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: Decision Rendered

Appeal ID: 14742	**Project Address:** 1800 SW 6th Ave
Hearing Date: 3/8/17	**Appellant Name:** Peter Mauro
Case No.: B-015	**Appellant Phone:** 19712701930 x5026
Appeal Type: Building	**Plans Examiner/Inspector:** Steven Freeh, Lisa Buellesbach
Project Type: commercial	**Stories:** 6 **Occupancy:** U **Construction Type:** II-B
Building/Business Name: ATT PG84	**Fire Sprinklers:** Yes - Interior
Appeal Involves: Alteration of an existing structure	**LUR or Permit Application No.:** 16-289733-CO
Plan Submitted Option: pdf [File 1] [File 2] [File 3]	**Proposed use:** Wireless Communications Facility

APPEAL INFORMATION SHEET

Appeal item 1

Code Section	COP Code Guide IBC/26/#1 par. B.7
Requires	The height of the FRP screen shall not exceed 10'-0" above the elevation of the roof at any point where the FRP screen is attached. The proposed FRP screen wall is proposed to be approximately 17 feet in height.
Proposed Design	ATT is proposing to place wireless communications equipment and antennas on the south facade of an existing rooftop penthouse. This portion of the facility iwas required to go through Design Review (LU 16220552 DZ)? through those discussions, it was decided to match the dimensions and finish of the existing penthouse, including the height and width, with a FRP penthouse extension. This extension will be made out of RF Friendly FRP panels, mounted on a combination of steel and FRP structural support, based on the Portland code guidance. The proposed extension will be 32' wide, 6' deep, and approximately 14' tall (as measured from the parapet, approximately 17 feet overall). The width and height are such that they match the existing brick penthouse. The height of the proposed facade is the subject of this appeal.
Reason for alternative	This facility was granted a Building Code Appeal approval in case number for width of the FRP enclosure: 14501. This height of the FRP screen wall is dictated by the height of the existing brick penthouse; we are extedning this brick penthouse in order to conceal a new array of wireless communications antennas and equipment. FRP materials are required to allow for the proper functioning of the wireless signal, as it allows the signal to propagate through the materials without any interference or loss of power.

Through the design review process, the planning staff required that we use one continuous material for the entire facade, in order to ensure that it both matches visually with the existing penthouse, but so that as it ages, it weathers at a continuous rate and appearance. The height of our proposed extension matches the existing penthouse exactly. Overall, matching the existing penthouse and using one continuous facade material will provide a more aesthetically pleasing overall installation.

All structural components meet the 10 foot max height requirement, with the bottom portions designed with steel. Portions of the structure have been redesigned to meet other checksheet comments, and are reflected in these plans, but have not yet been submitted for review (we are waiting for all materials to submit one final package to the plans examiners).

The remaining aspects of the FRP enclosure were designed to meet the Code Guidance for FRP enclosures. The extension will not block any existing pathways, egress/access doors, rooftop ladders, etc.on the rooftop. The bottom of the FRP enclosure is open (below the level of the parapet) to allow for proper drainage along the rooftop.

Based on the above, we respectfully request that our appeal be granted. Please let me know if you require any additional information or clarification.

APPEAL DECISION

Height of FRP screening: Granted for proposed configuration containing maximum 10' of FRP structure mounted on top of steel supporting framework.

The Administrative Appeal Board finds with the conditions noted, that the information submitted by the appellant demonstrates that the approved modifications or alternate methods are consistent with the intent of the code; do not lessen health, safety, accessibility, life, fire safety or structural requirements; and that special conditions unique to this project make strict application of those code sections impractical.

Pursuant to City Code Chapter 24.10, you may appeal this decision to the Building Code Board of Appeal within 180 calendar days of the date this decision is published. For information on the appeals process and costs, including forms, appeal fee, payment methods and fee waivers, go to www.portlandoregon.gov/bds/appealsinfo, call (503) 823-7300 or come in to the Development Services Center.

PG84 BROADWAY & HARRISON

1800 SW 6TH AVENUE
PORTLAND, OREGON 97201

FA #10576518

PROJECT SUMMARY

THIS PROJECT INCLUDES THE FOLLOWING SCOPE OF WORK:

1. PROPOSED INSTALLATION OF A WIRELESS COMMUNICATION FACILITY ON AN EXISTING BUILDING.
2. PROPOSED INSTALLATION OF A SCREENED EQUIPMENT PLATFORM W/ OUTDOOR CABINETS ON THE ROOFTOP OF AN EXISTING 121.4' BUILDING.
3. PROPOSED INSTALLATION OF (9) PANEL ANTENNAS, (15) RRH'S, (3) SQUIDS, AND (4) FIBER DEMARC BOXES MOUNTED ON THE ROOFTOP OF AN EXISTING 121.4' BUILDING W/ (1) GPS ANTENNA MOUNTED AT PLATFORM LEVEL.
4. PROPOSED INSTALLATION OF 200A AC POWER SERVICE, FIBER SERVICE WITH ASSOCIATED HARDWARE.

SITE INFORMATION

ALPHA SECTOR:	
LATITUDE:	45.511417° N
LONGITUDE:	-122.682111° W
BETA SECTOR:	
LATITUDE:	45.511000° N
LONGITUDE:	-122.682333° W
GAMMA SECTOR:	
LATITUDE:	45.511000° N
LONGITUDE:	-122.682333° W
SOURCE:	1A CERTIFICATION
DATUM:	NAD 83
JURISDICTION:	CITY OF PORTLAND
COUNTY:	MULTNOMAH COUNTY
APN:	R246262
ZONING CLASSIFICATION:	CX - CENTRAL COMMERCIAL
GROUND ELEVATION:	136.0'± AMSL (NAVD 88) @ NORTH ENTRANCE
OCCUPANCY GROUP:	U
CONSTRUCTION TYPE:	II-B

PROJECT CONTACTS

APPLICANT
NEW CINGULAR WIRELESS PCS, LLC
19801 SW 72ND AVENUE #200
TUALATIN, OR 97062
BYRON JARNAGIN
PH: 503.691.4937

PROPERTY OWNER
OWNERS' ASSOCIATION OF PORTLAND STATE UNIVERSITY
ACADEMIC & STUDENT RECREATION CTR
1600 SW 4TH AVENUE, SUITE 515
PORTLAND, OR 97201
LYNDA CLARKE
PH: 503.725.9919

PROJECT CONSULTANT
CENTERLINE SOLUTIONS
6623 NE 78TH CT, SUITE B-1
PORTLAND, OR 97218
JOE RIDDLE
PH: 971.270.1930 x5011

SITE ACQUISITION CONSULTANT
CENTERLINE SOLUTIONS
6623 NE 78TH CT, SUITE B-1
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ZONING & PERMITTING CONSULTANT
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PETER MAURO
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ENGINEER OF RECORD
VECTOR STRUCTURAL ENGINEERS
9138 S STATE STREET, SUITE 101
SANDY, UT 84070
ROGER T. ALWORTH, S.E.
PH: 801.990.1775

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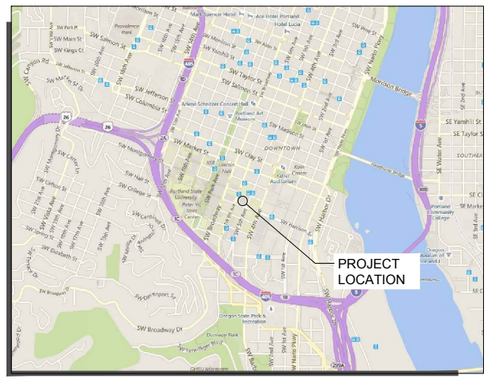
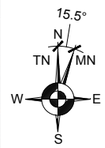
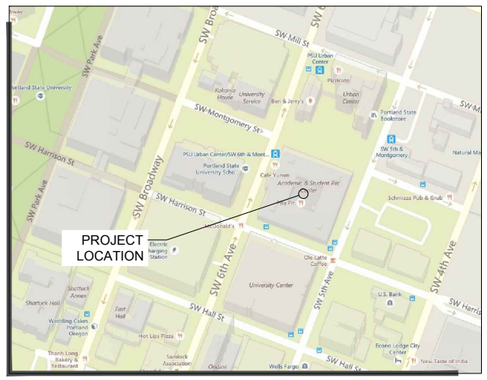
PROJECT VICINITY & AREA MAPS







DRIVING DIRECTIONS

FROM AT&T TUALATIN OFFICE:

1. START OUT GOING SE ON SW 72ND AVE TOWARD SW COOS CT (.1 MI)
2. TAKE THE 1ST LEFT ONTO SW SAGERT ST (.4 MI)
3. TURN LEFT ONTO SW 65TH AVE (.5 MI)
4. SW 65TH AVE BECOMES SW NYBERG RD (.4 MI)
5. MERGE ONTO I-5 N VIA THE RAMP ON THE RIGHT TOWARD PORTLAND (10.1 MI)
6. TAKE THE I-405 N EXIT, EXIT 299B, ON THE LEFT TOWARD US-26 W/CITY CENTER (0.83 MI)
7. TAKE THE 6TH AVE EXIT, EXIT 1C (0.24 MI)
8. CONTINUE ON 6TH AVENUE (0.24 MI)
9. THE BUILDING IS ON THE RIGHT JUST PAST SW HARRISON ST

ESTIMATED DISTANCE: 12.6 MILES
ESTIMATED TIME: 30 MINUTES

LEGAL DESCRIPTION

PSU ACADEMIC AND STUDENT RECREATION CENTER, A CONDOMINIUM, GENERAL COMMON ELEMENTS

UTILITY COMPANIES

POWER: PORTLAND GENERAL ELECTRIC
BRYAN HANGGARTNER
PH: 503.803.6461

FIBER: COMCAST
PH: TBD

GOVERNING CODES

IBC-2012, INTERNATIONAL BUILDING CODE W/ LOCAL AMENDMENTS

NEC-2008, NATIONAL ELECTRICAL CODE

1 2016 PORTLAND FIRE CODE

A.D.A. COMPLIANCE
INSTALLATION IS UNMANNED AND NOT FOR HUMAN HABITATION. HANDICAP ACCESS IS NOT REQUIRED PER A.D.A.

SIGN OFF OF FINAL CONSTRUCTION DRAWINGS

REVIEWERS SHALL CLEARLY PLACE INITIALS ADJACENT TO EACH REDLINE NOTE AS DRAWINGS ARE BEING REVIEWED

SIGN-OFF	DATE	SIGNATURE
CONSULTANT:		
LANDLORD		
ZONING		
LEASING		
SITE ACQUISITION		
PROJECT MANAGER		
CONSTRUCTION MANAGER		
AT&T:		
CONSTRUCTION MANAGER		
EQUIPMENT ENGINEER		
OPERATIONS MANAGER		
NSB MANAGER		
COMPLIANCE		
RF MANAGER		
RF ENGINEER		
TRANSPORT		

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CENTERLINE SOLUTIONS Advancing Wireless Networks

VECTOR ENGINEERS

STRUCTURAL REGISTERED PROFESSIONAL ENGINEER
78187PE
OREGON
MAY 16, 2006
ROGER ALWORTH
02/16/2017
EXPIRES 12/31/2017

CP PROJECT NO.: ATT-15-0042-19

PRELIMINARY

NO.	DATE	D/C	DESCRIPTION
0	10-17-16	MS/MS	90% CD REVIEW
1	10-27-16	MS/MS	CLIENT COMMENT
2	11-22-16	MS/MS	CLIENT COMMENT

SUBMITTAL

NO.	DATE	D/C	DESCRIPTION
0	12-19-16	MS/MS	BP SUBMITTAL
1	01-27-17	MS/MS	FLS COMMENTS
2	02-15-17	JL/CL	BP COMMENTS

SITE NAME
PG84
BROADWAY &
HARRISON

SITE ADDRESS
1800 SW 6TH AVENUE
PORTLAND, OR 97201

1
SHEET TITLE
TITLE SHEET

SHEET NO.
T-1.0

GENERAL CONSTRUCTION NOTES

1. ALL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE LOCAL BUILDING CODE, THE LATEST EDITION AND ALL OTHER APPLICABLE CODES AND ORDINANCES.
2. CONTRACTOR SHALL CONSTRUCT SITE IN ACCORDANCE WITH THESE DRAWINGS AND AT&T INTEGRATED CONSTRUCTION STANDARDS FOR WIRELESS SITES (LATEST REVISION). THE SPECIFICATION IS THE RULING DOCUMENT AND ANY DISCREPANCIES BETWEEN THE SPECIFICATION AND THESE DRAWINGS SHOULD BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO PROCEEDING WITH CONSTRUCTION.
3. CONTRACTOR SHALL VISIT THE JOB SITE AND SHALL FAMILIARIZE HIMSELF WITH ALL CONDITIONS AFFECTING THE PROPOSED WORK AND SHALL MAKE PROVISIONS AS TO THE COST THEREOF. FIELD CONDITIONS AND DIMENSIONS AND CONFIRMING THAT THE WORK MAY BE ACCOMPLISHED AS SHOWN PRIOR TO PROCEEDING WITH CONSTRUCTION. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO THE COMMENCEMENT OF WORK. NO COMPENSATION WILL BE AWARDED BASED ON CLAIM OF LACK OF KNOWLEDGE OF FIELD CONDITIONS.
4. PLANS ARE NOT TO BE SCALED. THESE PLANS ARE INTENDED TO BE A DIAGRAMMATIC OUTLINE ONLY UNLESS OTHERWISE NOTED. THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT AND APPURTENANCES, AND LABOR NECESSARY TO EFFECT ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
5. DIMENSIONS SHOWN ARE TO FINISH SURFACES UNLESS OTHERWISE NOTED. SPACING BETWEEN EQUIPMENT IS REQUIRED CLEARANCE. THEREFORE, IT IS CRITICAL TO FIELD VERIFY DIMENSIONS, SHOULD THERE BE ANY QUESTIONS REGARDING THE CONTRACT DOCUMENTS, EXISTING CONDITIONS AND/OR DESIGN INTENT, THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING THE WORK.
6. DETAILS ARE INTENDED TO SHOW DESIGN INTENT. MODIFICATIONS MAY BE REQUIRED TO SUIT JOB DIMENSIONS OR CONDITIONS, AND SUCH MODIFICATIONS SHALL BE INCLUDED AS PART OF THE WORK.
7. CONTRACTOR SHALL RECEIVE CLARIFICATION IN WRITING, AND SHALL RECEIVE IN WRITING AUTHORIZATION TO PROCEED BEFORE STARTING WORK ON ANY ITEMS NOT CLEARLY DEFINED OR IDENTIFIED BY THE CONTRACT DOCUMENTS.
8. CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK USING THE BEST CONSTRUCTION SKILLS AND ATTENTION. CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES AND FOR COORDINATING ALL PORTIONS OF THE WORK UNDER CONTRACT, UNLESS OTHERWISE NOTED.
9. CONTRACTOR SHALL BE RESPONSIBLE FOR THE SAFETY OF THE WORK AREA, ADJACENT AREAS AND BUILDING OCCUPANTS THAT ARE LIKELY TO BE AFFECTED BY THE WORK UNDER THIS CONTRACT. WORK SHALL CONFORM TO ALL OSHA REQUIREMENTS.
10. CONTRACTOR SHALL COORDINATE HIS WORK WITH THE SUPERINTENDENT OF BUILDINGS & GROUNDS AND SCHEDULE HIS ACTIVITIES AND WORKING HOURS IN ACCORDANCE WITH THE REQUIREMENTS.
11. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING HIS WORK WITH THE WORK OF OTHERS AS IT MAY RELATE TO RADIO EQUIPMENT, ANTENNAS AND ANY OTHER PORTIONS OF THE WORK.
12. INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS UNLESS SPECIFICALLY OTHERWISE INDICATED OR WHERE LOCAL CODES OR REGULATIONS TAKE PRECEDENCE.
13. MAKE NECESSARY PROVISIONS TO PROTECT EXISTING SURFACES, EQUIPMENT, IMPROVEMENTS, PIPING ETC. AND IMMEDIATELY REPAIR ANY DAMAGE THAT OCCURS DURING CONSTRUCTION.
14. IN DRILLING HOLES INTO CONCRETE WHETHER FOR FASTENING OR ANCHORING PURPOSES, OR PENETRATIONS THROUGH THE FLOOR FOR CONDUIT RUNS, PIPE RUNS, ETC., MUST BE CLEARLY UNDERSTOOD THAT REINFORCING STEEL SHALL NOT BE DRILLED INTO, CUT OR DAMAGED UNDER ANY CIRCUMSTANCES (UNLESS NOTED OTHERWISE). LOCATIONS OF REINFORCING STEEL ARE NOT DEFINITELY KNOWN AND THEREFORE MUST BE SEARCHED FOR BY APPROPRIATE METHODS AND EQUIPMENT.
15. REPAIR ALL EXISTING WALL SURFACES DAMAGED DURING CONSTRUCTION SUCH THAT THEY MATCH AND BLEND IN WITH ADJACENT SURFACES.
16. SEAL PENETRATIONS THROUGH FIRE RATED AREAS WITH U.L. LISTED AND FIRE CODE APPROVED MATERIALS.
17. KEEP CONTRACT AREA CLEAN, HAZARD FREE, AND DISPOSE OF ALL DIRT, DEBRIS, AND RUBBISH. EQUIPMENT NOT SPECIFIED AS REMAINING ON THE PROPERTY OF THE OWNER SHALL BE REMOVED. LEAVE PREMISES IN CLEAN CONDITION AND FREE FROM PAINT SPOTS, DUST, OR SMUDGES OF ANY NATURE. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ALL ITEMS UNTIL COMPLETION OF CONSTRUCTION.
18. MINIMUM BEND RADIUS OF ANTENNA CABLES SHALL BE IN ACCORDANCE WITH CABLE MANUFACTURERS RECOMMENDATIONS.
19. 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 THE ENGINEER.
20. CONTRACTOR SHALL MINIMIZE DISTURBANCE TO EXISTING SITE DURING CONSTRUCTION. EROSION CONTROL MEASURES, IF REQUIRED DURING CONSTRUCTION SHALL BE IN CONFORMANCE WITH JURISDICTIONAL OR STATE AND LOCAL GUIDELINES FOR EROSION AND SEDIMENT CONTROL AND COORDINATED WITH LOCAL REGULATORY AUTHORITIES.
21. LIGHT SHADED LINES AND NOTES REPRESENT WORK PREVIOUSLY DONE. DARK SHADED LINES AND NOTES REPRESENT THE SCOPE OF WORK FOR THIS PROJECT. CONTRACTOR SHALL VERIFY IF EXISTING CONSTRUCTION IS COMPLETE. CONTRACTOR SHALL NOTIFY ENGINEER OF ANY EXISTING CONDITIONS THAT DEVIATE FROM THE DRAWINGS PRIOR TO BEGINNING CONSTRUCTION.
22. CONTRACTOR SHALL SECURE ALL NECESSARY PERMITS AND/OR WIRING CERTIFICATES REQUIRED FOR THE ELECTRICAL SERVICE UPGRADE. IN ADDITION, CONTRACTOR SHALL PROVIDE ALL NECESSARY COORDINATION AND SCHEDULING WITH THE SERVING ELECTRICAL UTILITY AND LOCAL INSPECTION AUTHORITIES.
23. CONTRACTOR TO VERIFY ALL ASPECTS OF THE EXISTING STRUCTURE FOR CONFORMITY WITH THE VALUES SHOWN IN THESE DRAWINGS AND NOTIFY THE E.O.R. IF ANY DISCREPANCIES ARE FOUND.

SITE WORK NOTES

1. DO NOT EXCAVATE OR DISTURB BEYOND THE PROPERTY LINES OR LEASE LINES, UNLESS OTHERWISE NOTED.
2. DO NOT SCALE BUILDING DIMENSIONS FROM DRAWING.
3. SIZE, LOCATION AND TYPE OF ANY UNDERGROUND UTILITIES OR IMPROVEMENTS SHALL BE ACCURATELY NOTED AND PLACED ON AS-BUILT DRAWINGS BY GENERAL CONTRACTOR AND ISSUED TO ARCHITECT/ENGINEER AT COMPLETION OF PROJECT.
4. ALL EXISTING UTILITIES, FACILITIES, CONDITIONS AND THEIR DIMENSIONS SHOWN ON PLANS HAVE BEEN PLOTTED FROM AVAILABLE RECORDS. THE ENGINEER AND OWNER ASSUME NOT RESPONSIBILITY WHATSOEVER AS TO THE SUFFICIENCY OR ACCURACY OF THE INFORMATION SHOWN ON THE PLANS OR THE MANNER OF THEIR REMOVAL OR ADJUSTMENT. CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING EXACT LOCATION OF ALL EXISTING UTILITIES AND FACILITIES PRIOR TO START OF CONSTRUCTION. CONTRACTOR SHALL ALSO OBTAIN FROM EACH UTILITY COMPANY DETAILED INFORMATION RELATIVE TO WORKING SCHEDULES AND METHODS OF REMOVING OR ADJUSTING EXISTING UTILITIES.
5. CONTRACTOR SHALL VERIFY ALL EXISTING UTILITIES BOTH HORIZONTALLY AND VERTICALLY PRIOR TO START OF CONSTRUCTION. ANY DISCREPANCIES OR DOUBTS AS TO THE INTERPRETATION OF PLANS SHALL BE IMMEDIATELY REPORTED TO THE ARCHITECT/ENGINEER FOR RESOLUTION AND INSTRUCTION, AND NO FURTHER WORK SHALL BE PERFORMED UNTIL THE DISCREPANCY IS CHECKED AND CORRECTED BY THE ARCHITECT/ENGINEER. FAILURE TO SECURE SUCH INSTRUCTION MEANS CONTRACTOR WILL HAVE WORKED AT HIS/HER OWN RISK AND EXPENSE.
6. CONTRACTOR SHALL CALL LOCAL DIGGER HOT LINE FOR UTILITY LOCATIONS 48 HOURS PRIOR TO START OF CONSTRUCTION.
7. ALL NEW AND EXISTING UTILITY STRUCTURES ON SITE AND IN AREAS TO BE DISTURBED BY CONSTRUCTION SHALL BE ADJUSTED TO FINISH ELEVATIONS PRIOR TO FINAL INSPECTION OF WORK.
8. GRADING OF THE SITE WORK AREA IS TO BE SMOOTH AND CONTINUOUS IN SLOPE AND IS TO FEATHER INTO EXISTING GRADES AT THE GRADING LIMITS.
9. ALL TEMPORARY EXCAVATIONS FOR THE INSTALLATION OF FOUNDATIONS, UTILITIES, ETC., SHALL BE PROPERLY LAID BACK OR BRACED IN ACCORDANCE WITH CORRECT OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) REQUIREMENTS.
10. STRUCTURAL FILLS SUPPORTING PAVEMENTS SHALL BE COMPACTED TO 95% OF MAXIMUM STANDARD PROCTOR DRY DENSITY.
11. NEW GRADES NOT IN BUILDING AND DRIVEWAY IMPROVEMENT AREA TO BE ACHIEVED BY FILLING WITH APPROVED CLEAN FILL AND COMPACTED TO 95% OF STANDARD PROCTOR DENSITY.
12. ALL FILL SHALL BE PLACED IN UNIFORM LIFTS. THE LIFTS THICKNESS SHOULD NOT EXCEED THAT WHICH CAN BE PROPERLY COMPACTED THROUGHOUT ITS ENTIRE DEPTH WITH THE EQUIPMENT AVAILABLE.
13. ANY FILLS PLACED ON EXISTING SLOPES THAT ARE STEEPER THAN 10 HORIZONTAL TO 1 VERTICAL SHALL BE PROPERLY BENCHED INTO THE EXISTING SLOPE AS DIRECTED BY A GEOTECHNICAL ENGINEER.
14. CONTRACTOR SHALL CLEAN ENTIRE SITE DAILY AFTER CONSTRUCTION SUCH THAT NO PAPERS, THRASH, WEEDS, BRUSH OR ANY OTHER DEPOSITS WILL REMAIN. ALL MATERIALS COLLECTED DURING CLEANING OPERATIONS SHALL BE DISPOSED OF OFF-SITE BY THE GENERAL CONTRACTOR.
15. ALL TREES AND SHRUBS WHICH ARE NOT IN DIRECT CONFLICT WITH THE IMPROVEMENTS SHALL BE PROTECTED BY THE GENERAL CONTRACTOR.
16. ALL SITE WORK SHALL BE CAREFULLY COORDINATED BY GENERAL CONTRACTOR WITH LOCAL UTILITY COMPANY, TELEPHONE COMPANY, AND ANY OTHER UTILITY COMPANIES HAVING JURISDICTION OVER THIS LOCATION.

DRAWING ABBREVIATIONS

AFF	ABOVE FINISH FLOOR	LB(S)	POUND(S)
AGL	ABOVE GRADE LEVEL	LF	LINEAR FEET
AWG	AMERICAN WIRE GAUGE	MAX	MAXIMUM
AC	AIR CONDITIONING	MECH	MECHANICAL
ADJ	ADJUSTABLE	MFR	MANUFACTURER
APPROX	APPROXIMATELY	MGR	MANAGER
AZ	AZIMUTH	MIN	MINIMUM
BLDG	BUILDING	MISC	MISCELLANEOUS
CM	CONSTRUCTION MANAGER	MTL	METAL
CAB	CABINET	MTZL	METALIZE(D)
CL	CENTERLINE	MW	MICROWAVE
CLG	CEILING	NEC	NATIONAL ELECTRICAL CODE
CLR	CLEAR	(N)	NEW
CO	COPPER	NIC	NOT IN CONTRACT
CONC	CONCRETE	NTS	NOT TO SCALE
COND	CONDUIT	N/A	NOT APPLICABLE
CONST	CONSTRUCTION	OC	ON CENTER
CONT	CONTINUOUS	OD	OUTSIDE DIAMETER
CPM	CASCADIA PM	OP	OVERHEAD POWER
D/C	DRAFTER/CHECKER	OT	OVERHEAD FIBER
DEMO	DEMOLISH	OPP	OPPOSITE
DIA	DIAMETER	PL	PROPERTY LINE
DIM	DIMENSION	PLYWD	PLYWOOD
DN	DOWN	PM	PROJECT MANAGER
DTL	DETAIL	PROP	PROPERTY
DWG	DRAWING	PT	PRESSURE TREATED
EA	EACH	RO	ROUGH OPENING
ELECT	ELECTRICAL	ROW	RIGHT OF WAY
ELEV	ELEVATION	RRU/RRH	REMOTE RADIO UNIT
EQ	EQUAL	REQ	REQUIRED
EQUIP	EQUIPMENT	SBTC	SOLID BARE TINNED COPPER
(E)	EXISTING	SF	SQUARE FEET
EXT	EXTERIOR	SHT	SHEET
FIN	FINISH	SPEC	SPECIFICATION
FLR	FLOOR	SQ	SQUARE
FT	FOOT, FEET	SS	STAINLESS STEEL
GA	GAUGE	STL	STEEL
GALV	GALVANIZED	STRUCT	STRUCTURE, STRUCTURAL
GC	GENERAL CONTRACTOR	TOC	TOP OF CONCRETE
GWB	GYPSUM WALL BOARD	TOM	TOP OF MASONRY
GR	GRADE	THRU	THROUGH
GRND	GROUND	TNND	TINNED
HVAC	HEATING, VENTING & AIR CONDITIONING	UG	UNDERGROUND
HORIZ	HORIZONTAL	UNO	UNLESS NOTED OTHERWISE
HT	HEIGHT	UP	UNDERGROUND POWER
IBC	INTERNATIONAL BUILDING CODE	UF	UNDERGROUND FIBER
ID	INSIDE DIAMETER	VIF	VERIFY IN FIELD
IN	INCH	VERT	VERTICAL
INSUL	INSULATION	WP	WATERPROOF
INT	INTERIOR	W/	WITH
JBOX	JUNCTION BOX	W/O	WITHOUT

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CENTERLINE SOLUTIONS
Advancing Wireless Networks

VECTOR ENGINEERS

STRUCTURAL
REGISTERED PROFESSIONAL ENGINEER
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SUBMITTAL

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SITE NAME

PG84
BROADWAY &
HARRISON

SITE ADDRESS

1800 SW 6TH AVENUE
PORTLAND, OR 97201

SHEET TITLE

GENERAL
NOTES

SHEET NO.

GN-1

STRUCTURAL STEEL NOTES

1. ALL STEEL WORK SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE AISC MANUAL OF STEEL CONSTRUCTION. STEEL SECTIONS SHALL BE IN ACCORDANCE WITH ASTM AS INDICATED BELOW:
   W-SHAPES: ASTM A992, 50 KSI
   ANGLES, BARS CHANNELS: ASTM A36, 36 KSI
   HSS SECTIONS: ASTM 500, 46 KSI
   PIPE SECTIONS: ASTM A53-E, 35 KSI

2. ALL EXTERIOR EXPOSED STEEL AND HARDWARE SHALL BE HOT DIPPED GALVANIZED.

3. ALL WELDING SHALL BE PERFORMED USING E70XX ELECTRODES AND WELDING SHALL CONFORM TO AISC. WHERE FILLET WELD SIZES ARE NOT SHOWN, PROVIDE THE MINIMUM SIZE PER TABLE J2.4 IN THE AISC "MANUAL OF STEEL CONSTRUCTION". PAINTED SURFACES SHALL BE TOUCHED UP. ALL WELDING SHALL BE PERFORMED IN AN APPROVED SHOP.

4. ALL BOLTS FOR STEEL TO STEEL CONNECTIONS TO BE PER ASTM A325. HOLES TO BE 1/16" DIA. LARGER THAN BOLT, U.N.O.

5. NON-STRUCTURAL CONNECTIONS FOR STEEL GRATING MAY USE 5/8"Ø ASTM A 307 BOLTS UNLESS NOTED OTHERWISE.

6. FIELD MODIFICATIONS ARE TO BE COATED WITH ZINC ENRICHED PAINT.

7. HOLES TO RECEIVE EXPANSION/WEDGE ANCHORS SHALL CONFORM TO MANUFACTURER'S RECOMMENDATION FOR EMBEDMENT DEPTH AND DIAMETER. LOCATE AND AVOID CUTTING EXISTING REBAR OR TENDONS WHEN DRILLING HOLES IN ELEVATED CONCRETE SLABS OR CONCRETE WALLS.

8. USE AND INSTALLATION OF CONCRETE EXPANSION/WEDGE ANCHOR, SHALL BE PER ICC & MANUFACTURER'S WRITTEN RECOMMENDED PROCEDURES. THIRD PARTY SPECIAL INSPECTION IS REQUIRED FOR CONCRETE EXPANSION ANCHORS (I.E. SIMPSON STRONG-BOLT 2 WEDGE ANCHORS PER ESR-3037). INSTALLATION OF WEDGE ANCHORS IN MASONRY IS NOT PERMITTED.

SPECIAL INSPECTION NOTES

1. CONTRACTOR SHALL PROVIDE REQUIRED SPECIAL INSPECTIONS PERFORMED BY AN INDEPENDENT INSPECTOR, APPROVED BY AT&T AND THE LOCAL JURISDICTION, AS REQUIRED BY IBC SECTION 1704 AND 1705 FOR THE FOLLOWING:

   A. STRUCTURAL STEEL:
      i. ALL HIGH STRENGTH BOLT INSTALLATIONS; BOLTING INSPECTION TASKS SHALL BE IN ACCORDANCE WITH TABLES N5.6-1, N5.6-2, AND N5.6-3 PER AISC 360-10.
      ii. FIELD WELDING (IF UTILIZED).

   B. BOLTS AND ANCHORS IN CONCRETE:
      i. RETROFIT ANCHORS IN CONCRETE (ASHESIVE/EPOXY, EXPANSION, WEDGE, OR SCREW TYPE ANCHORS): INSPECT SIZE, LENGTH, CLEANLINESS, AND INSTALLATION PER MANUFACTURER'S RECOMMENDATIONS.

   C. CONCRETE CONSTRUCTION:
      i. VERIFICATION AND INSPECTION OF CONCRETE CONSTRUCTION SHALL BE IN ACCORDANCE WITH IBC SECTION 1705, TABLE 1705.3.

2. PROVIDE SPECIAL INSPECTIONS FOR OTHER ITEMS NOTED ON DRAWINGS TO CONFIRM COMPLIANCE WITH CONTRACT DOCUMENTS.

3. THE SPECIAL INSPECTOR SHALL PROVIDE A COPY OF THE REPORT TO THE OWNER, ARCHITECT, STRUCTURAL ENGINEER, CONTRACTOR, AND BUILDING OFFICIAL.

4. CONTINUOUS THIRD PARTY SPECIAL INSPECTION REQUIRED FOR ALL BELZONA 1111 MOUNTED PLATES AND HARDWARE.

DRAWING ABBREVIATIONS

AFF	ABOVE FINISH FLOOR	LB(S)	POUND(S)
AGL	ABOVE GRADE LEVEL	LF	LINEAR FEET
AWG	AMERICAN WIRE GAUGE	MAX	MAXIMUM
AC	AIR CONDITIONING	MECH	MECHANICAL
ADJ	ADJUSTABLE	MFR	MANUFACTURER
APPROX	APPROXIMATELY	MGR	MANAGER
AZ	AZIMUTH	MIN	MINIMUM
BLDG	BUILDING	MISC	MISCELLANEOUS
CM	CONSTRUCTION MANAGER	MTL	METAL
CAB	CABINET	MTZL	METALIZE(D)
CL	CENTERLINE	MW	MICROWAVE
CLG	CEILING	NEC	NATIONAL ELECTRICAL CODE
CLR	CLEAR	(N)	NEW
CO	COPPER	NIC	NOT IN CONTRACT
CONC	CONCRETE	NTS	NOT TO SCALE
COND	CONDUIT	N/A	NOT APPLICABLE
CONST	CONSTRUCTION	OC	ON CENTER
CONT	CONTINUOUS	OD	OUTSIDE DIAMETER
CPM	CASCADIA PM	OP	OVERHEAD POWER
D/C	DRAFTER/CHECKER	OT	OVERHEAD FIBER
DEMO	DEMOLISH	OPP	OPPOSITE
DIA	DIAMETER	PL	PROPERTY LINE
DIM	DIMENSION	PLYWD	PLYWOOD
DN	DOWN	PM	PROJECT MANAGER
DTL	DETAIL	PROP	PROPERTY
DWG	DRAWING	PT	PRESSURE TREATED
EA	EACH	RO	ROUGH OPENING
ELECT	ELECTRICAL	ROW	RIGHT OF WAY
ELEV	ELEVATION	RRU/RRH	REMOTE RADIO UNIT
EQ	EQUAL	REQ	REQUIRED
EQUIP	EQUIPMENT	SBTC	SOLID BARE TINNED COPPER
(E)	EXISTING	SF	SQUARE FEET
EXT	EXTERIOR	SHT	SHEET
FIN	FINISH	SPEC	SPECIFICATION
FLR	FLOOR	SQ	SQUARE
FT	FOOT, FEET	SS	STAINLESS STEEL
GA	GAUGE	STL	STEEL
GALV	GALVANIZED	STRUCT	STRUCTURE, STRUCTURAL
GC	GENERAL CONTRACTOR	TOC	TOP OF CONCRETE
GWB	GYPSUM WALL BOARD	TOM	TOP OF MASONRY
GR	GRADE	THRU	THROUGH
GRND	GROUND	TNND	TINNED
HVAC	HEATING, VENTING & AIR CONDITIONING	UG	UNDERGROUND
HORIZ	HORIZONTAL	UNO	UNLESS NOTED OTHERWISE
HT	HEIGHT	UP	UNDERGROUND POWER
IBC	INTERNATIONAL BUILDING CODE	UF	UNDERGROUND FIBER
ID	INSIDE DIAMETER	VIF	VERIFY IN FIELD
IN	INCH	VERT	VERTICAL
INSUL	INSULATION	WP	WATERPROOF
INT	INTERIOR	W/	WITH
JBOX	JUNCTION BOX	W/O	WITHOUT

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VECTOR ENGINEERS

STRUCTURAL
REGISTERED PROFESSIONAL ENGINEER
78187PE
OREGON
MAY 16, 2006
ROGER ALWORTH
02/16/2017
EXPIRES 12/31/2017

CP PROJECT NO.: ATT-15-0042-19

PRELIMINARY

NO.	DATE	D/C	DESCRIPTION
0	10-17-16	MS/MS	90% CD REVIEW
1	10-27-16	MS/MS	CLIENT COMMENT
2	11-22-16	MS/MS	CLIENT COMMENT

SUBMITTAL

NO.	DATE	D/C	DESCRIPTION
0	12-19-16	MS/MS	BP SUBMITTAL
1	01-27-17	MS/MS	FLS COMMENTS
2	02-15-17	JL/CL	BP COMMENTS

SITE NAME

PG84
BROADWAY &
HARRISON

SITE ADDRESS

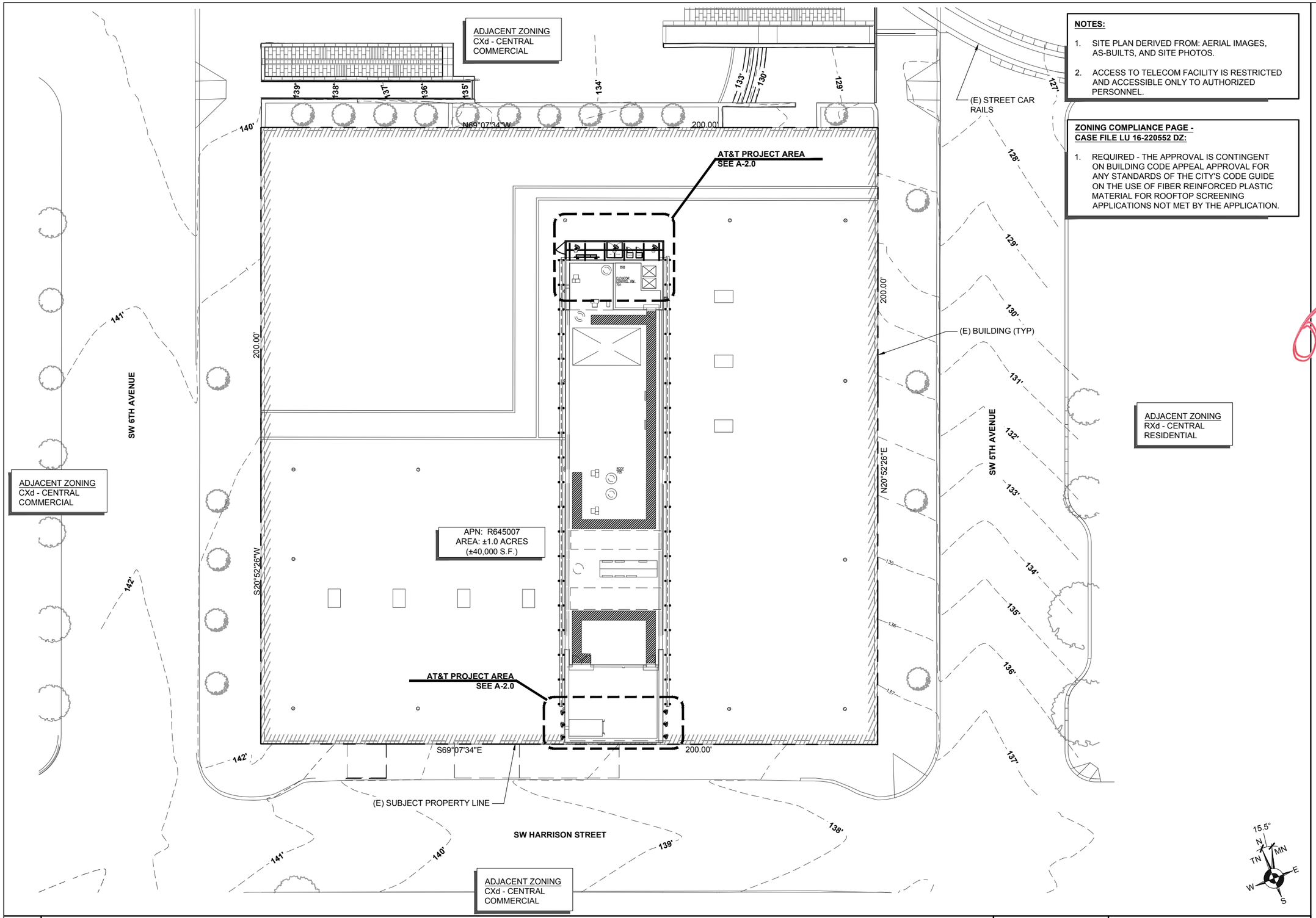
1800 SW 6TH AVENUE
PORTLAND, OR 97201

SHEET TITLE

GENERAL NOTES

SHEET NO.

GN-1



NOTES:

1. SITE PLAN DERIVED FROM: AERIAL IMAGES, AS-BUILTS, AND SITE PHOTOS.
2. ACCESS TO TELECOM FACILITY IS RESTRICTED AND ACCESSIBLE ONLY TO AUTHORIZED PERSONNEL.

ZONING COMPLIANCE PAGE - CASE FILE LU 16-220552 DZ:

1. REQUIRED - THE APPROVAL IS CONTINGENT ON BUILDING CODE APPEAL APPROVAL FOR ANY STANDARDS OF THE CITY'S CODE GUIDE ON THE USE OF FIBER REINFORCED PLASTIC MATERIAL FOR ROOFTOP SCREENING APPLICATIONS NOT MET BY THE APPLICATION.

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SITE NAME

PG84
BROADWAY &
HARRISON

SITE ADDRESS

1800 SW 6TH AVENUE
PORTLAND, OR 97201

SHEET TITLE

OVERALL
SITE PLAN

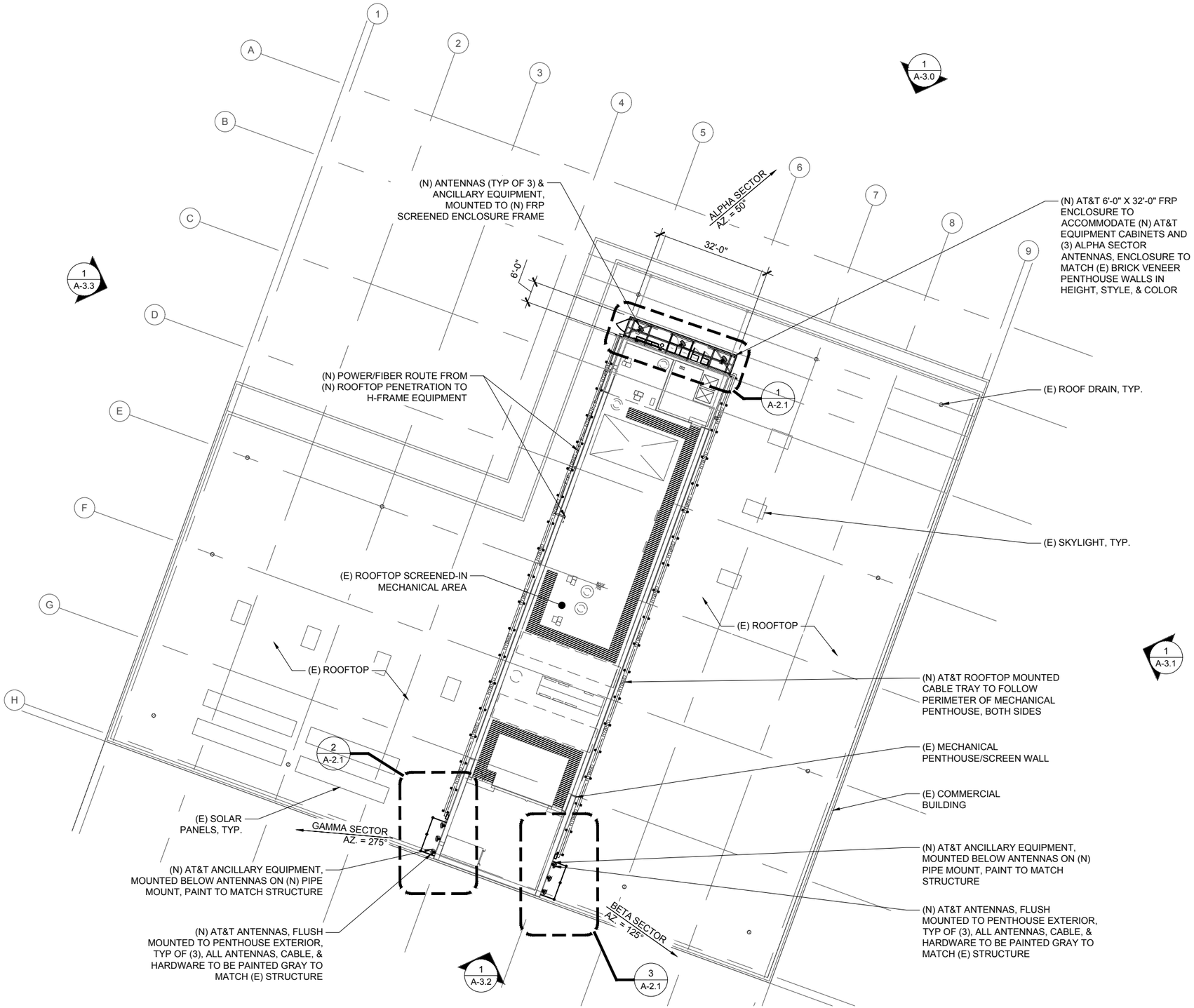
SHEET NO.

A-1.0

1 OVERALL SITE PLAN

SCALE: 1" = 30'-0" (11X17)
SCALE: 1" = 15'-0" (22X34)

0' 15' 30' 60'



NOTES:

1. THE DEPICTION OF: POWER, FIBER, TELCO, COAX CABLE/CONDUIT IS FOR SCHEMATIC PURPOSES ONLY. CONTRACTOR TO DETERMINE DURING THE BID WALK THE SUITABILITY OF EXISTING MOUNTS, RACEWAYS, ETC. AND ANY NEW MATERIALS TO ATTACH ABOVE STATED CONDUIT/CABLE PRIOR TO MATERIALS PROCUREMENT. ALL WORK TO CONFORM TO LOCAL CODE AND NEC STANDARDS.
2. VERIFY ANTENNA MODELS, COUNT, RAD CENTER & AZIMUTHS WITH LOCK DOWN SET RF SITE BUILD FORM - SEE LATEST RFDS.
3. EQUIPMENT LAYOUTS SHALL BE IN ACCORDANCE WITH STANDARDS PER ATT-TELCO-IS-812-000-003 FOR NETWORK EQUIPMENT ENVIRONMENTS.
4. EQUIPMENT LAYOUTS SHALL BE IN COMPLIANCE WITH PUBLISHED EQUIPMENT MANUFACTURER'S REQUIREMENTS/RESTRICTIONS RELATIVE TO ACTUAL PLACEMENT OF EQUIPMENT.
5. EQUIPMENT LAYOUTS SHALL BE REVIEWED BY AN AT&T SITE OR FIELD OPERATIONS REPRESENTATIVE(S) TO ENSURE THE PHYSICAL RELATIONSHIP OF NETWORK ELEMENTS, CABLE MANAGEMENT AND SUPERSTRUCTURE ENGINEERING ARE APPROPRIATE AND EFFICIENT FROM AN EQUIPMENT OPERATIONS AND MAINTENANCE PERSPECTIVE.
6. EQUIPMENT LAYOUTS SHALL BE REVIEWED AND APPROVED BY THE AT&T CONSTRUCTION MANAGER DURING CONSTRUCTION.
7. EQUIPMENT LAYOUTS SHALL BE REVIEWED BY A POWER ENGINEER OR PERSON FAMILIAR WITH DC POWER DISTRIBUTION TO ENSURE EQUIPMENT POWER DISTRIBUTION HAS BEEN SUFFICIENTLY PLANNED FOR AND ACCOMMODATED.
8. ALL GROUNDING MUST CONFORM TO ATT-TP-76416 GROUNDING AND BONDING REQUIREMENTS FOR NETWORK FACILITIES.
9. SEE AT&T APPLICATION GUIDE (G07-00-004_REV_C) FOR SURGE SUPPRESSOR & REMOTE RADIO HEAD (RRH) MFG. SPECIFICATIONS / INSTALLATION REQUIREMENTS.
10. EQUIPMENT CABINETS/RACKS TO BE ANCHORED TO PLATFORM CABINET/RACK PER MANUFACTURER'S RECOMMENDATIONS. ANCHOR SIZE, QUANTITY, SPECIFICATIONS, ETC. TO BE VERIFIED PRIOR TO INSTALLATION. SEE DETAIL 1/A-40.

ZONING COMPLIANCE PAGE - CASE FILE LU 16-220552 DZ:

1. REQUIRED - THE APPROVAL IS CONTINGENT ON BUILDING CODE APPEAL APPROVAL FOR ANY STANDARDS OF THE CITY'S CODE GUIDE ON THE USE OF FIBER REINFORCED PLASTIC MATERIAL FOR ROOFTOP SCREENING APPLICATIONS NOT MET BY THE APPLICATION.

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SITE NAME

PG84
BROADWAY &
HARRISON

SITE ADDRESS

1800 SW 6TH AVENUE
PORTLAND, OR 97201

SHEET TITLE

OVERALL
ROOF PLAN

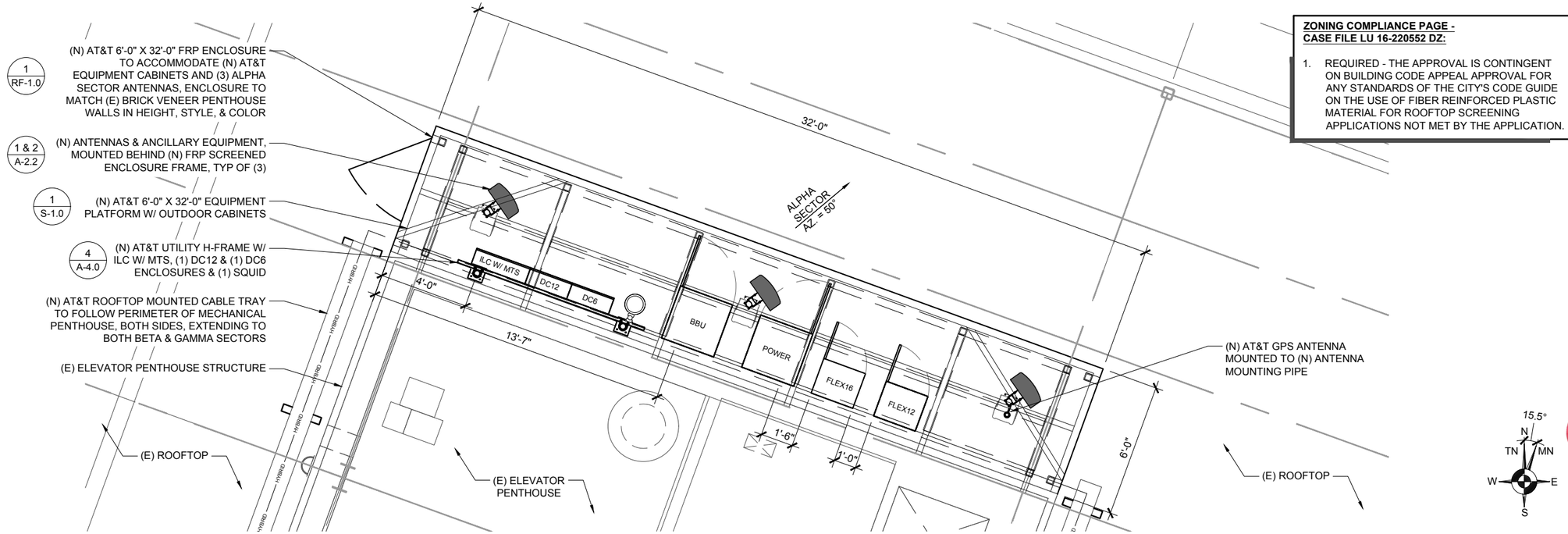
SHEET NO.

A-2.0

1 OVERALL ROOF PLAN

SCALE: 1" = 30'-0" (11X17)
SCALE: 1" = 15'-0" (22X34)

0' 15' 30' 60'

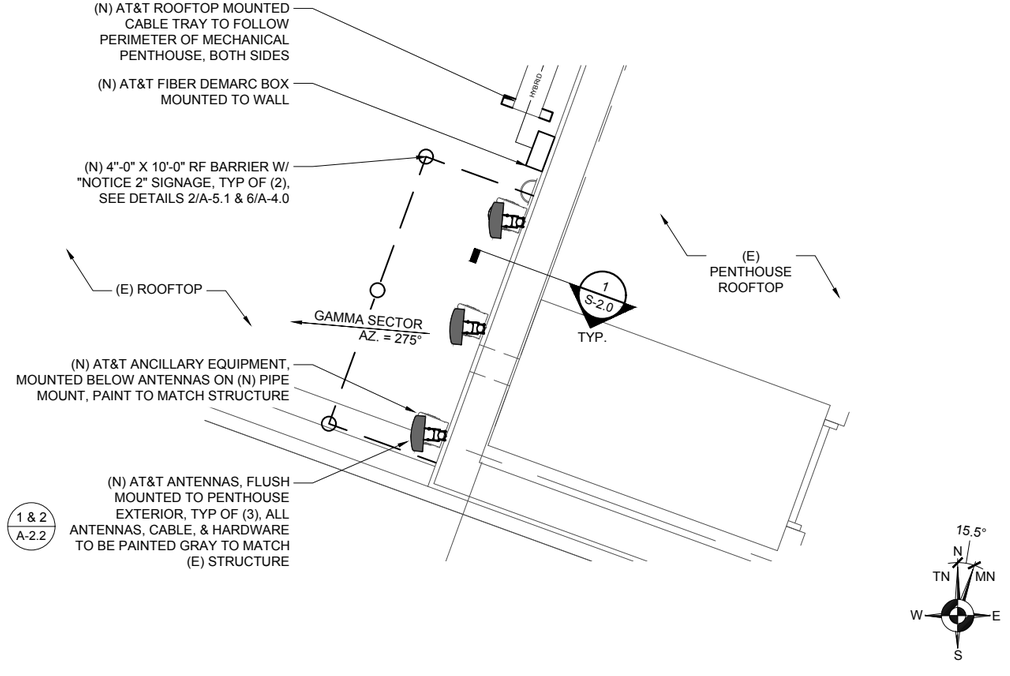


ZONING COMPLIANCE PAGE - CASE FILE LU 16-220552 DZ:

1. REQUIRED - THE APPROVAL IS CONTINGENT ON BUILDING CODE APPEAL APPROVAL FOR ANY STANDARDS OF THE CITY'S CODE GUIDE ON THE USE OF FIBER REINFORCED PLASTIC MATERIAL FOR ROOFTOP SCREENING APPLICATIONS NOT MET BY THE APPLICATION.

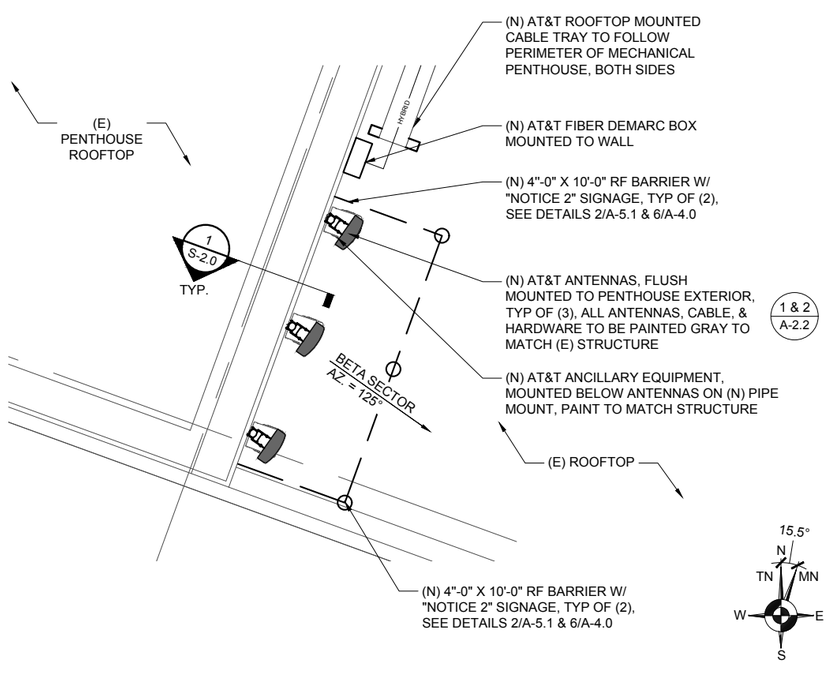
1 ANTENNA & EQUIPMENT PLAN (ALPHA SECTOR ONLY)

SCALE: NTS (11X17)
SCALE: NTS (22X34)



2 GAMMA SECTOR - ANTENNA PLAN

SCALE: NTS (11X17)
SCALE: NTS (22X34)



3 BETA SECTOR - ANTENNA PLAN

SCALE: NTS (11X17)
SCALE: NTS (22X34)

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SITE NAME

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BROADWAY &
HARRISON

SITE ADDRESS

1800 SW 6TH AVENUE
PORTLAND, OR 97201

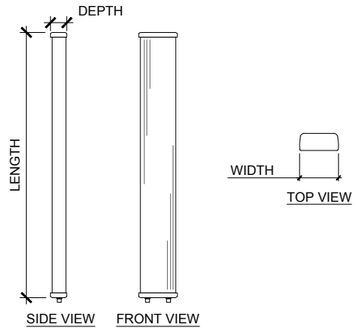
SHEET TITLE

ENLARGED ANT. & EQUIPMENT PLANS

SHEET NO.

A-2.1

NOTE:
1. IF REQUIRED, PAINT TO MATCH THE EXISTING STRUCTURE AND/OR BLEND WITH THE SURROUNDING AREAS USING NON-REFLECTIVE PAINT.
2. VERIFY FINAL RF CONFIGURATION WITH CLIENT REPRESENTATIVE PRIOR TO COMMENCEMENT OF CONSTRUCTION.
3. ALL ANTENNA INSTALLATION AND TESTING SHALL CONFORM TO CURRENT AT&T STANDARDS.



MANUFACTURER:	CCI
PART NUMBER:	HPA-45R-BUU-H6
LENGTH:	72.1"
WIDTH:	18.6"
DEPTH	8.2"
WEIGHT:	49.2 LBS
WEIGHT W/ HARDWARE:	61.8 LBS

MOUNTING HARDWARE PART# MBK-01

MANUFACTURER:	COMMSCOPE
PART NUMBER:	SBNHH-1D45A
LENGTH:	48.0"
WIDTH:	18.0"
DEPTH	7.0"
WEIGHT:	50.5 LBS
WEIGHT W/ HARDWARE:	58.0 LBS

MOUNTING HARDWARE PART# BSAMNT-1

1 ANTENNA SPECIFICATIONS

SCALE: NTS (11X17)
SCALE: NTS (22X34)

ANTENNAS - FINAL CONFIGURATION*

* BASED ON RFDS v. 2.1 DATED 10-17-16

SECTOR	POS.	NEW / FUTURE	MNFR.	ANTENNA MODEL	RAD CENTER	AZIMUTH	DIMENSIONS (L x W x D)	WEIGHT (LBS)
ALPHA	A1	NEW	CCI	HPA-45R-BUU-H6	118.4'	50°	72.1" X 18.6" X 8.2"	61.8
	A3	NEW	CCI	HPA-45R-BUU-H6	118.4'	50°	72.1" X 18.6" X 8.2"	61.8
	A4	NEW	COMMSCOPE	SBNHH-1D45A	118.4'	50°	48.0" X 18.0" X 7.0"	58.0
BETA	B1	NEW	CCI	HPA-45R-BUU-H6	114.5'	125°	72.1" X 18.6" X 8.2"	61.8
	B3	NEW	CCI	HPA-45R-BUU-H6	114.5'	125°	72.1" X 18.6" X 8.2"	61.8
	B4	NEW	COMMSCOPE	SBNHH-1D45A	114.5'	125°	48.0" X 18.0" X 7.0"	58.0
GAMMA/ DELTA	C1	NEW	CCI	HPA-45R-BUU-H6	114.5'	275°	72.1" X 18.6" X 8.2"	61.8
	C3	NEW	CCI	HPA-45R-BUU-H6	114.5'	275°	72.1" X 18.6" X 8.2"	61.8
	C4	NEW	COMMSCOPE	SBNHH-1D45A	114.5'	275°	48.0" X 18.0" X 7.0"	58.0

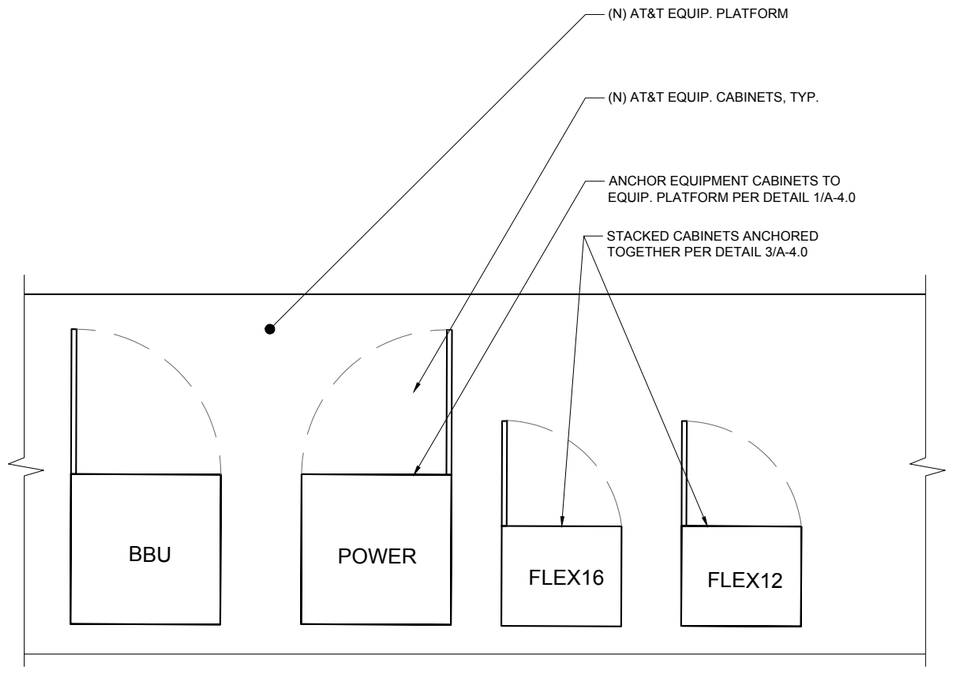
ANCILLARY EQUIP. - FINAL CONFIGURATION*

QTY.	NEW / FUTURE	TECHNOLOGY	MANUFACTURER	MODEL	RAD CENTER	DIMENSIONS (L x W x D)	WEIGHT (LBS)
3	NEW	RRH	ALCATEL-LUCENT	RRH2x60-850	-	18.9" x 11.5" x 9.0"	50.0
3	NEW	RRH	ALCATEL-LUCENT	RRH2x40W-07AT	-	24.8" x 11.5" x 5.7"	52.9
3	NEW	RRH	ALCATEL-LUCENT	B25 RRH4x30-4R	-	21.2" x 12.0" x 7.2"	53.0
3	NEW	RRH	ALCATEL-LUCENT	RRH4x25-WCS-4R	-	29.5" x 11.8" x 7.9"	70.0
3	NEW	RRH	ALCATEL-LUCENT	B66A-RRH4x45	-	18.9" x 11.5" x 9.0"	50.0
3	NEW	SURGE SUPPRESSOR	RAYCAP	DC6-48-60-18-8F	-	31.3" X 11.0"Ø	33.0
1	NEW	OVERVOLTAGE J-BOX	RAYCAP	DC12-48-60-0-25E	-	24.0" x 27.0" x 8.8"	56.3
3	NEW	OVERVOLTAGE J-BOX	RAYCAP	DC6-48-60-18	-	21.0" x 22.4" x 6.37"	43.5

2 ANTENNA SCHEDULE

AT&T EQUIPMENT INFORMATION

EQUIPMENT	QTY.	DIMENSIONS	WEIGHT
PURCELL FLX16WS	2 (STACKED)	30"H X 25"W X 20"D	400 lbs EA. 800 lbs TOTAL (MAX.)
PURCELL FLX12-2820	2 (STACKED)	23"H X 28"W X 20"D	400 lbs EA. 800 lbs TOTAL (MAX.)
EMERSON NETSURE 512 DC PWR. CAB. (OUTDOOR)	1	72"H X 32"W X 39"D	2,540 lbs (MAX.)
EMERSON NETSURE DC BATTERY CAB. (OUTDOOR)	1	72"H X 36"W X 37"D	3,955 lbs (MAX.)



3 OUTDOOR EQUIPMENT SCHEDULE & PLAN 2

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SITE NAME

PG84
BROADWAY & HARRISON

SITE ADDRESS

1800 SW 6TH AVENUE
PORTLAND, OR 97201

SHEET TITLE

ANTENNA & EQUIP. DETAILS

SHEET NO.

A-2.2

NOTE: BATTERIES ARE PROPOSED AT THIS SITE.

MANUF.	MODEL #	QTY.	ELECTROLYTE QTY. PER BATTERY	TOTAL ELECTROLYTE QTY.
MARATHON	MV12V155FT	20	2.17 GAL / PER	43.40 GAL*

* PER SECTION 608.1 OF THE 2012 INTERNATIONAL FIRE CODE, STATIONARY STORAGE BATTERY SYSTEMS HAVING AN ELECTROLYTE CAPACITY OF LESS THAN 50 GALLONS FOR VALVE-REGULATED LEAD-ACID (VRLA) BATTERY SYSTEMS, DO NOT NEED TO COMPLY WITH TABLE 608.1.

MARATHON™

From the World Leader in VRLA Battery Technology

Designed for durability in Telecommunications, and Electric Utility applications, the GNB FRONT Terminal *MARATHON*™ series provides high performance and reliability in long duration discharge applications. The location of the terminals on the front (vs. the top) of the battery greatly facilitates the installation and maintenance of the product when placed in a cabinet enclosure or on a standard relay rack tray. The *MARATHON*™ Front Terminal battery series highlights another example of GNB's extensive experience and world wide leadership in VRLA technology.

"Designed in" Quality Manufacturing

Quality manufacturing processes for the MARATHON™ series batteries incorporate the industry's most advanced technologies including: an automated helium leak detection system, a computer controlled "fill by weight" acid filler, and a temperature controlled water bath formation process. Each and every unit is capacity tested.

High Performance MARATHON™ Series Features

- Flame-retardant reinforced container and cover compliant with UL94 V-0, 28% L.O.I.
- Integrated flash arrester ultrasonically welded into cover.
- Patented "Diamond Side-Wall" design to maintain structural integrity in higher operating temperatures
- Heat sealed case-to-cover bond to ensure a leak proof seal
- High-Compression Absorbent Glass Mat (AGM) technology for greater than 99% recombination efficiency
- High-tin, calcium, silver, lead positive plate design for maximum service float life; 10 year design life @ 25°C (77°F)
- Front Accessible Copper Alloy Terminals & "Easy On/Easy Off" Post Protector
- Reliable one-way, self-resealing safety vents
- Integrated Carry Handles
- Multicell design for faster installation and reduced maintenance

Applications

MARATHON™ series batteries incorporate GNB's advanced VRLA technology designed for long life and high performance in:

Telecommunications
- Distributed Power
- PCS
- Cellular
- Broadband

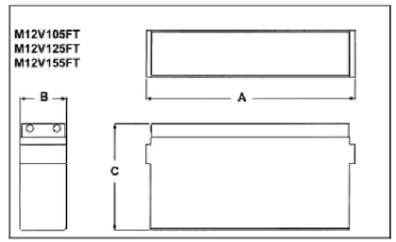
Electric Utility
- Switchgear Control Power
- Communications

UL Recognized Component

MARATHON™

MARATHON™ Front Terminal Specifications

	Model Number	Voltage	Capacity (AH) 8 Hr To 1.75 VPC @ 25°C	Capacity (AH) 10 hr To 1.80 VPC @ 20°C	Nominal Dimensions Inches A	B	C	Millimeters A	B	C	Nominal Weight lbs.	Kg
	M12V105FT	12	104	100	20.12	4.33	9.38	511	110	238	79	35.8
	M12V125FT	12	125	121	22.00	4.90	11.15	559	124	283	105	47.6
**	M12V155FT	12	155	150	22.00	4.90	11.15	559	124	283	119	53.8



MARATHON™ Front Terminal Electrical Data

Model Number	Short Circuit Current	Internal Resistance (mOhms)
M12V105FT	3125	4.0
M12V125FT	3814	3.2
M12V155FT	3683	3.0

Float Voltage & Charging

Constant Voltage charging is recommended
Recommended float voltage: 2.27 VPC @ 25°C (77°F)
Float Voltage Range: 2.25 to 2.30 VPC @ 25°C (77°F)
Equalize voltage: 2.35 VPC for 24 Hours

NOTE: Design and/or specifications subject to change without notice. If questions arise, contact your local GNB sales representative for clarification

1	BATTERY SPECIFICATIONS
2	NOT IN USE

SCALE: NTS (11X17)
SCALE: NTS (22X34)

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CENTERLINE SOLUTIONS
Advancing Wireless Networks

VECTOR ENGINEERS

STRUCTURAL
REGISTERED PROFESSIONAL ENGINEER
78187PE
OREGON
MAY 16, 2006
ROGER ALWORTH
02/16/2017
EXPIRES 12/31/2017

CP PROJECT NO.: ATT-15-0042-19

PRELIMINARY

NO.	DATE	D/C	DESCRIPTION
0	10-17-16	MS/MS	90% CD REVIEW
1	10-27-16	MS/MS	CLIENT COMMENT
2	11-22-16	MS/MS	CLIENT COMMENT

SUBMITTAL

NO.	DATE	D/C	DESCRIPTION
0	12-19-16	MS/MS	BP SUBMITTAL
1	01-27-17	MS/MS	FLS COMMENTS
2	02-15-17	JL/CL	BP COMMENTS

SITE NAME

PG84
BROADWAY &
HARRISON

SITE ADDRESS

1800 SW 6TH AVENUE
PORTLAND, OR 97201

SHEET TITLE

BATTERY SPECIFICATIONS

SHEET NO.

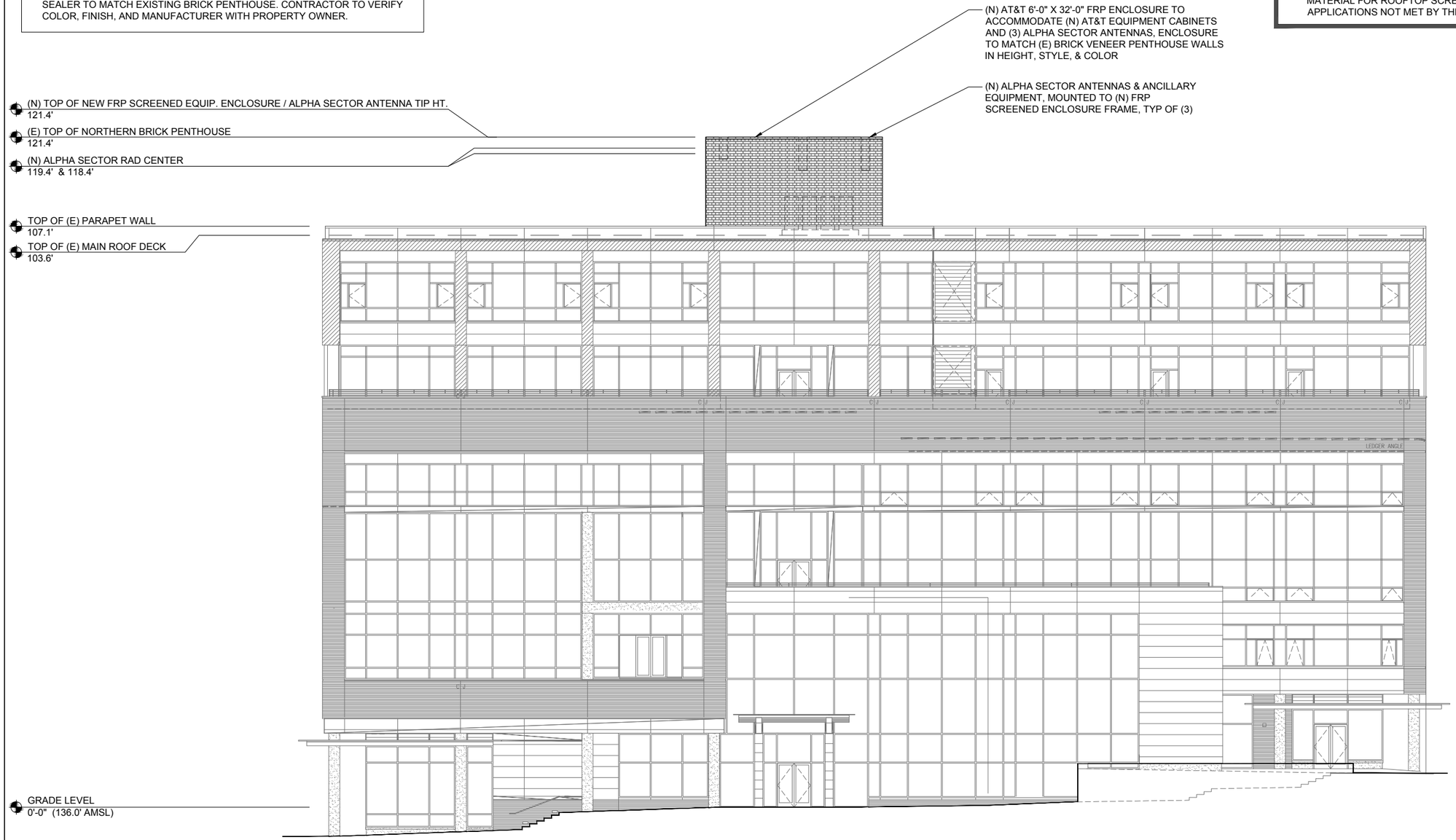
A-2.3

NOTE:

1. FOR BETA/GAMMA SECTOR, ALL ANTENNAS, ANCILLARY EQUIPMENT, AND MOUNTING HARDWARE TO BE PAINTED W/ MILLER 'GRAYSTROKE' OR APPROVED EQUAL. CONTRACTOR TO VERIFY COLOR, FINISH, AND MANUFACTURER WITH PROPERTY OWNER.
2. FOR ALPHA SECTOR, SCREEN WALL TO BE FINISHED WITH CE-OP-3A FLAT SEALER TO MATCH EXISTING BRICK PENTHOUSE. CONTRACTOR TO VERIFY COLOR, FINISH, AND MANUFACTURER WITH PROPERTY OWNER.

ZONING COMPLIANCE PAGE - CASE FILE LU 16-220552 DZ:

1. REQUIRED - THE APPROVAL IS CONTINGENT ON BUILDING CODE APPEAL APPROVAL FOR ANY STANDARDS OF THE CITY'S CODE GUIDE ON THE USE OF FIBER REINFORCED PLASTIC MATERIAL FOR ROOFTOP SCREENING APPLICATIONS NOT MET BY THE APPLICATION.



1 NORTH ELEVATION - FINAL

SCALE: 1" = 20'-0" (11X17)
SCALE: 1" = 10'-0" (22X34)

0' 10' 20' 40'

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CENTERLINE SOLUTIONS Advancing Wireless Networks

VECTOR ENGINEERS

STRUCTURAL REGISTERED PROFESSIONAL ENGINEER 78187PE OREGON MAY 16, 2006 ROGER ALWORTH 02/16/2017 EXPIRES 12/31/2017

CP PROJECT NO.: ATT-15-0042-19

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SITE NAME

PG84
BROADWAY &
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SITE ADDRESS

1800 SW 6TH AVENUE
PORTLAND, OR 97201

SHEET TITLE

NORTH
ELEVATION

SHEET NO.

A-3.0

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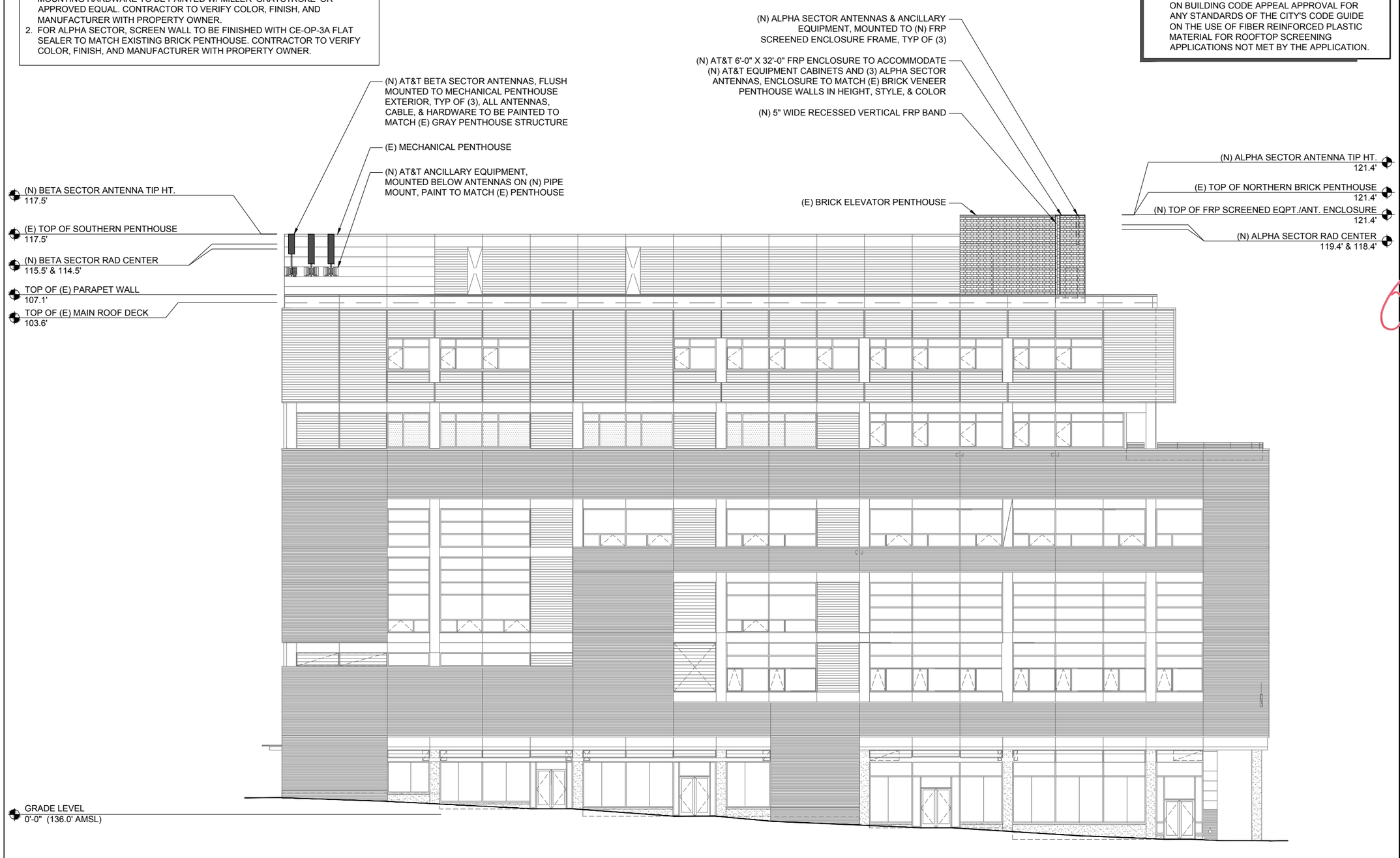

1 | EAST ELEVATION - FINAL

SCALE: 1" = 20'-0" (11X17)
SCALE: 1" = 10'-0" (22X34)

0' 10' 20' 40'

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CENTERLINE SOLUTIONS
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SUBMITTAL

NO.	DATE	D/C	DESCRIPTION
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1	01-27-17	MS/MS	FLS COMMENTS
2	02-15-17	JL/CL	BP COMMENTS

SITE NAME

PG84
BROADWAY &
HARRISON

SITE ADDRESS

1800 SW 6TH AVENUE
PORTLAND, OR 97201

SHEET TITLE

EAST
ELEVATION

SHEET NO.

A-3.1

NOTE:

1. FOR BETA/GAMMA SECTOR, ALL ANTENNAS, ANCILLARY EQUIPMENT, AND MOUNTING HARDWARE TO BE PAINTED W/ MILLER 'GRAYSTROKE' OR APPROVED EQUAL. CONTRACTOR TO VERIFY COLOR, FINISH, AND MANUFACTURER WITH PROPERTY OWNER.
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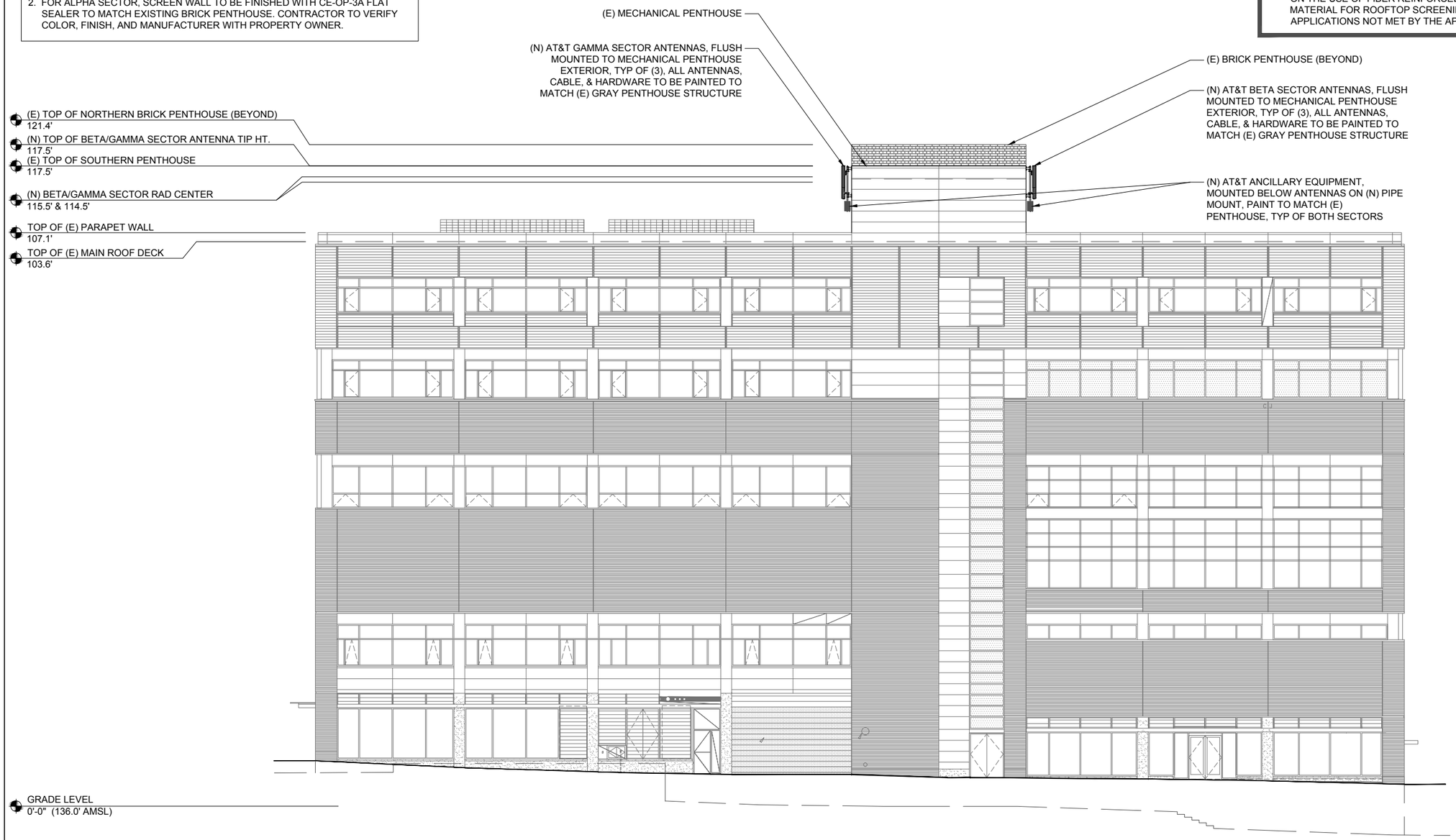

1 SOUTH ELEVATION - FINAL

SCALE: 1" = 20'-0" (11X17)
SCALE: 1" = 10'-0" (22X34)

0' 10' 20' 40'

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CENTERLINE SOLUTIONS Advancing Wireless Networks

VECTOR ENGINEERS

STRUCTURAL REGISTERED PROFESSIONAL ENGINEER 78187PE OREGON MAY 16, 2006 ROGER ALWORTH 02/16/2017 EXPIRES 12/31/2017

CP PROJECT NO.: ATT-15-0042-19

PRELIMINARY

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SUBMITTAL

NO.	DATE	D/C	DESCRIPTION
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2	02-15-17	JL/CL	BP COMMENTS

SITE NAME

PG84
BROADWAY &
HARRISON

SITE ADDRESS

1800 SW 6TH AVENUE
PORTLAND, OR 97201

SHEET TITLE

SOUTH ELEVATION

SHEET NO.

A-3.2

NOTE:

1. FOR BETA/GAMMA SECTOR, ALL ANTENNAS, ANCILLARY EQUIPMENT, AND MOUNTING HARDWARE TO BE PAINTED W/ MILLER 'GRAYSTROKE' OR APPROVED EQUAL. CONTRACTOR TO VERIFY COLOR, FINISH, AND MANUFACTURER WITH PROPERTY OWNER.
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ZONING COMPLIANCE PAGE -
CASE FILE LU 16-220552 DZ:

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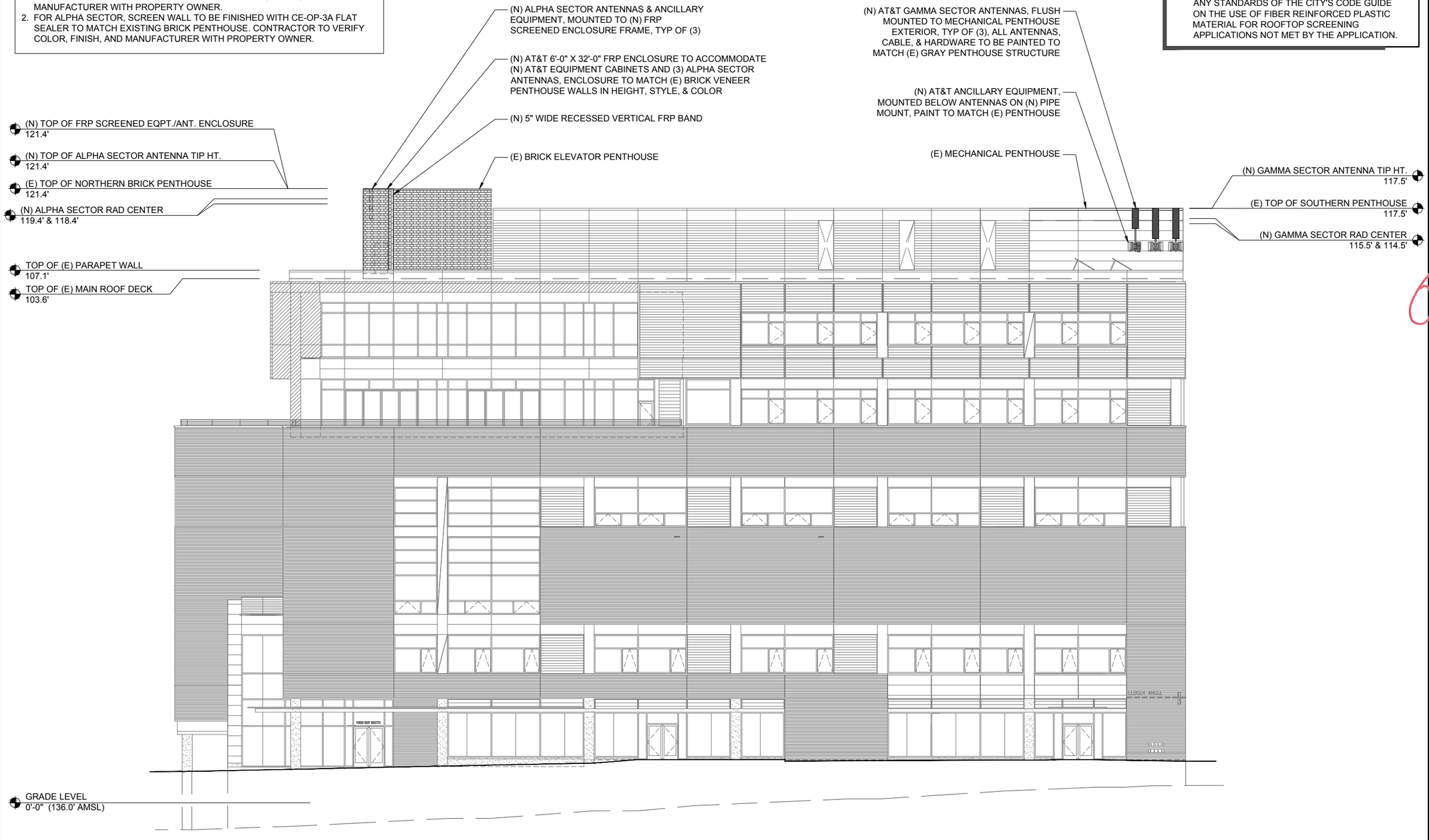

1 | WEST ELEVATION - FINAL

SCALE: 1" = 20'-0" (11X17)
SCALE: 1" = 10'-0" (22X34)

0' 10' 20' 40'

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CENTERLINE SOLUTIONS
Advancing Wireless Networks

VECTOR ENGINEERS

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SITE NAME

PG84
BROADWAY &
HARRISON

SITE ADDRESS

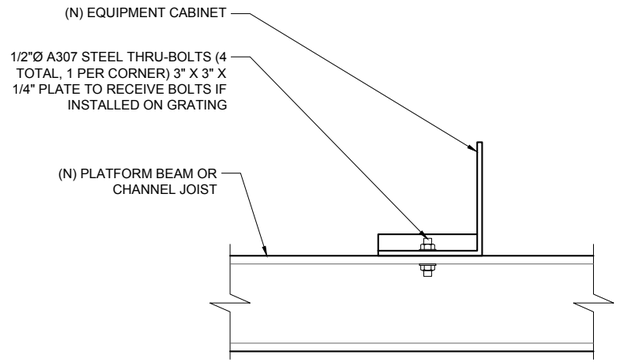
1800 SW 6TH AVENUE
PORTLAND, OR 97201

SHEET TITLE

WEST
ELEVATION

SHEET NO.

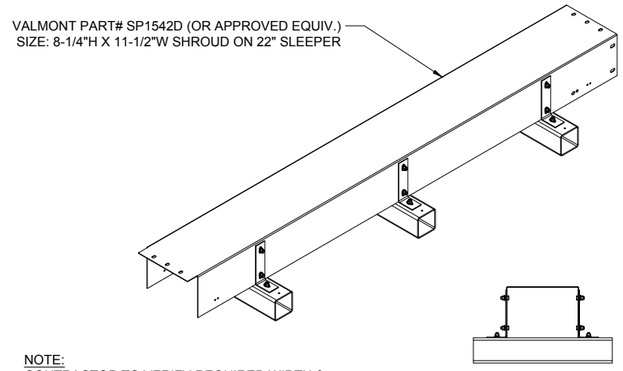
A-3.3



NOTE:
VERIFY EQUIPMENT CABINET SPECIFICATIONS FOR MOUNTING HOLE LOCATIONS.

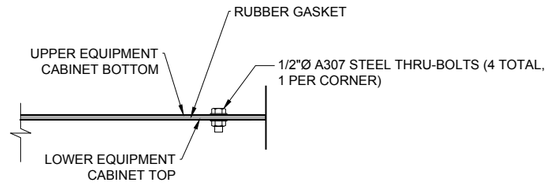
1 CABINET CONNECT. DETAIL 2 — SCALE: NTS (11X17) / SCALE: NTS (22X34)

- TALLER ROOFTOP COVER KITS TO ACCEPT STACKABLE STYLE SNAP-INS. STACK UP TO (8) 1-5/8" CABLES OR (12) 7/8" CABLES
- SELF-SPLICING
- HEAVY-DUTY 11 GAUGE GALVANIZED STEEL SELF-SPLICING COVER
- EACH KIT INCLUDES THREE SLEEPERS AND HARDWARE (RUBBER PADS SHOWN BUT NOT INCLUDED)



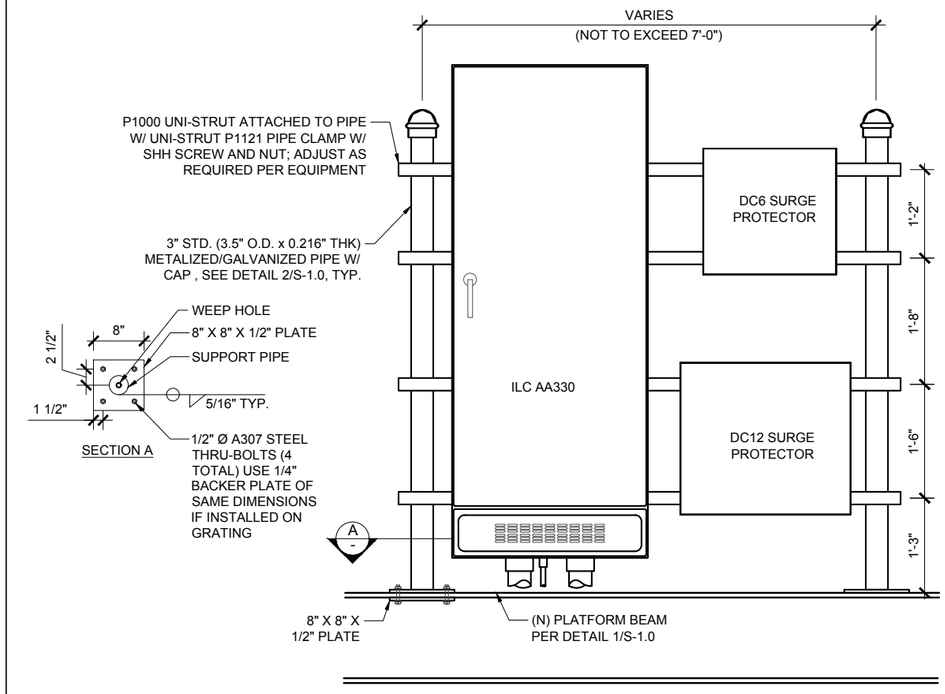
NOTE:
CONTRACTOR TO VERIFY REQUIRED WIDTH & DEPTH OF CABLE SHROUD AND ACCOUNT FOR FUTURE CABLE ROUTING.

2 TYPICAL CONDUIT TRAY DETAIL — SCALE: NTS (11X17) / SCALE: NTS (22X34)

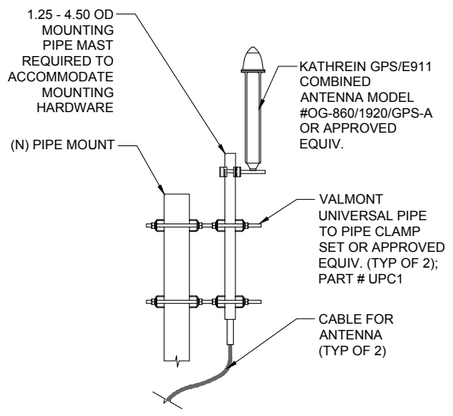


NOTE:
VERIFY EQUIPMENT CABINET SPECIFICATIONS FOR MOUNTING HOLE LOCATIONS.

3 CABINET DETAIL 2 — SCALE: NTS (11X17) / SCALE: NTS (22X34)

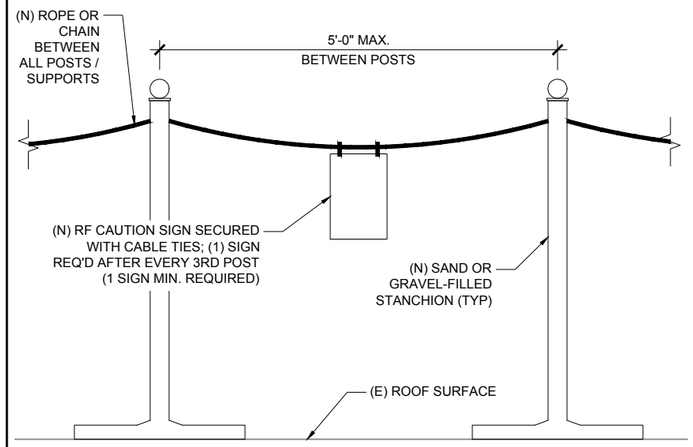


4 TYP H-FRAME DETAIL 2 — SCALE: NTS (11X17) / SCALE: NTS (22X34)



NOTES:
1. LOCATION OF ANTENNA MUST HAVE CLEAR VIEW OF SOUTHERN SKY; NO BLOCKAGES EXCEEDING 25% OF SURFACE AREA OF HEMISPHERE AROUND ANTENNA ALLOWED.
2. ALL GPS ANTENNA LOCATIONS MUST BE ABLE TO RECEIVE CLEAR SIGNALS FROM A MIN. OF (4) SATELLITES AND ARE TO BE VERIFIED W/ HANDHELD GPS UNIT BEFORE FINAL LOCATION IS SELECTED.

5 GPS ANTENNA — SCALE: NTS (11X17) / SCALE: NTS (22X34)



NOTE:
PLEASE REFERENCE PG84 RFSSRP COMPLIANCE/SIGNAGE

6 TYPICAL RF BARRIER — SCALE: NTS (11X17) / SCALE: NTS (22X34)

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STRUCTURAL
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78187PE
OREGON
MAY 16, 2006
ROGER ALWORTH
02/16/2017
EXPIRES 12/31/2017

CP PROJECT NO.: ATT-15-0042-19

PRELIMINARY

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SUBMITTAL

NO.	DATE	D/C	DESCRIPTION
0	12-19-16	MS/MS	BP SUBMITTAL
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2	02-15-17	JL/CL	BP COMMENTS

SITE NAME

PG84
BROADWAY &
HARRISON

SITE ADDRESS

1800 SW 6TH AVENUE
PORTLAND, OR 97201

SHEET TITLE

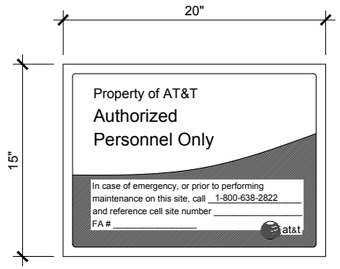
CONSTRUCTION DETAILS

SHEET NO.

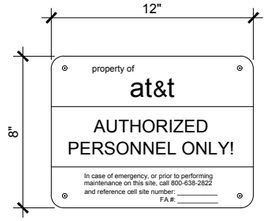
A-4.0

AT&T OWNED SITES REQUIRE THE FOLLOWING SIGNS:

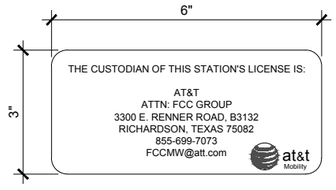
NOTE: AT&T LEASED SITES (NOT OWNED BY AT&T) ONLY REQUIRE A DOOR & FCC CUSTODIAL LICENSE SIGN.



1. ALUMINUM GATE SIGN



2. DOOR SIGN (SHELTER OR TENANT IMPROVEMENT ROOM)

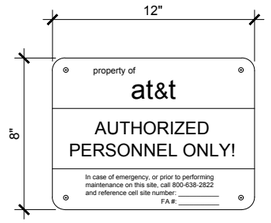


3. FCC CUSTODIAL LICENSE SIGN

4. NO TRESPASSING SIGNS

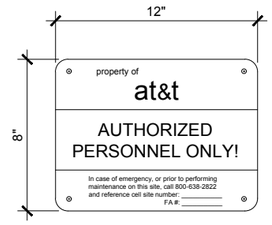
NOTES:

1. OUTDOOR SITES REQUIRE THE SAME GATE AND NO TRESPASSING SIGNS AS INDOOR SITES IF OWNED BY AT&T. IN PLACE OF THE DOOR SIGN THE CABINETS MUST HAVE THE FOLLOWING SIGNS:

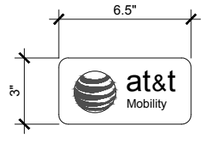


NOTE: SIGN MUST BE AFFIXED TO THE SIDE OF THE CABINET (FRONT, REAR OR SIDE) WHICH IS MOST VISIBLE WHEN APPROACHING THE CABINET FROM THE SITE ACCESS POINT.

AT&T IDENTIFICATION SIGN FOR SINGLE CABINET SITE



NOTE: SIGN MUST BE AFFIXED TO THE SIDE OF THE CABINET (FRONT, REAR OR SIDE) WHICH IS MOST VISIBLE WHEN APPROACHING THE CABINET FROM THE SITE ACCESS POINT.



NOTE: MULTIPLE CABINET SITES REQUIRE THE SIGN ABOVE ATTACHED TO THE SIDE OF EACH CABINET ON THE END OF THE LINEUP. IN ADDITION, A SIGN INDICATING AT&T AS THE OWNER MUST BE AFFIXED TO THE FRONT OR REAR OF EVERY CABINET (NOT BOTH). AT&T IDENTIFICATION SIGN IS TO BE AFFIXED TO THE MOST VISIBLE AREA (FRONT OR REAR) WHEN APPROACHING THE CABINETS FROM THE SITE ACCESS POINT.

AT&T IDENTIFICATION SIGNS FOR MULTIPLE CABINET SITE

1	STANDARD CELL SITE SIGNAGE REQUIRED	2	OUTDOOR CABINET SITE SIGNAGE REQUIRED	3	NOT USED

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OREGON
MAY 16, 2006
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SITE NAME

PG84
BROADWAY &
HARRISON

SITE ADDRESS

1800 SW 6TH AVENUE
PORTLAND, OR 97201

SHEET TITLE

SIGNAGE
DETAILS

SHEET NO.

A-5.0

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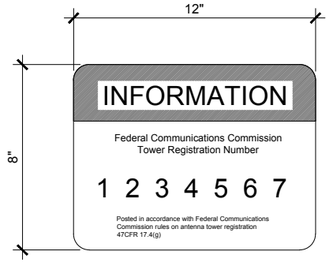
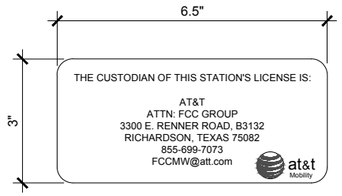
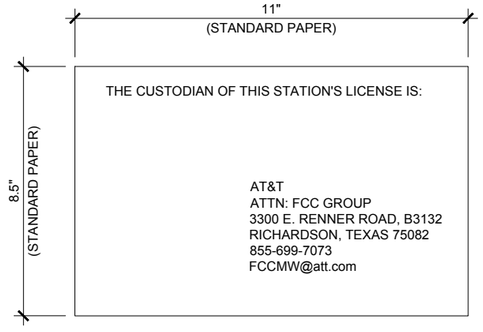


ANTENNA STRUCTURE REGISTRATION (ASR) SIGN



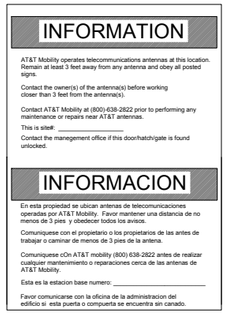
FCC CUSTODIAL LETTER
(AVAILABLE THROUGH EXCEL SIGN, PART #ATT DC CUS 653)

OR



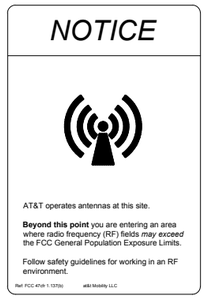
FCC CUSTODIAL LETTER

1 FCC SIGNS REQUIRED



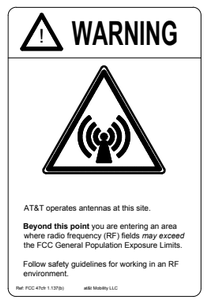
NOTE: RF SIGNS ARE TO BE POSTED PER ATT-002-290-078

GREEN INFORMATION SIGNS



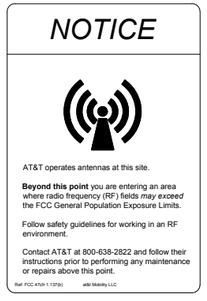
BLUE NOTICE

YELLOW CAUTION

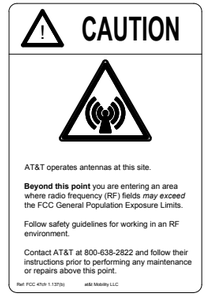


ORANGE WARNING

TYPE I SIGNS
(REQUIRE AN ADJACENT GREEN INFORMATION SIGN)



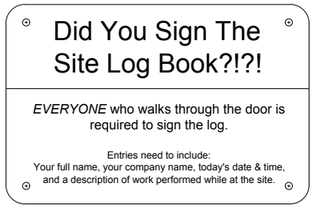
BLUE NOTICE



YELLOW CAUTION

TYPE II SIGNS
(DO NOT REQUIRE AN ADJACENT GREEN INFORMATION SIGN)

2 RF EMISSION SIGNS REQUIRED



NOTE: POSTING ON INSIDE OF SHELTER DOOR RECOMMENDED.

LOG BOOK SIGN

NOTE: CAN BE AFFIXED TO PADLOCKS TO INDICATE AT& LOCK, CAN ALSO BE USED TO LABEL ITEMS SUCH AS ELECTRICAL DISCONNECT BOXES, ELECTRICAL METERS, ETC. 1" X 8" IF ORDERED FROM EXCEL SIGN.

PADLOCK DECAL

GATE SIGN

3 MISCELLANEOUS SIGNS

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VECTOR ENGINEERS

STRUCTURAL
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78187PE
OREGON
MAY 16, 2006
ROGER ALWORTH
02/16/2017
EXPIRES 12/31/2017

CP PROJECT NO.: ATT-15-0042-19

PRELIMINARY

NO.	DATE	D/C	DESCRIPTION
0	10-17-16	MS/MS	90% CD REVIEW
1	10-27-16	MS/MS	CLIENT COMMENT
2	11-22-16	MS/MS	CLIENT COMMENT

SUBMITTAL

NO.	DATE	D/C	DESCRIPTION
0	12-19-16	MS/MS	BP SUBMITTAL
1	01-27-17	MS/MS	FLS COMMENTS
2	02-15-17	JL/CL	BP COMMENTS

SITE NAME

PG84
BROADWAY &
HARRISON

SITE ADDRESS

1800 SW 6TH AVENUE
PORTLAND, OR 97201

SHEET TITLE

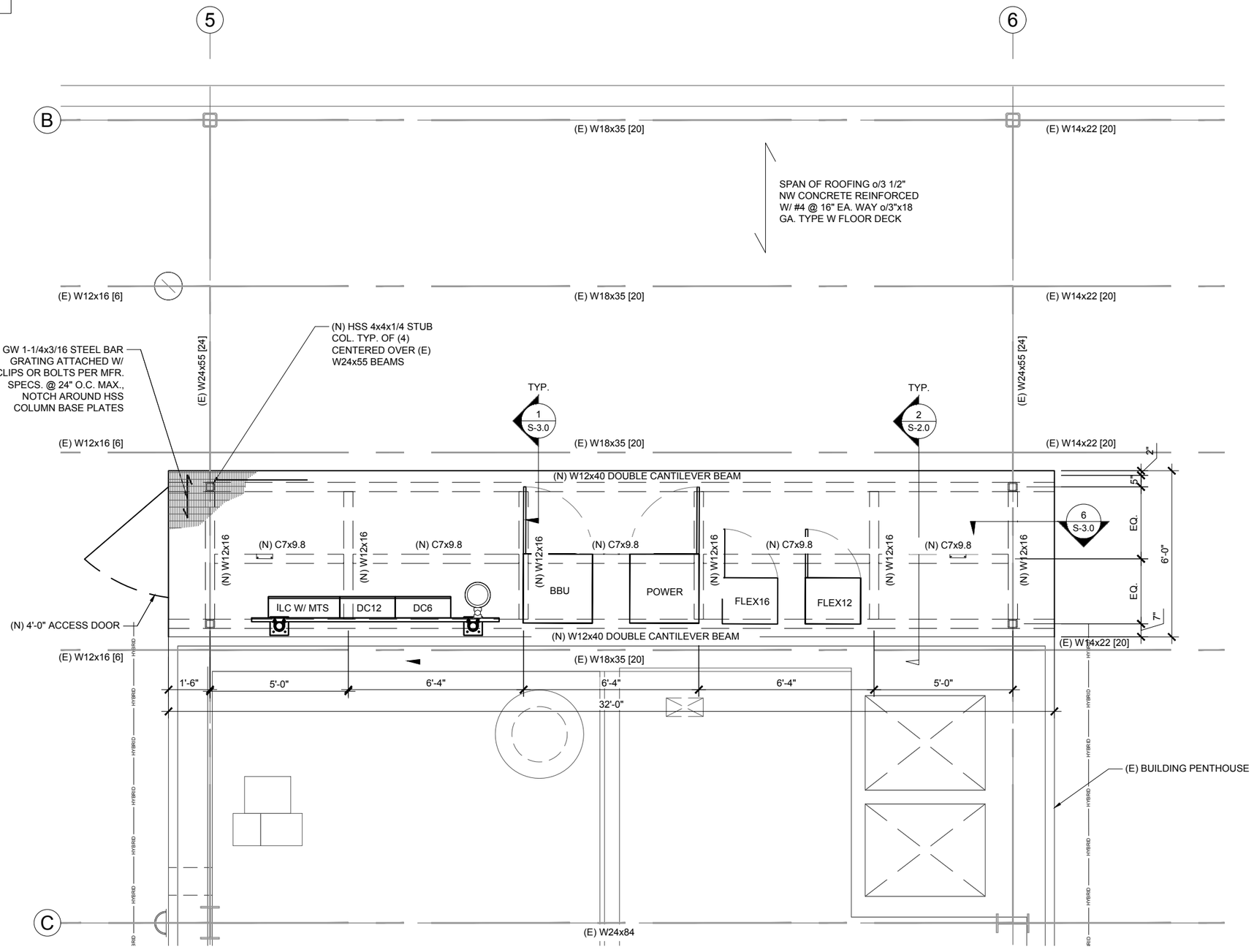
SIGNAGE
DETAILS

SHEET NO.

A-5.1

NOTES:

1. SEE SHEET GN-2 FOR STRUCTURAL STEEL AND SPECIAL INSPECTION NOTES.
2. [##] REFERS TO THE QUANTITY OF 3/4" DIA. x 4 1/2" LONG HEADED STUDS ON THE COMPOSITE BEAM.



1 EQUIPMENT PLATFORM - PLAN VIEW 2

SCALE: NTS (11X17)
SCALE: NTS (22X34)

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SHEET TITLE

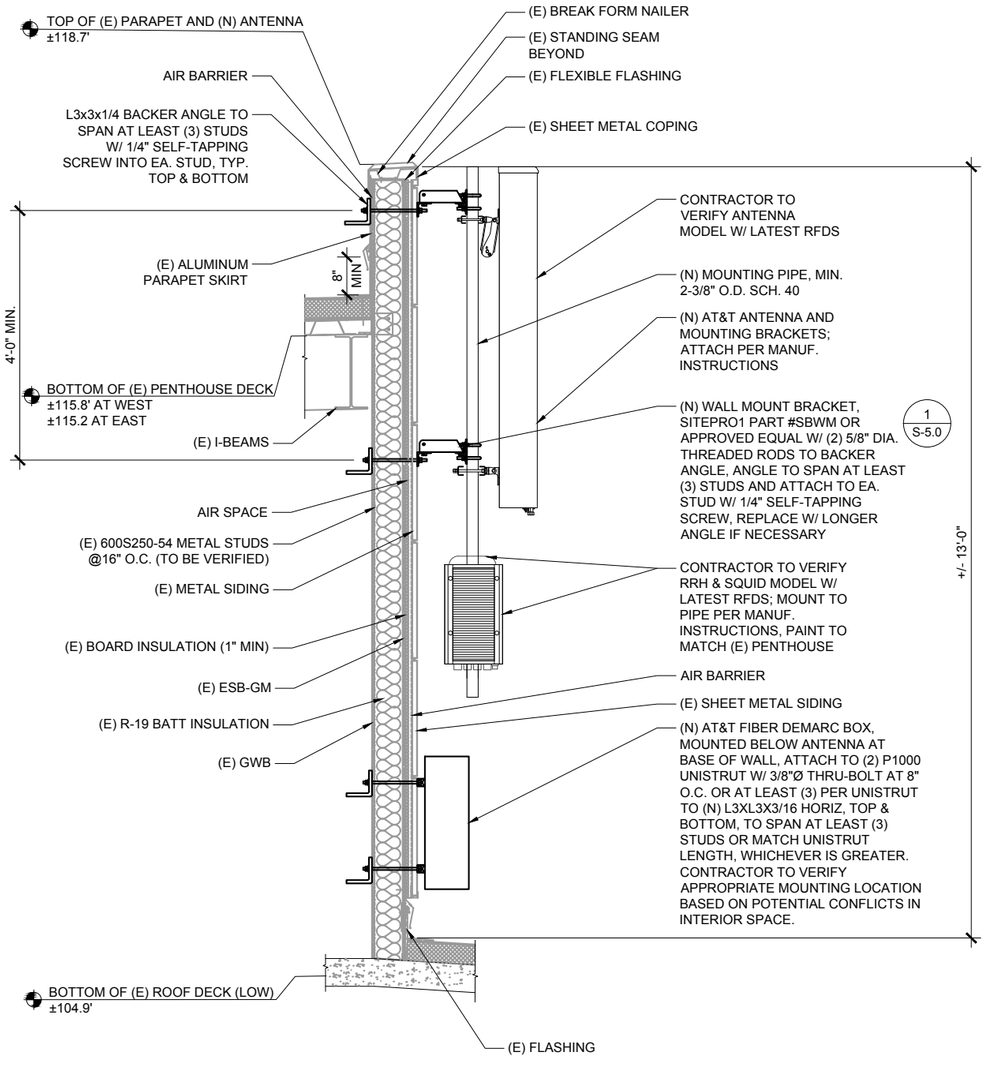
EQUIPMENT PLATFORM

SHEET NO.

S-1.0

NOTE:

WATERPROOFING/SEALING OF ALL WALL & ROOF PENETRATIONS BY CONTRACTOR AS REQ'D.



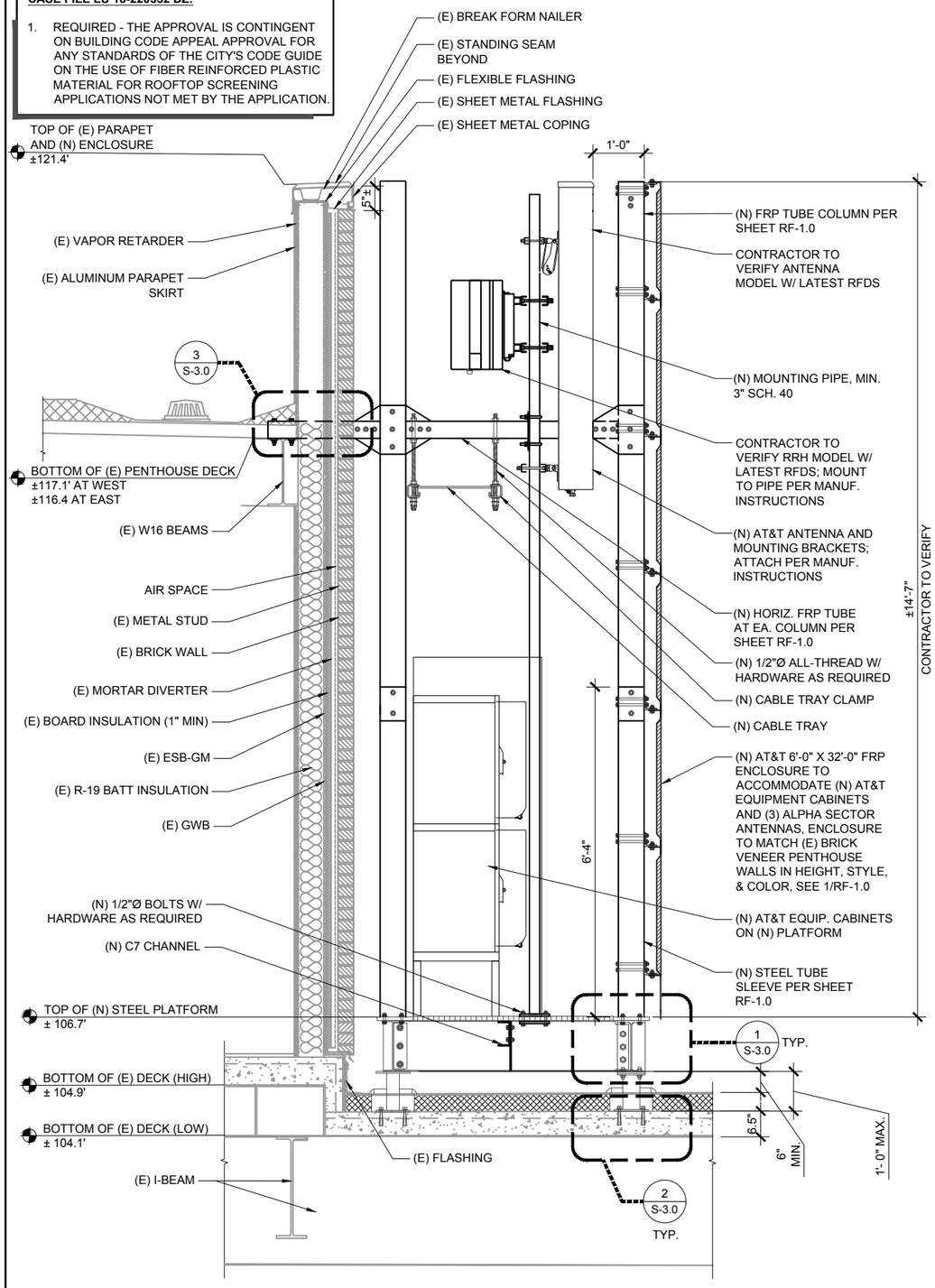
1 BETA/GAMMA SECTOR MOUNTING DETAILS 2

SCALE: 3/8"= 1'-0" (11X17)
SCALE: 3/4" = 1'-0" (22X34)

0' 1' 3' 5'

ZONING COMPLIANCE PAGE - CASE FILE LU 16-220552 DZ:

1. REQUIRED - THE APPROVAL IS CONTINGENT ON BUILDING CODE APPEAL APPROVAL FOR ANY STANDARDS OF THE CITY'S CODE GUIDE ON THE USE OF FIBER REINFORCED PLASTIC MATERIAL FOR ROOFTOP SCREENING APPLICATIONS NOT MET BY THE APPLICATION.



2 ALPHA SECTOR MOUNTING DETAILS 2

SCALE: 3/8"= 1'-0" (11X17)
SCALE: 3/4" = 1'-0" (22X34)

0' 1' 3' 5'

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SITE NAME

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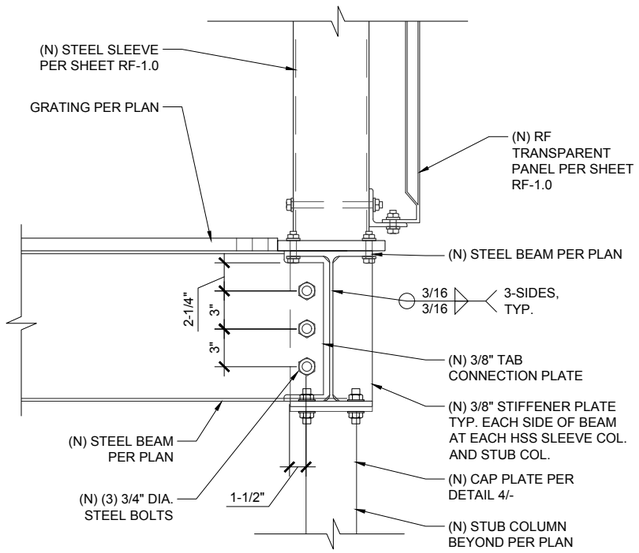
PORTLAND, OR 97201

SHEET TITLE

STRUCTURAL DETAILS

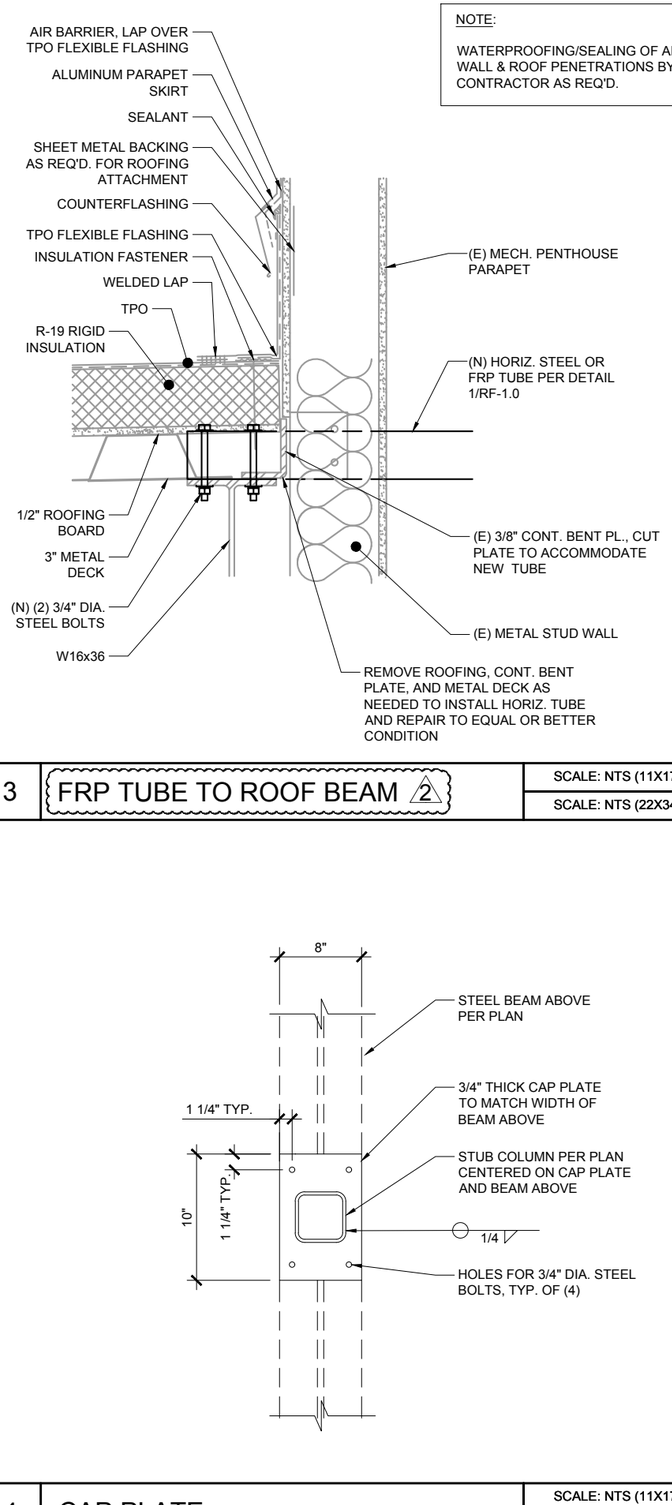
SHEET NO.

S-2.0



1 BEAM TO BEAM CONNECTION

SCALE: NTS (11X17)
SCALE: NTS (22X34)

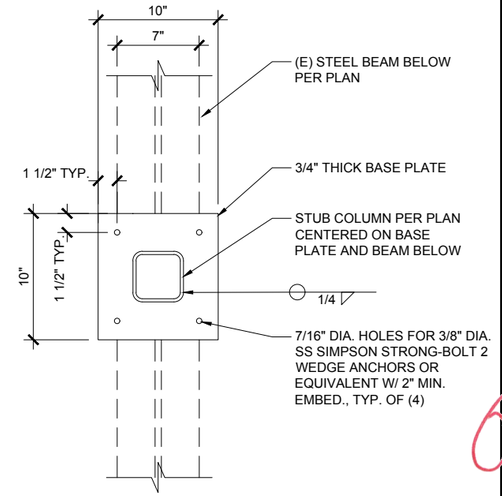


NOTE:

WATERPROOFING/SEALING OF ALL WALL & ROOF PENETRATIONS BY CONTRACTOR AS REQ'D.

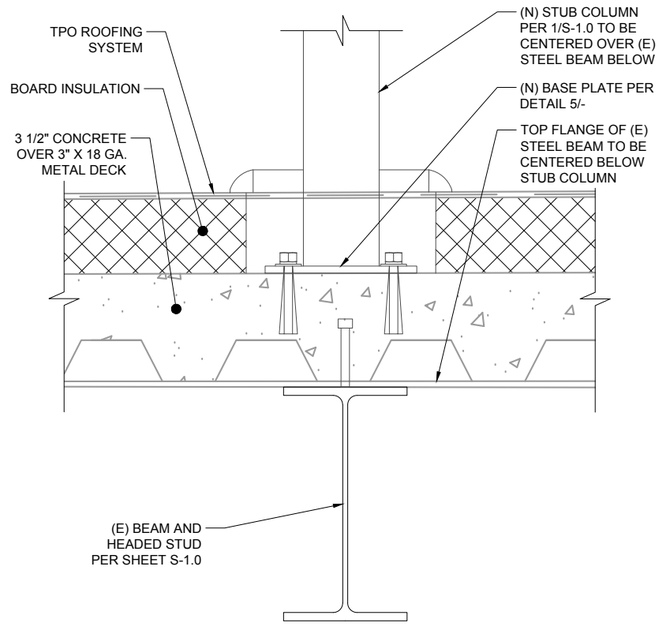
3 FRP TUBE TO ROOF BEAM 2

SCALE: NTS (11X17)
SCALE: NTS (22X34)



5 BASE PLATE

SCALE: NTS (11X17)
SCALE: NTS (22X34)



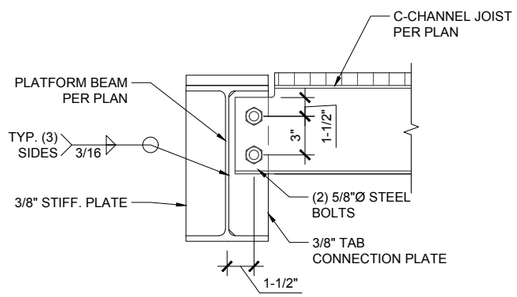
2 STUB COLUMN ROOF PENETRATION 2

SCALE: NTS (11X17)
SCALE: NTS (22X34)

4 CAP PLATE

SCALE: NTS (11X17)
SCALE: NTS (22X34)

NOTE:
CONNECTION IS TYPICAL EA. SIDE WHERE JOIST OCCURS ON BOTH SIDES OF BEAM.



6 JOIST TO BEAM

SCALE: NTS (11X17)
SCALE: NTS (22X34)

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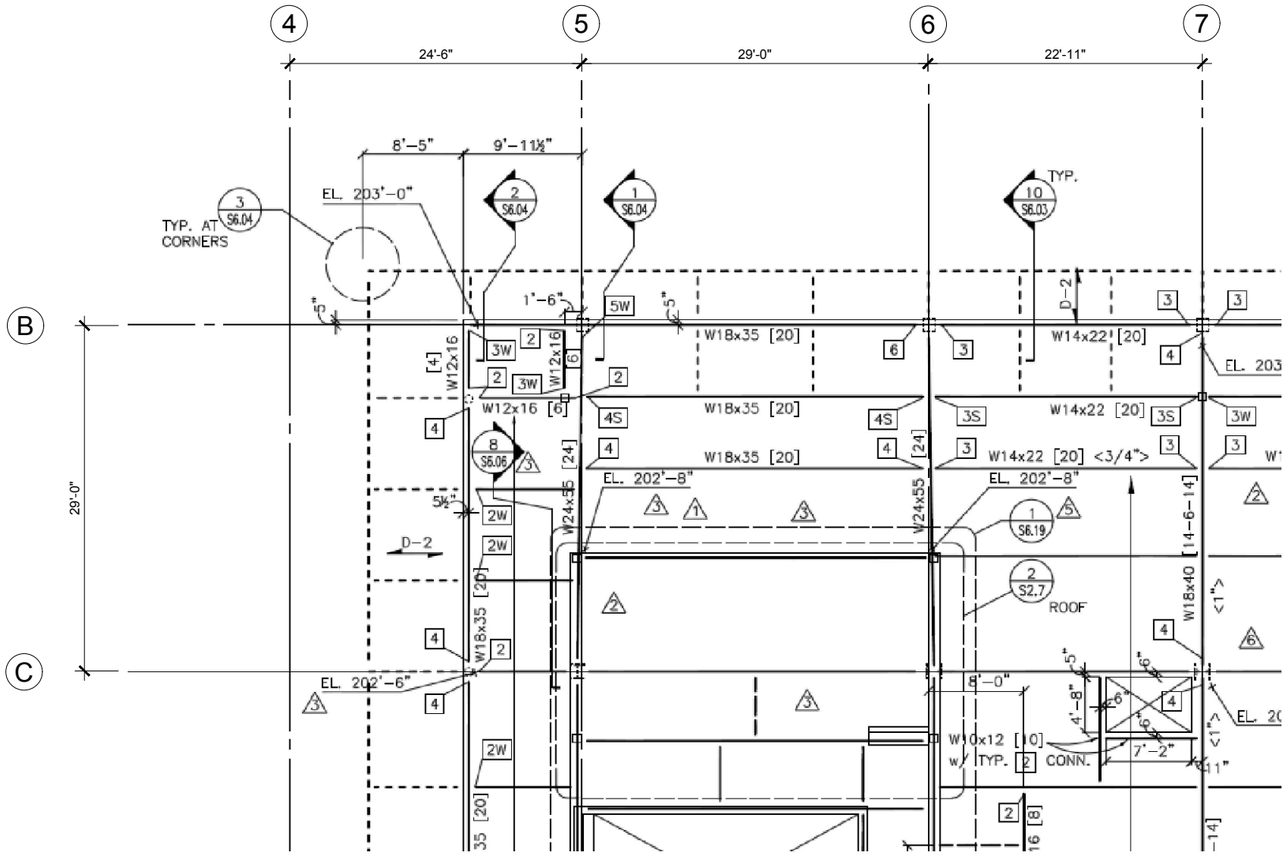
PORTLAND, OR 97201

SHEET TITLE

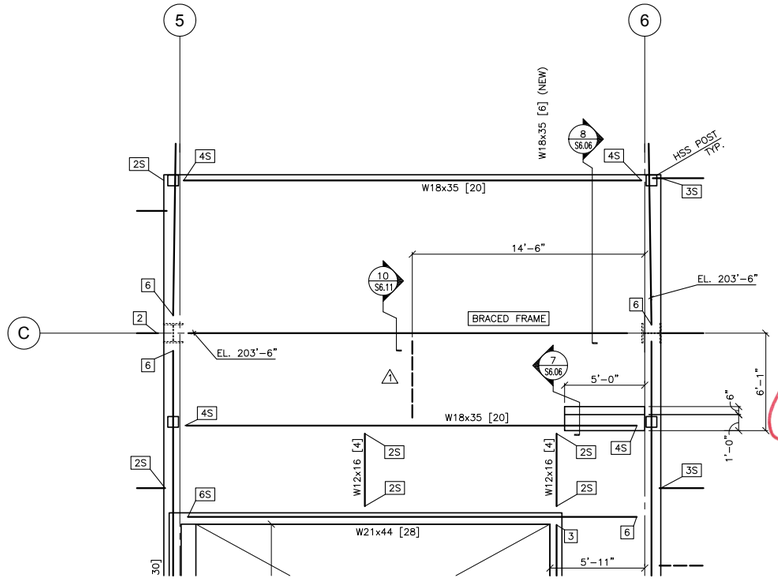
STRUCTURAL DETAILS

SHEET NO.

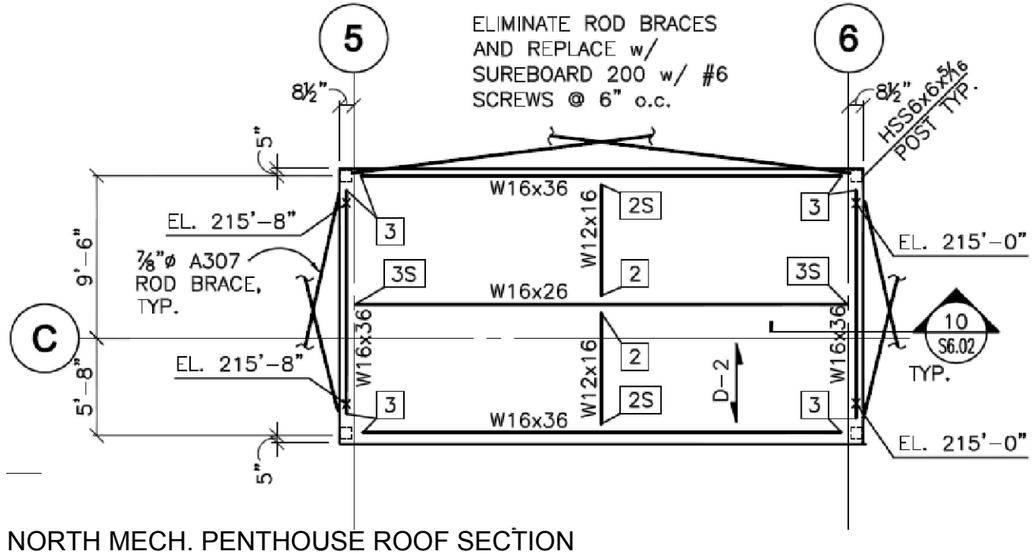
S-3.0



ROOF- NORTH MECH. PENTHOUSE PLAN VIEW



NORTH MECH. PENTHOUSE FLOOR SECTION



NORTH MECH. PENTHOUSE ROOF SECTION

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SHEET TITLE

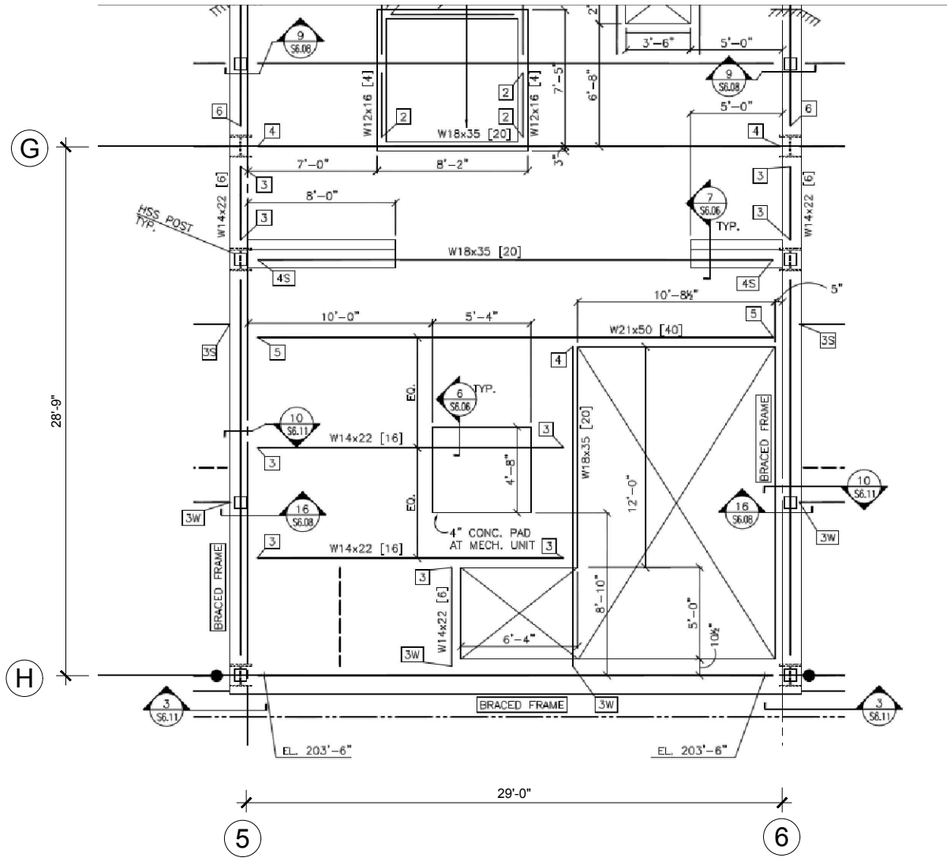
EXISTING
FRAMING DETAILS

SHEET NO.

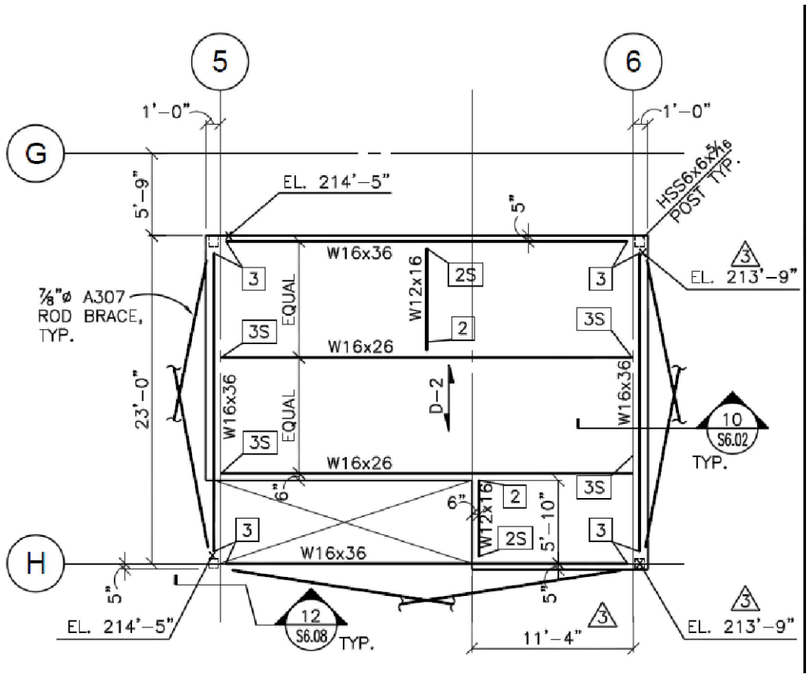
S-4.0

1 EXISTING FRAMING DETAILS 2

SCALE: NTS (11X17)
SCALE: NTS (22X34)



ROOF- SOUTH MECH. PENTHOUSE PLAN VIEW



ROOF- SOUTH MECH. PENTHOUSE

1 EXISTING FRAMING DETAILS 2

SCALE: NTS (11X17)

SCALE: NTS (22X34)

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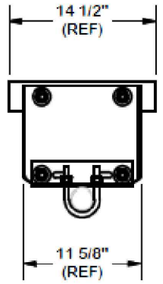
SHEET TITLE

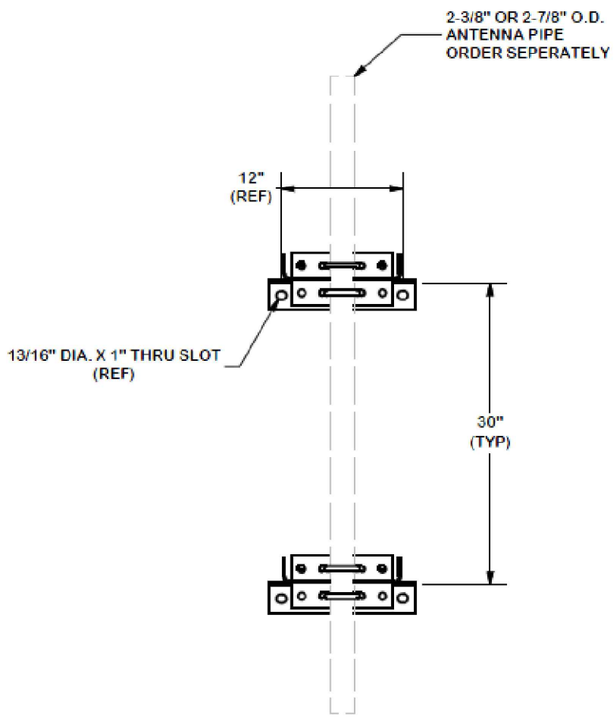
EXISTING
FRAMING DETAILS

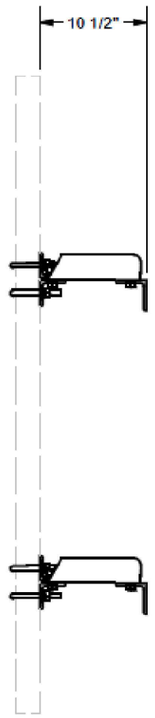
SHEET NO.

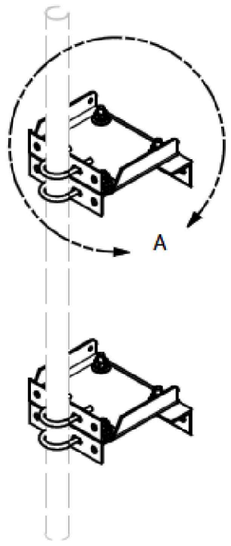
S-4.1

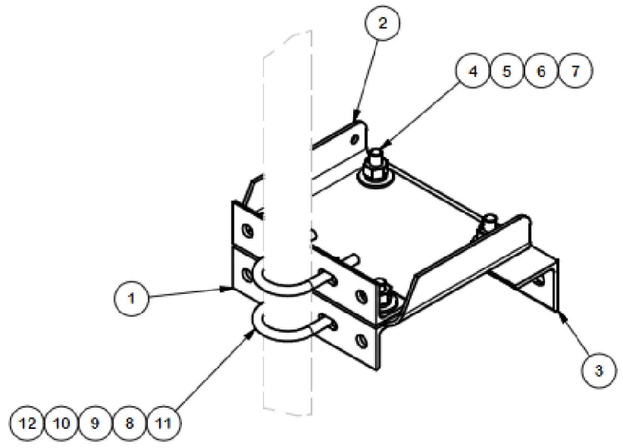


PARTS LIST						
ITEM	QTY	PART NO.	PART DESCRIPTION	LENGTH	UNIT WT.	NET WT.
1	4	X-SLD-A	SLIDER BRACKET ANGLE	10 in	3.28	13.12
2	2	X-SLD-BP	SLIDER BRACKET BENT PLATE		8.13	16.26
3	2	X-SLD3	SLIDER BRACKET WALL ANGLE	14 1/2 in	6.10	12.20
4	8	G5802	5/8" x 2" HDG HEX BOLT GR5		0.27	2.16
5	8	G58FW	5/8" HDG USS FLATWASHER		0.07	0.56
6	8	G58LW	5/8" HDG LOCKWASHER		0.03	0.21
7	8	G58NUT	5/8" HDG HEAVY 2H HEX NUT		0.13	1.04
8	8	G12FW	1/2" HDG USS FLATWASHER		0.03	0.27
9	8	G12LW	1/2" HDG LOCKWASHER		0.01	0.11
10	8	G12NUT	1/2" HDG HEAVY 2H HEX NUT		0.07	0.57
11	4	X-UB1212	1/2" X 2-1/2" X 4-1/2" X 2" GALV. U-BOLT		0.66	2.63
12	4	X-UB1300	1/2" X 3" X 5" X 2" GALV U-BOLT		0.70	2.79
					TOTAL WT. #	51.93









DETAIL A

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BROADWAY &
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SITE ADDRESS

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PORTLAND, OR 97201

SHEET TITLE

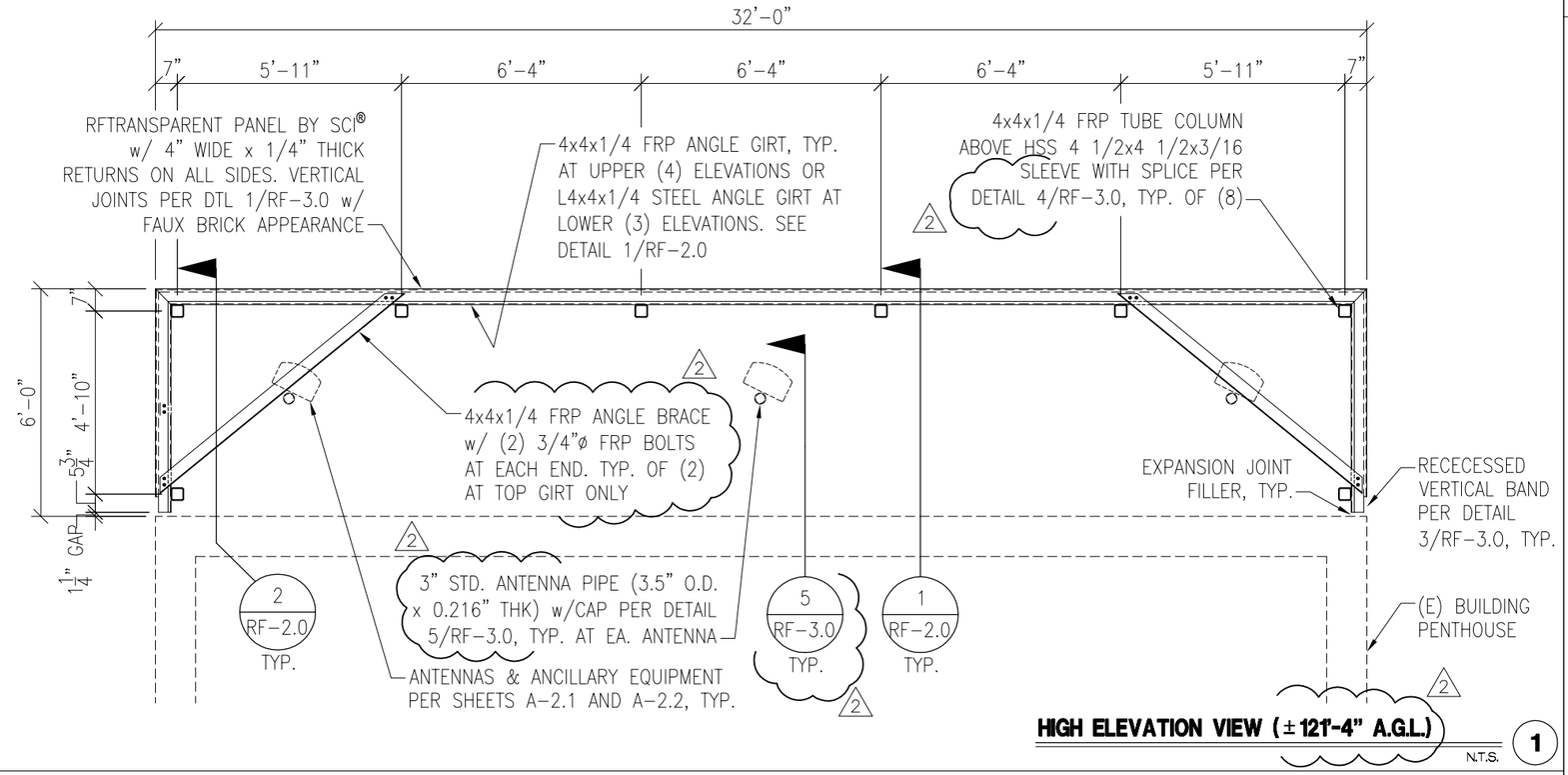
WALL MOUNTING DETAILS

SHEET NO.

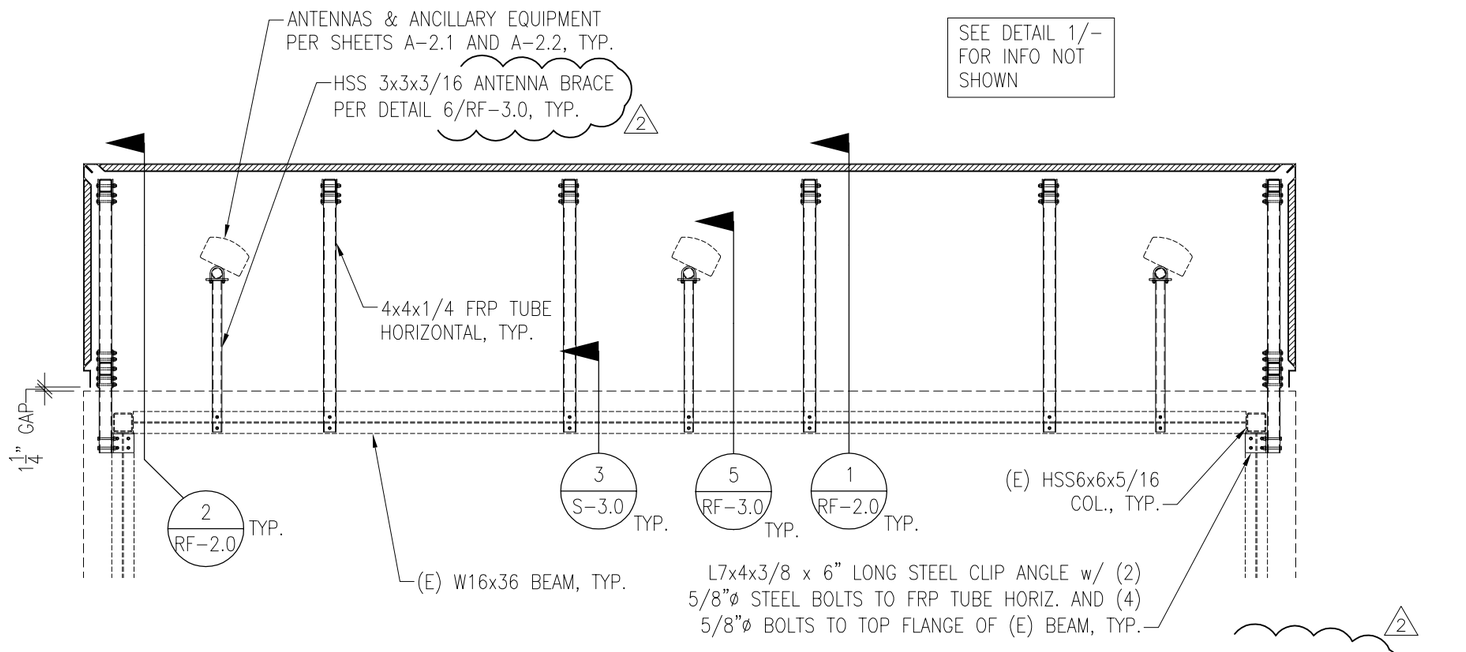
S-5.0

1 WALL MOUNTING DETAILS 2

SCALE: NTS (11X17)
SCALE: NTS (22X34)



HIGH ELEVATION VIEW (±121'-4" A.G.L.) N.T.S. **1**



MIDDLE ELEVATION VIEW (±117'-0" A.G.L.) N.T.S. **2**

GENERAL DESIGN NOTES

DESIGN NOTES AND MATERIAL REQUIREMENTS:

1. THE DESIGN CRITERIA FOR THIS STRUCTURE IS AS FOLLOWS:
   A. STANDARDS AND DESIGN CODES:
      BUILDING CODE: OREGON STRUCTURAL SPECIALTY CODE, 2014 EDITION (2012 IBC)
      STEEL MANUAL: AISC STEEL CONST. MANUAL, 14TH ED.
   B. DESIGN:
      WIND:
      120 MPH (3-SEC GUST)
      EXPOSURE: B
      RISK CATEGORY: II
      SEISMIC:
      IMPORTANCE FACTOR: 1.00
      RISK CATEGORY: II
      MAPPED SPECTRAL RESPONSE ACCELERATION:
      S_S = 0.989, S_1 = 0.426
      SITE CLASS: D
      SPECTRAL RESPONSE COEFFICIENTS:
      S_{DS} = 0.728, S_{D1} = 0.447

2. GENERAL STRUCTURAL NOTES:
   A. ALL MATERIALS SHALL CONFORM TO THE FOLLOWING STANDARDS:
      STEEL:

SCREWS:	SAE GR. 5 (OR EQUIVALENT)
THRU BOLTS:	ASTM A307
HIGH-STRENGTH BOLTS (STEEL TO STEEL):	ASTM A325
RECT. HSS:	ASTM A500 GR. B (46 KSI)
WIDE FLANGE STEEL BEAMS:	ASTM A992, GR. 50
PIPE:	ASTM A53 GR. B
STEEL SHAPES/PLATES:	ASTM A36, U.N.O.

      ALL STEEL SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A123 AND ASTM A153
      FRP:
      PULTRUDED SHAPES/THREADED ROD: FIBERGRATE DYNAFORM (LARR#: 25536)
   B. ALL WELDING TO BE PERFORMED BY WELDERS CERTIFIED IN ACCORDANCE WITH AWS D1.1. FIELD WELDING IS PROHIBITED.

3. GENERAL STRUCTURAL NOTES:
   A. STEEL FABRICATION SHALL BE DONE ON THE PREMISES OF A FABRICATOR REGISTERED AND APPROVED AS REQUIRED BY THE IBC TO PERFORM SUCH WORK WITHOUT SPECIAL INSPECTION.
   B. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND EXISTING CONDITIONS PRIOR TO CONSTRUCTION.
   C. THE FOLLOWING SPECIAL INSPECTIONS (WHERE APPLICABLE) SHALL BE REQUIRED PER CHAPTER 17 OF THE IBC.
      - PERIODIC SPECIAL INSPECTION OF HIGH-STRENGTH BOLTING
      - PERIODIC SPECIAL INSPECTION OF POST INSTALLED ANCHORS IN CONCRETE
      - FIELD WELDING (IF UTILIZED)
   D. NO STRUCTURAL OBSERVATION IS REQUIRED.
   E. HOLES IN STEEL AND FRP MEMBERS TO BE 1/16" LARGER THAN BOLT, U.N.O.

GENERAL NOTES

1) CONTRACTOR SHALL FIELD VERIFY SITE OR LAYOUT RESTRICTIONS, SITE CONDITIONS, DIMENSIONS, AND ELEVATIONS BEFORE START OF CONSTRUCTION. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF CENTERLINE SOLUTIONS PRIOR TO BEGINNING PROJECT. ALL WORK SHALL BE PERFORMED USING ACCEPTED CONSTRUCTION PRACTICES.
2) THE CONTRACTOR AND ALL SUBCONTRACTORS SHALL COMPLY WITH ALL LOCAL CODES, REGULATIONS, AND ORDINANCES AS WELL AS STATE DEPARTMENT OF INDUSTRIAL REGULATIONS AND DIVISION OF INDUSTRIAL SAFETY (OSHA) REQUIREMENTS.
3) THE CONTRACTOR SHALL SUPERVISE AND DIRECT ALL WORK TO THE BEST OF HIS/HER ABILITY AND SKILL. CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, PROCEDURES, AND SEQUENCES, AND FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THE CONTRACT.
4) THE CONTRACTOR SHALL VERIFY, COORDINATE, AND PROVIDE ALL NECESSARY BLOCKING, BACKING, FRAMING, HANGERS, OR OTHER SUPPORTS FOR ALL ITEMS REQUIRING SAME, WHETHER SHOWN OR NOT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TEMPORARY BRACING, SHORING, FORMWORK, ETC., AND SHALL CONFORM TO ALL NATIONAL, STATE, AND LOCAL ORDINANCES AND CODES, IN ORDER TO SAFELY EXECUTE ALL STAGES OF WORK TO COMPLETE THIS PROJECT.
5) IT IS THE INTENT OF THESE DRAWINGS TO SHOW THE COMPLETED INSTALLATION OF THE STRUCTURE SHOWN.
6) CONTRACTOR ASSUMES RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THE PROJECT, INCLUDING THE SAFETY OF ALL PERSONS AND PROPERTY IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES. THIS REQUIREMENT APPLIES CONTINUOUSLY, AND IS NOT LIMITED TO NORMAL WORKING HOURS.
7) CONTRACTOR TO HOLD ENGINEER HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT.
8) IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO LOCATE ALL (E) UTILITIES, SHOWN OR NOT SHOWN. THE CONTRACTOR IS FINANCIALLY RESPONSIBLE FOR REPAIR OR REPLACEMENT OF UTILITIES OR OTHER PROPERTY DAMAGED IN CONJUNCTION WITH THE EXECUTION OF WORK ON THIS PROJECT.
9) WEATHER PROOFING AND/OR FLASHING TO BE PROVIDED BY CONTRACTOR AS REQUIRED.
10) ALL BOLTS TO HAVE AT LEAST 1-1/2" EDGE DISTANCE U.N.O.

2

VECTOR ENGINEERS
9138 S. State St., Suite 101 (801) 990-1775
Sandy, UT 84070 (801) 990-1776 FAX
www.vectorse.com

DATE: 12/19/16	DESIGNED: LRG	DRAFTER: MGP

REVISIONS

DATE	DESCRIPTION
2/15/17	2 PLAN CHECK COMMENTS

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CENTERLINE SOLUTIONS
Advancing Wireless Networks

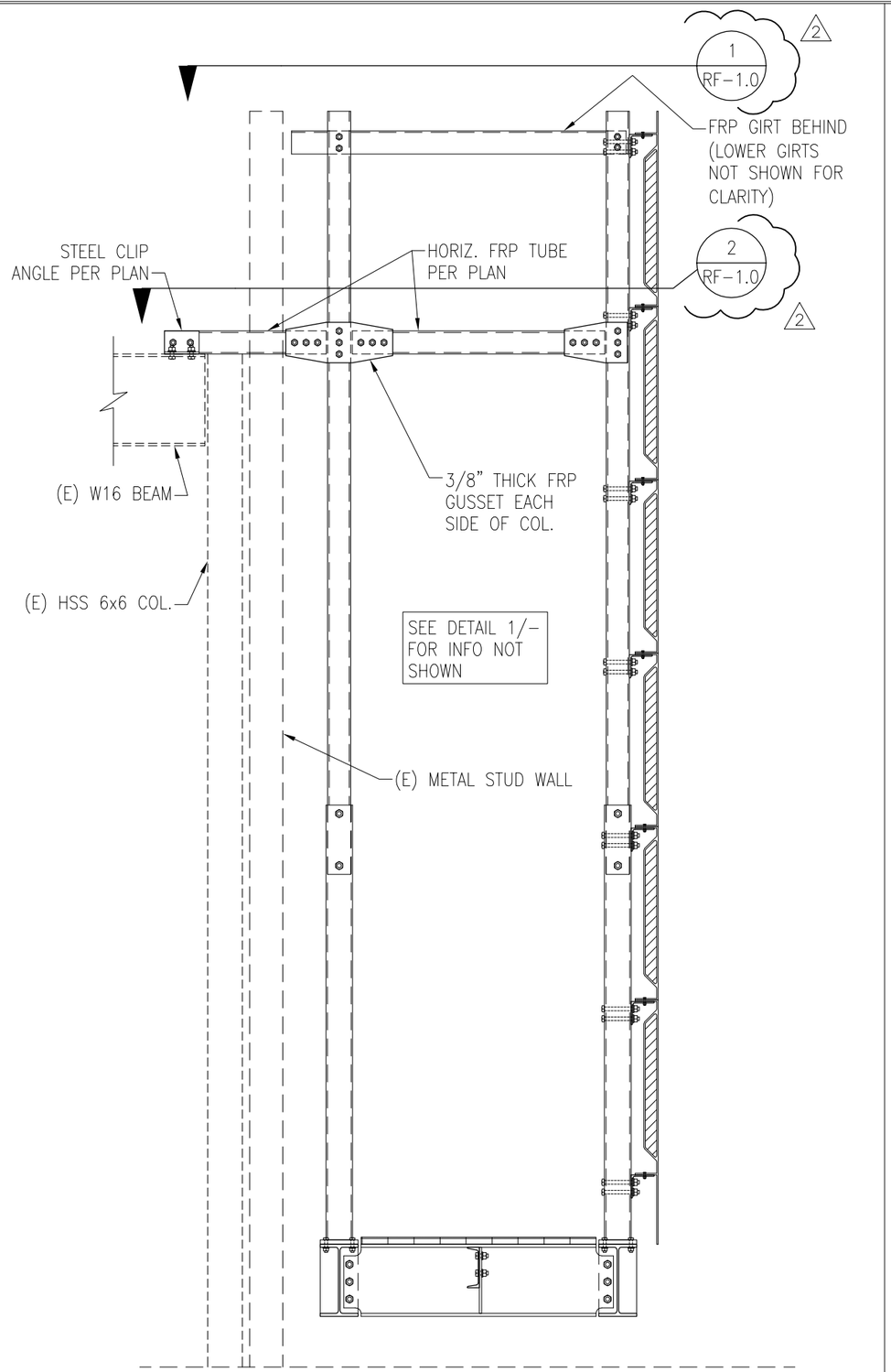
STRUCTURAL
REGISTERED PROFESSIONAL ENGINEER
78187PE
OREGON
MAY 16, 2006
ROGER ALWORTH
02/16/2017
EXPIRES 12/31/2017

ENCLOSURE PLAN

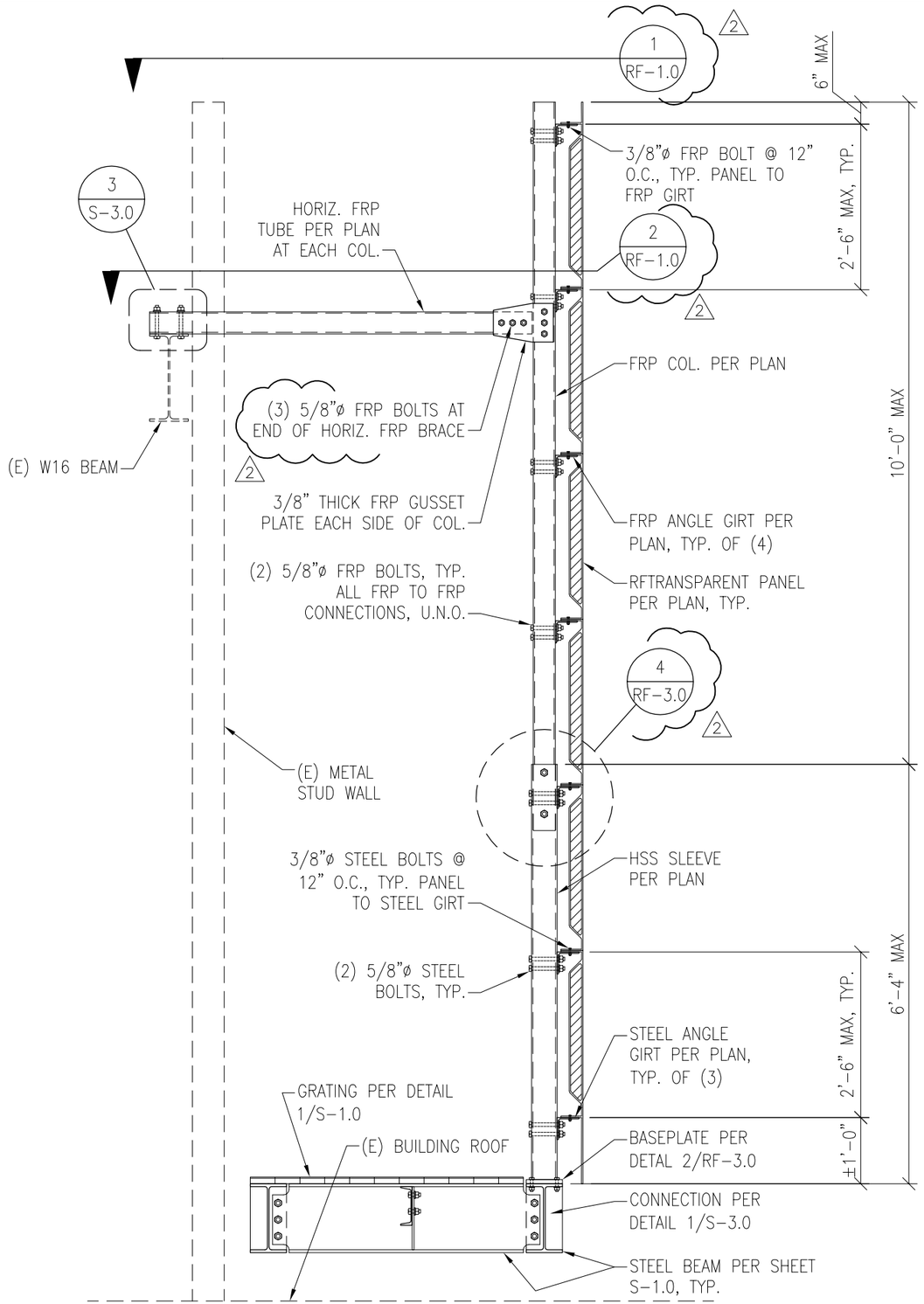
PG84 BROADWAY & HARRISON
32'-0" X 6'-0" ENCLOSURE
1800 SW 6TH AVENUE
PORTLAND, OR 97201

U1194-001-161

RF-1.0 REV 1



SECTION N.T.S. (2)



SECTION N.T.S. (1)

VECTOR ENGINEERS
9138 S. State St., Suite 101 (801) 990-1775
Sandy, UT 84070 (801) 990-1776 FAX
www.vectorse.com

DATE: 12/19/16	DESIGNED: LRG	DRAFTER: MGP

REVISIONS

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2/15/17	2 PLAN CHECK COMMENTS

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CENTERLINE SOLUTIONS
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OREGON
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ENCLOSURE SECTIONS

PG84 BROADWAY & HARRISON

32'-0" X 6'-0" ENCLOSURE
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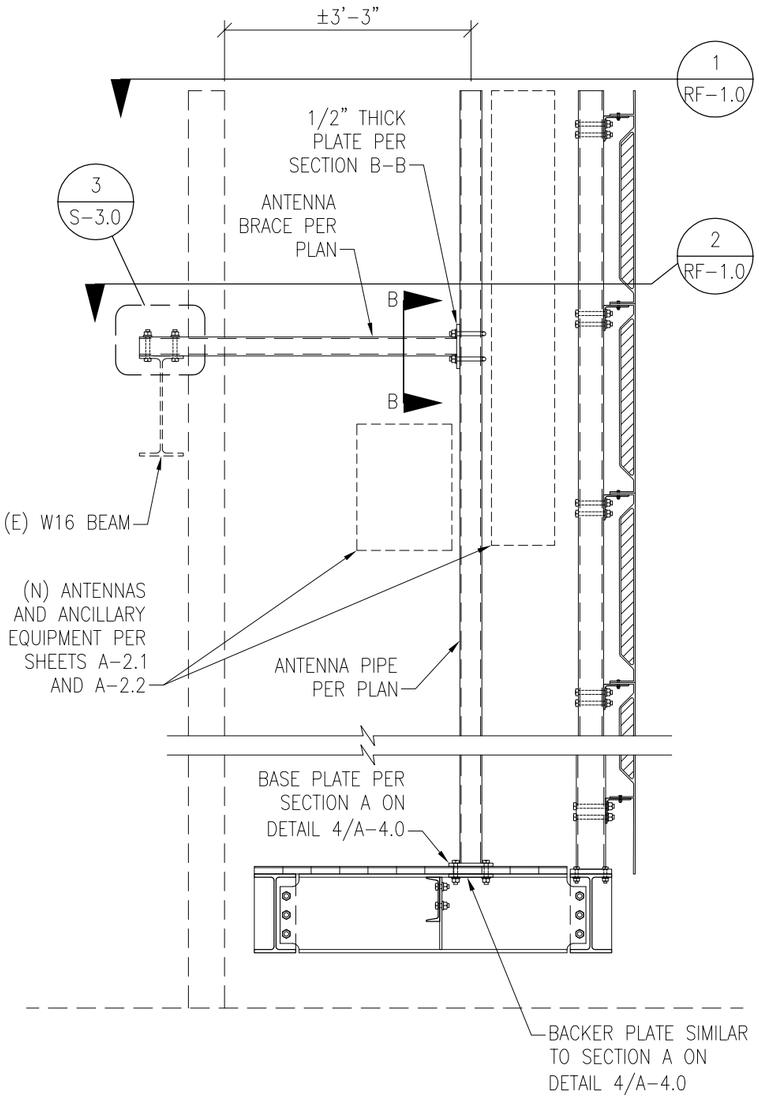
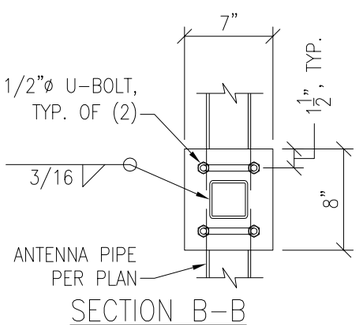
PORTLAND, OR 97201

U1194-001-161

RF-2.0 REV 1





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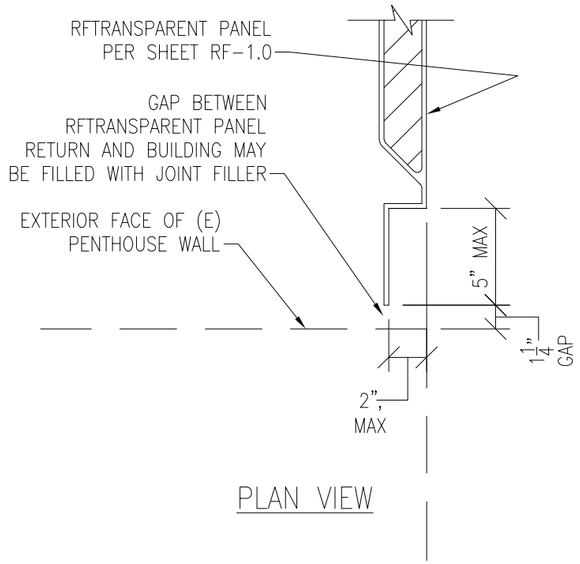

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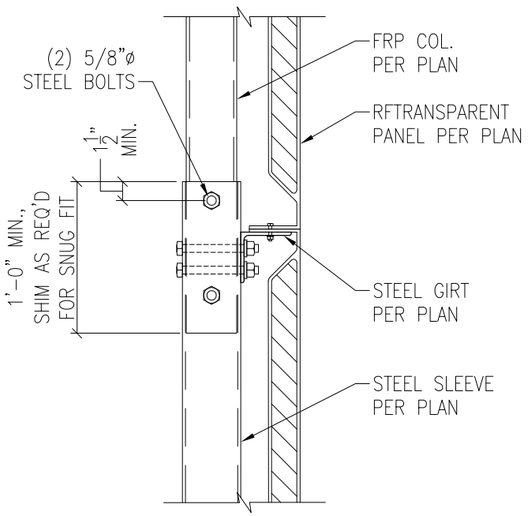
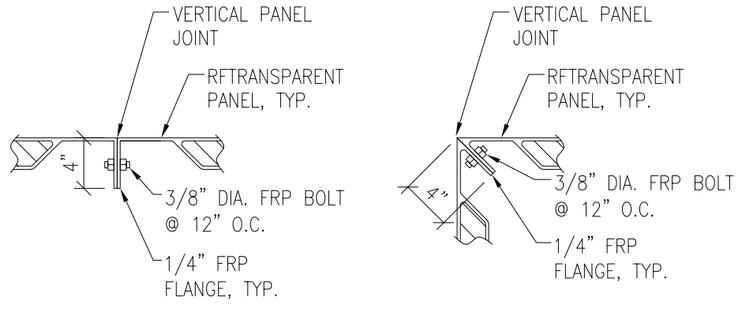


FRP COL. TO STEEL SLEEVE 4 N.T.S. 2



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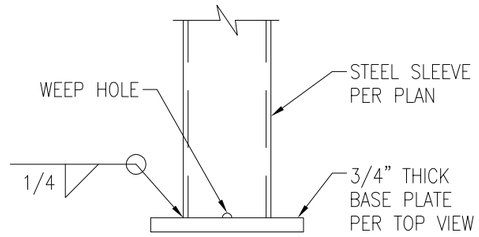

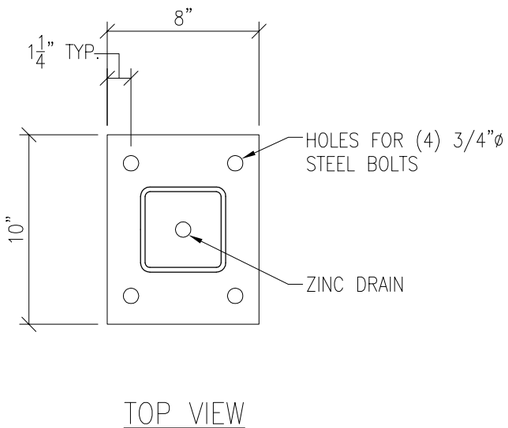

BASE PLATE 2 N.T.S.

VECTOR ENGINEERS
9138 S. State St., Suite 101 (801) 990-1775
Sandy, UT 84070 (801) 990-1776 FAX
www.vectorse.com

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ENCLOSURE DETAILS

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1800 SW 6TH AVENUE
PORTLAND, OR 97201

U1194-001-161

RF-3.0 REV 1

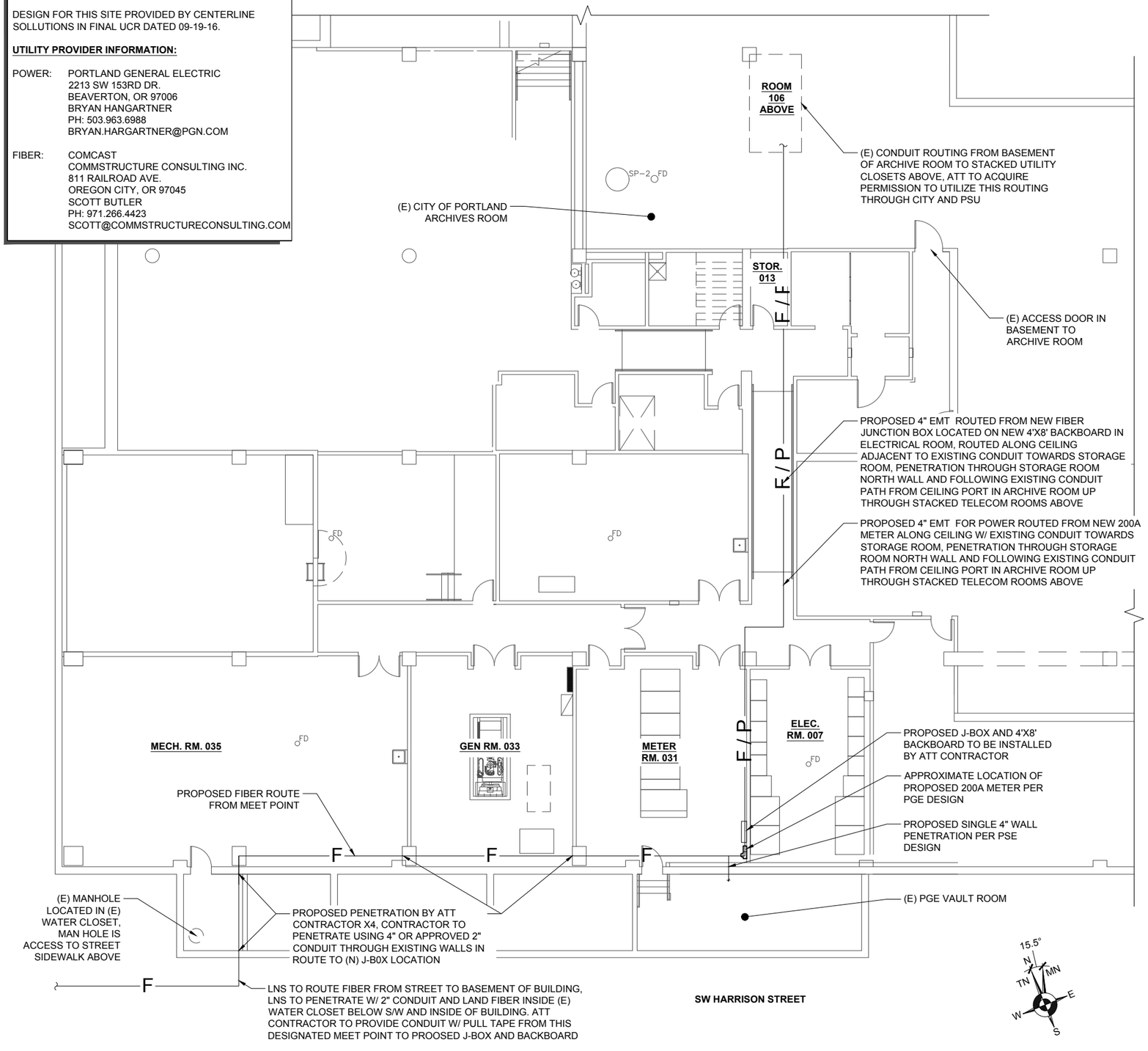
UTILITY COORDINATION REPORT (UCR) INFORMATION:

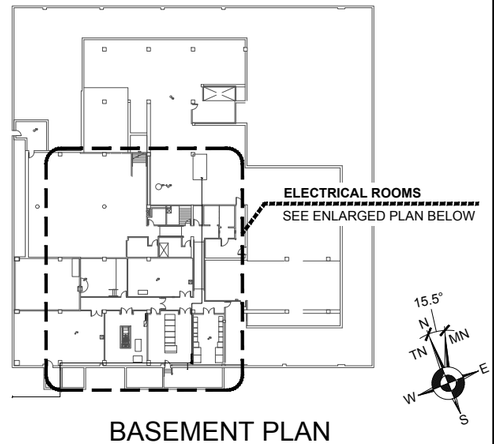
DESIGN FOR THIS SITE PROVIDED BY CENTERLINE SOLLUTIONS IN FINAL UCR DATED 09-19-16.

UTILITY PROVIDER INFORMATION:

POWER: PORTLAND GENERAL ELECTRIC
2213 SW 153RD DR.
BEAVERTON, OR 97006
BRYAN HANGARTNER
PH: 503.963.6988
BRYAN.HARGARTNER@PGN.COM

FIBER: COMCAST
COMMSTRUCTURE CONSULTING INC.
811 RAILROAD AVE.
OREGON CITY, OR 97045
SCOTT BUTLER
PH: 971.266.4423
SCOTT@COMMSTRUCTURECONSULTING.COM





BASEMENT PLAN

NOTES:

1. THE DEPICTION OF: POWER, FIBER, TELCO, COAX CABLE/CONDUIT IS FOR SCHEMATIC PURPOSES ONLY. CONTRACTOR TO DETERMINE DURING THE BID WALK THE SUITABILITY OF EXISTING MOUNTS, RACEWAYS, ETC. AND ANY NEW MATERIALS TO ATTACH ABOVE STATED CONDUIT/CABLE PRIOR TO MATERIALS PROCUREMENT. ALL WORK TO CONFORM TO LOCAL CODE AND NEC STANDARDS.
2. VERIFY ANTENNA MODELS, COUNT, RAD CENTER & AZIMUTHS WITH LOCK DOWN SET RF SITE BUILD FORM - SEE LATEST RFDS.
3. EQUIPMENT LAYOUTS SHALL BE IN ACCORDANCE WITH STANDARDS PER ATT-TELCO-IS-812-000-003 FOR NETWORK EQUIPMENT ENVIRONMENTS.
4. EQUIPMENT LAYOUTS SHALL BE IN COMPLIANCE WITH PUBLISHED EQUIPMENT MANUFACTURER'S REQUIREMENTS/RESTRICTIONS RELATIVE TO ACTUAL PLACEMENT OF EQUIPMENT.
5. EQUIPMENT LAYOUTS SHALL BE REVIEWED BY AN AT&T SITE OR FIELD OPERATIONS REPRESENTATIVE(S) TO ENSURE THE PHYSICAL RELATIONSHIP OF NETWORK ELEMENTS, CABLE MANAGEMENT AND SUPERSTRUCTURE ENGINEERING ARE APPROPRIATE AND EFFICIENT FROM AN EQUIPMENT OPERATIONS AND MAINTENANCE PERSPECTIVE.
6. EQUIPMENT LAYOUTS SHALL BE REVIEWED AND APPROVED BY THE AT&T CONSTRUCTION MANAGER DURING CONSTRUCTION.
7. EQUIPMENT LAYOUTS SHALL BE REVIEWED BY A POWER ENGINEER OR PERSON FAMILIAR WITH DC POWER DISTRIBUTION TO ENSURE EQUIPMENT POWER DISTRIBUTION HAS BEEN SUFFICIENTLY PLANNED FOR AND ACCOMMODATED.
8. ALL GROUNDING MUST CONFORM TO ATT-TP-76416 GROUNDING AND BONDING REQUIREMENTS FOR NETWORK FACILITIES.
9. SEE AT&T APPLICATION GUIDE (G07-00-004_REV_C) FOR SURGE SUPPRESSOR & REMOTE RADIO HEAD (RRH) MFG. SPECIFICATIONS / INSTALLATION REQUIREMENTS.
10. EQUIPMENT CABINETS/RACKS TO BE ANCHORED TO EQUIP. PLATFORM PER CABINET/RACK MANUFACTURER'S RECOMMENDATIONS. ANCHOR SIZE, QUANTITY, SPECIFICATIONS, ETC. TO BE VERIFIED PRIOR TO INSTALLATION.

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VECTOR ENGINEERS

CP PROJECT NO.: ATT-15-0042-19

PRELIMINARY

NO.	DATE	D/C	DESCRIPTION
0	10-17-16	MS/MS	90% CD REVIEW
1	10-27-16	MS/MS	CLIENT COMMENT
2	11-22-16	MS/MS	CLIENT COMMENT

SUBMITTAL

NO.	DATE	D/C	DESCRIPTION
0	12-19-16	MS/MS	BP SUBMITTAL
1	01-27-17	MS/MS	FLS COMMENTS
2	02-15-17	JL/CL	BP COMMENTS

SITE NAME

PG84
BROADWAY &
HARRISON

SITE ADDRESS

1800 SW 6TH AVENUE
PORTLAND, OR 97201

SHEET TITLE

BASEMENT LEVEL UTILITY PLAN

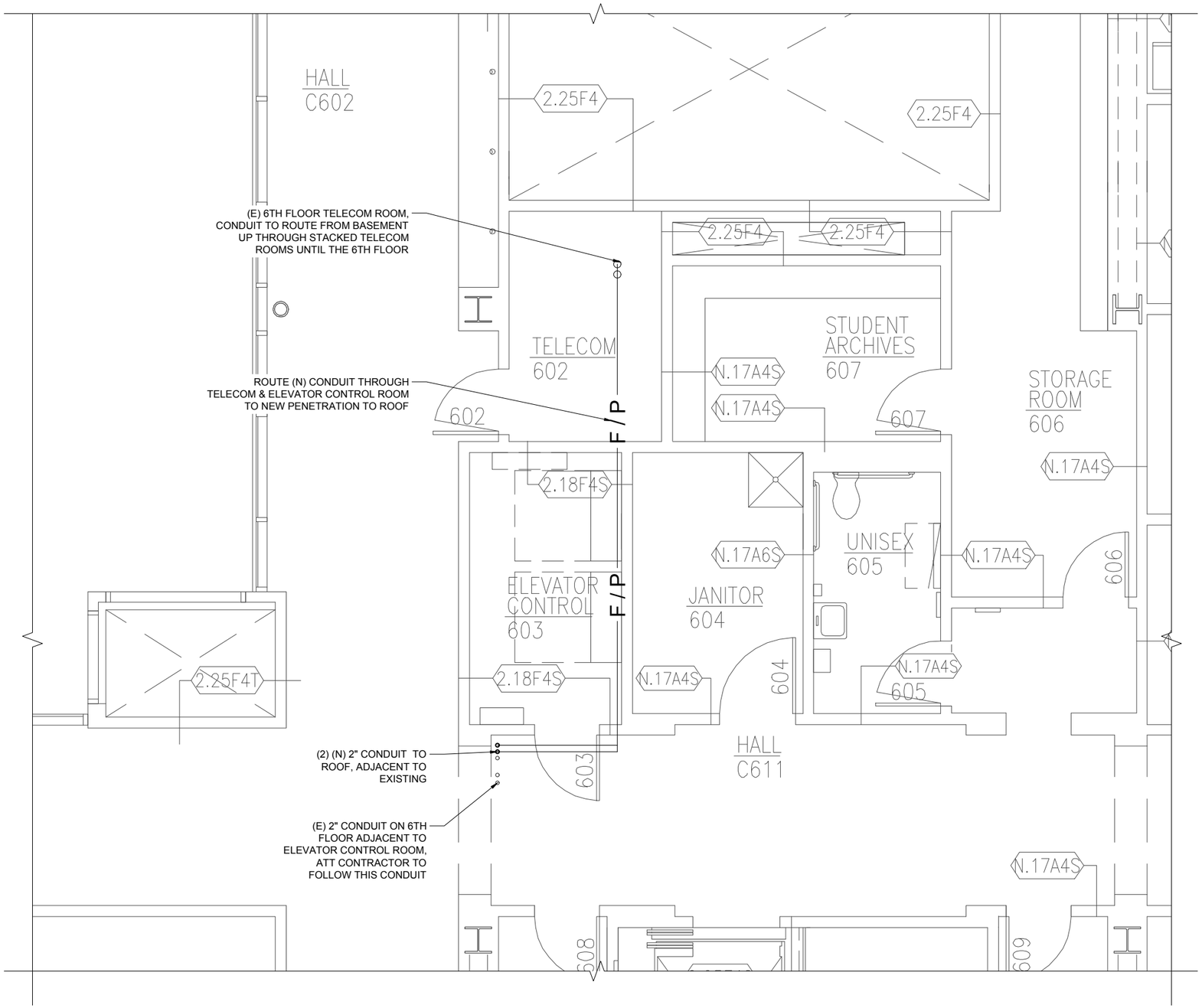
SHEET NO.

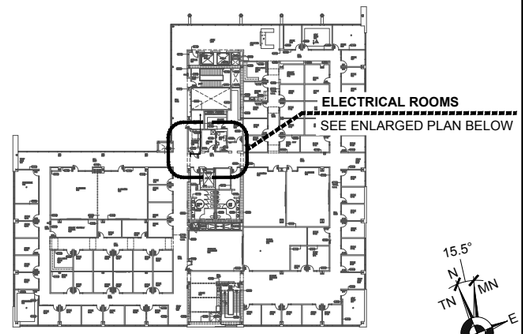
E-1.0

1 BASEMENT LEVEL UTILITY PLAN

SCALE: 1/16" = 1'-0" (11X17)
SCALE: 1/8" = 1'-0" (22X34)

0' 8' 16' 32'





6TH FLOOR PLAN

15.5°
N
TN
MN
E
W
S

1 | 6TH FLOOR UTILITY PLAN

SCALE: 3/16" = 1'-0" (11X17)
SCALE: 3/8" = 1'-0" (22X34)

0' 5' 10'

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VECTOR ENGINEERS

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SUBMITTAL

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1	01-27-17	MS/MS	FLS COMMENTS
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SITE NAME

PG84
BROADWAY &
HARRISON

SITE ADDRESS

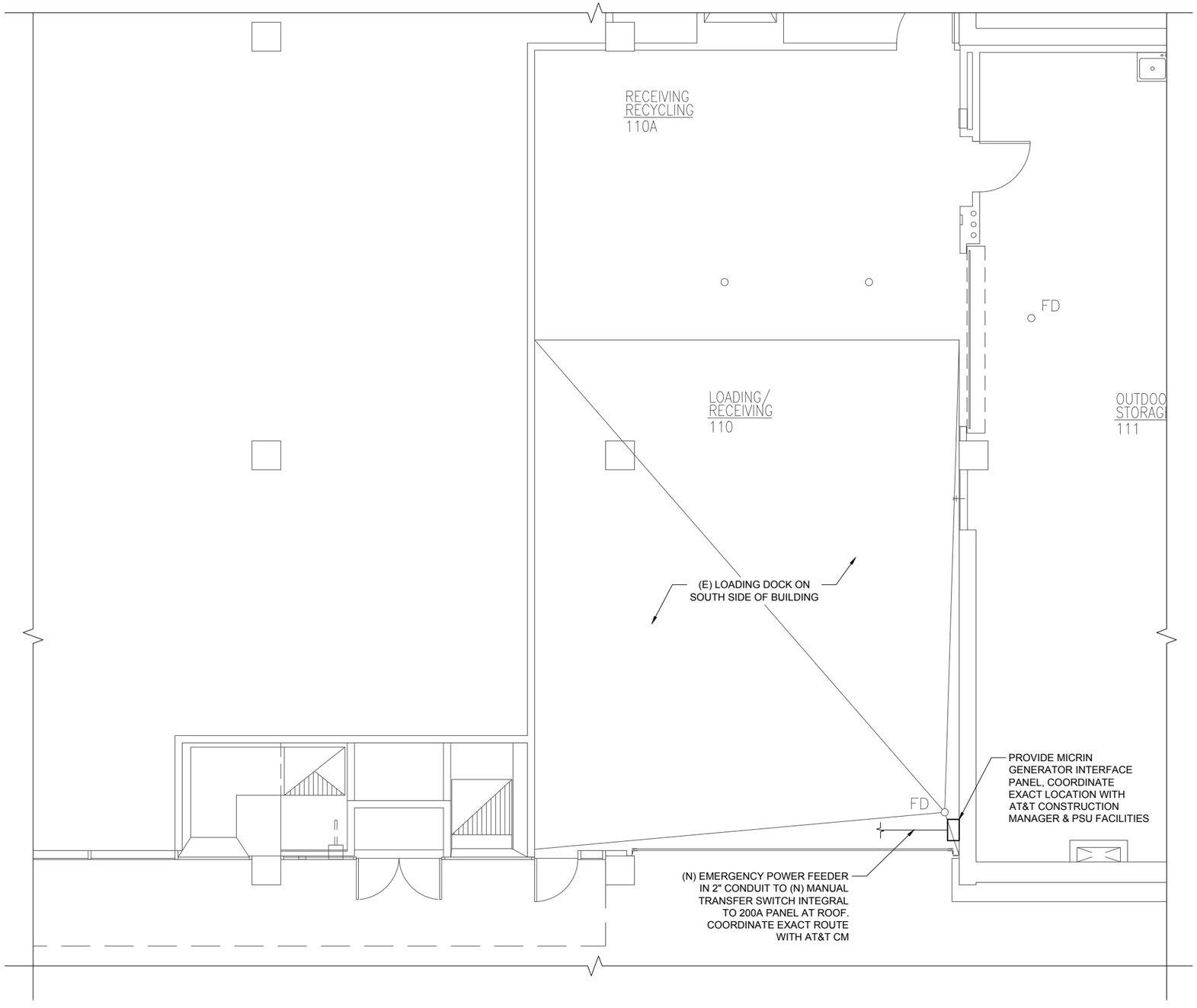
1800 SW 6TH AVENUE
PORTLAND, OR 97201

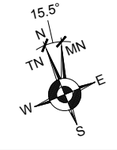
SHEET TITLE

6TH FLOOR
UTILITY PLAN

SHEET NO.

E-1.1





1 | 1ST FLOOR PLAN - GEN PLUG LOCATION

SCALE: 1/8" = 1'-0" (11X17)
SCALE: 1/4" = 1'-0" (22X34)

0' 4' 8' 16'

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2	11-22-16	MS/MS	CLIENT COMMENT

SUBMITTAL

NO.	DATE	D/C	DESCRIPTION
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1	01-27-17	MS/MS	FLS COMMENTS
2	02-15-17	JL/CL	BP COMMENTS

SITE NAME

PG84
BROADWAY &
HARRISON

SITE ADDRESS

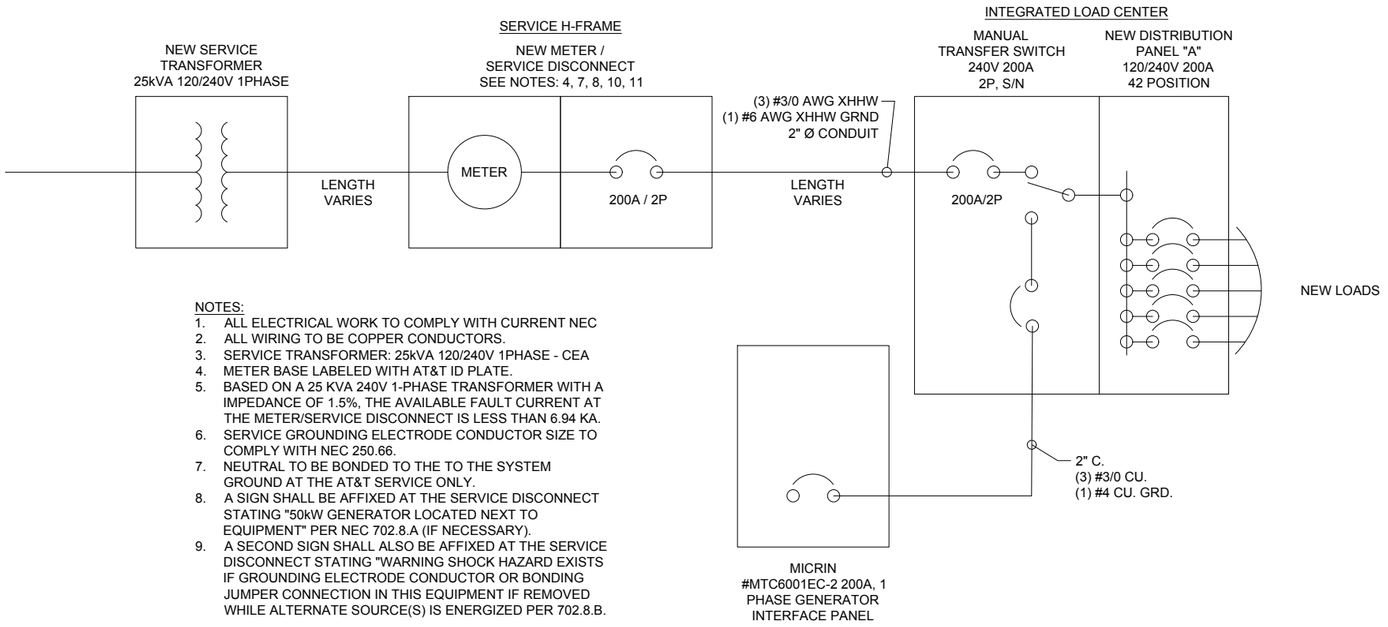
1800 SW 6TH AVENUE
PORTLAND, OR 97201

SHEET TITLE

1ST FLR PLAN - GEN
PLUG LOCATION

SHEET NO.

E-1.2



NOTES:

1. ALL ELECTRICAL WORK TO COMPLY WITH CURRENT NEC
2. ALL WIRING TO BE COPPER CONDUCTORS.
3. SERVICE TRANSFORMER: 25kVA 120/240V 1PHASE - CEA
4. METER BASE LABELED WITH AT&T ID PLATE.
5. BASED ON A 25 KVA 240V 1-PHASE TRANSFORMER WITH A IMPEDANCE OF 1.5%, THE AVAILABLE FAULT CURRENT AT THE METER/SERVICE DISCONNECT IS LESS THAN 6.94 KA.
6. SERVICE GROUNDING ELECTRODE CONDUCTOR SIZE TO COMPLY WITH NEC 250.66.
7. NEUTRAL TO BE BONDED TO THE TO THE SYSTEM GROUND AT THE AT&T SERVICE ONLY.
8. A SIGN SHALL BE AFFIXED AT THE SERVICE DISCONNECT STATING "50kW GENERATOR LOCATED NEXT TO EQUIPMENT" PER NEC 702.8.A (IF NECESSARY).
9. A SECOND SIGN SHALL ALSO BE AFFIXED AT THE SERVICE DISCONNECT STATING "WARNING SHOCK HAZARD EXISTS IF GROUNDING ELECTRODE CONDUCTOR OR BONDING JUMPER CONNECTION IN THIS EQUIPMENT IF REMOVED WHILE ALTERNATE SOURCE(S) IS ENERGIZED PER 702.8.B.

1 | ONE-LINE DIAGRAM

SCALE: NTS (11X17)
SCALE: NTS (22X34)

ELECTRICAL NOTES:

1. COMPLY WITH THE LATEST EDITION OF THE NEC, INTERNATIONAL BUILDING CODE, THE REQUIREMENTS OF ALL APPLICABLE MUNICIPAL AND STATE CODES AND REGULATIONS, AND UTILITY GUIDELINES.
2. PERFORM ALL VERIFICATION, OBSERVATIONS, TESTING AND EXAMINATION OF WORK PRIOR TO THE ORDERING OF ELECTRICAL EQUIPMENT AND THE ACTUAL CONSTRUCTION. ISSUE A WRITTEN NOTICE OF ALL FINDINGS TO THE CONSTRUCTION MANAGER LISTING ALL MALFUNCTIONS, FAULTY EQUIPMENT AND DISCREPANCIES.
3. UNDERGROUND CONDUIT SHALL BE RIGID POLYVINYL CHLORIDE CONDUIT, SCHEDULE 40 CONFORMING TO UL ARTICLE 651, WESTERN PLASTICS OR CARLON MANUFACTURER. COUPLINGS SHALL BE SLIP-ON SOLVENT SEALED TO PIPE, SOLVENT, WESTERN TYPE COMPATIBLE WITH PVC DUCT, ALL BENDS SHALL BE 36" MINIMUM RADIUS.
4. NEUTRAL SHALL BE COLOR CODED, INSULATION SHALL BE CROSS-LINKED POLYETHYLENE.
5. CONTRACTOR TO CONTACT ALL UTILITIES FOR LOCATION OF UNDERGROUND SERVICES. SERVICE LOCATIONS TO BE CONFIRMED PRIOR TO CONSTRUCTION.
6. THE CONTRACTOR IS RESPONSIBLE FOR ALL PERMITTING, FILING, AND FEES IN CONJUNCTION WITH THE PROJECT.
7. THE CONTRACTOR SHALL SCHEDULE ALL NECESSARY INSPECTIONS WITH THE PROPER AUTHORITIES AND INFORM AT&T 24 HOURS IN ADVANCE. ALL TICKETS AND INSPECTION VERIFICATIONS WILL BE SUBMITTED TO THE OWNER'S REPRESENTATIVE WITHIN 24 HOURS AFTER THE INSPECTION HAS TAKEN PLACE.
8. ALL EQUIPMENT, WIRING, AND MATERIALS MUST HAVE A UL LABEL.
9. ALL WORK SHALL BE DONE BY QUALIFIED AND EXPERIENCED JOURNEYMEN AND PERFORMED IN A WORKMANLIKE MANNER AND SHALL PROCEED IN AN ORDERLY MANNER SO AS NOT TO HOLD UP THE PROGRESS OF THE PROJECT.
10. THOROUGHLY TEST ALL LINES, FEEDERS, EQUIPMENT, AND DEVICES WITH MAXIMUM LOADS TO ASSURE PROPER OPERATION.
11. CONDUCTOR LENGTHS SHALL BE CONTINUOUS FROM TERMINATION TO TERMINATION WITHOUT SPLICES UNLESS NOTED OTHERWISE.
12. PROVIDE PULL BOXES WHERE SHOWN AND / OR WHERE REQUIRED BY CODES AND/OR UTILITY COMPANIES.
13. ALL CONDUIT ROUGH-IN SHALL BE COORDINATED WITH THE MECHANICAL EQUIPMENT TO AVOID LOCATION CONFLICTS, CONTRACTOR SHALL VERIFY ALL LOCATIONS.
14. ALL WIRES SHALL BE TAGGED AT ALL PULL BOXES, J-BOXES, EQUIPMENT BOXES, AND CABINETS WITH APPROVED PLASTIC TAGS.
15. ALL BREAKERS IN PANEL BOXES SHALL BE IDENTIFIED WITH TYPE WRITTEN LABELS NEATLY PLACED ALONG SIDE OF THE BREAKER.
16. ALL FIRE RATED WALL AND FLOOR PENETRATIONS ARE TO BE CAULKED AND SEALED WITH A FIRE RESISTANT CAULKING TO MAINTAIN THE INTEGRITY OF THE FIRE SEPARATION.
17. UTILIZE SONNEBORN TYPE NP-1 CAULKING FOR SEALING ALL EXTERIOR WALL PENETRATIONS.

PANEL: "A"			BUS: 200A			VOLTAGE: 120/240V, 1Ø, 3W		
	FEEDER: SEE POWER RISER	MAIN BRKR: 200A				MOUNTING:		
CKT NO.	CIRCUIT DESCRIPTION	AMPS/POLES	LOAD VA	PHASE	LOAD VA	AMPS/POLES	CIRCUIT DESCRIPTION	CKT NO.
1	LTE CABINET	30/2		A		20/1	EXT. WORK LIGHT	2
3	---	-		B		-	---	4
5	LTE CABINET	30/2		A		20/1	TELCO DEMARC BOX	6
7	---	-		B		-	---	8
9	LTE CABINET	30/2		A		20/1	GENERATOR BLOCK HTR	10
11	---	-		B		20/1	GENERATOR BATT CHRGR	12
13	POWER CABINET	30/2		A			SPARE	14
15	---	-		B			SPARE	16
17	POWER CABINET	30/2		A			SPARE	18
19	---	-		B			SPARE	20
21	POWER CABINET	30/2		A			SPARE	22
23	---	-		B			SPARE	24
25	POWER CABINET	30/2		A			SPARE	26
27	---	-		B			SPARE	28
29	SPARE	30/2		A			SPARE	30
31	---	-		B			SPARE	32
33	---	-		A			SPARE	34
35	---	-		B			SPARE	36
37	---	-		A			SPARE	38
39	---	-		B			SPARE	40
41	EXT. RECEPTACLE	20/1		A			SPARE	42

2 | PANEL SCHEDULE

3 | NOT IN USE

SCALE: NTS (11X17)
SCALE: NTS (22X34)

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SITE NAME

PG84
BROADWAY &
HARRISON

SITE ADDRESS

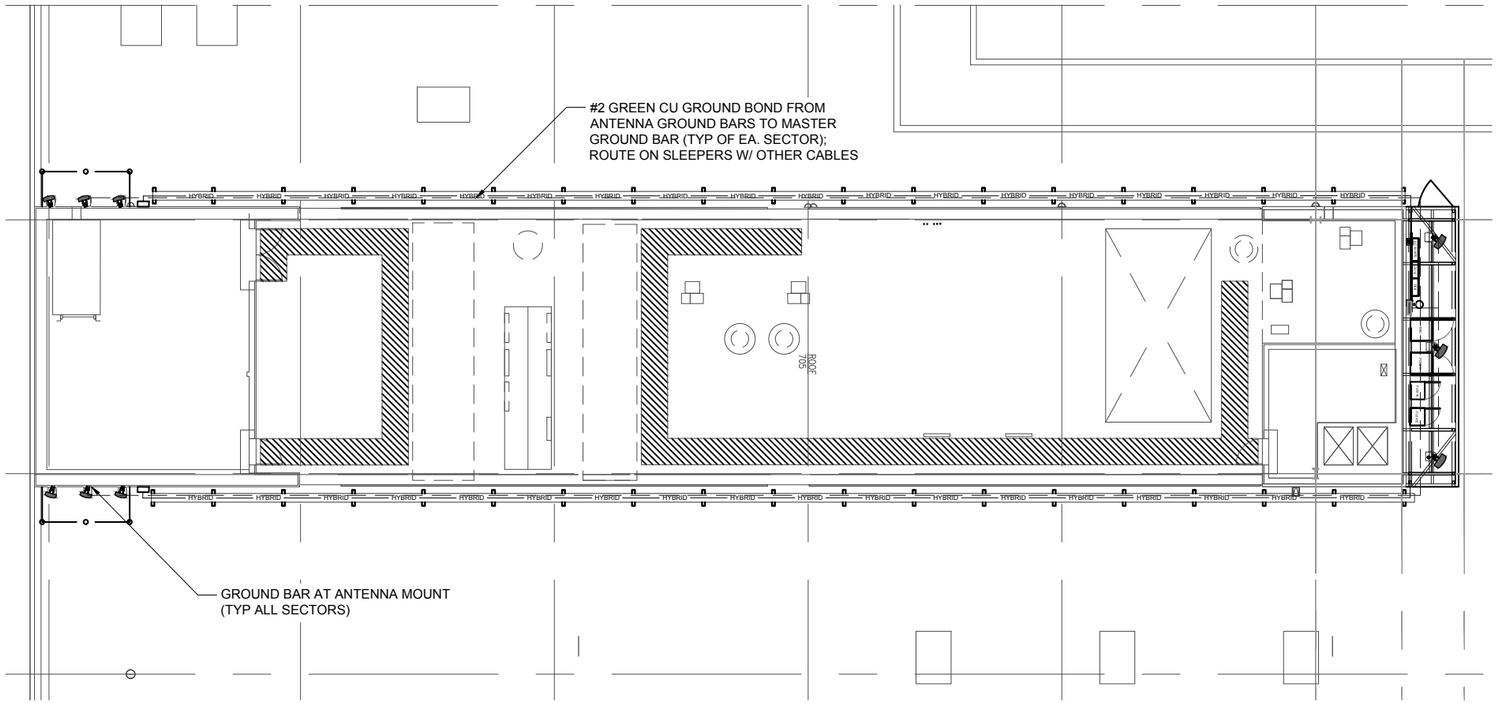
1800 SW 6TH AVENUE
PORTLAND, OR 97201

SHEET TITLE

ELECTRICAL DETAILS

SHEET NO.

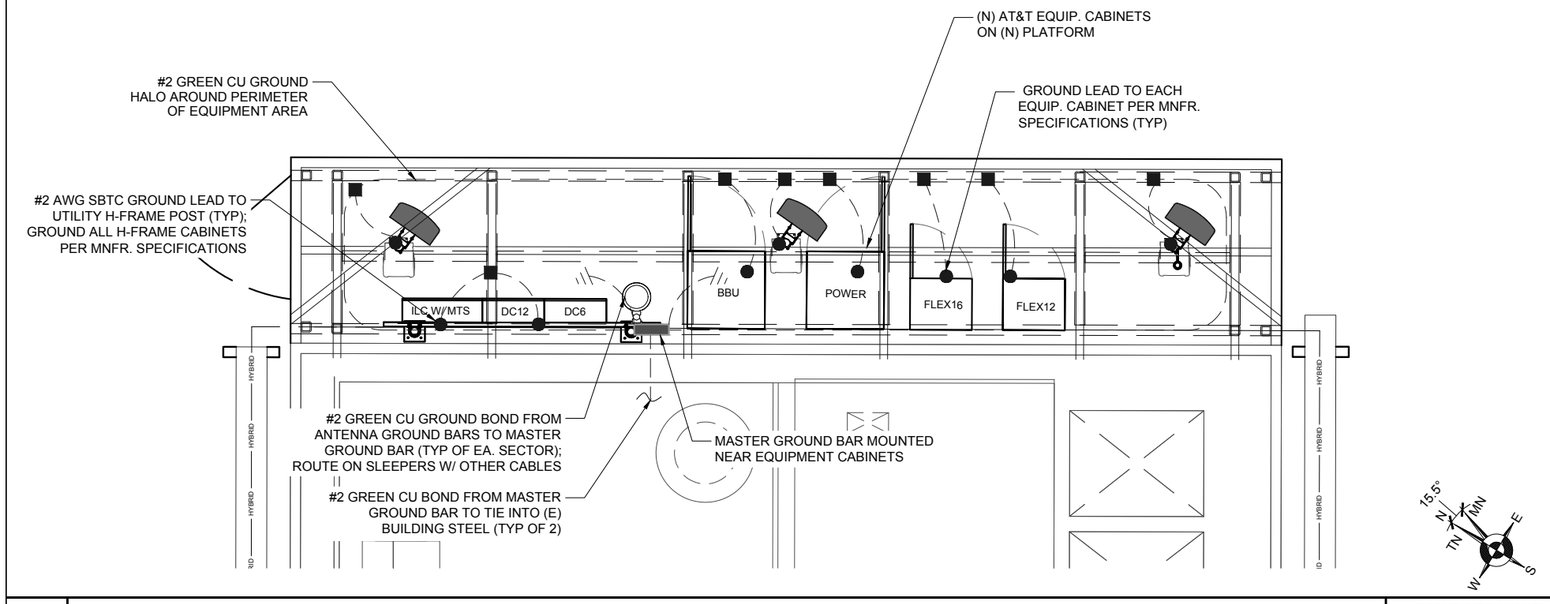
E-2.0



1 ROOF GROUNDING PLAN

SCALE: NTS (11X17)

SCALE: NTS (22X34)



2 ENLARGED EQUIPMENT GROUNDING PLAN

SCALE: NTS (11X17)

SCALE: NTS (22X34)

GROUNDING NOTES:

1. DEPICTION OF GROUNDING ROUTING IS FOR CONCEPTUAL PURPOSES ONLY. CONTRACTOR TO DETERMINE FINAL ROUTING PER EXISTING SITE CONDITIONS.
2. ALL ABOVE GRADE GROUND LEADS TO BE SHEATHED IN CARFLEX-X-FLEX™ FLEXIBLE CONDUIT OR EQUIV.
3. EXOTHERMIC WELDS (2). 2 AWG BARE TINNED SOLID COPPER CONDUCTORS TO GROUNDING BAR. ROUTE CONDUCTORS TO BURIED GROUNDING RING AND PROVIDE PARALLEL EXOTHERMIC WELD.
4. EC SHALL USE PERMANENT MARKER TO DRAW THE LINES BETWEEN EACH SECTION AND LABEL EACH SECTION ("P", "A", "N", "I") WITH 1" HIGH LETTERS.
5. ALL HARDWARE 18-8 STAINLESS STEEL, INCLUDING LOCK WASHERS, COAT ALL SURFACES WITH AN ANTI-OXIDANT COMPOUND BEFORE MATING. ALL HARDWARE SHALL BE STAINLESS STEEL 3/8 INCH DIAMETER OR LARGER.
6. FOR GROUND BOND TO STEEL ONLY: INSERT A CADMIUM FLAT WASHER BETWEEN LUG AND STEEL, COAT ALL SURFACES WITH AN ANTI-OXIDANT COMPOUND BEFORE MATING.
7. NUT & WASHER SHALL BE PLACED ON THE FRONT SIDE OF THE GROUNDING BAR AND BOLTED ON THE BACK SIDE. INSTALL BLACK HEAT-SHRINKING TUBE, 600 VOLT INSULATION ON ALL GROUNDING TERMINATIONS. THE INTENT IS TO WEATHERPROOF THE COMPRESSION CONNECTION.
8. GROUNDING KIT SHALL BE TYPE AND PART NUMBER AS SUPPLIED OR RECOMMENDED BY CABLE MANUFACTURER.
9. WEATHERPROOFING SHALL BE TYPE AND PART NUMBER AS SUPPLIED OR RECOMMENDED BY CABLE MANUFACTURER.
10. WHEN THE SCOPE OF WORK REQUIRES THE ADDITION OF A GROUNDING BAR TO AN EXISTING TOWER, THE SUBCONTRACTOR SHALL OBTAIN APPROVAL FROM THE TOWER OWNER PRIOR TO MOUNTING THE GROUNDING BAR TO THE TOWER.
11. EXTEND TWO (2) 2 AWG TINNED CU CONDUCTORS FROM BURIED GROUNDING RING AND CONNECT TO THE NEW TOWER. FOLLOW MANUFACTURERS RECOMMENDATIONS FOR GROUNDING CONNECTIONS TO THE TOWER. (APPLICABLE TO NEW TOWERS ONLY.)
12. NUMBER OF GROUNDING BARS MAY VARY DEPENDING ON THE TYPE OF TOWER, ANTENNA LOCATION, AND CONNECTION ORIENTATION. THE SUBCONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING ADDITIONAL GROUNDING BARS AS REQUIRED, PROVIDING 50% SPARE CONNECTION POINTS.
13. EXPOSED GROUND WIRES TO BE NON METALLIC LIQUID TIGHT.
14. ALL DETAILS ARE SHOWN IN GENERAL TERMS. ACTUAL INSTALLATION AND CONSTRUCTION MAY VARY DUE TO SITE SPECIFIC CONDITIONS.
15. GROUND ALL ANTENNA BASES, FRAMES, CABLE RUNS, AND OTHER METALLIC COMPONENTS USING GROUND WIRES AND CONNECT TO SURFACE MOUNTED BUS BARS. FOLLOW ANTENNA AND BTS MANUFACTURERS PRACTICES FOR GROUNDING REQUIREMENTS. GROUND COAX SHIELD AT BOTH ENDS AND EXIT FROM TOWER OR POLE USING MFR'S PRACTICES.
16. ALL GROUND CONNECTIONS SHALL BE EXOTHERMIC. ALL WIRES SHALL BE COPPER THHN/THWN. ALL GROUND WIRE SHALL BE GREEN INSULATED WIRE ABOVE GROUND.
17. CONTRACTOR TO VERIFY AND TEST GROUND SOURCE TO CERTIFY SYSTEM RESISTANCE IS 5.0 OHMS, OR LESS. GROUNDING AND OTHER OPERATIONAL TESTING WILL BE WITNESSED BY AT&T WIRELESS, LLC. REPRESENTATIVE.
18. REFER TO DIVISION 16 GENERAL ELECTRIC; GENERAL ELECTRICAL PROVISION AND COMPLY WITH ALL REQUIREMENTS OF GROUNDING STANDARDS.
19. ELECTRICAL CONTRACTOR TO PROVIDE DETAILED DESIGN OF GROUNDING SYSTEM PER AT&T STANDARD GROUNDING METHOD, AND RECEIVE APPROVAL OF DESIGN BY AUTHORIZED AT&T MOBILITY REPRESENTATIVE, PRIOR TO INSTALLATION OF GROUNDING SYSTEM. PHOTO DOCUMENT ALL CADWELDS AND GROUND RINGS.
20. NOTIFY CONSTRUCTION MANAGER IF THERE ARE ANY DIFFICULTIES INSTALLING GROUNDING SYSTEM DUE TO SITE SOIL CONDITIONS.
21. ALL EXISTING GROUND BARS, WIRES & CONNECTIONS SHALL BE FIELD VERIFIED. ANY DEFICIENT ITEMS SHALL BE REPLACED AS REQUIRED TO ACHIEVE ADEQUATE GROUNDING REQUIRED BY AT&T.

GENERAL GROUNDING NOTES

GROUND TEST WELL

GROUND ROD

CAD WELD CONNECTION

MECHANICAL WELD CONNECTION

GROUND BAR

GROUNDING SYMBOLS

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CENTERLINE SOLUTIONS
Advancing Wireless Networks

VECTOR ENGINEERS

CP PROJECT NO.: ATT-15-0042-19

PRELIMINARY

NO.	DATE	D/C	DESCRIPTION
0	10-17-16	MS/MS	90% CD REVIEW
1	10-27-16	MS/MS	CLIENT COMMENT
2	11-22-16	MS/MS	CLIENT COMMENT

SUBMITTAL

NO.	DATE	D/C	DESCRIPTION
0	12-19-16	MS/MS	BP SUBMITTAL
1	01-27-17	MS/MS	FLS COMMENTS
2	02-15-17	JL/CL	BP COMMENTS

SITE NAME

PG84
BROADWAY &
HARRISON

SITE ADDRESS

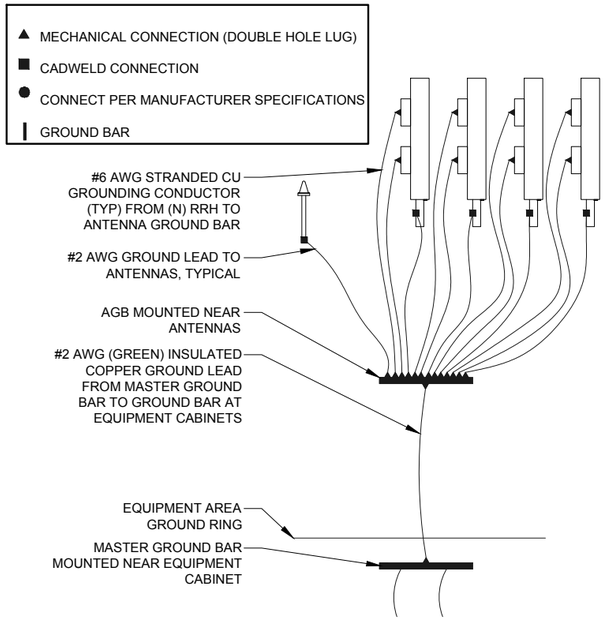
1800 SW 6TH AVENUE
PORTLAND, OR 97201

SHEET TITLE

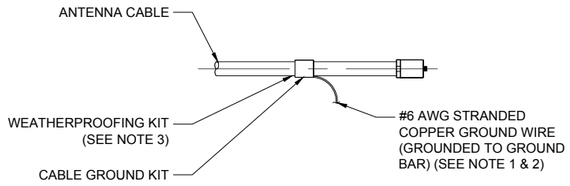
GROUNDING SITE PLAN

SHEET NO.

E-3.0



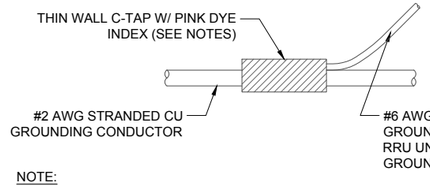
1 | ANTENNA GROUNDING | SCALE: NTS (11X17) / SCALE: NTS (22X34)



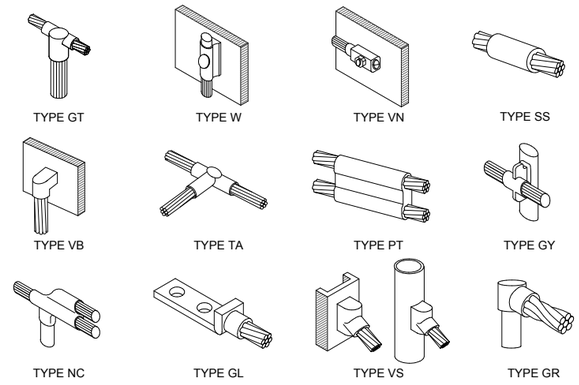
CONNECTION OF CABLE GROUND KIT TO ANTENNA CABLE

NOTES:
1. DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO GROUND BAR.
2. GROUNDING KIT SHALL BE ANDREW SUREGROUND TYPE KIT WITH TWO-HOLE LUG.
3. WEATHER PROOFING SHALL INCORPORATE PPC WEATHERPROOFING TAPE KIT, COLD SHRINK SHALL NOT BE USED.

2 | TYP. CABLE GROUNDING | SCALE: NTS (11X17) / SCALE: NTS (22X34)



NOTE:
CONTRACTOR TO SURROUND COMPLETED CONNECTION W/ WEATHER PROOFING TAPE TO ENSURE WEATHER PROOF CONNECTION.



3 | C-TAP & EXOTHERMIC CONN. | SCALE: NTS (11X17) / SCALE: NTS (22X34)

4 | NOT USED | SCALE: NTS (11X17) / SCALE: NTS (22X34)

5 | NOT USED | SCALE: NTS (11X17) / SCALE: NTS (22X34)

6 | NOT USED | SCALE: NTS (11X17) / SCALE: NTS (22X34)

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SITE NAME

PG84
BROADWAY &
HARRISON

SITE ADDRESS

1800 SW 6TH AVENUE
PORTLAND, OR 97201

SHEET TITLE

GROUNDING DETAILS

SHEET NO.

E-4.0

Fibergrate Composite Structures
5151 Beltline Road, Suite 1212
Dallas, TX 75254

Attn: Michael George
(818) 597-0886

RESEARCH REPORT: RR 25536

Expires: February 1, 2018
Issued Date: February 1, 2016
Code: 2014 LABC

GENERAL APPROVAL – Reevaluation- Fibergrate® FRP RF Panel Enclosure System for rooftop communication antenna screening

DETAILS

The Fibergrate enclosure system consists of Dynaform® pultruded fiberglass reinforced structural shapes and molded FRP Fiberplate® which spans between the structural supports. Connections between the pultruded shapes and cladding plate are accomplished by means of FRP threaded rod and fiber-reinforced thermoplastic nuts. The material specifications are as follows:

1. Dynaform® Pultruded Structural Shapes: Fiberglass reinforced plastic shapes formed by the pultrusion method. The minimum properties for the pultruded beams are listed in Table 1.

2. Fiberplate® molded FRP plate: Open molded fiber-reinforced plastic plate with bi-directional strength.

3. ½" FRP threaded rod.

4. Fiber-reinforced thermoplastic nut.

The approval is subject to the following conditions:

1. Fiberplate® cladding panels are installed inside a frame of 4" x ½" equal leg angle in the long (horizontal) directions, and 3" x $^{3}/_{8}$" equal leg angle in the short (vertical direction). Cladding panels are through-bolted to the angle frame by means of ½" FRP threaded rod and fiber reinforced thermoplastic nuts. When support as described above, the allowable load for the 5'-0" x 7'-0" framed panel is 37.7 psf (pounds per square foot).

2. Dynaform® Structural Shapes applied as beams: The design values are in Table 1.

TABLE 1 - Design values for FRP

Property	Direction	Specification
Tensile	Lengthwise Crosswise	5350 psi 945 psi
Tensile Modulus	Lengthwise Crosswise	3.48×10^{6} psi 1.45×10^{6} psi
Flexural	Lengthwise Crosswise	6685 psi 1825 psi
Flexural Modulus	Lengthwise Crosswise	2.54×10^{6} psi 1.13×10^{6} psi
Shear	Horizontal	930 psi
½" bolt bearing	Lengthwise Crosswise	5150 psi 1980 psi
Minimum edge distance		1.5 - inch

Note: Design value is based on a factor of safety of 8

3. Complete plans and structural calculations prepared by a California licensed architect or permit issuance civil or structural engineer shall be submitted to the department for approval prior to permit issuance.

4. The Fire Department shall approve all plans for plastic screening on Title 19 buildings.

5. Antennas and screening must not obstruct access to the roof by the Fire Department as required by Sec 57.504.4 of the Los Angeles Municipal Code which states: Roof access. No person shall install or maintain any security barrier such as a barbed wire fence, razor wire fencing, chain link fencing or any other fencing material, cable, aerial, antenna or other obstruction on the roof of any commercial establishment in such a matter as to obstruct or render egress or access hazardous in the event of fire or other emergency.

   Exception: Guy wire, rods and aerial antenna masts may be attached to a roof structure having a slope less than 30 degrees provided there is full clearance of 7 feet or more between the roof and said obstruction. Guy wire or rod required to support aerial or antenna masts may be attached to a roof structure a lateral distance from the mast not in excess of one-sixth the height of the mast.

6. The individual rooftop screening panel area in any one plane or approximately the same plane shall be limited to 250 square feet and the total maximum aggregate area of all panels shall not exceed the larger of 3 square feet per foot of building frontage or 5 percent of the area of the roof, with a maximum allowable height of 8 feet above the roof level.

7. Screening material shall be located at least 10 ft from interior property lines.

8. Screening shall not be illuminated or electrified.

9. Each panel shall be identified with LARR #25536 and Fibergrate Composite Structural Label

10. The fabrication will be in accordance with manufacturer's quality control manual. A copy of the quality control manual is on file with Engineering Research Section.

DISCUSSION

The clerical modification is update compliance to 2014 Los Angeles City Building Code and to change the contact person and phone number.

The report is in compliance with the 2014 Los Angeles City Building Code.

The approval is based on tests and requirements listed in the Information Bulletin P/BC 2002-82.

Fibergrate Composite Structures
RE: Fibergrate ® FRP RF Panel Enclosure System for rooftop communication antenna screening

Addressee to whom this Research Report is issued is responsible for providing copies of it, complete with any attachments indicated, to architects, engineers and builders using items approved herein in design or construction which must be approved by Department of Building and Safety Engineers and Inspectors.

This general approval of an equivalent alternate to the Code is only valid where an engineer and/or inspector of this Department has determined that all conditions of this Approval have been met in the project in which it is to be used.

QUAN NGHIEM, Chief
Engineering Research Section
201 N. Figueroa St., Room 880
Los Angeles, CA 90012
Phone- 213-202-9812
Fax- 213-202-9943

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SGS U.S. Testing Company Inc. CONFIDENTIAL

5555 Telegraph Road • Los Angeles, CA 90040 • Tel: 323-838-1600 • Fax: 323-722-8251

CLIENT: SOLAR COMMUNICATIONS INTERNATIONAL, INC.
8885 Rio San Diego Drive, Ste. 20
San Diego, CA 92108
Rodger Smith

Test Report No:	174337-9	Date:	March 5, 2003

SAMPLE ID: The Client submitted and identified the following test materials as Fiber Cell Reinforced Vinyl Ester.

DATE OF RECEIPT: Entered into SGS USTC sample tracking system on February 3, 2003 as STN 35926.

TESTING PERIOD: March 3, 2003.

AUTHORIZATION: Client's Purchase Order No. 1767.

TEST REQUESTED: Uniform Building Code Standard 26-7 "Method of Test for Determining Classification of Approved Light-Transmitting Plastics". This method is based on ASTM Designation D635-74 "Standard Test Method for Rate of Burning and/or Extent and Time of Burning of Plastics in a Horizontal Position". A bar of the material to be tested is supported horizontally at one end. The free end is exposed to a specified gas flame for 30 seconds. The elapsed time and burn length are measured and reported if the specimen does not burn more than 100 mm. An average burning rate is reported for a material if it burns beyond the 100 mm mark from the ignited end.

TEST RESULTS: For detailed results see page 2.

CLASSIFICATION: The submitted sample is classified CC1.
See classification requirements on page 2.

Tested by

Brian Ortega
Test Technician

Signed for and on behalf of SGS U.S. Testing Company Inc.

Greg Banasky
Supervisor Fire Technology

CONFIDENTIAL

TEST RESULTS:	Average Time of Burning:	551 seconds
	Range of Time of Burning:	450 - 615 seconds
	Average Extent of Burning:	19 mm
	Range of Extent of Burning:	15 - 22 mm
	Number of Specimens Tested:	10
	Average Specimen Thickness:	0.40" nominal

OBSERVATIONS: None of the specimens tested burned to the 100 mm mark

CLASSIFICATION REQUIREMENTS PER UBC STANDARD 26-7, SEC. 26.706.5

CC1: Plastic materials which have a burning extent of 1 inch (25mm) or less when tested in nominal 0.060-inch (1.5mm) thickness (or in the thickness intended for use) by this test.

CC2: Plastic materials which have a burning rate of 2.5 inches per minute (64mm/min) or less when tested in nominal 0.060-inch (1.5mm) thickness (or in the thickness intended for use) by this test.

****

End of Report