHEET NUMBER
DSD-3

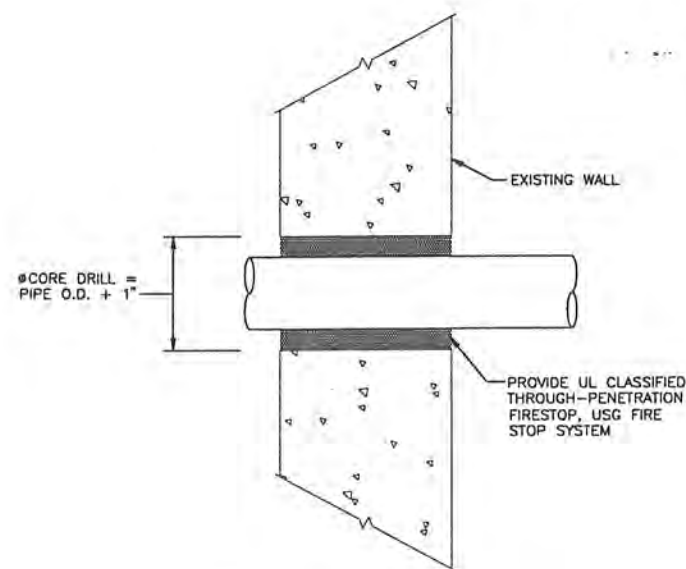
David J. Farles
11/11/97



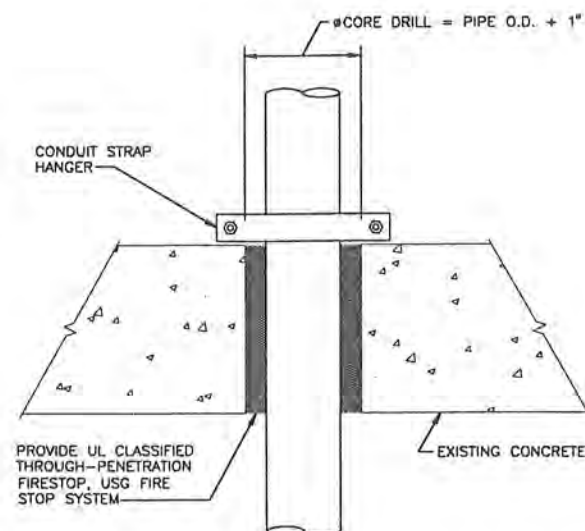
DETAIL A
CONDUIT ROOF PENETRATION
NTS



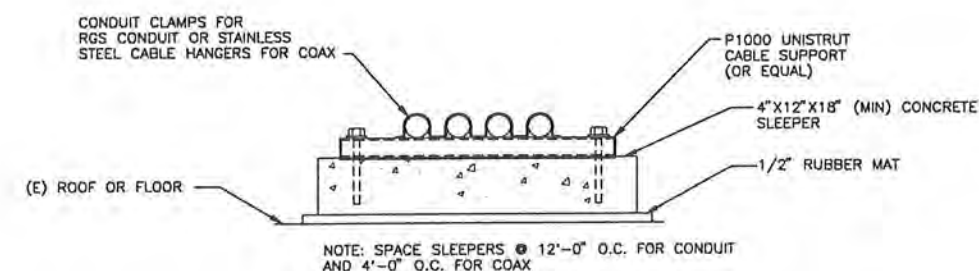
DETAIL B
CONCRETE ATTACHMENT
SUPPORT TO EXISTING STRUCTURE - TYPICAL DETAIL
NTS



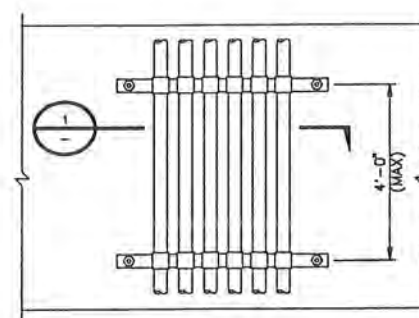
TYPICAL WALL CORE DRILL



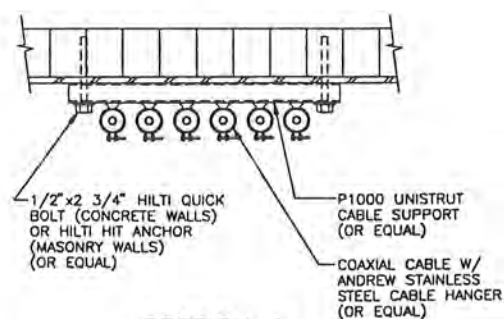
TYPICAL FLOOR CORE DRILL



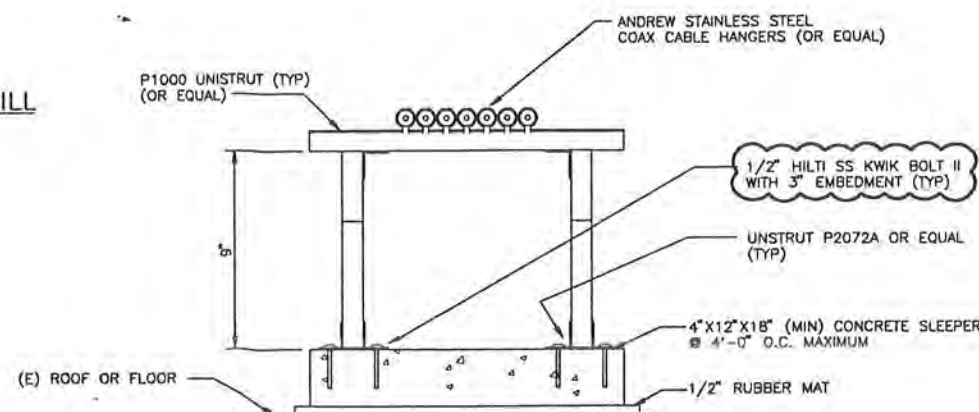
LOW PROFILE SUPPORT DETAIL
NTS



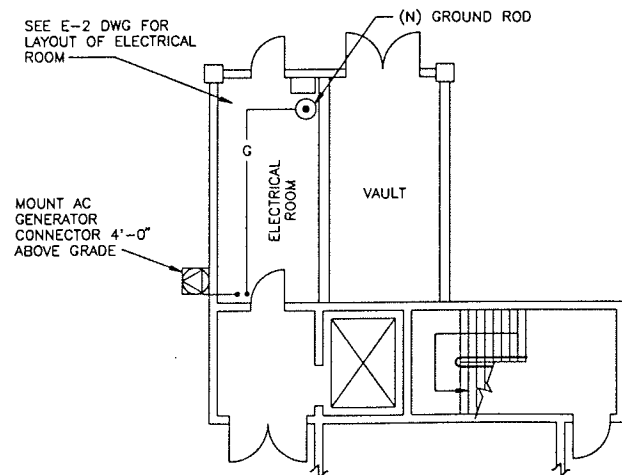
WALL MOUNTED COAX
DETAIL
NTS



SECTION 1
NTS
(SEE THIS DWG)

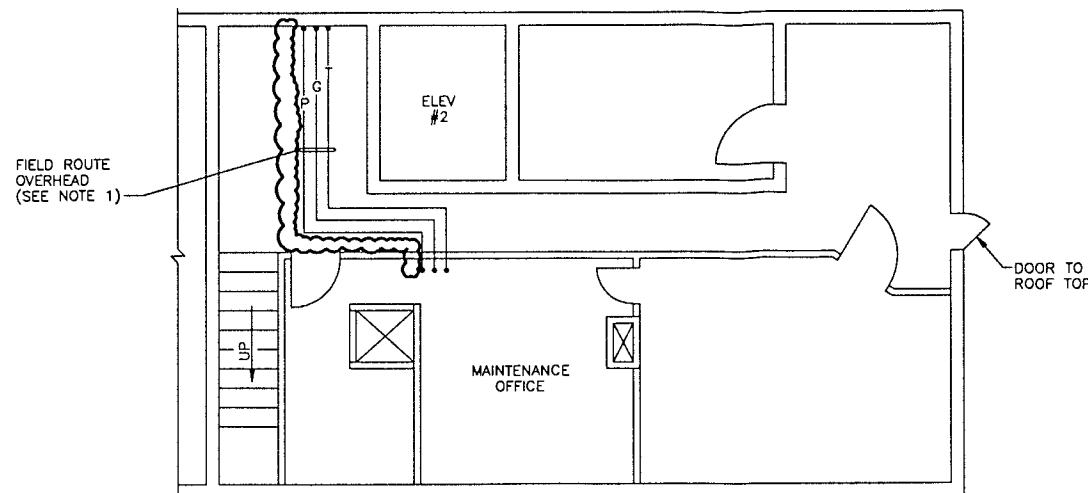


WAVEGUIDE SUPPORT DETAIL
NTS



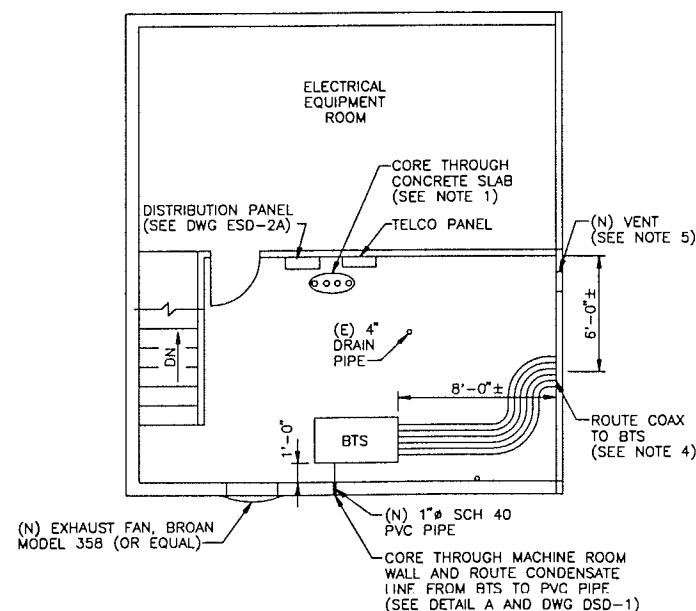
PARTIAL EAST
FIRST FLOOR PLAN

8' 4' 0' 8' 16'



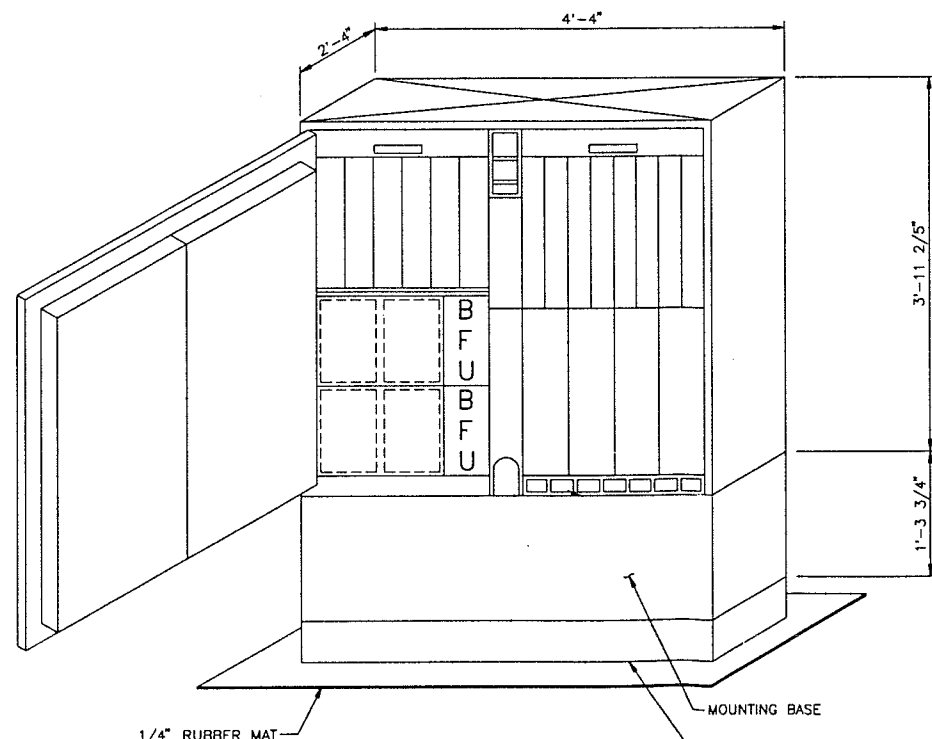
PARTIAL EAST PENTHOUSE
FLOOR PLAN

5' 0' 5' 10'



MACHINE ROOM
2B FLOOR PLAN

5' 0' 5' 10'

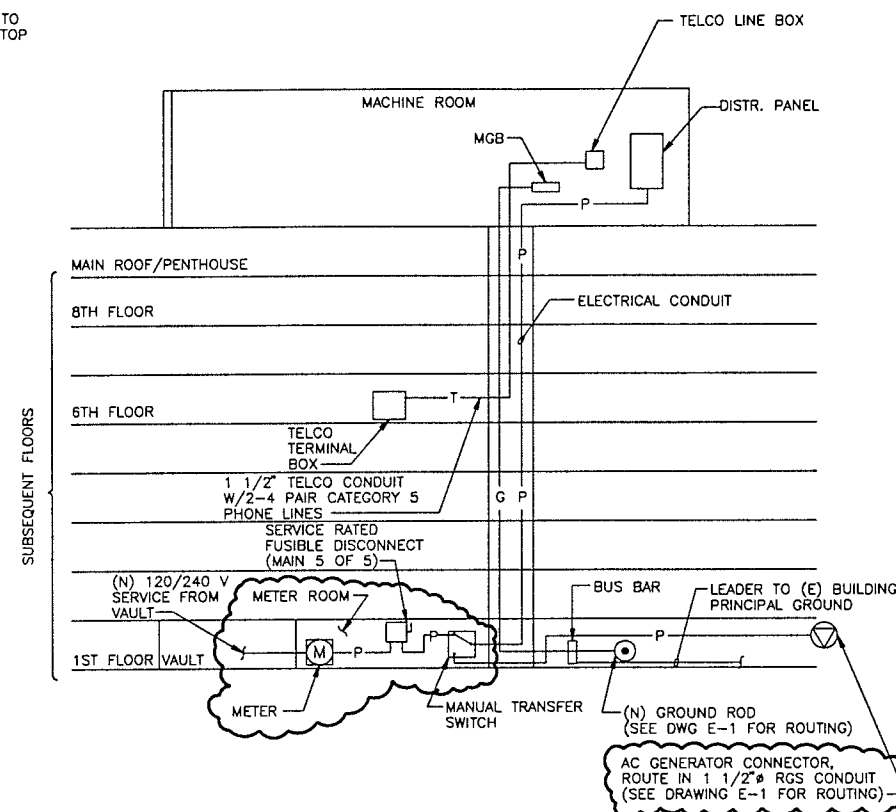


BTS ISOMETRIC VIEW

NTS

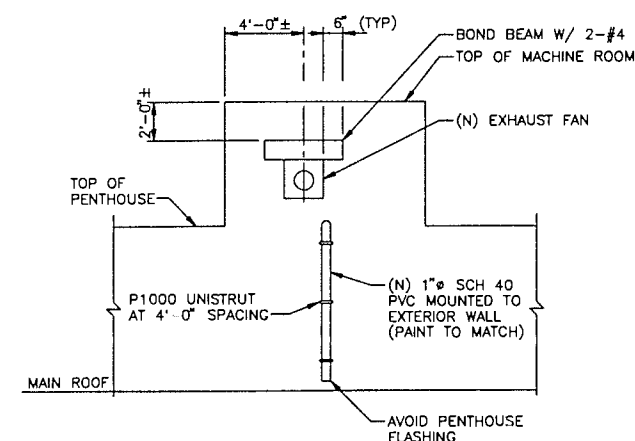
NOTES:

1. FIELD ROUTE POWER, GROUND, AND TELCO EACH IN 1 1/2" RGS CONDUITS FROM PANELS MOUNTED IN MACHINE ROOM. CORE THROUGH CONCRETE SLAB IN MACHINE ROOM AND ROUTE CONDUITS OVERHEAD TO NORTH WALL OF PENTHOUSE. FOLLOW ROUTE USED BY EXISTING TELECOMMUNICATIONS CARRIER DOWN THROUGH STACKED METER ROOMS. (SEE DWG DSD-3)
2. ROUTE POWER TO 8TH FLOOR METER ROOM.
3. ROUTE TELCO TO 6TH FLOOR METER ROOM.
4. PENETRATE (E) BLOCK WALL OF UPPER PENTHOUSE AND INSTALL MICROFLECT B1118 BUILDING ENTRY PANEL 2'-0" ABOVE FLOOR. ROUTE COAX THROUGH ENTRY PORTS AND TO BTS. SUPPORT WITH CONCRETE SLEEPERS AND UNISTRUT HANGERS AT 4'-0" O.C. (SEE DWG A-1 AND DSD-3)
5. USE A RIESNER TYPE 6B ALUMINUM VENT BRICK (OR EQUAL) INSTALL 2'-0" ABOVE MACHINE ROOM FLOOR.



POWER/TELEPHONE RISER DIAGRAM

NTS



DETAIL A

NTS

OMNIPPOINT
COMMUNICATIONS
MB OPERATIONS, INC.
600 ANSIN BLVD.
HALLANDALE, FLORIDA
(954) 457-5700

PROPERTY OWNER
Name: WALTER PAGE
Address: MAYAN TWRS CONDO
125 OCEAN AVENUE
PALM BEACH SHORES, FL 33404
Phone: (561) 844-4550

APPROVALS

OMNIPPOINT _____
LANDLORD _____
LEASING _____
R.F. _____
ZONING _____
CONSTRUCTION _____
BSIE _____

PROJECT NO: 36585

DRAWN BY: TYW

CHECKED BY: RWW

PROFESSIONAL ENGINEER

Name: RICHARD NEAL CROWDIS
Discipline: ELECTRICAL
State: FLORIDA
Registration No.: 0039114
Date: 11/11/97

REV	DATE	DESCRIPTION
4	11/11/97	GENERAL REVISIONS
3	11/03/97	GENERAL REVISIONS
2	08/18/97	GENERAL REVISIONS
1	08/14/97	CONSTRUCTION ISSUE
0	07/17/97	BID/REVIEW ISSUE

BLACK & VEATCH
11401 LAMAR
OVERLAND PARK, KS. 66211
(913) 458-2000

SHEET TITLE
CONDUIT ROUTING
6WP1009B

SHEET NUMBER

E-1

Richard Crowdis
11/11/97

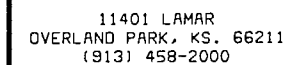
PROPERTY OWNER
Name WALTER PAGE
MAYAN THRS CONDO
Address 125 OCEAN AVENUE
PALM BEACH SHORES, FL 3340
Phone (561) 844-4550

OMNIPONT _____
LANDLORD _____
LEASING _____
R.F. _____
ZONING _____
CONSTRUCTION _____
BSIE _____

CHECKED BY: GPB

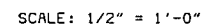
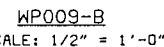
Name RICHARD NEAL CROWDIS
Discipline ELECTRICAL
State FLORIDA
Registration No. 0039114
Date 11/11/97

1	11/11/97	GENERAL REVISIONS
0	11/03/97	CONSTRUCTION ISSUES
REV	DATE	DESCRIPTION

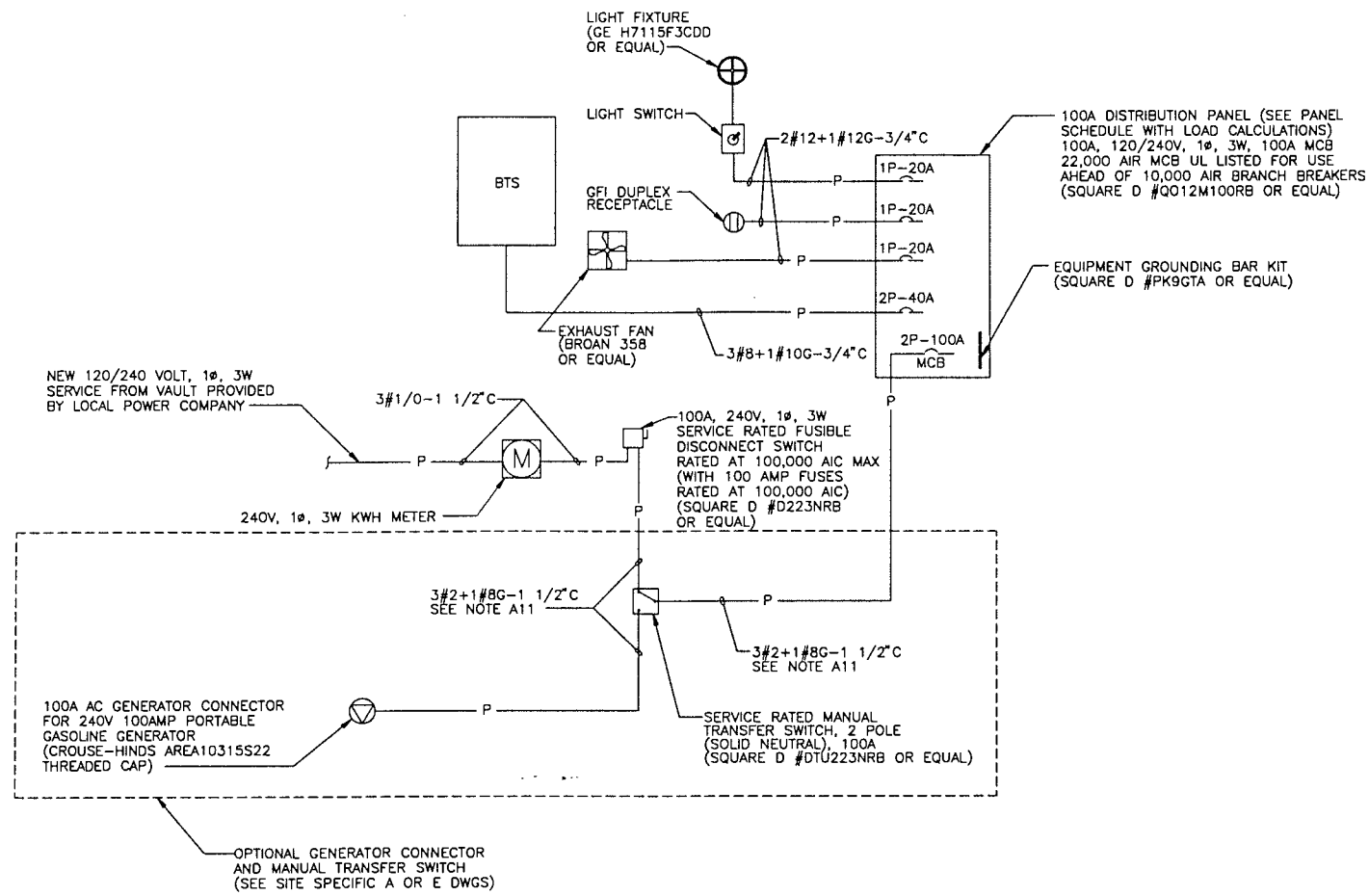


ELECTRICAL ROOM
PLAN & ELEVATION
6WP1009B

E-2



Richard
Crouche
11/11/97



BUILDING W/ 120/240 VOLT BUS
POWER DIAGRAM
NTS

POWER PANEL SCHEDULE									
PANEL DESIGNATION: 240/120 VOLTS AC, 1 PHASE, 3 WIRE WITH SEPARATE GROUND BUS, SOLID NEUTRALS, MAIN CIRCUIT BREAKER, AND 12 SPACES							SURFACE MTNG:X____ MCB SIZE: 2P, 100A		
CIRCUIT NO.	LOAD DESCRIPTION	LOAD ØA	LOAD ØB	AMP/ POLE	AMP/ POLE	LOAD ØA	LOAD ØB	LOAD DESCRIPTION	CIRCUIT NO.
1	BTS	3170	-	40/2	-	-	-	SPACE	2
3		-	3170		-	-	-	SPACE	4
5	RECEPTACLE	180	-	20/1	-	-	-	SPACE	6
7	LIGHT	-	100	20/1	-	-	-	SPACE	8
9	FAN	-	520	20/1	-	-	-	SPACE	10
11	SPACE	-	-	-	-	-	-	SPACE	12
TOTAL CONNECTED LOAD/Ø (VA):		ØA LOAD: 3350		ØB LOAD: 3790					
PANEL LOAD CALCULATIONS IN AMPERES									
TOTAL CONNECTED LOAD (VA): <u>7,140</u>		●240V: 7140/240 = 29.8 AMPS							
DEMAND FACTOR: <u>1.0</u>		●480V: 7140/480 = 14.9 AMPS							
DEMAND LOAD (VA): <u>7140</u>		●208V: 7140/208 = 34.3 AMPS							

PANEL SCHEDULE WITH LOAD CALCULATIONS

ELECTRICAL LEGEND:

- SAFETY DISCONNECT SWITCH
- MANUAL TRANSFER SWITCH
- KILOWATT HOUR METER
- TRANSFORMER
- CIRCUIT BREAKER
- GROUND
- LIGHT FIXTURE
- LIGHT SWITCH
- AC GENERATOR CONNECTOR
- GFI DUPLEX RECEPTACLE
- POWER WIRING
- TELCO WIRING
- GROUND WIRING
- FUSE
- THERMOSTATICALLY CONTROLLED EXHAUST FAN

ABBREVIATIONS

- A AMPERE
- AIC AMPS INTERRUPTING CURRENT
- AIR AMPS INTERRUPTING RATING
- BTS BASE TRANSCEIVER SUBSYSTEM
- C CONDUIT
- (E) EXISTING
- G GROUND
- KWH KILOWATT HOUR
- (N) NEW
- P POLE
- SN SOLID NEUTRAL
- SW SWITCH
- V VOLT
- W WIRE
- Ø PHASE

ELECTRICAL NOTES:

A - GENERAL

- A1. ALL ELECTRICAL WORK SHALL CONFORM TO THE NATIONAL ELECTRICAL CODE (EDITION ACCEPTED BY LOCAL JURISDICTION) AND APPLICABLE LOCAL CODES.
- A2. GROUNDING SHALL COMPLY WITH ARTICLE 250 OF THE NATIONAL ELECTRIC CODE.
- A3. ALL ELECTRICAL EQUIPMENT AND ACCESSORIES SHALL BE U.L. APPROVED.
- A4. ALL POWER WIRING SHALL BE STRANDED COPPER, TYPE THHN, AND 90 DEGREES C RATED.
- A5. GROUNDING ELECTRODE CONDUCTORS SHALL BE BARE, TIN COATED COPPER AND EQUIPMENT GROUND CONDUCTORS SHALL BE GREEN INSULATED.
- A6. ALL POWER WIRING SHALL BE INSTALLED IN GALVANIZED RIGID STEEL CONDUIT, EMT, OR FLEXIBLE LIQUIDTIGHT CONDUIT, AS INDICATED.
- A7. CONTRACTOR SHALL OBTAIN ALL PERMITS, PAY PERMIT FEES, AND SCHEDULE INSPECTIONS.
- A8. CONTRACTOR SHALL APPLY FOR ELECTRICAL SERVICE AS SOON AS POSSIBLE AND COORDINATE REQUIREMENTS, SERVICE ROUTING, AND METER SOCKET TYPE WITH LOCAL POWER COMPANY.
- A9. CONTRACTOR SHALL APPLY FOR TELEPHONE SERVICE AS SOON AS POSSIBLE AND COORDINATE REQUIREMENTS AND SERVICE ROUTING WITH TELEPHONE COMPANY.
- A10. PROVIDE ALL LABOR AND MATERIAL DESCRIBED ON THIS DRAWING, AND ALL ITEMS INCIDENTAL TO COMPLETING AND PRESENTING THIS PROJECT AS FULLY OPERATIONAL.
- A11. WHERE LONG POWER CABLE RUNS PREVAIL, CONTRACTOR SHALL CALCULATE THE VOLTAGE DROP AND SIZE WIRES AND CONDUIT ACCORDINGLY.
- A12. WHERE TRANSFORMER IS REQUIRED FOR ELECTRICAL SERVICE, TRANSFORMER SECONDARY SHALL BE GROUNDED PER N.E.C. ARTICLE 250-26.
- A13. ALL ELECTRICAL DEVICES EXPOSED TO WEATHER SHALL BE OF RAINPROOF CONSTRUCTION AND SHALL REQUIRE WATER TIGHT CONDUIT.

B - POWER CABLE AND SERVICE

- B1. CONTRACTOR SHALL PROVIDE CONDUIT AND WIRING TO BTS AND VERIFY EXACT CONDUIT ROUTING. RACEWAY SYSTEM MATERIALS AND DEVICES FURNISHED SHALL BE IN ACCORDANCE WITH APPLICABLE STANDARDS OF ANSI, NEMA, AND UL. RACEWAY SYSTEM COMPONENTS SHALL BE INSTALLED IN ACCORDANCE WITH APPLICABLE REQUIREMENTS OF THE N.E.C.
- B2. A COIL OF WIRE SHALL EXTEND A MINIMUM OF 10 FEET FROM CONDUIT TO PERMIT TERMINATION BY OTHERS.
- B3. CONTRACTOR SHALL SEAL AROUND ALL CONDUIT PENETRATIONS THROUGH WALLS, FLOORS AND ROOFS TO PREVENT MOISTURE PENETRATION OR VERMIN INFESTATION.
- B4. CONDUCTORS RUNNING ALONG HORIZONTAL SURFACES (ROOF TOP OR SLAB) SHALL BE INSTALLED IN RIGID CONDUIT SUPPORTED ON SLEEPERS.
- B5. ALL VERTICAL RUNS OF POWER CABLE EXCEEDING 80 FEET IN LENGTH SHALL BE SUPPORTED (PER 1996 N.E.C. ARTICLE 300) USING KELLEMS GRIPS OR ACCEPTABLE EQUAL CABLE SUPPORT SYSTEM.
- B6. WHERE A SEPARATE ELECTRICAL SERVICE DROP IS ADDED, CONTRACTOR SHALL INSTALL PERMANENT SERVICE DISCONNECT OR GROUPING THEREOF, DENOTING ALL OTHER SERVICE ENTRANCES, LOCATION OF EACH AND THE AREAS SERVED BY EACH.
- B7. WHERE ELECTRICAL POWER IS TO BE SUB-FED FROM AN EXISTING DISTRIBUTION SYSTEM, THE FOLLOWING SHALL APPLY:
 - A) CONTRACTOR SHALL PERFORM LOAD TESTING TO DETERMINE MAXIMUM FEEDER DEMAND PER ARTICLE 220-35(1) 1996 N.E.C.. CONTRACTOR SHALL VERIFY WHETHER EXISTING FEEDER CAPACITY EXCEEDS VALUE CALCULATED PER ARTICLE 220-35(2) 1996 N.E.C.
 - B) EACH BRANCH CIRCUIT PROTECTIVE DEVICE SHALL HAVE SAME INTERRUPTING RATING AS EQUIPMENT SUPPLYING IT.
 - C) PREFERRED MEANS OF SUPPLY SHALL BE A BRANCH CIRCUIT PROTECTIVE DEVICE LOCATED IN EXISTING PANEL.
 - D) IF A BRANCH CIRCUIT PROTECTIVE DEVICE CANNOT BE OBTAINED OR SPACE IS NOT AVAILABLE, A BRANCH CIRCUIT MAY BE TAPPED FROM EXISTING FEEDER CONDUCTORS USING AN INSTALLED 2-POLE FUSED DISCONNECT AND METER BASE PER ARTICLE 240-21(B) OF 1996 N.E.C. WITH TEN FOOT (10) MAXIMUM TAP CONDUCTORS. FUSED DISCONNECT SHALL BE LISTED SAME OR BETTER INTERRUPTING RATING AS EXISTING SOURCE OF SUPPLY.

C - RF (COAX) AND LOW VOLTAGE CABLE

- C1. RF CABLES AND LOW VOLTAGE CABLING BETWEEN BTS, LNA OR TMA AND ANTENNA SHALL BE ROUTED USING HANGER BLOX OR ACCEPTABLE EQUAL
- C2. RF CABLES AND LOW VOLTAGE CABLING BETWEEN BTS, LNA OR TMA AND ANTENNA SHALL BE ROUTED AS FOLLOWS:
 - A) RUNNING ALONG HORIZONTAL ROOFING SURFACES: USE WAVEGUIDE SUPPORTS MOUNTED ON CONCRETE SLEEPERS AS SHOWN IN STANDARD DRAWING OSD-2.
 - B) RUNNING ALONG VERTICAL EXTERIOR WALLS WHERE PAINT TO MATCH IS SPECIFIED OR WHERE SIMPLE MECHANICAL PROTECTION IS REQUIRED: USE 12 X 3 COVERED MICROFLECT WALL SUPPORT KIT.
 - C) RUNNING ALONG OR ADJACENT TO BTS PLATFORM: USE 12 X 3 OPEN OR COVERED ELECTRICAL LADDER TRAY.

OMNIPOINT COMMUNICATIONS MB OPERATIONS, INC.
600 ANSIN BLVD.
HALLANDALE, FLORIDA
(954) 457-5700

PROPERTY OWNER
WALTER PAGE
Name MAYAN TWRS CONDO
Address 125 OCEAN AVENUE
PALM BEACH SHORES, FL 33404
Phone (561) 844-4550

APPROVALS
OMNIPOINT _____
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ZONING _____
CONSTRUCTION _____
BSIE _____

PROJECT NO: 36585

DRAWN BY: JLG

CHECKED BY: GPB

PROFESSIONAL ENGINEER
Name RICHARD NEAL CROWDIS
Discipline ELECTRICAL
State FLORIDA
Registration No. 0039114
Date 11/11/97

REV	DATE	DESCRIPTION
1	11/10/97	GENERAL REVISIONS
0	10/27/97	CONSTRUCTION ISSUE

BLACK & VEATCH
11401 LAMAR
OVERLAND PARK, KS. 66211
(913) 458-2000

SHEET TITLE
NEW 120/240V SERVICE
BTS IN BUILDING

SHEET NUMBER
ESD-1A

Richard Crowdis
11/11/97

GROUNDING NOTES:

A - GENERAL

- A1. INSTALLATION OF GROUNDING ELECTRODE SYSTEM SHALL COMPLY WITH ARTICLE 250 OF THE NATIONAL ELECTRIC CODE AND WITH ALL BUILDING CODES OF AUTHORITIES HAVING JURISDICTION.
- A2. GROUNDING CONDUCTORS SHALL BE #2 AWG TINNED SOLID BARE COPPER BELOW AND ABOVE GRADE, UNLESS OTHERWISE NOTED AND SHALL BE ROUTED IN A DOWNWARD PATH TOWARDS GROUND BARS.
- A3. GROUNDING CONDUCTORS SHALL BE KEPT AS SHORT AND DIRECT AS POSSIBLE WITH MINIMUM BEND RADIUS OF 12 INCHES.
- A4. ALL BELOW GRADE CONNECTIONS SHALL BE CADWELD TYPE CONNECTIONS AND ALL CONNECTIONS TO EQUIPMENT AND GROUND BARS SHALL BE 2-HOLE BRONZE COMPRESSION CONNECTORS UNLESS OTHERWISE NOTED.
- A5. CONTRACTOR SHALL INSPECT AND TEST ANY EXISTING OR NEW GROUNDING SYSTEM WITH A BIDDLE-MEGGER TESTER AND CONTACT CONSTRUCTION MANAGER IF RESISTANCE EXCEEDS 5 OHMS AND SHALL FIELD MODIFY GROUNDING SYSTEM AS NECESSARY TO ACHIEVE COMPLIANCE. TEST RESULTS AND CONCLUSIONS SHALL BE RECORDED FOR PROJECT CLOSE-OUT DOCUMENTATION.
- A6. CONTRACTOR SHALL INSTALL NEW PCS GROUNDING SYSTEM PER SPECIFICATIONS AND INTERCONNECT NEW SYSTEMS TO ANY EXISTING GROUNDING SYSTEMS AS REQUIRED BY NFPA 70 AND 78 (THIS APPLIES TO ELECTRICAL POWER DISTRIBUTION GROUNDING SYSTEM, LIGHTNING PROTECTION GROUNDING SYSTEM, COAX CABLE GROUNDING SYSTEM AND ANY OTHER EXISTING GROUNDING SYSTEMS).
- A7. GROUNDING CONDUCTORS SHALL BE BONDED TO CABLE SUPPORTS, ANTENNA FRAMES, AND ANY SUPPORT FRAMES OR RACKS USING CADWELD CONNECTIONS.
- A8. CONTRACTOR SHALL PROVIDE LOCK WASHERS FOR ALL MECHANICAL CONNECTIONS FOR GROUND CONDUCTORS, STAINLESS STEEL HARDWARE SHALL BE USED THROUGHOUT.
- A9. GROUNDING CONDUCTORS EMBEDDED IN CONCRETE OR PENETRATING WALLS AND FLOORS SHALL BE ENCASED IN PVC CONDUIT. NO METALLIC CONDUIT SHALL BE USED FOR GROUNDING CONDUCTORS UNLESS REQUIRED BY LOCAL CODES OR OTHERWISE INDICATED ON DRAWINGS. CONTRACTOR SHALL SEAL AROUND ALL CONDUIT PENETRATIONS TO PREVENT MOISTURE PENETRATION AND VERMIN INFESTATION.
- A10. CONTRACTOR SHALL BOND PCS GROUNDING SYSTEM VIA THE MASTER GROUND BAR TO ALL METAL OBJECTS WITHIN 12 FEET OF EQUIPMENT, CONDUIT AND CABLES.
- A11. BONDING OF GROUNDED CONDUCTOR (NEUTRAL) AND GROUNDING CONDUCTOR SHALL BE AT SERVICE DISCONNECTING MEANS. BONDING JUMPER SHALL BE INSTALLED PER N.E.C. ARTICLE 250-26.
- A12. CONTRACTOR SHALL VERIFY EXACT CONDUIT ROUTING FOR GROUNDING CONDUCTORS WHERE APPLICABLE.
- A13. A GROUND LEAD IS REQUIRED ONLY FOR BTS SUPPORTED ON STEEL FRAME. AN ADDITIONAL GROUND LEAD IS REQUIRED IF CABLE TRAY IS USED.
- A14. CONNECTIONS TO CGB SHALL BE ARRANGED IN THE FOLLOWING THREE GROUPS:
- SURGE PRODUCERS (COAXIAL CABLE GROUND KITS, TELCO CABINET AND POWER PEDESTAL GROUND).
 - SURGE ABSORBERS (GROUNDING ELECTRODE RING OR BUILDING STEEL).
 - NON-SURGING OBJECTS (EGB GROUND IN BTS).
- A15. DOUBLING OR STACKING OF ANY CONNECTIONS IS NOT ACCEPTABLE.
- A16. ALL GROUND BARS SHALL BE INSTALLED WITH STAND OFF INSULATORS.

B - PREPARATION

- B1. SURFACES: ALL CONNECTIONS SHALL BE MADE TO BARE METAL. ALL PAINTED SURFACES SHALL BE FIELD INSPECTED TO ENSURE PROPER CONTACT. ALL GALVANIZED SURFACES ON WHICH GALVANIZING HAS BEEN REMOVED BY CUTTING, DRILLING, OR ANY OTHER OPERATION SHALL BE RE-GALVANIZED IN ACCORDANCE WITH ASTM A780 USING "ZINC RICH" COATING AS MANUFACTURED BY ZRC CHEMICAL PRODUCTS COMPANY (LOCATED IN QUINCY, MASSACHUSETTS), OR ACCEPTABLE EQUAL. NO WASHERS ARE ALLOWED BETWEEN ITEMS BEING GROUNDED. ALL CONNECTIONS ARE TO HAVE A NON-OXIDIZING AGENT ("COPPER SHIELD") APPLIED PRIOR TO INSTALLATION.
- B2. GROUND BAR: ALL COPPER GROUND BARS SHALL BE CLEANED, POLISHED AND A NON-OXIDIZING AGENT ("COPPER SHIELD") APPLIED. NO FINGER PRINTS OR DISCOLORED COPPER SHALL BE PERMITTED.

C - COAX CABLE

- C1. COAX CABLE OUTER CONDUCTORS (SHIELDS) SHALL BE GROUNDED USING COAX GROUNDING KITS AT A MINIMUM OF TWO POINTS, INCLUDING AT ANTENNA AND AT MASTER GROUND BAR. THE COAXIAL CABLE SHALL NOT EXCEED 100 FEET BETWEEN GROUNDING KITS.
- C2. GROUNDING CONDUCTOR CONSISTING OF #2 AWG TINNED SOLID BARE COPPER WIRE SHALL BE BONDED TO WAVEGUIDE ENTRY GROUND BAR USING CADWELD CONNECTIONS.
- C3. COAX CABLES ENTERING A BUILDING SHALL BE GROUNDED WITH COAX GROUNDING KITS TO AN INSULATED COAX GROUND BAR WHICH SHALL BE INSTALLED ON THE OUTSIDE FACE OF THE BUILDING, BELOW THE CABLE ENTRY PORTS.
- C4. WHEN COAX CABLES ENTER A BUILDING FROM A TOWER, THE COAX GROUND BAR AT THE BUILDING SHALL BE CONNECTED TO THE EXTERNAL GROUND RING USING #2 AWG BARE TINNED SOLID COPPER ISOLATED IN PVC CONDUIT.
- C5. WHEN COAX CABLES ENTER A BUILDING FROM A ROOF TOP, THE COAX GROUND BAR AT THE BUILDING SHALL BE CONNECTED TO THE MASTER GROUND BAR NEAR THE BTS USING #2 AWG STRANDED TINNED COPPER CONDUCTOR (SEE BUILDINGS NOTES ON THIS DRAWING FOR CONNECTION TO PRINCIPLE GROUND BAR AND BUILDING GROUND).

D - BUILDINGS

- D1. ELECTRICAL CONTRACTOR SHALL PERFORM REQUIRED TESTING ON GROUNDING SYSTEM ONCE GROUNDING SYSTEM IS COMPLETELY CONSTRUCTED AND BEFORE SERVICE POWER AND GROUND IS CONNECTED (SEE NOTE A5 FOR TEST DESCRIPTION).
- D2. A #4/0 AWG COPPER CONDUCTOR SHALL BE ROUTED FROM MASTER GROUND BAR AT BTS SITE TO MAIN METAL COLD WATER PIPE AND BONDED TO PIPE WITH BRONZE 2-HOLE PIPE CLAMP. CLAMP SHALL BE CONNECTED TO WATER PIPE WITHIN 5 FEET OF ENTRY OF PIPE INTO BUILDING WITH NO DEVICES BETWEEN ENTRY POINT AND CONNECTION AND SHALL COME IN CONTACT WITH PIPE FOR A MINIMUM DISTANCE OF 4 INCHES.
- D3. METAL RACEWAYS, ENCLOSURES, FRAMES AND OTHER NON-CURRENT CARRYING PARTS OF ELECTRICAL EQUIPMENT SHALL BE KEPT AT LEAST 6 FEET AWAY FROM LIGHTNING ROD CONDUCTORS OR THEY MUST BE BONDED TO LIGHTNING ROD CONDUCTORS AT THE LOCATION WHERE SEPARATION DISTANCE IS LESS THAN 6 FEET.
- D4. A MASTER GROUND BAR (MGB) SHALL BE INSTALLED NEAR BTS WITH BUILDING PRINCIPAL GROUND BAR (BPG) INSTALLED NEAR ENTRANCE OF MAIN METAL COLD WATER PIPE INTO BUILDING. A #4/0 AWG STRANDED COPPER DOWN CONDUCTOR (VERTICAL GROUND RISER) SHALL BE USED TO INTERCONNECT GROUND BARS.
- D5. VERTICAL RISER SHALL CONSIST OF A #4/0 AWG (THWN) STRANDED COPPER CONDUCTOR INSIDE 3/4" PVC CONDUIT.
- D6. CONTRACTOR SHALL BOND BUILDING PRINCIPAL GROUND BAR (BPG) NEAR MAIN METAL COLD WATER PIPE TO EXISTING BUILDING GROUND RING AS WELL AS TO MAIN METAL COLD WATER PIPE WITH #4/0 AWG (THWN) STRANDED COPPER CONDUCTOR.
- D7. TRANSMISSION BONDING BARS (TBB) SHALL BE INSTALLED NEAR ANTENNAS AND SHALL BE BONDED TO MASTER GROUND BAR (MGB) WITH #2 AWG TINNED SOLID BARE COPPER CONDUCTOR.
- D8. IF CODES REQUIRE VERTICAL RISER TO BE ISOLATED IN CONDUIT, PVC CONDUIT IS PREFERRED. IF METALLIC CONDUIT SHOULD BE REQUIRED, GROUNDING BUSHINGS SHALL BE INSTALLED ON EACH END OF THE CONDUIT AND BONDED TO GROUND BARS USING #2 AWG (THWN) STRANDED COPPER CONDUCTORS WITH GREEN INSULATION.
- D9. IF REQUIRED ON THE SITE DRAWING, INSTALL AN INSPECTION WELL AS SHOWN ON GSD-3 OR GSD-3A.

E - LAND BUILDS AND CO-LOCATES

- E1. THE GROUND ELECTRODE SYSTEM SHALL CONSIST OF DRIVEN GROUND RODS UNIFORMLY SPACED AROUND THE EQUIPMENT FOUNDATION AND AROUND THE PERIMETER OF THE TOWER FOUNDATION. THE GROUND RODS SHALL BE 5/8" X 10'-0" COPPER CLAD STEEL INTERCONNECTED WITH #2 SOLID TINNED BARE COPPER GROUND CONDUCTOR TO FORM A GROUND RING AT A DEPTH OF 30 INCHES BELOW THE SURFACE OF THE SOIL. A MINIMUM OF 1 FOOT AND A MAXIMUM OF 3 FEET CLEARANCES SHALL BE MAINTAINED FROM FOUNDATIONS. TOWER AND EQUIPMENT GROUND RINGS SHALL BE INTERCONNECTED WITH TWO GROUNDING CONDUCTORS OF EQUAL LENGTH AND MATERIALS.
- E2. GROUND RODS SHALL BE BONDED TO GROUND RINGS AND INTERCONNECTING CONDUCTORS AT EQUAL INTERVALS OF APPROXIMATELY 10 FEET.
- E3. WAVEGUIDE BRIDGE SHALL BE BONDED TO GROUND RINGS OR INTERCONNECTING CONDUCTORS WITH GROUNDING CONDUCTORS BONDED TO DIAGONALLY OPPOSED SUPPORT POSTS.
- E4. GROUND BARS SHALL BE BONDED TO GROUND RING WITH SINGLE GROUNDING CONDUCTOR.
- E5. BONDS TO ANTENNA MASTS, FENCE POSTS, WAVEGUIDE BRIDGE, TOWER STEEL (UNLESS PROHIBITED BY TOWER MANUFACTURER) AND THOSE BELOW GRADE SHALL BE EXOTHERMIC TYPE (CADWELD). ALL OTHER BONDS SHALL BE BRONZE 2-HOLE COMPRESSION FITTINGS UNLESS OTHERWISE NOTED.
- E6. GROUNDING CONDUCTORS MAKING A TRANSITION FROM ABOVE TO BELOW GRADE SHALL BE INSULATED FROM EARTH CONTACT BY PASSING THROUGH PVC CONDUIT. THE CONDUIT SHALL EXTEND AT LEAST 6 INCHES ABOVE AND 12 INCHES BELOW GRADE LEVEL.

F - LIGHTNING PROTECTION

- F1. IF EXISTING BUILDING HAS AN NFPA 780 AIR TERMINAL SYSTEM, EXISTING SYSTEM SHALL BE BONDED TO A GROUND BAR TO BOND THE EXISTING SYSTEM TO THE NEW SYSTEM. SHOULD THE EXISTING SYSTEM COME WITHIN 8 FEET OF ANTENNA STRUCTURES, EXISTING SYSTEM SHALL ALSO BE BONDED TO COAX GROUND BARS.
- F2. IF SITE IS IN A HIGH RISK AREA AND ANTENNAS DO NOT FALL WITHIN EXISTING CONE OF PROTECTION FOR BUILDING, AIR TERMINALS SHALL BE INSTALLED AT ANTENNAS. A SINGLE AIR TERMINAL MAY BE USED WHEN TWO ANTENNAS ARE MOUNTED ON SAME STRUCTURE AND IT HAS BEEN DETERMINED THAT BOTH ANTENNAS WILL FALL WITHIN LIGHTNING CONE OF PROTECTION OR SINGLE AIR TERMINAL.

GROUNDING LEGEND:

- □ □ □ COPPER GROUND BAR
- EXOTHERMIC WELD CONNECTION
 - COMPRESSION FITTING GROUND CONNECTION
 - COAXIAL CABLE SHIELD GROUND KIT CONNECTION
 - ⊗ INSPECTION WELL
 - ⊙ GROUND ROD
 - P — POWER WIRING
 - T — TELCO WIRING
 - G — GROUND WIRING

ABBREVIATIONS

- BTS BASE TRANSCIVER SUBSYSTEM
LNA LOW NOISE AMPLIFIER
TMA TOWER MOUNTED AMPLIFIER
TBB TRANSMISSION BOND BAR
CGB COAX GROUND BAR
MGB MASTER GROUND BAR
CGB COAX GROUND BAR
BPG BUILDING PRINCIPAL GROUND
(E) EXISTING
(N) NEW
C CONDUIT
G GROUND
W WIRE

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COMMUNICATIONS
MB OPERATIONS, INC.
600 ANSIN BLVD.
HALLANDALE, FLORIDA
(954) 457-5700

PROPERTY OWNER

Name WALTER PAGE
MAYAN TWRS CONDO
Address 125 OCEAN AVENUE
PALM BEACH SHORES, FL 33404
Phone (561) 844-4550

APPROVALS

OMNIPOINT _____
LANDLORD _____
LEASING _____
R.F. _____
ZONING _____
CONSTRUCTION _____
BSIE _____

PROJECT NO: 36585

DRAWN BY: JLG

CHECKED BY: DB

PROFESSIONAL ENGINEER

Name RICHARD NEAL CROWDIS
Discipline ELECTRICAL
State FLORIDA
Registration No. 0039114
Date 11/11/97

1	11/10/97	GENERAL REVISIONS
0	10/27/97	CONSTRUCTION ISSUE
REV	DATE	DESCRIPTION



BLACK & VEATCH

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OVERLAND PARK, KS. 66211
(913) 458-2000

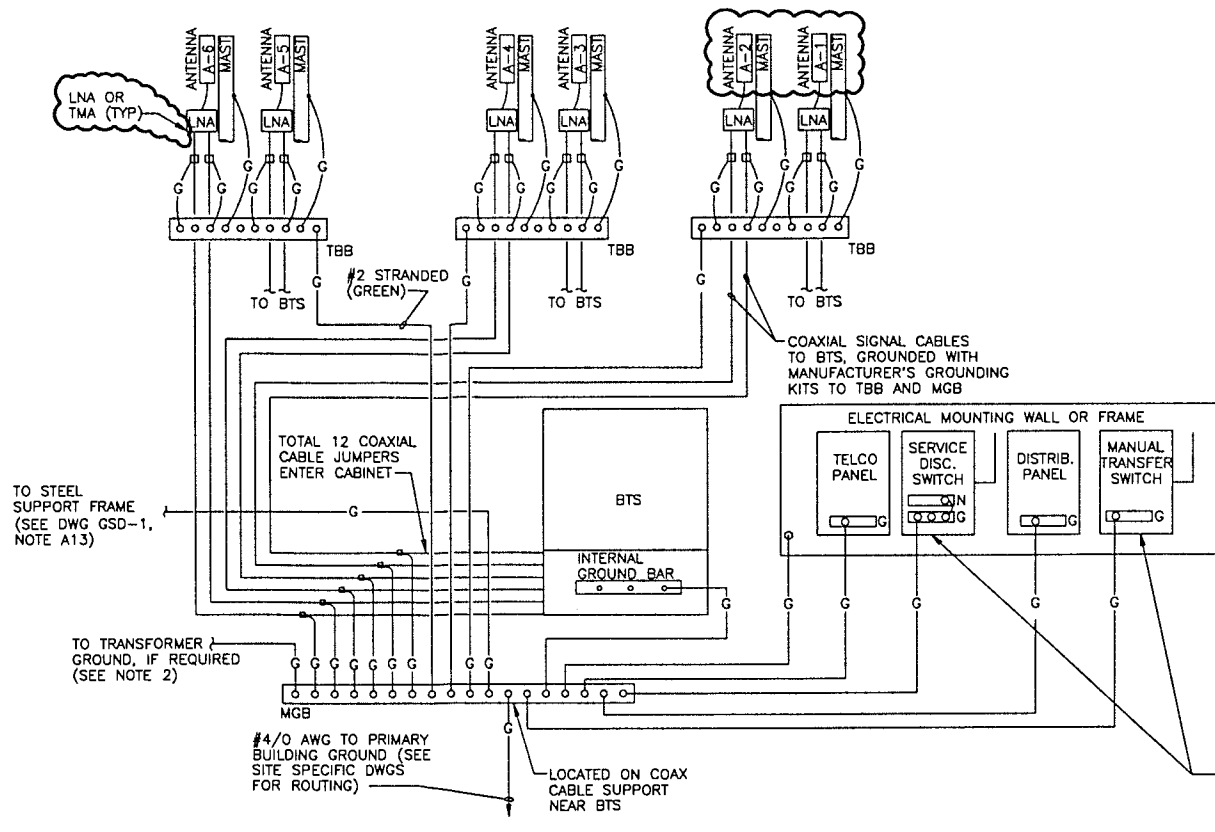
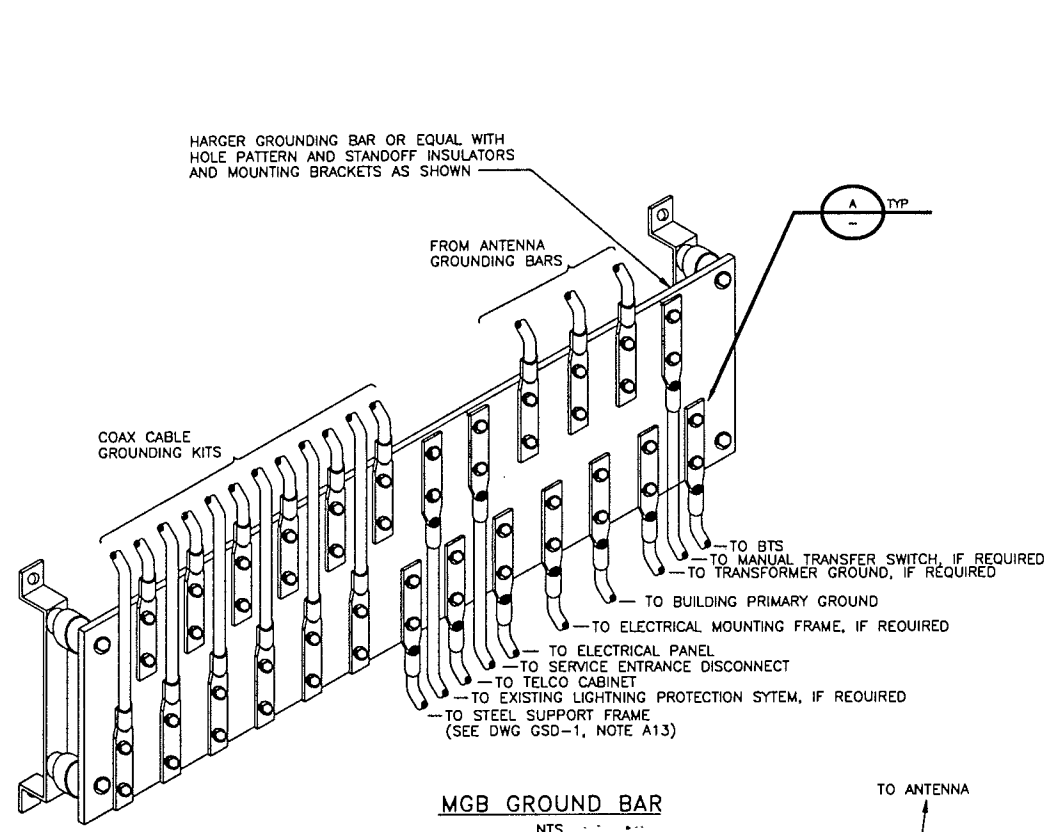
SHEET TITLE

GROUNDING NOTES
AND LEGEND

SHEET NUMBER

GSD-1

Richard Crowdis
11/11/97



- NOTE:
1. SEE DWG GSD-1 FOR GROUNDING NOTES, LEGEND AND ABBREVIATIONS.
 2. TRANSFORMER SECONDARY SHALL BE GROUNDED PER NEC 250-26.

OMNIPPOINT
COMMUNICATIONS
MB OPERATIONS, INC.
600 ANSIN BLVD.
HALLANDALE, FLORIDA
(954) 457-5700

PROPERTY OWNER
WALTER PAGE
Name MAYAN TWRS CONDO
Address 125 OCEAN AVENUE
PALM BEACH SHORES, FL 33404
Phone (561) 844-4550

APPROVALS

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ZONING _____
CONSTRUCTION _____
BSIE _____

PROJECT NO: 36585

DRAWN BY: JLG

CHECKED BY: GPB

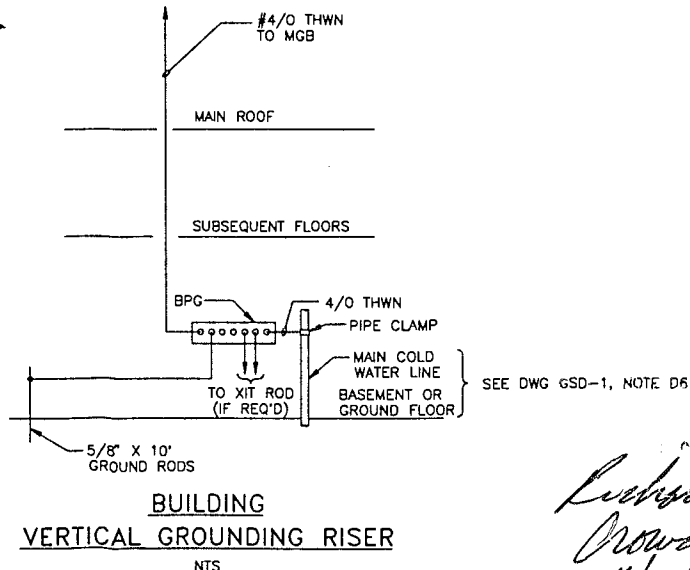
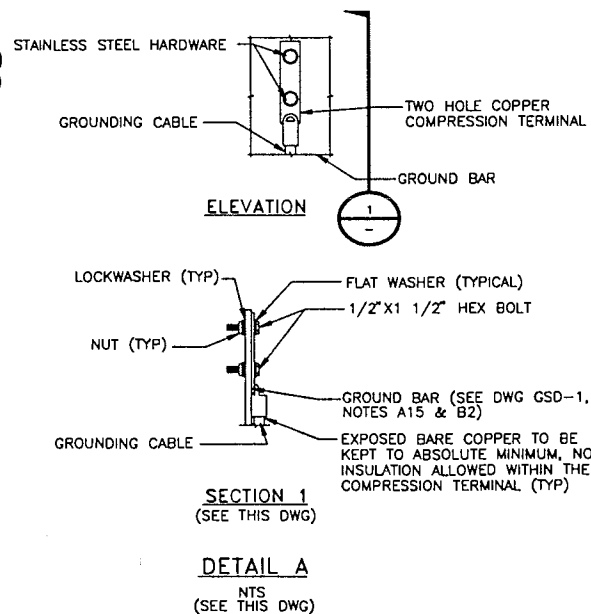
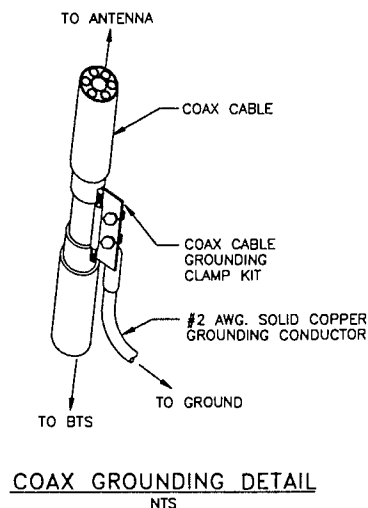
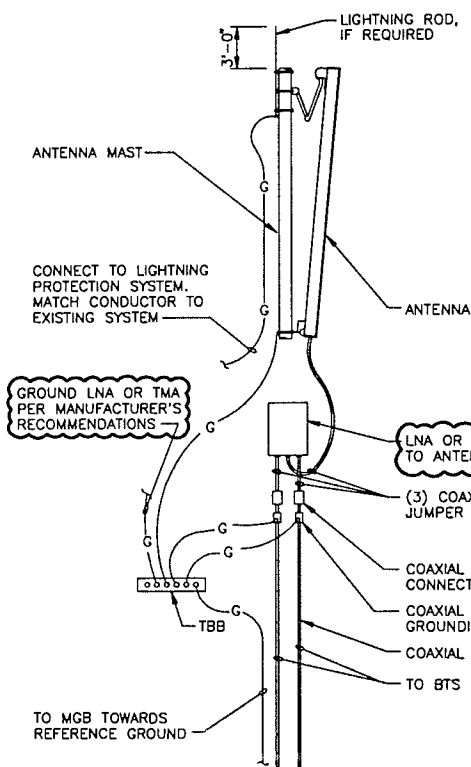
PROFESSIONAL ENGINEER
Name RICHARD NEAL CROWDIS
Discipline ELECTRICAL
State FLORIDA
Registration No. 0039114
Date 11/11/97

REV	DATE	DESCRIPTION
2	11/10/97	GENERAL REVISIONS
1	10/29/97	GENERAL REVISIONS
0	10/27/97	CONSTRUCTION ISSUE

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11401 LAMAR
OVERLAND PARK, KS. 66211
(913) 458-2000

SHEET TITLE
GROUNDING RISER & DETAILS
BTS ON ROOF

SHEET NUMBER
GSD-2



Richard Crowdis
11/11/97



Ms. Jessica Ross
Dish Wireless, LLC.
5701 South Santa FE Drive
Littleton, CO 80120
(206) 523-1941



Morrison Hershfield
1455 Lincoln Parkway, Suite 500
Atlanta, GA 30346
(770) 379-8500

Date: April 4, 2022

Subject: Rooftop Structural Design Report

Site ID: MIMIA00378A

Site Address: 125 S Ocean Avenue, Palm Beach Shores, Palm Beach Co., FL 33404
Site Coordinates: Latitude: 26° 46' 45.01" N, Longitude: 80° 01' 59.21" W

Tower Description: 95 ft – Building w/ Penthouse
Mount Description: FRP Enclosed Antenna Mounts

Morrison Hershfield Project Number: DSH-041 / 2101541

Dear Ms. Ross,

Morrison Hershfield is pleased to submit this “**Rooftop Structural Design Report**” to determine the structural integrity of proposed antenna enclosure, existing slab and wall for the proposed antenna and equipment attached on the above mentioned supporting structure.

This structural analysis utilizes an ultimate 3-second gust wind speed of 170 mph as required by the 2020 Florida Building Code 7th Edition. Applicable Standard references and design criteria are listed in Section 2 - Analysis Criteria.

Our analysis demonstrates that the proposed FRP Enclosed Antenna Mounts **ARE in conformance** with the requirements of the above noted standards under the effects of loading described.

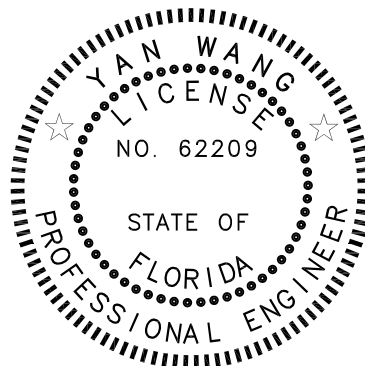
Summary of Results			
Mount Components	FRP Enclosed Antenna Mounts	43.7%	Sufficient
Connection Checks	Enclosure to Roof	34.2%	Sufficient
Building Checks	Sufficient		

We at *Morrison Hershfield* appreciate the opportunity of providing our continuing professional services to you and Dish Wireless, LLC. If you have any questions or need further assistance on this or any other projects please give us a call.

Respectfully submitted by:
Morrison Hershfield

Yan Wang, P.E. (FL License No. 62209)
Senior Engineer

Certificate of Authorization No. 8508



THIS ITEM HAS BEEN ELECTRONICALLY SIGNED AND SEALED
BY YAN WANG, PE ON THE DATE AS SHOWN USING A DIGITAL
SIGNATURE. PRINTED COPIES OF THIS DOCUMENT ARE NOT
CONSIDERED SIGNED AND SEALED AND THE SIGNATURE
MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

1.0 INTRODUCTION

This is a 95± ft building w/ penthouse, constructed with concrete and structural steel. Proposed antennas equipment are to be installed at a mount elevation of 100 ft on the proposed FRP enclosed antenna mounts that are attached to building roof.

2.0 ANALYSIS CRITERIA

The following design parameters have been used in our analysis:

Design Standard:	2020 Florida Building Code, 7th Edition ASCE 7-16, Minimum Design Loads and Associated Criteria for Building and Other Structures ACI 318-19, Building Code Requirements for Structural Concrete AISC 325-17, Manual of Steel Construction
Design Wind Speed:	170 mph (Ultimate 3-sec gust) with no radial ice
Risk Category:	II
Exposure Category:	D
Topographic Factor, K_{zt} :	1.0
Seismic S_s :	0.045 [Neglected]
Seismic S_1 :	0.024 [Neglected]

The mount analysis was based on the following documentation:

Table 1 – Documentation

Document	Description	Source
Rooftop Mapping Report	Tower Engineering Professionals, Inc., Site ID: MIMIA00378A, dated 11/30/2021	Client
Redlined Preliminary Construction Drawings	Morrison Hershfield, Site ID: MIMIA00378A, dated 05/17/2021	MH
Structural Design Drawings	Morrison Hershfield, Site ID: MIMIA00378A, dated 04/04/2022	ON FILE



3.0 ANALYSIS LOADING

The proposed antennas, transmission lines and other equipment considered in this analysis were provided by the client and are noted in Table 2a.

Table 2a – Antenna Loads

Mount C.L (ft)	Antenna C.L (ft)	Antenna Description	Location	TX-Lines	Note
PROPOSED					
100.0	100.0	(3) JMA MX08FRO665-21 Panel	355°/180°/270°	DC & Fiber Trunks	1
		(3) CMAX DMW2060-43153 Panel	355°/180°/270°		
		(3) MTI TB GO60708-50-02B RRH	-		
		(3) MTI TB G2021-49-02B RRH			
		(3) Baicells Nova436Q RRH			

Note: Any discrepancies in loading from this listing should be brought to Morrison Hershfield's attention; results of this assessment cannot be used if the loading is different.

1. Proposed antennas and equipment to be installed on proposed antenna mounts and wall mounts.

The proposed equipment considered in this analysis were provided by the client and are noted in Table 2b.

Table 2b – Equipment Loads

Equipment Description	Weight (lbs.)	Note
PROPOSED		
(1) Enersys HEX 2000005996 Cabinet	1000.0	1
(1) Charles CFIT-PF2020DSH1 Fiber Telco Enclosure	20.0	2
(1) Square D Safety Switches D224NRB	53.51	
(1) Power Protective Cabinet	180.0	
(1) GPS Unit	-	

Note: Any discrepancies in loading from this listing should be brought to Morrison Hershfield's attention; results of this assessment cannot be used if the loading is different.

1. Proposed equipment to installed on the proposed equipment wall mounts.
2. Proposed equipment directly attached to wall.

4.0 ANALYSIS PROCEDURE

RISA-3D (version 19.0.4), a commercially available analysis software package, was used to create a three-dimensional model of the antenna mounting system and calculate member stresses for various loading cases.

Enercalc (Build 20.22.1.27), a commercially available analysis software package, was used to create a three-dimensional model of the concrete masonry wall and calculate stresses for various loading cases.

Wind and seismic loading on equipment for various loading cases were determined in accordance with ASCE 7-16. Select output from the analysis is included in the report.

5.0 ASSUMPTIONS

- 1) The building, foundation, and antenna supporting mounts were constructed according to applicable code.
- 2) The building and antenna supporting mounting system have been maintained according to construction document and manufacturer's specifications.
- 3) The building and its components, including antenna supporting mounts have not been compromised.
- 4) The analysis will be required to be revised if the existing conditions in the field differ from those shown in the above-referenced documents or assumed in this analysis. No allowance was made for any damaged, missing, or rusted members.
- 5) Steel grades have been assumed as follows, unless noted otherwise

Channel, Solid Round, Angle, Plate	ASTM A36 (GR 36)
HSS (Rectangular)	ASTM 500 (GR B-46)
HSS (Round)	ASTM 500 (GR B-42)
Pipe	ASTM A53 (GR 35)
Connection Bolts	ASTM A325
U-Bolts	ASTM A307
Unistrut – P1000	ASTM A570 (GR 33)
- 6) FRP Material shall comply with the following minimum mechanical specifications:

Modulus of Elasticity	2.8×10^6 psi
Shear Modulus	4.5×10^5 psi
Tensile Stress	30,000 psi Lengthwise; 7,000 psi Crosswise
Flexural Stress	30,000 psi Lengthwise; 10,000 psi Crosswise
Compressive Stress	30,000 psi Lengthwise; 15,000 psi Crosswise
Coefficient of thermal expansion	4.4×10^{-6} in/in/ $^{\circ}$ F
- 7) The existing wall geometry are taken from the rooftop mapping report completed by Tower Engineering Professionals, Inc., Site ID: MIMIA00378A, dated 11/30/2021, and is considered to be correct.
- 8) The proposed loading is taken from the redlined preliminary construction drawings by Morrison Hershfield, Site ID: MIMIA00378A, dated 05/17/2021, and is considered to be correct.

This analysis may be affected if any assumptions are not valid or have been made in error. Morrison Hershfield should be notified to determine the effect on the structural integrity of the antenna mounting system.



6.0 SUMMARY OF RESULTS

The following tables summarize the location and utilized percentage of available capacity for each component of the mount. With consideration to the appropriate safety factors, 100% represents the full capacity of the component. Percentages below 100% indicate available capacity and conformance of the component. Percentages between 100% and 105% indicate an acceptable capacity. Percentages above 105% indicate an overstressed situation requiring structural modification to ensure conformance with the applicable codes and standards.

Based on our analysis results, the FRP Enclosed Antenna Mounts & Wall Mounts **ARE within capacity** to support the loads under the current loading scenario.

Table 3a – Mount Component Stresses vs. Capacity (FRP Enclosed Antenna Mounts)

Notes	Component	Critical Member	Mount Centerline (ft)	% Capacity	Pass / Fail
1	Main Horizontal	M61	100.0	43.7	Pass
1	Mast Pipe	M68	100.0	29.6	Pass
1	Connection Checks	-	100.0	34.2	Pass

Structure Rating (max from all components) =	43.7%
---	--------------

Notes:

- 1) See additional documentation in "Additional Calculations" for calculations supporting the % capacity consumed.

7.0 RECOMMENDATIONS

The proposed FRP Enclosed Antenna Mounts, existing slab & penthouse wall have sufficient capacity to support the proposed loading configuration. No modifications are required at this time.

ATTACHMENTS: Software Input Calculations, Wire Frame and Rendered Models, Software Analysis Output
Additional Calculations and Structural Design Drawings



SOFTWARE INPUT CALCULATIONS

BUILDING ELEVATION



WIND LOAD CALCULATIONS ON APPURTENANCES:

Code Search

Code: 2020 Florida Building Code

Occupancy:

Occupancy Group = B Business

Risk Category & Importance Factors:

Risk Category: Category II: All bldgs and other structures except those listed in Categories I, III, & IV

Wind Loads - Other Structures: ASCE 7- 16

Ultimate Wind Pressures

Wind Factor = 1.00
Gust Effect Factor (G) = 0.85 Ultimate Wind Speed = 170 mph
Kzt = 1.00 Exposure = D

1. Enclosure

Front & Side:

A. Solid Freestanding Walls & Solid Signs (& open signs with less than 30% open)

		s/h = 0.12	Case A & B
Dist to sign top (h)	101.0 ft	B/s = 1.00	C _f = 1.80
Height (s)	12.5 ft	Lr/s = 0.00	F = qz G C _f A _s = 138.1 As
Width (B)	12.5 ft	Kz = 1.435	A _s = 156.3 sf
Wall Return (Lr) =		qz = 90.3 psf	F = 21580 lbs
Directionality (Kd)	0.85	ASCE7 Load Combinations Use	

2. DISH's Proposed (1) JMA MX08FRO665-21 Panel (72.8"x20.0"x8.0", Wt. = 64.5 lbs), Total (3)

Front:

A. Solid Freestanding Walls & Solid Signs (& open signs with less than 30% open)

		s/h = 0.06	Case A & B
Dist to sign top (h)	100.0 ft	B/s = 0.27	C _f = 1.85
Height (s)	6.1 ft	Lr/s = 0.00	F = qz G C _f A _s = 141.7 As
Width (B)	1.7 ft	Kz = 1.433	A _s = 10.1 sf
Wall Return (Lr) =		qz = 90.1 psf	F = 1433 lbs
Directionality (Kd)	0.85	ASCE7 Load Combinations Use	

Side:

A. Solid Freestanding Walls & Solid Signs (& open signs with less than 30% open)

		s/h = 0.06	Case A & B
Dist to sign top (h)	100.0 ft	B/s = 0.11	C _f = 1.90
Height (s)	6.1 ft	Lr/s = 0.00	F = qz G C _f A _s = 145.2 As
Width (B)	0.7 ft	Kz = 1.433	A _s = 4.0 sf
Wall Return (Lr) =		qz = 90.1 psf	F = 587 lbs
Directionality (Kd)	0.85	ASCE7 Load Combinations Use	



3. DISH Proposed (1) CMAX DMW2060-43153 Panel (15.7"x9.8"x3.3", Wt. = 12.0 lbs), Total (3)

Front:

A. Solid Freestanding Walls & Solid Signs (& open signs with less than 30% open)

		s/h =	0.01	<u>Case A & B</u>	
Dist to sign top (h)	100.0 ft	B/s =	0.62	C _f =	1.84
Height (s)	1.3 ft	Lr/s =	0.00	F = qz G C _f A _s =	140.7 As
Width (B)	0.8 ft	Kz =	1.433	A _s =	1.1 sf
Wall Return (Lr) =		qz =	90.1 psf	F =	150 lbs
Directionality (Kd)	0.85	ASCE7 Load Combinations Use			

Side:

A. Solid Freestanding Walls & Solid Signs (& open signs with less than 30% open)

		s/h =	0.01	<u>Case A & B</u>	
Dist to sign top (h)	100.0 ft	B/s =	0.21	C _f =	1.85
Height (s)	1.3 ft	Lr/s =	0.00	F = qz G C _f A _s =	141.7 As
Width (B)	0.3 ft	Kz =	1.433	A _s =	0.4 sf
Wall Return (Lr) =		qz =	90.1 psf	F =	51 lbs
Directionality (Kd)	0.85	ASCE7 Load Combinations Use			

4. DISH Proposed (1) MTI TB G060708-50-02B RRH (13.9"x16.9"x9.8", Wt. = 97.0 lbs), Total (3)

Front:

A. Solid Freestanding Walls & Solid Signs (& open signs with less than 30% open)

		s/h =	0.01	<u>Case A & B</u>	
Dist to sign top (h)	100.0 ft	B/s =	1.22	C _f =	1.80
Height (s)	1.2 ft	Lr/s =	0.00	F = qz G C _f A _s =	137.9 As
Width (B)	1.4 ft	Kz =	1.433	A _s =	1.6 sf
Wall Return (Lr) =		qz =	90.1 psf	F =	225 lbs
Directionality (Kd)	0.85	ASCE7 Load Combinations Use			

Side:

A. Solid Freestanding Walls & Solid Signs (& open signs with less than 30% open)

		s/h =	0.01	<u>Case A & B</u>	
Dist to sign top (h)	100.0 ft	B/s =	0.71	C _f =	1.83
Height (s)	1.2 ft	Lr/s =	0.00	F = qz G C _f A _s =	140.1 As
Width (B)	0.8 ft	Kz =	1.433	A _s =	0.9 sf
Wall Return (Lr) =		qz =	90.1 psf	F =	133 lbs
Directionality (Kd)	0.85	ASCE7 Load Combinations Use			

5. DISH Proposed (1) MTI TB G2021-49-02B RRH (13.9"x16.9"x9.8", Wt. = 86.0 lbs), Total (3)

Front:

A. Solid Freestanding Walls & Solid Signs (& open signs with less than 30% open)

		s/h =	0.01	<u>Case A & B</u>	
Dist to sign top (h)	100.0 ft	B/s =	1.22	C _f =	1.80
Height (s)	1.2 ft	Lr/s =	0.00	F = qz G C _f A _s =	137.9 As
Width (B)	1.4 ft	Kz =	1.433	A _s =	1.6 sf
Wall Return (Lr) =		qz =	90.1 psf	F =	225 lbs
Directionality (Kd)	0.85	ASCE7 Load Combinations Use			

Side:

A. Solid Freestanding Walls & Solid Signs (& open signs with less than 30% open)

		s/h =	0.01	<u>Case A & B</u>	
Dist to sign top (h)	100.0 ft	B/s =	0.71	C _f =	1.83
Height (s)	1.2 ft	Lr/s =	0.00	F = qz G C _f A _s =	140.1 As
Width (B)	0.8 ft	Kz =	1.433	A _s =	0.9 sf
Wall Return (Lr) =		qz =	90.1 psf	F =	133 lbs
Directionality (Kd)	0.85	ASCE7 Load Combinations Use			

6. Dish Proposed (1) Baicells Nova436Q RRH (33.11"x20.51"x8.54", Wt. = 101.63 lbs), Total (3)

Front

A. Solid Freestanding Walls & Solid Signs (& open signs with less than 30% open)

		s/h =	0.03	<u>Case A & B</u>	
Dist to sign top (h)	100.0 ft	B/s =	0.62	C _f =	1.84
Height (s)	2.8 ft	Lr/s =	0.00	F = qz G C _f A _s =	140.8 As
Width (B)	1.7 ft	Kz =	1.433	A _s =	4.7 sf
Wall Return (Lr) =		qz =	90.1 psf	F =	663 lbs
Directionality (Kd)	0.85	ASCE7 Load Combinations Use			

Side

A. Solid Freestanding Walls & Solid Signs (& open signs with less than 30% open)

		s/h =	0.03	<u>Case A & B</u>	
Dist to sign top (h)	100.0 ft	B/s =	0.26	C _f =	1.85
Height (s)	2.8 ft	Lr/s =	0.00	F = qz G C _f A _s =	141.7 As
Width (B)	0.7 ft	Kz =	1.433	A _s =	2.0 sf
Wall Return (Lr) =		qz =	90.1 psf	F =	277 lbs
Directionality (Kd)	0.85	ASCE7 Load Combinations Use			



WIND LOAD CALCULATIONS ON MOUNT MEMBERS:

1. P2.5STD Pipe (2.875" OD)

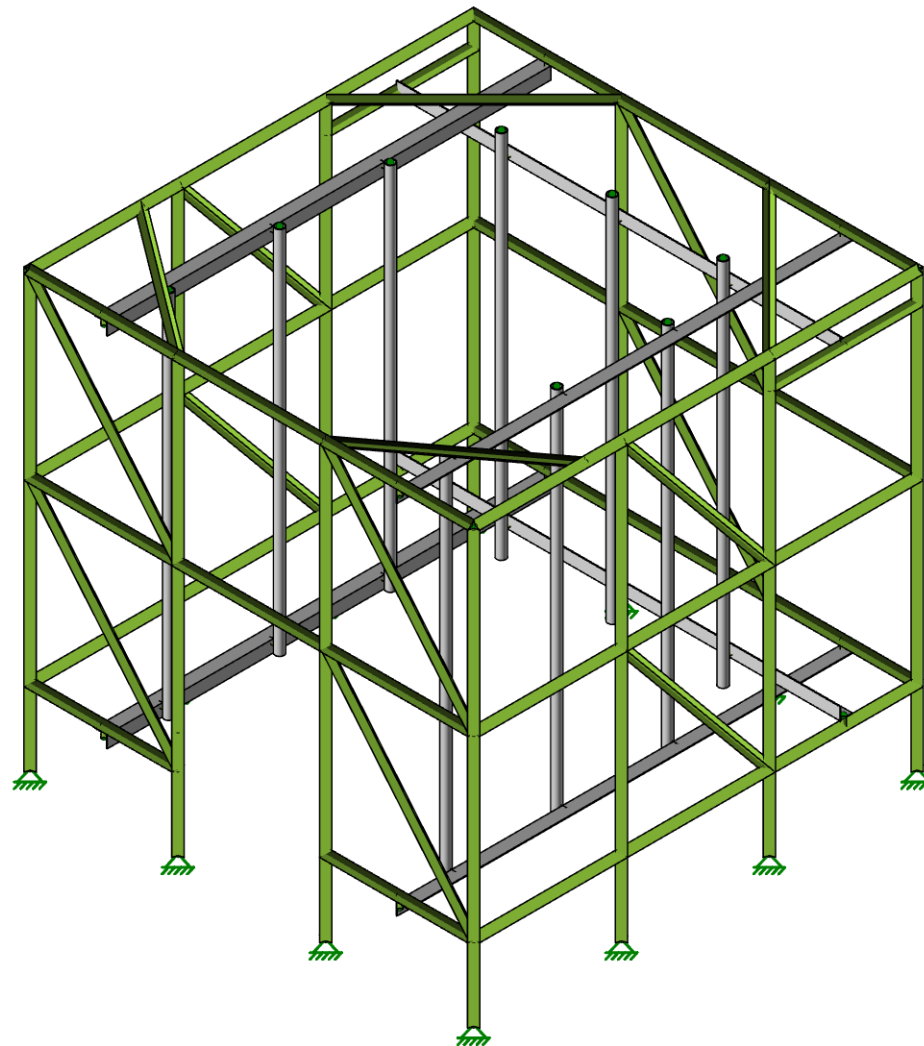
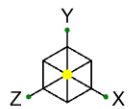
Height to centroid of Af (z)	100.0 ft		Kz =	1.433	
			Base pressure (qz) =	90.1 psf	
Width (zero if round)	0.0 ft				
Diameter (zero if rec)	0.2 ft	D(qz) ^{0.5} =	2.27	F = qz G Cf Af =	99.6 Af
Percent of open area		I =	0.1	Solid Area: Af =	sf
to gross area	90.0%	Cf =	1.3	F =	0 lbs
Directionality (Kd)	0.85	ASCE7 Load Combinations Used			

2. L4x4x3/8 (4" WIDTH)

		s/h =	0.00	Case A & B	
Dist to sign top (h)	100.0 ft	B/s =	3.00	Cf =	1.83
Height (s)	0.3 ft	Lr/s =	0.00	F = qz G Cf As =	139.8 As
Width (B)	1.0 ft	Kz =	1.433	As =	0.3 sf
Wall Return (Lr) =		qz =	90.1 psf	F =	47 lbs
Directionality (Kd)	0.85	ASCE7 Load Combinations Used			
Percent of open area		Open reduction		Case C	
to gross area	0.0%	factor =	1.00	Horiz dist from	
				windward edge	
		<u>Case C reduction factors</u>		Cf	F=qzGCfAs (psf)
		Factor if s/h>0.8 =	1.00	0 to s	2.60 199.1 As
		Wall return factor		s to 2s	1.70 130.2 As
		for Cf at 0 to s =	1.00	2s to 3s	1.15 88.1 As



WIRE FRAME AND RENDERED MODELS



Envelope Only Solution

Morrison Hershfield

VG

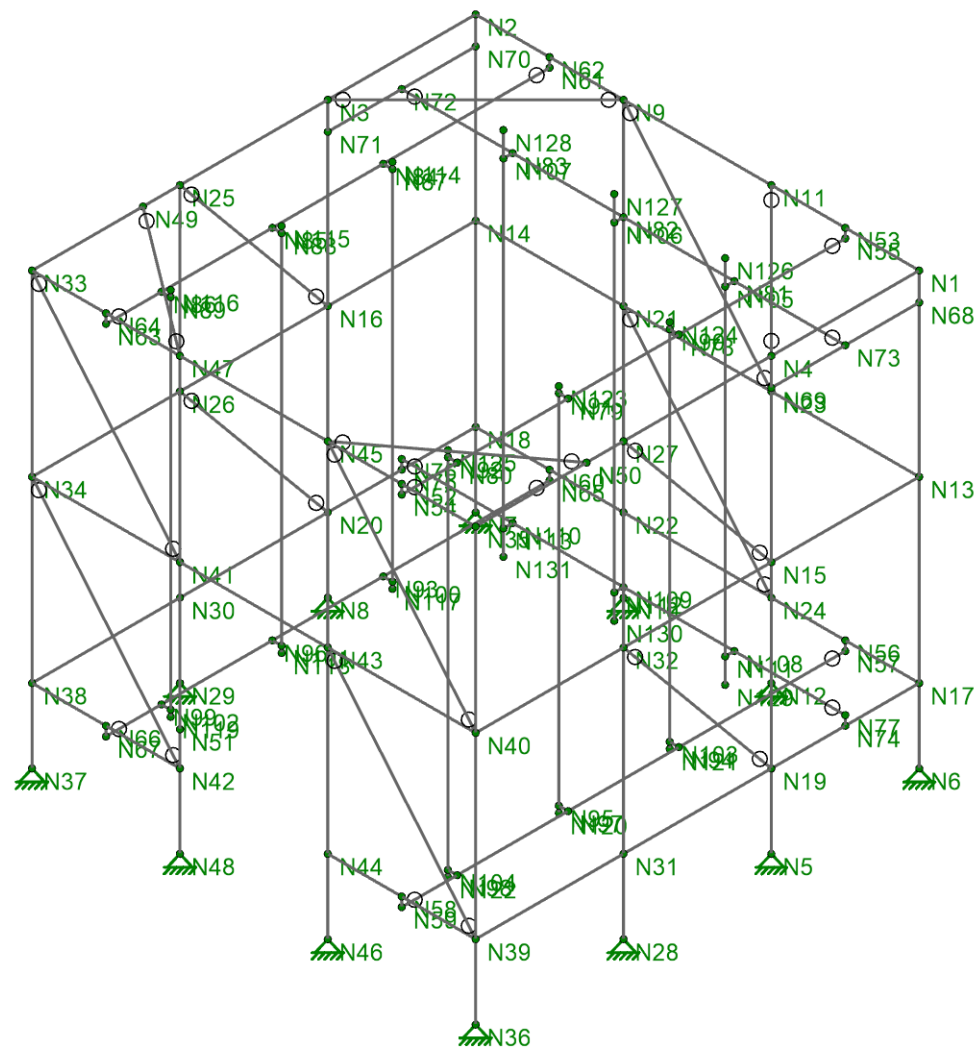
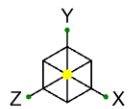
DSH-041 / 2101541

Site #: MIMIA00378A / MIMIA00378A

SK-1

Apr 04, 2022

FRP Enclosed Antenna Mounts.r3d



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VG

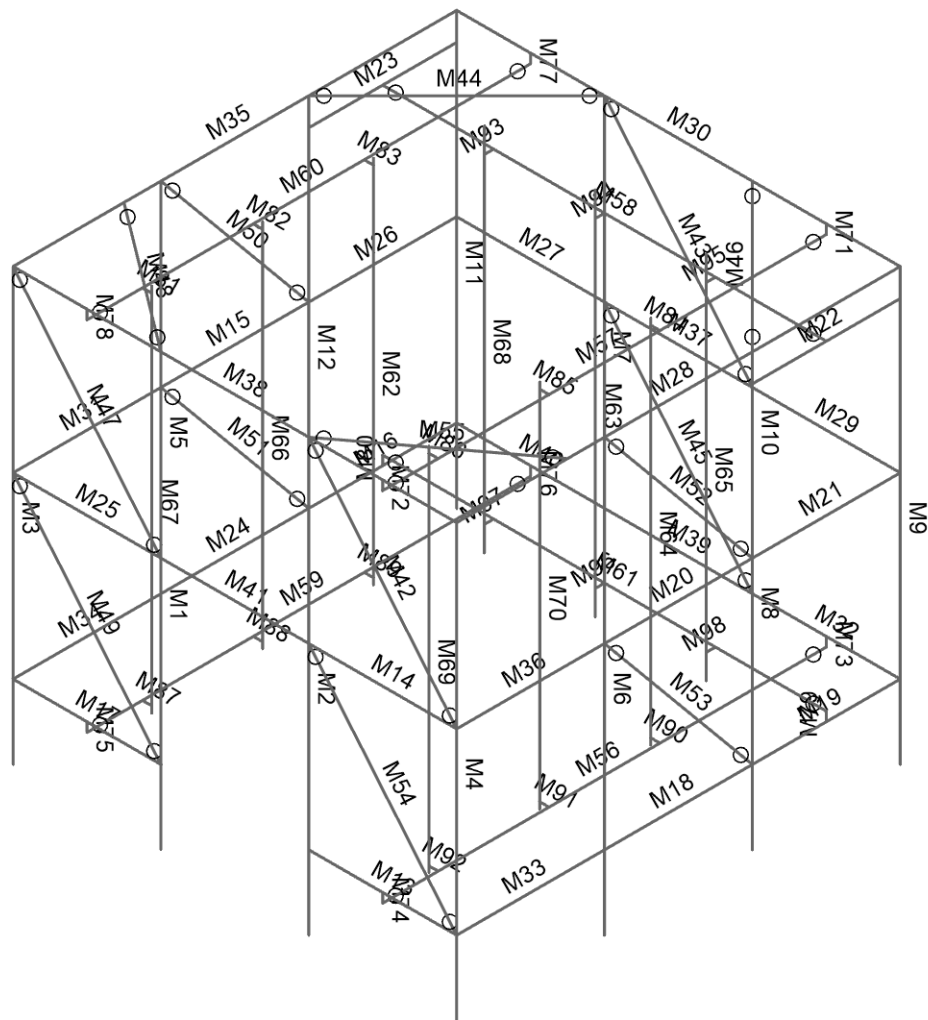
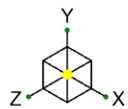
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Site #: MIMIA00378A / MIMIA00378A

SK-2

Apr 04, 2022

FRP Enclosed Antenna Mounts.r3d



Envelope Only Solution

Morrison Hershfield

VG

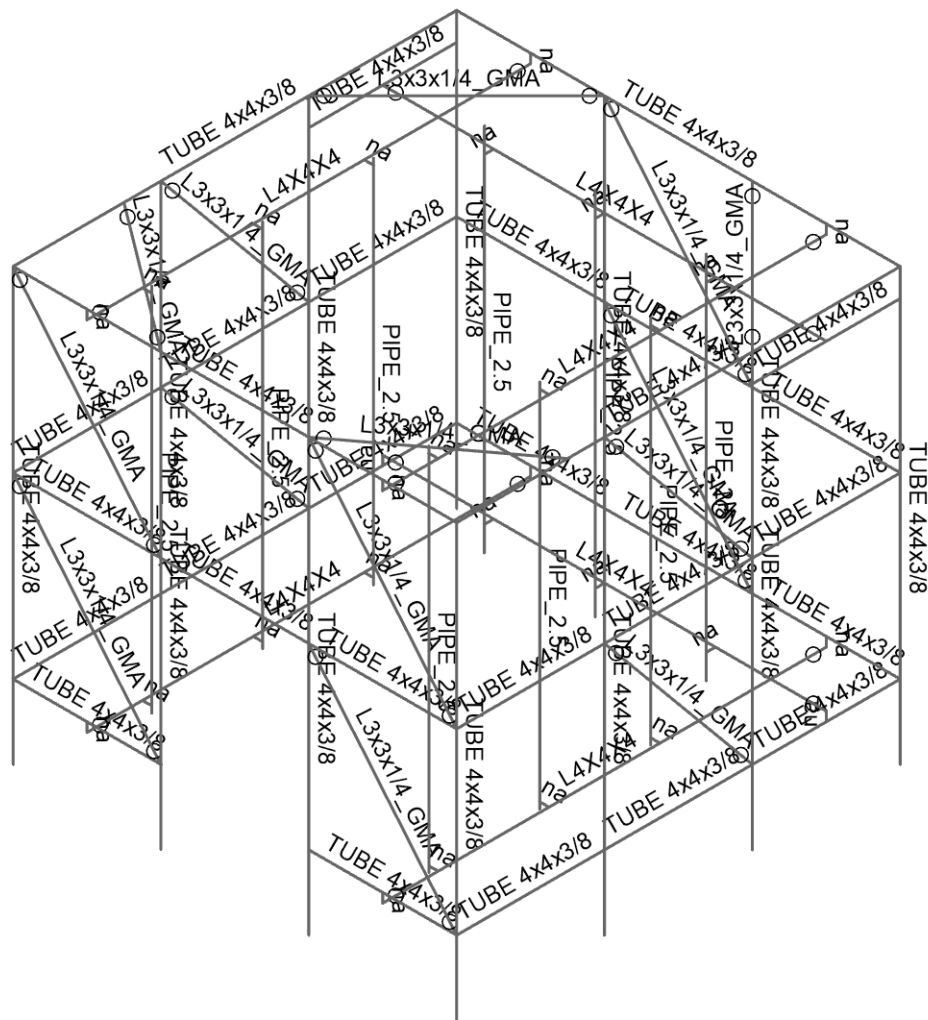
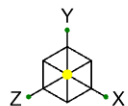
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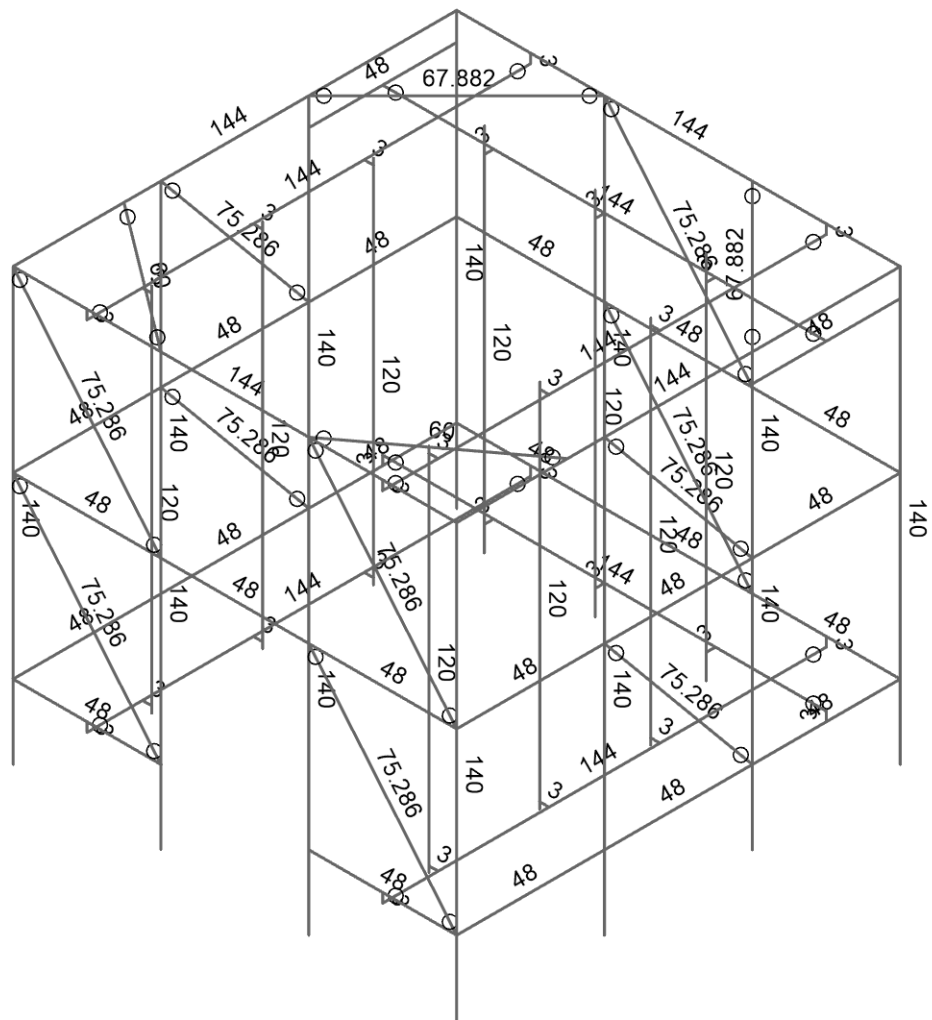
SK-3

Apr 04, 2022

FRP Enclosed Antenna Mounts.r3d

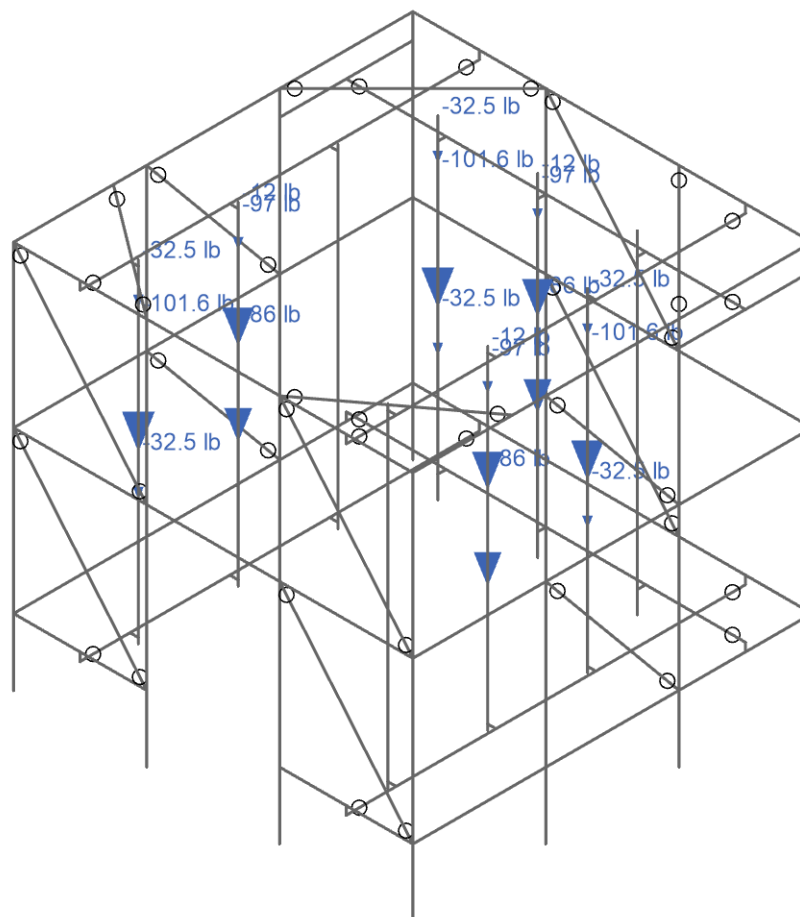
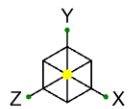


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Morrison Hershfield	Site #: MIMIA00378A / MIMIA00378A	SK-4
VG		Apr 04, 2022
DSH-041 / 2101541		FRP Enclosed Antenna Mounts.r3d



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SK-5
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FRP Enclosed Antenna Mounts.r3d



Loads: BLC 1, DL
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VG

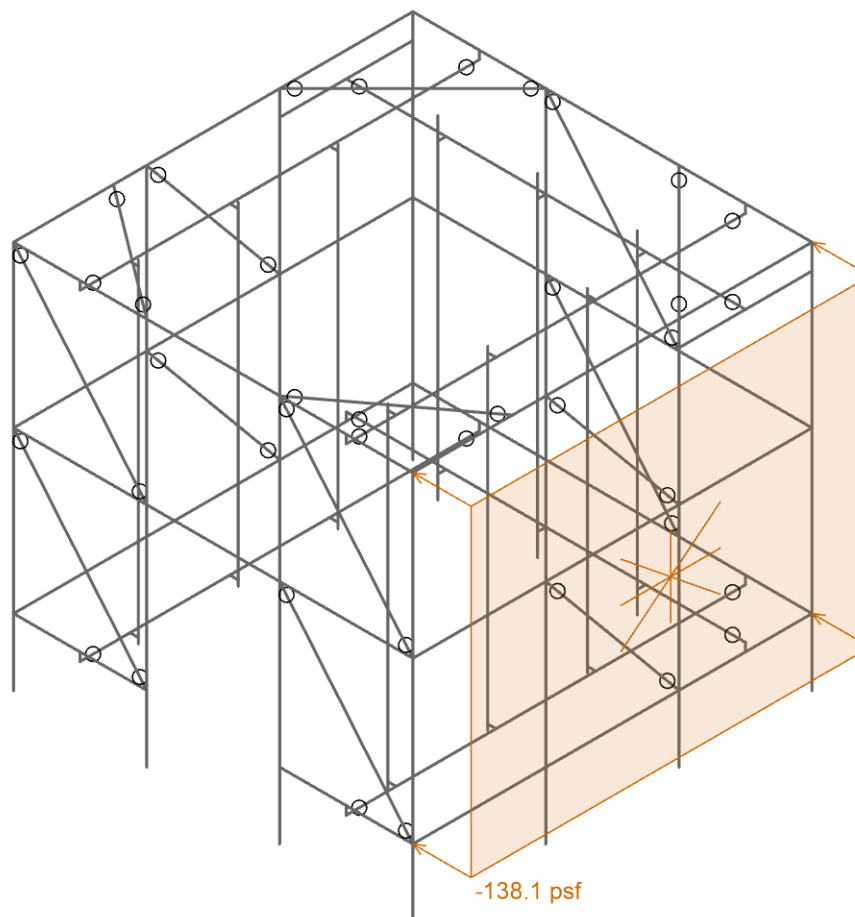
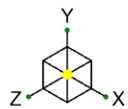
DSH-041 / 2101541

Site #: MIMIA00378A / MIMIA00378A

SK-6

Apr 04, 2022

FRP Enclosed Antenna Mounts.r3d



Loads: BLC 2, Wind X
Envelope Only Solution

Morrison Hershfield

VG

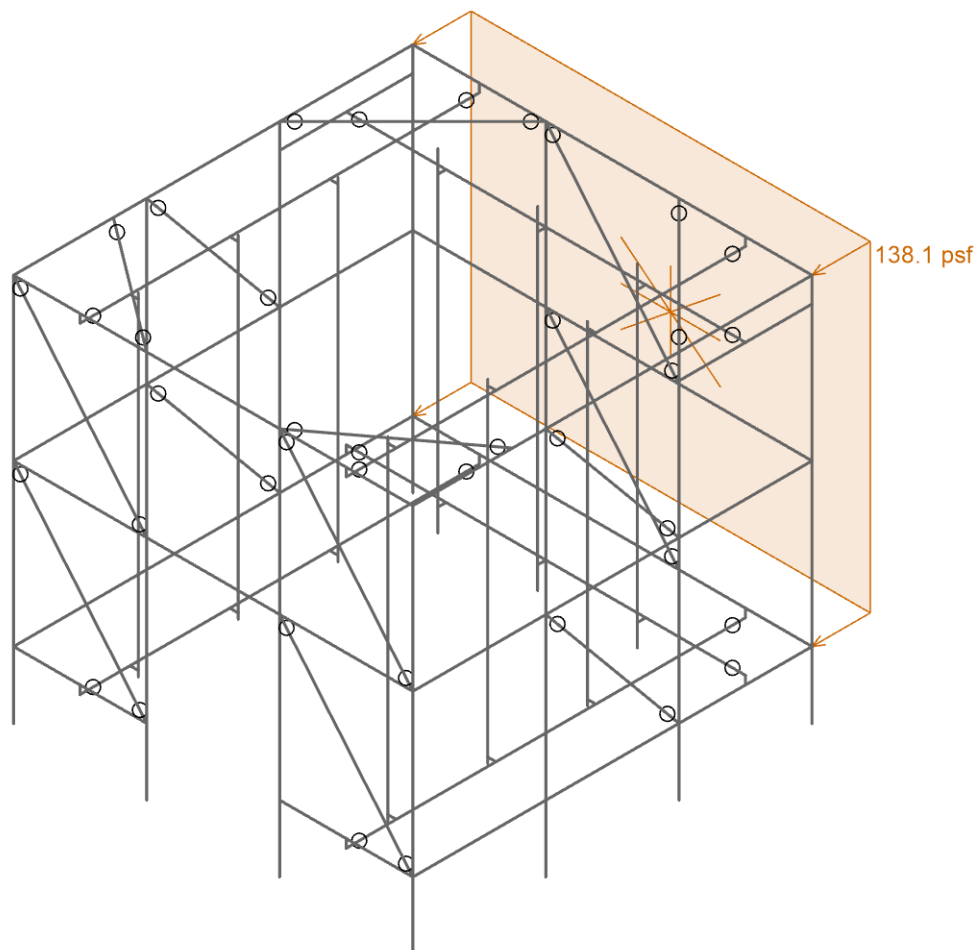
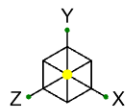
DSH-041 / 2101541

Site #: MIMIA00378A / MIMIA00378A

SK-7

Apr 04, 2022

FRP Enclosed Antenna Mounts.r3d



Loads: BLC 3, Wind Z
Envelope Only Solution

Morrison Hershfield

VG

DSH-041 / 2101541

Site #: MIMIA00378A / MIMIA00378A

SK-8

Apr 04, 2022

FRP Enclosed Antenna Mounts.r3d

SOFTWARE ANALYSIS OUTPUT

Model Settings

Solution

Members

Number of Reported Sections	3
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)	24
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 15th (360-16): ASD
Stiffness Adjustment	Yes (Iterative)
Notional Annex	None
Connections	None
Cold Formed Steel	None

Model Settings (Continued)

Stiffness Adjustment	Yes (Iterative)
Wood	None
Temperature	< 100F
Concrete	None
Masonry	None
Aluminum	None
Structure Type	Building
Stiffness Adjustment	Yes (Iterative)
Stainless	AISC 14th (360-10): ASD
Stiffness Adjustment	Yes (Iterative)

Concrete

Compression Stress Block	Rectangular Stress Block
Analyze using Cracked Sections	Yes
Leave room for horizontal rebar splices (2*d bar spacing)	No
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 7-16
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 ₁ (g)	0.024
SD ₁ (g)	0.039



Company : Morrison Hershfield
Designer : VG
Job Number : DSH-041 / 2101541
Model Name : Site #: MIMIA00378A / MIMIA00378A

04/04/2022
11:38:21 AM
Checked By : YW

Model Settings (Continued)

SD _s (g)	0.048
T _L (sec)	8

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
Q ₀ Z	1
Q ₀ X	1
C ₀ Z	4
C ₀ X	4
ρ Z	1
ρ X	1

General Materials Properties

	Label	E [psi]	Nu	Therm. Coeff. [$10^{-6}/^{\circ}\text{F}$]	Density [k/ft ³]	Plate Methodology
1	Rigid	1e+9	0.3	0	0	Isotropic
2	FRP	2.5e+6	0.3	0.44	0.11	Isotropic

Hot Rolled Steel Properties

	Label	E [psi]	G [psi]	Nu	Therm. Coeff. [$10^{-6}/^{\circ}\text{F}$]	Density [k/ft ³]	Yield [psi]	Ry	Fu [psi]	Rt
1	A53 Gr.B	2.9e+07	1.115e+07	0.3	0.65	0.49	35000	1.6	60000	1.2
2	A36 Gr.36	2.9e+07	1.115e+07	0.3	0.65	0.49	36000	1.5	58000	1.2

General Section Sets

	Label	Shape	Type	Material	Area [in ²]	Iyy [in ⁴]	Izz [in ⁴]	J [in ⁴]
1	Vertical Post	TUBE 4x4x3/8	None	FRP	5.43	12.03	12.03	18.7
2	Horizontal	TUBE 4x4x3/8	None	FRP	5.43	12.03	12.03	18.7
3	Bracing	L3x3x1/4 GMA	None	FRP	1.42	1.24	0.49	0.031
4	Link		None	Rigid	1e+06	1e+06	1e+06	1e+06

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design Rule	Area [in ²]	Iyy [in ⁴]	Izz [in ⁴]	J [in ⁴]
1	Main Horizontal	L4X4X4	Beam	Single Angle	A36 Gr.36	Typical	1.93	3	3	0.044
2	Mast Pipe	PIPE 2.5	Column	Pipe	A53 Gr.B	Typical	1.61	1.45	1.45	2.89

Node Boundary Conditions

	Node Label	X [k/in]	Y [k/in]	Z [k/in]
1	N5	Reaction	Reaction	Reaction
2	N6	Reaction	Reaction	Reaction
3	N7	Reaction	Reaction	Reaction
4	N8	Reaction	Reaction	Reaction
5	N10	Reaction	Reaction	Reaction
6	N12	Reaction	Reaction	Reaction
7	N28	Reaction	Reaction	Reaction
8	N29	Reaction	Reaction	Reaction
9	N36	Reaction	Reaction	Reaction
10	N37	Reaction	Reaction	Reaction
11	N46	Reaction	Reaction	Reaction

Node Boundary Conditions (Continued)

	Node Label	X [k/in]	Y [k/in]	Z [k/in]
12	N48	Reaction	Reaction	Reaction

Hot Rolled Steel Design Parameters

	Label	Shape	Length [in]	Lb y-y [in]	Lb z-z [in]	Lcomp top [in]	Lcomp bot [in]	Function
1	M56	Main Horizontal	144	Segment	Segment	Segment	Segment	Lateral
2	M57	Main Horizontal	144	Segment	Segment	Segment	Segment	Lateral
3	M58	Main Horizontal	144	Segment	Segment	Segment	Segment	Lateral
4	M59	Main Horizontal	144	Segment	Segment	Segment	Segment	Lateral
5	M60	Main Horizontal	144	Segment	Segment	Segment	Segment	Lateral
6	M61	Main Horizontal	144	Segment	Segment	Segment	Segment	Lateral
7	M62	Mast Pipe	120	Segment	Segment	Segment	Segment	Lateral
8	M63	Mast Pipe	120	Segment	Segment	Segment	Segment	Lateral
9	M64	Mast Pipe	120	Segment	Segment	Segment	Segment	Lateral
10	M65	Mast Pipe	120	Segment	Segment	Segment	Segment	Lateral
11	M66	Mast Pipe	120	Segment	Segment	Segment	Segment	Lateral
12	M67	Mast Pipe	120	Segment	Segment	Segment	Segment	Lateral
13	M68	Mast Pipe	120	Segment	Segment	Segment	Segment	Lateral
14	M69	Mast Pipe	120	Segment	Segment	Segment	Segment	Lateral
15	M70	Mast Pipe	120	Segment	Segment	Segment	Segment	Lateral

Member Point Loads (BLC 1 : DL)

	Member Label	Direction	Magnitude [lb, lb-ft]	Location [(in, %)]
1	M67	Y	-32.5	15
2	M68	Y	-32.5	15
3	M64	Y	-32.5	15
4	M67	Y	-32.5	75
5	M68	Y	-32.5	75
6	M64	Y	-32.5	75
7	M63	Y	-12	15
8	M66	Y	-12	15
9	M70	Y	-12	15
10	M63	Y	-97	45
11	M66	Y	-97	45
12	M70	Y	-97	45
13	M63	Y	-86	75
14	M66	Y	-86	75
15	M70	Y	-86	75

Member Point Loads (BLC 1 : DL) (Continued)

	Member Label	Direction	Magnitude [lb, lb-ft]	Location [(in, %)]
16	M64	Y	-101.6	60
17	M67	Y	-101.6	60
18	M68	Y	-101.6	60

Member Area Loads (BLC 2 : Wind X)

	Node A	Node B	Node C	Node D	Direction	Load Direction	Magnitude [psf]
1	N39	N35	N1	N17	X	Two Way	-138.1

Member Area Loads (BLC 3 : Wind Z)

	Node A	Node B	Node C	Node D	Direction	Load Direction	Magnitude [psf]
1	N1	N2	N18	N17	Z	Two Way	138.1

Basic Load Cases

	BLC Description	Category	Y Gravity	Point	Distributed	Area(Member)
1	DL	DL	-1	18		
2	Wind X	WLX				1
3	Wind Z	WLZ				1
4	BLC 2 Transient Area Loads	None			61	
5	BLC 3 Transient Area Loads	None			52	

Load Combinations

	Description	Solve	P-Delta	BLC	Factor	BLC	Factor
1	IBC 16-8	Yes	Y	DL	1		
2	IBC 16-12 (a) (a)	Yes	Y	DL	1	WLX	0.6
3	IBC 16-12 (a) (b)	Yes	Y	DL	1	WLZ	0.6
4	IBC 16-12 (a) (c)	Yes	Y	DL	1	WLX	-0.6
5	IBC 16-12 (a) (d)	Yes	Y	DL	1	WLZ	-0.6
6	IBC 16-15 (a)	Yes	Y	DL	0.6	WLX	0.6
7	IBC 16-15 (b)	Yes	Y	DL	0.6	WLZ	0.6
8	IBC 16-15 (c)	Yes	Y	DL	0.6	WLX	-0.6
9	IBC 16-15 (d)	Yes	Y	DL	0.6	WLZ	-0.6

Envelope Node Reactions

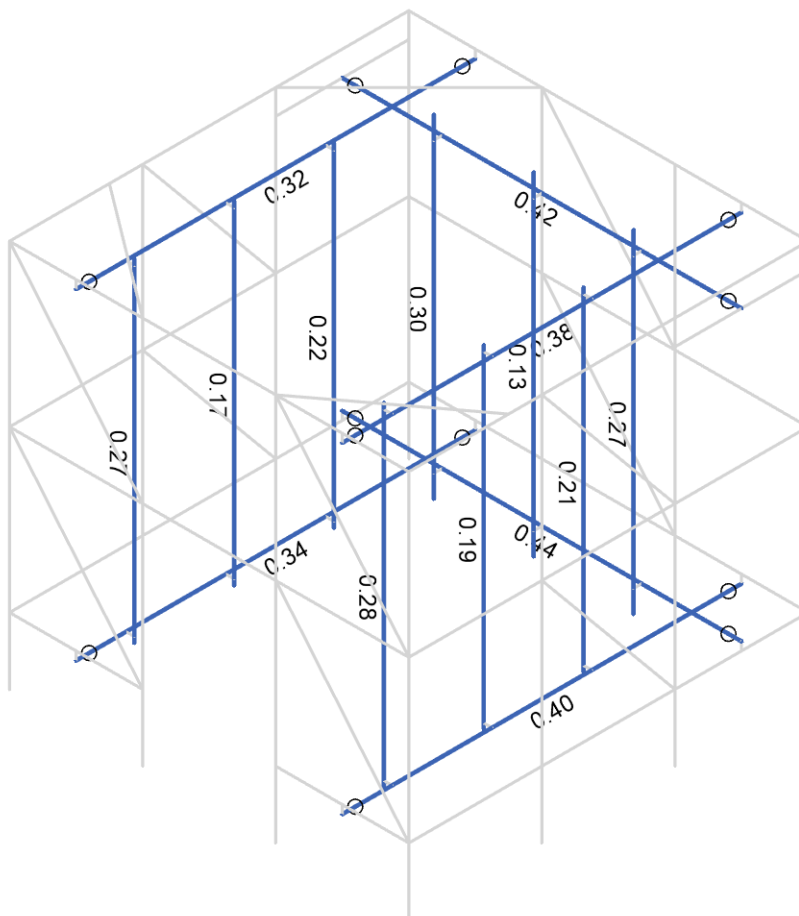
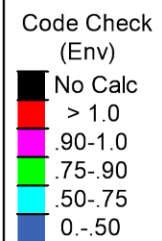
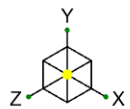
Node Label			X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [lb-ft]	LC	MY [lb-ft]	LC	MZ [lb-ft]	LC
1	N5	max	315.727	6	4538.174	5	1166.943	9	0	9	0	9	0	9
2		min	-310.327	8	-3906.444	7	-1339.049	3	0	1	0	1	0	1
3	N6	max	800.003	6	1568.088	5	704.337	5	0	9	0	9	0	9
4		min	-786.667	4	-937.867	7	-706.573	7	0	1	0	1	0	1
5	N7	max	840.46	2	1621.234	2	731.364	5	0	9	0	9	0	9
6		min	-867.263	8	-981.772	8	-728.869	7	0	1	0	1	0	1
7	N8	max	416.71	6	4738.799	5	1184.563	9	0	9	0	9	0	9
8		min	-416.606	8	-4091.505	7	-1375.239	3	0	1	0	1	0	1
9	N10	max	1137.659	6	4462.159	2	206.43	9	0	9	0	9	0	9
10		min	-1321.655	4	-4119.802	8	-234.713	3	0	1	0	1	0	1
11	N12	max	1348.149	2	4577.218	4	267.583	9	0	9	0	9	0	9
12		min	-1155.462	8	-4205.944	6	-296.345	3	0	1	0	1	0	1
13	N28	max	510.834	2	4135.679	7	1301.058	5	0	9	0	9	0	9
14		min	-492.262	4	-4157.249	5	-1123.969	7	0	1	0	1	0	1
15	N29	max	143.459	2	4357.41	3	1331.566	5	0	9	0	9	0	9
16		min	-150.289	4	-4329.592	9	-1143.37	7	0	1	0	1	0	1
17	N36	max	1046.665	6	3999.239	4	943.934	5	0	9	0	9	0	9
18		min	-945.827	4	-3537.612	6	-899.269	7	0	1	0	1	0	1
19	N37	max	928.956	2	4536.002	2	961.648	5	0	9	0	9	0	9
20		min	-1030.976	8	-4022.177	8	-913.908	7	0	1	0	1	0	1
21	N46	max	1126.174	2	3805.472	2	433.148	9	0	9	0	9	0	9
22		min	-1234.753	8	-3271.424	8	-450.22	3	0	1	0	1	0	1
23	N48	max	1040.095	6	4375.616	4	413.871	9	0	9	0	9	0	9
24		min	-941.941	4	-3779.72	6	-424	3	0	1	0	1	0	1
25	Totals:	max	9611.845	2	3336.489	3	9611.657	5						
26		min	-9611.84	8	2001.887	9	-9611.616	7						

Envelope AISC 15TH (360-16): ASD Member Steel Code Checks

	Member	Shape	Code Check	Loc[in]	LC	Shear Check	Loc[in]	Dir	LC	Pnc/om [lb]	Pnt/om [lb]	Mnyy/om [lb-ft]	Mnzz/om [lb-ft]	Cb	Eqn
1	M56	L4X4X4	0.399	52.898	5	0.06	144	y	4	29698.827	41604.79	2087.556	4359.119	1.5	H2-1
2	M57	L4X4X4	0.376	52.898	5	0.03	144	y	2	29698.827	41604.79	2087.556	4359.119	1.5	H2-1
3	M58	L4X4X4	0.417	108.735	2	0.035	144	y	3	31892.288	41604.79	2087.556	4467.655	1.5	H2-1
4	M59	L4X4X4	0.343	52.898	5	0.062	144	z	4	29698.827	41604.79	2087.556	4359.119	1.5	H2-1
5	M60	L4X4X4	0.323	52.898	5	0.035	144	z	4	29698.827	41604.79	2087.556	4359.119	1.5	H2-1
6	M61	L4X4X4	0.437	108.735	2	0.045	144	y	5	31892.288	41604.79	2087.556	4467.655	1.5	H2-1
7	M62	PIPE 2.5	0.216	117.551	5	0.011	117.551		5	15706.227	33742.515	2392.715	2392.715	2.208	H1-1b
8	M63	PIPE 2.5	0.132	111.429	4	0.007	111.429		4	18248.591	33742.515	2392.715	2392.715	2.272	H1-1b

Envelope AISC 15TH (360-16): ASD Member Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[in]	LC	Shear Check	Loc[in]	Dir	LC	Pnc/om [lb]	Pnt/om [lb]	Mnyy/om [lb-ft]	Mnzz/om [lb-ft]	Cb	Eqn
9	M64	PIPE 2.5	0.208	117.551	5	0.013	117.551		4	15706.227	33742.515	2392.715	2.255	H1-1b
10	M65	PIPE 2.5	0.274	111.429	4	0.016	111.429		4	18248.591	33742.515	2392.715	2.272	H1-1b
11	M66	PIPE 2.5	0.168	117.551	3	0.009	117.551		3	15706.227	33742.515	2392.715	2.253	H1-1b
12	M67	PIPE 2.5	0.266	117.551	3	0.013	117.551		3	15706.227	33742.515	2392.715	2.215	H1-1b
13	M68	PIPE 2.5	0.296	111.429	2	0.017	111.429		2	18248.591	33742.515	2392.715	2.271	H1-1b
14	M69	PIPE 2.5	0.277	117.551	3	0.015	117.551		2	15706.227	33742.515	2392.715	1.828	H1-1b
15	M70	PIPE 2.5	0.191	117.551	3	0.012	117.551		2	15706.227	33742.515	2392.715	2.251	H1-1b



Member Code Checks Displayed (Enveloped)
Envelope Only Solution

Morrison Hershfield

VG

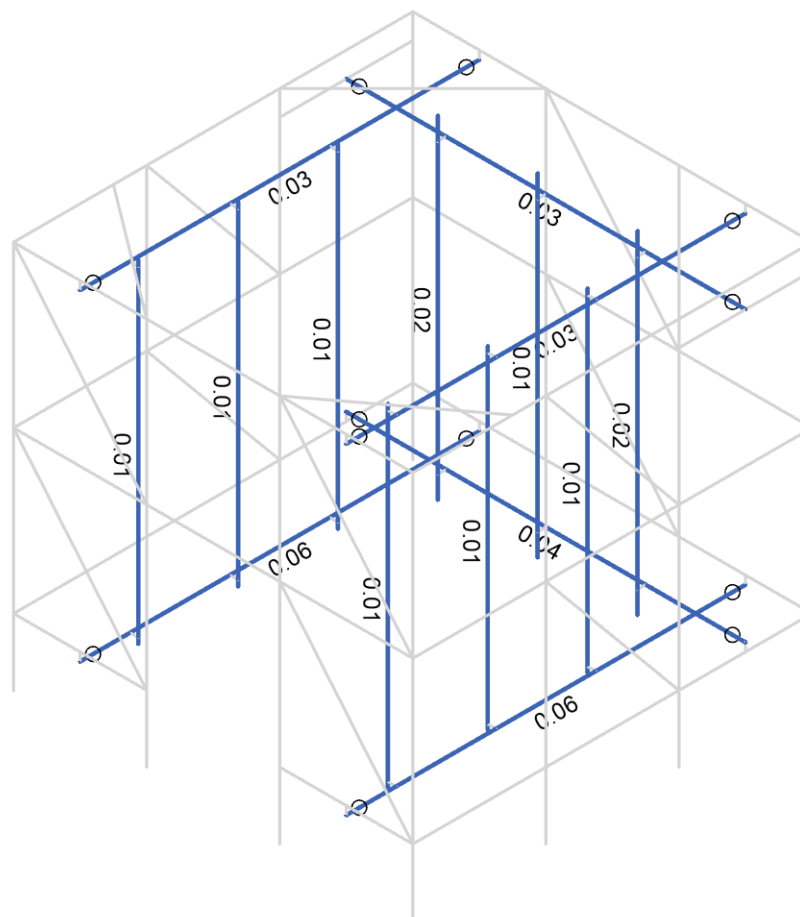
DSH-041 / 2101541

Site #: MIMIA00378A / MIMIA00378A

SK-9

Apr 04, 2022

FRP Enclosed Antenna Mounts.r3d

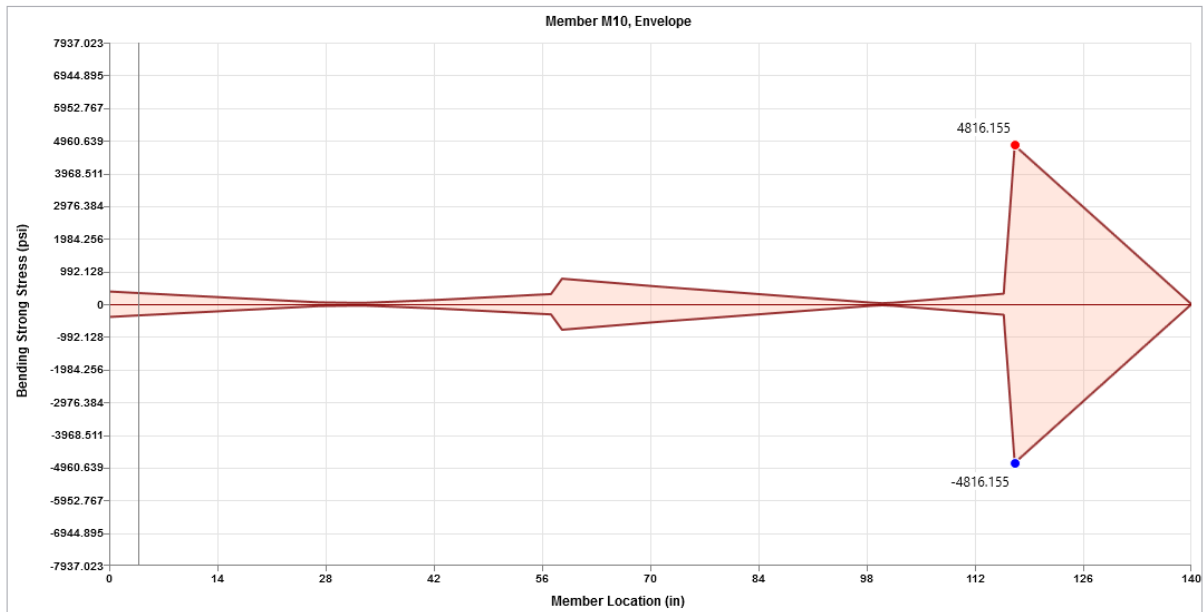


No Calc
 > 1.0
 .90-1.0
 .75-.90
 .50-.75
 0.-.50

FRP Enclosed Antenna Mounts.r3d

FRP Tube Check

MECHANICAL PROPERTIES	ASTM	UNITS	THICKNESS					
			ISO & ISOFR			VEFR		
			1/8"	3/16"-1/4"	3/8"-1"	1/8"	3/16"-1/4"	3/8"-1"
Tensile Stress, LW	D-638	psi	24,000	24,000	24,000	24,000	24,000	24,000
Tensile Stress, CW	D-638	psi	7,500	10,000	10,000	7,500	10,000	10,000
Tensile Modulus, LW	D-638	10 ⁶ psi	2.0	2.0	2.0	2.0	2.0	2.0
Tensile Modulus, CW	D-638	10 ⁶ psi	1.0	1.1	1.4	1.0	1.1	1.4
Compressive Stress, LW	D-695	psi	24,000	24,000	24,000	24,000	24,000	24,000
Compressive Stress, CW	D-695	psi	15,500	16,500	16,500	16,500	17,500	17,500
Compressive Modulus, LW	D-695	10 ⁶ psi	1.8	1.8	1.8	1.8	1.8	1.8
Compressive Modulus, CW	D-695	10 ⁶ psi	1.0	1.0	1.0	1.0	1.0	1.0
Flexural Stress, LW	D-790	psi	35,000	35,000	30,000	35,000	35,000	30,000
Flexural Stress, CW	D-790	psi	15,000	15,000	18,000	15,000	15,000	18,000
Flexural Modulus, LW	D-790	10 ⁶ psi	1.6	2.0	2.0	1.6	2.0	2.0
Flexural Modulus, CW	D-790	10 ⁶ psi	0.9	1.1	1.4	0.9	1.1	1.4
Perpendicular Shear Stress, LW	D-3846	psi	6,000	6,000	6,000	6,000	6,000	6,000
Perpendicular Shear Stress, CW	D-3846	psi	6,000	6,000	6,000	6,000	6,000	6,000
Bearing Stress, LW	D-953	psi	32,000	32,000	32,000	32,000	32,000	32,000
Notched Izod Impact, LW	D-256	ft-lbs/in	18.5	20	20	18.5	20	20
Notched Izod Impact, CW	D-256	ft-lbs/in	5	5	5	5	5	5



Maximum Bending Stress in FRP Tube per Risa-3D = 4816 Psi < 15000 Psi of allowable load.

Allowable Flexural Stress, LW = $30,000 / 3 = 10,000 > 4816$ Psi

[OK!]

Allowable Flexural Stress, CW = $18,000 / 3 = 6,000 > 4816$ Psi

[OK!]

4 x 4 x 3/8 SQUARE TUBE

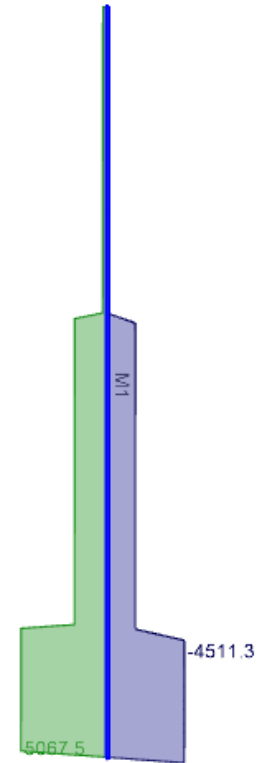
Allowable Concentric Axial Stresses and Loads

A = 5.23 in.² r = 1.48 in.



True Length (ft)	F _a (psi)	P _a (lbs)
1.0	6,595	34,492
1.5	6,595	34,492
2.0	6,595	34,492
2.5	6,595	34,492
3.0	6,595	34,492
3.5	6,595	34,492
4.0	6,595	34,492
4.5	6,595	34,492
5.0	6,595	34,492
5.5	6,595	34,492
6.0	6,595	34,492
6.5	6,318	33,043
7.0	5,895	30,831
7.5	5,490	28,713
8.0	5,175	27,065
8.5	4,874	25,491
9.0	4,576	23,932
9.5	4,298	22,479
10.0	3,960	20,711
10.5	3,712	19,414
11.0	3,420	17,887
11.5	3,209	16,783
12.0	2,961	15,486
12.5	2,719	14,220
13.0	2,566	13,420
13.5	2,411	12,610
14.0	2,268	11,862
14.5	2,113	11,051
15.0	1,964	10,272

The effective "K" value is 0.70. See page 60 for additional information.



Maximum axial force in Vertical post FRP Tube per Risa-3D = 5067.5 lbs < 15,486 lbs of allowable load.

BOLT CONNECTION

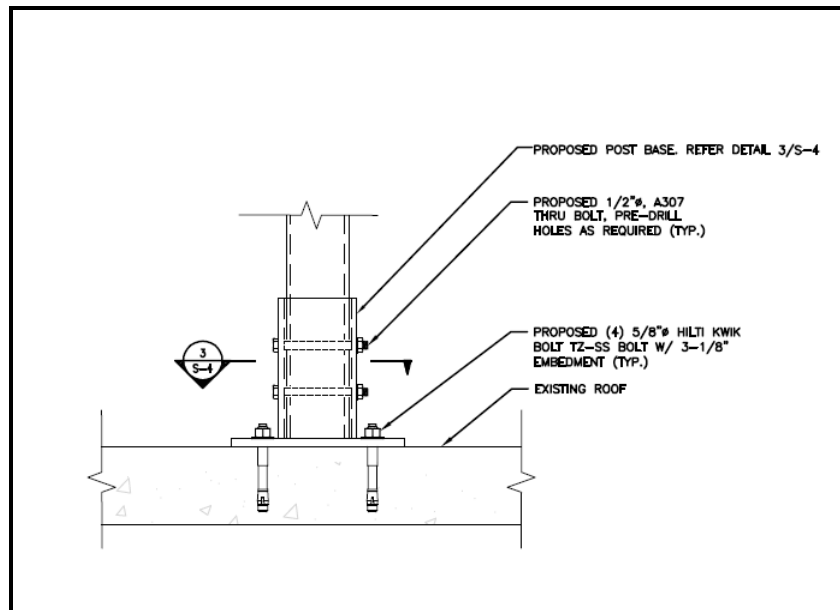
Vertical Post to Roof

LC	Node Label	X [lb]	Y [lb]	Z [lb]	Shear [lb]	Tension [lb]
8	N5	-298.534	360.26	-35.706	300.7	0.0
8	N6	-789.727	1282.484	50.757	791.4	0.0
8	N7	-887.325	-969.003	-29.562	887.8	-969.0
8	N8	-424.137	179.715	-36.512	425.7	0.0
8	N10	-1348.739	-4287.875	41.922	1349.4	-4287.9
8	N12	-1124.36	4623.05	170.896	1137.3	0.0
8	N28	-515.054	10.368	-7.136	515.1	0.0
8	N29	-128.8	-202.379	-39.69	134.8	-202.4
8	N36	-1050.419	3388.235	-76.983	1053.2	0.0
8	N37	-888.019	-4578.189	-40.392	888.9	-4578.2
8	N46	-1405.816	-2960.369	-41.369	1406.425	-2960.4
8	N48	-750.878	4925.659	43.79	752.1538	0.0

Maximum reactions from Risa

Shear = 1407 lbs
Tension = 4578 lbs

Proposed bolt connections are (4) 5/8" Hilti KWIK Bolt TZ-SS Bolt with 3-1/8" embedment per connection.



Reaction per Bolt

Shear = 1407 / 4 = 352 lbs
Tension = 4578 / 4 = 1145 lbs

Table 16 - Hilti KWIK Bolt TZ stainless steel design strength with concrete / pullout failure in cracked concrete^{1,2,3,4,5}

Nominal anchor diameter in.	Effective embed. in. (mm)	Nominal embed. in. (mm)	Tension - ϕN_n				Shear - ϕV_n			
			$f'_c = 2,500$ psi lb (kN)	$f'_c = 3,000$ psi lb (kN)	$f'_c = 4,000$ psi lb (kN)	$f'_c = 6,000$ psi lb (kN)	$f'_c = 2,500$ psi lb (kN)	$f'_c = 3,000$ psi lb (kN)	$f'_c = 4,000$ psi lb (kN)	$f'_c = 6,000$ psi lb (kN)
3/8	2 (51)	2-5/16 (59)	1,520 (6.8)	1,665 (7.4)	1,925 (8.6)	2,355 (10.5)	1,685 (7.5)	1,845 (8.2)	2,130 (9.5)	2,605 (11.6)
1/2	2 (51)	2-3/8 (60)	1,750 (7.8)	1,915 (8.5)	2,210 (9.8)	2,710 (12.1)	2,375 (10.6)	2,605 (11.6)	3,005 (13.4)	3,680 (16.4)
	3-1/4 (83)	3-5/8 (91)	3,235 (14.4)	3,545 (15.8)	4,095 (18.2)	5,015 (22.3)	6,970 (31.0)	7,640 (34.0)	8,820 (39.2)	10,800 (48.0)
5/8	3-1/8 (79)	3-9/16 (91)	3,050 (13.6)	3,345 (14.9)	3,860 (17.2)	4,730 (21.0)	6,575 (29.2)	7,200 (32.0)	8,315 (37.0)	10,185 (45.3)
	4 (102)	4-7/16 (113)	3,795 (16.9)	4,160 (18.5)	4,800 (21.4)	5,880 (26.2)	9,520 (42.3)	10,430 (46.4)	12,040 (53.6)	14,750 (65.6)
3/4	3-3/4 (95)	4-5/16 (110)	5,270 (23.4)	5,775 (25.7)	6,670 (29.7)	8,165 (36.3)	12,200 (54.3)	13,365 (59.5)	15,430 (68.6)	18,900 (84.1)
	4-3/4 (121)	5-9/16 (142)	5,720 (25.4)	6,265 (27.9)	7,235 (32.2)	8,860 (39.4)	12,320 (54.8)	13,495 (60.0)	15,585 (69.3)	19,085 (84.9)

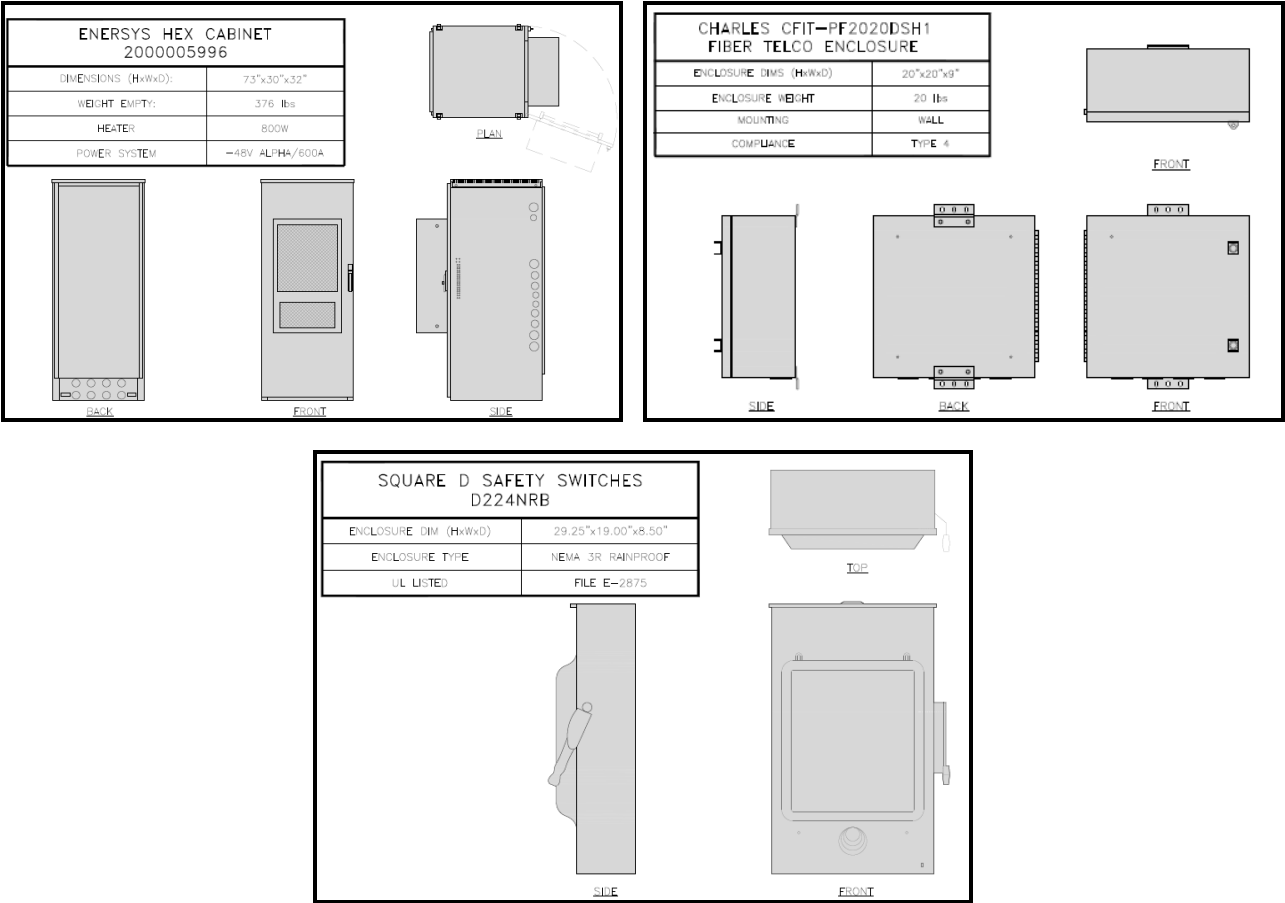
Allowable Tension Capacity = 3345 lbs
Allowable Shear Capacity = 7200 lbs

Tension Capacity = 1145/3345 = 34.2% ← [OK!]

Shear Capacity = 358/7200 = 5.0% [OK!]



PROPOSED EQUIPMENT DETAILS



WIND LOAD CALCULATIONS ON CABINETS:

Code Search

Code: International Building Code 2018

Occupancy:

Occupancy Group = B Business

Risk Category & Importance Factors:

Risk Category: Category II : All bldgs and other structures except those listed in Categories I, III, & IV

Wind Loads - Other Structures: ASCE 7- 16

Ultimate Wind Pressures

Wind Factor = 1.00
Gust Effect Factor (G) = 0.85
Kzt = 1.00
Ultimate Wind Speed = 170 mph
Exposure = D

1. Dish Proposed (1) Eversys HEX 2000005996 Cabinet (73"x30"x32", Wt. = 1000 lb)
Front

A. Solid Freestanding Walls & Solid Signs (& open signs with less than 30% open)

Dist to sign top (h)	100.0 ft	s/h =	0.06	Case A & B
Height (s)	6.1 ft	B/s =	0.41	C _f = 1.85
Width (B)	2.5 ft	Lr/s =	0.00	F = qz G C _f A _s = 141.7 As
Wall Return (Lr) =		Kz =	1.433	A _s = 15.2 sf
Directionality (Kd)	0.85	qz =	90.1 psf	F = 2155 lbs
ASCE7 Load Combinations Use: <input type="text"/>				

Side

A. Solid Freestanding Walls & Solid Signs (& open signs with less than 30% open)

Dist to sign top (h)	100.0 ft	s/h =	0.06	Case A & B
Height (s)	6.1 ft	B/s =	0.44	C _f = 1.85
Width (B)	2.7 ft	Lr/s =	0.00	F = qz G C _f A _s = 141.7 As
Wall Return (Lr) =		Kz =	1.433	A _s = 16.2 sf
Directionality (Kd)	0.85	qz =	90.1 psf	F = 2299 lbs
ASCE7 Load Combinations Use: <input type="text"/>				

Masonry Slender Wall

Project File: Brick Wall.ec6

LIC# : KW-06013886, Build:20.22.1.8

Morrison Hershfield

(c) ENERCALC INC 1983-2021

DESCRIPTION:

Code References

Calculations per TMS 402-16, IBC 2018, CBC 2019, ASCE 7-16

Load Combinations Used : ASCE 7-16

General Information

Calculations per TMS 402-16, IBC 2018, CBC 2019, ASCE 7-16

Construction Type : Grouted Hollow Concrete Masonry

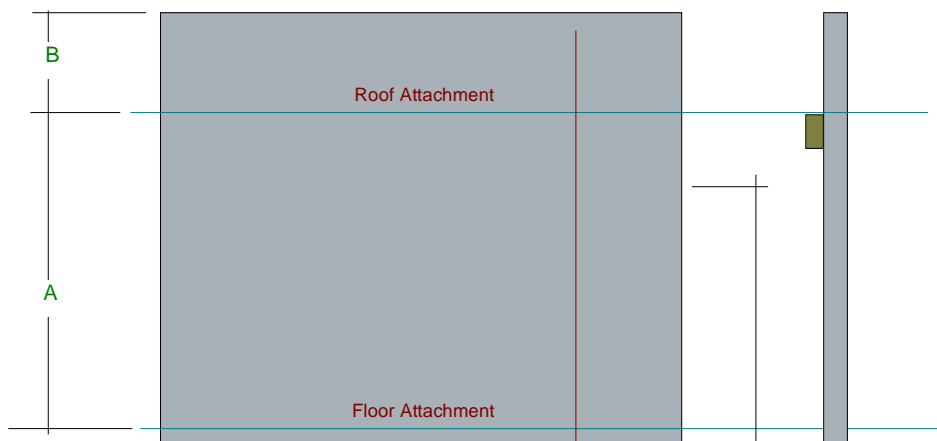
F'm	=	1.50 ksi	Nom. Wall Thickness	8 in	Temp Diff across thickness	=	deg F
Fy - Yield	=	60.0 ksi	Actual Thickness	7.625 in	Min Allow Out-of-plane Defl R _e	=	0.0
Fr - Rupture	=	61.0 psi	Rebar "d" distance	3.8125 in	Minimum Vertical Steel %	=	0.0020
Em = f'm *	=	900.0	Lower Level Rebar . . .				
Max % of ρ_{bal} .	=	0.007138	Bar Size	# 3			
Grout Density	=	140 pcf	Bar Spacing	120 in			
Block Weight		Normal Weight					
Wall Weight	=	0.0 psf					

Wall is grouted at rebar cells only

One-Story Wall Dimensions

A Clear Height	=	10 ft
B Parapet height	=	ft

Wall Support Condition Top Pinned, Bottom F



Vertical Loads

Vertical Concentrated Loads (Applied to full "Strip Width")

Beam Load #1	Eccentricity	18.0 in
	Dist. from Base	6.0 ft

DL : Dead

Lr : Roof Live

Lf : Floor Live

S : Snow

W : Wind

k

Lateral Loads

Wind Loads :

Full area WIND load psf

Seismic Loads :

Wall Weight Seismic Load Input Method : Direct entry of Lateral Wall Weight

Seismic Wall Lateral Load psf

Fp 1.0 = 0.0 psf

	D	Lr	L	E	W	Height	(Applied to full "STRIP Width")
Point Lateral Load					1.077 k	3 ft	
Point Lateral Load					1.077 k	9 ft	

Masonry Slender Wall

Project File: Brick Wall.ec6

LIC# : KW-06013886, Build:20.22.1.8

Morrison Hershfield

(c) ENERCALC INC 1983-2021

DESCRIPTION:

DESIGN SUMMARY

Results reported for "Strip Width" of 180.0 in

Governing Load Combination . . .		Actual Values . . .		Allowable Values . . .	
PASS	Moment Capacity Check +1.20D+W	Maximum Bending Stress Ratio0.9911			
		Max Mu	-2.849 k-ft	Phi * Mn	2.874 k-ft
PASS	Service Deflection Check W Only	Actual Defl. Ratio L/	49660	Allowable Defl. Ratio	150.0
		Max. Deflection	0.002416 in		
PASS	Axial Load Check +1.20D+W	Max Pu / Ag	2.331 psi	Max. Allow. Defl.	0.80 in
		Location	0.1667 ft	0.2 * f'm	300.0 psi
	Reinforcing Limit Check				
		Actual As/bd	0.000240	Max Allow As/bd	0.007138
		Maximum Reactions for Load Combination...			
		Top Horizontal	W Only		1.047 k
		Base Horizontal	W Only		1.107 k
		Vertical Reaction	+D+0.60W		1.0 k

Design Maximum Combinations - Moments

Results reported for "Strip Width" = 12 in.

Load Combination	Axial Load		Mcr k-ft	Mu k-ft	Moment Values			As in^2	As Ratio	0.6 * rho bal	Bar 'd'
	Pu k	0.2*f'm*b*t k			Phi	Phi Mn k-ft					
+1.40D at 5.67 to 6.00	0.000	10.296	0.43	0.07	0.90	0.17	0.011	0.0002	0.0071	0.00	
+1.20D at 5.67 to 6.00	0.000	10.296	0.43	0.06	0.90	0.17	0.011	0.0002	0.0071	0.00	
+1.20D+0.50W at 0.00 to 0.33	0.080	10.296	0.43	0.11	0.90	0.19	0.011	0.0002	0.0071	0.00	
+1.20D-0.50W at 5.67 to 6.00	0.000	10.296	0.43	0.09	0.90	0.17	0.011	0.0002	0.0071	0.00	
+1.20D+W at 0.00 to 0.33	0.080	10.296	0.43	0.19	0.90	0.19	0.011	0.0002	0.0071	0.00	
+1.20D-W at 0.00 to 0.33	0.080	10.296	0.43	0.14	0.90	0.19	0.011	0.0002	0.0071	0.00	
+0.90D+W at 0.00 to 0.33	0.060	10.296	0.43	0.18	0.90	0.19	0.011	0.0002	0.0071	0.00	
+0.90D-W at 0.00 to 0.33	0.060	10.296	0.43	0.14	0.90	0.19	0.011	0.0002	0.0071	0.00	
+1.20D+E at 5.67 to 6.00	0.000	10.296	0.43	0.06	0.90	0.17	0.011	0.0002	0.0071	0.00	
+1.20D-E at 5.67 to 6.00	0.000	10.296	0.43	0.06	0.90	0.17	0.011	0.0002	0.0071	0.00	
+0.90D+E at 5.67 to 6.00	0.000	10.296	0.43	0.05	0.90	0.17	0.011	0.0002	0.0071	0.00	
+0.90D-E at 5.67 to 6.00	0.000	10.296	0.43	0.05	0.90	0.17	0.011	0.0002	0.0071	0.00	

Design Maximum Combinations - Deflections

Results reported for "Strip Width" = 12 in.

Load Combination	Axial Load Pu k	Moment Values		I gross in^4	Stiffness		Deflections	
		Mcr k-ft	Mactual k-ft		I cracked in^4	I effective in^4	Deflection in	Defl. Ratio
D Only at 7.33 to 7.67	0.000	0.43	0.03	326.00	3.00	326.000	0.000	412450.2
+D+0.60W at 4.67 to 5.00	0.067	0.43	0.07	326.00	3.28	326.000	0.002	79,824.9
+D-0.60W at 6.33 to 6.67	0.000	0.43	0.08	326.00	3.00	326.000	0.002	73,406.6
+D+0.450W at 4.33 to 4.67	0.067	0.43	0.06	326.00	3.28	326.000	0.001	103669.9
+D-0.450W at 6.33 to 6.67	0.000	0.43	0.07	326.00	3.00	326.000	0.001	93,311.0
+0.60D+0.60W at 4.67 to 5.00	0.040	0.43	0.06	326.00	3.17	326.000	0.001	81,988.1
+0.60D-0.60W at 6.00 to 6.33	0.000	0.43	0.07	326.00	3.00	326.000	0.002	77,785.2
+D+0.70E at 7.33 to 7.67	0.000	0.43	0.03	326.00	3.00	326.000	0.000	412450.2
+D-0.70E at 7.33 to 7.67	0.000	0.43	0.03	326.00	3.00	326.000	0.000	412450.2
+D+0.5250E at 7.33 to 7.67	0.000	0.43	0.03	326.00	3.00	326.000	0.000	412450.2
+D-0.5250E at 7.33 to 7.67	0.000	0.43	0.03	326.00	3.00	326.000	0.000	412450.2
+0.60D+0.70E at 7.33 to 7.67	0.000	0.43	0.02	326.00	3.00	326.000	0.000	687418.2
+0.60D-0.70E at 7.33 to 7.67	0.000	0.43	0.02	326.00	3.00	326.000	0.000	687418.2
W Only at 5.33 to 5.67	0.000	0.43	0.06	326.00	3.00	326.000	0.002	49,660.4
-W at 5.33 to 5.67	0.000	0.43	0.06	326.00	3.00	326.000	0.002	49,660.4

Masonry Slender Wall

Project File: Brick Wall.ec6

LIC# : KW-06013886, Build:20.22.1.8

Morrison Hershfield

(c) ENERCALC INC 1983-2021

DESCRIPTION:

0.000	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.0
0.000	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.0

Project Title:
 Engineer:
 Project ID:
 Project Descr:

Masonry Slender Wall

Project File: Brick Wall.ec6

LIC# : KW-06013886, Build:20.22.1.8

Morrison Hershfield

(c) ENERCALC INC 1983-2021

DESCRIPTION: --None--

Reactions - Vertical & Horizontal

Load Combination	Base Horizontal	Top Horizontal	Vertical @ Wall Base
D Only	0.2 k	0.18 k	1.000 k
+D+0.60W	0.8 k	0.45 k	1.000 k
+D-0.60W	0.5 k	0.81 k	1.000 k
+D+0.450W	0.7 k	0.29 k	1.000 k
+D-0.450W	0.3 k	0.65 k	1.000 k
+0.60D+0.60W	0.8 k	0.52 k	0.600 k
+0.60D-0.60W	0.6 k	0.74 k	0.600 k
+D+0.70E	0.2 k	0.18 k	1.000 k
+D-0.70E	0.2 k	0.18 k	1.000 k
+D+0.5250E	0.2 k	0.18 k	1.000 k
+D-0.5250E	0.2 k	0.18 k	1.000 k
+0.60D+0.70E	0.1 k	0.11 k	0.600 k
+0.60D-0.70E	0.1 k	0.11 k	0.600 k
W Only	1.1 k	1.05 k	0.000 k
-W	1.1 k	1.05 k	0.000 k
E Only	0.0 k	0.00 k	0.000 k
E Only * -1.0	0.0 k	0.00 k	0.000 k

Concrete Beam

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Morrison Hershfield

DESCRIPTION: Slab Check_MIMIA00378A

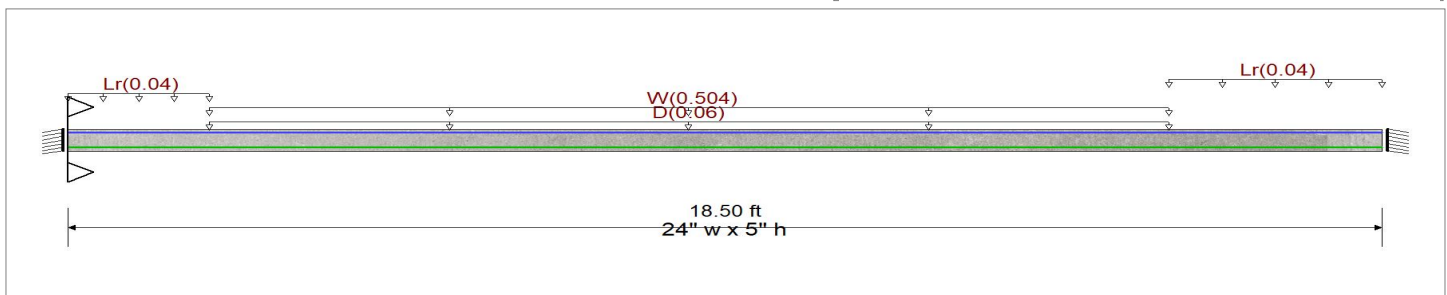
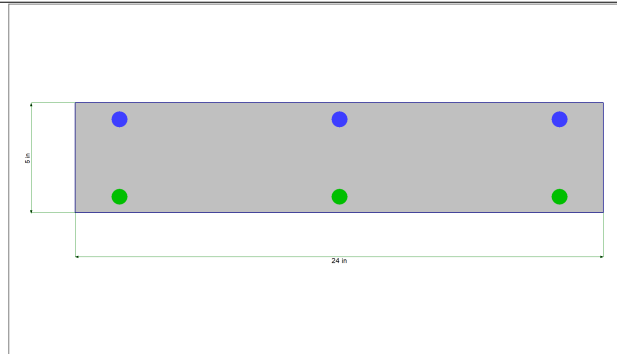
CODE REFERENCES

Calculations per ACI 318-14, IBC 2018, CBC 2019, ASCE 7-16

Load Combination Set : ASCE 7-16

Material Properties

f'_c	=	3.0 ksi	ϕ Phi Values	Flexure :	0.90
$f_r = f'_c^{1/2} * 7.50$	=	410.792 psi		Shear :	0.750
ψ Density	=	145.0 pcf	β_1	=	0.850
λ LtWt Factor	=	1.0			
Elastic Modulus	=	3,122.0 ksi	F_y - Stirrups	=	40.0 ksi
f_y - Main Rebar	=	60.0 ksi	E - Stirrups	=	29,000.0 ksi
E - Main Rebar	=	29,000.0 ksi	Stirrup Bar Size #	=	3
			Number of Resisting Legs Per Stirrup =	=	2

**Cross Section & Reinforcing Details**

Rectangular Section, Width = 24.0 in, Height = 5.0 in

Span #1 Reinforcing....

3-#6 at 0.750 in from Top, from 0.0 to 18.50 ft in this span

3-#6 at 0.750 in from Bottom, from 0.0 to 18.50 ft in this span

Beam self weight calculated and added to loads

Load for Span Number 1

Uniform Load : D = 0.060 k/ft, Extent = 2.0 --> 15.50 ft, Tributary Width = 1.0 ft, (Enclosure DL)

Uniform Load : W = 0.5040 k/ft, Extent = 2.0 --> 15.50 ft, Tributary Width = 1.0 ft, (WL)

Uniform Load : Lr = 0.040 k/ft, Extent = 0.0 --> 2.0 ft, Tributary Width = 1.0 ft, (Roof LL)

Uniform Load : Lr = 0.040 k/ft, Extent = 15.50 --> 18.50 ft, Tributary Width = 1.0 ft, (Roof LL)

DESIGN SUMMARY**Design OK**

Maximum Bending Stress Ratio =		0.878 : 1	Maximum Deflection	
Section used for this span	Typical Section		Max Downward Transient Deflection	0.603 in Ratio = 368 >= 360.
Mu : Applied	-19.368 k-ft		Max Upward Transient Deflection	0.000 in Ratio = 0 < 360.0
Mn * Phi : Allowable	22.059 k-ft		Max Downward Total Deflection	0.603 in Ratio = 368 >= 180.
Location of maximum on span	0.000 ft		Max Upward Total Deflection	0.000 in Ratio = 0 < 180.0
Span # where maximum occurs	Span # 1			

Vertical Reactions

Support notation : Far left is #1

Load Combination	Support 1	Support 2
Overall MAXimum	3.725	3.403
Overall MINimum	0.082	0.118
+D+H	1.548	1.498
+D+L+H	1.548	1.498
+D+Lr+H	1.631	1.614
+D+S+H	1.548	1.498
+D+0.750Lr+0.750L+H	1.610	1.585
+D+0.750L+0.750S+H	1.548	1.498

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Morrison Hershfield

DESCRIPTION: Slab Check_MIMIA00378A

Vertical Reactions

Support notation : Far left is #1

Load Combination	Support 1	Support 2
+D+0.60W+H	3.725	3.403
+D+0.750Lr+0.750L+0.450W+H	3.242	3.016
+D+0.750L+0.750S+0.450W+H	3.180	2.927
+0.60D+0.60W+0.60H	3.104	2.806
+D+0.70E+0.60H	1.548	1.498
+D+0.750L+0.750S+0.5250E+H	1.548	1.498
+0.60D+0.70E+H	0.930	0.897
D Only	1.548	1.498
Lr Only	0.082	0.118
L Only		
S Only		
W Only	3.626	3.178
E Only		
H Only		

Detailed Shear Information

Load Combination	Span Number	Distance (ft)	'd' (in)	Vu (k) Actual	Vu (k) Design	Mu (k-ft)	d*Vu/Mu	Phi*Vc (k)	Comment	Phi*Vs (k)	Phi*Vn (k)	Spacing (in) Req'd Suggest
+1.20D+0.50Lr+L+W+1.60H	1	0.00	4.25	5.53	5.53	19.37	0.10	8.21	PhiVc/2 < Vu <= It<=10", Not I	8.2	8.2	0.0 0.0
+1.20D+0.50Lr+L+W+1.60H	1	0.20	4.25	5.50	5.50	18.25	0.11	8.23	PhiVc/2 < Vu <= It<=10", Not I	8.2	8.2	0.0 0.0
+1.20D+0.50Lr+L+W+1.60H	1	0.40	4.25	5.46	5.46	17.15	0.11	8.24	PhiVc/2 < Vu <= It<=10", Not I	8.2	8.2	0.0 0.0
+1.20D+0.50Lr+L+W+1.60H	1	0.61	4.25	5.43	5.43	16.04	0.12	8.26	PhiVc/2 < Vu <= It<=10", Not I	8.3	8.3	0.0 0.0
+1.20D+0.50Lr+L+W+1.60H	1	0.81	4.25	5.40	5.40	14.95	0.13	8.28	PhiVc/2 < Vu <= It<=10", Not I	8.3	8.3	0.0 0.0
+1.20D+0.50Lr+L+W+1.60H	1	1.01	4.25	5.36	5.36	13.86	0.14	8.30	PhiVc/2 < Vu <= It<=10", Not I	8.3	8.3	0.0 0.0
+1.20D+0.50Lr+L+W+1.60H	1	1.21	4.25	5.33	5.33	12.78	0.15	8.33	PhiVc/2 < Vu <= It<=10", Not I	8.3	8.3	0.0 0.0
+1.20D+0.50Lr+L+W+1.60H	1	1.42	4.25	5.30	5.30	11.71	0.16	8.36	PhiVc/2 < Vu <= It<=10", Not I	8.4	8.4	0.0 0.0
+1.20D+0.50Lr+L+W+1.60H	1	1.62	4.25	5.26	5.26	10.64	0.18	8.39	PhiVc/2 < Vu <= It<=10", Not I	8.4	8.4	0.0 0.0
+1.20D+0.50Lr+L+W+1.60H	1	1.82	4.25	5.23	5.23	9.58	0.19	8.44	PhiVc/2 < Vu <= It<=10", Not I	8.4	8.4	0.0 0.0
+1.20D+0.50Lr+L+W+1.60H	1	2.02	4.25	5.18	5.18	8.53	0.22	8.49	PhiVc/2 < Vu <= It<=10", Not I	8.5	8.5	0.0 0.0
+1.20D+0.50Lr+L+W+1.60H	1	2.22	4.25	5.04	5.04	7.49	0.24	8.55	PhiVc/2 < Vu <= It<=10", Not I	8.6	8.6	0.0 0.0
+1.20D+0.50Lr+L+W+1.60H	1	2.43	4.25	4.89	4.89	6.49	0.27	8.62	PhiVc/2 < Vu <= It<=10", Not I	8.6	8.6	0.0 0.0
+1.20D+0.50Lr+L+W+1.60H	1	2.63	4.25	4.75	4.75	5.51	0.30	8.72	PhiVc/2 < Vu <= It<=10", Not I	8.7	8.7	0.0 0.0
+1.20D+0.50Lr+L+W+1.60H	1	2.83	4.25	4.60	4.60	4.57	0.36	8.84	PhiVc/2 < Vu <= It<=10", Not I	8.8	8.8	0.0 0.0
+1.20D+0.50Lr+L+W+1.60H	1	3.03	4.25	4.45	4.45	3.65	0.43	9.03	Vu < PhiVc/2 lot Req'd 9.6.	9.0	9.0	0.0 0.0
+1.20D+0.50Lr+L+W+1.60H	1	3.23	4.25	4.31	4.31	2.77	0.55	9.33	Vu < PhiVc/2 lot Req'd 9.6.	9.3	9.3	0.0 0.0
+1.20D+0.50Lr+L+W+1.60H	1	3.44	4.25	4.16	4.16	1.91	0.77	9.87	Vu < PhiVc/2 lot Req'd 9.6.	9.9	9.9	0.0 0.0
+1.20D+0.50Lr+L+W+1.60H	1	3.64	4.25	4.02	4.02	1.08	1.00	10.44	Vu < PhiVc/2 lot Req'd 9.6.	10.4	10.4	0.0 0.0
+1.20D+0.50Lr+L+W+1.60H	1	3.84	4.25	3.87	3.87	0.29	1.00	10.44	Vu < PhiVc/2 lot Req'd 9.6.	10.4	10.4	0.0 0.0
+1.20D+0.50Lr+L+W+1.60H	1	4.04	4.25	3.73	3.73	0.48	1.00	10.44	Vu < PhiVc/2 lot Req'd 9.6.	10.4	10.4	0.0 0.0
+1.20D+0.50Lr+L+W+1.60H	1	4.25	4.25	3.58	3.58	1.22	1.00	10.44	Vu < PhiVc/2 lot Req'd 9.6.	10.4	10.4	0.0 0.0
+1.20D+0.50Lr+L+W+1.60H	1	4.45	4.25	3.43	3.43	1.93	0.63	9.52	Vu < PhiVc/2 lot Req'd 9.6.	9.5	9.5	0.0 0.0
+1.20D+0.50Lr+L+W+1.60H	1	4.65	4.25	3.29	3.29	2.61	0.45	9.07	Vu < PhiVc/2 lot Req'd 9.6.	9.1	9.1	0.0 0.0
+1.20D+0.50Lr+L+W+1.60H	1	4.85	4.25	3.14	3.14	3.26	0.34	8.81	Vu < PhiVc/2 lot Req'd 9.6.	8.8	8.8	0.0 0.0
+1.20D+0.50Lr+L+W+1.60H	1	5.05	4.25	3.00	3.00	3.88	0.27	8.64	Vu < PhiVc/2 lot Req'd 9.6.	8.6	8.6	0.0 0.0
+1.20D+0.50Lr+L+W+1.60H	1	5.26	4.25	2.85	2.85	4.47	0.23	8.52	Vu < PhiVc/2 lot Req'd 9.6.	8.5	8.5	0.0 0.0
+1.20D+0.50Lr+L+W+1.60H	1	5.46	4.25	2.71	2.71	5.03	0.19	8.43	Vu < PhiVc/2 lot Req'd 9.6.	8.4	8.4	0.0 0.0
+1.20D+0.50Lr+L+W+1.60H	1	5.66	4.25	2.56	2.56	5.56	0.16	8.36	Vu < PhiVc/2 lot Req'd 9.6.	8.4	8.4	0.0 0.0
+1.20D+0.50Lr+L+W+1.60H	1	5.86	4.25	2.41	2.41	6.07	0.14	8.31	Vu < PhiVc/2 lot Req'd 9.6.	8.3	8.3	0.0 0.0
+1.20D+0.50Lr+L+W+1.60H	1	6.07	4.25	2.27	2.27	6.54	0.12	8.27	Vu < PhiVc/2 lot Req'd 9.6.	8.3	8.3	0.0 0.0
+1.20D+0.50Lr+L+W+1.60H	1	6.27	4.25	2.12	2.12	6.98	0.11	8.23	Vu < PhiVc/2 lot Req'd 9.6.	8.2	8.2	0.0 0.0
+1.20D+0.50Lr+L+W+1.60H	1	6.47	4.25	1.98	1.98	7.40	0.09	8.20	Vu < PhiVc/2 lot Req'd 9.6.	8.2	8.2	0.0 0.0
+1.20D+0.50Lr+L+W+1.60H	1	6.67	4.25	1.83	1.83	7.78	0.08	8.17	Vu < PhiVc/2 lot Req'd 9.6.	8.2	8.2	0.0 0.0
+1.20D+0.50Lr+L+W+1.60H	1	6.87	4.25	1.68	1.68	8.14	0.07	8.14	Vu < PhiVc/2 lot Req'd 9.6.	8.1	8.1	0.0 0.0
+1.20D+0.50Lr+L+W+1.60H	1	7.08	4.25	1.54	1.54	8.46	0.06	8.12	Vu < PhiVc/2 lot Req'd 9.6.	8.1	8.1	0.0 0.0
+1.20D+0.50Lr+L+W+1.60H	1	7.28	4.25	1.39	1.39	8.76	0.06	8.10	Vu < PhiVc/2 lot Req'd 9.6.	8.1	8.1	0.0 0.0
+1.20D+0.50Lr+L+W+1.60H	1	7.48	4.25	1.25	1.25	9.03	0.05	8.08	Vu < PhiVc/2 lot Req'd 9.6.	8.1	8.1	0.0 0.0

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Morrison Hershfield

DESCRIPTION: Slab Check_MIMIA00378A

Detailed Shear Information

Load Combination	Span Number	Distance (ft)	'd' (in)	Vu (k) Actual	Vu (k) Design	Mu (k-ft)	d*Vu/Mu	Phi*Vc (k)	Comment	Phi*Vs (k)	Phi*Vn (k)	Spacing (in) Req'd Suggest
+1.20D+0.50Lr+L+W+1.60H	1	7.68	4.25	1.10	1.10	9.27	0.04	8.07	Vu < PhiVc/2	lot Req'd 9.6.	8.1	0.0 0.0
+1.20D+0.50Lr+L+W+1.60H	1	7.89	4.25	0.96	0.96	9.47	0.04	8.05	Vu < PhiVc/2	lot Req'd 9.6.	8.0	0.0 0.0
+1.20D+0.50Lr+L+W+1.60H	1	8.09	4.25	0.81	0.81	9.65	0.03	8.03	Vu < PhiVc/2	lot Req'd 9.6.	8.0	0.0 0.0
+1.20D+0.50Lr+L+W+1.60H	1	8.29	4.25	0.66	0.66	9.80	0.02	8.02	Vu < PhiVc/2	lot Req'd 9.6.	8.0	0.0 0.0
+1.20D+0.50Lr+L+W+1.60H	1	8.49	4.25	0.52	0.52	9.92	0.02	8.01	Vu < PhiVc/2	lot Req'd 9.6.	8.0	0.0 0.0
+1.20D+0.50Lr+L+W+1.60H	1	8.69	4.25	0.37	0.37	10.01	0.01	7.99	Vu < PhiVc/2	lot Req'd 9.6.	8.0	0.0 0.0
+1.20D+0.50Lr+L+W+1.60H	1	8.90	4.25	0.23	0.23	10.07	0.01	7.98	Vu < PhiVc/2	lot Req'd 9.6.	8.0	0.0 0.0
+1.20D+0.50Lr+L+W+1.60H	1	9.10	4.25	0.08	0.08	10.10	0.00	7.97	Vu < PhiVc/2	lot Req'd 9.6.	8.0	0.0 0.0
+1.20D+L+0.50S+W+1.60H	1	9.30	4.25	-0.07	0.07	10.10	0.00	7.97	Vu < PhiVc/2	lot Req'd 9.6.	8.0	0.0 0.0
+1.20D+L+0.50S+W+1.60H	1	9.50	4.25	-0.21	0.21	10.07	0.01	7.98	Vu < PhiVc/2	lot Req'd 9.6.	8.0	0.0 0.0
+1.20D+L+0.50S+W+1.60H	1	9.70	4.25	-0.36	0.36	10.01	0.01	7.99	Vu < PhiVc/2	lot Req'd 9.6.	8.0	0.0 0.0
+1.20D+L+0.50S+W+1.60H	1	9.91	4.25	-0.50	0.50	9.93	0.02	8.01	Vu < PhiVc/2	lot Req'd 9.6.	8.0	0.0 0.0
+1.20D+L+0.50S+W+1.60H	1	10.11	4.25	-0.65	0.65	9.81	0.02	8.02	Vu < PhiVc/2	lot Req'd 9.6.	8.0	0.0 0.0
+1.20D+L+0.50S+W+1.60H	1	10.31	4.25	-0.79	0.79	9.66	0.03	8.03	Vu < PhiVc/2	lot Req'd 9.6.	8.0	0.0 0.0
+1.20D+L+0.50S+W+1.60H	1	10.51	4.25	-0.94	0.94	9.49	0.04	8.05	Vu < PhiVc/2	lot Req'd 9.6.	8.0	0.0 0.0
+1.20D+L+0.50S+W+1.60H	1	10.72	4.25	-1.09	1.09	9.28	0.04	8.06	Vu < PhiVc/2	lot Req'd 9.6.	8.1	0.0 0.0
+1.20D+L+0.50S+W+1.60H	1	10.92	4.25	-1.23	1.23	9.05	0.05	8.08	Vu < PhiVc/2	lot Req'd 9.6.	8.1	0.0 0.0
+1.20D+L+0.50S+W+1.60H	1	11.12	4.25	-1.38	1.38	8.78	0.06	8.10	Vu < PhiVc/2	lot Req'd 9.6.	8.1	0.0 0.0
+1.20D+L+0.50S+W+1.60H	1	11.32	4.25	-1.52	1.52	8.49	0.06	8.12	Vu < PhiVc/2	lot Req'd 9.6.	8.1	0.0 0.0
+1.20D+L+0.50S+W+1.60H	1	11.52	4.25	-1.67	1.67	8.17	0.07	8.14	Vu < PhiVc/2	lot Req'd 9.6.	8.1	0.0 0.0
+1.20D+L+0.50S+W+1.60H	1	11.73	4.25	-1.81	1.81	7.82	0.08	8.16	Vu < PhiVc/2	lot Req'd 9.6.	8.2	0.0 0.0
+1.20D+L+0.50S+W+1.60H	1	11.93	4.25	-1.96	1.96	7.44	0.09	8.19	Vu < PhiVc/2	lot Req'd 9.6.	8.2	0.0 0.0
+1.20D+L+0.50S+W+1.60H	1	12.13	4.25	-2.11	2.11	7.02	0.11	8.22	Vu < PhiVc/2	lot Req'd 9.6.	8.2	0.0 0.0
+1.20D+L+0.50S+W+1.60H	1	12.33	4.25	-2.25	2.25	6.58	0.12	8.26	Vu < PhiVc/2	lot Req'd 9.6.	8.3	0.0 0.0
+1.20D+L+0.50S+W+1.60H	1	12.54	4.25	-2.40	2.40	6.11	0.14	8.30	Vu < PhiVc/2	lot Req'd 9.6.	8.3	0.0 0.0
+1.20D+L+0.50S+W+1.60H	1	12.74	4.25	-2.54	2.54	5.61	0.16	8.36	Vu < PhiVc/2	lot Req'd 9.6.	8.4	0.0 0.0
+1.20D+L+0.50S+W+1.60H	1	12.94	4.25	-2.69	2.69	5.08	0.19	8.42	Vu < PhiVc/2	lot Req'd 9.6.	8.4	0.0 0.0
+1.20D+L+0.50S+W+1.60H	1	13.14	4.25	-2.84	2.84	4.53	0.22	8.51	Vu < PhiVc/2	lot Req'd 9.6.	8.5	0.0 0.0
+1.20D+L+0.50S+W+1.60H	1	13.34	4.25	-2.98	2.98	3.94	0.27	8.62	Vu < PhiVc/2	lot Req'd 9.6.	8.6	0.0 0.0
+1.20D+L+0.50S+W+1.60H	1	13.55	4.25	-3.13	3.13	3.32	0.33	8.79	Vu < PhiVc/2	lot Req'd 9.6.	8.8	0.0 0.0
+1.20D+L+0.50S+W+1.60H	1	13.75	4.25	-3.27	3.27	2.67	0.43	9.03	Vu < PhiVc/2	lot Req'd 9.6.	9.0	0.0 0.0
+1.20D+L+0.50S+W+1.60H	1	13.95	4.25	-3.42	3.42	2.00	0.61	9.46	Vu < PhiVc/2	lot Req'd 9.6.	9.5	0.0 0.0
+1.20D+L+0.50S+W+1.60H	1	14.15	4.25	-3.56	3.56	1.29	0.98	10.38	Vu < PhiVc/2	lot Req'd 9.6.	10.4	0.0 0.0
+1.20D+L+0.50S+W+1.60H	1	14.36	4.25	-3.71	3.71	0.56	1.00	10.44	Vu < PhiVc/2	lot Req'd 9.6.	10.4	0.0 0.0
+1.20D+L+0.50S+W+1.60H	1	14.56	4.25	-3.86	3.86	0.21	1.00	10.44	Vu < PhiVc/2	lot Req'd 9.6.	10.4	0.0 0.0
+1.20D+L+0.50S+W+1.60H	1	14.76	4.25	-4.00	4.00	1.00	1.00	10.44	Vu < PhiVc/2	lot Req'd 9.6.	10.4	0.0 0.0
+1.20D+L+0.50S+W+1.60H	1	14.96	4.25	-4.15	4.15	1.83	0.80	9.95	Vu < PhiVc/2	lot Req'd 9.6.	10.0	0.0 0.0
+1.20D+L+0.50S+W+1.60H	1	15.16	4.25	-4.29	4.29	2.68	0.57	9.37	Vu < PhiVc/2	lot Req'd 9.6.	9.4	0.0 0.0
+1.20D+L+0.50S+W+1.60H	1	15.37	4.25	-4.44	4.44	3.56	0.44	9.05	Vu < PhiVc/2	lot Req'd 9.6.	9.1	0.0 0.0
+1.20D+0.50Lr+L+W+1.60H	1	15.57	4.25	-4.55	4.55	4.46	0.36	8.85	PhiVc/2 < Vu <= It<=10", Not I		8.9	0.0 0.0
+1.20D+0.50Lr+L+W+1.60H	1	15.77	4.25	-4.58	4.58	5.38	0.30	8.71	PhiVc/2 < Vu <= It<=10", Not I		8.7	0.0 0.0
+1.20D+0.50Lr+L+W+1.60H	1	15.97	4.25	-4.61	4.61	6.31	0.26	8.60	PhiVc/2 < Vu <= It<=10", Not I		8.6	0.0 0.0
+1.20D+0.50Lr+L+W+1.60H	1	16.17	4.25	-4.65	4.65	7.25	0.23	8.52	PhiVc/2 < Vu <= It<=10", Not I		8.5	0.0 0.0
+1.20D+0.50Lr+L+W+1.60H	1	16.38	4.25	-4.68	4.68	8.19	0.20	8.46	PhiVc/2 < Vu <= It<=10", Not I		8.5	0.0 0.0
+1.20D+0.50Lr+L+W+1.60H	1	16.58	4.25	-4.71	4.71	9.14	0.18	8.41	PhiVc/2 < Vu <= It<=10", Not I		8.4	0.0 0.0
+1.20D+0.50Lr+L+W+1.60H	1	16.78	4.25	-4.75	4.75	10.10	0.17	8.37	PhiVc/2 < Vu <= It<=10", Not I		8.4	0.0 0.0
+1.20D+0.50Lr+L+W+1.60H	1	16.98	4.25	-4.78	4.78	11.06	0.15	8.34	PhiVc/2 < Vu <= It<=10", Not I		8.3	0.0 0.0
+1.20D+0.50Lr+L+W+1.60H	1	17.19	4.25	-4.81	4.81	12.03	0.14	8.31	PhiVc/2 < Vu <= It<=10", Not I		8.3	0.0 0.0
+1.20D+0.50Lr+L+W+1.60H	1	17.39	4.25	-4.85	4.85	13.01	0.13	8.29	PhiVc/2 < Vu <= It<=10", Not I		8.3	0.0 0.0
+1.20D+0.50Lr+L+W+1.60H	1	17.59	4.25	-4.88	4.88	13.99	0.12	8.27	PhiVc/2 < Vu <= It<=10", Not I		8.3	0.0 0.0
+1.20D+0.50Lr+L+W+1.60H	1	17.79	4.25	-4.91	4.91	14.98	0.12	8.25	PhiVc/2 < Vu <= It<=10", Not I		8.2	0.0 0.0
+1.20D+0.50Lr+L+W+1.60H	1	17.99	4.25	-4.95	4.95	15.97	0.11	8.23	PhiVc/2 < Vu <= It<=10", Not I		8.2	0.0 0.0
+1.20D+0.50Lr+L+W+1.60H	1	18.20	4.25	-4.98	4.98	16.98	0.10	8.22	PhiVc/2 < Vu <= It<=10", Not I		8.2	0.0 0.0
+1.20D+0.50Lr+L+W+1.60H	1	18.40	4.25	-5.01	5.01	17.99	0.10	8.21	PhiVc/2 < Vu <= It<=10", Not I		8.2	0.0 0.0

Concrete Beam

com\US Tower Projects\Dish Network\DSH-041 - MIMIA00378A\DSH-041 SA\Analysis\DSH-041 Slab Check.ec6 .

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Lic. # : KW-06013886

Morrison Hershfield

DESCRIPTION: Slab Check_MIMIA00378A

Maximum Forces & Stresses for Load Combinations

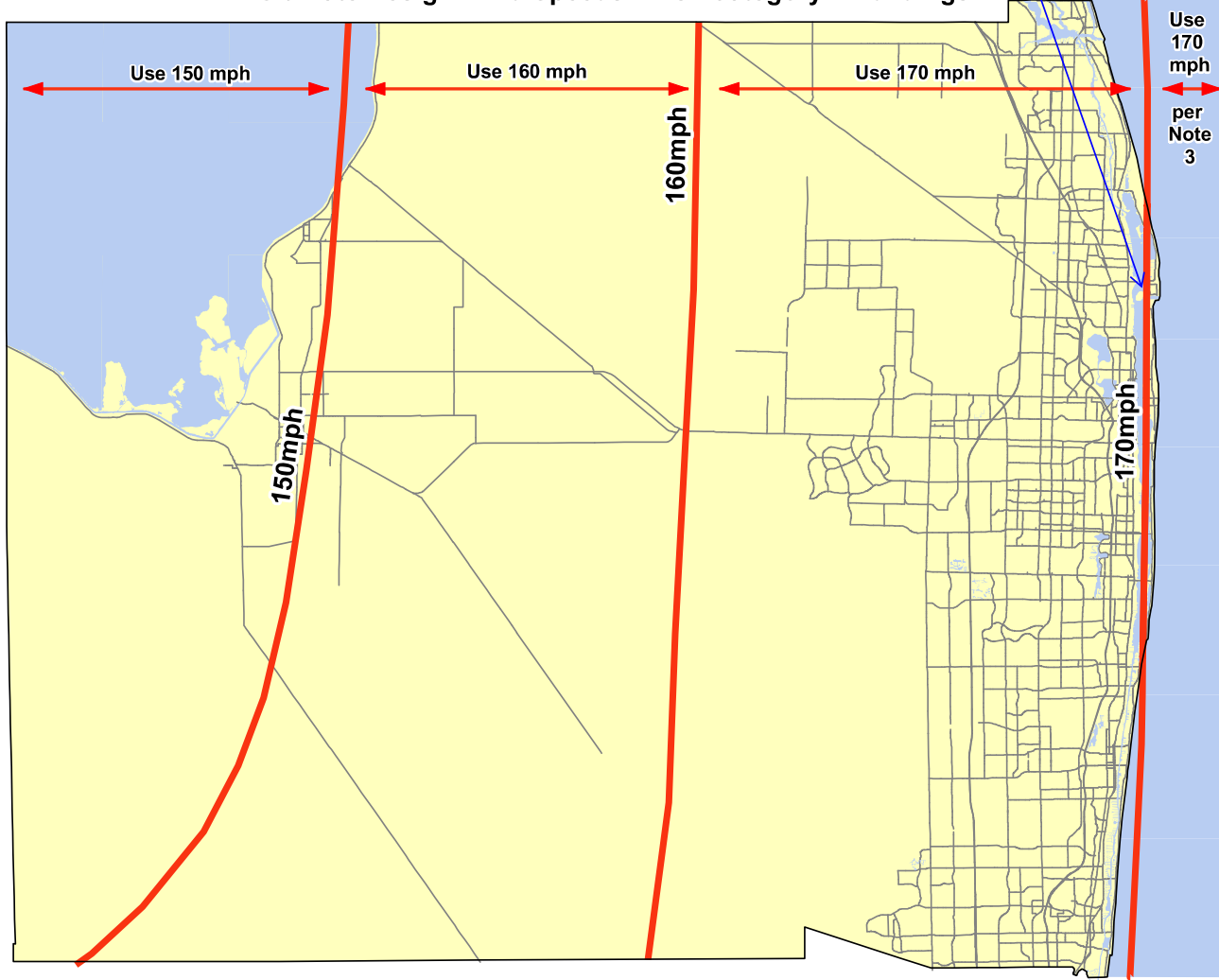
Load Combination Segment	Span #	Location (ft) along Beam	Bending Stress Results (k-ft)		
			Mu : Max	Phi*Mnx	Stress Ratio
MAXimum BENDING Envelope					
Span # 1	1	18.500	-19.37	22.06	0.88
+1.40D+1.60H					
Span # 1	1	18.500	-7.04	22.06	0.32
+1.20D+0.50Lr+1.60L+1.60H					
Span # 1	1	18.500	-6.08	22.06	0.28
+1.20D+1.60L+0.50S+1.60H					
Span # 1	1	18.500	-6.03	22.06	0.27
+1.20D+1.60Lr+L+1.60H					
Span # 1	1	18.500	-6.17	22.06	0.28
+1.20D+1.60Lr+0.50W+1.60H					
Span # 1	1	18.500	-12.82	22.06	0.58
+1.20D+L+1.60S+1.60H					
Span # 1	1	18.500	-6.03	22.06	0.27
+1.20D+1.60S+0.50W+1.60H					
Span # 1	1	18.500	-12.68	22.06	0.57
+1.20D+0.50Lr+L+W+1.60H					
Span # 1	1	18.500	-19.37	22.06	0.88
+1.20D+L+0.50S+W+1.60H					
Span # 1	1	18.500	-19.32	22.06	0.88
+0.90D+W+1.60H					
Span # 1	1	18.500	-17.82	22.06	0.81
+1.20D+L+0.20S+E+1.60H					
Span # 1	1	18.500	-6.03	22.06	0.27
+0.90D+E+0.90H					
Span # 1	1	18.500	-4.53	22.06	0.21

Overall Maximum Deflections

Load Combination	Span	Max. "-" Defl (in)	Location in Span (ft)	Load Combination	Max. "+" Defl (in)	Location in Span (ft)
W Only	1	0.6030	9.250		0.0000	0.000

Palm Beach County - Figure 1609.3(1) **Ultimate Design Wind Speeds - Risk Category II Buildings**

Site ID#: MIMIA00378A



Sources: Florida Department of Community Affairs, Codes and Standards Division; Applied Research Associates, Inc; Florida Geographic Library

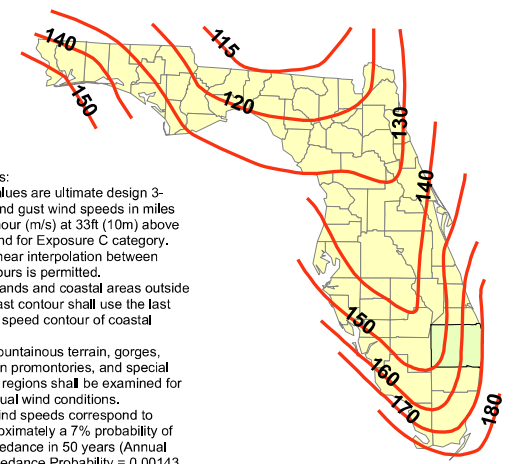
The ultimate design wind speed, Vult, in mph, for the determination of the wind loads shall be determined by Figures 1609.3(1), 1609.3(2), 1609.3(3), and 1609.3(4). The ultimate design wind speed, Vult, for use in the design of Risk Category II buildings and structures shall be obtained from Figure 1609.3(1). The ultimate design wind speed, Vult, for use in the design of Risk Category III buildings and structures shall be obtained from Figure 1609.3(2). The ultimate design wind speed, Vult, for use in the design of Risk Category IV buildings and structures shall be obtained from Figure 1609.3(3). The ultimate design wind speed, Vult, for use in the design of Risk Category I buildings and structures shall be obtained from Figure 1609.3(4). The ultimate design wind speed, Vult, for the special wind regions indicated near mountainous terrain and near gorges shall be in accordance with local jurisdiction requirements. The ultimate design wind speeds, Vult, determined by the local jurisdiction shall be in accordance with Chapter 26 of ASCE 7. The exact location of wind speed lines shall be established by local ordinance using recognized physical landmarks such as major roads, canals, rivers and lake shores wherever possible. To determine the applicable wind speed of a particular parcel, Palm Beach County has developed separate Geographic Information Systems (GIS) tools for each of the Risk Categories, available on the Building Division website at <http://discover.pbcgov.org/pzb/Maps/Wind-Speeds.aspx>

WIND-BORNE DEBRIS REGION. Areas within hurricane-prone regions located:

1. Within 1 mile (1.61 km) of the coastal mean high water line where the ultimate design wind speed, Vult, is 130 mph (58 m/s) or greater; or
2. In areas where the ultimate design wind speed is 140 mph (63.6 m/s) or greater. Linear interpolation between contours may not be utilized in the determination of the Wind-Borne Debris Region. All of Unincorporated Palm Beach County is within the Wind-Borne Debris Region.

For Risk Category II buildings and other structures and Risk Category III buildings and other structures, except health care facilities, the wind-borne debris region shall be based on Figure 1609.3(1). For Risk Category III health care facilities, the wind-borne debris region shall be based on Figure 1609.3(2). For Risk Category IV buildings and other structures, the wind-borne debris region shall be based upon Figure 1609.3(3).

Figure 1609.3(1) Ultimate Design Wind Speeds, for Risk Category II Buildings and Other Structures



- Notes:
1. Values are ultimate design 3-second gust wind speeds in miles per hour (m/s) at 33ft (10m) above ground for Exposure C category.
 2. Linear interpolation between contours is permitted.
 3. Islands and coastal areas outside the last contour shall use the last wind speed contour of coastal area.
 4. Mountainous terrain, gorges, ocean promontories, and special wind regions shall be examined for unusual wind conditions.
 5. Wind speeds correspond to approximately a 7% probability of exceedance in 50 years (Annual Exceedance Probability = 0.00143, MRI = 700 years).



PALM BEACH COUNTY AMENDMENTS TO THE FLORIDA BUILDING CODE - BUILDING, 7th EDITION (2020)

Exposure categories to be utilized for design shall be in accordance with Section 1609.4 of the Florida Building Code, Building.

Date: 10/6/2020 S:\Work\kubber\Projects\Building Department\Wind_Data\WindSpeeds_2020\UltimateDesignWindSpeedMaps_1609.3(1).mxd/sek

0 5 10 Miles



Planning, Zoning and Building Department - GIS

2300 N. Jog Road
 West Palm Beach, FL 33411
 (561) 233-5000
pzbmap@pbcgov.com
www.pbcgov.com/pzb

ASCE 7 Hazards Report

Address:

No Address at This Location

Standard:

ASCE/SEI 7-16

Risk Category: II

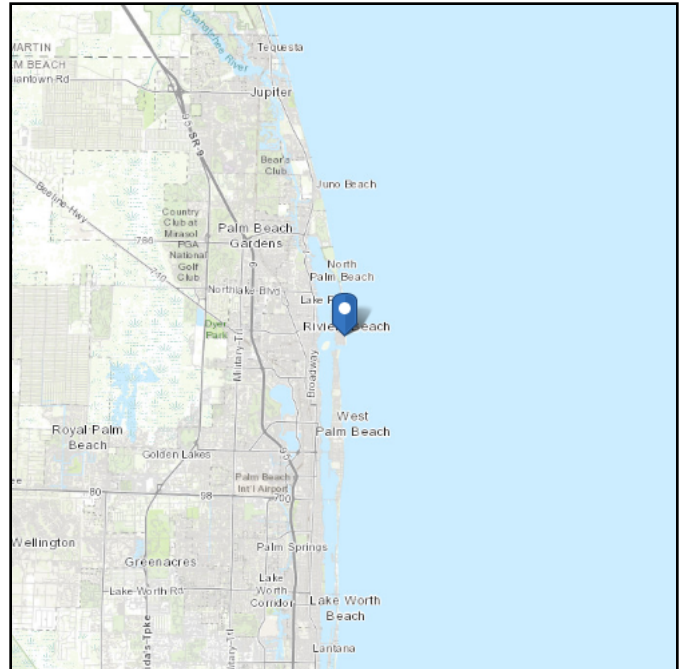
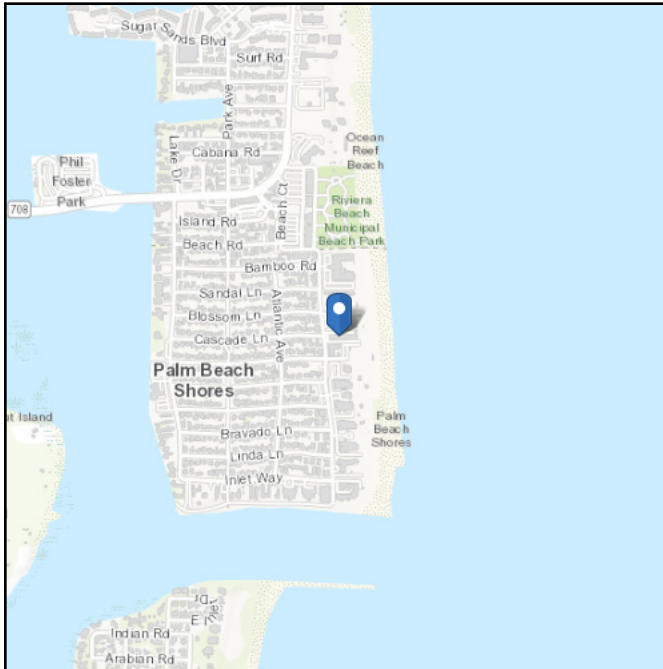
Soil Class:

D - Stiff Soil

Elevation: 6.05 ft (NAVD 88)

Latitude: 26.779169

Longitude: -80.033114



Wind

Results:

Wind Speed	170 Vmph
10-year MRI	89 Vmph
25-year MRI	112 Vmph
50-year MRI	127 Vmph
100-year MRI	138 Vmph

Per Palm Beach County Wind Map, 170 mph ultimate wind speed is to be considered

Data Source:

ASCE/SEI 7-16, Fig. 26.5-1B and Figs. CC.2-1–CC.2-4, and Section 26.5.2

Date Accessed:

Sun Feb 27 2022

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

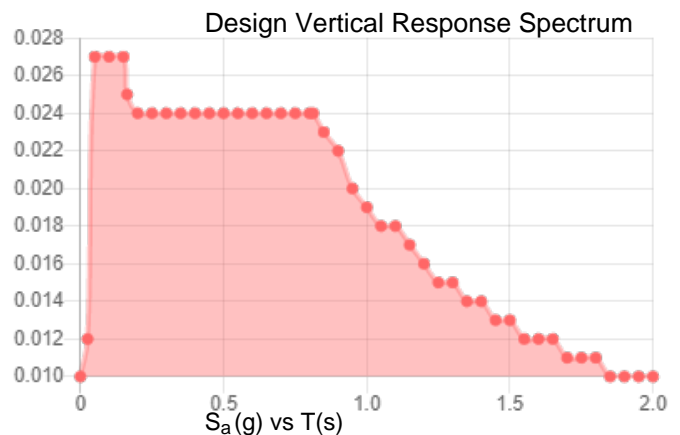
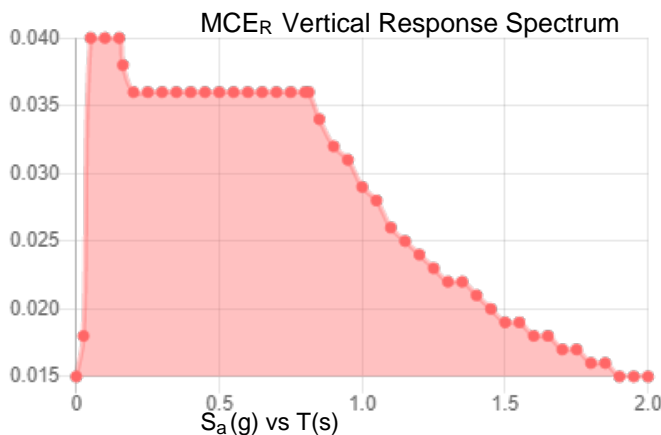
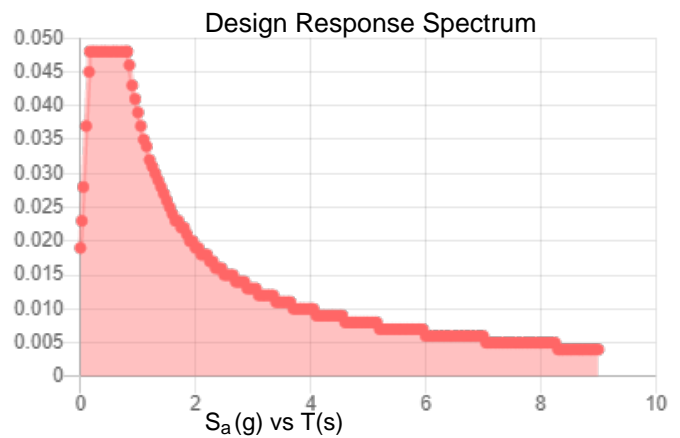
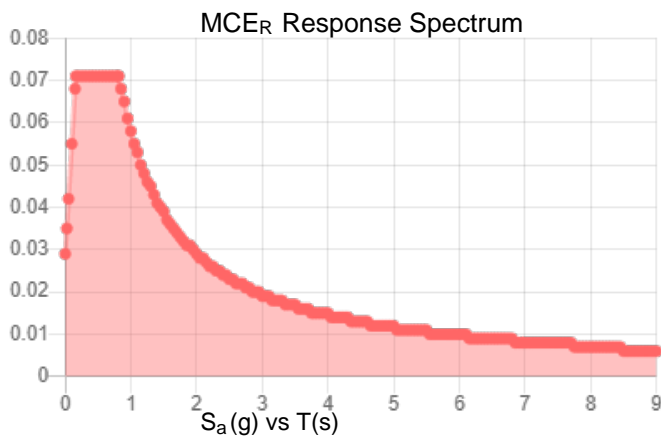
Site is in a hurricane-prone region as defined in ASCE/SEI 7-16 Section 26.2. Glazed openings shall be protected against wind-borne debris as specified in Section 26.12.3.

Site Soil Class: D - Stiff Soil

Results:

S_S :	0.045	S_{D1} :	0.039
S_1 :	0.024	T_L :	8
F_a :	1.6	PGA :	0.021
F_v :	2.4	PGA _M :	0.033
S_{MS} :	0.071	F_{PGA} :	1.6
S_{M1} :	0.058	I_e :	1
S_{DS} :	0.048	C_v :	0.7

Seismic Design Category A



Data Accessed: Sun Feb 27 2022

Date Source:

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

The ASCE 7 Hazard Tool is provided for your convenience, for informational purposes only, and is provided “as is” and without warranties of any kind. The location data included herein has been obtained from information developed, produced, and maintained by third party providers; or has been extrapolated from maps incorporated in the ASCE 7 standard. While ASCE has made every effort to use data obtained from reliable sources or methodologies, ASCE does not make any representations or warranties as to the accuracy, completeness, reliability, currency, or quality of any data provided herein. Any third-party links provided by this Tool should not be construed as an endorsement, affiliation, relationship, or sponsorship of such third-party content by or from ASCE.

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STRUCTURAL DESIGN DRAWINGS

STRUCTURAL GENERAL NOTES

1. REFER TO T-2 FOR SPECIAL INSPECTION CHECK LIST.
2. THE GENERAL NOTES AND TYPICAL DETAILS ARE APPLICABLE TO ALL PARTS OF THE STRUCTURE, AND SHALL BE READ IN CONJUNCTION WITH THE STRUCTURAL DRAWINGS AND PROJECT SPECIFICATIONS.
3. USE ONLY THE LATEST ISSUE OF ANY GOVERNING CODES, STANDARDS OR REGULATIONS REQUIRED OR MENTIONED IN THE FOLLOWING NOTES.
4. ALL CONSTRUCTION, EXCEPT WHERE NOTED OTHERWISE, SHALL COMPLY WITH THE REQUIREMENTS OF THE NOTED BUILDING CODES AND REFERENCE STANDARDS.
5. VERIFY ALL DIMENSIONS AND REPORT ANY DISCREPANCIES TO THE ENGINEER BEFORE PROCEEDING WITH THE WORK.
6. FOR DETAILS AND DIMENSIONS NOT GIVEN ON STRUCTURAL DRAWINGS, REFER TO ARCHITECTURAL, MECHANICAL AND ELECTRICAL DRAWINGS.
7. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION BETWEEN TRADES.
8. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO SAFEGUARD ALL EXISTING STRUCTURES AFFECTED BY THIS CONSTRUCTION. ON ANY NEW STRUCTURE OR PORTION THEREOF, DO NOT EXCEED THE DESIGN LOADING INDICATED ON THESE DRAWINGS.
9. ALL DESIGN LOADING INDICATED ON THESE DRAWINGS ARE SPECIFIED (UNFACTORED) LOADS, UNLESS OTHERWISE INDICATED.
10. ALL CONNECTION FORCES AND BRACING FORCES SHOWN ON THESE DRAWINGS ARE THE CRITICAL UNFACTORED FORCES UNLESS OTHERWISE INDICATED.
11. DO NOT SCALE THE DRAWINGS.
12. THE DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF MORRISON HERSHFIELD CORPORATION AND MAY NOT BE REPRODUCED IN ANY FORM WITHOUT WRITTEN PERMISSION.

FRP STRUCTURAL MEMBERS

1. FRP STRUCTURAL SHAPES SHALL BE STEALTH FRP SERIES 1525, OR APPROVED EQUAL MANUFACTURED USING THE PULTRUSION PROCESS.
2. IF PREFABRICATED MEMBERS DO NOT ASSEMBLED PER PLAN, CONTACT MANUFACTURER BEFORE CUTTING OR ALTERING FABRICATED MEMBERS.
3. FRP STRUCTURAL MEMBERS SHALL BE FABRICATED AND ASSEMBLED AS INDICATED ON THE DRAWINGS.
4. THE CONTRACTOR SHALL PROTECT THE FRP STRUCTURAL MEMBERS FRO ABUSE TO PREVENT BREAKAGE, NICKS, GOUGES, ETC. DURING FABRICATION, HANDLING AND INSTALLATION.
5. COAT ANY CUT OR DRILLED EDGES OF FRP STRUCTURAL MEMBERS WITH HETROLAC OR EQUIVALENT RESIN OR ACRYLIC SEALER.
6. FRP BOLTS SHOULD BE TIGHTENED 1/2 TURN PAST SNUG AND LOCKED WITH EPOXY.

STRUCTURAL STEEL NOTES

1. THESE NOTES EXCLUDE PRE-MANUFACTURED TOWER & ANTENNA PLATFORMS DESIGNED & ENGINEERED BY THE MANUFACTURER.
2. FABRICATOR AND WELDERS MUST BE CERTIFIED TO APPLICABLE SECTIONS OF ANSI/AWS D1.1 - STRUCTURAL WELDING CODE - STEEL.
3. ALL WELDS NOT SHOWN ON DESIGN DRAWINGS SHALL BE SUCH AS TO DEVELOP 100% OF STRENGTH OF THE BASE METAL.
4. ALL BOLTED CONNECTIONS SHALL BE BEARING TYPE CONNECTIONS CONFORMING TO "RCSC SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS".
5. IN ALL CASES CONNECTIONS SHALL MEET THE REQUIREMENTS OF ANSI/AISC 360.
6. FABRICATOR SHALL NOTIFY ENGINEER OF ANY DISCREPANCIES AND/OR ERRORS ON THE DESIGN DRAWINGS IN TIME TO PREVENT ANY FABRICATION ERRORS.
7. SURFACE PREPARATION OF ALL STRUCTURAL STEEL SHALL BE IN ACCORDANCE WITH THE LATEST ISSUE OF STEEL STRUCTURES PAINTING COUNCIL SPECIFICATION FOR COMMERCIAL BLAST CLEANING SPCC-SP6
8. ALL STEEL SHALL BE HOT DIP GALVANIZED TO MEET THE REQUIREMENTS OF ASTM STANDARD SPECIFICATION A123 WITH FIELD TOUCH UP WITH ZINC RICH PAINT AFTER CONSTRUCTION.

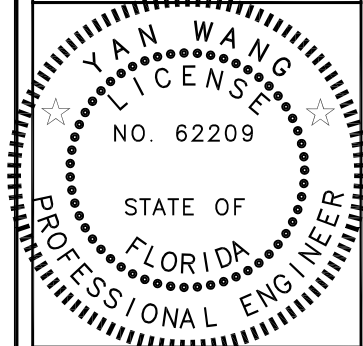
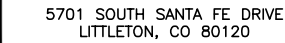
DESIGN CRITERIA NOTES

DESIGN DATA:

2020 FLORIDA BUILDING CODE (2018 IBC)	
WIND SPEED:	170 MPH (ULTIMATE 3 SEC. GUST)
EXPOSURE:	D
RISK CATEGORY=	II

MATERIALS:

STRUCTURAL WF STEEL ONLY	A992 (50 KSI)
STRUCTURAL STEEL	A572 (50 KSI)
X-BRACING ANGLES	A36
ANGLES & PLATES	A36
HSS STRUCTURAL TUBING	A500 GRADE B (46 KSI)
STEEL PIPE	A501 OR A53 GRADE B
HIGH STRENGTH BOLTS	A325 N OR SC CLASS A
WELDING ELECTRODES	E70XX



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PLAN REVIEW STAMP

DRAWN BY:	CHECKED BY:	APPROVED BY:
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MG	YW	AV
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RFDS REV #: 1

SUBMITTALS		
REV	DATE	DESCRIPTION
A	04/04/2022	ISSUED FOR REVIEW

DISH WIRELESS PROJECT INFORMATION
MIMIA00378A
125 S OCEAN AVE
PALM BEACH SHORES
FL 33477

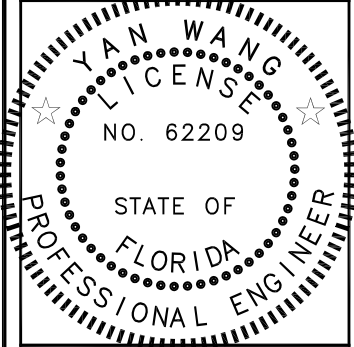
SHEET NUMBER

S-1



5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

MORRISON HERSHFIELD
600 STEWART STREET, SUITE 200
SEATTLE, WA 98101
Tel: 206.268.7370
www.morrisonhershfield.com



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MG	YW	AV

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CONSTRUCTION DOCUMENTS

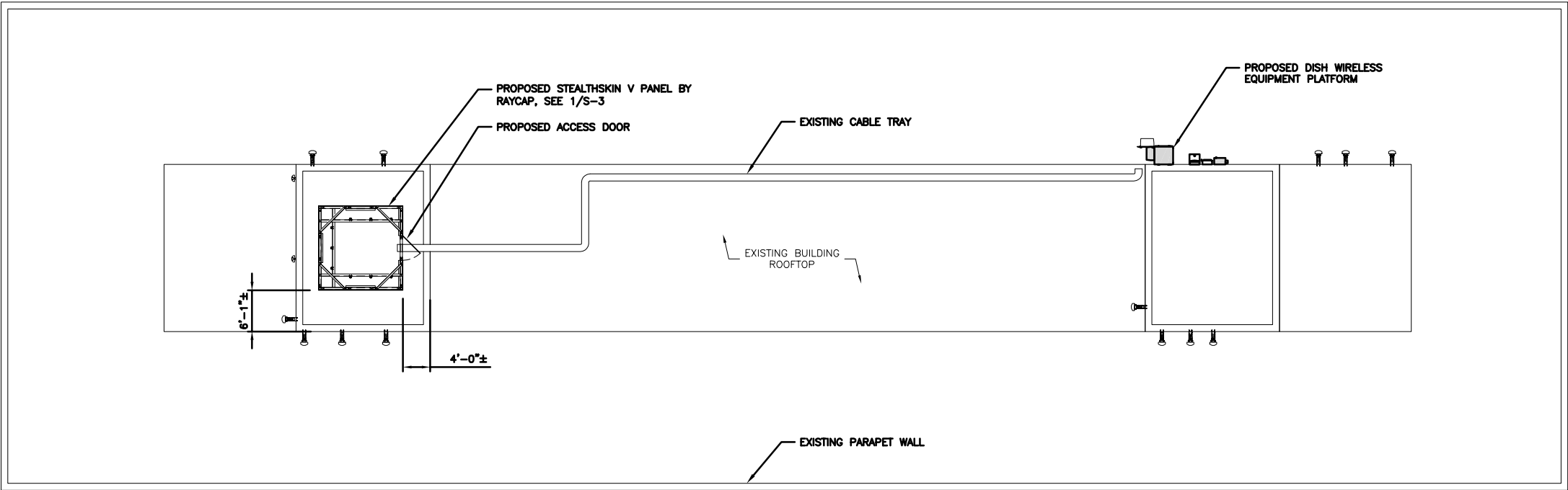
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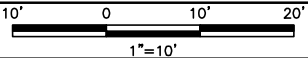
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MIMIA00378A
125 S OCEAN AVE
PALM BEACH SHORES
FL 33477

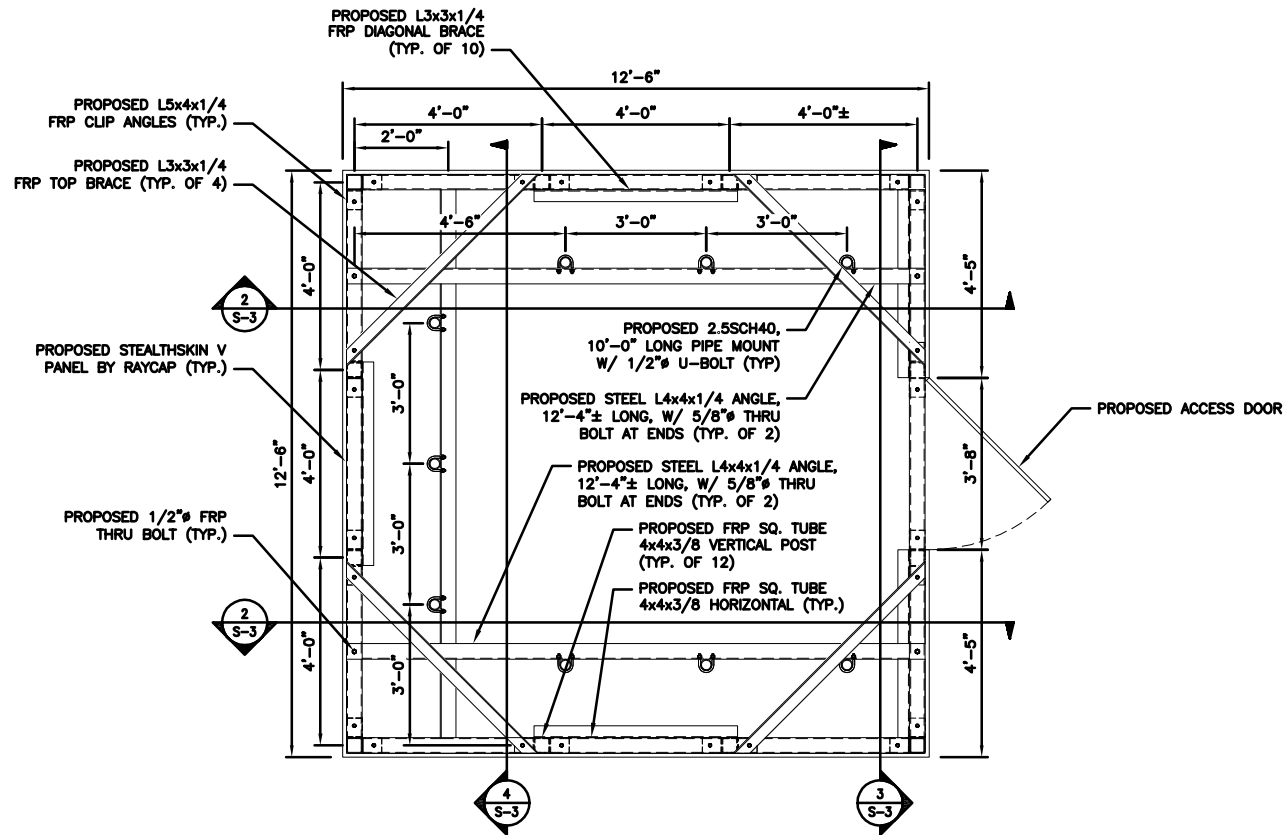
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SRUCTURAL ROOF PLAN

SHEET NUMBER
S-2

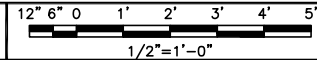


STRUCTURAL ROOF PLAN

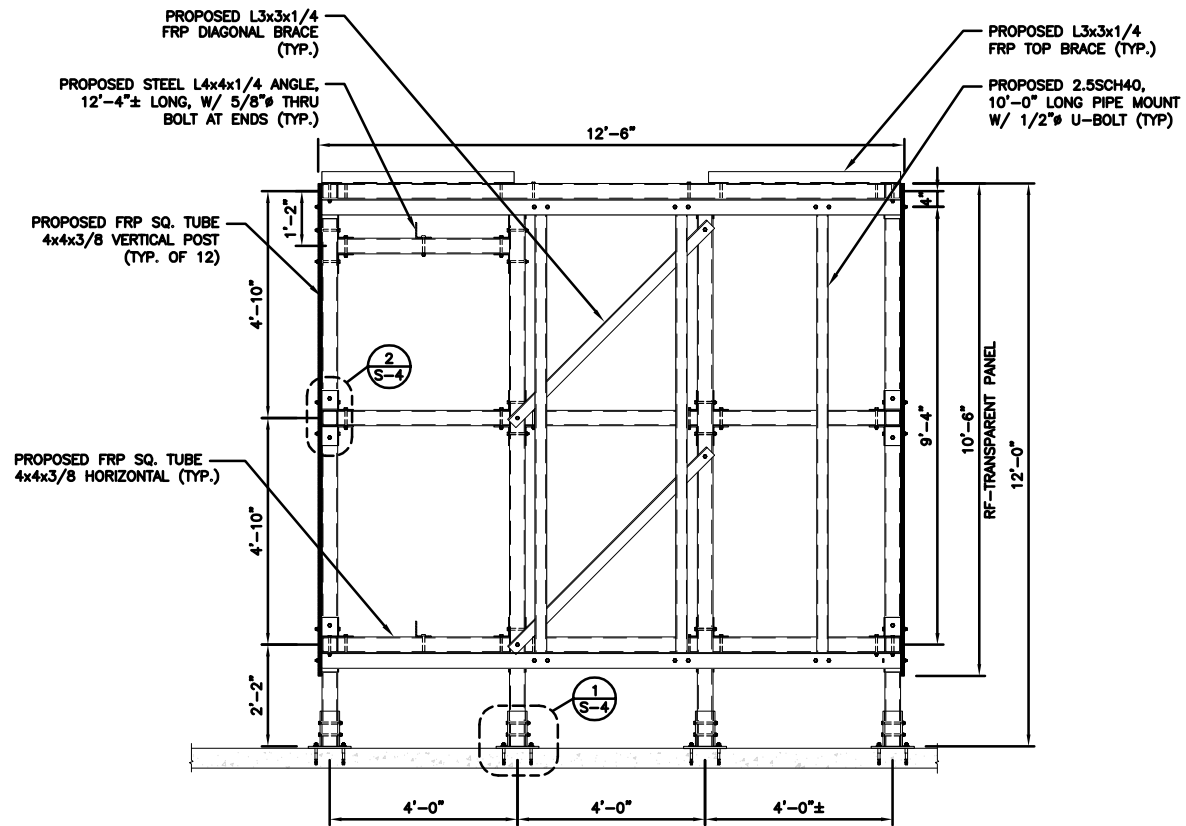




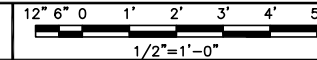
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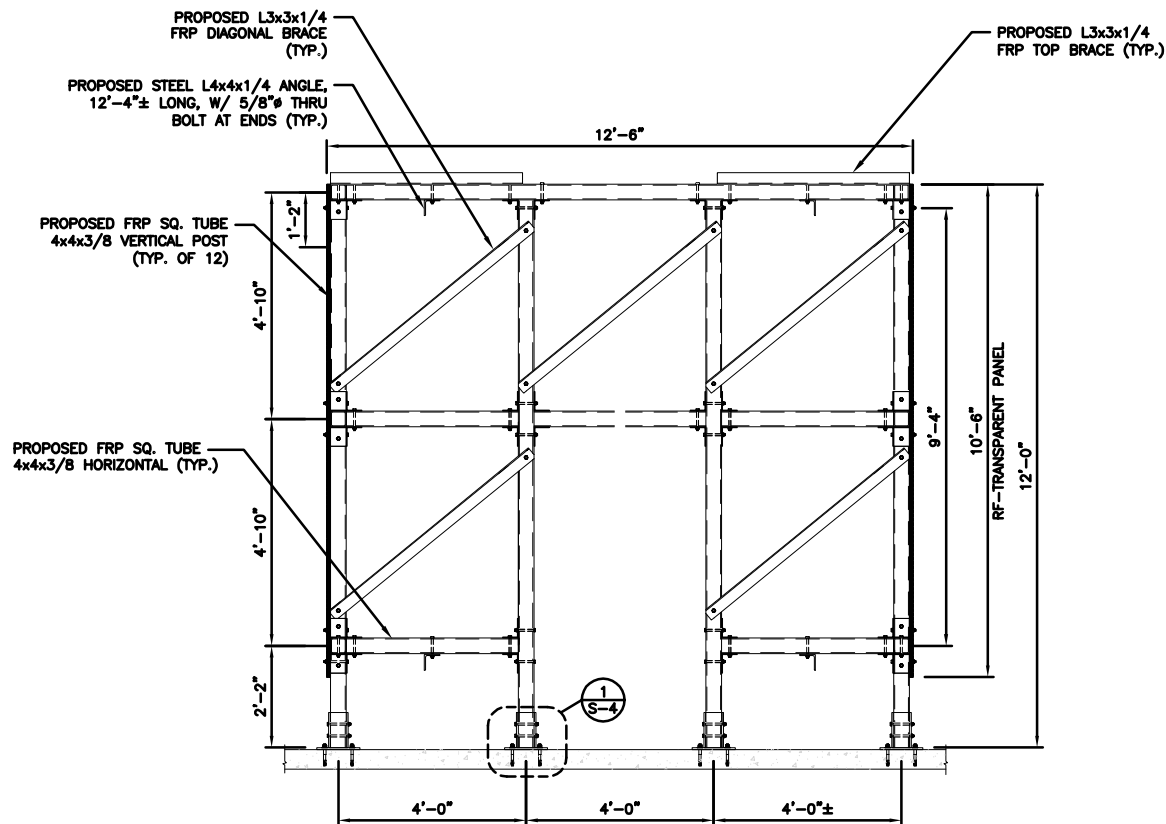
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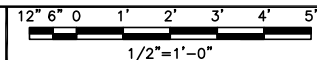
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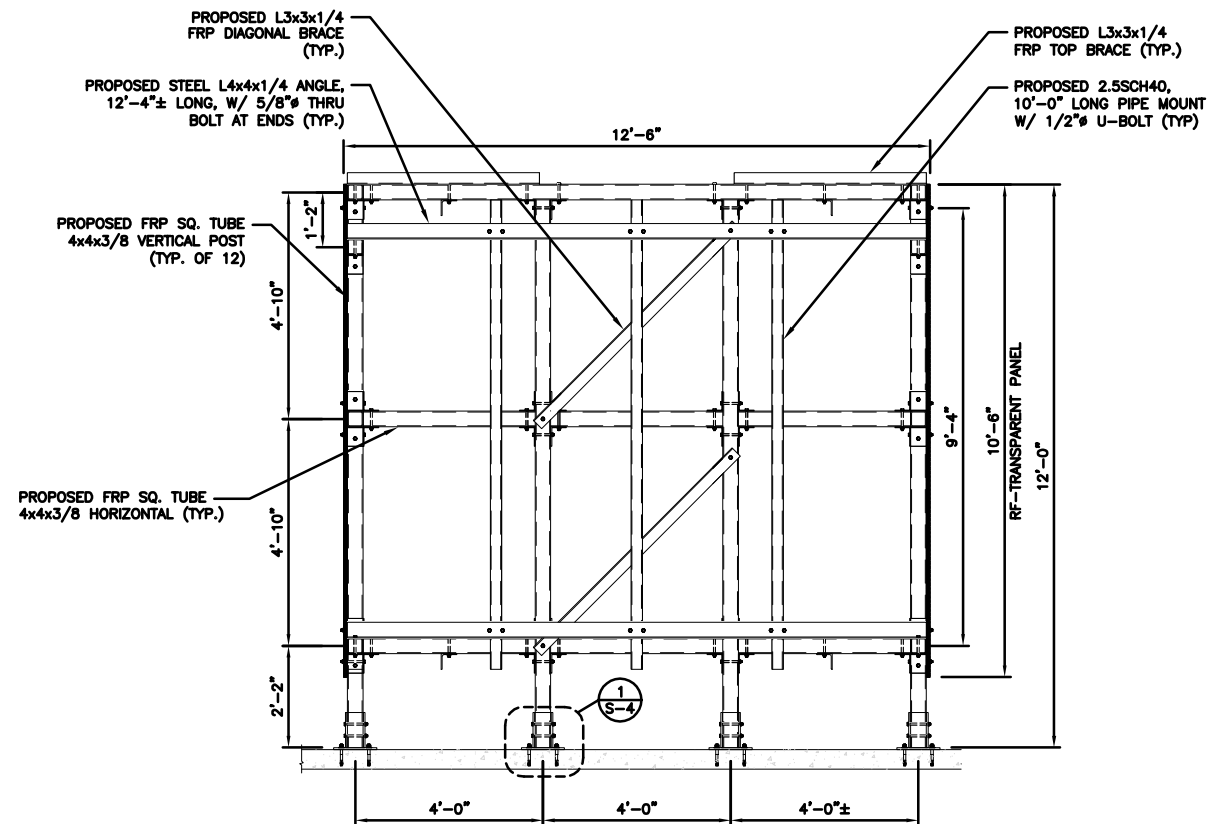
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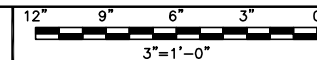
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SECTION

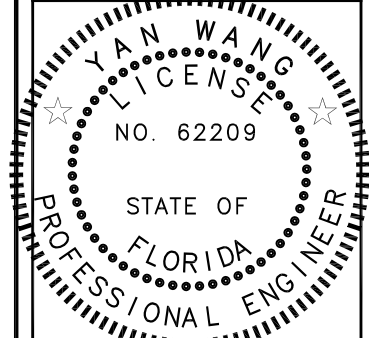


4

dish
wireless.

5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

MORRISON HERSHFIELD
600 STEWART STREET, SUITE 200
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MG YW AV

RFDS REV #: 1

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SUBMITTALS		
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A	04/04/2022	ISSUED FOR REVIEW

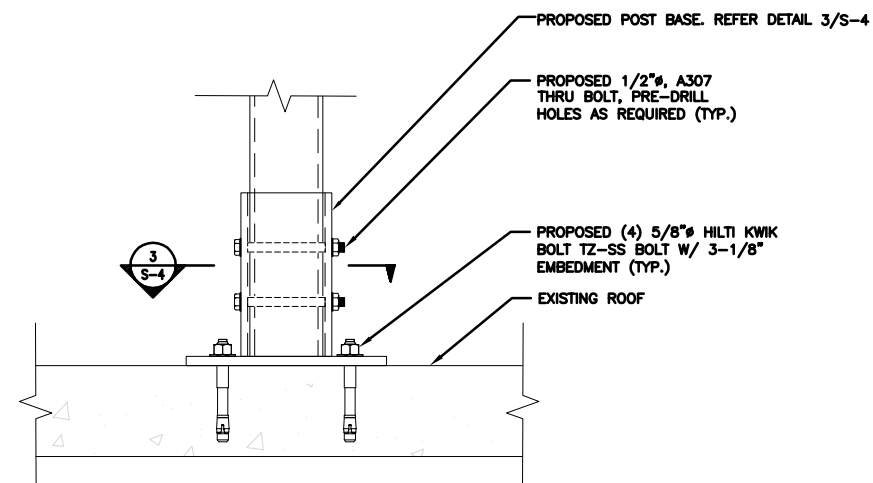
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210154100

DISH WIRELESS PROJECT INFORMATION
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125 S OCEAN AVE
PALM BEACH SHORES
FL 33477

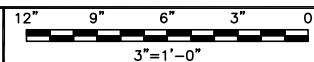
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EQUIPMENT SCREEN
DETAILS

SHEET NUMBER

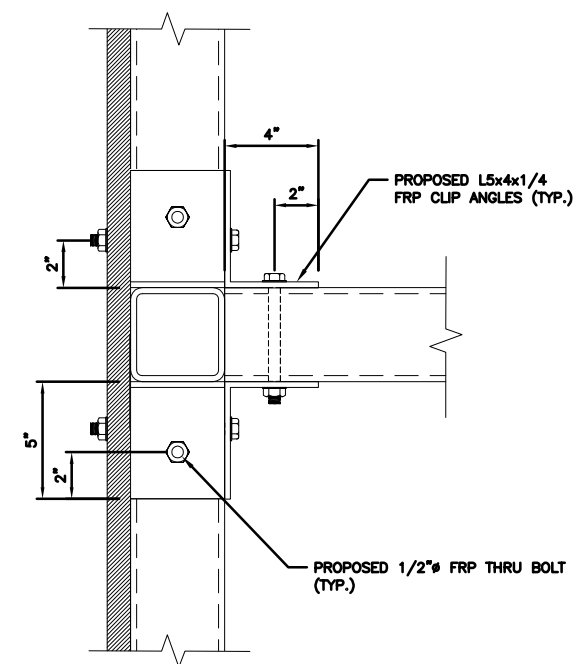
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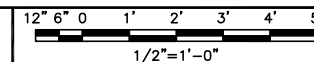
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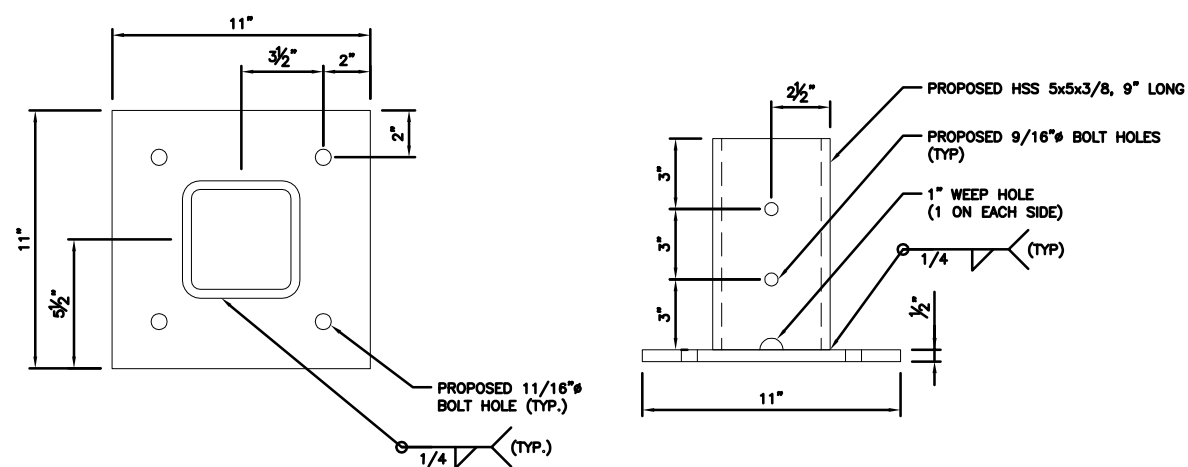
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CLIP ANGLE DETAIL



2



POST BASE DETAIL

NO SCALE

3

NOT USED

NO SCALE

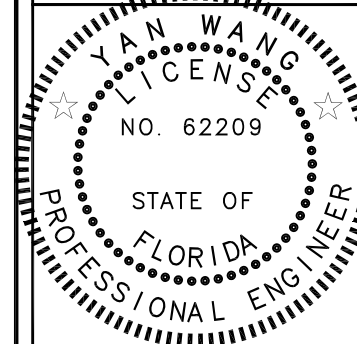
4

dish
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MG YW AV

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CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	04/04/2022	ISSUED FOR REVIEW

A&E PROJECT NUMBER
210154100

DISH WIRELESS PROJECT INFORMATION
MIMIA00378A
125 S OCEAN AVE
PALM BEACH SHORES
FL 33477

SHEET TITLE
FRP ENCLOSURE DETAILS

SHEET NUMBER

S-4

N. ANDREW ROTENSTREICH, SHAREHOLDER
Direct Dial: 205.250.8304
E-Mail Address: arotenstreich@bakerdonelson.com

April 18, 2023

VIA ELECTRONIC MAIL and FEDERAL EXPRESS

Town of Palm Beach Shores
c/o Keith W. Davis
c/o Amity Barnard
Davis & Associates, P.A.
701 Northpoint Parkway, Suite 205
West Palm Beach, Florida 33407
keith@davislawteam.com
mitti@davislawteam.com

Re: Town of Palm Beach Shores (the “Town”); Application No. SE22-01 (the “Application”); Mayan Towers, 125 Ocean Avenue, Palm Beach Shores, Florida 33404 (the “Mayan Towers”); Eligible Facilities Request

Dear Commission Board:

As you are aware, our firm represents DISH Wireless L.L.C. (“DISH”) with respect to the above-referenced matter. Without waiving any claims that DISH has against the Town, including those asserted in the Complaint filed on March 29, 2023 (the “Complaint”), DISH intends to attend the Town Commission Meeting scheduled for April 24, 2023, at 6:30 p.m. (the “April Meeting”) and urge that it approve DISH’s pending Application. To that end, this letter addresses certain issues raised at the March 22, 2023, Planning and Zoning Board Meeting (the “March Meeting”).

1. DISH has demonstrated the factors necessary for the Commission Board to grant a special exception.

As we have discussed, and as explained further below, DISH believes that the Town’s decision to treat DISH’s Application as a request to grant a special exception permit is improper under federal and Florida law, and that the Application should have been processed (and granted) pursuant to Section 6409 of the Spectrum Act, 47 U.S.C. § 1455(a) (“Section 6409”). Notwithstanding the Town’s decision, and without a waiver of DISH’s rights under state or federal law, the Town should approve the Application because DISH has demonstrated that it meets all of the standards for granting a special exception contained in Pf. 15.7 of the Town’s Zoning Code.

DISH has submitted documentation, including Stamped Construction Drawings, demonstrating that it meets all of the factors in Section Pf. 15.7:

- (a) *All structures shall be separated from adjacent and nearby uses by appropriate screening devices.*

Response: The Stamped Construction Drawings demonstrate that all structures are to be separate from adjacent and nearby uses via appropriate screening devices. Further, the project will paint all equipment to match the existing aesthetics of the building.

- (b) *Excessive vehicular traffic is not generated on residential streets.*

Response: The proposed project consists of adding unmanned antennas and equipment to an existing rooftop that already contains rooftop telecommunications equipment. The project will have no traffic impact and will certainly not create “excessive” vehicular traffic on surrounding residential streets.

- (c) *A vehicular parking or traffic problem is not created.*

Response: As noted above, the proposed project consists of adding unmanned antennas and equipment to an existing rooftop that already contains rooftop telecommunications equipment. No traffic or parking problems will be created.

- (d) *Appropriate drives, walks, and buffers are installed.*

Response: The Stamped Construction Drawings demonstrate that the project will not need drives, walks, or buffers to be installed. These elements are inapplicable because the proposed project consists of adding unmanned antennas and equipment to an existing rooftop that already hosts telecommunication equipment.

- (e) *The proposed use will make a substantial contribution to the neighborhood environment and will not infringe on the rights of properties in the vicinity of the excepted use.*

Response: The proposed project consists of adding antennas and equipment to a rooftop containing existing telecommunication facilities and thus will not infringe on the rights of any other property owners.¹ Further, the proposed installation will improve

¹ At the March Hearing, the P&Z Board made argumentative and improper remarks about DISH’s customer demand or quality of service in the Town of Palm Beach Shores. Under Florida law, “the local government may not require information on or evaluate a wireless provider’s business decisions about its service, customer demand for its

wireless service to DISH's customers in the Town, thus improving the Town's wireless infrastructure.

(f) The proposed use will not endanger, restrict or impair public safety.

Response: The Stamped Construction Drawings and Radio Frequency – Electromagnetic Energy (RF-EME) Jurisdictional Report (the “EME Report”)² demonstrate the proposed use will not endanger, restrict, or impair public safety. The proposed project consists of adding antennas and equipment to a rooftop containing existing telecommunication facilities.

DISH has demonstrated that the Application meets all of the standards required for special exception; the Commission should approve the Application.

2. DISH's Application to collocate does not exceed the maximum permitted amount of rooftop coverage by equipment and the Town cannot use Section Pf. 8.3(e) of the Town Zoning Code as a reason for denying DISH's Application.

The Town has incorrectly and inappropriately taken the position that DISH's Application does not qualify as an eligible facilities request (as further defined below) because DISH's proposed installation would “not comply with conditions associated with the siting approval of the construction or modification of the eligible support structure or base station equipment.” 47 C.F.R. § 1.6100(b)(7)(vi). Specifically, the Town has claimed DISH's proposed installation would “exceed the maximum permitted amount of rooftop coverage by equipment which is limited to 5% of the roof area of the building” and cites to Section Pf. 8.3(e) of the Town's Zoning Ordinance. The Town's position fails for several reasons.

First, to the extent Section Pf. 8.3(e) is deemed to apply to DISH's proposed installation, DISH's proposed installation does not exceed the maximum coverage. The total square footage of all transmission equipment on the rooftop (inclusive of the proposed DISH installation) is less than 0.604%. The total square footage is demonstrated on sheet A-2 of the Stamped Construction Drawings and the January 6, 2023, letter from Tower Engineering Professionals, Inc.³ This percentage is probably even smaller because the Town approved Sprint's removal of transmission equipment in permit number 2022-117.

service, or quality of its service to or from a particular area or site, unless the wireless provider voluntarily offers this information to the local government.” § 365.172(13)(b)(1), Fla. Stat.

² A copy of the EME Report is attached as **Exhibit A**.

³ For the convenience of the Commission Board, the January 6, 2023, letter from Tower Engineering Professionals, Inc. setting forth the total square footage of all the transmission equipment on the roof of the Mayan Towers is attached as **Exhibit B**.

Second, based on the Town's response to our March 9, 2023, public records request made pursuant to Chapter 119, Florida Statutes, wireless telecommunications equipment has been installed on the Mayan Towers since 1995. Since that time the Town has processed at least twenty-one requests to install, modify, or upgrade wireless equipment on the roof. From our review of the records the Town produced, the Town has never denied any of these requests based on Section Pf. 8.3(e) or even cited or mentioned this provision when processing these requests, the last of which appears to have been made, approved, and completed in 2021. To the extent that the Town is requiring DISH to comply with the requirements of Section Pf. 8.3(e), or to seek a variance from its requirements, when it does not require and appears to have never required other wireless carriers, then the Town would be violating the Telecommunications Act of 1996's prohibition on discriminating amongst providers of functionally equivalent services. *See* 42 U.S.C. § 332(c)(7)(B)(i)(I).

Third, the Federal Communications Commission ("FCC") has preempted local governments from doing exactly what the Town is attempting to do here – using its ordinances to turn existing wireless base stations into legal, non-conforming uses. In 2014, the FCC held that:

We agree with [Personal Communications Industry Association] that legal, non-conforming structures should be available for modification under Section 6409(a), as long as the modification itself does not “substantially change” the physical dimensions of the supporting structure as defined here. We accordingly reject municipal arguments that any modification of an existing wireless tower or base station that has “legal, non-conforming” status should be considered a “substantial change” to its “physical dimensions.” As PCIA argues, the approach urged by municipalities could thwart the purpose of Section 6409(a) altogether, as simple changes to local zoning codes could immediately turn existing structures into legal, non-conforming uses unavailable for collocation under the statute. Considering Congress’s intent to promote wireless facilities deployment by encouraging collocation on existing structures and considering the requirement in Section 6409(a) that States and municipalities approve covered requests “[n]otwithstanding . . . any other provision of law,” we find the municipal commenters’ proposal to be unsupportably restrictive.

Acceleration of Broadband Deployment by Improving Wireless Facilities Siting Policies, Report and Order, 29 FCC Rcd 12865, ¶ 201 (2014)(emphasis added)(“2014 Infrastructure Order”). Based on the FCC's holding, DISH may collocate at the Mayan Towers even if it is a legal, non-conforming structure as long as the modification itself does not “substantially change” the physical dimensions of the supporting structure as defined in Section 6409 (the proposed installation will obviously not change the Mayan Towers at all). DISH's collocation of transmission equipment on the roof of the Mayan Tower is not a “substantial change” as defined in Section 6409 and the implementing orders.

Fourth, Section Pf 8.3(e) does not constitute a “condition associated with the siting approval of the construction or modification of the eligible support structure or base station

equipment.” Section Pf. 8.3(e) provides that “[t]he total roof area of such roof structures shall not be greater than five (5) percent of the roof area of the building on which they are erected,” the provision is fairly clear that it does not apply to wireless facilities such as DISH’s proposed installation. The provision only applies to “[r]oof structures for housing elevator machinery, stairwell enclosures, tanks, skylights, chimneys, ventilating fans, receiving antennas,⁴ air conditioning equipment and non-habitable architectural features.” The list of features that are considered when calculating the five percent rooftop area limit is exclusive and wireless transmission facilities are not one of the specified features.

3. The Planning and Zoning Board (“P&Z Board”) recommendation to deny DISH’s Application based on radio frequency emissions is not sustainable under federal and Florida law.

The Town is prohibited from considering, or even requiring DISH to provide evidence of, compliance with federal regulations regarding radio frequency emissions in connection with the Application to collocate its equipment at the Mayan Towers. The P&Z Board’s recommendation to deny the Application, based on considering and requiring DISH to provide evidence of radio frequency emissions, clearly and unquestionably violates federal and Florida law.

Section 332(c)(7) of the Communications Act, adopted as part of the Telecommunications Act of 1996, prohibits state and local authorities from regulating the siting of personal wireless facilities on the basis of the environmental effects of radio frequency emissions. 47 U.S.C. § 332(c)(7)(B)(iv); 2014 Infrastructure Order ¶ 245. Section 332(c)(7) states:

No State or local government or instrumentality thereof may regulate the placement, construction, and modification of personal wireless service facilities on the basis of the environmental effects of radio frequency emissions to the extent that such facilities comply with the Commission’s regulations concerning such emissions.

47 U.S.C. § 332(c)(7)(B)(iv)(emphasis added). For this reason alone, the P&Z Board’s recommendation is clearly wrong and not supported by substantial evidence.

In addition, the P&Z Board’s recommendation defies Florida law’s clear instruction that a local government “may not require wireless providers to provide evidence of a wireless communications facility’s compliance with federal regulations.” § 365(13)(c), Fla. Stat. Florida law provides:

⁴ While the Town’s Zoning Ordinance does not appear to define a “receiving antenna,” the Town’s ordinances discuss Receiving Antenna in Chapter 14, Buildings and Building Regulations, Article XI, Receiving Antennae. Section 14-307 of that Article provides that “‘satellite dish antennae’ shall mean a broadcast receiver that allows consumers to receive television signals directly from a satellite rather than from another television broadcasting system.” Neither DISH’s proposed installation nor any of the existing wireless equipment on the rooftop fall within this definition.

Local governments may not require wireless providers to provide evidence of a wireless communications facility's compliance with federal regulations, except evidence of compliance with applicable Federal Aviation Administration requirements under 14 C.F.R. part 77, as amended, and evidence of proper Federal Communications Commission licensure, or other evidence of Federal Communications Commission authorized spectrum use, but may request the Federal Communications Commission to provide information as to a wireless provider's compliance with federal regulations, as authorized by federal law.

§ 365(13)(c), Fla. Stat. (emphasis added). Here, the P&Z Board improperly recommended a denial of DISH's Application based on evidence concerning radio frequency emissions and compliance with federal regulations. For this additional reason, the P&Z Board's recommendation is incorrect and not supported by substantial evidence.

Even though not required to do so, DISH submitted and proffered a EME Report establishing DISH's radio frequency emissions will comply with federal regulations. For this additional reason, the P&Z Board's recommendation is not supported by substantial evidence.⁵

4. The Town is required to approve DISH's Application because DISH's Application satisfies the criteria established by Section 6409.

DISH continues to maintain (as set forth in its recently filed Complaint) that the Application is governed by Section 6409. Under Section 6409, the Town must approve an eligible facilities request within 60 days if the statutory criteria is met. 47 U.S.C. § 1455(a). More specifically, Section 6409 states:

"A State or local government may not deny, and shall approve any eligible facilities request for a modification of an existing tower or base station that does not substantially change the physical dimensions of such tower or base station."

47 U.S.C. § 1455(a) (emphasis added). The FCC explained this to mean:

The provision states without equivocation that the reviewing authority "may not deny, and shall approve" any qualifying application. **This directive leaves no room for a lengthy and discretionary approach to reviewing an application that meets the statutory criteria; once the application meets these criteria, the law forbids the State or local government from denying it.**

⁵ At the March 22, 2023, Meeting, the P&Z Board made argumentative remarks that DISH should have submitted the EME Report sooner. These remarks entirely miss the mark. First, under federal and Florida law, DISH is not even required to provide this EME Report to the Town (and the Town's ordinances do not require it). Second, the Town was required to notify DISH within 30 days of receiving the application, in writing, clearly and specifically what documents or information were missing. 47 C.F.R. § 1.6100(c)(2); *see also* § 365(13)(d)(3)(a), Fla. Stat. The Town never notified DISH that any documents or information was missing let alone this EME Report. Third, DISH entered the EME Report into evidence at the March Meeting for the P&Z Board's consideration.

2014 Infrastructure Order ¶ 227.

Here, DISH's Application meets the statutory criteria. DISH's Application is an eligible facilities request⁶ because it seeks to collocate new wireless transmission equipment on a long-existing base station⁷ located on the roof of the Mayan Towers. Because DISH's Application meets Section 6409's criteria, the law forbids the Town from denying DISH's Application or subjecting DISH to the March Meeting or April Meeting involving a special exception on different factors. The Town's review of the Application should end here, and DISH's Application should have already been approved on this basis alone.

5. Conclusion

For the reasons explained herein, the Town is required to approve the Application. If you have any questions, need additional information, or wish to discuss this matter, please do not hesitate to contact me.

Respectfully submitted,

BAKER, DONELSON, BEARMAN,
CALDWELL & BERKOWITZ, PC



N. Andrew Rotenstreich

⁶ An "eligible facilities request" is "any request for modification of . . . [a] base station that does not substantially change the physical dimensions of the . . . base station, involving (i) Collocation of new transmission equipment; (ii) Removal of transmission equipment; or (iii) Replacement of transmission equipment. 47 C.F.R. § 1.6100(b)(3); 47 U.S.C. § 1455(a)(2).

⁷ "Base station" means "[a] structure or equipment at a fixed location that enables Commission-licensed or authorized wireless communications between user equipment and a communications network." 47 C.F.R. 1.6100(b)(1). Base station does not encompass a tower. *Id.*

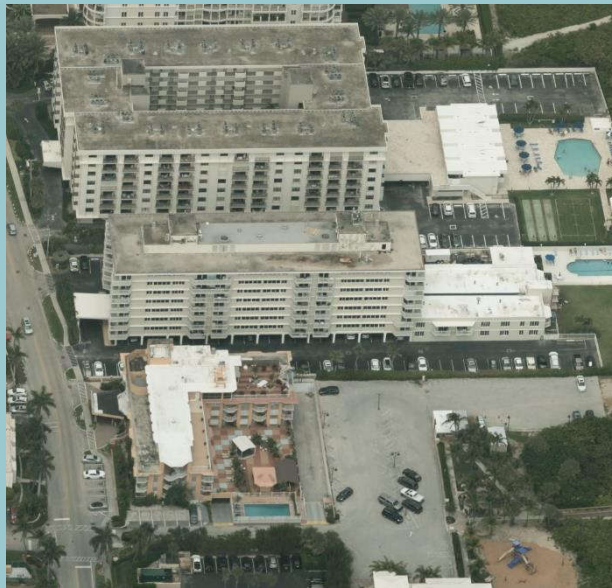
EXHIBIT A

Radio Frequency - Electromagnetic Energy (RF-EME) Jurisdictional Report

Site No. MIMIA00378A

125 S. Ocean Avenue
Palm Beach Shores, Florida 33404
26° 46' 45.12" N, -80° 2' 0.07" W NAD83

EBI Project No. 6222001414
May 27, 2022



Prepared for:
Dish Wireless

Prepared by:
 **EBI Consulting**
environmental | engineering | due diligence

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APPENDICES

APPENDIX A CERTIFICATIONS

APPENDIX B RADIO FREQUENCY ELECTROMAGNETIC ENERGY SAFETY / SIGNAGE PLANS

APPENDIX C FEDERAL COMMUNICATIONS COMMISSION (FCC) REQUIREMENTS

REFERENCE DOCUMENTS (NOT ATTACHED)

CDs: MIMIA00378A_PRELIMCD_20210517164652_JV_05.20.2021_REVIEWED WITH
REDLINES_20210527100033

RFDS: RFDS-MIMIA00378A-PRELIMINARY-20220506-v.5_20220506150257

EXECUTIVE SUMMARY

Purpose of Report

EnviroBusiness Inc. (dba EBI Consulting) has been contracted by Dish Wireless to conduct radio frequency electromagnetic (RF-EME) modeling for Dish Wireless Site MIMIA00378A located at 125 S. Ocean Avenue in Palm Beach Shores, Florida to determine RF-EME exposure levels from proposed Dish Wireless communications equipment at this site. As described in greater detail in Appendix C of this report, the Federal Communications Commission (FCC) has developed Maximum Permissible Exposure (MPE) Limits for the general public and for occupational activities. This report summarizes the results of RF-EME modeling in relation to relevant FCC RF-EME compliance standards for limiting human exposure to RF-EME fields.

Statement of Compliance

A site is considered out of compliance with FCC regulations if there are areas that exceed the FCC exposure limits and there are no RF hazard mitigation measures in place. Any carrier which has an installation that contributes more than 5% of the applicable MPE must participate in mitigating these RF hazards.

As presented in the sections below, based on worst-case predictive modeling, there are no modeled areas on any accessible rooftop or ground-level walking/working surface related to the proposed antennas that exceed the FCC's occupational or general public exposure limits at this site.

At the nearest walking/working surfaces to the Dish Wireless antennas, the maximum power density generated by the DISH antennas is approximately **65.38** percent of the FCC's general public limit (**13.08** percent of the FCC's occupational limit).

The composite exposure level from all carriers on this site is approximately **65.80** percent of the FCC's general public limit (**13.16** percent of the FCC's occupational limit) at the nearest walking/working surface to each antenna.

Recommended control measures are outlined in Section 4.0 and within the Site Safety Plan (attached); Dish Wireless should also provide procedures to shut down and lockout/tagout this wireless equipment in accordance with their own standard operating protocol. Non-telecom workers who will be working in areas of exceedance are required to contact Dish Wireless since only DISH has the ability to lockout/tagout the facility, or to authorize others to do so.

1.0 INTRODUCTION

Radio frequency waves are electromagnetic waves from the portion of the electromagnetic spectrum at frequencies lower than visible light and microwaves. The wavelengths of radio waves range from thousands of meters to around 30 centimeters. These wavelengths correspond to frequencies as low as 3 cycles per second (or hertz [Hz]) to as high as one gigahertz (one billion cycles per second).

Personal Communication (PCS) facilities used by Dish Wireless in this area will potentially operate within a frequency range of 600 to 5000 MHz. Facilities typically consist of: 1) electronic transceivers (the radios or cabinets) connected to wired telephone lines; and 2) antennas that send the wireless signals created by the transceivers to be received by individual subscriber units (PCS telephones). Transceivers are typically connected to antennas by coaxial cables.

Because of the short wavelength of PCS services, the antennas require line-of-site paths for good propagation, and are typically installed a distance above ground level. Antennas are constructed to concentrate energy towards the horizon, with as little energy as possible scattered towards the ground or the sky. This design, combined with the low power of PCS facilities, generally results in no possibility for exposure to approach Maximum Permissible Exposure (MPE) levels, with the exception of in areas in the immediate vicinity of the antennas.

MPE limits do not represent levels where a health risk exists, since they are designed to provide a substantial margin of safety. These limits apply for continuous exposures and are intended to provide a prudent margin of safety for all persons, regardless of age, gender, size or health.

2.0 SITE DESCRIPTION

This project site includes the following proposed wireless telecommunication antennas on a rooftop located at 125 S. Ocean Avenue in Palm Beach Shores, Florida.

Ant #	Operator	Antenna Make	Antenna Model	Frequency (MHz)	Azimuth (deg.)	Mechanical Downtilt (deg.)	Horizontal Beamwidth (Degrees)	Aperture (feet)	Total Power Input (Watts)	Gain (dBd)*	Total ERP (Watts)	Total EIRP (Watts)
1	Dish	Commscope	FFVV-65B-R2 02DT 600 PRELIM	600	355	0	67	6.0	120	11.1	1377.78	2259.57
1	Dish	Commscope	FFVV-65B-R2 02DT 700 PRELIM	700	355	0	61	6.0	120	11.81	1622.49	2660.88
1	Dish	Commscope	FFVV-65B-R2 02DT 1900 PRELIM	1900	355	0	70	6.0	160	15.52	5083.00	8336.12
1	Dish	Commscope	FFVV-65B-R2 02DT 2100 PRELIM	2100	355	0	65	6.0	160	16.04	5729.54	9396.45
2	Dish	Commscope	FFVV-65B-R2 02DT 600 PRELIM	600	200	0	67	6.0	120	11.1	1377.78	2259.57
2	Dish	Commscope	FFVV-65B-R2 02DT 700 PRELIM	700	200	0	61	6.0	120	11.81	1622.49	2660.88
2	Dish	Commscope	FFVV-65B-R2 02DT 1900 PRELIM	1900	200	0	70	6.0	160	15.52	5083.00	8336.12
2	Dish	Commscope	FFVV-65B-R2 02DT 2100 PRELIM	2100	200	0	65	6.0	160	16.04	5729.54	9396.45
3	Dish	Commscope	FFVV-65B-R2 02DT 600 PRELIM	600	270	0	67	6.0	120	11.1	1377.78	2259.57
3	Dish	Commscope	FFVV-65B-R2 02DT 700 PRELIM	700	270	0	61	6.0	120	11.81	1622.49	2660.88
3	Dish	Commscope	FFVV-65B-R2 02DT 1900 PRELIM	1900	270	0	70	6.0	160	15.52	5083.00	8336.12
3	Dish	Commscope	FFVV-65B-R2 02DT 2100 PRELIM	2100	270	0	65	6.0	160	16.04	5729.54	9396.45
4	Unknown	GENERIC	PANEL 4FT 00DT 850	850	0	0	61	4.0	100	11.52	1419.06	2327.25
5	Unknown	GENERIC	PANEL 4FT 00DT 1900	1900	0	0	65	4.0	100	14.65	2917.43	4784.58
6	Unknown	GENERIC	PANEL 4FT 00DT 850	850	0	0	61	4.0	100	11.52	1419.06	2327.25
7	Unknown	GENERIC	PANEL 4FT 00DT 850	850	180	0	61	4.0	100	11.52	1419.06	2327.25
8	Unknown	GENERIC	PANEL 4FT 00DT 1900	1900	180	0	65	4.0	100	14.65	2917.43	4784.58

Ant #	Operator	Antenna Make	Antenna Model	Frequency (MHz)	Azimuth (deg.)	Mechanical Downtilt (deg.)	Horizontal Beamwidth (Degrees)	Aperture (feet)	Total Power Input (Watts)	Gain (dBd)*	Total ERP (Watts)	Total EIRP (Watts)
9	Unknown	GENERIC	PANEL 4FT 00DT 850	850	180	0	61	4.0	100	11.52	1419.06	2327.25
10	Unknown	GENERIC	PANEL 4FT 00DT 850	850	270	0	61	4.0	100	11.52	1419.06	2327.25
11	Unknown	GENERIC	PANEL 4FT 00DT 850	850	0	0	61	4.0	100	11.52	1419.06	2327.25
12	Unknown	GENERIC	PANEL 4FT 00DT 1900	1900	0	0	65	4.0	100	14.65	2917.43	4784.58
13	Unknown	GENERIC	PANEL 4FT 00DT 850	850	180	0	61	4.0	100	11.52	1419.06	2327.25
14	Unknown	GENERIC	PANEL 4FT 00DT 1900	1900	180	0	65	4.0	100	14.65	2917.43	4784.58
15	Unknown	GENERIC	PANEL 4FT 00DT 850	850	180	0	61	4.0	100	11.52	1419.06	2327.25
16	Unknown	GENERIC	PANEL 4FT 00DT 1900	1900	270	0	65	4.0	100	14.65	2917.43	4784.58

- Note there is 1 Dish Wireless antenna per sector at this site. For clarity, the different frequencies for each antenna are entered on separate lines.
- Gain includes antenna and combiner.

Ant #	NAME	X	Y	Antenna Radiation Centerline	Z-Height Penthouse Roof	Z-Height Upper Roof	Z-Height Main Roof	Z-Height Adjacent Building	Z-Height Lower Roof	Z-Height Entrance Cover	Z-Height Ground
1	Dish	71.0	140.6	106.0	11.0	21.0	31.0	63.0	86.0	94.0	106.0
2	Dish	70.7	131.6	106.0	11.0	21.0	31.0	63.0	86.0	94.0	106.0
3	Dish	70.2	136.1	106.0	11.0	21.0	31.0	63.0	86.0	94.0	106.0
4	Unknown	209.1	151.3	82.0	-13.0	-3.0	7.0	39.0	62.0	70.0	82.0
5	Unknown	213.0	151.3	82.0	-13.0	-3.0	7.0	39.0	62.0	70.0	82.0
6	Unknown	219.8	151.3	82.0	-13.0	-3.0	7.0	39.0	62.0	70.0	82.0
7	Unknown	186.9	120.7	92.0	-3.0	7.0	17.0	49.0	72.0	80.0	92.0
8	Unknown	183.6	120.4	92.0	-3.0	7.0	17.0	49.0	72.0	80.0	92.0
9	Unknown	179.4	120.4	92.0	-3.0	7.0	17.0	49.0	72.0	80.0	92.0
10	Unknown	175.4	125.7	92.0	-3.0	7.0	17.0	49.0	72.0	80.0	92.0
11	Unknown	64.8	151.6	92.0	-3.0	7.0	17.0	49.0	72.0	80.0	92.0
12	Unknown	75.2	151.6	92.0	-3.0	7.0	17.0	49.0	72.0	80.0	92.0
13	Unknown	81.4	120.7	92.0	-3.0	7.0	17.0	49.0	72.0	80.0	92.0
14	Unknown	72.1	120.4	92.0	-3.0	7.0	17.0	49.0	72.0	80.0	92.0
15	Unknown	63.7	120.4	92.0	-3.0	7.0	17.0	49.0	72.0	80.0	92.0
16	Unknown	60.6	123.8	92.0	-3.0	7.0	17.0	49.0	72.0	80.0	92.0

• Note the Z-Height represents the distance from the antenna centerline in feet.

The above tables contain an inventory of proposed Dish Wireless antennas and other carrier antennas if sufficient information was available to model them. Note that EBI uses an assumed set of antenna specifications and powers for unknown and other carrier antennas for modeling purposes. The FCC guidelines incorporate two separate tiers of exposure limits that are based upon occupational/controlled exposure limits (for workers) and general population/uncontrolled exposure limits for members of the general public that may be exposed to antenna fields. While access to this site is considered uncontrolled, the analysis has considered exposures with respect to both controlled and uncontrolled limits as an untrained worker may access adjacent rooftop locations. Additional information regarding controlled/uncontrolled exposure limits is provided in Appendix C. Appendix B presents a site safety plan that provides a plan view of the rooftop with antenna locations.

3.0 WORST-CASE PREDICTIVE MODELING

EBI has performed theoretical MPE modeling using RoofMaster™ software to estimate the worst-case power density at the site's nearby broadcast levels resulting from operation of the antennas. RoofMaster™ is a widely-used predictive modeling program that has been developed by Waterford Consultants to predict RF power density values for rooftop and tower telecommunications sites produced by vertical collinear antennas that are typically used in the cellular, PCS, paging and other communications services. Using the computational methods set forth in Federal Communications Commission (FCC) Office of Engineering & Technology (OET) Bulletin 65, "Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields" (OET-65), RoofMaster™ calculates predicted power density in a scalable grid based on the contributions of all RF sources characterized in the study scenario. At each grid location, the cumulative power density is expressed as a percentage of the FCC limits. Manufacturer antenna pattern data is utilized in these calculations. RoofMaster™ models consist of the Far Field model as specified in OET-65 and an implementation of the OET-65 Cylindrical Model (Sula9). The models utilize several operational specifications for different types of antennas to produce a plot of spatially-averaged power densities that can be expressed as a percentage of the applicable exposure limit.

For this report, EBI utilized antenna and power data provided by Dish Wireless and compared the resultant worst-case MPE levels to the FCC's occupational/controlled exposure limits outlined in OET Bulletin 65. The assumptions used in the modeling are based upon information provided by Dish Wireless and information gathered from other sources. Elevations of walking/working surfaces were estimated based on elevations provided and available aerial imagery. Sector orientation assignments were made assuming coverage is directed to areas of site. Changes to antenna mount heights or placement will impact site compliance. The parameters used for modeling are summarized in the Site Description antenna inventory table in Section 2.0.

Two Unknown Carriers also have antennas on the rooftop. Information about these antennas was included in the modeling analysis.

Based on worst-case predictive modeling, there are no modeled areas on any accessible rooftop or ground-level walking/working surface related to the proposed Dish Wireless antennas that exceed the FCC's occupational or general public exposure limits at this site. At the nearest walking/working surfaces to the Dish Wireless antennas, the maximum power density generated by the Dish Wireless antennas is approximately 65.38 percent of the FCC's general public limit (13.08 percent of the FCC's occupational limit). The composite exposure level from all carriers on this site is approximately 65.80 percent of the FCC's general public limit (13.16 percent of the FCC's occupational limit) at the nearest walking/working surface to each antenna.

The Site Safety Plan also presents areas where Dish Wireless antennas contribute greater than 5% of the applicable MPE limit for a site. A site is considered out of compliance with FCC regulations if there are areas that exceed the FCC exposure limits and there are no RF hazard mitigation measures in place. Any carrier which has an installation that contributes more than 5% of the applicable MPE must participate in mitigating these RF hazards.

There are no modeled areas on the rooftop and ground that exceed the FCC's limits for general public or occupational exposure in front of the other carrier antennas.

The inputs used in the modeling are summarized in the Site Description antenna inventory table in Section 2.0. A graphical representation of the RoofMaster™ modeling results is presented in Appendix B. Microwave dish antennas are designed for point-to-point operations at the elevations of the installed equipment rather than ground level coverage. The maximum power density generated by all carrier antennas, including microwaves and panel antennas, is included in the modeling results presented within this report.

4.0 MITIGATION/SITE CONTROL OPTIONS

EBI's modeling indicates that there are no areas in front of the Dish Wireless antennas that exceed the FCC standards for occupational or general public exposure. All exposures above the FCC's safe limits require that individuals be elevated above the rooftop and ground. In order to alert people accessing the rooftop, a Guidelines sign and an NOC Information sign are recommended for installation at each access point to the rooftop. Additionally, Blue Notice signs are recommended for installation on the front and back of the antenna mount at each Dish Wireless Sector. These signs must be placed in a conspicuous manner so that they are visible to any person approaching the antennas from any direction.

Barriers are recommended for installation when possible to block access to the areas in front of the antennas that exceed the FCC general public and/or occupational limits. Barriers may consist of rope, chain, or fencing. Painted stripes should only be used as a last resort. There are no barriers recommended at this site. Barriers are not recommended for installation because exceedances are into free space over lower walking/working surfaces. There are no exceedances on any rooftop and/or ground walking/working surface.

These protocols and recommended control measures have been summarized and included with a graphic representation of the antennas and associated signage and control areas in a RF-EME Site Safety Plan, which is included as Appendix B. Individuals and workers accessing the rooftop should be provided with a copy of the attached Site Safety Plan, made aware of the posted signage, and signify their understanding of the Site Safety Plan.

To reduce the risk of exposure, EBI recommends that access to areas associated with the active antenna installation be restricted and secured where possible.

Implementation of the signage recommended in the Site Safety Plan and in this report will bring this site into compliance with the FCC's rules and regulations.

5.0 SUMMARY AND CONCLUSIONS

EBI has prepared a Radiofrequency – Electromagnetic Energy (RF-EME) Compliance Report for telecommunications equipment installed by Dish Wireless Site Number MIMIA00378A located at 125 S. Ocean Avenue in Palm Beach Shores, Florida to determine worst-case predicted RF-EME exposure levels from wireless communications equipment installed at this site. This report summarizes the results of RF-EME modeling in relation to relevant Federal Communications Commission (FCC) RF-EME compliance standards for limiting human exposure to RF-EME fields.

As presented in the sections above, based on the FCC criteria, there are no modeled areas on any accessible rooftop or ground-level walking/working surface related to the proposed antennas that exceed the FCC's occupational or general public exposure limits at this site.

Workers should be informed about the presence and locations of antennas and their associated fields. Recommended control measures are outlined in Section 4.0 and within the Site Safety Plan (attached); Dish Wireless should also provide procedures to shut down and lockout/tagout this wireless equipment in accordance with their own standard operating protocol. Non-telecom workers who will be working in areas of exceedance are required to contact Dish Wireless since only Dish Wireless has the ability to lockout/tagout the facility, or to authorize others to do so.

6.0 LIMITATIONS

This report was prepared for the use of Dish Wireless. It was performed in accordance with generally accepted practices of other consultants undertaking similar studies at the same time and in the same locale under like circumstances. The conclusions provided by EBI are based solely on the information provided by the client. The observations in this report are valid on the date of the investigation. Any additional information that becomes available concerning the site should be provided to EBI so that our conclusions may be revised and modified, if necessary. This report has been prepared in accordance with Standard Conditions for Engagement and authorized proposal, both of which are integral parts of this report. No other warranty, expressed or implied, is made.

Appendix A

Certifications

Preparer Certification

I, Lindsay Clark, state that:

- I am an employee of EnviroBusiness Inc. (d/b/a EBI Consulting), which provides RF-EME safety and compliance services to the wireless communications industry.
- I have successfully completed RF-EME safety training, and I am aware of the potential hazards from RF-EME and would be classified “occupational” under the FCC regulations.
- I am fully aware of and familiar with the Rules and Regulations of both the Federal Communications Commissions (FCC) and the Occupational Safety and Health Administration (OSHA) with regard to Human Exposure to Radio Frequency Radiation.
- I have reviewed the data provided by the client and incorporated it into this Site Compliance Report such that the information contained in this report is true and accurate to the best of my knowledge.



Reviewed and Approved by:



sealed 27may2022 mike@h2dc.com
H2DC PLLC FL CoA#: 32201

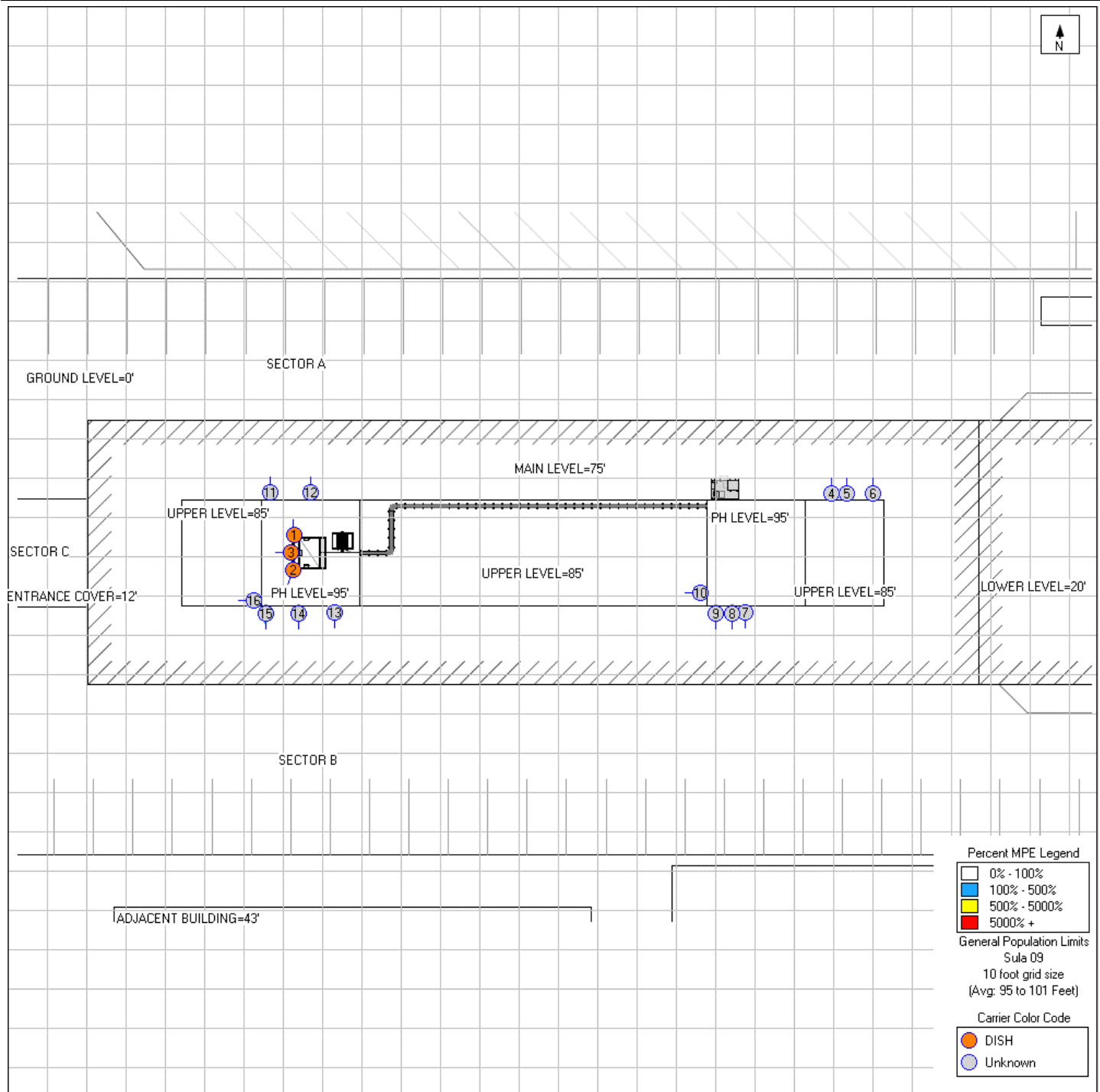
Michael McGuire
Electrical Engineer
mike@h2dc.com

Note that EBI's scope of work is limited to an evaluation of the Radio Frequency – Electromagnetic Energy (RF-EME) field generated by the antennas and broadcast equipment noted in this report. The engineering and design of the building and related structures, as well as the impact of the antennas and broadcast equipment on the structural integrity of the building, are specifically excluded from EBI's scope of work.

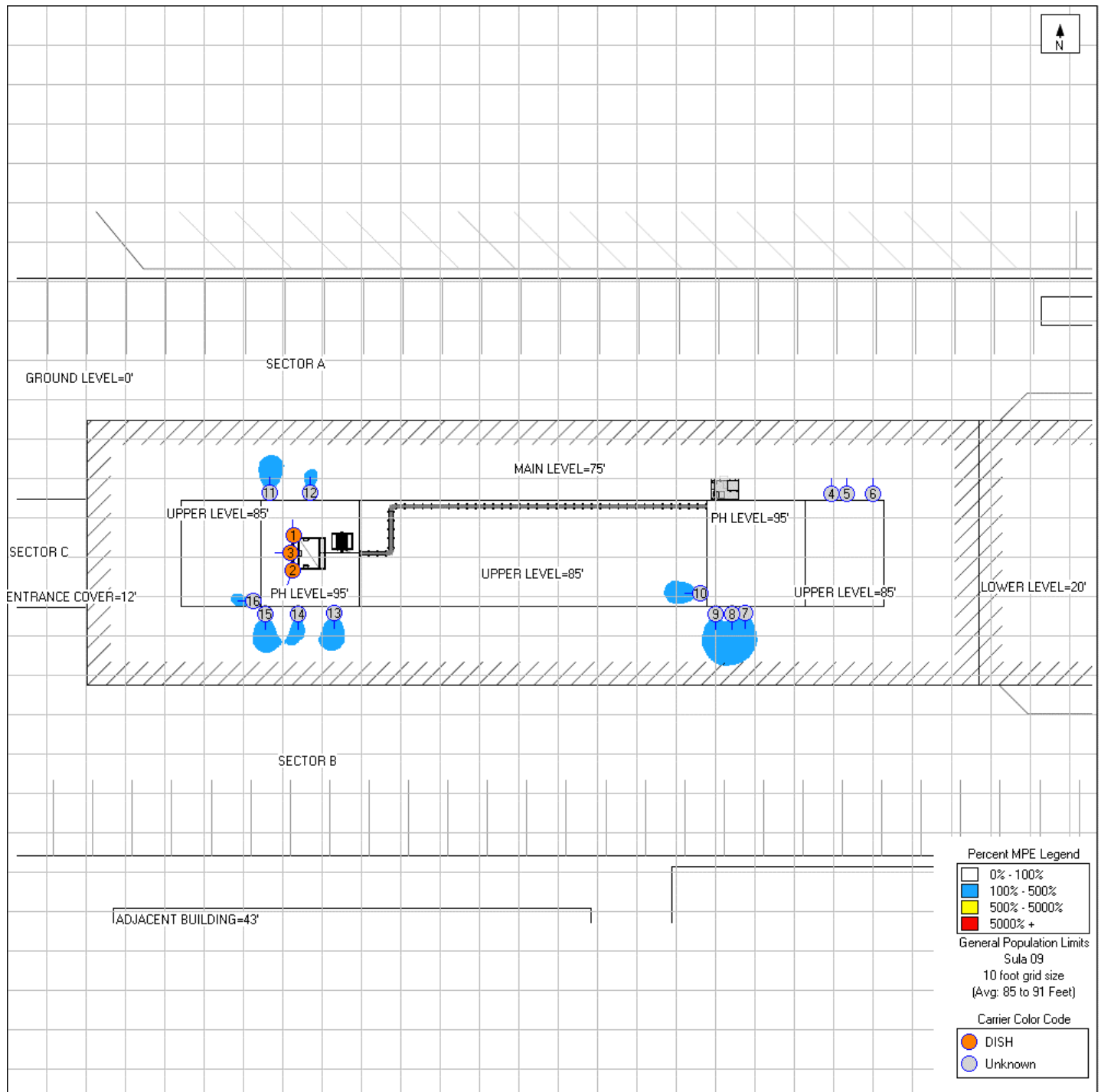
Appendix B

Radio Frequency Electromagnetic Energy Safety Information and Signage Plans

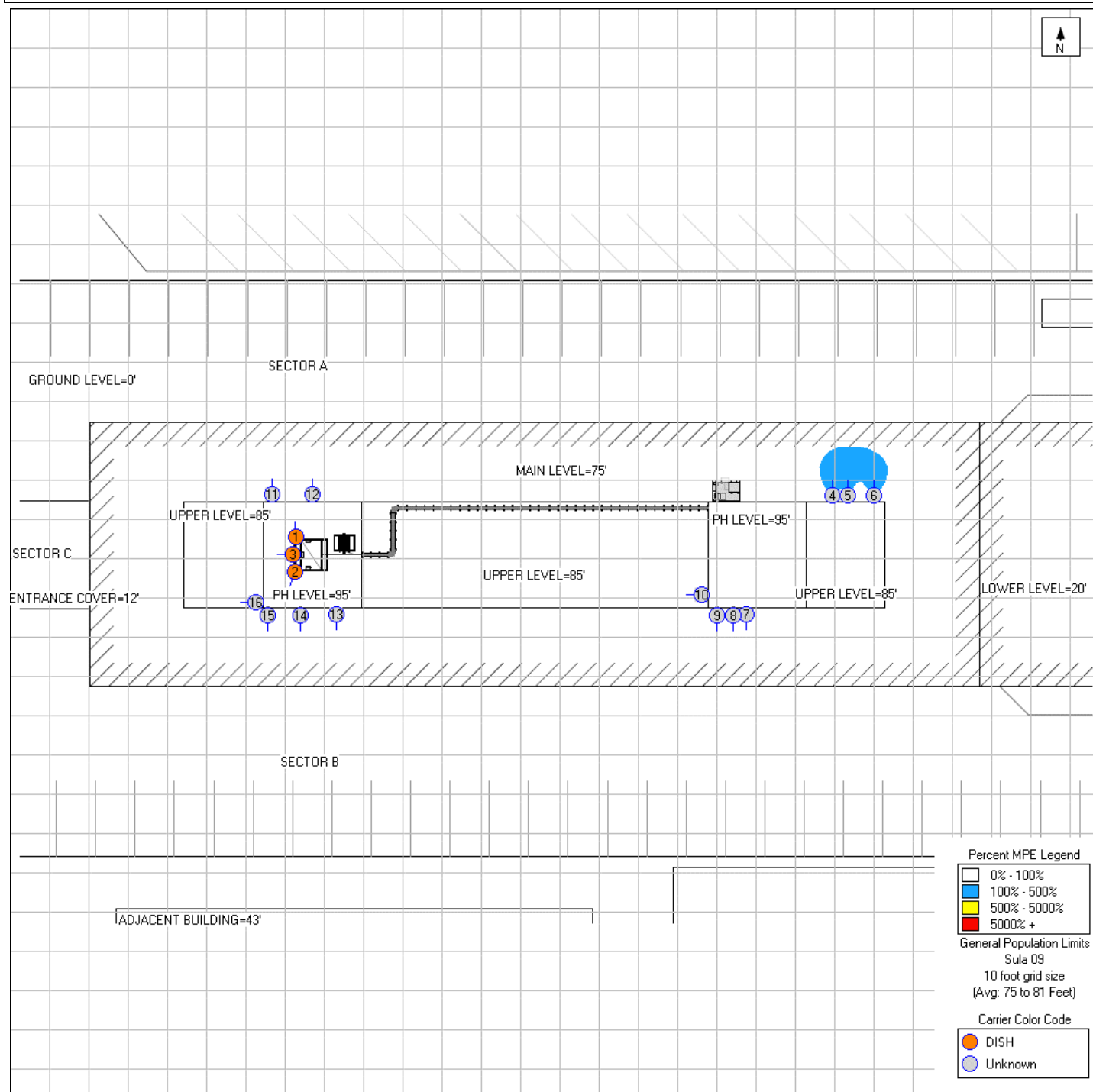
Nearest Walking Surface (Penthouse Roof Level) Simulation



Upper Roof Level Simulation



Main Roof Level Simulation

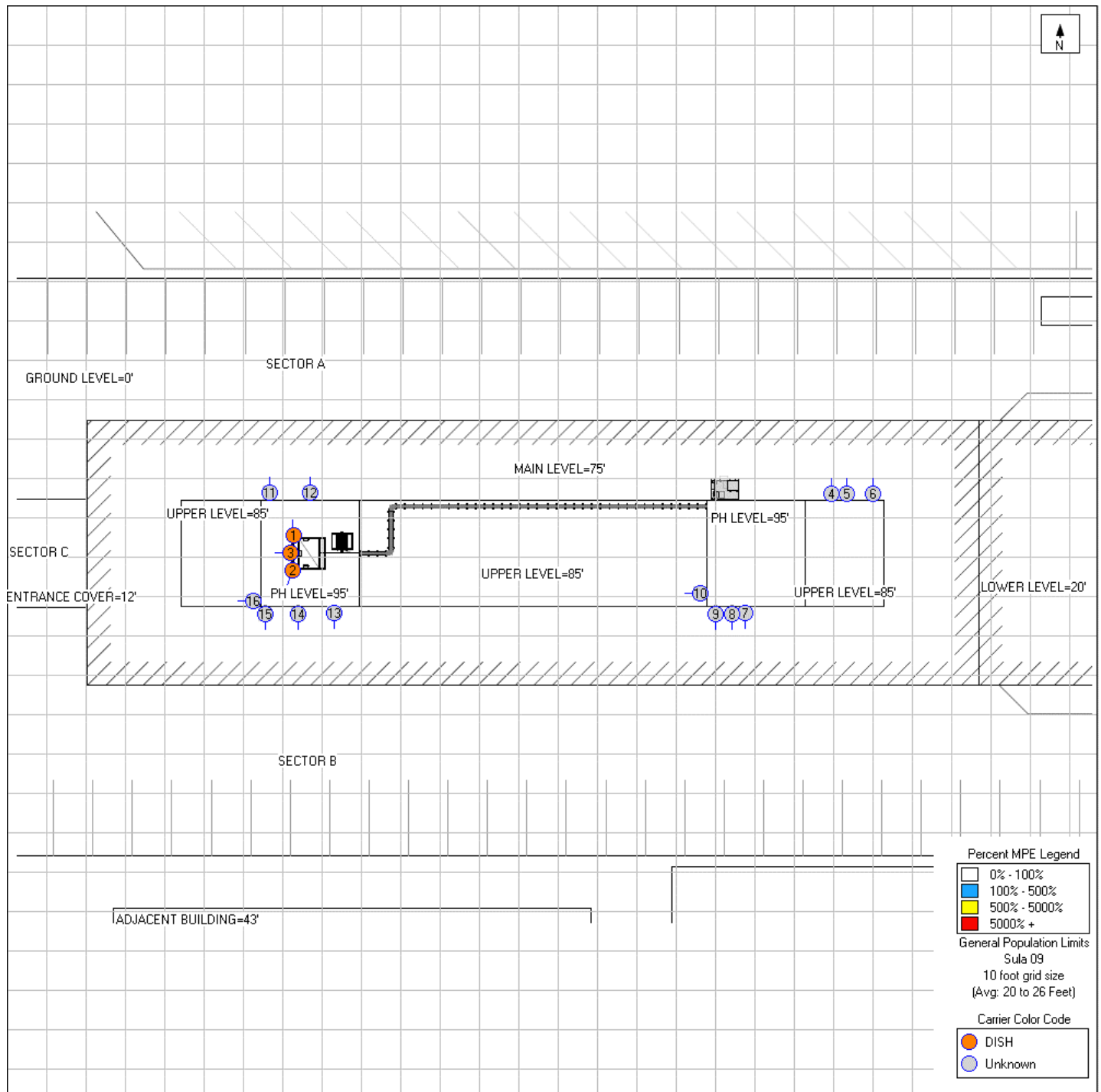


The diagram is a site plan for the Sula 09 facility, overlaid on a 10-foot grid. The plan shows the following features:

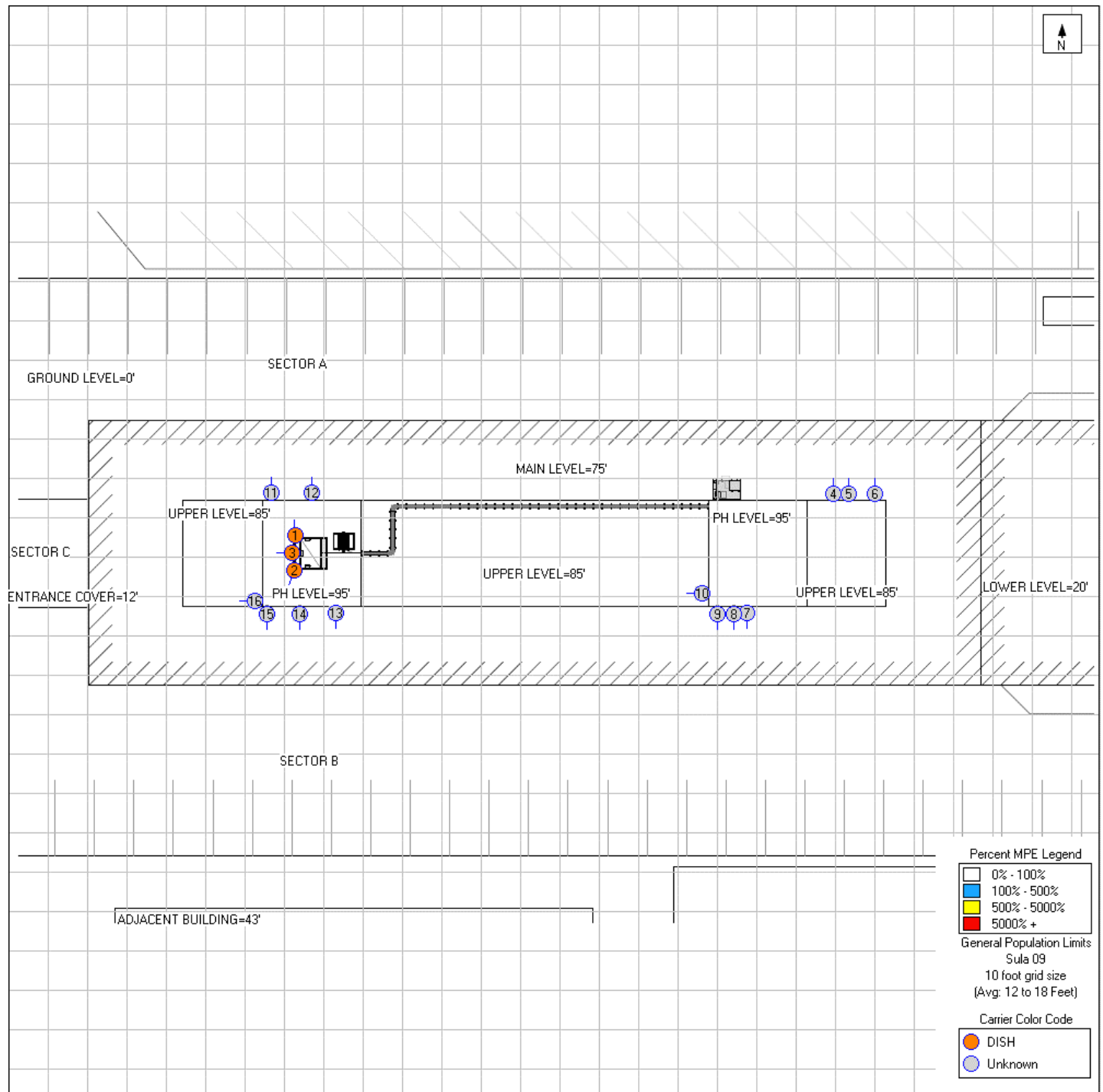
- Ground Level:** 0'
- Main Level:** 75'
- Upper Level:** 85'
- PH Level:** 95'
- Lower Level:** 20'
- Sectors:** Sector A, Sector B, and Sector C are labeled.
- Entrance Cover:** 12'
- Adjacent Building:** 43'
- Carrier Color Code:**
 - Orange circle: DISH
 - Blue circle: Unknown
- Percent MPE Legend:**
 - 0% - 100% (White)
 - 100% - 500% (Blue)
 - 500% - 5000% (Yellow)
 - 5000% + (Red)
- General Population Limits:** Sula 09, 10 foot grid size (Avg: 43 to 49 Feet)

The plan shows a complex layout with multiple levels and sectors. The Main Level is the central horizontal corridor. The Upper Level is above it, and the Lower Level is below it. The PH Level is a vertical section on the right. The Entrance Cover is on the left. The Adjacent Building is on the right. The Carrier Color Code indicates the type of carrier (DISH or Unknown) and the Percent MPE indicates the population density.

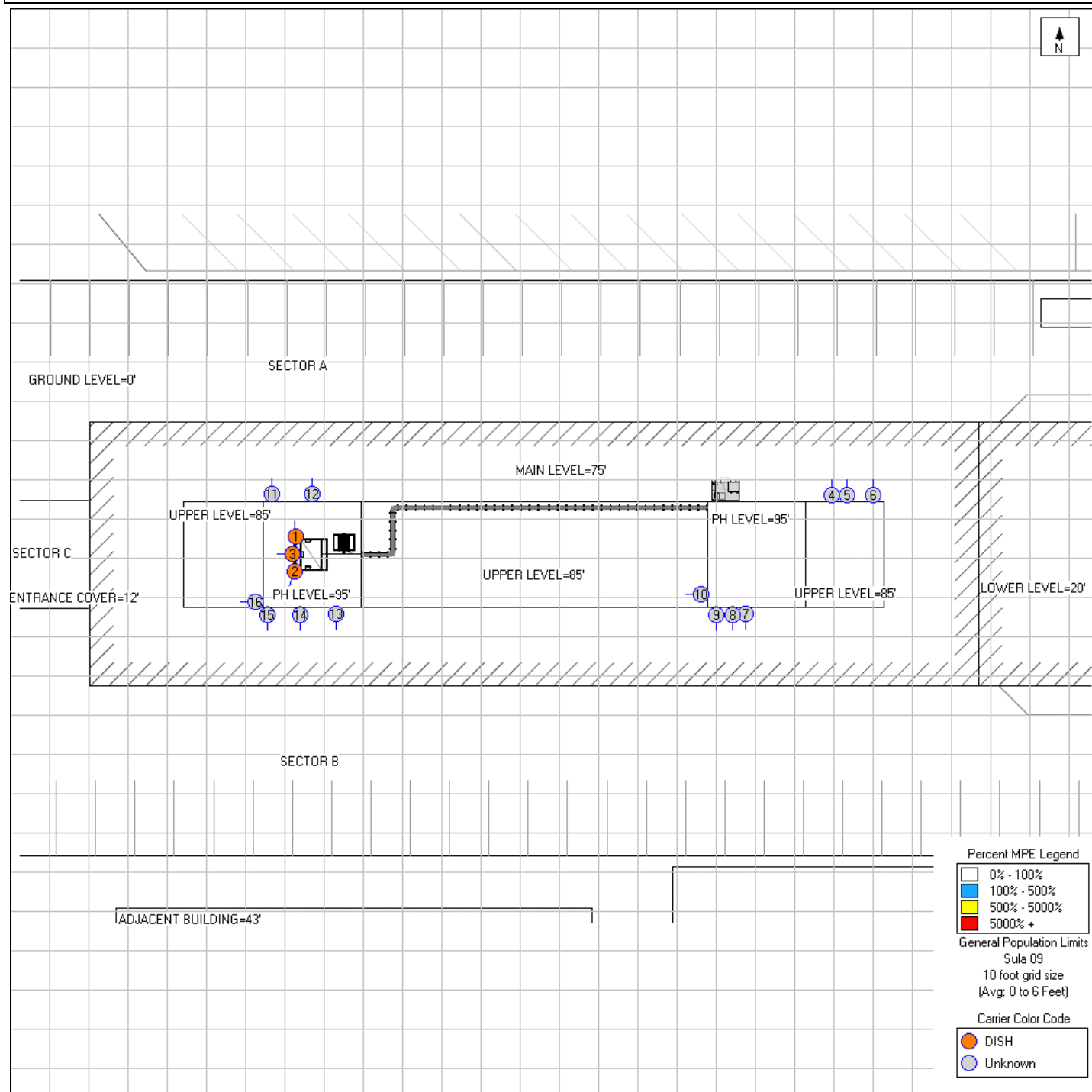
Lower Roof Level Simulation



Entrance Cover Level Simulation



Ground Level Simulation



Sign	Posting Instructions	Required Signage / Mitigation
	<p align="center">NOC Information</p> <p>Information signs are used to provide contact information for any questions or concerns for personnel accessing the site.</p>	Securely post at the main rooftop access door and every point of access to the site in a manner conspicuous to all individuals entering thereon as indicated in the signage plan.
	<p align="center">Guidelines</p> <p>Informational sign used to notify workers that there are active antennas installed and provide guidelines for working in RF environments.</p>	Securely post at the main rooftop access door and every point of access to the site in a manner conspicuous to all individuals entering thereon as indicated in the signage plan.
	<p align="center">Notice</p> <p>Used to notify individuals they are entering an area where the power density emitted from transmitting antennas may exceed the FCC's MPE limit for the general public or occupational exposures.</p>	Securely post on the front and back of the antenna mount at each Dish Wireless Sector.
	<p align="center">Caution</p> <p>Used to notify individuals that they are entering a hot spot where either the general public or occupational FCC's MPE limit is or could be exceeded.</p>	Signage not required.
	<p align="center">Warning</p> <p>Used to notify individuals that they are entering a hot zone where the occupational FCC's MPE limit has been exceeded by 10x.</p>	Signage not required.

Appendix C

Federal Communications Commission (FCC) Requirements

The FCC has established Maximum Permissible Exposure (MPE) limits for human exposure to Radiofrequency Electromagnetic (RF-EME) energy fields, based on exposure limits recommended by the National Council on Radiation Protection and Measurements (NCRP) and, over a wide range of frequencies, the exposure limits developed by the Institute of Electrical and Electronics Engineers, Inc. (IEEE) and adopted by the American National Standards Institute (ANSI) to replace the 1982 ANSI guidelines. Limits for localized absorption are based on recommendations of both ANSI/IEEE and NCRP.

The FCC guidelines incorporate two separate tiers of exposure limits that are based upon occupational/controlled exposure limits (for workers) and general public/uncontrolled exposure limits for members of the general public.

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 public/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.

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

Table I and Figure I (below), which are included within the FCC's OET Bulletin 65, summarize the MPE limits for RF emissions. These limits are designed to provide a substantial margin of safety. They vary by frequency to take into account the different types of equipment that may be in operation at a particular facility and are "time-averaged" limits to reflect different durations resulting from controlled and uncontrolled exposures.

The FCC's MPEs are measured in terms of power (mW) over a unit surface area (cm²). Known as the power density, the FCC has established an occupational MPE of 5 milliwatts per square centimeter (mW/cm²) and an uncontrolled MPE of 1 mW/cm² for equipment operating in the 1900 MHz frequency range. For the Dish Wireless equipment operating at 600 MHz or 850 MHz, the FCC's occupational MPE is 2.83 mW/cm² and an uncontrolled MPE of 0.57 mW/cm². For the Dish Wireless equipment operating at 1900 MHz, the FCC's occupational MPE is 5.0 mW/cm² and an uncontrolled MPE limit of 1.0 mW/cm². These limits are considered protective of these populations.

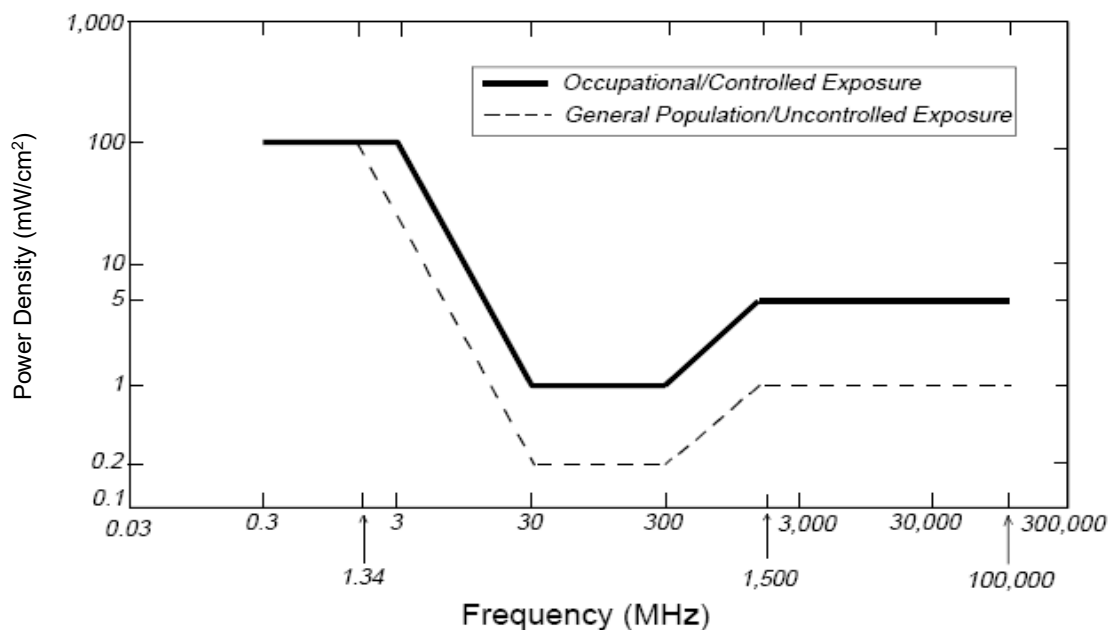
Table 1: Limits for Maximum Permissible Exposure (MPE)				
(A) Limits for Occupational/Controlled Exposure				
Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm ²)	Averaging Time [E] ² , [H] ² , or S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842/f	4.89/f	(900/f ²)*	6
30-300	61.4	0.163	1.0	6
300-1,500	--	--	f/300	6
1,500-100,000	--	--	5	6
(B) Limits for General Public/Uncontrolled Exposure				
Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm ²)	Averaging Time [E] ² , [H] ² , or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	(180/f ²)*	30
30-300	27.5	0.073	0.2	30
300-1,500	--	--	f/1,500	30
1,500-100,000	--	--	1.0	30

f = Frequency in (MHz)

* Plane-wave equivalent power density

Figure 1. FCC Limits for Maximum Permissible Exposure (MPE)

Plane-wave Equivalent Power Density



Based on the above, the most restrictive thresholds for exposures of unlimited duration to RF energy for several personal wireless services are summarized below:

Personal Wireless Service	Approximate Frequency	Occupational MPE	Public MPE
Microwave (Point-to-Point)	5,000 - 80,000 MHz	5.00 mW/cm ²	1.00 mW/cm ²
Broadband Radio (BRS)	2,600 MHz	5.00 mW/cm ²	1.00 mW/cm ²
Wireless Communication (WCS)	2,300 MHz	5.00 mW/cm ²	1.00 mW/cm ²
Advanced Wireless (AWS)	2,100 MHz	5.00 mW/cm ²	1.00 mW/cm ²
Personal Communication (PCS)	1,950 MHz	5.00 mW/cm ²	1.00 mW/cm ²
Cellular Telephone	870 MHz	2.90 mW/cm ²	0.58 mW/cm ²
Specialized Mobile Radio (SMR)	855 MHz	2.85 mW/cm ²	0.57 mW/cm ²
Long Term Evolution (LTE)	700 MHz	2.33 mW/cm ²	0.47 mW/cm ²
Most Restrictive Frequency Range	30-300 MHz	1.00 mW/cm ²	0.20 mW/cm ²

MPE limits are designed to provide a substantial margin of safety. These limits apply for continuous exposures and are intended to provide a prudent margin of safety for all persons, regardless of age, gender, size, or health.

Personal Communication (PCS) facilities used by Dish Wireless in this area will potentially operate within a frequency range of 600 to 2100 MHz. Facilities typically consist of: 1) electronic transceivers (the radios or cabinets) connected to wired telephone lines; and 2) antennas that send the wireless signals created by the transceivers to be received by individual subscriber units (PCS telephones). Transceivers are typically connected to antennas by coaxial cables.

Because of the short wavelength of PCS services, the antennas require line-of-site paths for good propagation, and are typically installed above ground level. Antennas are constructed to concentrate energy towards the horizon, with as little energy as possible scattered towards the ground or the sky. This design, combined with the low power of PCS facilities, generally results in no possibility for exposure to approach Maximum Permissible Exposure (MPE) levels, with the exception of areas directly in front of the antennas.

FCC Compliance Requirement

A site is considered out of compliance with FCC regulations if there are areas that exceed the FCC exposure limits and there are no RF hazard mitigation measures in place. Any carrier which has an installation that contributes more than 5% of the applicable MPE must participate in mitigating these RF hazards.

EXHIBIT B

Date: January 6, 2023

Town of Palm Beach Shores
247 Edwards Lane
Palm Beach Shores, FL 33404

Subject: Plan Revision Narrative Letter

Project: Dish Wireless Collocation

Dish Wireless Site ID: MIMIA00378A

Site Address: 125 Ocean Avenue, Palm Beach Shores, FL 33404
N 26° 46' 45.01"
W 80° 01' 59.21"

To Whom It May Concern:

Tower Engineering Professionals is pleased to submit this Justification Letter to the Developmental Review Committee. The purpose of this letter is breakdown rooftop square footage calculations of existing telecommunication carriers to address previous DRC comments. Based on documentation provided by the Town of Palm Beach Shores the following telecommunication providers have been identified as present on the rooftop: Verizon, T-Mobile, Sprint, Omni Point, QXC Communications, and the proposed Dish Wireless install.

The calculations are as follow:

Carrier	Total Square Footage (calculated from a plan view and only considering wireless communications equipment)
Verizon	12.728 sq.ft.
T-Mobile	23.472 sq.ft.
Sprint	14.295 sq.ft.
Omni Point	3.781 sq.ft.
QXC Communications	0.827 sq.ft.
Dish Wireless	35.340 sq.ft.
6 Existing Ladders to access equipment	8.620 sq.ft.
Total	99.063 sq.ft.

Based on the original building drawings dated 01/05/1968 the rooftop was identified to be 16394.3125 sq.ft.

$$99.063 \text{ sq.ft.} \div 16394.3125 \text{ sq.ft.} = 0.00604$$

Converting this to a percentage yields = 0.604%

Based on these calculations the proposed Dish Wireless install will have minimal impact on the 5% roof structure code restriction in Pf. 8.3(e).

Tower Engineering Professionals, Inc.
326 Tryon Road
Raleigh, NC 27603
(919) 661-6351

This item has been digitally signed and sealed by
JOSHUA H. CARDEN using a Digital Signature and
date. Printed copies of this document are not
considered signed and sealed and the signature
must be verified on any electronic copies.



If you have any questions or comments, please contact our office.

Sincerely,

Tower Engineering Professionals, Inc.

Joshua H. Carden, P.E.

jcarden@tepgroup.net

FL License #: 83511

FL COA#: 31011