

Development Services

From Concept to Construction

Phone: 503-823-7300 Email: bds@portlandoregon.gov 1900 SW 4th Ave, Portland, OR 97201

More Contact Info (<http://www.portlandoregon.gov/bds/article/519984>)



APPEAL SUMMARY

Status: Hold for Additional Information - Reconsideration of ID 26350

Appeal ID: 27506	Project Address: 1705 SW 11th Ave
Hearing Date: 2/16/22	Appellant Name: Courtnee Gomez
Case No.: B-005	Appellant Phone: 9165274157
Appeal Type: Building	Plans Examiner/Inspector: Kent Hegsted, Lisa Buellesbach, Amit Kumar
Project Type: commercial	Stories: 8 Occupancy: R-2 Construction Type: II-A, II-B
Building/Business Name: AT&T	Fire Sprinklers: Yes - Full
Appeal Involves: Alteration of an existing structure	LUR or Permit Application No.: 21-009355-REV-01
Plan Submitted Option: pdf [File 1] [File 2] [File 3] [File 4] Proposed use: Unmanned Rooftop Telecom Facility	

APPEAL INFORMATION SHEET

Appeal item 1

Code Section	IBC/26/#1
Requires	Code Guide for Fiber Reinforced Plastic Material - OSSC/26/#1. Use of Fiber Plastic Material for rooftop screening applications. Section B (Design and Construction), #7: "The height of the FRP screen shall not exceed 10' above the elevation of the roof at any point where the FRP screen is attached."
Code Modification or Alternate Requested	The intent of this appeal is to allow the FRP screens to stay at the existing 15'-6" above the roof.
Proposed Design	AT&T has an existing telecommunications facility/cell-site located on the roof of Blumel Hall at Portland State University. The installation consists of three antenna sectors mounted on steel frames attached to the roof and located behind FRP Screens and a rooftop equipment shelter. The existing and proposed screens do not meet the height limit contained within Code Guide OSSC/26/#1, which limits FRP screen height to 10' above the roof. However, the existing enclosure was approved under LU 11-137393 CU DZ for a screen height of 15'-6" and has previously received approval of a building code appeal (Appeal ID #13968). Each existing antenna sector/frame is approximately 15' long by 6' deep. The screens are setback between approx. 5' and 12' from the edge of the roof. Due to the additional wind and weight of the screens at antenna sectors Alpha and Gamma, reinforcement to the horizontal FRP angles is needed. Additionally, a full replacement FRP screening for Beta Sector is also needed. The proposed reinforcement of the horizontal FRP angles and the replacement FRP for Beta Sector will not increase the existing height of the facility. The proposal is illustrated on the attached construction drawings (Exhibit A). Note the structural drawings (Sheets S-1 through S-10) include detailed information about the design of the proposed FRP screens.

Reason for alternative As described in the previous section, AT&T has an existing telecommunications facility located on the roof of Blumel Hall at Portland State University. In 2011, AT&T moved the existing antennas mounted to the building's exterior to the (3) FRP enclosures that exist today as detailed in the LU 11-137393 CU DZ (associated building permit # 11-180157-000-00-CO). This relocation returned "the integrity to the brick and terra cotta building". Additionally, the size of the enclosures was approved as it matched "the scale and location of where stair and elevator overruns might occur on this L-shaped building". The enclosures fully screen the antennas from the adjacent buildings while providing an architectural feature that compliments the building's exterior. If required to comply with the 10' rule, it would expose the existing equipment and defeat the stealthing design required per the land use approval.

The alternative design also provides equivalent structural capacity, life safety and fire protection to what the code requires. As documented in the attached Structural Analysis report dated September 3, 2021 by Tylon (Exhibit B), once the proposed structural modifications are made to the existing roof structure, the screen additions will meet all applicable Codes (except the 10' height limitation) and will provide adequate structural capacity. The City requires that Fiber Reinforced Plastic (FRP) products proposed to be over the 10ft height limit have a valid approval report, such as an International Code Council Evaluation Service (ICC-ES) report or City of Los Angeles Research Report (LA-RR). The applicant is proposing to use FRP screens manufactured by Hi-Tech Composite Structures, which have an approved LA-RR. The structural report (Exhibit B) specifies the use of LA-RR approved FRP by Hi-Tech Composite Structures and a copy of the approval report (City of Los Angeles Research Report (LA-RR)) is attached as Exhibit C. The use of this tested and approved material will ensure that the project meets or exceeds all safety standards. As detailed in the LA-RR dated December 13, 2021, there is a maximum allowable height of 18 feet above the roof level. The overall height being proposed is 15'6", which is below this limit. Additionally, the individual rooftop screening panel area in any one plane is less than 250 square feet, and the screens are set back more than 20 ft from any interior property lines.

Regarding fire protection, the City further requires that FRP material used for rooftop screening applications shall be classified as CC1 or better and have a maximum flame spread of 50. As noted on Page 2 of the LA-RR report, the screens designed by High Tech Composite Structures that will be used for this installation (Exhibit D), have a flame spread index of 25. Furthermore, it should be noted that the existing building is fully sprinkled. This was confirmed on August 30, 2016, by Jeff Herman, City of Portland Fire Plans Reviewer. Additionally, the proposed screens that will enclose the existing antenna frames have adequate clearance for access around them, are well away from rooftop mechanical equipment, and do not obstruct any means of egress for emergencies or access to the roof for the fire department. Based on the foregoing, the alternative design provides equivalent structural capacity, life safety and fire protection and meets the intent of the guidelines. As such, the proposed screens that extend 15'-6" above the roof should be approved for this installation.

APPEAL DECISION

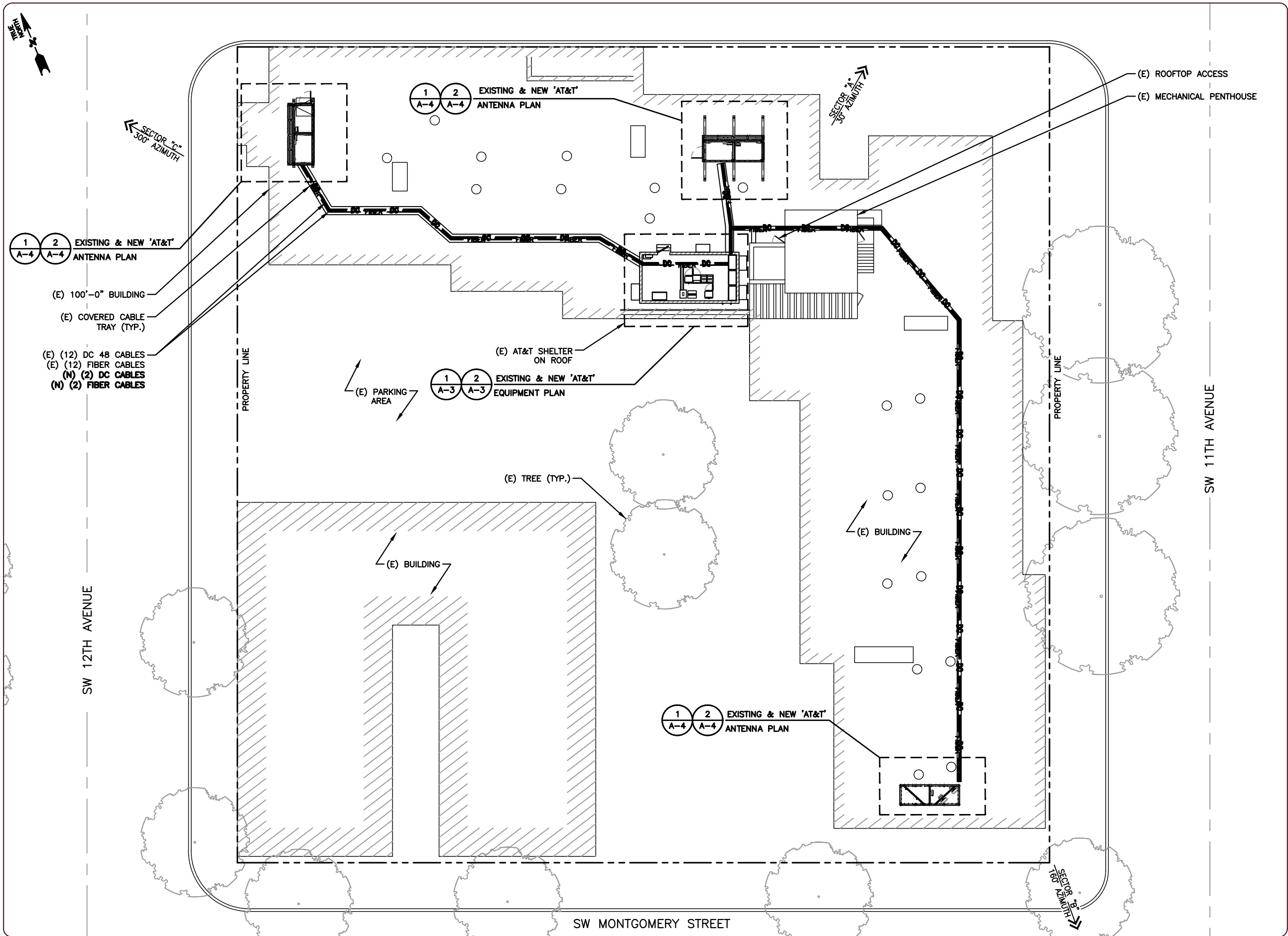
Increase in maximum allowable height of FRP screens from 10 feet to 15 feet, 6 inches above the roof of a Type IIA building: Hold for additional information.

See note below regarding the process for submitting additional information.

Appellant may contact John Butler (503 865-6427) or e-mail at John.Butler@portlandoregon.gov with questions.

Additional information is submitted as a no fee reconsideration, following the same submittal process and using the same appeals form as the original appeal. Indicate at the beginning of the appeal form that you are filing a reconsideration and include the original assigned Appeal ID number. The reconsideration will receive a new appeal number.

Include the original attachments and appeal language. Provide new text with only that information that is specific to the reconsideration in a separate paragraph(s) clearly identified as "Reconsideration Text" with any new attachments also referenced. Once submitted, the appeal cannot be revised.
No additional fee is required.



1825 W. WALNUT HILL LANE, SUITE 120
IRVING, TEXAS 75038
1-855-669-5421



DRAWING SCALES ARE INTENDED FOR 11"x17" SIZE
PRINTED MEDIA ONLY.

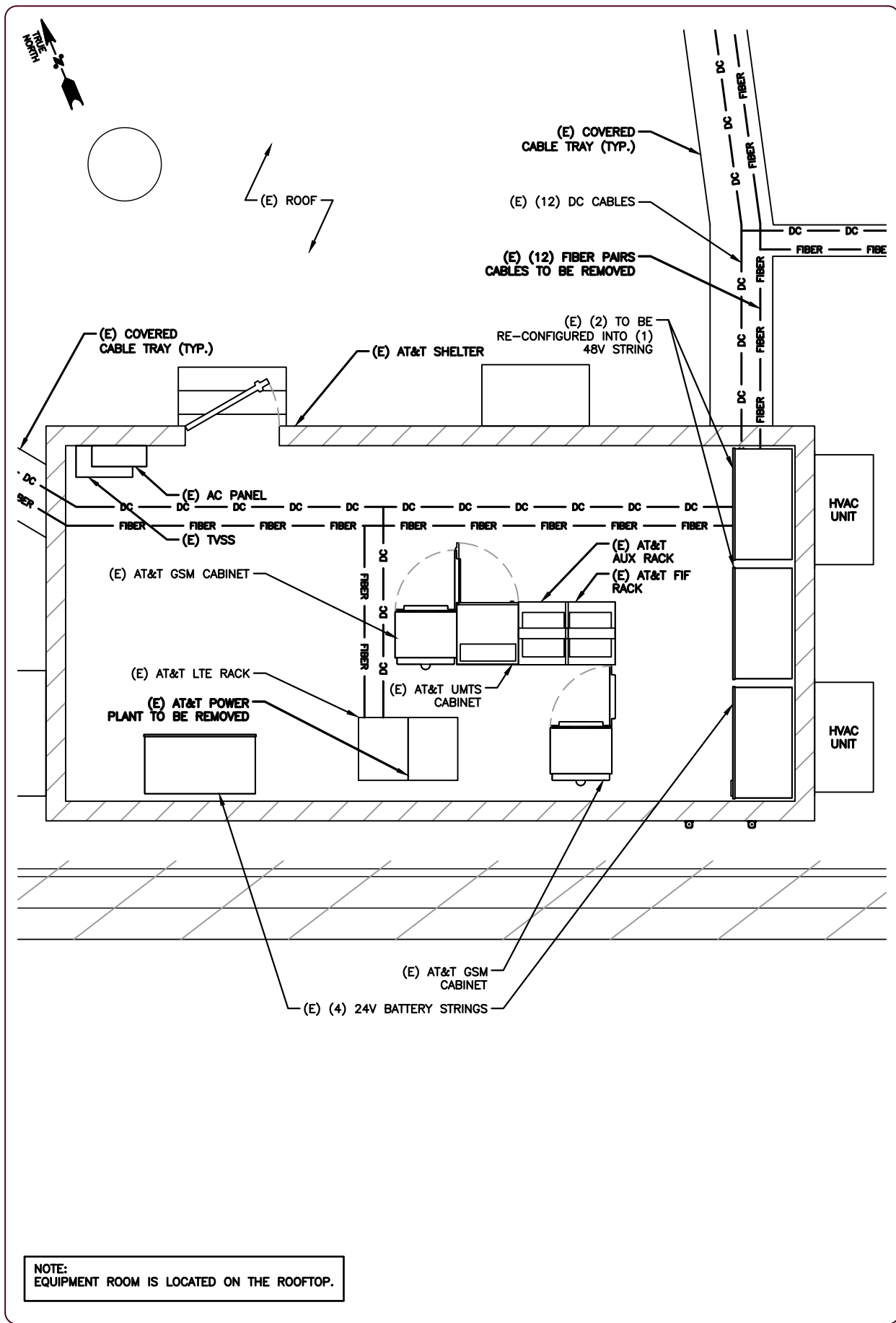
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1	03/23/21	100% CD	RCD
2	05/06/21	100% CD	RCD
3	05/26/21	100% CD	RCD
4	08/16/21	100% CD	RCD
5	09/23/21	100% CD	RCD
6	01/24/22	100% CD	RCD

SITE INFORMATION	
SITE ID: PR46	
FA NUMBER: 10094246	
RFDS NAME & ID: PR46 & 3547802	
SITE NAME: PSU	
SITE ADDRESS: 1705 SW 11TH AVENUE PORTLAND, OR 97201	

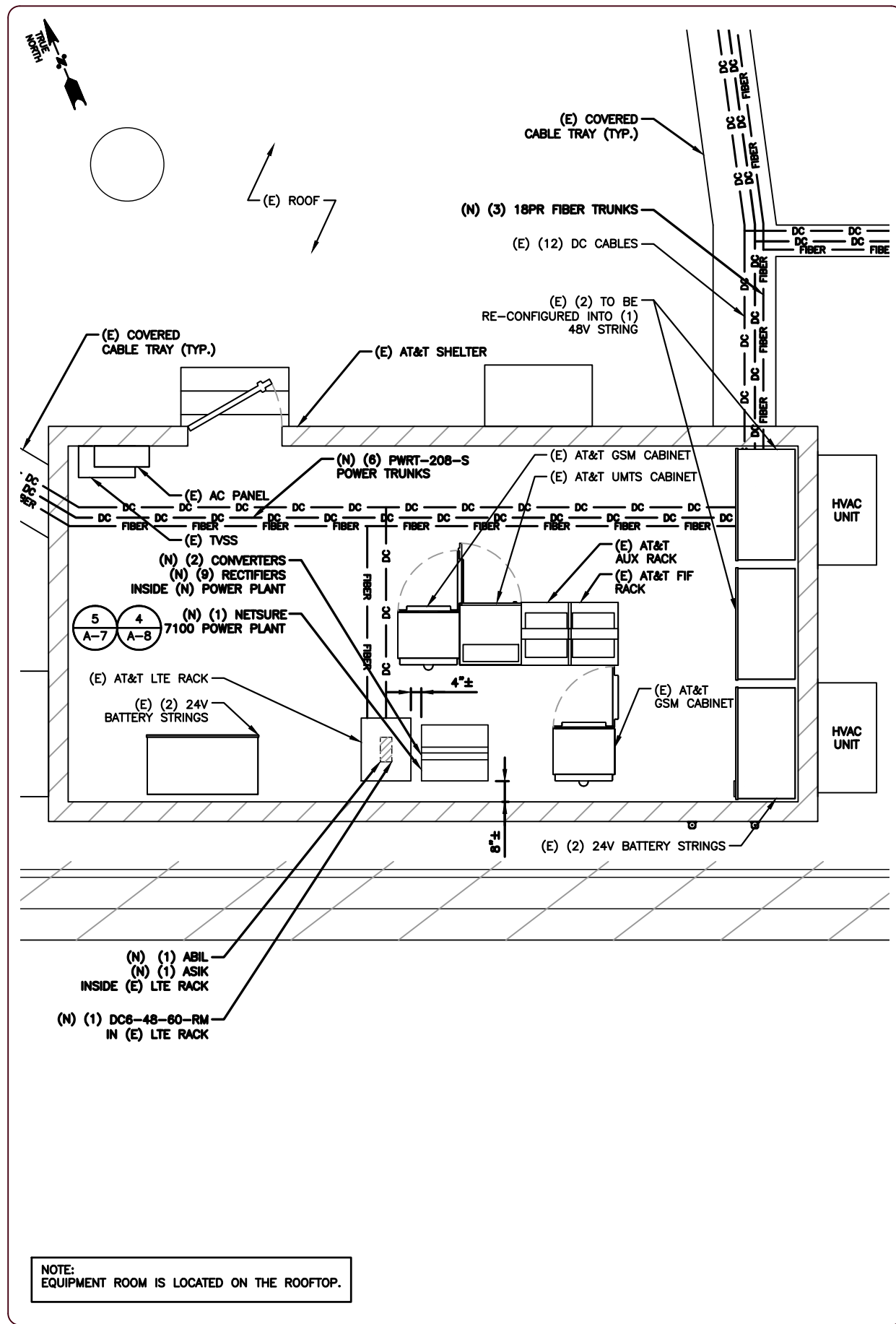
SHEET DESCRIPTION	
ENLARGED SITE PLAN	

SHEET No.	
A-2	

1 ENLARGED SITE PLAN
A-2 SCALE (11" X 17"): 3/32" = 1'-0" 0 5'-4" 10'-8" 21'-4" 32'-0"



1 EXISTING EQUIPMENT LAYOUT PLAN
A-3 SCALE (11" X 17"): 1/2" = 1'-0"



2 PROPOSED EQUIPMENT LAYOUT PLAN
A-3 SCALE (11" X 17"): 1/2" = 1'-0"



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FA NUMBER:
10094246

RFDS NAME & ID:
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SITE NAME:
PSU

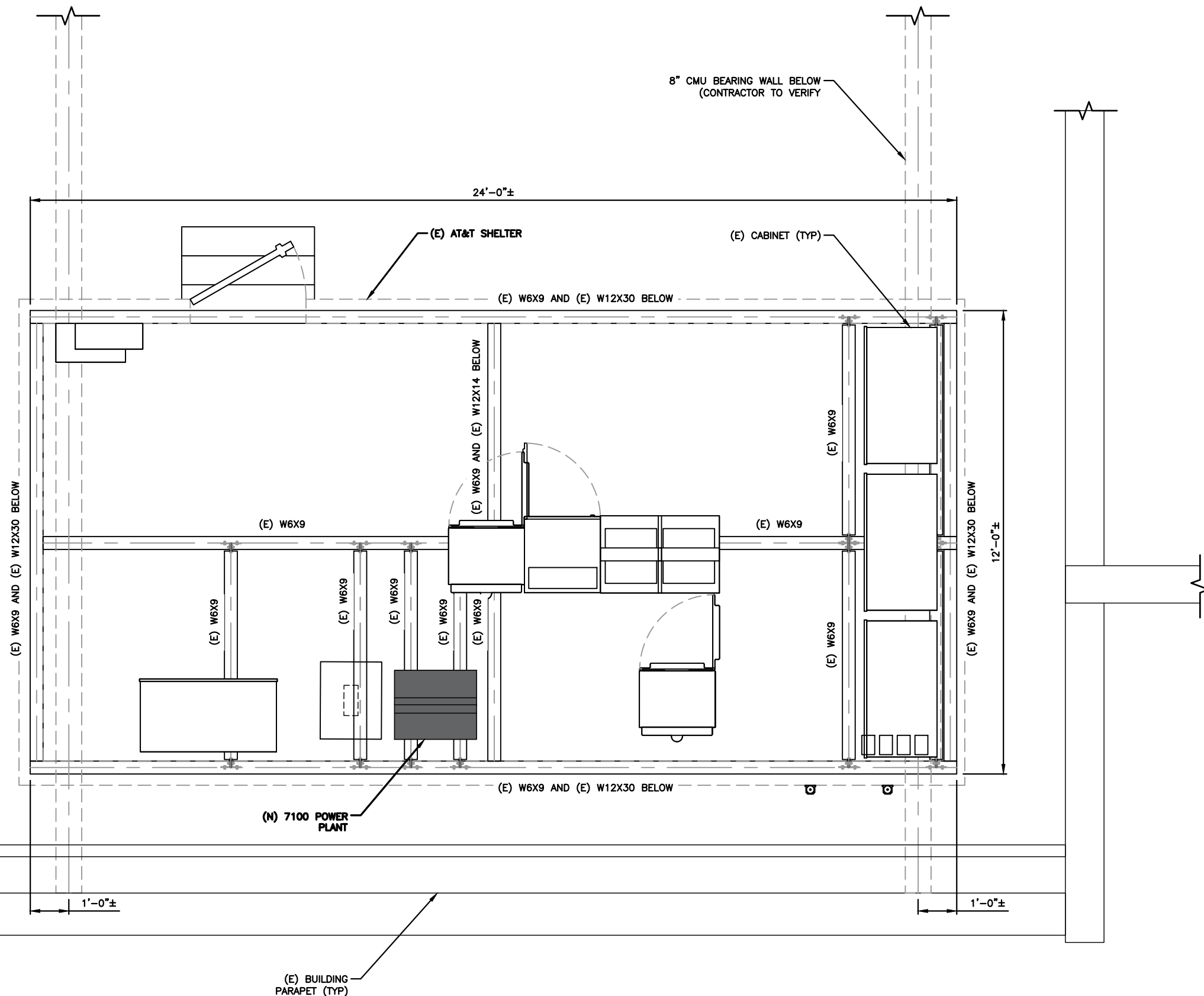
SITE ADDRESS:
1705 SW 11TH AVENUE
PORTLAND, OR 97201

SHEET DESCRIPTION

EXISTING & PROPOSED
EQUIPMENT LAYOUT PLANS

SHEET No.

A-3



NOTE:
EQUIPMENT ROOM IS LOCATED ON THE ROOFTOP.



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1705 SW 11TH AVENUE
PORTLAND, OR 97201

SHEET DESCRIPTION

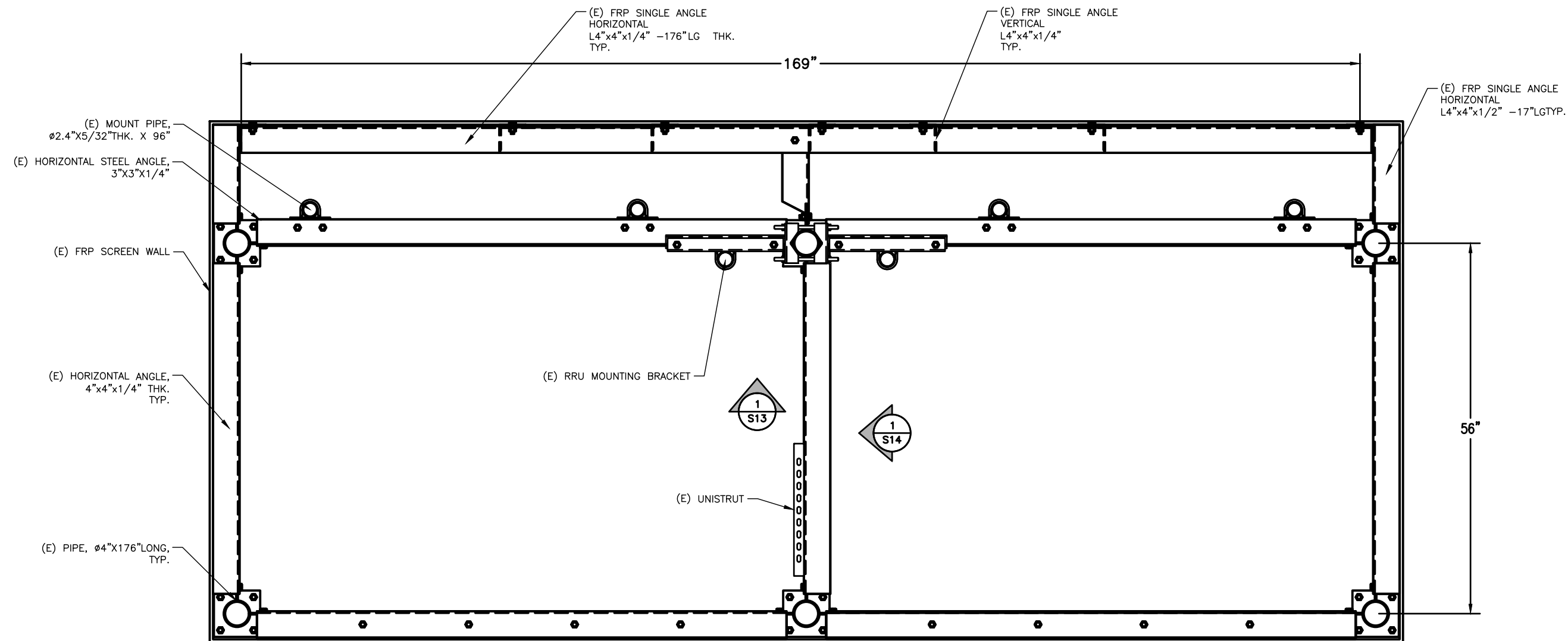
STRUCTURAL
EQUIPMENT ROOM
FRAMING PLAN

SHEET No.

S-2

(E) - EXISTING

EQUIPMENT NOT SHOWN FOR CLARITY.



1
S12 EXISTING PLAN VIEW
SCALE: 1-1/2" = 1'-0"



DRAWING SCALES ARE INTENDED FOR 11"x17" SIZE PRINTED MEDIA ONLY. ALL OTHER PRINTED SIZES ARE DEEMED "NOT TO SCALE".

SUBMITTALS			
REV	DATE	DESCRIPTION	BY
0	10/20/2021	FOR REVIEW	NI
1	03/10/2021	REVISED HEIGHT OF SHROUDS TO 120"	HM
2	08/19/2021	REVISED HEIGHT OF SHROUDS TO 176"	HM
3	01/26/2022	REVISED SHEETS	HM

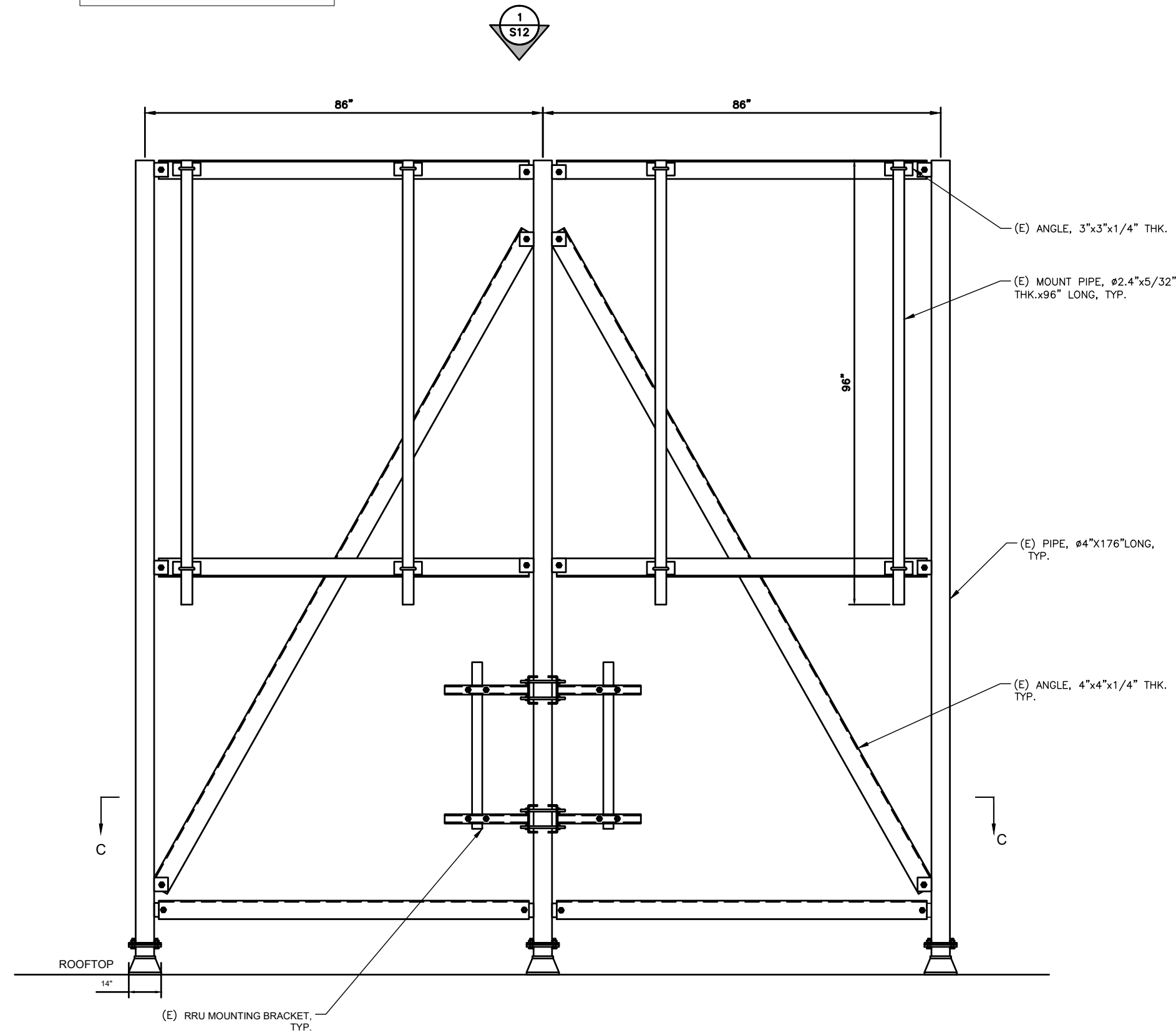
SITE INFORMATION	
SITE NAME: PSU	
SITE NUMBER: PR46	
SITE ADDRESS: 1705 SW 11TH AVENUE, PORTLAND, OR 97201	

SHEET DESCRIPTION	
EXISTING FRP SHROUD ALPHA, BETA & GAMMA	

SHEET No.	
S12	

(E) - EXISTING

EQUIPMENT NOT SHOWN FOR CLARITY.



1
S13 EXISTING ELEVATION VIEW
SCALE: 1" = 1'-0"



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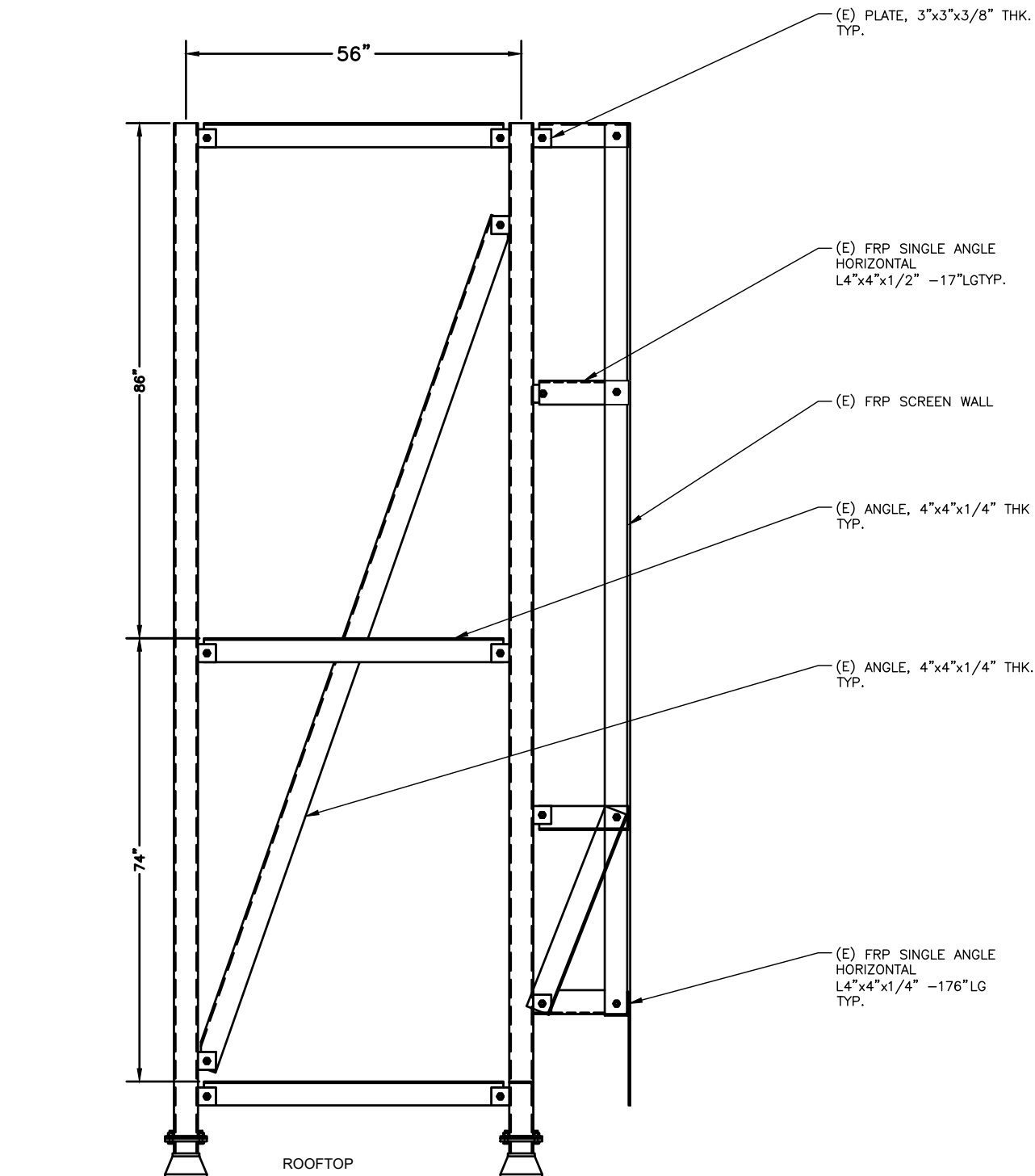
SITE INFORMATION	
SITE NAME: PSU	
SITE NUMBER: PR46	
SITE ADDRESS: 1705 SW 11TH AVENUE, PORTLAND, OR 97201	

SHEET DESCRIPTION	
EXISTING FRP SHROUD ALPHA, BETA & GAMMA	

SHEET No.	
S13	

(N) - NEW

EQUIPMENT NOT SHOWN FOR CLARITY.



1 EXISTING ELEVATION VIEW
S14 SCALE: 1" = 1'-0"



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SITE INFORMATION

SITE NAME:
PSU

SITE NUMBER:
PR46

SITE ADDRESS:
1705 SW 11TH AVENUE,
PORTLAND, OR 97201

SHEET DESCRIPTION

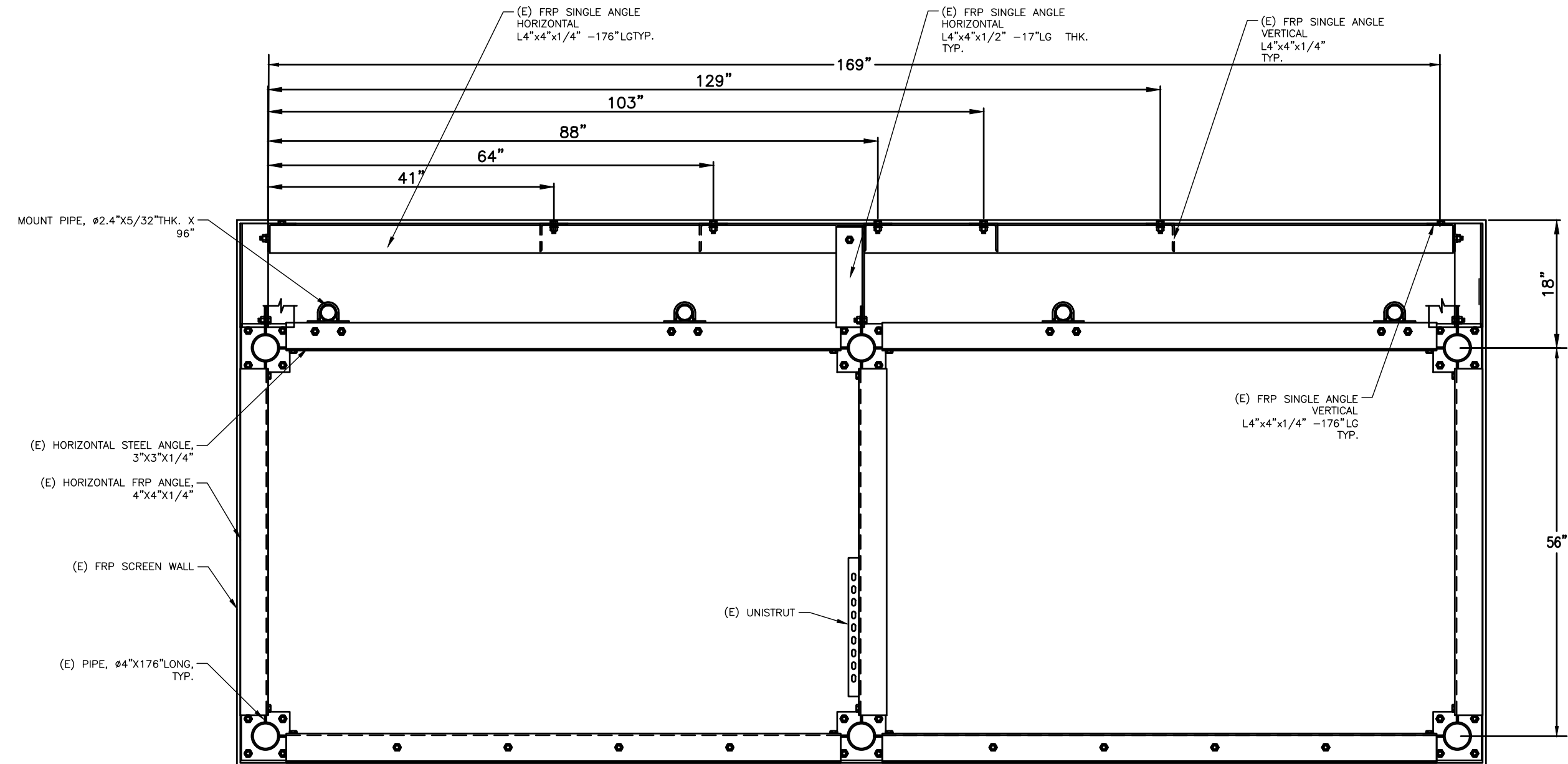
EXISTING FRP SHROUD
ALPHA, BETA &
GAMMA

SHEET No.

S14

(E) - EXISTING

EQUIPMENT NOT SHOWN FOR CLARITY.



1 SECTION C-C
S15 SCALE: 1" = 1'-0" 0 0'-6" 1'-0" 2'-0" 3'-0"



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3	01/26/2022	REVISED SHEETS	HM

SITE INFORMATION	
SITE NAME: PSU	
SITE NUMBER: PR46	
SITE ADDRESS: 1705 SW 11TH AVENUE, PORTLAND, OR 97201	

SHEET DESCRIPTION	
EXISTING FRP SHROUD ALPHA, BETA & GAMMA	

SHEET No.	
S15	

Mount Analysis Report

Smartlink

11410 NE 122nd Ave, Ste 102 Kirkland, WA 98034

Subject: Analysis of the Proposed FRP Structure at 90.6 ft. ElevationDear **Smartlink**,

We have been provided with RF information, photos and sketches of the structure for the above referenced sites. AT&T is proposing to change the equipment configuration on the Proposed mounting hardware.

A revised antenna, coax and miscellaneous equipment schematic have been provided to us. We have been asked to evaluate this information to determine whether the mounting apparatus is adequate to safely support the proposed loading change.

RISA 3D (Version 17), 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.

1. Source Data

Document Type	Source	Reference	Date
RFDS	AT&T	RFDS ID: 3547802	May 5, 2020
Construction Drawings	Trylon	Site ID: PR46	March 2, 2021
Mount Modification Drawings	Trylon	J.N:166962	August 9, 2021
Audit Photos	Trylon	Site ID: PR46	October 7, 2020

2. Analysis Criteria

Adopted Codes and Site Parameters	
Building Code / Local Code	2018 IBC / 2019 OSSC
Code Standard	ASCE 7-16
Design Wind Speed (mph)	98
Design Wind Speed with Ice (mph)	30
Design Ice Thickness (in)	2.0
Risk Category/Structure Class	II
Exposure Category	C
Topographic Factor, K_{zt}	1.0
Seismic Response Acceleration, S_s (g)	0.888
Seismic Response Acceleration, S_1 (g)	0.398

3. Final Loading Configuration

Mount CL (ft)	Equipment CL (ft)	Qty.	Manufacturer	Model	Carrier
90.6	95	6	Commscope	NNHH-65C-R4	AT&T
		2	KMW	ET-X-UW-70-16-70-18-iR-AT-RA	
		3	Nokia	AHCA	
		3	Alcatel	B66A RRH4X45-4R	
		3	Alcatel	RRH4x25-WCS-4R	
		3	Nokia	AHLBBA	
		3	Alcatel	B25 RRH4X30-4R	
		3	Raycap	DC6-48-60-0-1B-01-SS	
		2	Kaelus	DBC0135F3V92-1	

5. Analysis Results

Mount CL (ft.)	Component	% Capacity	Pass/Fail	Notes
90.6	Mount Pipe(s)	9.8	PASS	1
	FRP Horizontal(s)	70.1	PASS	
	Steel Horizontal(s)	20.8	PASS	
	FRP Vertical(s)	71.4	PASS	
	Steel Vertical(s)	20.9	PASS	
	FRP Bracing(s)	59.3	PASS	
	Steel Bracing(s)	19.0	PASS	
	Connection(s)	76.3	PASS	

Structure Rating (max from all components) =	76.3%
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Notes:

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

6. Conclusions and Recommendations

Based on the information provided, our calculations conclude that the Proposed AT&T FRP Structure installed at 90.6 ft. elevation has sufficient capacity to carry the final loading configuration.

APPENDIX

ADDITIONAL CALCULATIONS

LOAD COMBINATIONS [LRFD] cont..

#	Description
87	$0.9D + Di + Wi_{210^\circ}$
88	$0.9D + Di + Wi_{240^\circ}$
89	$0.9D + Di + Wi_{270^\circ}$
90	$0.9D + Di + Wi_{300^\circ}$
91	$0.9D + Di + Wi_{330^\circ}$
92	$(1.2 + 0.2Sds)D + L + 0.2S + E_{0^\circ}$
93	$(1.2 + 0.2Sds)D + L + 0.2S + E_{30^\circ}$
94	$(1.2 + 0.2Sds)D + L + 0.2S + E_{60^\circ}$
95	$(1.2 + 0.2Sds)D + L + 0.2S + E_{90^\circ}$
96	$(1.2 + 0.2Sds)D + L + 0.2S + E_{120^\circ}$
97	$(1.2 + 0.2Sds)D + L + 0.2S + E_{150^\circ}$
98	$(1.2 + 0.2Sds)D + L + 0.2S + E_{180^\circ}$
99	$(1.2 + 0.2Sds)D + L + 0.2S + E_{210^\circ}$
100	$(1.2 + 0.2Sds)D + L + 0.2S + E_{240^\circ}$
101	$(1.2 + 0.2Sds)D + L + 0.2S + E_{270^\circ}$
102	$(1.2 + 0.2Sds)D + L + 0.2S + E_{300^\circ}$
103	$(1.2 + 0.2Sds)D + L + 0.2S + E_{330^\circ}$
104	$(0.9 - 0.2Sds)D + E_{0^\circ}$
105	$(0.9 - 0.2Sds)D + E_{30^\circ}$
106	$(0.9 - 0.2Sds)D + E_{60^\circ}$
107	$(0.9 - 0.2Sds)D + E_{90^\circ}$
108	$(0.9 - 0.2Sds)D + E_{120^\circ}$
109	$(0.9 - 0.2Sds)D + E_{150^\circ}$
110	$(0.9 - 0.2Sds)D + E_{180^\circ}$
111	$(0.9 - 0.2Sds)D + E_{210^\circ}$
112	$(0.9 - 0.2Sds)D + E_{240^\circ}$
113	$(0.9 - 0.2Sds)D + E_{270^\circ}$
114	$(0.9 - 0.2Sds)D + E_{300^\circ}$
115	$(0.9 - 0.2Sds)D + E_{330^\circ}$

LOAD COMBINATIONS [LRFD] cont..

#	Description
87	$0.9D + Di + Wi_{210^\circ}$
88	$0.9D + Di + Wi_{240^\circ}$
89	$0.9D + Di + Wi_{270^\circ}$
90	$0.9D + Di + Wi_{300^\circ}$
91	$0.9D + Di + Wi_{330^\circ}$
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93	$(1.2 + 0.2Sds)D + L + 0.2S + E_{30^\circ}$
94	$(1.2 + 0.2Sds)D + L + 0.2S + E_{60^\circ}$
95	$(1.2 + 0.2Sds)D + L + 0.2S + E_{90^\circ}$
96	$(1.2 + 0.2Sds)D + L + 0.2S + E_{120^\circ}$
97	$(1.2 + 0.2Sds)D + L + 0.2S + E_{150^\circ}$
98	$(1.2 + 0.2Sds)D + L + 0.2S + E_{180^\circ}$
99	$(1.2 + 0.2Sds)D + L + 0.2S + E_{210^\circ}$
100	$(1.2 + 0.2Sds)D + L + 0.2S + E_{240^\circ}$
101	$(1.2 + 0.2Sds)D + L + 0.2S + E_{270^\circ}$
102	$(1.2 + 0.2Sds)D + L + 0.2S + E_{300^\circ}$
103	$(1.2 + 0.2Sds)D + L + 0.2S + E_{330^\circ}$
104	$(0.9 - 0.2Sds)D + E_{0^\circ}$
105	$(0.9 - 0.2Sds)D + E_{30^\circ}$
106	$(0.9 - 0.2Sds)D + E_{60^\circ}$
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115	$(0.9 - 0.2Sds)D + E_{330^\circ}$

