



23 Mauchly, #110, Irvine, CA 92618

## Antenna Mount Analysis

April 12, 2022

Site: SFSFO00411D

Type: Rooftop

Address: 350 Calle Principal, Monterey, CA 93940

County: Monterey County

Lat/Long: 36° 36' 1.0" N, 121° 53' 42.3" W (36.600280, -121.895080)

P#/Eng: P-065394/MM

J5 Infrastructure Partners (J5IP) is pleased to submit this antenna mount analysis report to Dish. The purpose of this analysis is to evaluate existing antenna mounts. The project scope of work relevant to this report includes the following items:

- Remove (6) (E) Panel Antennas
- Install (6) (P) Panel Antennas

A site visit was performed by J5IP personnel on November 19, 2021. Existing elements relevant to the project scope of work were visually inspected and found to be in good condition.

This report was prepared in accordance with the 2019 CBC, ASCE 7-16, and the AISC 360-16.

This analysis is based off third party data and assumes satisfactory workmanship of all previously-installed and proposed components. If existing conditions vary from what is shown in this report, or if assumptions made within this analysis are inaccurate, the Engineer of Record shall be notified immediately in writing.

It has been our pleasure to be of service to you in this matter. The results of our analysis are summarized in the table below. Please contact us should you have any specific questions, require further clarification, or if we can be of further service.

Sincerely,  
J5 Infrastructure Partners, Inc.



SIGNED: 04/13/2022  
EXPIRES: 09/30/2023

Description of Element	Demand-Capacity Ratio	Result	Notes
(E) Antenna Mast (Pipe 2 STD)	26%	PASS	
(E) Standoff (HSS3x3x3/16)	14%	PASS	
(E) Mount Anchorage (1/2"Ø - A307 Thru. Bolt)	15%	PASS	

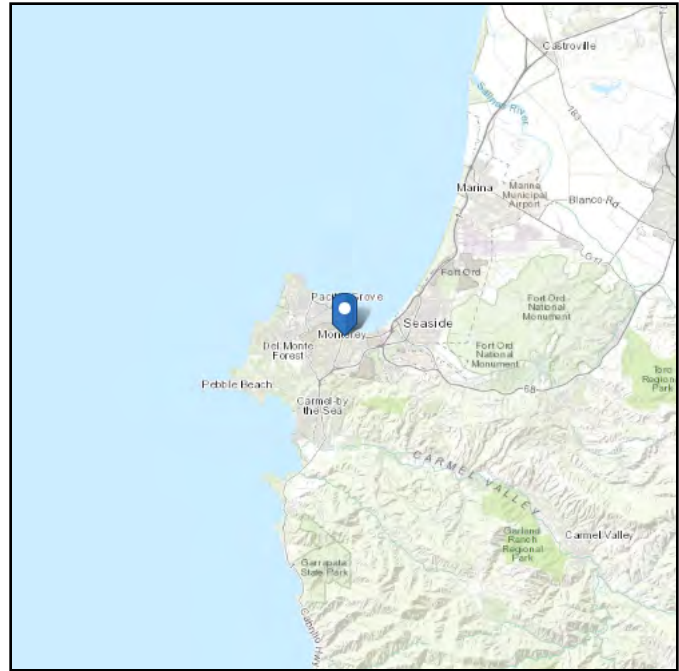
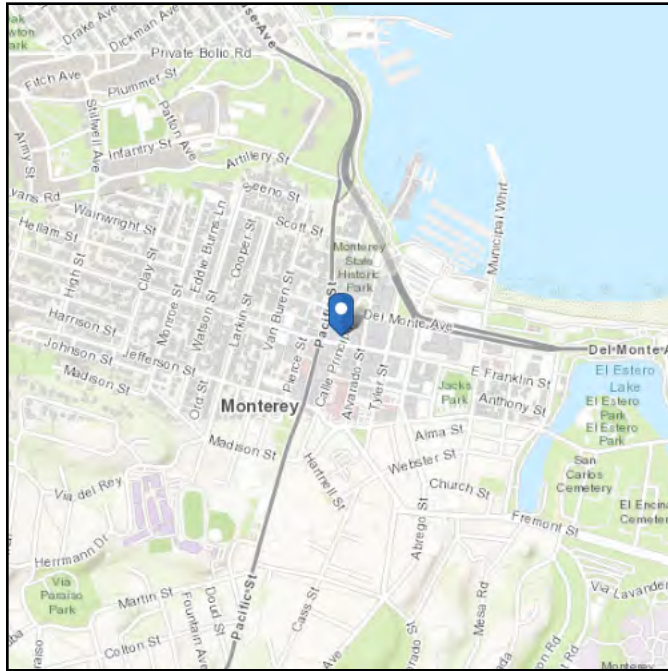


# ASCE 7 Hazards Report

**Address:**  
No Address at This Location

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

**Elevation:** 30.86 ft (NAVD 88)  
**Latitude:** 36.60028  
**Longitude:** -121.89508



## Wind

### Results:

Wind Speed	92 Vmph
10-year MRI	63 Vmph
25-year MRI	70 Vmph
50-year MRI	74 Vmph
100-year MRI	78 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: Mon Jan 17 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 not in a hurricane-prone region as defined in ASCE/SEI 7-16 Section 26.2.



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

**Results:**

$S_s$ :	1.33	$S_{D1}$ :	N/A
$S_1$ :	0.497	$T_L$ :	12
$F_a$ :	1.2	PGA :	0.576
$F_v$ :	N/A	PGA <sub>M</sub> :	0.692
$S_{MS}$ :	1.596	$F_{PGA}$ :	1.2
$S_{M1}$ :	N/A	$I_e$ :	1
$S_{DS}$ :	1.064	$C_v$ :	1.366

Ground motion hazard analysis may be required. See ASCE/SEI 7-16 Section 11.4.8.

**Data Accessed:** Mon Jan 17 2022

**Date Source:** [USGS Seismic Design Maps](#)



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.

# Loads on Building Appurtenances (page 1 of 2)

- Design is in accordance with the 2018 IBC.
- Wind loading procedure is per ASCE 7-16 CH 29.4
- Seismic loads are 1.0E
- Wind loads are 1.0W

## Site Criteria - Wind (ASCE CH 26.10.2)

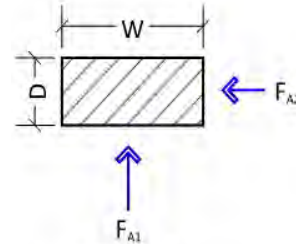
Exposure:	<b>C</b>	(ASCE CH 26.7)
$K_{zt}$ :	<b>1.00</b>	(ASCE CH 26.8.2)
$K_e$ :	<b>1.00</b>	(ASCE CH 26.9)
V:	<b>92 mph</b>	(ASCE CH 26.5.1)

## Site Criteria - Seismic (ASCE CH 13.3)

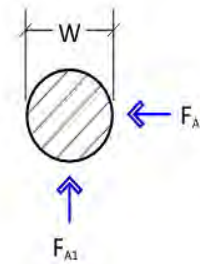
$S_{DS}$ :	<b>1.064 g</b>	
$I_p$ :	<b>1.0</b>	(ASCE CH 13.1.3)
$a_p$ :	<b>1.0</b>	(ASCE Table 13.6-1)
$R_p$ :	<b>2.5</b>	(ASCE Table 13.6-1)

## Building Info

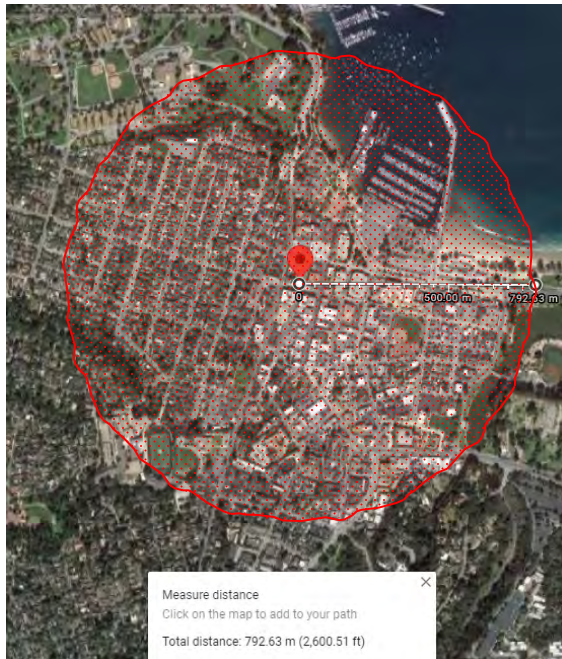
h:	<b>96 ft</b>	(Mean roof height)
$z_g$ :	<b>30 ft</b>	(Ground elevation)



**Figure 1**  
Flat Appurtenance  
Plan View



**Figure 2**  
Round Appurtenance  
Plan View



**EXPOSURE C**

See next page for individual appurtenance loads.

## Loads on Building Appurtenances (page 2 of 2)

### Building Appurtenances

Description	Type	Dimensions & Weight					Wind			Seismic		z/h
		z	H	W	D	W <sub>p</sub>	F <sub>A1</sub>	F <sub>A2</sub>	q <sub>z</sub>	F <sub>p</sub>		
		ft	in	in	in	lb	lb	lb	psf	lb	W <sub>p</sub>	
MX08FRO665-21 JMA	Flat	96	72	20	8	74.5	328	143	24.4	38	0.51	1.00

## Load Combinations for Building Appurtenances

### Codes & Standards

- 2018 IBC
- ASCE 7-16

### Project Criteria

$S_{DS}$ :	<b>1.064</b>	
$\Omega_o$ :	<b>2.0</b>	(ASCE Table 13.6-1)
$f_1$ :	<b>0.5</b>	(IBC 1605.2)
$f_2$ :	<b>0.2</b>	(IBC 1605.2)

### Load Combinations - LRFD

- The following load combinations are applied in our analysis model.
- Lateral loads are considered in 2 orthogonal directions.
- For load definitions see IBC 1605.2 and ASCE 12.4

LC1: $1.4(D + F)$	(IBC Eq 16-1)
LC2: $1.2(D + F) + 1.6(L + H) + 0.5(L_r \text{ or } S \text{ or } R)$	(IBC Eq 16-2)
LC3: $1.2(D + F) + 1.6(L_r \text{ or } S \text{ or } R) + 1.6H + (f_1L \text{ or } 0.5W)$	(IBC Eq 16-3)
LC4: $1.2(D + F) + W + f_1L + 1.6H + 0.5(L_r \text{ or } S \text{ or } R)$	(IBC Eq 16-4)
LC5: $(1.2 + 0.2S_{DS})(D + F) + E + f_1L + 1.6H + f_2S$	(IBC Eq 16-5, ASCE 12.4.2.3)
LC6: $0.9D + W + 1.6H$	(IBC Eq 16-6)
LC7: $(0.9 - 0.2SDS)(D + F) + E + 1.6H$	(IBC Eq 16-7, ASCE 12.4.2.3)

### Load Combinations - ASD

- The following load combinations are applied in our analysis model.
- Lateral loads are considered in 2 orthogonal directions.
- For load definitions see IBC 1605.2 and ASCE 12.4

LC11: $D + F$	(IBC Eq 16-8)
LC12: $D + H + F + L$	(IBC Eq 16-9)
LC13: $D + H + F + (L_r \text{ or } S \text{ or } R)$	(IBC Eq 16-10)
LC14: $D + H + F + 0.75L + 0.75(L_r \text{ or } S \text{ or } R)$	(IBC Eq 16-11)
LC15a: $D + H + F + 0.6W$	(IBC Eq 16-12)
LC15b: $(1.0 + 0.14S_{DS})(D + F) + H + 0.7E$	(IBC Eq 16-12)
LC16: $D + H + F + 0.45W + 0.75L + 0.75(L_r \text{ or } S \text{ or } R)$	(IBC Eq 16-13)
LC17: $(1.0 + 0.10S_{DS})(D + F) + H + 0.525E + 0.75L + 0.75S$	(IBC Eq 16-14)
LC18: $0.6D + 0.6W + H$	(IBC Eq 16-15)
LC19: $(0.6 - 0.14S_{DS})(D + F) + 0.7E + H$	(IBC Eq 16-16)

### Load Combinations for Anchorage to Concrete - LRFD

- The following load combinations are used to determine anchorage forces for concrete anchorage.

LC21: $1.2(D + F) + W + f_1L + 1.6H + 0.5(L_r \text{ or } S \text{ or } R)$	(IBC Eq 16-4)
LC22: $(1.2 + 0.2S_{DS})(D + F) + \Omega_oE + f_1L + 1.6H + f_2S$	(IBC Eq 16-5, ASCE 12.4.3.1)
LC23: $0.9D + W + 1.6H$	(IBC Eq 16-6)
LC24: $(0.9 - 0.2S_{DS})(D + F) + \Omega_oE + 1.6H$	(IBC Eq 16-7, ASCE 12.4.3.1)

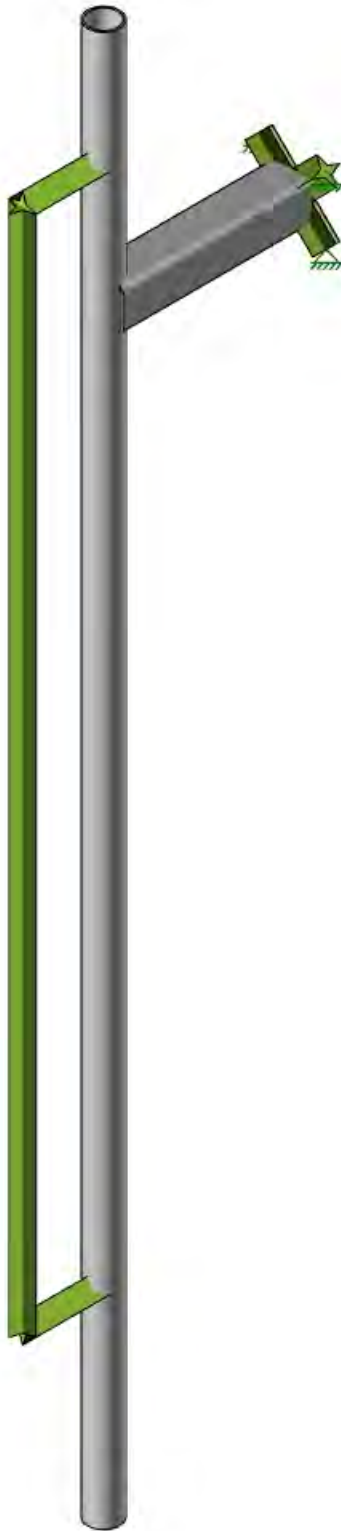
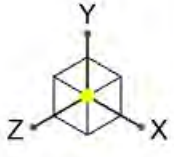
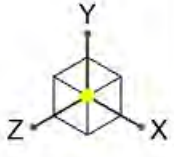





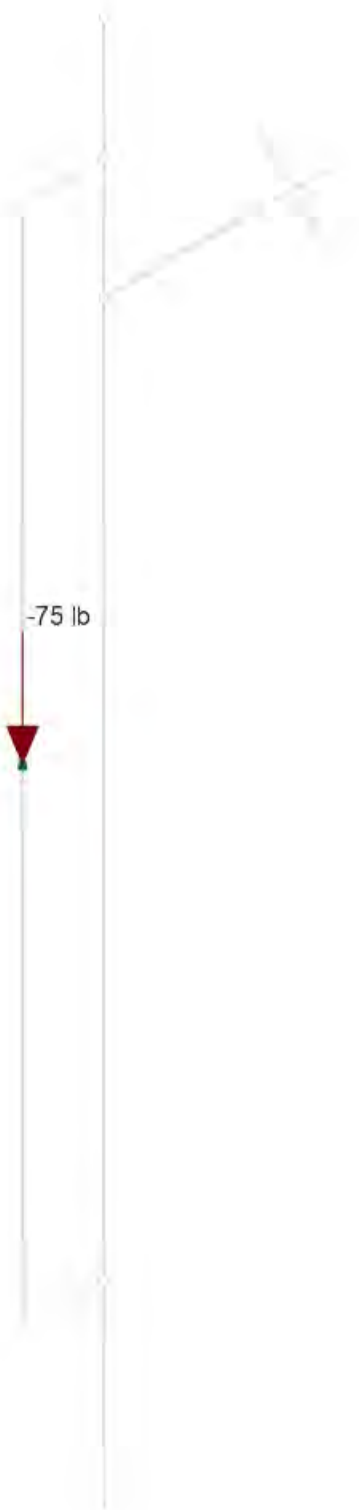
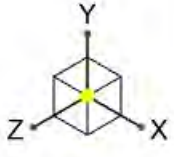


Exhibit D

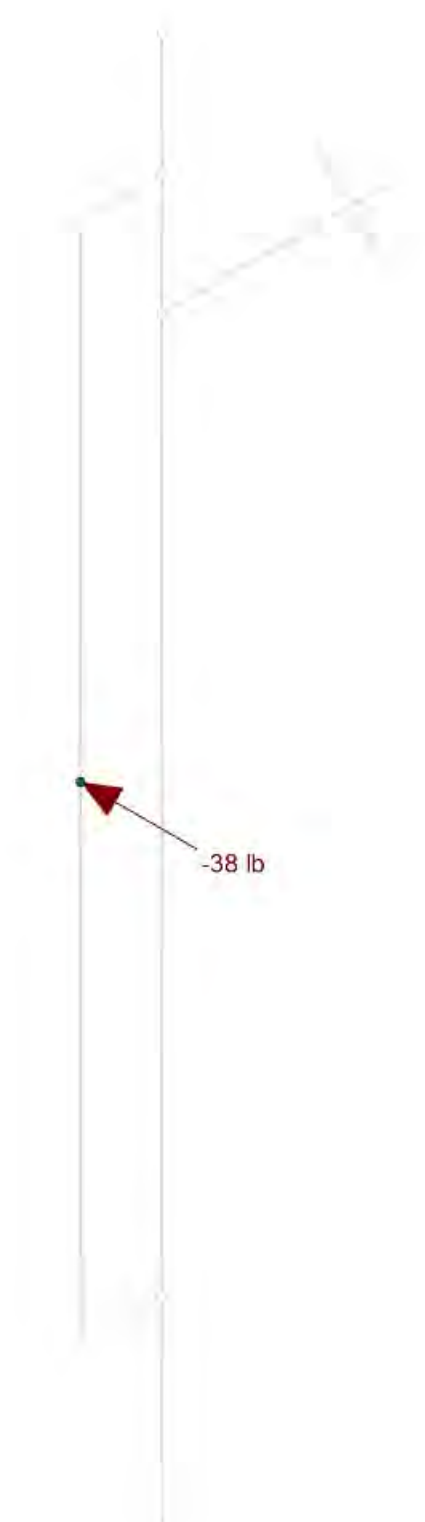
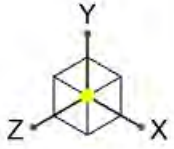


Section Sets	
	(N)/(E) Pipe Mast
	(E) Standoff
	RIGID

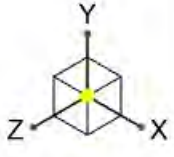




Loads: BLC 1, D

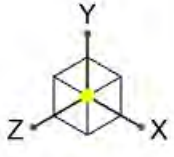


Loads: BLC 2, Ex



-38 lb

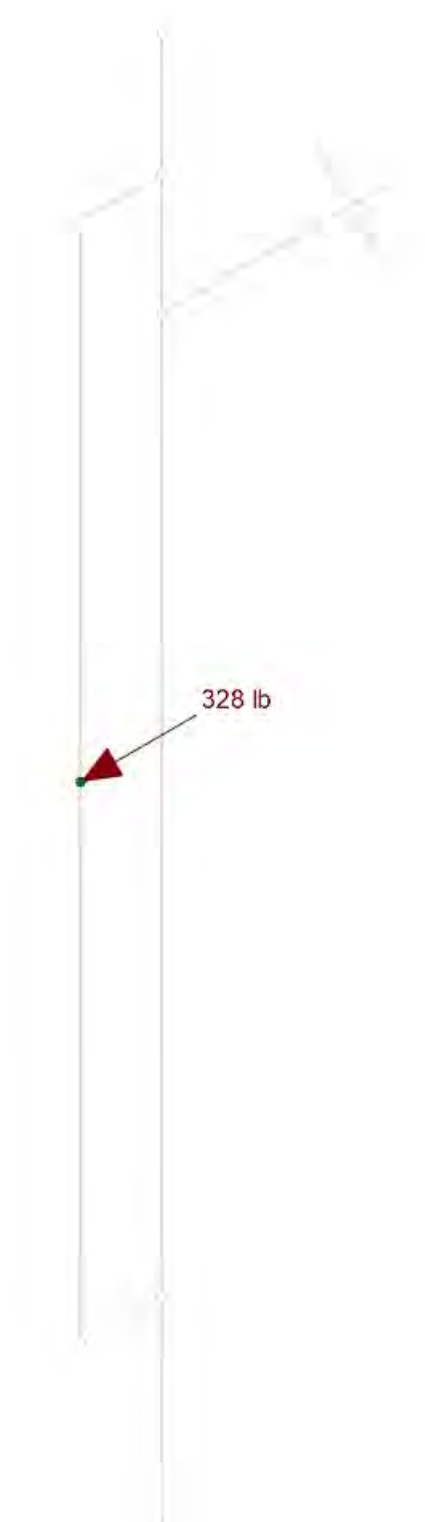
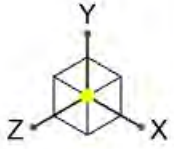
Loads: BLC 3, Ez



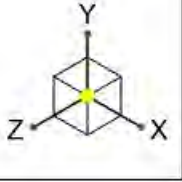
143 lb

A red arrow points from the text '143 lb' to a point on a vertical line. The arrow is oriented towards the right and slightly downwards. The point on the line is marked with a small green dot.

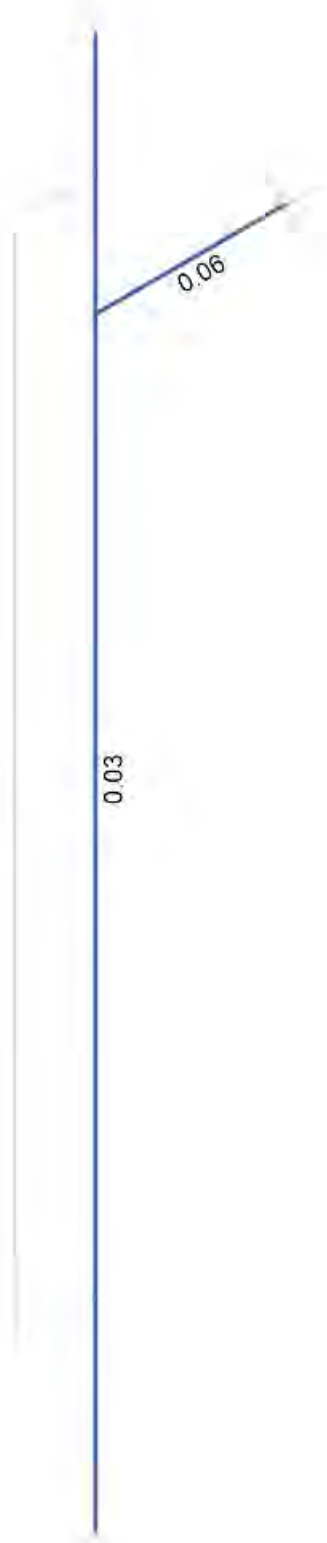
Loads: BLC 10, Wx



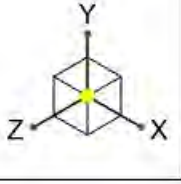
Loads: BLC 11, Wz



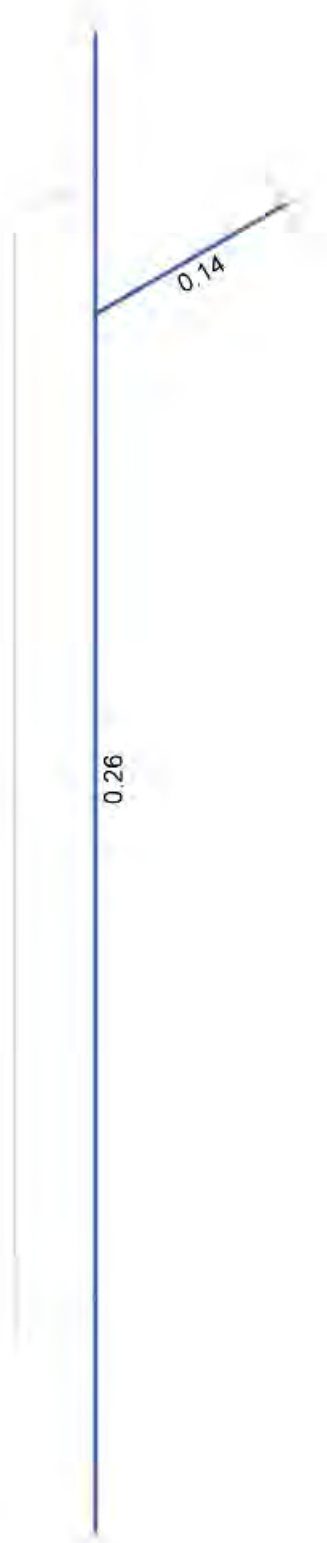
Shear Check (Env)	
Black	No Calc
Red	> 1.0
Magenta	.90-1.0
Green	.75-.90
Cyan	.50-.75
Blue	0.-.50



Member Shear Checks Displayed (Enveloped)



Code Check (Env)	
Black	No Calc
Red	> 1.0
Magenta	.90-1.0
Green	.75-.90
Cyan	.50-.75
Blue	0.-.50



Member Code Checks Displayed (Enveloped)



**Node Coordinates**

	Label	X [in]	Y [in]	Z [in]	Detach From Diaphragm
1	1	-72	6	2.5	
2	3	-72	84	-11.5	
3	9	-72	84	2.5	
4	10	-72	102	2.5	
5	11	-72	93	2.5	
6	12	-72	21	2.5	
7	13	-72	93	8.5	
8	14	-72	21	8.5	
9	A	-72	57	8.5	
10	15	-69.5	86.5	-11.5	
11	16	-69.5	81.5	-11.5	
12	17	-74.5	86.5	-11.5	
13	18	-74.5	81.5	-11.5	

**Node Boundary Conditions**

	Node Label	X [k/in]	Y [k/in]	Z [k/in]
1	15	Reaction	Reaction	Reaction
2	17	Reaction	Reaction	Reaction
3	18	Reaction	Reaction	Reaction
4	16	Reaction	Reaction	Reaction

**Hot Rolled Steel Properties**

	Label	E [ksi]	G [ksi]	Nu	Therm. Coeff. [1e <sup>-5</sup> F <sup>-1</sup> ]	Density [k/ft <sup>3</sup> ]	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	A53 Gr.B	29000	11154	0.3	0.65	0.49	35	1.6	60	1.2
7	A1085	29000	11154	0.3	0.65	0.49	50	1.4	65	1.3
8	FRP	2800	480	0.3	0.65	0.12	16.7	1.4	30	1.3
9	A913 Gr.65	29000	11154	0.3	0.65	0.49	65	1.1	80	1.1
10	F1554 Gr. 55	29000	11154	0.3	0.65	0.49	55	1.1	75	1.1

**General Materials Properties**

	Label	E [ksi]	G [ksi]	Nu	Therm. Coeff. [1e <sup>-5</sup> F <sup>-1</sup> ]	Density [k/ft <sup>3</sup> ]	Plate Methodology
1	gen Conc3NW	3155	1372	0.15	0.6	0.145	Isotropic
2	gen Conc4NW	3644	1584	0.15	0.6	0.145	Isotropic
3	gen Conc3LW	2085	906	0.15	0.6	0.11	Isotropic
4	gen Conc4LW	2408	1047	0.15	0.6	0.11	Isotropic
5	gen Alum	10100	4077	0.3	1.29	0.173	Isotropic
6	gen Steel	29000	11154	0.3	0.65	0.49	Isotropic
7	gen Plywood	1800	38	0	0.3	0.035	Isotropic
8	RIGID	1e+6		0.3	0	0	Isotropic

**Hot Rolled Steel Section Sets**

	Label	Shape	Type	Design List	Material	Design Rule	Area [in <sup>2</sup> ]	Iyy [in <sup>4</sup> ]	Izz [in <sup>4</sup> ]	J [in <sup>4</sup> ]
1	(N)/(E) Pipe Mast	PIPE 2.0	Column	Pipe	A53 Gr.B	Typical	1.02	0.627	0.627	1.25
2	(E) Standoff	HSS3X3X3	Beam	Tube	A500 Gr.B Rect	Typical	1.89	2.46	2.46	4.03
3	(N)/(E) Bracket	L3X3X4	Beam	Single Angle	A36 Gr.36	Typical	1.44	1.23	1.23	0.031
4	SitePro DCP	PL2X0.5	None	None	A36 Gr.36	Typical	1	0.021	0.333	0.07
5	Thread Rod	ROD0.625	None	None	F1554 Gr. 55	Typical	0.307	0.007	0.007	0.015

**General Section Sets**

	Label	Shape	Type	Material	Area [in <sup>2</sup> ]	Iyy [in <sup>4</sup> ]	Izz [in <sup>4</sup> ]	J [in <sup>4</sup> ]
1	RIGID		None	RIGID	1e+06	1e+06	1e+06	1e+06
2	GEN1	RE4X4	Beam	gen Conc3NW	16	21.333	21.333	31.573

**Member Primary Data**

Label	I Node	J Node	Section/Shape	Type	Design List	Material	Design Rule
1	1	10	(N)/(E) Pipe Mast	Column	Pipe	A53 Gr.B	Typical
2	5	3	(E) Standoff	Beam	Tube	A500 Gr.B Rect	Typical
3	6	11	RIGID	None	None	RIGID	Typical
4	7	12	RIGID	None	None	RIGID	Typical
5	8	13	RIGID	None	None	RIGID	Typical
6	9	15	RIGID	None	None	RIGID	Typical
7	10	17	RIGID	None	None	RIGID	Typical

**Basic Load Cases**

BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Nodal
1 D	DL		-1		1
2 Ex	ELX	-0.51			1
3 Ez	ELZ			-0.51	1
4 F	FL				
5 H	HL				
6 L	LL				
7 Lr	RLL				
8 R	RL				
9 S	SL				
10 Wx	WLX				1
11 Wz	WLZ				1

**Node Loads and Enforced Displacements (BLC 1 : D)**

Node Label	L, D, M	Direction	Magnitude [(lb, lb-ft), (in, rad), (lb*s <sup>2</sup> /in, lb*s <sup>2</sup> *in)]
1 A	L	Y	-75

**Node Loads and Enforced Displacements (BLC 2 : Ex)**

Node Label	L, D, M	Direction	Magnitude [(lb, lb-ft), (in, rad), (lb*s <sup>2</sup> /in, lb*s <sup>2</sup> *in)]
1 A	L	X	-38

**Node Loads and Enforced Displacements (BLC 3 : Ez)**

Node Label	L, D, M	Direction	Magnitude [(lb, lb-ft), (in, rad), (lb*s <sup>2</sup> /in, lb*s <sup>2</sup> *in)]
1 A	L	Z	-38

**Node Loads and Enforced Displacements (BLC 10 : Wx)**

Node Label	L, D, M	Direction	Magnitude [(lb, lb-ft), (in, rad), (lb*s <sup>2</sup> /in, lb*s <sup>2</sup> *in)]
1 A	L	X	143

**Node Loads and Enforced Displacements (BLC 11 : Wz)**

Node Label	L, D, M	Direction	Magnitude [(lb, lb-ft), (in, rad), (lb*s <sup>2</sup> /in, lb*s <sup>2</sup> *in)]
1 A	L	Z	328

**Load Combinations**

Description	Solve	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
1 **LC11 (IBC Eq 16-8)**														
2 LC11	Yes	Y	DL	1	FL	1								
3														
4 **LC12 (IBC Eq 16-9)**														
5 LC12	Yes	Y	DL	1	HL	1	FL	1	LL	1				
6														
7 **LC13 (IBC Eq 16-10)**														
8 LC13a (Lr)	Yes	Y	DL	1	HL	1	FL	1	RLL	1				
9 LC13b (S)	Yes	Y	DL	1	HL	1	FL	1	SL	1				
10 LC13c (R)	Yes	Y	DL	1	HL	1	FL	1	RL	1				
11														
12 **LC14 (IBC Eq 16-11)**														
13 LC14a (Lr)	Yes	Y	DL	1	HL	1	FL	1	LL	0.75	RLL	0.75		
14 LC14b (S)	Yes	Y	DL	1	HL	1	FL	1	LL	0.75	SL	0.75		

**Load Combinations (Continued)**

	Description	Solve	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
15	LC14c (R)	Yes	Y	DL	1	HL	1	FL	1	LL	0.75	RL	0.75		
16															
17	**LC15 (IBC Eq 16-12)**														
18	LC15aa (Wx)	Yes	Y	DL	1	HL	1	FL	1	WLX	0.6				
19	LC15aa (-Wx)	Yes	Y	DL	1	HL	1	FL	1	WLX	-0.6				
20	LC15ab (Wz)	Yes	Y	DL	1	HL	1	FL	1	WLZ	0.6				
21	LC15ab (-Wz)	Yes	Y	DL	1	HL	1	FL	1	WLZ	-0.6				
22	LC15ba (Ex)	Yes	Y	DL	1.15	FL	1.15	HL	1	ELX	0.7				
23	LC15ba (-Ex)	Yes	Y	DL	1.15	FL	1.15	HL	1	ELX	-0.7				
24	LC15bb (Ez)	Yes	Y	DL	1.15	FL	1.15	HL	1	ELZ	0.7				
25	LC15bb (-Ez)	Yes	Y	DL	1.15	FL	1.15	HL	1	ELZ	-0.7				
26															
27	**LC16 (IBC Eq 16-13)**														
28	LC16aa (Lr + Wx)	Yes	Y	DL	1	HL	1	FL	1	WLX	0.45	LL	0.75	RLL	0.75
29	LC16aa (Lr - Wx)	Yes	Y	DL	1	HL	1	FL	1	WLX	-0.45	LL	0.75	RLL	0.75
30	LC16ab (Lr + Wz)	Yes	Y	DL	1	HL	1	FL	1	WLZ	0.45	LL	0.75	RLL	0.75
31	LC16ab (Lr - Wz)	Yes	Y	DL	1	HL	1	FL	1	WLZ	-0.45	LL	0.75	RLL	0.75
32	LC16ba (S + Wx)	Yes	Y	DL	1	HL	1	FL	1	WLX	0.45	LL	0.75	SL	0.75
33	LC16ba (S - Wx)	Yes	Y	DL	1	HL	1	FL	1	WLX	-0.45	LL	0.75	SL	0.75
34	LC16bb (S + Wz)	Yes	Y	DL	1	HL	1	FL	1	WLZ	0.45	LL	0.75	SL	0.75
35	LC16bb (S - Wz)	Yes	Y	DL	1	HL	1	FL	1	WLZ	-0.45	LL	0.75	SL	0.75
36	LC16ca (R + Wx)	Yes	Y	DL	1	HL	1	FL	1	WLX	0.45	LL	0.75	RL	0.75
37	LC16ca (R - Wx)	Yes	Y	DL	1	HL	1	FL	1	WLX	-0.45	LL	0.75	RL	0.75
38	LC16cb (R + Wz)	Yes	Y	DL	1	HL	1	FL	1	WLZ	0.45	LL	0.75	RL	0.75
39	LC16cb (R - Wz)	Yes	Y	DL	1	HL	1	FL	1	WLZ	-0.45	LL	0.75	RL	0.75
40															
41	**LC17 (IBC Eq 16-14)**														
42	LC17a (Ex)	Yes	Y	DL	1.11	FL	1.11	HL	1	ELX	0.525	LL	0.75	SL	0.75
43	LC17a (-Ex)	Yes	Y	DL	1.11	FL	1.11	HL	1	ELX	-0.525	LL	0.75	SL	0.75
44	LC17b (Ez)	Yes	Y	DL	1.11	FL	1.11	HL	1	ELZ	0.525	LL	0.75	SL	0.75
45	LC17b (-Ez)	Yes	Y	DL	1.11	FL	1.11	HL	1	ELZ	-0.525	LL	0.75	SL	0.75
46															
47	**LC18 (IBC Eq 16-15)**														
48	LC18aa (Wx)	Yes	Y	DL	0.6	WLX	0.6	HL	1						
49	LC18aa (-Wx)	Yes	Y	DL	0.6	WLX	-0.6	HL	1						
50	LC18ab (Wz)	Yes	Y	DL	0.6	WLZ	0.6	HL	1						
51	LC18ab (-Wz)	Yes	Y	DL	0.6	WLZ	-0.6	HL	1						
52															
53	**LC19 (IBC Eq 16-16)**														
54	LC19a (Ex)	Yes	Y	DL	0.45	FL	0.45	ELX	0.7	HL	1				
55	LC19a (-Ex)	Yes	Y	DL	0.45	FL	0.45	ELX	-0.7	HL	1				
56	LC19b (Ez)	Yes	Y	DL	0.45	FL	0.45	ELZ	0.7	HL	1				
57	LC19b (-Ez)	Yes	Y	DL	0.451	FL	0.451	ELZ	-0.7	HL	1				

**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 15 max	113.76	18	158.27	19	363.52	50	0	57	0	57	0	57
2 min	-81.32	49	-114.41	48	-675.36	21	0	2	0	2	0	2
3 17 max	81.32	48	158.27	18	363.52	50	0	57	0	57	0	57
4 min	-113.76	19	-114.41	49	-675.36	21	0	2	0	2	0	2
5 18 max	156.66	19	126.42	18	773.76	21	0	57	0	57	0	57
6 min	-124.22	48	-82.56	49	-461.92	50	0	2	0	2	0	2
7 16 max	124.22	49	126.42	19	773.76	21	0	57	0	57	0	57
8 min	-156.66	18	-82.56	48	-461.92	50	0	2	0	2	0	2
9 Totals: max	85.8	19	127.46	24	196.8	21						
10 min	-85.8	18	49.88	55	-196.8	50						

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

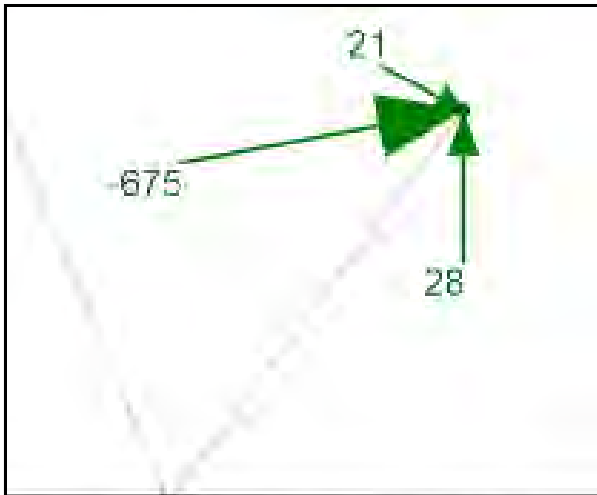
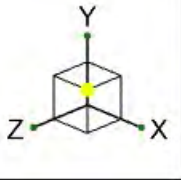
Member	Shape	Code Check	Loc[in]	LC	Shear Check	Loc[in]	Dir	LC	Pnc/om [lb]	Pnt/om [lb]	Mnyy/om [lb-ft]	Mnzz/om [lb-ft]	Cb	Eqn
1 1	PIPE 2.0	0.26	78	21	0.03	87		19	9924.22	21377.25	1245.26	1245.26	1	H1-1b
2 5	HSS3X3X3	0.14	14	21	0.06	14	y	19	51535.2	52059.88	4521.96	4521.96	1.09	H1-1b

**Material Take-Off**

	Material	Size	Pieces	Length[in]	Weight[K]
1	General Members				
2	RIGID		5	98.1	0
3	Total General		5	98.1	0
4					
5	Hot Rolled Steel				
6	A500 Gr.B Rect	HSS3X3X3	1	14	0.01
7	A53 Gr.B	PIPE_2.0	1	96	0.03
8	Total HR Steel		2	110	0.04

**Warning Log**

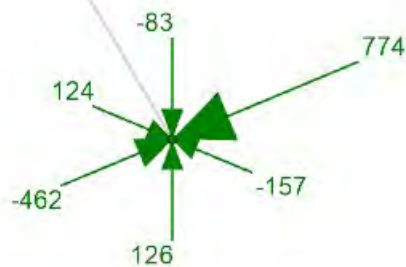
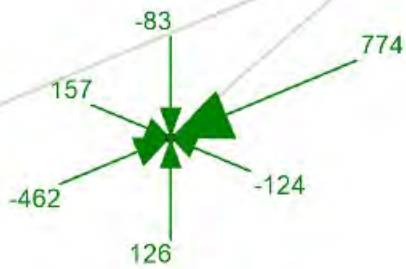
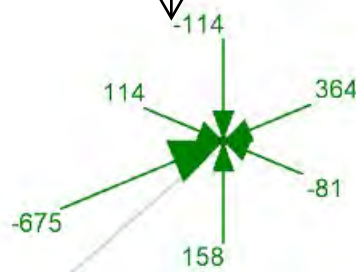
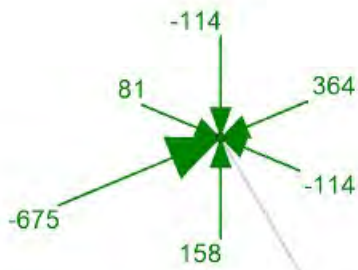
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Results for LC 21, LC15ab (-Wz)  
Reaction and Moment Units are lbs

$$T = 675 \text{ lbs}$$

$$V = \text{Sqrt}(21^2 + 28^2) = 35 \text{ lbs}$$



Reaction and Moment Units are lbs and lb-ft (Enveloped)

## Steel Bolts & Threaded Parts Check (Shear & Tension)

- Design is per the 2018 IBC.
- Design checks are per AISC 360-16.
- Threads are included in all design checks.
- Tension & Shear checks are per AISC J3.6
- Combined tension & shear checks are per RCSC 5.2

### General

Item Checked: (E) Antenna Mount Anchorage

### Design Criteria

Design Method: ASD

Bolt Material: A307 Bolts

### Material Properties (AISC Table J3.2)

$F_u$ : 60 ksi (AISC Table J3.2)

$F_{nt}$ : 45 ksi (AISC Table J3.2)

$F_{nv}$ : 27 ksi (AISC Table J3.2)

### Bolt Results - ASD

$T_a$ : 675 lb (ASD Tension)       $\Omega$ : 2.00 (ASD Safety Factor)

$V_a$ : 35 lb (ASD Shear)

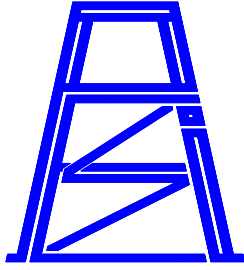
Bolt		Tension		Shear		Combined Tension & Shear	Max Ratio
Size	$A_b$	$T_n/\Omega$	$T_a/(T_n/\Omega)$	$V_n/\Omega$	$V_a/(V_n/\Omega)$	$(\Omega T_a/T_n)^2 + (\Omega V_a/V_n)^2$	
in	$in^2$	lb		lb			
1/4	0.049	1,104	0.61	663	0.05	0.38	0.61
3/8	0.110	2,485	0.27	1,491	0.02	0.07	0.27
1/2	0.196	4,418	0.15	2,651	0.01	0.02	0.15
5/8	0.307	6,903	0.10	4,142	0.01	0.01	0.10
3/4	0.442	9,940	0.07	5,964	0.01	0.00	0.07
7/8	0.601	13,530	0.05	8,118	0.00	0.00	0.05
1	0.785	17,671	0.04	10,603	0.00	0.00	0.04

### Bolt Results - LRFD (Not Applicable)

$T_u$ : 762 lb (LRFD Tension)       $\phi$ : 0.75 (LRFD Resistance Factor)

$V_u$ : 703 lb (LRFD Shear)

Bolt		Tension		Shear		Tension & Shear	Max Ratio
Size	$A_b$	$\phi T_n$	$T_u/\phi T_n$	$\phi V_n$	$V_u/\phi V_n$	$\left(\frac{T_u}{\phi T_n}\right)^2 + \left(\frac{V_u}{\phi V_n}\right)^2$	
in	$in^2$	lb		lb			
1/4	0.049	1,657	0.46	994	0.71	0.71	0.71
3/8	0.110	3,728	0.20	2,237	0.31	0.14	0.31
1/2	0.196	6,627	0.11	3,976	0.18	0.04	0.18
5/8	0.307	10,354	0.07	6,213	0.11	0.02	0.11
3/4	0.442	14,910	0.05	8,946	0.08	0.01	0.08
7/8	0.601	20,295	0.04	12,177	0.06	0.00	0.06
1	0.785	26,507	0.03	15,904	0.04	0.00	0.04



# ***PLATINUM***

## **Engineering Solutions, Inc.**

*Structural • Tower Engineering • Geotechnical*

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### **STRUCTURAL MAPPING**

*For:*

## ***CABINET PLATFORM, ANTENNA PARAPETS & RADIO FRAMES***

*Prepared By:*

***Darren Reimer, PE.***

*Checked By:*

***Naser Salem, PE., SE.***

***Report No. 2022-7766***

***March 25, 2022***

*Site Name:* **SFSF000411D**  
**350 Calle Principal**  
**Monterey, CA 93940**

*Site Number:* **SFSF000411D**

---

PLANS PREPARED FOR



2030 Main Street, Suite 200  
Irvine, CA 92614

PROPOSED PROJECT

ENGINEER OF RECORD



**PLATINUM**  
Engineering Solutions, Inc.

Commercial - Industrial - Residential - Towers  
10648 N. HWY 41  
Madera, CA 93638-9469  
Tel: (559) 439-0500  
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www.Platinumengineering.com

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PROJECT NO.: 2022-7766

DRAWN BY: S.S.

CHECKED BY: D.R.

APPROVED BY: N.SALEM

SCALE: NTS

ISSUE

0	3/23/22	NON-INVASIVE
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MARK	DATE	DESCRIPTION
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PROPOSED PROJECT

TELECOM  
MAPPING

STATUS

MAPPING

SITE NAME & NO.

SFSF000411D

SITE ADDRESS

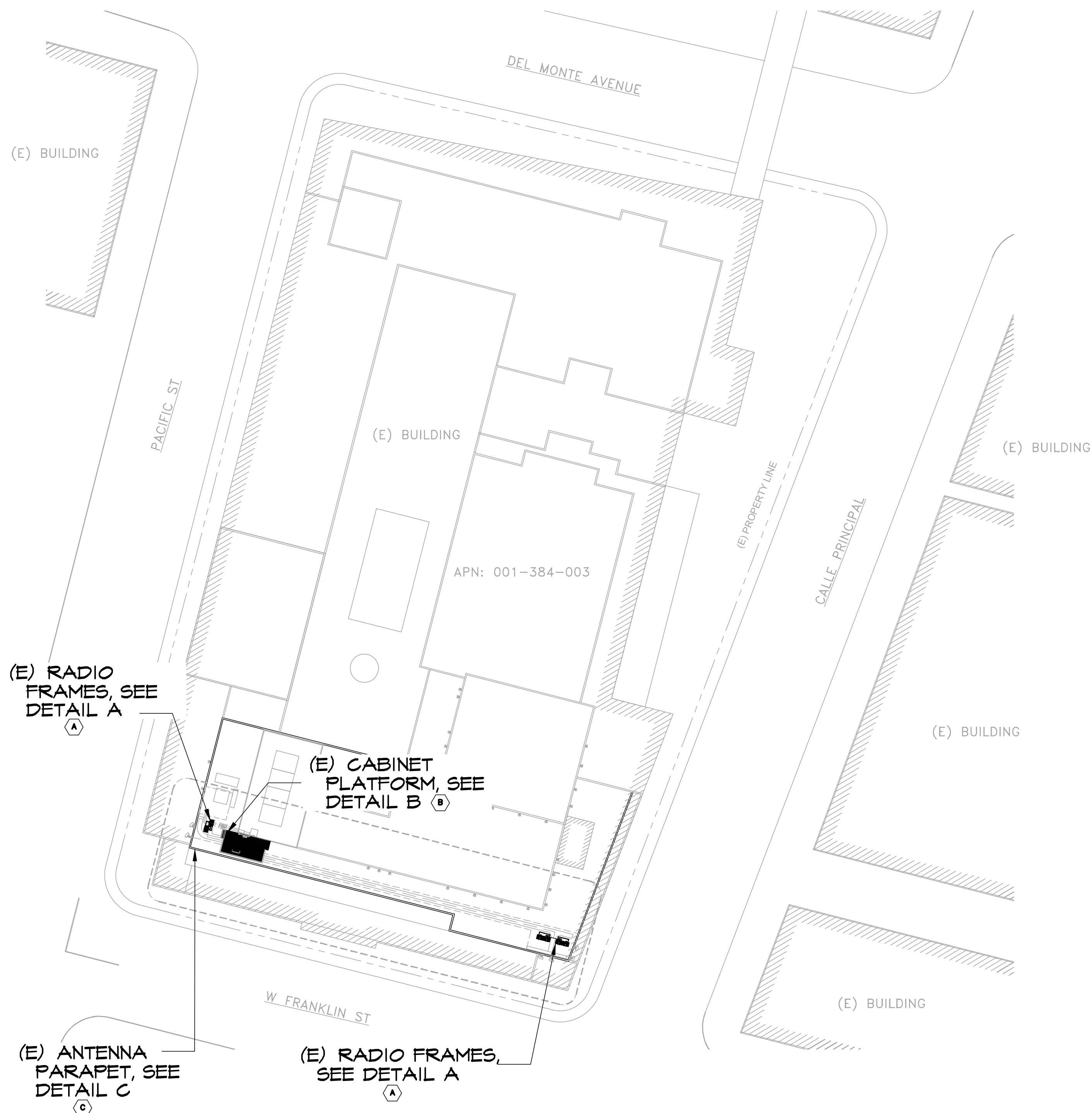
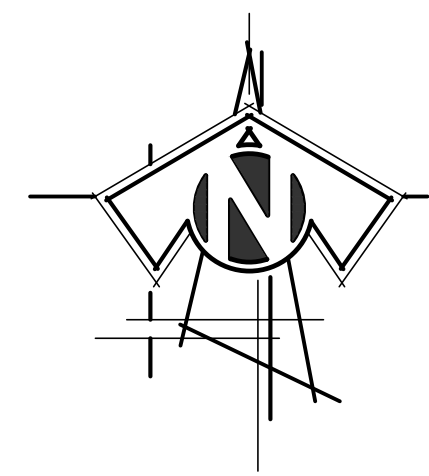
350 CALLE PRINCIPAL  
MONTEREY, CA 93940

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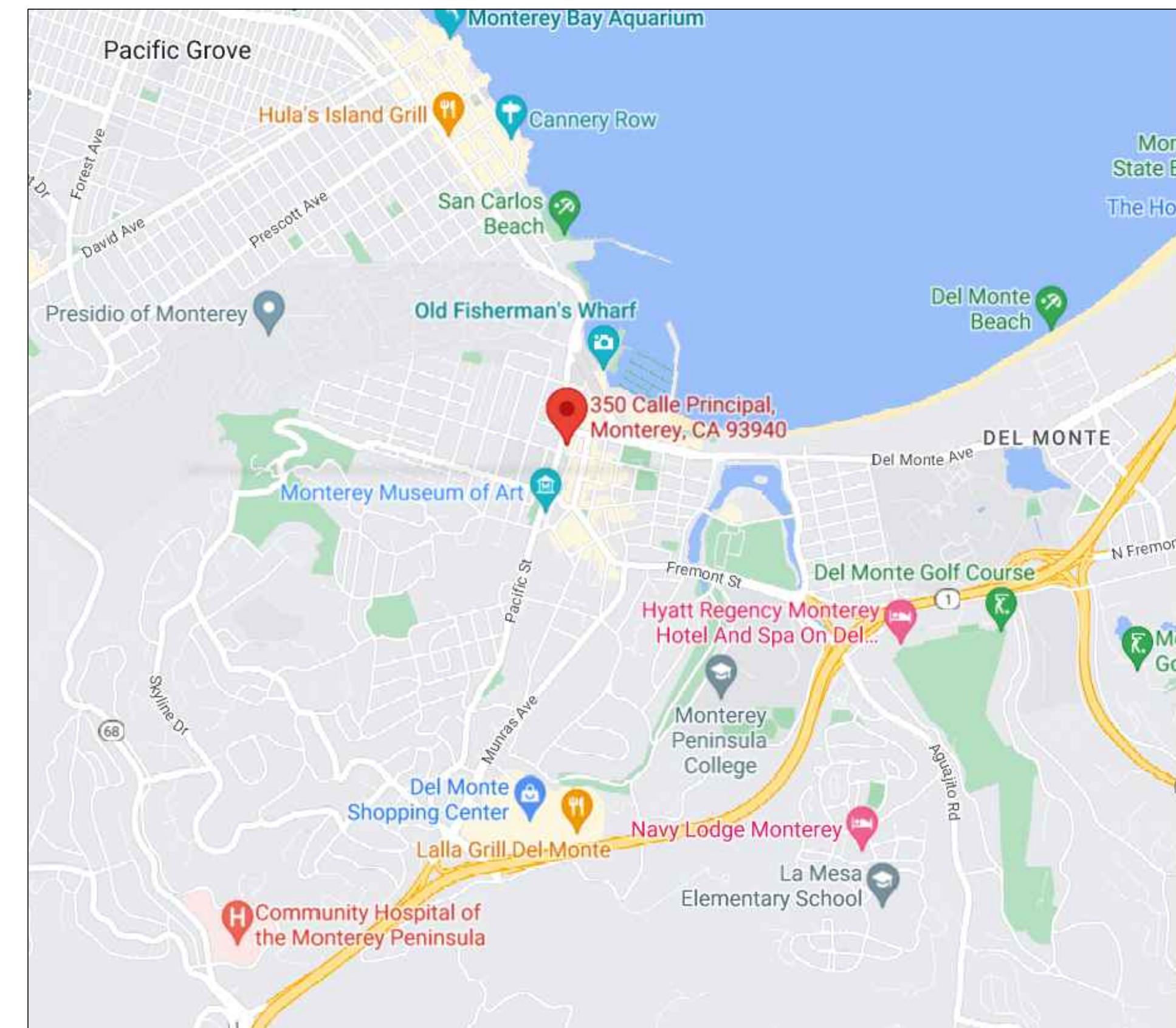
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S-1



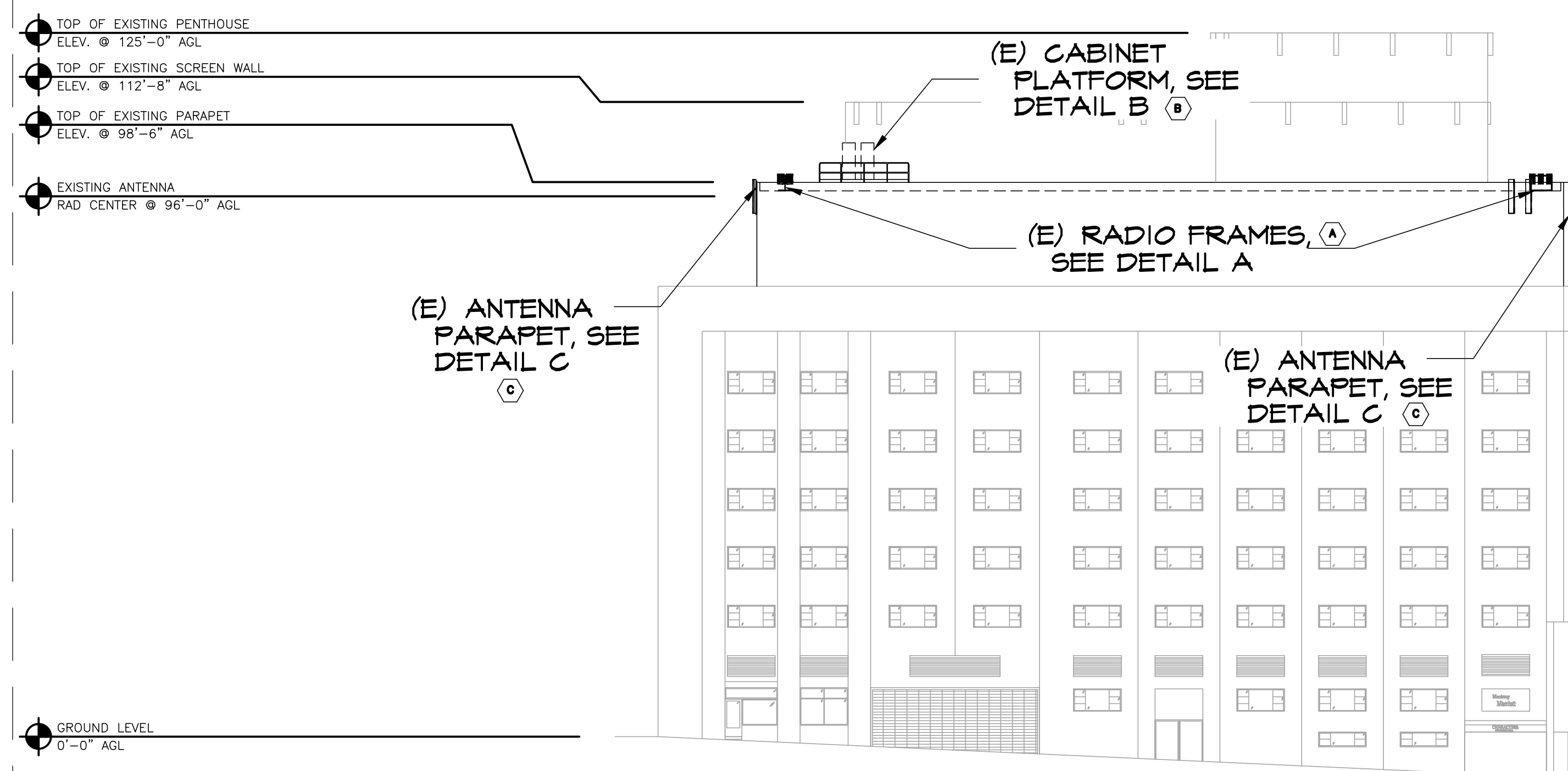
(E) SITE PLAN

SCALE: NTS



(E) SITE MAP

SCALE: NTS



(E) ELEVATION

SCALE: NTS





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PROJECT NO.:	2022-7766
DRAWN BY:	S.S.
CHECKED BY:	D.R.
APPROVED BY:	N.SALEM
SCALE:	AS NOTED

ISSUE	DATE	DESCRIPTION
0	3/23/22	NON-IMPACT

MARK	DATE	DESCRIPTION
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PROPOSED PROJECT

TELECOM  
MAPPING

STATUS

MAPPING

SITE NAME & NO.

SFSF000411D

SITE ADDRESS

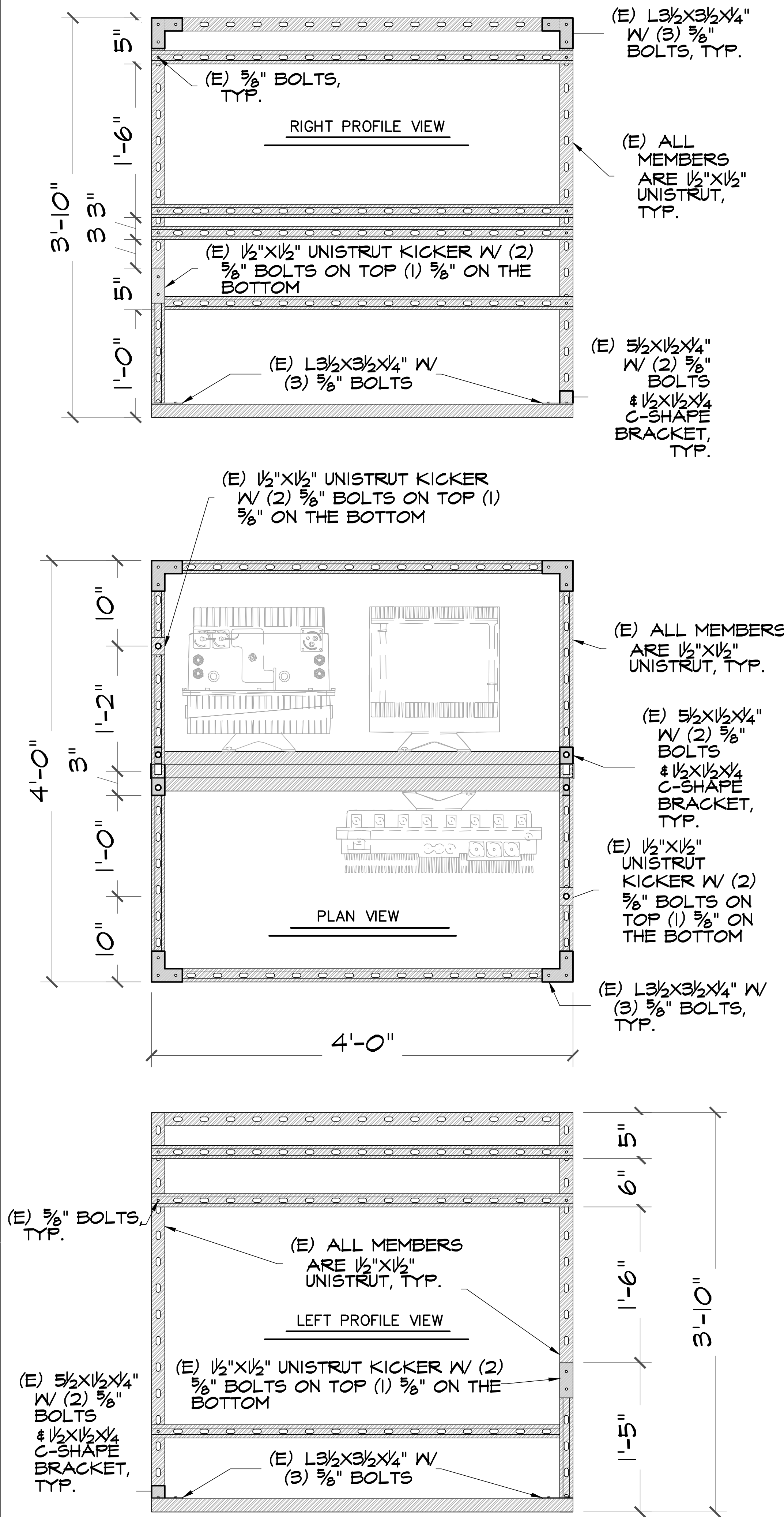
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MONTEREY, CA 93940

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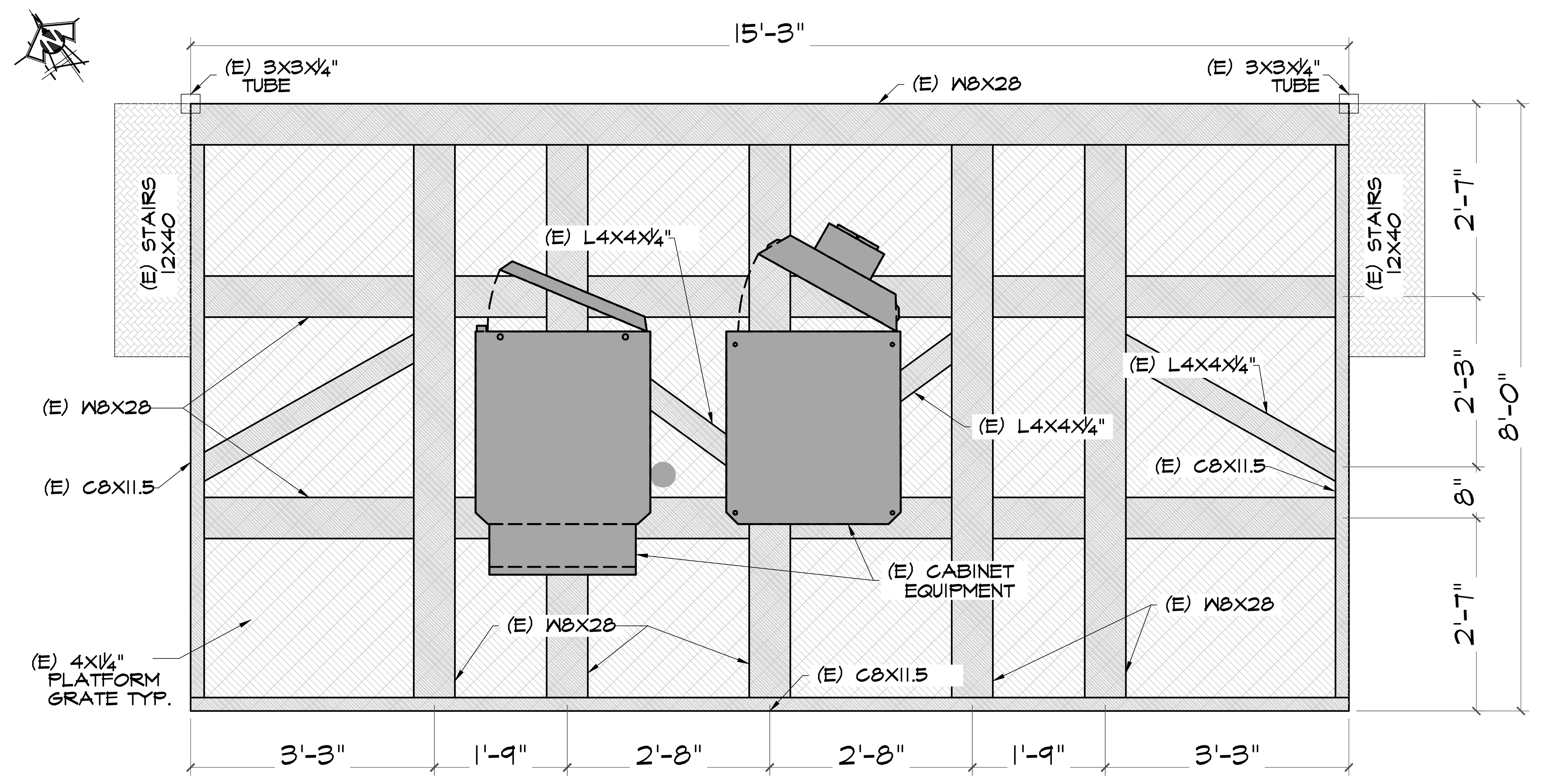
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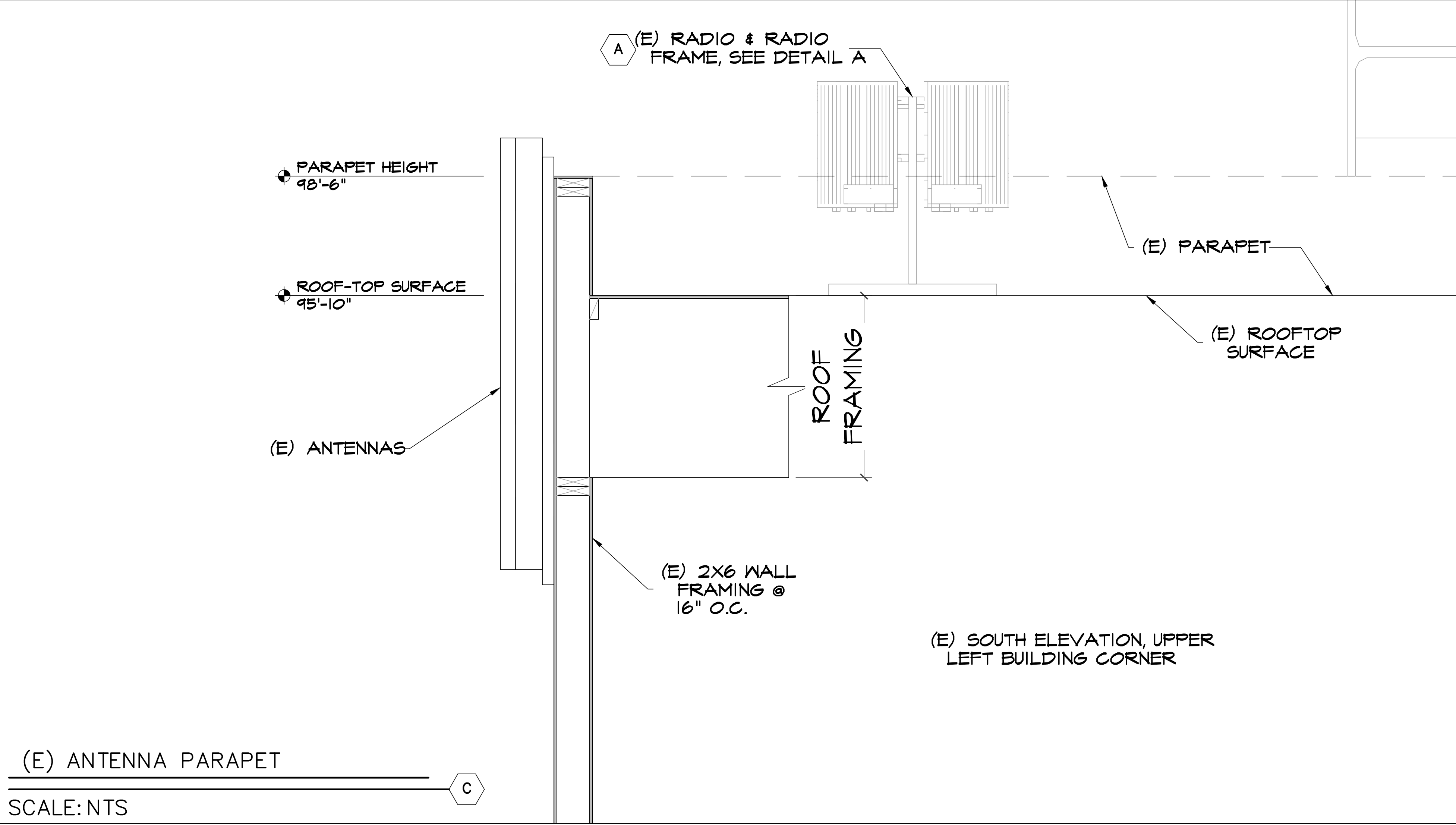
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(E) RADIO FRAMING  
SCALE: 1 1/2" = 1'-0" A



(E) CABINET PLATFORM  
SCALE: 1" = 1'-0" B



(E) ANTENNA PARAPET  
SCALE: NTS C

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Rev.	Date	Description
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A. AUTHORIZATION/PURPOSE ..... 2

B. HISTORY ..... 2

C. ASSUMPTIONS ..... 2

D. PROVISIONS ..... 3

APPENDIX

STRUCTURE MAPPING ..... A

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Rev.	Date	Description
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A. AUTHORIZATION/PURPOSE

As authorized by Adriana Villalobos from J5 Infrastructure Partners, a structural mapping was performed to investigate the properties of the existing equipment cabinet platform, antenna parapet and radio frames of the building located at 350 Calle Principal, Monterey, CA 93940.

B. HISTORY

1. Platinum Engineering has received the site location and access information Adriana Villalobos at J5 Infrastructure Partners, in the form of email.
2. Platinum Engineering Solutions Inc. visited the site and performed a mapping on March 16, 2022, took pictures and the following measurements necessary with standard tapes, laser, surveying equipment:
  - a. Structural map of equipment cabinet platform, antenna parapets and radio frames.
  - b. Member section dimensions and connections

C. ASSUMPTIONS

1. Site will be regularly serviced for telecom facility maintenance including weatherproofing, live growth abatement, drainage, ground wire paths, and straight plumb verification.
2. All structural members not included in this observation are also in good condition, site was built using industry standard construction, and bolts have appropriate installation torque.
3. All structural members, fasteners, and welds are regularly checked for cracks, deflection, rust, mold, rot or any signs of failure or serviceability issues.
4. All structural members concealed by finishing are assumed continuous with measurements matching portions of the structure that are accessible.

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#### D. PROVISIONS OF ANALYSIS

The analysis performed and the conclusions contained herein are based on the assumption that the structure had been properly built per the original drawings and maintained per the current code. And there is no significant deterioration or damage to any component.

Furthermore, the information and conclusions contained in this Report were determined by application of the current "state-of-the-art" engineering and analysis procedures and formulae, and Platinum Engineering Solutions, Inc. assumes no obligations to revise any of the information or conclusions contained in this Report in the event that such engineering and analysis procedures and formulae are hereafter modified or revised. In addition, under no circumstances will Platinum Engineering Solutions, Inc. have any obligation or responsibility whatsoever for or on account of consequential or incidental damages sustained by any person, firm or organization as a result of any information or conclusions contained in the Report, and the maximum liability of Platinum Engineering Solutions, Inc. if any, pursuant to this Report shall be limited to the total funds actually received by Platinum Engineering Solutions, Inc. for preparation of this Report.

Customer has requested Platinum Engineering Solutions, Inc. to prepare and submit to Customer an engineering analysis with respect to the Subject Structure and has further requested Platinum Engineering Solutions, Inc. to make appropriate recommendations regarding suggested structural modifications and changes to the Subject Structure. In making such request of Platinum Engineering Solutions, Inc. Customer has informed Platinum Engineering Solutions, Inc. that Customer will make a determination as to whether or not to implement any of the changes or modifications which may be suggested by Platinum Engineering Solutions, Inc. and that Customer will have any such changes or modifications made by riggers, erectors and other subcontractors of Customer's choice.

Customer hereby agrees and acknowledges that Platinum Engineering Solutions, Inc. shall have no liability whatsoever to Customer or to others for any work or services performed by any persons other than Platinum Engineering Solutions, Inc. in connection with the implementation of any structural changes or modifications recommended by Platinum Engineering Solutions, Inc. including but not limited to any services rendered for Customer or for others by riggers, erectors or other subcontractors. Customer acknowledges and agrees that any riggers, erectors or subcontractors retained or employed by Customer shall be solely responsible to Customer and to others for the quality of work performed by them and that Platinum Engineering Solutions, Inc. shall have no liability or responsibility whatsoever as a result of any negligence or breach of contract by any such rigger, erector or subcontractor.

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Rev.	Date	Description
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Rev.	Date	Description
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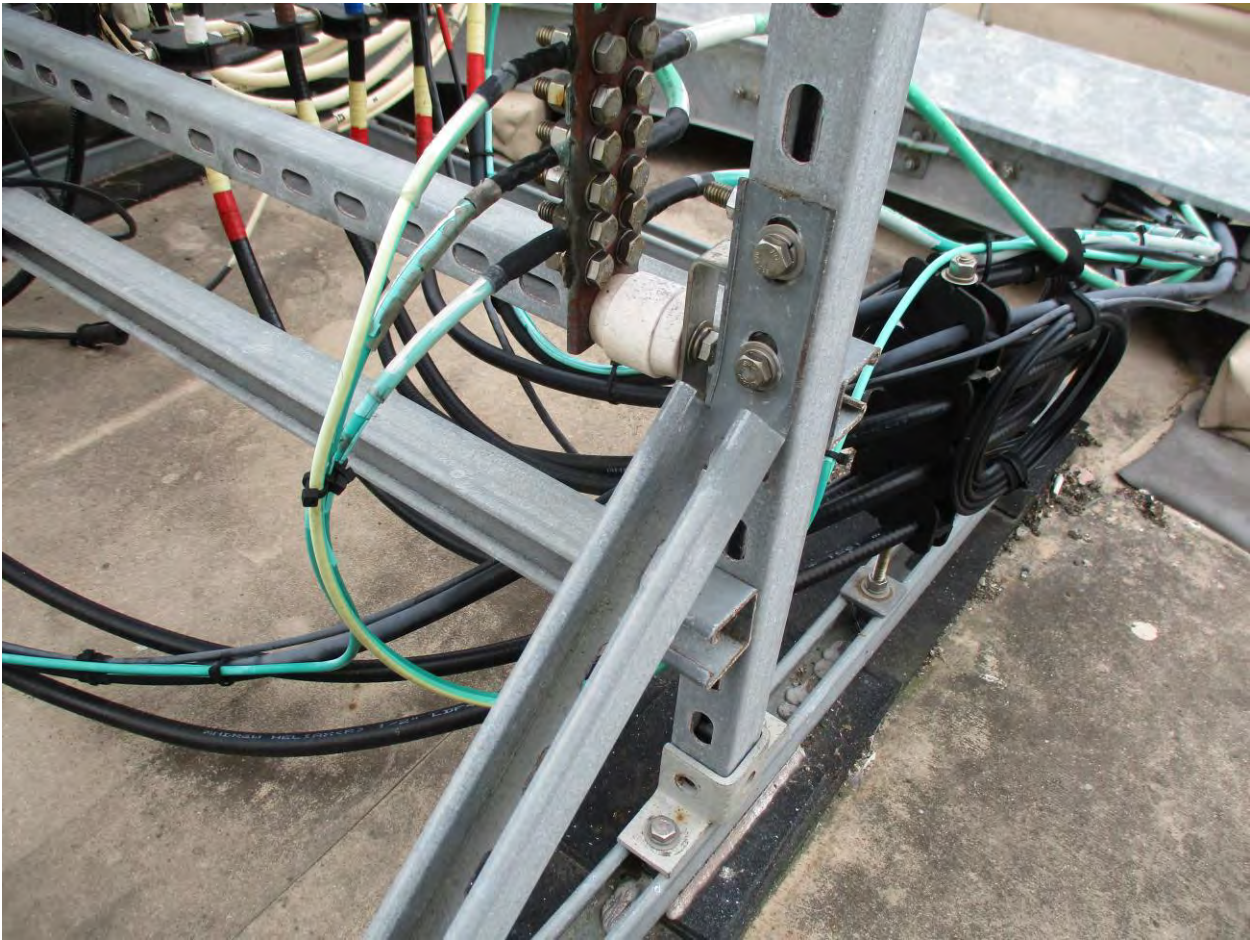


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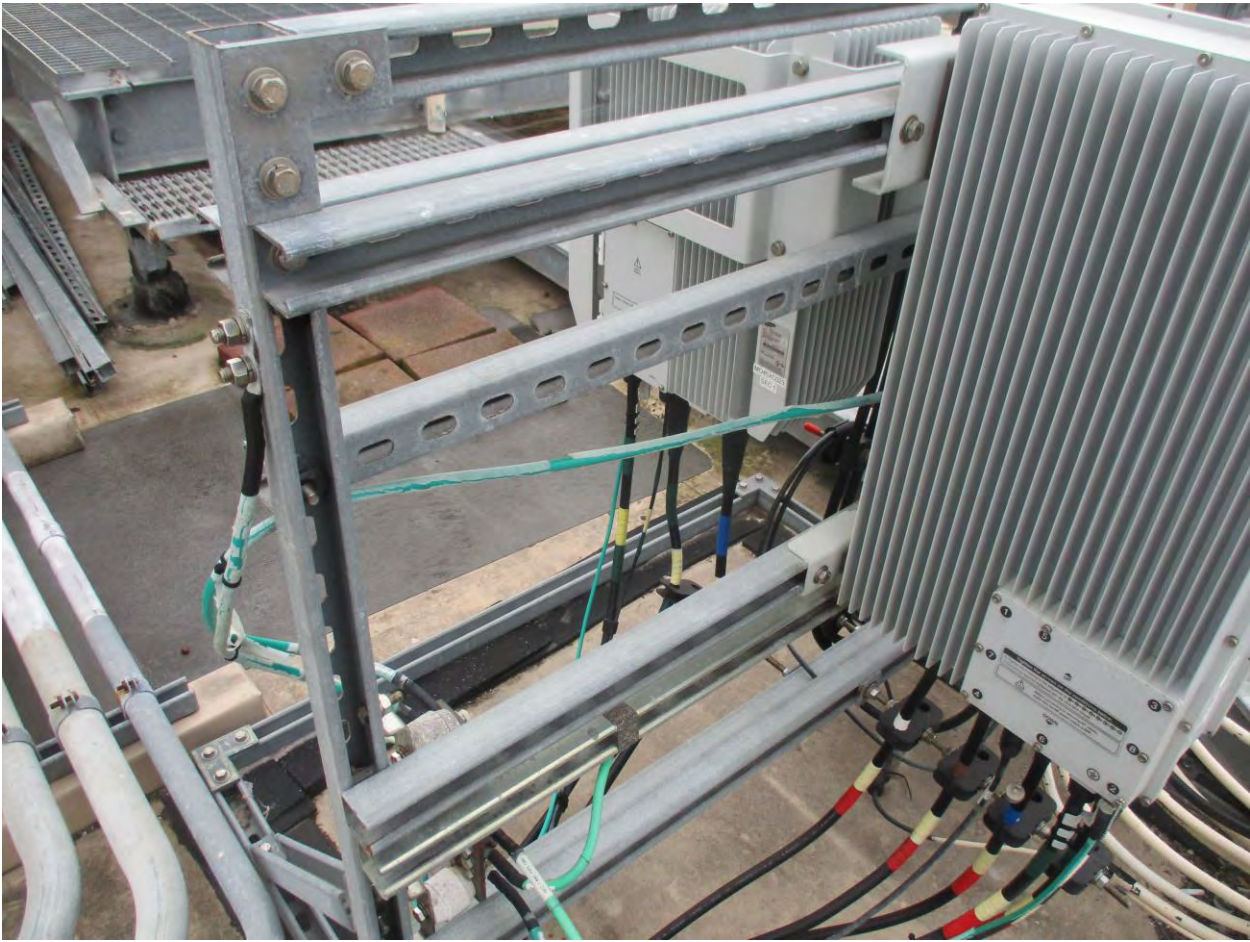
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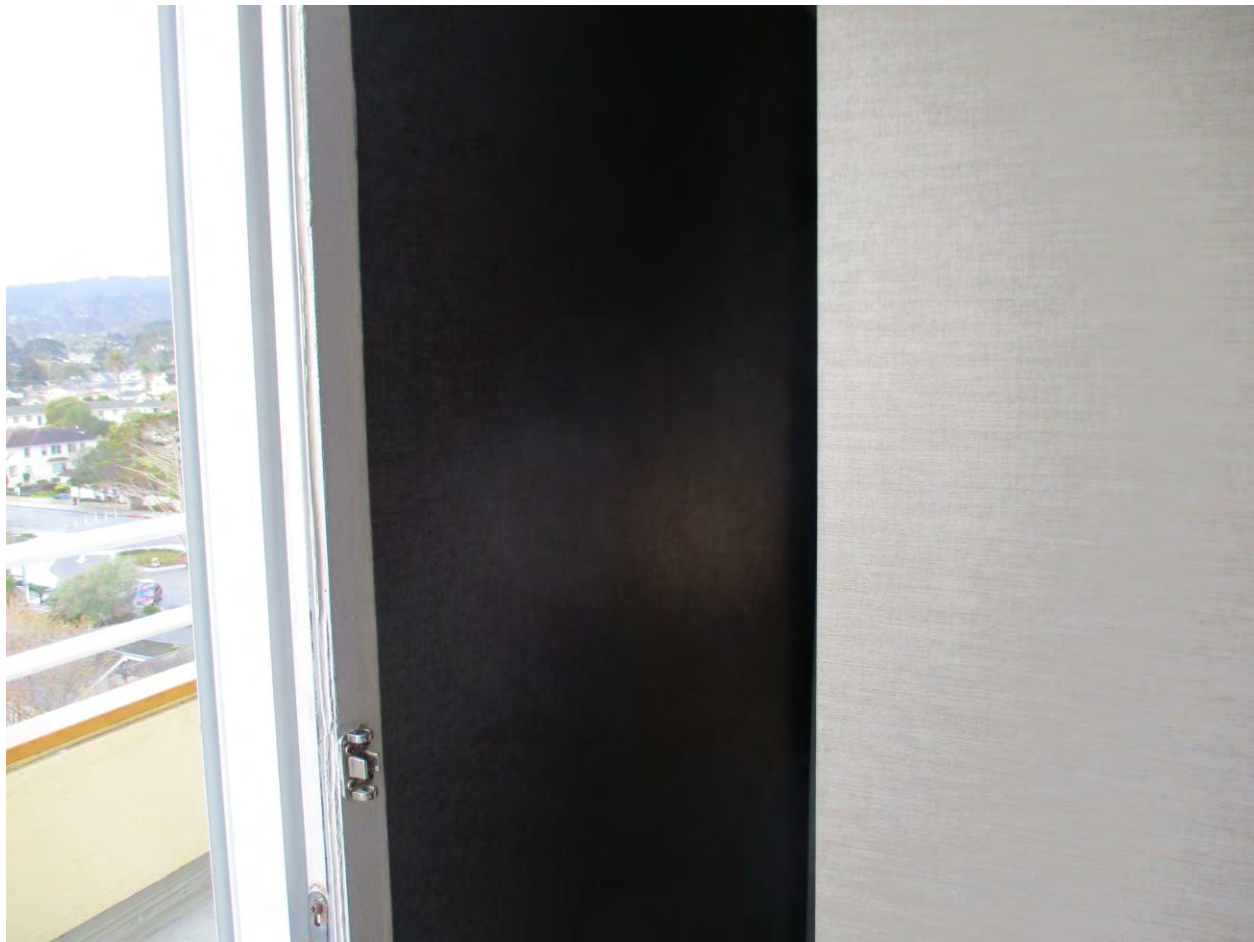
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