PROJECT DESCRIPTION

AT&T PROPOSES TO MODIFY AN EXISTING TELECOMMUNICATIONS FACILITY WITH THE REPLACEMENT OF (8) PANEL ANTENNAS WITH (8) PROPOSED PANEL ANTENNAS AND INSTALLATION OF (3) PROPOSED ACTIVE ANTENNAS c/w INTEGRATED RADIOS, (3) PROPOSED DC-6 SURGE SUPPRESSOR, (3) PROPOSED 6/6 DC TRUNK, (3) PROPOSED 12 PAIR FIBER CABLE AND (3) PROPOSED TRI-POD ANTENNA MOUNT ON EXISTING ROOFTOP.

PROJECT INFORMATION

SITE ADDRESS	2748 61ST AVENUE SOUTHEAST MERCER ISLAND, WA 98040	ZONING DISTRICT:	R-8,4
LATITUDE:	47° 35' 8.0016" N	EXISTING USE:	UNMANNED TELECOMMUNICATIONS FACILITY
LONGITUDE:	122° 15' 2.9988" W	PROPOSED USE:	UNMANNED TELECOMMUNICATIONS FACILITY
JURISDICTION:	MERCER ISLAND	OCCUPANCY:	U
		A.P.N.	217450-3385

RF DATA SHEET

DATE ISSUED: 07/21/2021 VERSION: 1.00

DRAWING INDEX

		REV
T-1	TITLE SHEET	0
GN-1	GENERAL NOTES I	0
GN-2	GENERAL NOTES II	0
GN-3	GENERAL NOTES III	0
C-1	SITE PLAN	0
C-2	ROOF PLAN	0
C-3	EQUIPMENT LAYOUT	0
C-4	EXISTING & PROPOSED NORTHWEST BUILDING ELEVATIONS	0
RF-1	EXISTING ANTENNA CONFIGURATIONS	0
RF-2.1	PROPOSED ANTENNA CONFIGURATIONS I	0
RF-2.2	PROPOSED ANTENNA CONFIGURATIONS II	0
RF-3	RF & EQUIPMENT DETAILS	0
RF-4	RF SIGNAGE DETAILS	0
S-1	CONSTRUCTION DETAILS	0
G-1	GROUNDING NOTES	0
G-2	SCHEMATIC GROUNDING PLAN	0
G-3	GROUNDING DETAILS	0

LEGAL DESCRIPTION

EAST SEATTLE ADD LOT 35 LESS E 11 FT THOF & LOT 36 LESS W 10FT THOF AKA LOT B MERCER ISLAND BLA 85-09-18 (B1) REC NO 8601029001

SITE PROJECT PARTICIPANTS

	NAME	COMPANY	NUMBER
A/E	LEE CAMPBELL	CORE ONE CONSULTING USA	778-805-2166
RF	GISELE LIMA	AT&T WIRELESS	425-919-3253
LANDLORD	T.B.D.	ISLAND TERRACE APARTMENTS	T.B.D.
SAQ MANAGER	KERI HEFLEN	MASTEC NETWORK SOLUTIONS	253-569-3026
A&E MANAGER	T.B.D.	MASTEC NETWORK SOLUTIONS	T.B.D.
CM	MIKE SUTHERBY	MASTEC NETWORK SOLUTIONS	253-579-3503

at&t

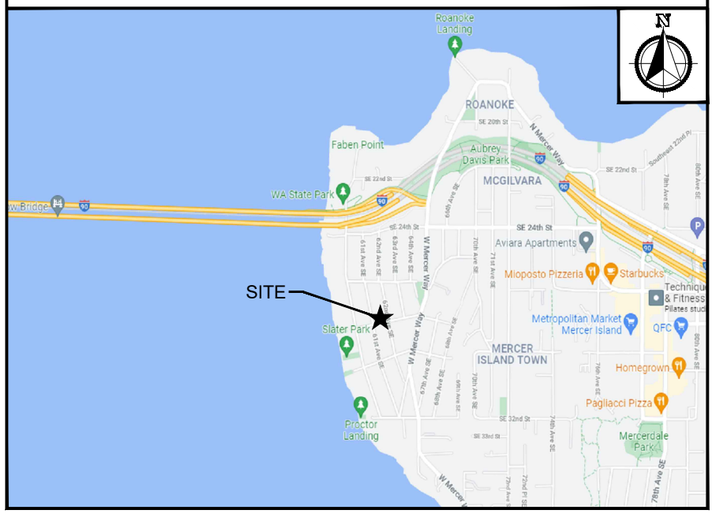
PROJECT SCOPE: 5G NR 1SR CBAND
FA#: 10092302
PTN#: 3801AOYF1Y/3801AOXZSG
PACE NUMBER: MRWOR052670/MRWOR051793
SITE NUMBER: SD17
SITE NAME: WEST MERCER
ADDRESS: 2748 61ST AVENUE SOUTHEAST MERCER ISLAND, WA 98040

PRELIMINARY DRAWINGS

VICINITY MAP

DIRECTIONS FROM AT&T OFFICE:

HEAD EAST TOWARD 120TH AVE NE. TURN RIGHT ONTO 120TH AVE NE. TURN RIGHT ONTO NE 195TH ST. USE THE LEFT 2 LANES TO TURN LEFT ONTO THE INTERSTATE 405 S RAMP TO RENTON. MERGE ONTO I-405 S. USE THE RIGHT 3 LANES TO TAKE EXIT 11 TO MERGE ONTO I-90 W TOWARD SEATTLE. TAKE EXIT 7 FOR ISLAND CREST WAY. CONTINUE ONTO N MERCER WAY. TURN LEFT ONTO 76TH AVE SE. TURN RIGHT ONTO SE 24TH ST. TURN LEFT ONTO W MERCER WAY. TURN RIGHT ONTO SE 28TH ST.



SCALING DRAWINGS

SUBCONTRACTOR SHALL VERIFY ALL PLANS, EXISTING DIMENSIONS & CONDITIONS ON THE JOB SITE & SHALL IMMEDIATELY NOTIFY THE ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR THE SAME.

IF USING 11"x17" PLOT, DRAWINGS WILL BE AT HALF SCALE.

DIG INFORMATION

811 Know what's below. Call before you dig

UULC:
UTILITIES UNDERGROUND LOCATION CENTER
1-800-424-5555 OR 811
WWW.CALLBEFOREYOUDIG.ORG/WASHINGTON
3 WORKING DAYS UTILITY NOTIFICATION PRIOR TO CONSTRUCTION

BUILDING CODES AND STANDARDS

SUBCONTRACTOR'S WORK SHALL COMPLY WITH ALL APPLICABLE NATIONAL, STATE, AND LOCAL CODES AS ADOPTED BY THE LOCAL AUTHORITY HAVING JURISDICTION (AHJ) FOR THE LOCATION. THE EDITION OF THE AHJ ADOPTED CODES AND STANDARDS IN EFFECT ON THE DATE OF CONTRACT AWARD SHALL GOVERN THE DESIGN.

BUILDING CODE:
[INTERNATIONAL BUILDING CODE (IBC), 2018 w/2019 CBC AS ADOPTED BY THE LOCAL JURISDICTION]

ELECTRICAL CODE:
[NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) 70 – 2017, NATIONAL ELECTRICAL CODE, AS ADOPTED BY THE LOCAL JURISDICTION]
LIGHTNING PROTECTION CODE:
[NFPA 780 – 2002, LIGHTNING PROTECTION CODE]

SUBCONTRACTOR'S WORK SHALL COMPLY WITH THE LATEST EDITION OF THE FOLLOWING STANDARDS.
AMERICAN CONCRETE INSTITUTE (ACI) 318, BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE
AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC), MANUAL OF STEEL CONSTRUCTION, FOURTEENTH EDITION
ANSI/TIA 222, STRUCTURAL STANDARDS FOR ANTENNA SUPPORTING STRUCTURES AND ANTENNAS.

TIA 607, COMMERCIAL BUILDING GROUNDING AND BONDING REQUIREMENTS FOR TELECOMMUNICATIONS

INSTITUTE FOR ELECTRICAL AND ELECTRONICS ENGINEERS (IEEE) 81, GUIDE FOR MEASURING EARTH RESISTIVITY, GROUND IMPEDANCE, AND EARTH SURFACE POTENTIALS OF A GROUND SYSTEM
IEEE 1100 (1999) RECOMMENDED PRACTICE FOR POWERING AND GROUNDING OF ELECTRONIC EQUIPMENT

IEEE C2 NATIONAL ELECTRIC SAFETY CODE, LATEST VERSION

TELCORDIA GR-1275, GENERAL INSTALLATION REQUIREMENTS

ANSI T1.311, FOR TELECOM – DC POWER SYSTEMS – TELECOM, ENVIRONMENTAL PROTECTION

FOR ANY CONFLICTS BETWEEN SECTIONS OF LISTED CODES AND STANDARDS REGARDING MATERIAL, METHODS OF CONSTRUCTION, OR OTHER REQUIREMENTS, THE MOST RESTRICTIVE REQUIREMENT SHALL GOVERN. WHERE THERE IS CONFLICT BETWEEN A GENERAL REQUIREMENT AND A SPECIFIC REQUIREMENT, THE SPECIFIC REQUIREMENT SHALL GOVERN.

APPROVAL / SIGN OFF OF PRELIMINARY DRAWINGS

	DATE	SIGNATURE
SAQ MANAGER		
CONSTRUCTION MANAGER		
RF ENGINEER		
RF ENGINEER MANAGER		
PROJECT MANAGER		
AT&T SIGN OFF		
LANDLORD'S REPRESENTATIVE		

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

at&t
AT&T MOBILITY
RTC BUILDING 3
18221 NE 72nd WAY
REDMOND, WA 98052

MasTec Network Solutions
22263 68th AVE S
KENT, WA 98032

CORE ONE CONSULTING USA
13555 SE 36TH ST, SUITE 100
BELLEVUE, WA 98006

PROJECT NO: 2152U248
DRAWN BY: SAM
CHECKED BY: L.C.

SUBMITTALS

0	NOV 22/21	FINAL CD'S	MP
C	NOV 15/21	RF SIGNAGE ADDED	MP
B	OCT 28/21	REVISED PER MASTEC	MP
A	SEPT 02/21	ISSUED FOR 90% REVIEW	SAM

PE SEAL
MICHAEL B. LEEPER
STATE OF WASHINGTON
56058
REGISTERED
PROFESSIONAL ENGINEER

SITE
WEST MERCER
SD17
2748 61ST AVE SE
MERCER ISLAND, WA 98040
FA #: 10092302

SHEET TITLE
TITLE SHEET

SHEET NUMBER
T-1

GENERAL NOTES:

1. THE CONTRACTOR SHALL NOTIFY TOWER NETWORK CARRIER OF ANY ERRORS, OMISSIONS, OR INCONSISTENCIES AS THEY MAY BE DISCOVERED IN PLANS, DOCUMENTS, NOTES, OR SPECIFICATIONS PRIOR TO STARTING CONSTRUCTION INCLUDING, BUT NOT LIMITED BY, DEMOLITION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CORRECTING ANY ERROR, OMISSION, OR INCONSISTENCY AFTER THE START OF CONSTRUCTION WHICH HAS NOT BEEN BROUGHT TO THE ATTENTION OF TOWER NETWORK CARRIER CONSTRUCTION PROJECT MANAGER AND SHALL INCUR ANY EXPENSES TO RECTIFY THE SITUATION. THE MEANS OF CORRECTING ANY ERROR SHALL FIRST BE APPROVED BY TOWER NETWORK CARRIER CONSTRUCTION PROJECT MANAGER.

2. PRIOR TO THE SUBMISSION OF BIDS, CONTRACTORS INVOLVED SHALL VISIT THE JOB SITE TO FAMILIARIZE THEMSELVES WITH ALL CONDITIONS AFFECTING THE PROPOSED PROJECT. CONTRACTORS PRIOR TO THE COMMENCEMENT OF CONSTRUCTION, THE CONTRACTOR HAVING BEEN AWARDED THIS PROJECT SHALL VISIT THE CONSTRUCTION SITE WITH THE CONSTRUCTION/CONTRACT DOCUMENTS TO VERIFY FIELD CONDITIONS AND CONFIRM THAT THE PROJECT WILL BE ACCOMPLISHED AS SHOWN. PRIOR TO PROCEEDING WITH CONSTRUCTION, ANY ERRORS, OMISSIONS, OR DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT/ENGINEER VERBALLY AND IN WRITING.

3. FOR COLLOCATION SITES: CONTACT TOWER OWNER REPRESENTATIVE FOR PARTICIPATION IN BID WALK.

4. DRAWINGS ARE NOT TO BE SCALED, WRITTEN DIMENSIONS TAKE PRECEDENCE, THIS SET OF DOCUMENTS IS INTENDED TO BE USED FOR DIAGRAMMATIC PURPOSES ONLY, UNLESS NOTED OTHERWISE. THE GENERAL CONTRACTOR'S SCOPE OF WORK SHALL INCLUDE FURNISHING ALL MATERIALS, EQUIPMENT, LABOR, AND ANY REQUIREMENTS DEEMED NECESSARY TO COMPLETE PROJECT AS DESCRIBED IN THE DRAWINGS AND OWNER'S PROJECT MANUAL.

5. THE ARCHITECTS/ENGINEERS HAVE MADE EVERY EFFORT TO SET FORTH IN THE CONSTRUCTION AND CONTRACT DOCUMENTS THE COMPLETE SCOPE OF WORK. CONTRACTORS BIDDING THE JOB ARE NEVERTHELESS CAUTIONED THAT MINOR OMISSIONS OR ERRORS IN THE DRAWINGS AND OR SPECIFICATIONS SHALL NOT EXCUSE SAID CONTRACTOR FROM COMPLETING THE PROJECT AND IMPROVEMENTS IN ACCORDANCE WITH THE INTENT OF THESE DOCUMENTS. THE BIDDER SHALL BEAR THE RESPONSIBILITY OF NOTIFYING (IN WRITING) THE ARCHITECT/ENGINEER OF ANY CONFLICTS, ERRORS, OR OMISSIONS PRIOR TO SUBMISSION OF CONTRACTOR'S PROPOSAL. IN THE EVENT OF DISCREPANCIES THE CONTRACTOR SHALL PRICE THE MORE COSTLY OR EXTENSIVE WORK, UNLESS DIRECTED OTHERWISE.

6. DRAWINGS ARE NOT TO BE SCALED UNDER ANY CIRCUMSTANCE. TOWER NETWORK CARRIER IS NOT RESPONSIBLE FOR ANY ERRORS RESULTING FROM THIS PRACTICE WRITTEN DIMENSIONS TAKE PRECEDENCE OVER SCALE SHOWN ON PLANS.

7. OWNER, CONTRACTOR, AND TOWER NETWORK CARRIER CONSTRUCTION PROJECT MANAGER SHALL MEET JOINTLY TO VERIFY ALL DRAWINGS AND SPECIFICATIONS PRIOR TO THE START OF CONSTRUCTION.

8. THE GENERAL CONTRACTOR SHALL RECEIVE WRITTEN AUTHORIZATION TO PROCEED WITH CONSTRUCTION PRIOR TO STARTING WORK ON ANY ITEM NOT CLEARLY DEFINED BY THE CONSTRUCTION DRAWINGS/CONTRACT DOCUMENTS.

9. THE CONTRACTOR SHALL PERFORM WORK DURING OWNER'S PREFERRED HOURS TO AVOID DISTURBING NORMAL BUSINESS.

10. THE CONTRACTOR SHALL PROVIDE TOWER NETWORK CARRIER PROPER INSURANCE CERTIFICATES NAMING TOWER NETWORK CARRIER AS ADDITIONAL INSURED, AND TOWER NETWORK CARRIER PROOF OF LICENSE(S) AND PE & PD INSURANCE.

11. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE PROJECT DESCRIBED IN THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THE CONTRACT.

12. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS ACCORDING TO MANUFACTURER'S/VENDOR'S SPECIFICATIONS UNLESS NOTED OTHERWISE OR WHERE LOCAL CODES OR ORDINANCES TAKE PRECEDENCE.

13. ALL WORK PERFORMED ON THE PROJECT AND MATERIALS INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES. CONTRACTOR SHALL GIVE ALL NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY, MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS, AND LOCAL AND STATE JURISDICTIONAL CODES BEARING ON THE PERFORMANCE OF THE WORK.

14. GENERAL CONTRACTOR SHALL PROVIDE, AT THE PROJECT SITE, A FULL SET OF CONSTRUCTION DOCUMENTS UPDATED WITH THE LATEST REVISIONS AND ADDENDA OR CLARIFICATIONS FOR USE BY ALL PERSONNEL INVOLVED WITH THE PROJECT. THIS SET IS A VALID CONTRACT DOCUMENT ONLY IF THE TITLE SHEET IS STAMPED "FOR CONSTRUCTION" AND EACH SUCCESSIVE SHEET BEARS THE ARCHITECT'S SIGNED WET STAMP.

15. A COPY OF GOVERNING AGENCY APPROVED PLANS SHALL BE KEPT IN A PLACE SPECIFIED BY THE GOVERNING AGENCY, AND BY LAW, SHALL BE AVAILABLE FOR INSPECTION AT ALL TIMES. THE PLANS ARE NOT TO BE USED BY THE WORKMEN. ALL CONSTRUCTION SETS SHALL REFLECT THE SAME INFORMATION AS GOVERNING AGENCY APPROVED PLANS. THE CONTRACTOR SHALL ALSO MAINTAIN ONE SET OF PLANS, IN GOOD CONDITION, COMPLETE WITH ALL REVISIONS, ADDENDA, AND CHANGE ORDERS ON THE PREMISES AT ALL TIMES UNDER THE DIRECT CARE OF THE SUPERINTENDENT. THE CONTRACTOR SHALL SUPPLY TOWER NETWORK CARRIER CONSTRUCTION PROJECT MANAGER. WITH A COPY OF ALL REVISIONS, ADDENDA, AND/OR CHANGE ORDERS AT THE CONCLUSION OF THE WORK AS A PART OF THE AS-BUILT DRAWING RECORDS.

16. THE STRUCTURAL COMPONENTS OF ADJACENT CONSTRUCTION OR FACILITIES ARE NOT TO BE ALTERED BY THIS CONSTRUCTION PROJECT UNLESS NOTED OTHERWISE.

17. THE CONTRACTOR SHALL STUDY THE STRUCTURAL, ELECTRICAL, MECHANICAL, AND PLUMBING PLANS AND CROSS CHECK THEIR DETAILS, NOTES, DIMENSIONS, AND ALL REQUIREMENTS PRIOR TO THE START OF ANY WORK.

18. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE COMPLETE SECURITY OF THE PROJECT AND SITE WHILE THE WORK IS IN PROGRESS UNTIL THE JOB IS COMPLETE.

19. THE CONTRACTOR HAS THE RESPONSIBILITY OF LOCATING ALL EXISTING UTILITIES WHETHER OR NOT SHOWN ON THE PLANS, AND TO PROTECT THEM FROM DAMAGE. THE CONTRACTOR, OR SUBCONTRACTOR AS SPECIFIED IN THE AGREEMENT BETWEEN SUBCONTRACTOR AND CONTRACTOR, SHALL BEAR THE EXPENSES OF REPAIR AND/OR REPLACEMENT OF UTILITIES OR OTHER PROPERTY DAMAGE BY OPERATIONS IN CONJUNCTION WITH THE EXECUTION OF THE WORK.

20. THE REFERENCES ON THE DRAWINGS ARE FOR CONVENIENCE ONLY AND SHALL NOT LIMIT THE APPLICATION OF ANY DRAWING OR DETAIL.

21. ALL DIMENSIONS ON THE PLANS ARE TO FACE OF STUD (F.O.S.) UNLESS NOTED OTHERWISE (U.N.O.).

22. ALL EXISTING CONSTRUCTION, EQUIPMENT, AND FINISHES NOTED TO BE REMOVED SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND WILL BE REMOVED FROM THE SITE WITH THE FOLLOWING EXCEPTIONS:
    A. PROPERTY NOTED TO BE RETURNED TO THE OWNER.
    B. PROPERTY NOTED TO BE REMOVED BY THE OWNER.

23. THE GOVERNING AGENCIES, CODE AUTHORITIES, AND BUILDING INSPECTORS SHALL PROVIDE THE MINIMUM STANDARDS FOR CONSTRUCTION TECHNIQUES, MATERIALS, AND FINISHES USED THROUGHOUT THE PROJECT. TRADE STANDARDS AND/OR PUBLISHED MANUFACTURERS SPECIFICATIONS MEETING OR EXCEEDING DESIGN REQUIREMENTS SHALL BE USED FOR INSTALLATION.

24. WHEN REQUIRED STORAGE OF MATERIALS OCCURS, THEY SHALL BE EVENLY DISTRIBUTED OVER ROUGH FRAMED FLOORS OR ROOFS SO AS NOT TO EXCEED THE DESIGNED LIVE LOADS FOR THE STRUCTURE. TEMPORARY SHORING AND/OR BRACING IS TO BE PROVIDED WHERE THE STRUCTURE HAS NOT ATTAINED THE DESIGN STRENGTH FOR THE CONDITIONS PRESENT.

25. PRIOR TO THE POURING OF ANY NEW SLAB OVER AN EXISTING SLAB THE CONTRACTOR SHALL VERIFY LOCATIONS OF ALL OPENINGS, CHASES, AND EQUIPMENT WHICH ARE TO BE IMPLEMENTED INTO THE NEW WORK. ALL ITEMS DESIGNATED TO BE ABANDONED SHALL BE NOTED AND DISCUSSED WITH THE OWNER AND TOWER NETWORK CARRIER CONSTRUCTION PROJECT MANAGER AS PART OF THE AS-BUILT DRAWING PACKAGE.

26. SEAL ALL PENETRATIONS THROUGH FIRE-RATED AREAS WITH U.L. LISTED OR FIRE MARSHALL APPROVED MATERIALS IF APPLICABLE TO THIS FACILITY AND OR PROJECT SITE.

27. BUILDING INSPECTORS AND/OR OTHER BUILDING OFFICIALS ARE TO BE NOTIFIED PRIOR TO ANY GRADING, CONSTRUCTION, AND ANY OTHER PROJECT EFFORT AS MANDATED BY THE GOVERNING AGENCY.

28. CONTRACTOR TO PROVIDE A PORTABLE FIRE EXTINGUISHER WITH A RATING OF NOT LESS THAN 2-A OR 2-A10BC WITHIN 75 FEET TRAVEL DISTANCE TO ALL PORTIONS OF PROJECT AREA DURING CONSTRUCTION.

29. THE PROJECT, WHEN COMPLETED, SHALL COMPLY WITH LOCAL SECURITY CODES AND TITLE-24 ENERGY CONSERVATION REQUIREMENTS. (TITLE-24 WHEN APPLICABLE)

30. ALL GLASS AND GLAZING IS TO COMPLY WITH CHAPTER 54 OF THE U.S. CONSUMER SAFETY COMMISSION – SAFETY STANDARDS FOR ARCHITECTURAL GLAZING MATERIALS (42 FR 1428, CFR PART 1201) AND LOCAL SECURITY REQUIREMENTS.

31. CONTRACTOR SHALL MAKE NECESSARY PROVISIONS TO PROTECT EXISTING IMPROVEMENTS, EASEMENTS, PAVING, CURBING, ETC. DURING CONSTRUCTION. UPON COMPLETION OF WORK, CONTRACTOR SHALL REPAIR ANY DAMAGE THAT MAY HAVE OCCURRED DUE TO CONSTRUCTION ON OR ABOUT THE PROPERTY.

32. CONTRACTOR SHALL KEEP GENERAL WORK AREA CLEAN AND HAZARD FREE DURING CONSTRUCTION AND DISPOSE OF ALL DIRT, DEBRIS, AND RUBBISH. CONTRACTOR SHALL REMOVE EQUIPMENT NOT SPECIFIED AS REMAINING ON THE PROPERTY OR PREMISES. SITE SHALL BE LEFT IN CLEAN CONDITION AND FREE FROM PAINT SPOTS, DUST, OR SMUDGES OF ANY NATURE.

33. NEW CONSTRUCTION ADDED TO EXISTING CONSTRUCTION SHALL MATCH IN FORM, TEXTURE, FINISH, AND IN MATERIALS EXCEPT AS NOTED IN THE PLANS AND SPECIFICATIONS.

34. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY BACKING, BLOCKING, AND/OR SLEEVES REQUIRED FOR THE INSTALLATION OF FIXTURES, MECHANICAL EQUIPMENT, PLUMBING, HARDWARE, AND FINISH ITEMS TO ENSURE A PROPER AND COMPLETE JOB.

35. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING A PROJECT LEVEL, STRAIGHT, AND TRUE ACCORDING TO THE PLANS. THE CONTRACTOR SHALL COMPARE THE LINES AND LEVELS OF THE EXISTING CONDITIONS WITH THOSE SHOWN ON THE PLANS PRIOR TO THE START OF ANY CONSTRUCTION. TOWER NETWORK CARRIER SHALL BE NOTIFIED OF ANY ERRORS, OMISSIONS, OR INCONSISTENCIES PRIOR TO ANY CONSTRUCTION.

36. THE CONTRACTOR IS TO PROVIDE PROTECTION FOR ADJOINING PROPERTIES FROM PHYSICAL HARM, NOISE, DUST, DIRT, AND FIRE AS REQUIRED BY THE GOVERNING AGENCIES.

37. WHERE SPECIFIED, MATERIALS TESTING SHALL BE TO THE LATEST STANDARDS AND/OR REVISIONS AVAILABLE AS REQUIRED BY THE GOVERNING AGENCY RESPONSIBLE FOR RECORDING THE RESULTS.

38. THE CONTRACTOR IS RESPONSIBLE FOR THE STORAGE OF ALL MATERIALS AND SHALL NOT DO SO ON PUBLIC PROPERTY WITHOUT A PERMIT TO DO SO FROM THE GOVERNING AGENCIES FOR THIS PURPOSE.

39. GENERAL NOTES AND STANDARD DETAILS ARE THE MINIMUM REQUIREMENTS TO BE USED IN CONDITIONS WHICH ARE NOT SPECIFICALLY SHOWN OTHERWISE.

40. TRADES INVOLVED IN THE PROJECT SHALL BE RESPONSIBLE FOR THEIR OWN CUTTING, FITTING, PATCHING, ETC., SO AS TO BE RECEIVED PROPERLY BY THE WORK OF OTHER TRADES.

41. ALL DEBRIS AND REFUSE IS TO BE REMOVED FROM THE PROJECT PREMISES AND SHALL BE LEFT IN A CLEAN (BROOM FINISH) CONDITION AT ALL TIMES BY EACH TRADE AS THEY PERFORM THEIR OWN PORTION OF THE WORK.

42. TOWER NETWORK CARRIER DOES NOT GUARANTEE ANY PRODUCTS, FIXTURES, AND/OR ANY EQUIPMENT NAMED BY A TRADE OR MANUFACTURER. GUARANTEE OR WARRANTY THAT MAY BE IN EFFECT IS DONE SO THROUGH THE COMPANY OR MANUFACTURER PROVIDING THE PRODUCT, FIXTURE, AND/OR EQUIPMENT ONLY: UNLESS SPECIFIC RESPONSIBILITY IS ALSO PROVIDED BY THE CONTRACTOR/SUBCONTRACTOR IN WRITTEN FORM.

43. CAUTION! CALL BEFORE YOU DIG! BURIED UTILITIES EXIST IN THE AREA AND UTILITY INFORMATION SHOWN MAY NOT BE COMPLETE. CONTACT THE ONE-CALL UTILITY LOCATE SERVICE A MINIMUM OF 48 HOURS PRIOR TO CONSTRUCTION. 1-800-424-5555.

44. CONTRACTOR TO REPLACE AND/OR REROUTE ANY EXISTING UNDERGROUND UTILITIES ENCOUNTERED DURING TRENCHING AND GENERAL CONSTRUCTION.

45. CONTRACTOR TO LOCATE ALL UTILITIES PRIOR TO PLACEMENT OF MONOPOLE FOOTING AND OTHER STRUCTURES TO BE PLACED IN GROUND. SEE GENERAL NOTE #6 ON THIS SHEET.

46. SEE CIVIL DRAWINGS FOR ADDITIONAL SITE INFORMATION.

47. CONTRACTOR TO DOCUMENT ALL WORK PERFORMED WITH PHOTOGRAPHS AND SUBMIT TO TOWER NETWORK CARRIER ALONG WITH REDLINED CONSTRUCTION SET.

48. CONTRACTOR TO DOCUMENT ALL CHANGES MADE IN THE FIELD BY MARKING UP (REDLINING) THE APPROVED CONSTRUCTION SET AND SUBMITTING THE REDLINED SET TO TOWER NETWORK CARRIER UPON COMPLETION.

49. WITH POWER COMPANY AS REQUIRED. CONTRACTOR TO REPORT POWER INSTALLATION COORDINATION SOLUTION(S) TO NETWORK CARRIER REPRESENTATIVE, PROJECT CONSTRUCTION MANAGER AND ARCHITECT.

50. ANY SUBSTITUTIONS OF MATERIALS AND/OR EQUIPMENT, MUST BE APPROVED BY TOWER NETWORK CARRIER CONSTRUCTION MANAGER.

51. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR AND SHALL REMEDY ALL FAULTY, INFERIOR, AND/OR IMPROPER MATERIALS, DAMAGED GOODS, AND/OR FAULTY WORKMANSHIP FOR ONE (1) YEAR AFTER THE PROJECT IS COMPETE AND ACCEPTED UNDER THIS CONTRACT; UNLESS NOTED OTHERWISE IN THE CONTRACT BETWEEN THE OWNER AND THE CONTRACTOR. (EXCEPTION) THE ROOFING SUBCONTRACTOR SHALL FURNISH A MAINTENANCE AGREEMENT FOR ALL WORK DONE, COSIGNED BY THE GENERAL CONTRACTOR, TO MAINTAIN THE ROOFING IN A WATERTIGHT CONDITION FOR A PERIOD OF TWO (2) YEARS STARTING AFTER THE DATE OF SUBSTANTIAL COMPLETION OF THE PROJECT, UNLESS OTHERWISE WRITTEN IN THE CONTRACT BETWEEN THE OWNER AND THE CONTRACTOR.

52. THE CONTRACTOR SHALL PROVIDE ADEQUATE PROTECTION FOR THE SAFETY OF THE OWNER'S EMPLOYEES, WORKMEN, AND ALL TIMES DURING THE CONSTRUCTION OF THE PROJECT.

53. THE CONTRACTOR SHALL BE REQUIRED TO PAY FOR ALL NECESSARY PERMITS AND/OR FEES WITH RESPECT TO THE WORK TO COMPLETE THE PROJECT. BUILDING PERMIT APPLICATIONS SHALL BE FILED BY THE OWNER OR HIS REPRESENTATIVE. CONTRACTOR SHALL OBTAIN PERMIT AND MAKE FINAL PAYMENT FOR SAID DOCUMENT.

54. THE ARCHITECT/ENGINEER IN CHARGE SHALL SIGN AND SEAL ALL DRAWINGS AND/OR SPECIFICATIONS.

55. TOWER NETWORK CARRIER WILL REVIEW AND APPROVE SHOP DRAWINGS AND SAMPLES FOR CONFORMANCE WITH DESIGN CONCEPT. TOWER NETWORK CARRIER PROJECT APPROVAL OF A SEPARATE ITEM SHALL NOT INCLUDE APPROVAL OF AN ASSEMBLY IN WHICH THE ITEM FUNCTIONS.

56. ALL ANTENNAS MOUNTED ON ROOF SUPPORT FRAMES TO BE PROVIDED BY TOWER NETWORK CARRIER COMMUNICATIONS.

57. CONTRACTOR TO PROVIDE TRENCH AS REQUIRED TO INSTALL BOTH ELECTRICAL AND TELEPHONE UNDERGROUND CONDUITS (#40 PVC) PER S.C.E. WORKORDER. BACKFILL WITH CLEAN SAND AND COMPACT TO THE SATISFACTION OF THE DISTRICTS INSPECTOR. REPLACE FINISH GRADE WITH MATCHING MATERIALS (GRASS, ASPHALT, CONCRETE, ETC.)

58. CONTRACTOR TO PROVIDE HEAVY STEEL PLATES AT OPEN TRENCHES FOR SAFETY AND TO PROTECT EXISTING GROUND SURFACES FROM HEAVY EQUIPMENT UTILIZED DURING CONSTRUCTION.

59. CONTRACTOR TO PATCH AND REPAIR ALL GROUND SURFACES WITHIN THE CONSTRUCTION AREA AS NECESSARY TO PROVIDE A UNIFORM SURFACE AND MAINTAIN EXISTING SURFACE DRAINAGE SLOPES.

60. CONTRACTOR TO REPLACE LANDSCAPE VEGETATION THAT WAS DAMAGED DUE TO CONSTRUCTION, AND TO MODIFY REMAINING IRRIGATION LINES TO OPERATING CONDITION, PROVIDING FULL COVERAGE TO IMPACTED AREAS.

61. IN THE CASE OF ROOFTOP SOLUTIONS FOR EQUIPMENT AND/OR ANTENNA FRAMES WHERE PENETRATION OF EXISTING ROOFING MATERIALS OCCUR, THE GENERAL CONTRACTOR SHALL COORDINATE WITH BUILDING OWNER AND BUILDING ROOFING CONTRACTOR OF RECORD FOR INSTALLATION, PATCH, REPAIR OR ANY AUGMENTATION TO THE ROOF, AND HAVE THE WORK GUARANTEED UNDER THE ROOFING CONTRACTOR'S WARRANTY FOR MOISTURE PENETRATION OR AND OTHER FUTURE BREACH OF ROOFING INTEGRITY.

62. IN THE CASE OF ROOFTOP SOLUTIONS WITH THE INSTALLATION OF ANTENNAS WITHIN CONCEALED (SHROUDED) SUPPORT FRAMES OR TRIPODS, THE GENERAL CONTRACTOR SHALL COORDINATE WITH THE FRP DESIGNER/FABRICATOR TO ENSURE THAT THE FINAL FRP SHROUD IS SIMULATING (IN APPEARANCE) DESIGNATED EXISTING EXTERIOR BUILDING FACADE MATERIALS, TEXTURES, AND COLORS. THE CONTRACTOR SHALL FURTHERMORE ENSURE THE USE OF COUNTERSUNK FASTENERS IN ALL FRP CONSTRUCTION. WHEN PHOTOSIMULATIONS ARE PROVIDED, THE CONTRACTOR SHALL ENSURE THAT FINAL CONSTRUCTION REPRESENTS WHAT IS INDICATED IN PHOTOSIMULATION. SHOP DRAWINGS SHALL BE PROVIDED TO THE GENERAL CONTRACTOR, CONSTRUCTION COORDINATOR, AND ARCHITECT PRIOR TO FABRICATION AND CONSTRUCTION.

63. IN THE CASE OF ROOFTOP SOLUTIONS FOR EQUIPMENT AND/OR ANTENNA FRAMES WHERE ANCHORING TO A CONCRETE ROOF SLAB IS REQUIRED, CONTRACTORS SHALL CONFIRM (PRIOR TO SUBMITTING BID) WITH CONSULTING CONSTRUCTION COORDINATOR AND ARCHITECT THE PRESENCE OF POST TENSION TENDONS WITHIN THE ROOF SLAB – RESULTING FROM AN UNDOCUMENTED DESIGN CHANGE IN THE EXISTING BUILDING "AS-BUILT DRAWING SET" – HAVING INDICATED AN ORIGINAL DESIGN SOLUTION OF REINFORCED CONCRETE W/ EMBEDDED STEEL REBAR. IN THE EVENT POST TENSION SLAB SOLUTION IS PRESENT, CONTRACTOR SHALL INCLUDE PROVISIONS FOR X-RAY PROCEDURES (INCLUDED IN BID) FOR ALL PENETRATION AREAS WHERE ANCHORING OCCURS.

64. GENERAL & SUB CONTRACTORS SHALL USE STAINLESS STEEL METAL LOCKING TIES FOR ALL CABLE TRAY TIE DOWNS AND ALL OTHER GENERAL TIE DOWNS (WHERE APPLICABLE). PLASTIC ZIP TIES SHALL NOT BE PERMITTED FOR USE ON TOWER NETWORK CARRIER PROJECTS. RECOMMENDED MANUFACTURE SHALL BE: PANDUIT CORP. METAL LOCKING TIES MODEL NO. MLT4S-CP UNDER SERIES-304 (OR EQUAL). PANDUIT PRODUCT DISTRIBUTED BY TRIARC.

65. ALL WORK TO BE DONE BETWEEN HOURS OF 8:00 AM AND 5:00 PM, EXCLUDING HOLIDAYS

SPECIAL NOTES:

1. PLANS PART OF THIS SET ARE COMPLEMENTARY. INFORMATION IS NOT LIMITED TO ONE PLAN. DRAWINGS AND SPECIFICATIONS ARE INSTRUMENTS OF SERVICE AND SHALL REMAIN THE PROPERTY OF THE ARCHITECT, WHETHER THE PROJECT FOR WHICH THEY ARE MADE IS EXECUTED OR NOT. THEY ARE NOT TO BE USED BY THE OWNER ON OTHER PROJECTS OR EXTENSION TO THIS PROJECT EXCEPT BY AGREEMENT IN WRITING AND WITH APPROPRIATE COMPENSATION TO THE ARCHITECT. THESE PLANS WERE PREPARED TO BE SUBMITTED TO GOVERNMENTAL BUILDING AUTHORITIES FOR REVIEW FOR COMPLIANCE WITH APPLICABLE CODES AND IT IS THE SOLE RESPONSIBILITY OF THE OWNER AND/OR CONTRACTOR TO BUILD ACCORDING TO APPLICABLE BUILDING CODES.

2. IF CONTRACTOR OR SUB-CONTRACTOR FIND IT NECESSARY TO DEVIATE FROM ORIGINAL APPROVED PLANS, THEN IT IS THE CONTRACTOR'S AND THE SUB-CONTRACTOR'S RESPONSIBILITY TO PROVIDE THE ARCHITECT WITH 4 COPIES OF THE PROPOSED CHANGES FOR HIS APPROVAL BEFORE PROCEEDING WITH THE WORK. IN ADDITION THE CONTRACTOR AND SUB-CONTRACTORS SHALL BE RESPONSIBLE FOR PROCURING ALL NECESSARY APPROVALS FROM THE BUILDING AUTHORITIES FOR THE PROPOSED CHANGES BEFORE PROCEEDING WITH THE WORK. THE CONTRACTOR AND SUB-CONTRACTORS SHALL BE RESPONSIBLE FOR PROCURING ALL NECESSARY INSPECTIONS AND APPROVALS FROM BUILDING AUTHORITIES DURING THE EXECUTION OF THE WORK.

3. IN EVERY EVENT, THESE CONSTRUCTION DOCUMENTS AND SPECIFICATIONS SHALL BE INTERPRETED TO BE A MINIMUM ACCEPTABLE MEANS OF CONSTRUCTION BUT THIS SHALL NOT RELIEVE THE CONTRACTOR, SUB-CONTRACTOR, AND/OR SUPPLIER/MANUFACTURER FROM PROVIDING A COMPLETE AND CORRECT JOB WHEN ADDITIONAL ITEMS ARE REQUIRED TO THE MINIMUM SPECIFICATION. IF ANY ITEMS NEED TO EXCEED THESE MINIMUM SPECIFICATIONS TO PROVIDE A COMPLETE, ADEQUATE AND SAFE WORKING CONDITION, THEN IT SHALL BE THE DEEMED AND UNDERSTOOD TO BE INCLUDED IN THE DRAWINGS. FOR EXAMPLE, IF AN ITEM AND/OR PIECE OF EQUIPMENT REQUIRES A LARGER WIRE SIZE (I.E. ELECTRICAL WIRE), STRONGER OR LARGER PIPING, INCREASED QUANTITY (I.E. STRUCTURAL ELEMENTS), REDUCED SPACING, AND/OR INCREASED LENGTH (I.E. BOLT LENGTHS, BAR LENGTHS) THEN IT SHALL BE DEEMED AND UNDERSTOOD TO BE INCLUDED IN THE BID/PROPOSAL. THESE DOCUMENTS ARE MEANT AS A GUIDE AND ALL ITEMS REASONABLY INFERRED SHALL BE DEEMED TO BE INCLUDED.

4. THESE CONTRACT DOCUMENTS AND SPECIFICATIONS SHALL NOT BE CONSTRUED TO CREATE A CONTRACTUAL RELATIONSHIP OF ANY KIND BETWEEN THE ARCHITECT AND THE CONTRACTOR.

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DRAWN BY: SAM

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SUBMITTALS

0	NOV 22/21	FINAL CD'S	MP
C	NOV 15/21	RF SIGNAGE ADDED	MP
B	OCT 28/21	REVISED PER MASTEC	MP
A	SEPT 02/21	ISSUED FOR 90% REVIEW	SAM

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SHEET TITLE
GENERAL NOTES I

SHEET NUMBER
GN-1

DESIGN CRITERIA:

1. THE STRUCTURAL DESIGN OF THIS PROJECT IS IN ACCORDANCE WITH THE INTERNATIONAL BUILDING CODE 2018 WITH w/2019 CBC.
2. DESIGN LOADS:
   SEE STRUCTURAL

CONCRETE NOTES:

1. ALL CONCRETE CONSTRUCTION SHALL BE IN ACCORDANCE WITH ACI–318.
2. CONCRETE SHALL BE MIXED, PROPORTIONED, CONVEYED AND PLACED IN ACCORDANCE WITH CHAPTER 19 OF THE 2015 IBC. STRENGTHS AT 28 DAYS AND MIX CRITERIA SHALL BE AS FOLLOWS..

TYPE OF CONSTRUCTION	28 DAY STRENGTHS (f'c)	W/C RATIO	MINIMUM CEMENT CONTENT PER CUBIC YARD
A. STRUCTURAL SLABS AND CONCRETE PIERS	4,000 PSI	≤ .45	6 ½ SACKS
B. ALL STRUCTURAL CONCRETE EXCEPT WALLS	4,000 PSI	≤ .45	6 ½ SACKS
C. CONCRETE WALLS	4,000 PSI	≤ .45	6 ½ SACKS
D. SLABS ON GRADE/TOPPING SLABS (FOR EQUIPMENT CABINET)	2,500 PSI	≤ .45	6 ½ SACKS

   CEMENT SHALL BE ASTM C150, PORTLAND CEMENT TYPE II U.N.O.

3. THE GENERAL CONTRACTOR SHALL SUPERVISE AND BE RESPONSIBLE FOR THE METHODS AND PROCEDURES OF CONCRETE PLACEMENT.
4. ALL CONCRETE WITH SURFACES EXPOSED TO STANDING WATER SHALL BE AIR–ENTRAINED WITH AN AIR–ENTRAINING AGENT CONFORMING TO ASTM C260, C494, C618, C989 AND C1017. TOTAL AIR CONTENT SHALL BE IN ACCORDANCE WITH TABLE 1904.2.1 OF THE 2015 IBC.
5. REINFORCING STEEL SHALL CONFORM TO ASTM A615 (INCLUDING SUPPLEMENT S1), GRADE 60, fy=60,000 PSI. EXCEPTIONS: ANY BARS SPECIFICALLY SO NOTED ON THE DRAWINGS SHALL BE GRADE 40, fy=40,000 PSI. GRADE 60 REINFORCING BARS INDICATED ON DRAWINGS TO BE WELDED SHALL CONFORM TO ASTM A706. REINFORCING COMPLYING WITH ASTM A615(S1) MAY BE WELDED ONLY IF MATERIAL PROPERTY REPORTS INDICATING CONFORMANCE WITH WELDING PROCEDURES SPECIFIED IN A.W.S. D14 ARE SUBMITTED.
6. REINFORCING STEEL SHALL BE DETAILED (INCLUDING HOOKS AND BENDS) IN ACCORDANCE WITH AC1 315 AND 318. LAP ALL CONTINUOUS REINFORCEMENT AT LEAST 30 BAR DIAMETERS OR A MINIMUM OF 2'–0". PROVIDE CORNER BARS AT ALL WALL AND FOOTING INTERSECTIONS. LAP CORNER BARS AT LEAST 30 BAR DIAMETERS OR A MINIMUM OF 2'–0". LAP ADJACENT MATS OF WELDED WIRE FABRIC A MINIMUM OF 8" AT SIDES AND ENDS.
7. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A–185.
8. SPIRAL REINFORCEMENT SHALL BE PLAIN WIRE CONFORMING TO ASTM A615, GRADE 60, fy=60,000 PSI.
9. NO BARS PARTIALLY EMBEDDED IN HARDENED CONCRETE SHALL BE FIELD BENT UNLESS SPECIFICALLY SO DETAILED OR APPROVED BY THE CONSULTANT.
10. CONCRETE PROTECTION (COVER) FOR REINFORCING STEEL SHALL BE AS FOLLOWS:

– FOOTINGS AND OTHER UNFORMED SURFACES, EARTH FACE — 3"

– FORMED SURFACES EXPOSED TO EARTH OR WEATHER (#6 BARS OR LARGER) — 2"
  (#5 BARS OR SMALLER) — 1 1/2"

– SLABS AND WALLS (INTERIOR FACE) — 3/4"

11. BARS SHALL BE SUPPORTED ON CHAIRS OR DOBIE BRICKS.
12. ANCHOR BOLTS TO CONFORM TO ASTM A307.
13. NON–SHRINK GROUT SHALL BE FURNISHED BY AN APPROVED MANUFACTURER AND SHALL BE MIXED AND PLACED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S PUBLISHED RECOMMENDATIONS. GROUT STRENGTH SHALL BE AT LEAST EQUAL TO THE MATERIAL ON WHICH IT IS PLACED (3,000 PSI MINIMUM).
14. ALL EXPANSION ANCHORS TO BE HILTI BRAND. ADHESIVE ANCHORS REQUIRE TESTING TO CONFIRM CAPACITY UNLESS WAIVED BY ENGINEER.

BUILDING NOTES:

1. VERIFICATION THAT THE EXISTING BUILDING ROOF CAN SUPPORT THE PROPOSED ANTENNA LOADING IS TO BE COMPLETED PRIOR TO ANY MODIFICATIONS BY OTHERS.
2. PROVIDE SUPPORTS FOR THE ANTENNA COAX CABLES TO THE ELEVATION OF ALL INITIAL AND FUTURE ANTENNAS. ANTENNA COAX CABLES ARE TO BE SUPPORTED AND RESTRAINED AT THE CENTERS SUITABLE TO THE MANUFACTURER'S REQUIREMENTS.

SAFETY PROGRAM:

1. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING AND DOCUMENTING THEIR OWN SAFETY TRAINING PROGRAM.

ABBREVIATED ROOF TOP SAFETY PROCEDURES (WHEN APPLICABLE):

(AS PER "ACCIDENT PREVENTION PROGRAM" – BY PERMISSION OF WREN CONSTRUCTION, INC. – 03/01/99)

FALL PROTECTION METHODS AND EQUIPMENT
ROOF TOP INSTALLATIONS

1. FOR WORK IS BEING PERFORMED WITHIN 25' OF AN UNPROTECTED ROOF EDGE, THE CONSTRUCTION SUPERVISOR SHALL DESIGNATE A TRAINED SAFETY MONITOR TO OBSERVE THE MOVEMENTS AND ACTIVITIES OF THE CONSTRUCTION WORKERS.
2. SAFETY MONITOR SHALL WARN CONSTRUCTION WORKERS OF HAZARDS (I.E., BACKING UP TOWARD A ROOF EDGE, ETC.) OR UNSAFE ACTIVITIES. THE SAFETY MONITOR MUST BE ON THE SAME ROOF AND WITHIN VISUAL AND VERBAL DISTANCE OF THE CONSTRUCTION WORKERS.
3. CONSTRUCTION INVOLVING WORKERS TO APPROACH WITHIN 6' OR LESS OF AN UNPROTECTED ROOF EDGE, REQUIRES WORKERS TO USE SAFETY LINE.
4. SAFETY LINE SHALL BE MINIMUM ½" DIAMETER NYLON, WITH A NOMINAL TENSILE STRENGTH OF 5400 LBS.
5. SAFETY LINE SHALL BE ATTACHED TO A SUBSTANTIAL MEMBER OF THE STRUCTURE.
6. SAFETY LINE LENGTH SHALL BE SET ALLOWING CONSTRUCTION WORKER TO REACH EDGE OF ROOF, BUT NOT BEYOND.
7. SAFETY BELTS SHALL BE WORN BY ALL CONSTRUCTION WORKERS.
8. MONTHLY SAFETY INSPECTION AND MAINTENANCE OF THE FALL PROTECTION EQUIPMENT SHALL OCCUR BY THE SAFETY COMMITTEE REPRESENTATIVES, INCLUDING:

   INSPECTION OF CONSTRUCTION AREA FOR HAZARDS
   USE OF AN INSPECTION CHECKLIST
   INTERVIEWING COWORKERS REGARDING SAFETY CONCERNS
   REPORTING AND DOCUMENTING ANY HAZARDS
   REPORTING HAZARDS TO THE SAFETY COMMITTEE FOR CONSIDERATION
   POSTING RESULTS OF INSPECTION AND ANY ACTION TAKEN
   RECEIVING AN UNBIASED REVIEW OF ONE'S OWN WORK AREA BY ANOTHER COWORKER SAFETY REPRESENTATIVE

REFER TO ROOFTOP WORK AREA SAFETY PROTOCOL
NATIONAL ASSOCIATION OF TOWER ERECTORS 2000 PUBLICATION

REFERENCED OSHA REGULATION/STANDARDS SHALL BE REVIEWED BY TOWER ERECTORS,
EQUIPMENT INSTALLERS, AND TOWER/ROOF TOP CONTRACTORS/SUBCONTRACTORS
   29 CFR 1926.500 – SCOPE, APPLICATION, AND DEFINITIONS
   29 CFR 1926.501 – DUTY TO HAVE FALL PROTECTION
   19 CFR 1926.502 – FALL PROTECTION SYSTEMS CRITERIA AND PRACTICES

FIBER REINFORCED POLYMER (FRP) NOTES:

1. FRP PLATES, SHAPES, BOLTS AND NUTS (STUD/NUT ASSEMBLIES) SHALL CONFORM TO ASTM D638, 695, 790. PLATES AND SHAPES TO BE FY = 30 KSI (LW), 7 KSI (CW) MIN.
2. IF FIELD FABRICATION IS REQUIRED, ALL CUT EDGES AND DRILLED HOLES TO BE SEALED USING VINYL ESTER SEALING KIT SUPPLIED BY THE MANUFACTURER.
3. ALL FASTENERS TO BE 1/2" DIA FRP THREADED ROD WITH FIBER REINFORCED THERMOPLASTIC NUT, SPACED AT 12 INCHES ON CENTER MAXIMUM, U.N.O., FOR PANELS AND AS DESIGNED FOR STRUCTURAL MEMBERS.
4. THE COLOR AND SURFACE PATTERN OF EXPOSED FRP PANELS SHALL MATCH THE EXTERIOR OF THE EXISTING BUILDING, U.N.O.
5. STUD/NUT ASSEMBLIES SHOULD BE LUBRICATED FOR INSTALLATION
6. ENSURE BEARING SURFACES OF THE NUTS ARE PARALLEL TO THE SURFACES BEING FASTENED.
7. TORQUE BOLTS ACCORDING TO THE FOLLOWING TABLE:

INSTALLATION TORQUE TABLE		
SIZE	ULTIMATE TORQUE STRENGTH	RECOMMENDED MAXIMUM INSTALLATION TORQUE
3/8–16 UNC	8 FT–LBS	4 FT–LBS
1/2–13 UNC	18 FT–LBS	8 FT–LBS
5/8–11 UNC	35 FT–LBS	16 FT–LBS
3/4–10 UNC	50 FT–LBS	24 FT–LBS
1–8 UNC	110 FT–LBS	50 FT–LBS

8. WHEN TIGHTENING FRP STUD/NUT ASSEMBLIES, WRENCHES MUST MAKE FULL CONTACT WITH ALL NUT EDGES. A STANDARD SIX POINT SOCKET IS RECOMMENDED.
9. STUD/NUT ASSEMBLIES SHOULD BE BONDED BY APPLYING BONDING AGENT TO ENTIRE NUT AND EXPOSED STUD.
10. ALL FRP MATERIALS TO BE PROVIDED BY FIBERGRATE COMPOSITE STRUCTURES, DALLAS TX, OR APPROVED EQUAL.
11. ALL FRP SHAPES TO BE DYNAFORM PULTRUDED STRUCTURAL SHAPES.
12. ALL FRP PLATES TO BE FIBERPLATE MOLDED FRP PLATE.
13. ALL FRP PANELS TO BE FIBERPLATE CLADDING PANEL.
14. EACH FRP PANEL TO BE IDENTIFIED WITH LARR#25536 AND FIBERGRATE COMPOSITE STRUCTURAL LABEL.
15. FRP MATERIAL TO BE CLASSIFIED AS CC1 OR BETTER, AND HAVE MAXIMUM FLAME SPREAD OF 50.
16. ALL DESIGN AND CONSTRUCTION TO BE COMPLETED IN ACCORDANCE WITH LOS ANGELES RESEARCH REPORT RR25536, DATED FEBRUARY 1, 2016.
17. SPECIAL INSPECTIONS MUST BE PROVIDED FOR ALL FRP INSTALLMENTS. SEE SPECIAL INSPECTION SECTION, THIS SHEET.

m		
	RANGE	RECOMMENDED
EDGE DISTANCE – CL* BOLT TO END	2.0–4.0	3.0
EDGE DISTANCE – CL* BOLT TO SIDE	1.5–3.5	2.5
BOLT PITCH – CL* TO CL*	4.0–5.0	5.0

STEEL CONSTRUCTION NOTES:

1. STRUCTURAL STEEL SHALL CONFORM TO THE AISC MANUAL OF STEEL CONSTRUCTION 14TH EDITION, FOR THE DESIGN AND FABRICATION OF STEEL COMPONENTS.
2. ALL FIELD CUT SURFACES, FIELD DRILLED HOLES, AND GROUND SURFACES WHERE EXISTING PAINT OR GALVANIZATION REMOVAL WAS REQUIRED SHALL BE REPAIRED WITH (2) BRUSHED COATS OF ZRC GALVILITE COLD GALVANIZING COMPOUND PER ASTM A780 AND MANUFACTURERS' RECOMMENDATIONS.
3. ALL FIELD DRILLED HOLES TO BE USED FOR FIELD BOLTING INSTALLATION SHALL BE STANDARD HOLES, AS DEFINED BY AISC, UNLESS NOTED OTHERWISE.
4. ALL EXTERIOR STEEL WORK SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A123.
5. ALL STEEL MEMBERS AND CONNECTIONS SHALL MEET THE FOLLOWING GRADES:
   - ANGLES, CHANNELS, PLATES AND BARS TO BE A36. Fy=36 KSI, U.N.O.
   - W SHAPES TO BE A992. Fy=50 KSI, U.N.O.
   - RECTANGULAR HSS TO BE A500, GRADE B. FY=46 KSI, U.N.O.
   - ROUND HSS TO BE A500, GRADE B. FY=42 KSI, U.N.O.
   - STEEL PIPE TO BE A53, GRADE B. Fy=35 KSI, U.N.O.
   - BOLTS TO BE A325–X. Fu=120 KSI, U.N.O.
   - U–BOLTS AND LAG SCREWS TO BE A307 GR A. Fu=60 KSI, U.N.O.
6. ALL WELDING SHALL BE DONE USING E80XX ELECTRODES, U.N.O.
7. ALL WELDING SHALL CONFORM TO AISC AND AWS D1.1 LATEST EDITION.
8. ALL HILTI ANCHORS TO BE CARBON STEEL, U.N.O.
   - MECHANICAL ANCHORS: KWIK BOLT–TZ, U.N.O.
   - CMU BLOCK ANCHORS: ADHESIVE – HY120, U.N.O.
   - CONCRETE ANCHORS: ADHESIVE – HY150, U.N.O.
   - CONCRETE REBAR: ADHESIVE – RE500, U.N.O.
9. ALL STUDS TO BE NELSON CAPACITOR DISCHARGE 1/4"–20 LOW CARBON STEEL COPPER–FLASH AT 55 KSI ULT/50 KSI YIELD, U.N.O.
10. BOLTS SHALL BE TIGHTENED TO A "SNUG TIGHT" CONDITION AS DEFINED BY AISC.
11. MINIMUM EDGE DISTANCES SHALL CONFORM TO AISC TABLE J3.4.

WOOD CONSTRUCTION NOTES:

1. ALL EXISTING WOOD SHAPES ARE ASSUMED TO BE DOUGLAS FIR–LARCH WITH A REFERENCE DESIGN BENDING VALUE OF 1000 PSI MIN.
2. ALL PROPOSED WOOD SHAPES ARE TO BE DOUGLAS FIR–LARCH WITH A REFERENCE DESIGN BENDING VALUE OF 1000 PSI MIN. U.N.O.
3. ALL EXISTING AND PROPOSED GLUED LAMINATED TIMBERS ARE TO BE 24F–1.8C DOUGLAS FIR BALANCED WITH A REFERENCE DESIGN BENDING VALUE OF 2400 PSI MIN. U.N.O.

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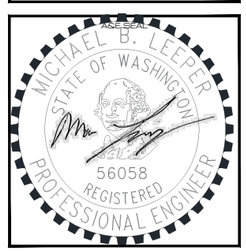
SUBMITTALS

0	NOV 22/21	FINAL CD'S	MP
C	NOV 15/21	RF SIGNAGE ADDED	MP
B	OCT 28/21	REVISED PER MASTEC	MP
A	SEPT 02/21	ISSUED FOR 90% REVIEW	SAM



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SHEET TITLE
GENERAL NOTES II

SHEET NUMBER
GN-2

1. STATEMENT OF SPECIAL INSPECTIONS

IBC	SI	SO	TITLE
1705.1.1	X	X	SPECIAL CASES (SEE FOLLOWING NOTES FOR EXTENT)
1705.1.1	X		ANCHOR BOLTS INSTALLATION AND PLACEMENT IN CONCRETE
1705.2			STEEL CONSTRUCTION
1705.3			CONCRETE CONSTRUCTION (SEE TABLE 1705.3)
1705.6			SOILS (SEE TABLE 1705.6)
1705.7			DEEP DRIVEN FOUNDATIONS (SEE TABLE 1705.7)
1705.8			CAST IN PLACE DEEP FOUNDATION (SEE TABLE 1705.8)

SI = SPECIAL INSPECTION
SO = STRUCTURAL OBSERVATION
X = ITEM IS REQUIRED
N/R = ITEM IS NOT REQUIRED

1.1 INSPECTION/TESTING REQUIREMENTS:

SEE DRAWINGS, SPECIFICATIONS, AND IBC SECTIONS 110, AND CHAPTER 17.

1.2 INSPECTIONS BY THE BUILDING OFFICIAL (IBC SECTION 110):

1.2.3 FRAMING INSPECTIONS SHALL BE MADE AFTER ALL SHEATHING, FRAMING, BLOCKING AND BRACING ARE COMPLETE AND ALL PIPES, DUCTS, ELECTRICAL, PLUMBING, ETC., ARE INSTALLED AND APPROVED PRIOR TO COVER.

A.

1.2.4 IN ADDITION TO THE INSPECTIONS SPECIFIED ABOVE, THE BUILDING OFFICIAL IS AUTHORIZED TO MAKE OR REQUIRE OTHER INSPECTIONS OF ANY CONSTRUCTION WORK TO ASCERTAIN COMPLIANCE WITH THE PROVISIONS OF THE IBC OR OTHER LAWS ENFORCED BY THE BUILDING OFFICIAL.

1.3 STRUCTURAL TESTS AND SPECIAL INSPECTIONS (IBC CHAPTER 17):

1.3.1 SEE PROJECT SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

1.3.2 STRUCTURAL TESTS AND SPECIAL INSPECTIONS SHALL BE PERFORMED IN ACCORDANCE WITH THE REQUIREMENTS OF CHAPTER 17 OF THE IBC AS WELL AS ANY ADDITIONAL REQUIREMENTS OF THE BUILDING OFFICIAL. OMISSION FROM THE LIST BELOW OF TESTING AND INSPECTION REQUIREMENTS SHALL NOT RELIEVE THE CONTRACTOR FROM PROVIDING TESTING AND INSPECTION REQUIRED BY THE SPECIFICATIONS, THE IBC AND THE BUILDING OFFICIAL.

1.3.3 TESTING AND SPECIAL INSPECTIONS SHALL BE COMPLETED IN ACCORDANCE WITH THE REQUIREMENTS OF CHAPTER 17 OF THE IBC FOR THE ITEMS LISTED IN THIS SECTION.

1.4 STRUCTURAL OBSERVATION

1.4.1 STRUCTURAL OBSERVATION SHALL BE PERFORMED DURING CONSTRUCTION IN A MANNER AS REQUIRED TO BECOME GENERALLY FAMILIAR WITH THE IN PLACE CONSTRUCTION.

1.4.2 STRUCTURAL OBSERVATION EXTENT SHALL BE AS INDICATED ABOVE. TIMING AND DURATION OF OBSERVATIONS SHALL BE COORDINATED WITH THE GENERAL CONTRACTOR DURING CONSTRUCTION.

1.4.3 CONSTRUCTION OBSERVATION REPORTS AND FINDINGS SHALL NOT BE VIEWED AS A WARRANTY OR GUARANTEE BY THE STRUCTURAL ENGINEER.

1.5 SPECIAL INSPECTOR: SHALL BE CURRENTLY WABO CERTIFIED AND UNDER THE SUPERVISION OF A REGISTERED PROFESSIONAL ENGINEER.

1.5.1 THE SPECIAL INSPECTOR SHALL OBSERVE THE WORK ASSIGNED FOR CONFORMANCE WITH THE APPROVED DESIGN DRAWINGS AND SPECIFICATIONS.

1.5.2 THE SPECIAL INSPECTOR SHALL FURNISH INSPECTION REPORTS TO THE BUILDING OFFICIAL, ENGINEER OF RECORD, ARCHITECT OF RECORD, AND OTHER DESIGNATED PERSONS. ALL DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE GENERAL CONTRACTOR FOR CORRECTION, THEN, IF NOT IN CONFORMANCE, TO THE PROPER DESIGN AUTHORITY AND BUILDING OFFICIAL.

1.5.3 THE SPECIAL INSPECTOR SHALL SUBMIT A FINAL REPORT STATING WHETHER THE WORK REQUIRING SPECIAL INSPECTION WAS IN CONFORMANCE WITH THE APPROVED PLANS AND SPECIFICATIONS AND THE APPLICABLE WORKMANSHIP PROVISIONS OF THE IBC. THE REPORT SHALL BE SEALED BY A REGISTERED PROFESSIONAL ENGINEER.

2A. REQUIRED SPECIAL INSPECTIONS AND TESTS OF STRUCTURAL STEEL – CONSTRUCTION INSPECTION OF WELDING

SPECIAL INSPECTION OR TEST TYPE	CONTINUOUS SPECIAL INSPECTION	PERIODIC SPECIAL INSPECTION	REFERENCED STANDARD
AISC 360 TABLE N5.4–1			
1. PRIOR TO WELDING, VERIFY AND INSPECT THE FOLLOWING:			
A. WELDING PROCEDURE SPECIFICATIONS (WPS)	X	N/R	–
B. MANUFACTURER CERTIFICATIONS FOR WELDING CONSUMABLES	X	N/R	AISC 360 A3.5
C. MATERIAL IDENTIFICATION OF STRUCTURAL STEEL MEMBERS	N/R	X	AISC 360 A3.1
D. WELDER IDENTIFICATION SYSTEM	N/R	X	–
E. FIT–UP OF GROOVE WELDS, INCLUDING JOINT GEOMETRY	N/R	X	–
1) JOINT PREPARATION			
2) DIMENSIONS: ALIGNMENT, ROOT OPENING, ROOT FACE,			
3) CLEANLINESS: CONDITION OF STEEL SURFACES			
4) TACKING: TACK WELD QUALITY AND LOCATION			
5) BACKING TYPE AND FIT (IF APPLICABLE)			
F. CONFIGURATION AND FINISH OF ACCESS HOLES	N/R	X	–
G. FIT–UP OF FILLET WELDS	N/R	X	–
1) DIMENSIONS: ALIGNMENT, GAPS AT ROOT			
2) CLEANLINESS: CONDITION OF STEEL SURFACES			
3) TACKING: TACK WELD QUALITY AND LOCATION			
H. CHECK WELDING EQUIPMENT	N/R	X	–
AISC 360 TABLE N5.4–2			
2. DURING WELDING, VERIFY AND INSPECT THE FOLLOWING:			
A. USE OF QUALIFIED WELDERS	N/R	X	–
B. CONTROL AND HANDLING OF WELDING CONSUMABLES	N/R	X	–
1) PACKAGING			
2) EXPOSURE CONTROL			
C. NO WELDING OVER CRACKED TACK WELDS	N/R	X	–
D. ENVIRONMENTAL CONDITIONS	N/R	X	–
1) WIND SPEED WITHIN LIMITS			
2) PRECIPITATION AND TEMPERATURE			
E. WELDING PROCEDURE SPECIFICATIONS FOLLOWED	N/R	X	–
1) SETTINGS ON WELDING EQUIPMENT			
2) TRAVEL SPEED			
3) SELECTED WELDED MATERIALS			
4) SHIELDING GAS TYPE AND FLOW RATE			
5) PREHEAT APPLIED			
6) INTERPASS TEMPERATURE MAINTAINED			
7) PROPER POSITION			
F. WELDING TECHNIQUES	N/R	X	–
1) INTERPASS AND FINAL CLEANING			
2) EACH PASS WITHIN PROFILE LIMITATIONS			

2A. REQUIRED SPECIAL INSPECTIONS AND TESTS OF STRUCTURAL STEEL – CONSTRUCTION INSPECTION OF WELDING (CONT.)

SPECIAL INSPECTION OR TEST TYPE	CONTINUOUS SPECIAL INSPECTION	PERIODIC SPECIAL INSPECTION	REFERENCED STANDARD
AISC 360 TABLE N5.4–3			
3. AFTER WELDING, VERIFY AND INSPECT THE FOLLOWING:			
A. WELDS CLEANED	N/R	X	–
B. SIZE, LENGTH, AND LOCATION OF WELDS	X	N/R	
C. WELDS MEET VISUAL ACCEPTANCE CRITERIA	X	N/R	–
1) CRACK PROHIBITION			
2) WELD TO BASE METAL FUSION			
3) CRATER CROSS SECTION			
4) WELD PROFILES			
5) WELD SIZE			
6) UNDERCUT			
7) POROSITY			
D. ARC STRIKES	X	N/R	
E. k–AREA	X	N/R	
F. BACKING REMOVED AND WELD TABS REMOVED, IF REQUIRED	X	N/R	
G. REPAIR ACTIVITIES	X	N/R	
H. DOCUMENT ACCEPTANCE OR REJECTION OF WELDED JOINT OR MEMBER	X	N/R	

2B. REQUIRED SPECIAL INSPECTIONS AND TESTS OF STRUCTURAL STEEL – CONSTRUCTION INSPECTION OF BOLTING

SPECIAL INSPECTION OR TEST TYPE	CONTINUOUS SPECIAL INSPECTION	PERIODIC SPECIAL INSPECTION	REFERENCED STANDARD
AISC 360 TABLE N5.6–1			
1. PRIOR TO BOLTING, VERIFY AND INSPECT THE FOLLOWING:			
A. MANUFACTURER'S CERTIFICATIONS FOR FASTENER MATERIALS	X	N/R	–
B. FASTENERS MARKED IN ACCORDANCE WITH ASTM REQUIREMENTS	N/R	X	–
C. PROPER FASTENER SELECTED FOR JOINT DETAIL	N/R	X	AISC 360 A3.1
D. PROPER BOLTING PROCEDURE SELECTED FOR JOINT DETAIL	N/R	X	–
E. CONNECTING ELEMENTS, INCLUDING THE APPROPRIATE FAYING SURFACE CONDITIONS AND HOLE PREPARATION, IF SPECIFIED, MEET APPLICABLE REQUIREMENTS	N/R	X	–
F. PRE–INSTALLATION VERIFICATION TESTING BY INSTALLATION PERSONNEL OBSERVED AND DOCUMENTED FOR FASTENER ASSEMBLIES AND METHODS USE	X	N/R	–
G. PROPER STORAGE PROVIDED FOR BOLTS, NUTS, WASHERS, AND OTHER FASTENER COMPONENTS	N/R	X	–
AISC 360 TABLE N5.6–2			
2. DURING BOLTING, VERIFY AND INSPECT THE FOLLOWING:			
A. FASTENER ASSEMBLIES, OF SUITABLE CONDITION, PLACED IN ALL HOLES AND WASHERS (IF REQUIRED) ARE POSITIONED AS REQUIRED	N/R	X	–
B. JOINT BROUGHT TO THE SNUG–TIGHT CONDITION PRIOR TO THE PRETENSIONING OPERATION	N/R	X	–
C. FASTENER COMPONENT NOT TURNED BY THE WRENCH PREVENTED FROM ROTATING	N/R	X	–
D. FASTENERS ARE PRETENSIONED IN ACCORDANCE WITH THE RCSC SPECIFICATION, PROGRESSING SYSTEMATICALLY FROM THE MOST RIGID POINT TOWARD THE FREE EDGES	N/R	X	–
AISC 360 TABLE N5.6–3			
3. AFTER BOLTING, VERIFY AND INSPECT THE FOLLOWING:			
A. DOCUMENT ACCEPTANCE OR REJECTION OF BOLTED CONNECTIONS	X	N/R	–

2.1 STRUCTURAL STEEL CONSTRUCTION:

SPECIAL INSPECTION AND NONDESTRUCTIVE TESTING OF STRUCTURAL STEEL ELEMENTS SHALL BE IN ACCORDANCE WITH THE QUALITY CONTROL AND QUALITY ASSURANCE REQUIREMENTS OF AISC 360, AS NOTED IN TABLES 15A, 15B, 15C, AND AWS D1.1, INCLUDING:

2.1.1 INSPECTION OF ERECTED STEEL SYSTEM.

2.1.2 REVIEW OF MATERIAL TEST REPORTS AND CERTIFICATIONS FOR COMPLIANCE WITH THE CONSTRUCTION DOCUMENTS.

2.1.3 OBSERVATION OF WELDING OPERATIONS AND VISUAL INSPECTION OF IN–PROCESS AND COMPLETED WELDS SHALL BE AS FOLLOWS:

A. VERIFY THAT WELD FILLER MATERIAL AND MANUFACTURER'S CERTIFICATE OF COMPLIANCE CONFORM TO AWS SPECIFICATION SPECIFIED. VERIFY WELDERS ARE CERTIFIED BY WABO, THAT PROPER ELECTRODES IN OVEN DRY CONDITIONS ARE USED, AND THAT PROPER METHODS AND PREPARATIONS ARE USED.

B. PERIODIC SPECIAL INSPECTION OF WELDING SHALL BE PERFORMED FOR SINGLE PASS FILLET WELDS LESS THAN OR EQUAL TO 5/16" AND FLOOR AND DECK WELDS.

C. CONTINUOUS SPECIAL INSPECTION OF WELDING SHALL BE PERFORMED ON COMPLETE AND PARTIAL PENETRATION GROOVE WELDS AND FILLET WELDS GREATER THAN 5/16".

D. ALL WELDS SHALL BE CHECKED VISUALLY.

E. ALL SHOP AND FIELD WELDING SHALL BE SUBJECT TO INSPECTION BY A WABO CERTIFIED WELDING INSPECTOR EMPLOYED BY THE OWNER. THE INSPECTOR SHALL UTILIZE RADIOGRAPHIC, ULTRASONIC, OR MAGNETIC PARTICLE TESTING AND ANY OTHER AID TO VISUAL INSPECTION THAT MAY BE DEEMED NECESSARY TO ASSURE THE ADEQUACY OF WELDING. THE OWNER SHALL CARRY OUT TESTING AND INTERPRETATION AT ANY STAGE AFTER WELDING.

F. 10% OF ALL FILLET WELDS SHALL BE CHECKED BY MAGNETIC PARTICLE TESTING.

G. 100% OF ALL COMPLETE PENETRATION WELDS SHALL BE CHECKED BY ULTRASONIC TESTING.

H. ALL WELDS FOUND DEFECTIVE AND REPAIRED SHALL BE REINSPECTED BY THE SAME METHOD ORIGINALLY USED. THE DOST OF REPAIR AND REINSPECTION SHALL BE BORNE BY THE CONTRACTOR.

I. STANDARDS FOR ACCEPTANCE SHALL BE AS GIVEN IN AWS D1.1.

2.1.4 OBSERVATION OF BOLTING OPERATIONS.

2.1.5 CONTINUOUS SPECIAL INSPECTION SHALL BE PERFORMED FOR EACH JOINT OR MEMBER. PERIODIC SPECIAL INSPECTION SHALL BE PERFORMED ON ITEMS ON A RANDOM BASIS. PERIODIC SPECIAL INSPECTION NEED NOT DELAY FABRICATION OR ERECTION OPERATIONS.

2.1.9 EPOXY ANCHORS: SPECIFIC REQUIREMENTS FOR INSPECTION OF ANCHORS INSTALLED IN HARDENED CONCRETE OR MASONRY SHALL BE AS DESCRIBED IN THE RESEARCH REPORT ISSUED BY AN APPROVED SOURCE (ICC, IAPMO, ETC.).

2.1.10 EXPANSION ANCHORS: SPECIFIC REQUIREMENTS FOR INSPECTION OF ANCHORS INSTALLED IN HARDENED CONCRETE OR MASONRY SHALL BE AS DESCRIBED IN THE RESEARCH REPORT ISSUED BY AN APPROVED SOURCE (ICC, IAPMO, ETC.).

2.2 ADDITIONAL REQUIRED SPECIAL INSPECTIONS FOR SEISMIC RESISTANCE PER IBC SECTION 1705.12

3. REQUIRED SPECIAL INSPECTIONS AND TESTS OF CONCRETE CONSTRUCTION

IBC TABLE 1705.3				
SPECIAL INSPECTION OR TEST TYPE	CONTINUOUS SPECIAL INSPECTION	PERIODIC SPECIAL INSPECTION	REFERENCED STANDARD	IBC REFERENCE
1. INSPECT REINFORCEMENT, INCLUDING PRESTRESSING TENDONS, AND VERIFY PLACEMENT.	X	–	ACI 318 Ch. 20, 25.2,25.3, 26.6.1–26.6.3	1908.4
2. REINFORCING BAR WELDING:				
A. VERIFY WELDABILITY OF REINFORCING BARS OTHER THAN ASTM A706:	–	X	AWS D1.4 ACI 318: 26.6.4	–
B. INSPECT SINGLE–PASS FILLET WELDS, MAXIMUM 5/16"; AND	–	X	AWS D1.4 ACI 318: 26.6.4	–
C. INSPECT ALL OTHER WELDS	X	–	AWS D1.4 ACI 318: 26.6.4	–
3. INSPECT ANCHORS CAST IN CONCRETE.	–	X	ACI 318: 17.8.2	–
4. INSPECT ANCHORS POST–INSTALLED IN HARDENED CONCRETE MEMBERS.[a]				
A. ADHESIVE ANCHORS INSTALLED IN HORIZONTALLY OR UPWARDLY INCLINED ORIENTATIONS TO RESIST SUSTAINED TENSION LOADS.	X	–	ACI 318: 17.8.2.4	–
B. MECHANICAL ANCHORS AND ADHESIVE ANCHORS NOT DEFINED IN 4.A.	–	–	ACI 318: 17.8.2	–
5. VERIFY USE OF REQUIRED DESIGN MIX.	–	X	ACI 318: CH. 19, 26.4.3, 26.4.4	–
6. PRIOR TO CONCRETE PLACEMENT, FABRICATE SPECIMENS FOR STRENGTH TESTS, PERFORM SLUMP AND AIR CONTENT TESTS, AND DETERMINE THE TEMPERATURE OF THE CONCRETE.	X	–	ASTM C172 ASTM C31 ACI 318: 26.4, 26.12	1908.10
7. INSPECT CONCRETE AND SHOTCRETE PLACEMENT FOR PROPER APPLICATION TECHNIQUES.	X	–	ACI 318: 26.5	1908.6, 1908.7, 1908.8
8. VERIFY MAINTENANCE OF SPECIFIED CURING TEMPERATURE AND TECHNIQUES.	–	X	ACI 318: 26.5.3–26.5.5	1908.9
9. INSPECT PRESTRESSED CONCRETE FOR:				
A. APPLICATION OF PRESTRESSING FORCES; AND	X	–	ACI 318: 26.10	–
B. GROUTING OF BONDED PRESTRESSING TENDONS.	X	–		
10. INSPECT ERECTION OF PRECAST CONCRETE MEMBERS.	–	X	ACI 318: Ch. 26.8	–
11. VERIFY IN–SITU CONCRETE STRENGTH, PRIOR TO STRESSING OF TENDONS IN POST–TENSIONED CONCRETE AND PRIOR TO REMOVAL OF SHORES AND FORMS FROM BEAMS AND STRUCTURAL SLABS.	–	X	ACI 318: 26.11.2	–
12. INSPECT FORMWORK FOR SHAPE, LOCATION AND DIMENSIONS OF THE CONCRETE MEMBER BEING FORMED.	–	X	ACI 318: 26.11.1.2(b)	–

3.1 CONCRETE: SPECIAL INSPECTION AND TESTING PER IBC TABLE 1705.3 AS NOTED IN TABLE 13, INCLUDING:

3.1.5 SPECIFIC REQUIREMENTS FOR SPECIAL INSPECTION OF ANCHORS INSTALLED IN HARDENED CONCRETE SHALL BE AS DESCRIBED IN THE RESEARCH REPORT ISSUED BY AN APPROVED SOURCE (ICC, IAPMO, ETC.).

4. REQUIRED SPECIAL INSPECTIONS AND TESTS OF SOILS

IBC TABLE 1705.6		
SPECIAL INSPECTION OR TEST TYPE	CONTINUOUS SPECIAL INSPECTION	PERIODIC SPECIAL INSPECTION
1. VERIFY MATERIALS BELOW SHALLOW FOUNDATIONS ARE ADEQUATE TO ACHIEVE THE DESIGN BEARING CAPACITY.	–	X
2. VERIFY EXCAVATIONS ARE EXTENDED TO PROPER DEPTH AND HAVE REACHED PROPER MATERIAL.	–	X
3. PERFORM CLASSIFICATION AND TESTING OF COMPACTED FILL MATERIALS.	–	X
4. VERIFY USE OF PROPER MATERIALS, DENSITIES AND LIFT THICKNESSES DURING PLACEMENT AND COMPACTION OF COMPACTED FILL.	X	–
5. PRIOR TO PLACEMENT OF COMPACTED FILL, INSPECT SUBGRADE AND VERIFY THAT SITE HAS BEEN PREPARED PROPERLY	–	X

5. REQUIRED SPECIAL INSPECTIONS AND TESTS OF DRIVEN DEEP FOUNDATION ELEMENTS

IBC TABLE 1705.7		
SPECIAL INSPECTION OR TEST TYPE	CONTINUOUS SPECIAL INSPECTION	PERIODIC SPECIAL INSPECTION
1. VERIFY ELEMENT MATERIALS, SIZES AND LENGTHS COMPLY WITH THE REQUIREMENTS.	X	–
2. DETERMINE CAPACITIES OF TEST ELEMENTS AND CONDUCT ADDI– TIONAL LOAD TESTS, AS REQUIRED.	X	–
3. INSPECT DRIVING OPERATIONS AND MAINTAIN COMPLETE AND ACCURATE RECORDS FOR EACH ELEMENT.	X	–
4. VERIFY PLACEMENT LOCATIONS AND PLUMBNESS, CONFIRM TYPE AND SIZE OF HAMMER, RECORD NUMBER OF BLOWS PER FOOT OF PENETRATION, DETERMINE REQUIRED PENETRATIONS TO ACHIEVE DESIGN CAPACITY, RECORD TIP AND BUTT ELEVATIONS AND DOCUMENT ANY DAMAGE TO FOUNDATION ELEMENT.	–	–
5. FOR STEEL ELEMENTS, PERFORM ADDITIONAL SPECIAL INSPEC– TIONS IN ACCORDANCE WITH SECTION 1705.2	–	–
6. FOR CONCRETE ELEMENTS AND CONCRETE–FILLED ELEMENTS, PERFORM TESTS AND ADDITIONAL SPECIAL INSPECTIONS IN ACCOR DANCE WITH SECTION 1705.3.	–	–
7. FOR SPECIALTY ELEMENTS, PERFORM ADDITIONAL INSPECTIONS AS DETERMINED BY THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE.	–	–

6. REQUIRED SPECIAL INSPECTIONS AND TESTS OF CAST–IN–PLACE DEEP FOUNDATION ELEMENTS

IBC TABLE 1705.8		
SPECIAL INSPECTION OR TEST TYPE	CONTINUOUS SPECIAL INSPECTION	PERIODIC SPECIAL INSPECTION
1. INSPECT DRILLING OPERATIONS AND MAINTAIN COMPLETE AND ACCURATE RECORDS FOR EACH ELEMENT.	X	–
2. VERIFY PLACEMENT LOCATIONS AND PLUMBNESS, CONFIRM ELEMENT DIAMETERS, BELL DIAMETERS (IF APPLICABLE), LENGTHS, EMBEDMENT INTO BEDROCK (IF APPLICABLE) AND ADEQUATE END–BEARING STRATA CAPACITY. RECORD CONCRETE OR GROUT VOLUMES.	–	–
3. FOR CONCRETE ELEMENTS, PERFORM TESTS AND ADDITIONAL SPECIAL INSPECTIONS IN ACCORDANCE WITH SECTION 1705.3.	–	–

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KENT, WA 98032

CORE ONE CONSULTING USA
13555 SE 36TH ST, SUITE 100
BELLEVUE, WA 98006

PROJECT NO: 2152U248
DRAWN BY: SAM
CHECKED BY: L.C.

SUBMITTALS

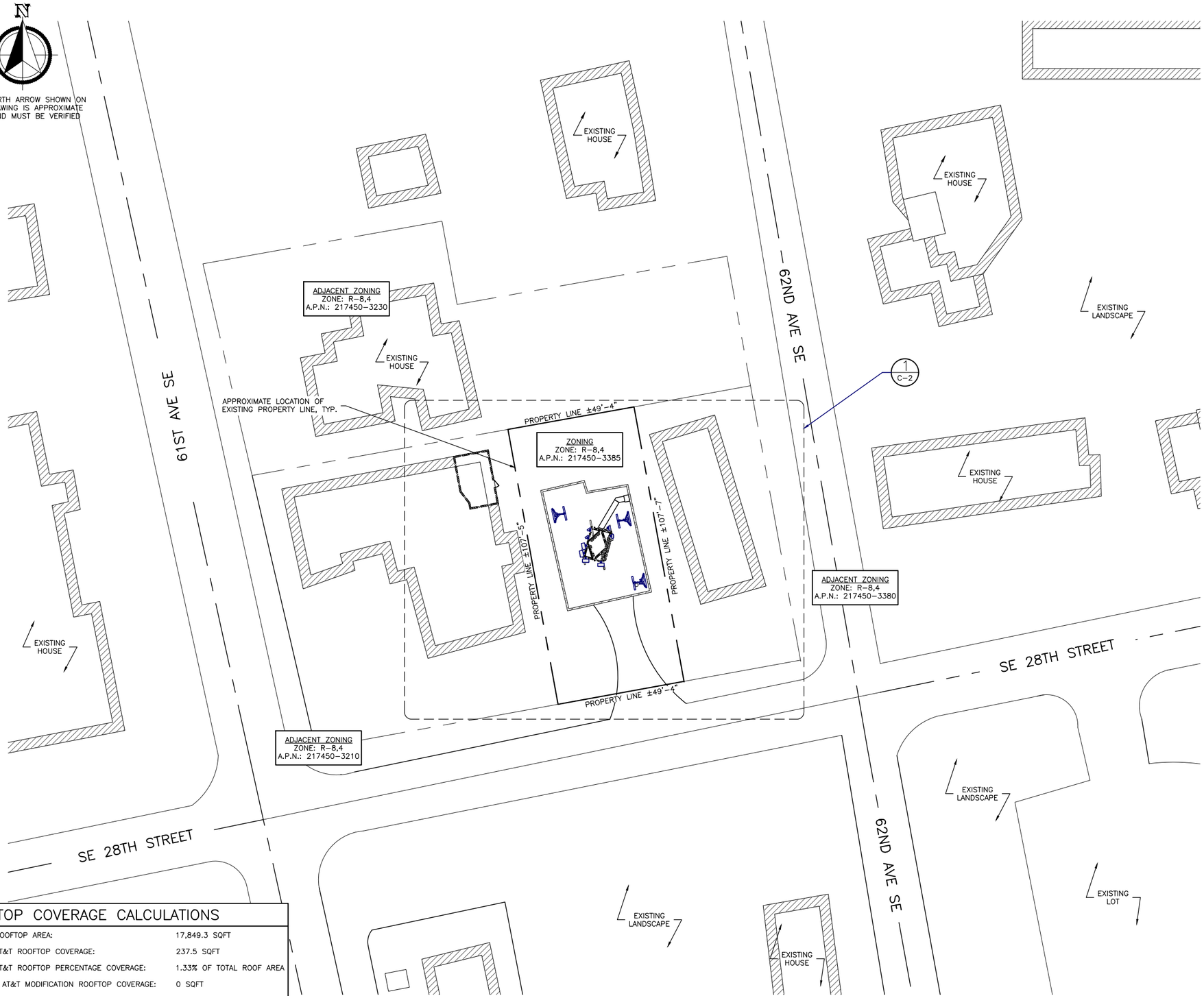
0	NOV 22/21	FINAL CD'S	MP
C	NOV 15/21	RF SIGNAGE ADDED	MP
B	OCT 28/21	REVISED PER MASTEC	MP
A	SEPT 02/21	ISSUED FOR 90% REVIEW	SAM

SITE
WEST MERCER
SD17
2748 61ST AVE SE
MERCER ISLAND, WA
98040

FA #: 10092302

SHEET TITLE
GENERAL NOTES III

SHEET NUMBER
GN-3



1 SITE PLAN
1"=10'-0" 22x34
1"=20'-0" 11x17
0 5' 10' 20'

NOTES:

1. SITE PLAN INFORMATION OBTAINED FROM DRAWINGS PREPARED BY MASTEC NETWORK SOLUTIONS, DATED 05/01/2020.
2. CONTRACTOR TO SITE VERIFY ALL DIMENSIONS AND CONDITIONS PRIOR TO CONSTRUCTION. REPORT ANY DISCREPANCIES TO THE ENGINEER.
3. THIS DRAWING DOES NOT REPRESENT A SURVEY.

LEGAL DESCRIPTION

EAST SEATTLE ADD LOT 35 LESS E 11 FT THOF & LOT 36 LESS W 10FT THOF AKA LOT B MERCER ISLAND BLA 85-09-18 (B1) REC NO 8601029001

PROPERTY OWNER

ISLAND TERRACE APARTMENTS LLC

CONTACT: T.B.D.
PHONE: T.B.D

ROOFTOP COVERAGE CALCULATIONS

EXISTING ROOFTOP AREA:	17,849.3 SQFT
EXISTING AT&T ROOFTOP COVERAGE:	237.5 SQFT
EXISTING AT&T ROOFTOP PERCENTAGE COVERAGE:	1.33% OF TOTAL ROOF AREA
PROPOSED AT&T MODIFICATION ROOFTOP COVERAGE:	0 SQFT
TOTAL OF EXISTING AND PROPOSED AT&T INSTALLATION ROOFTOP COVERAGE:	74 SQFT
TOTAL ROOFTOP PERCENTAGE COVERAGE OF EXISTING AND PROPOSED AT&T INSTALLATION:	0.49% OF TOTAL ROOF AREA

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AS-BUILT SEAL
MICHAEL B. LEEPER
STATE OF WASHINGTON
56058
REGISTERED
PROFESSIONAL ENGINEER

SITE
WEST MERCER
SD17
2748 61ST AVE SE
MERCER ISLAND, WA
98040

FA #: 10092302

SHEET TITLE
SITE PLAN

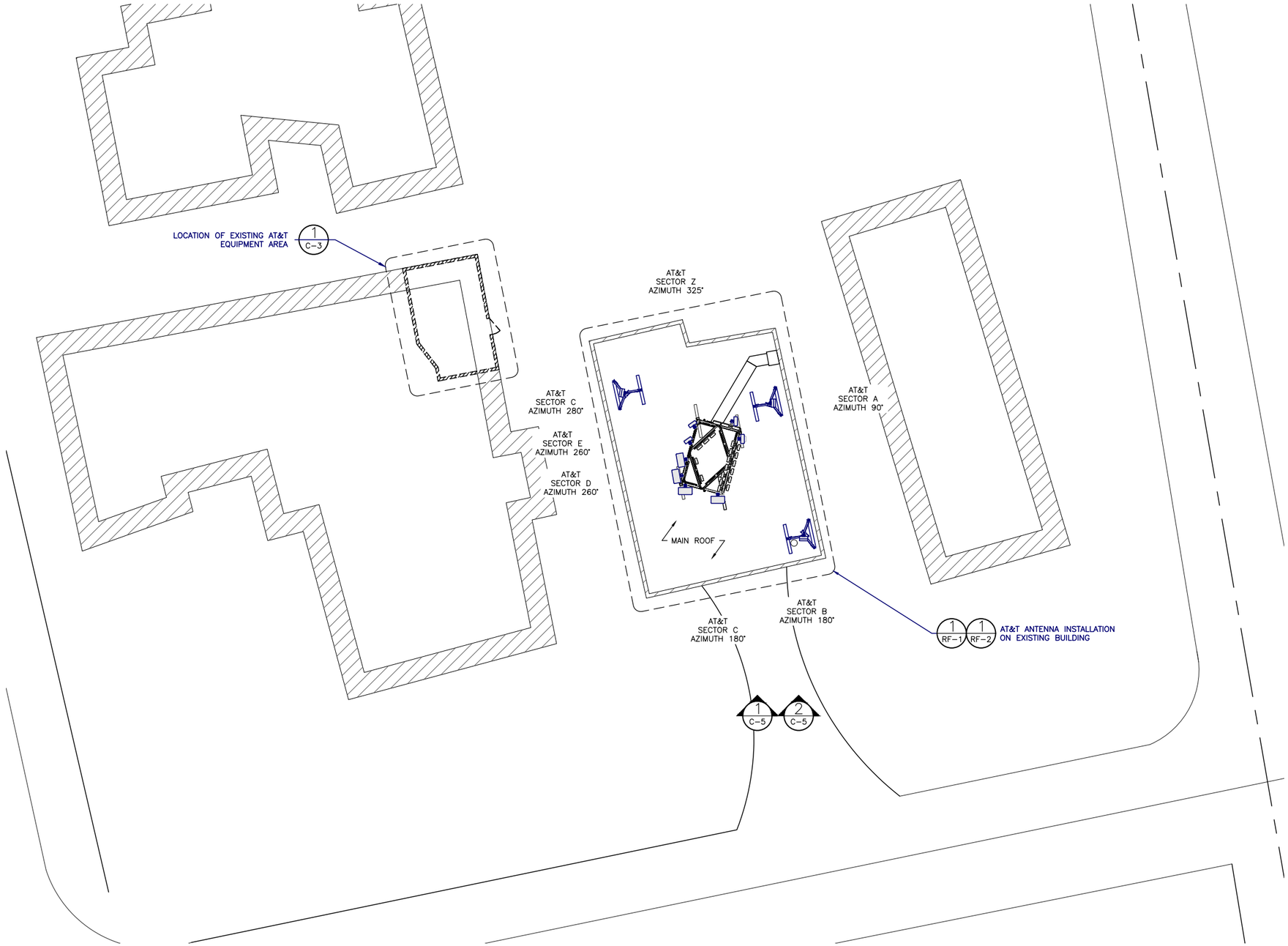
SHEET NUMBER
C-1

N

TRUE NORTH ARROW SHOWN ON THIS DRAWING IS APPROXIMATE ONLY AND MUST BE VERIFIED

NOTES:

1. ROOF PLAN INFORMATION OBTAINED FROM DRAWINGS PREPARED BY MASTEC NETWORK SOLUTIONS, DATED 05/01/2020..
2. CONTRACTOR TO SITE VERIFY ALL DIMENSIONS AND CONDITIONS PRIOR TO CONSTRUCTION. REPORT ANY DISCREPANCIES TO THE ENGINEER.



1 ROOF PLAN
1"=10'-0" (22x34) 1"=20'-0" (11x17)
0 5' 10' 20'

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FA #: 10092302

SHEET TITLE
ROOF PLAN

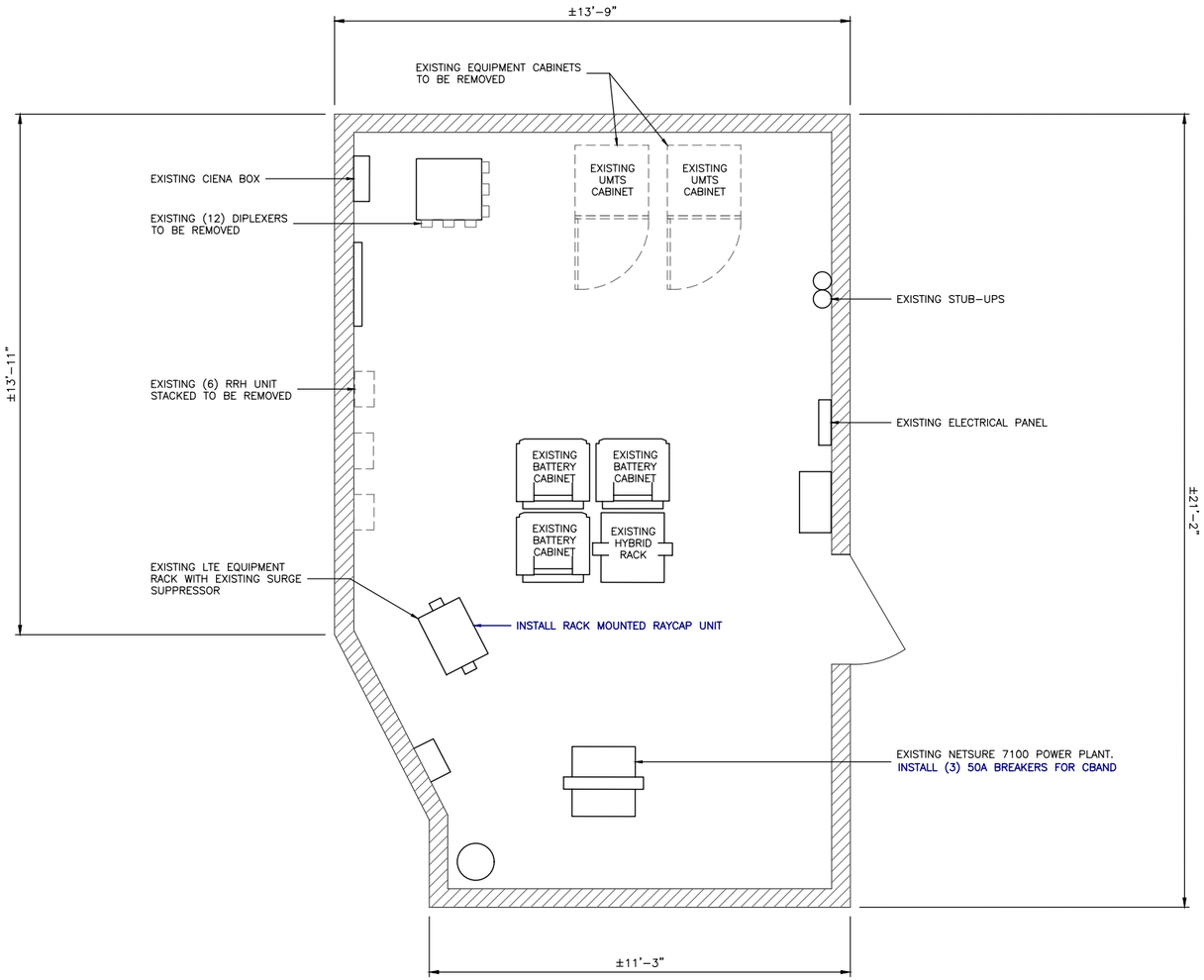
SHEET NUMBER
C-2

N

TRUE NORTH ARROW SHOWN ON THIS DRAWING IS APPROXIMATE ONLY AND MUST BE VERIFIED

NOTES:

1. EQUIPMENT LAYOUT INFORMATION OBTAINED FROM DRAWINGS PREPARED BY MASTEC NETWORK SOLUTIONS, DATED 05/01/2020.
2. CONTRACTOR TO SITE VERIFY ALL DIMENSIONS AND CONDITIONS PRIOR TO CONSTRUCTION. REPORT ANY DISCREPANCIES TO THE ENGINEER.



1 EQUIPMENT LAYOUT

1"=1'-0" 22x34 | 1/2"=1'-0" 11x17

0 1' 2'

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SUBMITTALS

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FA #: 10092302

SHEET TITLE

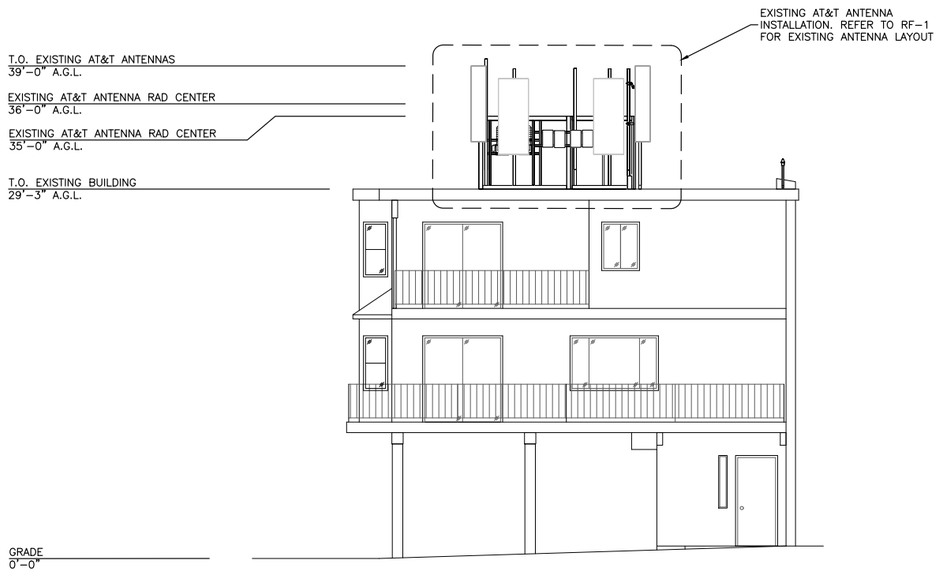
EQUIPMENT LAYOUT

SHEET NUMBER

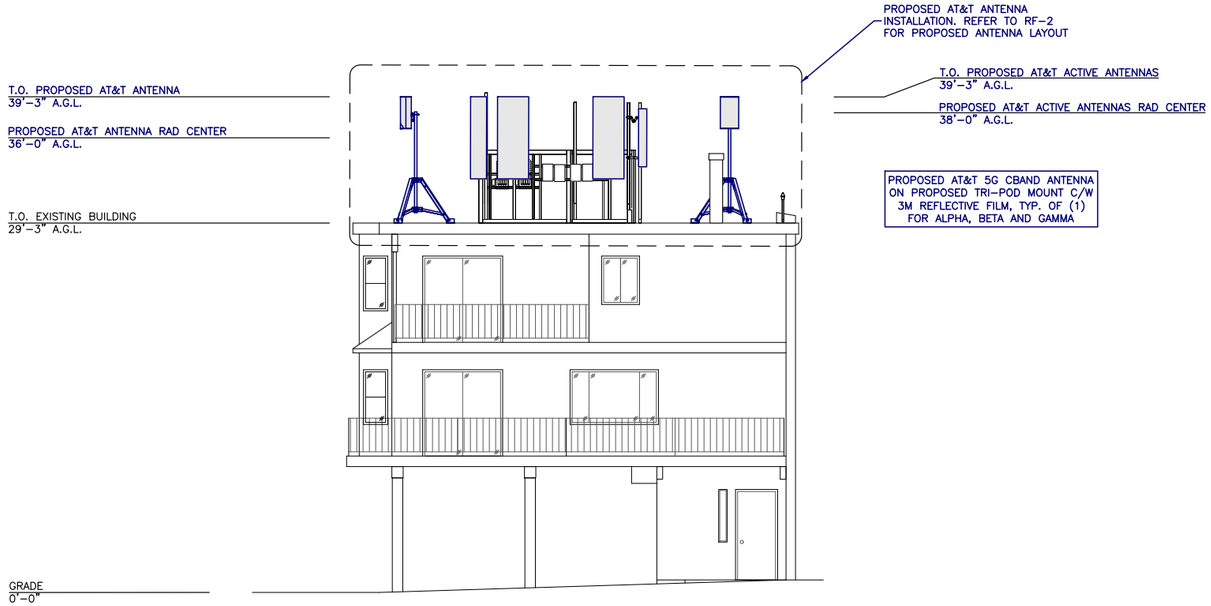
C-3

NOTE:

1. ELEVATION IS DIAGRAMMATIC ONLY.



1 EXISTING NORTHWEST ELEVATION
N.T.S.



2 PROPOSED NORTHWEST ELEVATION
N.T.S.

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FA #: 10092302

SHEET TITLE
EXISTING & PROPOSED NORTHWEST ELEVATIONS

SHEET NUMBER
C-4

EXISTING ANTENNA CONFIGURATION AND SCHEDULE

SECTOR A	AZIMUTH	RADCENTER	NUMBER OF ANTENNAS	VENDOR	MODEL	ELEC. TILT	MECH. TILT	RET	TMA	RRH COUNT	RRH MODEL NO.	NUMBER OF FEEDERS	FEEDER TYPE	FEEDER LENGTH	DIPLEXED	EQUIPMENT
LTE 850	90°	36'-0"	1	CCI	HPA-65R-BUU-H4	2°	0°	NO	(1) SDARS REMOTE	1	RRH4X25-WCS-4R	2	COAX	150'-0"±	NO	(1) EXISTING DC6-48-60-18-8F
5G 850						2°	0°					1	FIBER	150'-0"±		
LTE WCS						2°	0°			1	RRH 4T4R B5 160W AHCA	2	DC POWER	150'-0"±		
UMTS 850						2°	0°									
LTE 700	90°	36'-0"	1	CCI	TPA65R-BU4A	2°	0°	NO	NONE	1	RRH 4T4R B12/14 320W AHLBA	1	FIBER	150'-0"±	NO	(1) EXISTING DC6-48-60-18-8F
700 FN						2°	0°			1	RRH 4T4R B25/66 320W AHFIB					
LTE 1900						2°	0°									
LTE AWS						2°	0°									

SECTOR B	AZIMUTH	RADCENTER	NUMBER OF ANTENNAS	VENDOR	MODEL	ELEC. TILT	MECH. TILT	RET	TMA	RRH COUNT	RRH MODEL NO.	NUMBER OF FEEDERS	FEEDER TYPE	FEEDER LENGTH	DIPLEXED	EQUIPMENT
LTE 700	180°	35'-0"	1	TENXC	BSA-M65R-BUU-H6	2°	0°	NO	(1) SDARS REMOTE	1	RRH4X25-WCS-4R	2	COAX	150'-0"±	NO	–
700 FN						2°	0°									
LTE 850						4°	0°			1	RRH 4T4R B12/14 320W AHLBA	1	FIBER	150'-0"±		
5G 850						4°	0°			1	RRH 4T4R B25/66 320W AHFIB					
LTE 1900						2°	0°					2	DC POWER	150'-0"±		
LTE AWS						2°	0°			1	RRH 4T4R B5 160W AHCA					
LTE WCS																
UMTS 850																

SECTOR C	AZIMUTH	RADCENTER		VENDOR	MODEL	ELEC. TILT	MECH. TILT	RET	TMA	RRH COUNT	RRH MODEL NO.	NUMBER OF FEEDERS	FEEDER TYPE	FEEDER LENGTH	DIPLEXED	EQUIPMENT
LTE 700	180°	35'-0"	1	TENXC	BSA-M65R-BUU-H6	2°	0°	NO	(1) SDARS REMOTE	1	RRH4X25-WCS-4R	2	COAX	150'-0"±	NO	–
700 FN						2°	0°									
LTE 850						2°	0°			1	RRH 4T4R B12/14 320W AHLBA	1	FIBER	150'-0"±		
5G 850						2°	0°			1	RRH 4T4R B25/66 320W AHFIB					
LTE 1900						2°	0°					2	DC POWER	150'-0"±		
LTE AWS						2°	0°			1	RRH 4T4R B5 160W AHCA					
LTE WCS																
UMTS 850																

SECTOR D	AZIMUTH	RADCENTER		VENDOR	MODEL	ELEC. TILT	MECH. TILT	RET	TMA	RRH COUNT	RRH MODEL NO.	NUMBER OF FEEDERS	FEEDER TYPE	FEEDER LENGTH	DIPLEXED	EQUIPMENT
LTE 700	260°	35'-0"	1	TENXC	BSA-M65R-BUU-H6	2°	0°	NO	(1) SDARS REMOTE	1	RRH4X25-WCS-4R	2	COAX	150'-0"±	NO	–
700 FN						2°	0°									
LTE 850						4°	0°			1	RRH 4T4R B12/14 320W AHLBA	1	FIBER	150'-0"±		
5G 850						4°	0°			1	RRH 4T4R B25/66 320W AHFIB					
LTE 1900						2°	0°					2	DC POWER	150'-0"±		
LTE AWS						2°	0°			1	RRH 4T4R B5 160W AHCA					
LTE WCS																
UMTS 850																

SECTOR E	AZIMUTH	RADCENTER		VENDOR	MODEL	ELEC. TILT	MECH. TILT	RET	TMA	RRH COUNT	RRH MODEL NO.	NUMBER OF FEEDERS	FEEDER TYPE	FEEDER LENGTH	DIPLEXED	EQUIPMENT
LTE 700	260°	36'-0"	1	TENXC	BSA-M65R-BUU-H6	2°	0°	NO	(1) SDARS REMOTE	1	RRH4X25-WCS-4R	2	COAX	150'-0"±	NO	–
700 FN						2°	0°									
LTE 850						2°	0°			1	RRH 4T4R B12/14 320W AHLBA	1	FIBER	150'-0"±		
5G 850						2°	0°			1	RRH 4T4R B25/66 320W AHFIB					
LTE 1900						2°	0°					2	DC POWER	150'-0"±		
LTE AWS						2°	0°			1	RRH 4T4R B5 160W AHCA					
LTE WCS																
UMTS 850																

SECTOR Z	AZIMUTH	RADCENTER	NUMBER OF ANTENNAS	VENDOR	MODEL	ELEC. TILT	MECH. TILT	RET	TMA	RRH COUNT	RRH MODEL NO.	NUMBER OF FEEDERS	FEEDER TYPE	FEEDER LENGTH	DIPLEXED	EQUIPMENT
LTE 850	325°	36'-0"	1	CCI	HPA-65R-BUU-H4	3°	0°	NO	(1) SDARS REMOTE	1	RRH4X25-WCS-4R	2	COAX	150'-0"±	NO	–
5G 850						4°	0°					1	FIBER	150'-0"±		
LTE WCS						4°	0°			1	RRH 4T4R B5 160W AHCA	2	DC POWER	150'-0"±		
UMTS 850						3°	0°									
LTE 700	325°	36'-0"	1	CCI	TPA65R-BU4A	3°	0°	NO	NONE	1	RRH 4T4R B12/14 320W AHLBA	1	FIBER	150'-0"±	NO	(1) EXISTING DC6-48-60-18-8F
700 FN						3°	0°			1	RRH 4T4R B25/66 320W AHFIB					
LTE 1900						4°	0°									
LTE AWS						3°	0°									

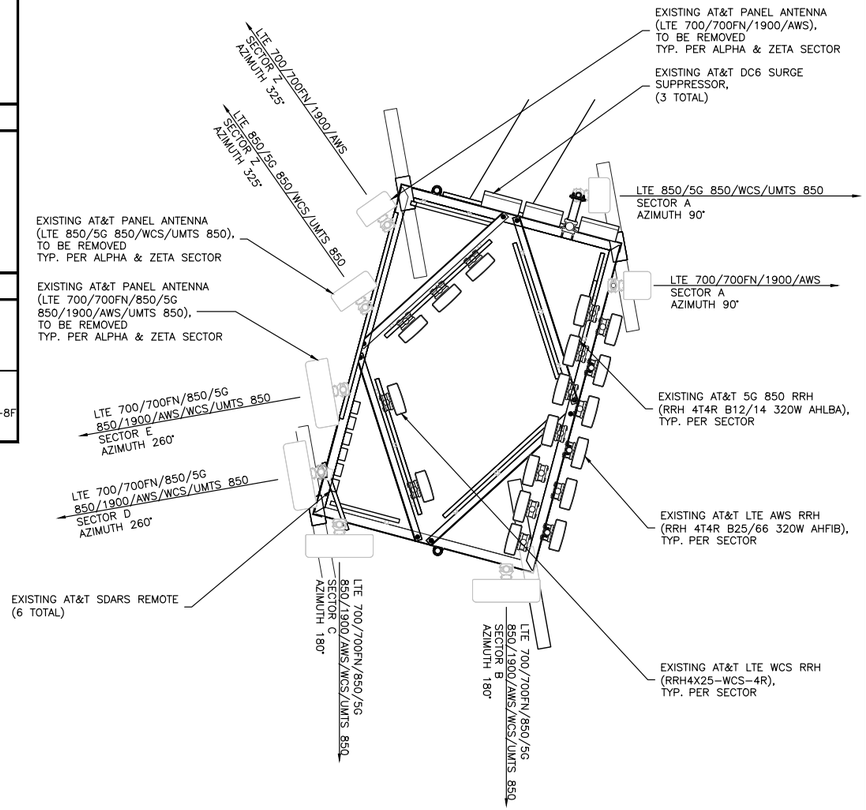
EXISTING ANTENNA CONFIGURATION AND SCHEDULE DATA WAS OBTAINED FROM AT&T RF DATA SHEET (DATED 17/21/2021) RFDS VERSION 2.0

N

TRUE NORTH ARROW SHOWN ON THIS DRAWING IS APPROXIMATE ONLY AND MUST BE VERIFIED

NOTES:

1. EXISTING ANTENNA LAYOUT INFORMATION OBTAINED FROM DRAWINGS PREPARED BY MASTEC NETWORK SOLUTIONS, DATED 05/01/2020.
2. CONTRACTOR TO SITE VERIFY ALL DIMENSIONS AND CONDITIONS PRIOR TO CONSTRUCTION. REPORT ANY DISCREPANCIES TO THE ENGINEER.



1 EXISTING ANTENNA CONFIGURATION
3/4"=1'-0" 22x34
3/8"=1'-0" 11x17
0 1' 2'

at&t
AT&T MOBILITY
RTC BUILDING 3
18221 NE 72nd WAY
REDMOND, WA 98052

MasTec
Network Solutions
22263 68th AVE S
KENT, WA 98032

CORE ONE CONSULTING USA
13555 SE 36TH ST, SUITE 100
BELLEVUE, WA 98006

PROJECT NO: 2152U248

DRAWN BY: SAM

CHECKED BY: L.C.

SUBMITTALS

0	NOV 22/21	FINAL CD'S	MP
C	NOV 15/21	RF SIGNAGE ADDED	MP
B	OCT 28/21	REVISED PER MASTEC	MP
A	SEPT 02/21	ISSUED FOR 90% REVIEW	SAM

AS-BUILT SEAL
MICHAEL B. LEEPER
STATE OF WASHINGTON
56058
REGISTERED
PROFESSIONAL ENGINEER

SITE
WEST MERCER
SD17
2748 61ST AVE SE
MERCER ISLAND, WA
98040

FA #: 10092302

SHEET TITLE
EXISTING ANTENNA CONFIGURATIONS

SHEET NUMBER
RF-1

PROPOSED ANTENNA CONFIGURATION AND SCHEDULE

SECTOR A	AZIMUTH	RADCENTER	NUMBER OF ANTENNAS	VENDOR	MODEL	ELEC. TILT	MECH. TILT	RET	TMA	RRH COUNT	RRH MODEL NO.	NUMBER OF FEEDERS	FEEDER TYPE	FEEDER LENGTH	DIPLEXED	EQUIPMENT
LTE 850	90°	36'-0"	1	COMMSCOPE	NNHH-65A-R4	2°	0°	NO	(1) SDARS REMOTE	1	RRH4X25-WCS-4R	2	COAX	150'-0"±	NO	(1) EXISTING DC6-48-60-18-8F
5G 850						2°	0°			1	RRH 4T4R B5 160W AHCA	1	FIBER	150'-0"±		
LTE WCS						2°	0°					2	DC POWER	150'-0"±		
LTE 700	90°	36'-0"	1	COMMSCOPE	NNHH-65A-R4	2°	0°	NO	NONE	1	RRH 4T4R B12/14 320W AHLBA	1	FIBER	150'-0"±	NO	(1) EXISTING DC6-48-60-18-8F
LTE 1900						2°	0°									
LTE AWS						2°	0°			1	RRH 4T4R B25/66 320W AHFIB					
5G 1900						2°	0°									
5G CBAND	90°	36'-0"	1	NOKIA	AEQK	0°	0°	NO	NONE	–	INTEGRATED RADIO	–	–	–	–	(1) PROPOSED DC6-48-60-18
SECTOR B	AZIMUTH	RADCENTER	NUMBER OF ANTENNAS	VENDOR	MODEL	ELEC. TILT	MECH. TILT	RET	TMA	RRH COUNT	RRH MODEL NO.	NUMBER OF FEEDERS	FEEDER TYPE	FEEDER LENGTH	DIPLEXED	EQUIPMENT
LTE 850	180°	36'-0"	1	COMMSCOPE	2NN2HH-33B-R4	2°	0°	NO	(1) SDARS REMOTE	1	RRH4X25-WCS-4R	2	COAX	150'-0"±	NO	–
5G 850						2°	0°									
LTE WCS						2°	0°			1	RRH 4T4R B5 160W AHCA	1	FIBER	150'-0"±		
LTE 700						4°	0°									
LTE 1900						4°	0°			1	RRH 4T4R B12/14 320W AHLBA					
LTE AWS						2°	0°					2	DC POWER	150'-0"±		
5G 1900						2°	0°			1	RRH 4T4R B25/66 320W AHFIB					
5G CBAND	180°	36'-0"	1	NOKIA	AEQK	0°	0°	NO	NONE	–	INTEGRATED RADIO	–	–	–	–	(1) PROPOSED DC6-48-60-18
SECTOR C	AZIMUTH	RADCENTER	NUMBER OF ANTENNAS	VENDOR	MODEL	ELEC. TILT	MECH. TILT	RET	TMA	RRH COUNT	RRH MODEL NO.	NUMBER OF FEEDERS	FEEDER TYPE	FEEDER LENGTH	DIPLEXED	EQUIPMENT
LTE 850	180°	36'-0"	1	COMMSCOPE	2NN2HH-33B-R4	2°	0°	NO	(1) SDARS REMOTE	1	RRH4X25-WCS-4R	2	COAX	150'-0"±	NO	–
5G 850						2°	0°									
LTE WCS						2°	0°			1	RRH 4T4R B5 160W AHCA	1	FIBER	150'-0"±		
LTE 700						2°	0°									
LTE 1900						2°	0°			1	RRH 4T4R B12/14 320W AHLBA					
LTE AWS						2°	0°					2	DC POWER	150'-0"±		
5G 1900						2°	0°			1	RRH 4T4R B25/66 320W AHFIB					
5G CBAND	280°	36'-0"	1	NOKIA	AEQK	0°	0°	NO	NONE	–	INTEGRATED RADIO	–	–	–	–	(1) PROPOSED DC6-48-60-18
SECTOR D	AZIMUTH	RADCENTER	NUMBER OF ANTENNAS	VENDOR	MODEL	ELEC. TILT	MECH. TILT	RET	TMA	RRH COUNT	RRH MODEL NO.	NUMBER OF FEEDERS	FEEDER TYPE	FEEDER LENGTH	DIPLEXED	EQUIPMENT
LTE 850	260°	36'-0"	1	COMMSCOPE	2NN2HH-33B-R4	2°	0°	NO	(1) SDARS REMOTE	1	RRH4X25-WCS-4R	2	COAX	150'-0"±	NO	–
5G 850						2°	0°									
LTE WCS						2°	0°			1	RRH 4T4R B5 160W AHCA	1	FIBER	150'-0"±		
LTE 700						2°	0°									
LTE 1900						2°	0°			1	RRH 4T4R B12/14 320W AHLBA					
LTE AWS						2°	0°					2	DC POWER	150'-0"±		
5G 1900						2°	0°			1	RRH 4T4R B25/66 320W AHFIB					
SECTOR E	AZIMUTH	RADCENTER	NUMBER OF ANTENNAS	VENDOR	MODEL	ELEC. TILT	MECH. TILT	RET	TMA	RRH COUNT	RRH MODEL NO.	NUMBER OF FEEDERS	FEEDER TYPE	FEEDER LENGTH	DIPLEXED	EQUIPMENT
LTE 850	260°	36'-0"	1	COMMSCOPE	2NN2HH-33B-R4	2°	0°	NO	(1) SDARS REMOTE	1	RRH4X25-WCS-4R	2	COAX	150'-0"±	NO	–
5G 850						2°	0°									
LTE WCS						2°	0°			1	RRH 4T4R B5 160W AHCA	1	FIBER	150'-0"±		
LTE 700						2°	0°									
LTE 1900						2°	0°			1	RRH 4T4R B12/14 320W AHLBA					
LTE AWS						2°	0°					2	DC POWER	150'-0"±		
5G 1900						2°	0°			1	RRH 4T4R B25/66 320W AHFIB					
SECTOR Z	AZIMUTH	RADCENTER	NUMBER OF ANTENNAS	VENDOR	MODEL	ELEC. TILT	MECH. TILT	RET	TMA	RRH COUNT	RRH MODEL NO.	NUMBER OF FEEDERS	FEEDER TYPE	FEEDER LENGTH	DIPLEXED	EQUIPMENT
LTE 850	325°	36'-0"	1	COMMSCOPE	NNHH-45A-R4	2°	0°	NO	(1) SDARS REMOTE	1	RRH4X25-WCS-4R	2	COAX	150'-0"±	NO	
5G 850						2°	0°					1	FIBER	150'-0"±		
LTE WCS						2°	0°			1	RRH 4T4R B5 160W AHCA	2	DC POWER	150'-0"±		
LTE 700	325°	36'-0"	1	COMMSCOPE	NNHH-45B-R4	2°	0°	NO	NONE	1	RRH 4T4R B12/14 320W AHLBA	1	FIBER	150'-0"±	NO	(1) EXISTING DC6-48-60-18-8F
LTE 1900						2°	0°									
LTE AWS						2°	0°			1	RRH 4T4R B25/66 320W AHFIB					
5G 1900						2°	0°									

PROPOSED ANTENNA CONFIGURATION AND SCHEDULE DATA WAS OBTAINED FROM AT&T RF DATA SHEET (DATED 07/21/2021) RFDS VERSION 2.0

SCOPE OF WORK

- INSTALL (3) PROPOSED TRI-POD ANTENNA MOUNT FOR NEW ACTIVE ANTENNAS.
- INSTALL (1) PROPOSED NOKIA AEQK ACTIVE ANTENNA c/w INTEGRATED RADIO, TYP. PER ALPHA, BETA AND GAMMA SECTOR ONLY.
- INSTALL (3) REFLECTIVE FILMS ON ACTIVE ANTENNAS.
- INSTALL (3) PROPOSED DC-6 SURGE SUPPRESSOR.
- INSTALL (3) PROPOSED 6/6 DC TRUNK CABLE AND (3) PROPOSED 12 PAIR FIBER CABLE FROM PENTHOUSE EQUIPMENT LOCATION TO ANTENNAS.
- INSTALL 2ND CPRI CONNECTION FOR ALL BANDS/RADIOS

VERIFICATION THAT THE EXISTING ANTENNA MOUNTS ARE CAPABLE OF SUPPORTING THE PROPOSED ANTENNA LOADING IS TO BE PROVIDED PRIOR TO ANY EQUIPMENT MODIFICATION.

STRUCTURAL ANALYSIS AND DESIGN TO BE COMPLETED PRIOR TO FINAL CONSTRUCTION DESIGN COMPLETION

MOUNT ALL PROPOSED EQUIPMENT AS PER MANUFACTURER'S RECOMMENDATIONS

NOTES:

1. EXISTING ANTENNA LAYOUT INFORMATION OBTAINED FROM DRAWINGS PREPARED BY MASTEC NETWORK SOLUTIONS, DATED 05/01/2020.
2. CONTRACTOR TO SITE VERIFY ALL DIMENSIONS AND CONDITIONS PRIOR TO CONSTRUCTION. REPORT ANY DISCREPANCIES TO THE ENGINEER.

at&t
AT&T MOBILITY
RTC BUILDING 3
18221 NE 72nd WAY
REDMOND, WA 98052

MasTec
Network Solutions
22263 68th AVE S
KENT, WA 98032

CORE ONE CONSULTING USA
13555 SE 36TH ST, SUITE 100
BELLEVUE, WA 98006

PROJECT NO: 2152U248

DRAWN BY: SAM

CHECKED BY: L.C.

SUBMITTALS

0	NOV 22/21	FINAL CD'S	MP
C	NOV 15/21	RF SIGNAGE ADDED	MP
B	OCT 28/21	REVISED PER MASTEC	MP
A	SEPT 02/21	ISSUED FOR 90% REVIEW	SAM

SITE
WEST MERCER
SD17
2748 61ST AVE SE
MERCER ISLAND, WA
98040

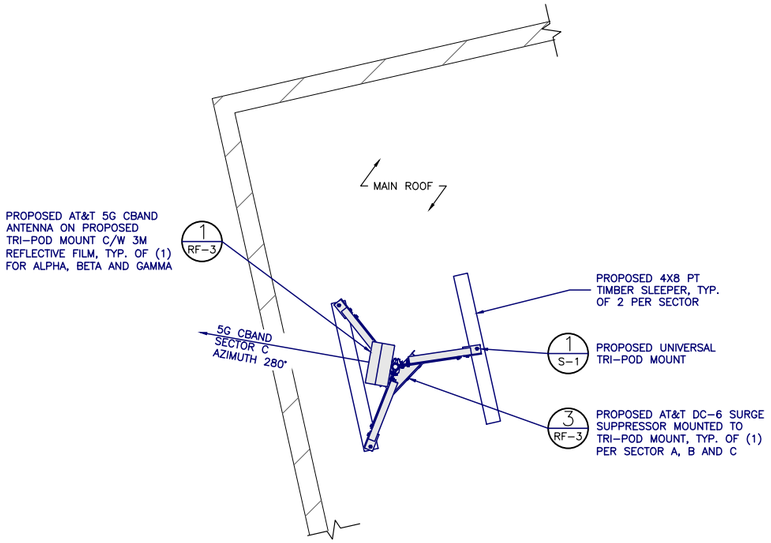
FA #: 10092302

SHEET TITLE
PROPOSED ANTENNA CONFIGURATIONS I

SHEET NUMBER
RF-2.1

N

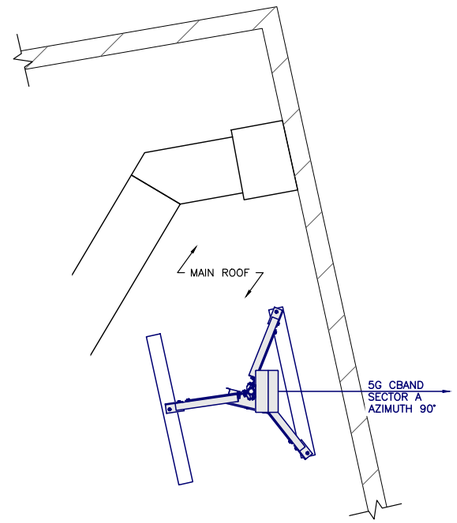
TRUE NORTH ARROW SHOWN ON THIS DRAWING IS APPROXIMATE ONLY AND MUST BE VERIFIED



1 – PROPOSED CBAND ANTENNA CONFIGURATION – SECTOR C

3/4"=1'-0" (22x34) 3/8"=1'-0" (11x17)

0 1' 2'



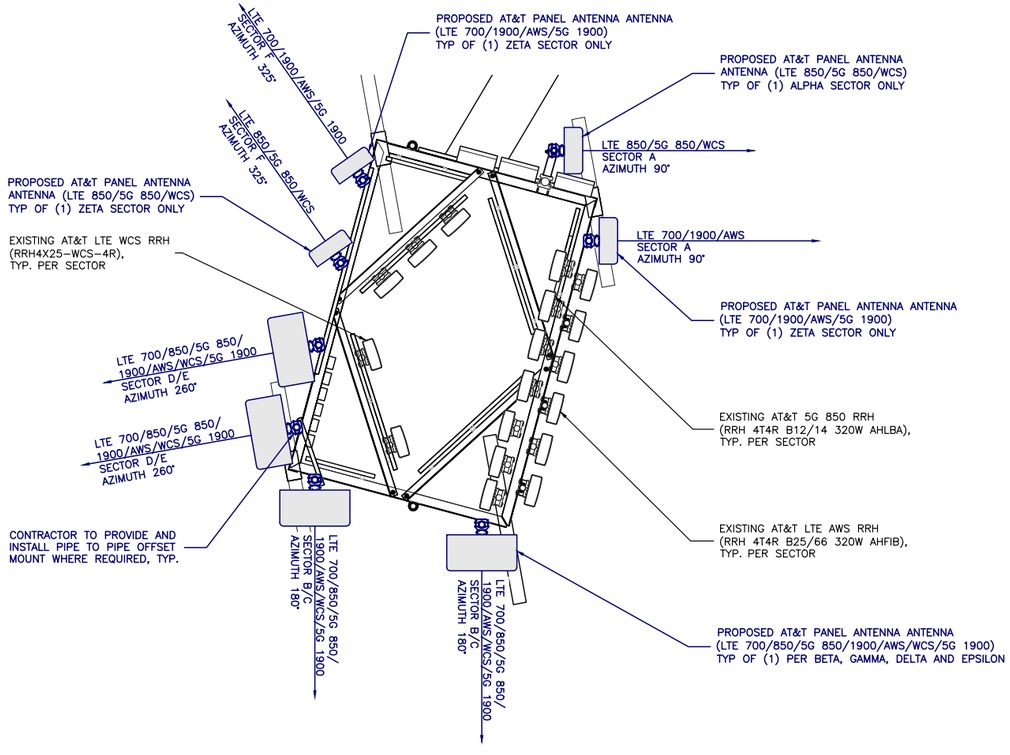
2 – PROPOSED CBAND ANTENNA CONFIGURATION – SECTOR A

3/4"=1'-0" (22x34) 3/8"=1'-0" (11x17)

0 1' 2'

NOTES:

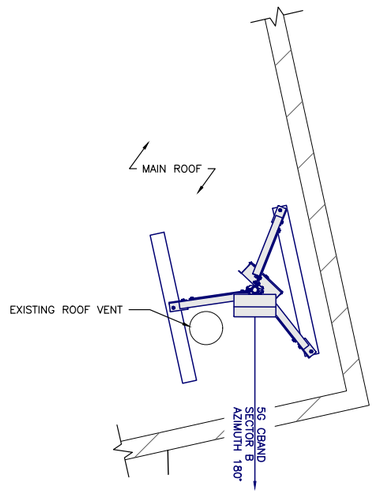
1. EXISTING ANTENNA LAYOUT INFORMATION OBTAINED FROM DRAWINGS PREPARED BY CORE ONE CONSULTING, USA LTD., DATED 01/04/2021.
2. CONTRACTOR TO SITE VERIFY ALL DIMENSIONS AND CONDITIONS PRIOR TO CONSTRUCTION. REPORT ANY DISCREPANCIES TO THE ENGINEER.



3 – PROPOSED ANTENNA CONFIGURATION AT FRP SCREEN

3/4"=1'-0" (22x34) 3/8"=1'-0" (11x17)

0 1' 2'



4 – PROPOSED CBAND ANTENNA CONFIGURATION – SECTOR B

3/4"=1'-0" (22x34) 3/8"=1'-0" (11x17)

0 1' 2'

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RTC BUILDING 3
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MasTec
Network Solutions

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KENT, WA 98032

CORE ONE CONSULTING USA

13555 SE 36TH ST, SUITE 100
BELLEVUE, WA 98006

PROJECT NO: 2152U248

DRAWN BY: SAM

CHECKED BY: L.C.

SUBMITTALS

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B	OCT 28/21	REVISED PER MASTEC	MP
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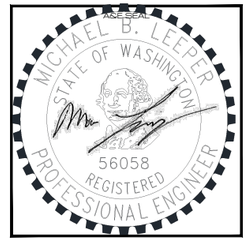


SITE

WEST MERCER
SD17
2748 61ST AVE SE
MERCER ISLAND, WA
98040

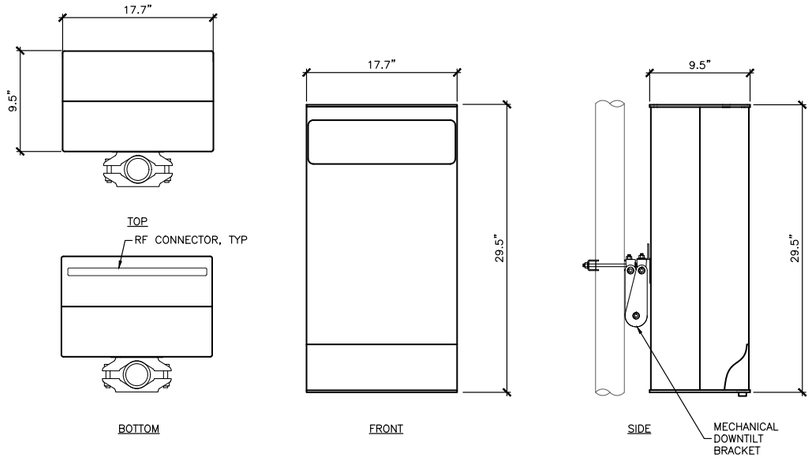
FA #: 10092302

SHEET TITLE

PROPOSED ANTENNA CONFIGURATIONS II

SHEET NUMBER

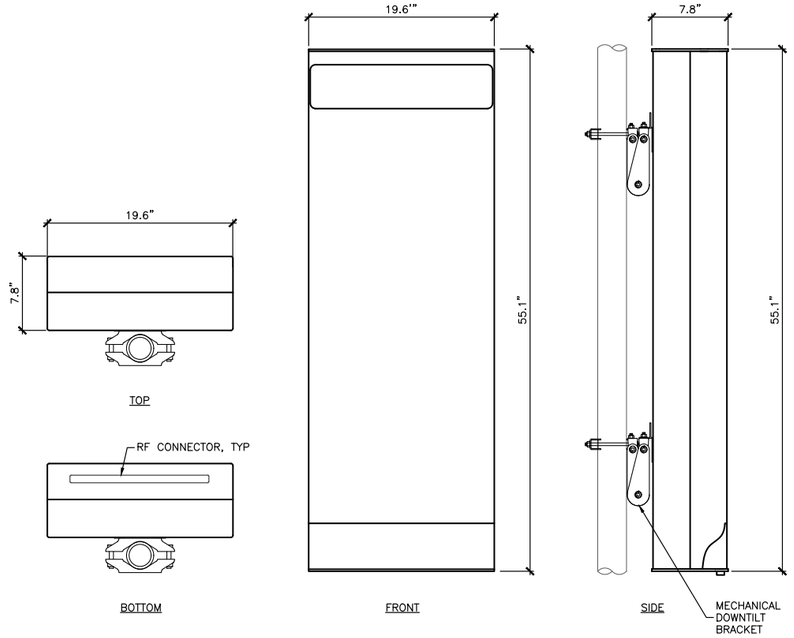
RF-2.2



MANUFACTURER:	NOKIA
MODEL:	AEQK
WEIGHT:	99.2 LBS
DIMENSIONS:	29.5" X 17.7" X 9.5"

***ASSUMED ANTENNA SKETCH ONLY WILL UPDATE WHEN INFORMATION IS RECEIVED

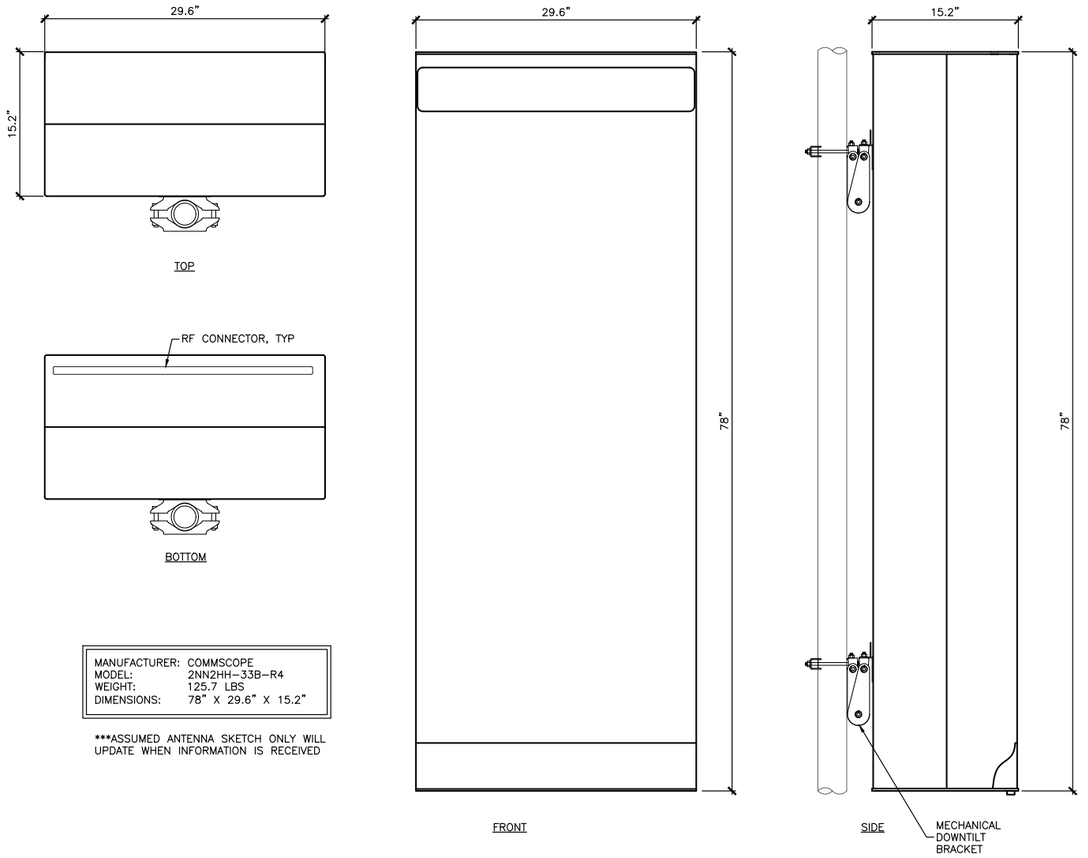
1 – C-BAND ANTENNA DETAIL
N.T.S.



MANUFACTURER:	COMMSCOPE
MODEL:	NNHH-65A-R4
WEIGHT:	68.3 LBS
DIMENSIONS:	55.1" X 19.6" X 7.8"

***ASSUMED ANTENNA SKETCH ONLY WILL UPDATE WHEN INFORMATION IS RECEIVED

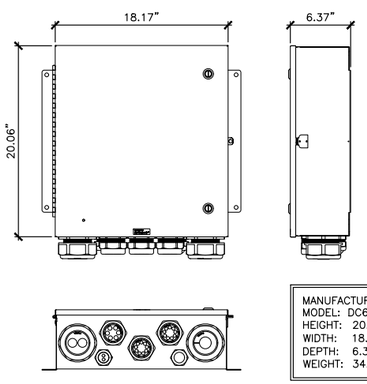
2 – ANTENNA DETAIL
N.T.S.



MANUFACTURER:	COMMSCOPE
MODEL:	2NN2HH-33B-R4
WEIGHT:	125.7 LBS
DIMENSIONS:	78" X 29.6" X 15.2"

***ASSUMED ANTENNA SKETCH ONLY WILL UPDATE WHEN INFORMATION IS RECEIVED

3 – ANTENNA DETAIL
N.T.S.



MANUFACTURER:	RAYCAP
MODEL:	DC6-48-60-18
HEIGHT:	20.06"
WIDTH:	18.17"
DEPTH:	6.37"
WEIGHT:	34.9 LBS

4 – SURGE SUPPRESSOR DETAIL
N.T.S.

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CHECKED BY: L.C.

SUBMITTALS

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SITE

WEST MERCER
SD17
2748 61ST AVE SE
MERCER ISLAND, WA
98040

FA #: 10092302

SHEET TITLE

RF & EQUIPMENT DETAILS

SHEET NUMBER

RF-3

NOTICE

Beyond This Point you are entering a controlled area where RF emissions *may exceed* the FCC General Population Exposure Limits.

Follow all posted signs and site guidelines for working in a RF environment.

Ref: 47CFR 1.1307(b)

at&t

CAUTION

Beyond This Point you are entering a controlled area where RF emissions *may exceed* the FCC Occupational Exposure Limits.

Obey all posted signs and site guidelines for working in a RF environment.

Ref: 47CFR 1.1307(b)

at&t

ALERTING SIGNS

WARNING!

DANGER DO NOT TOUCH TOWER!

SERIOUS "RF" BURN HAZARD!

MAINTAIN AN ADEQUATE CLEARANCE BETWEEN TOWER SUPPORTS AND GUY WIRES

FAILURE TO OBEY ALL POSTED SIGNS AND SITE GUIDELINES FOR WORKING IN A RADIO FREQUENCY ENVIRONMENT COULD RESULT IN SERIOUS INJURY. CONTACT CURRENT MAY EXCEED LIMITS PRESCRIBED IN ANSI/EEE C95.1-1992 FOR CONTROLLED ENVIRONMENTS.

at&t

ALERTING SIGN

at&t

PROPERTY OF AT&T

AUTHORIZED
PERSONNEL ONLY

IN CASE OF EMERGENCY, OR PRIOR TO PERFORMING MAINTENANCE ON THIS SITE, CALL 800-638-2822 AND REFERENCE CELL SITE NUMBER_____

INFO SIGN #4

INFORMATION

AT&T operates telecommunications antennas at this location. Remain at least 3 feet away from any antenna and obey all posted signs.

Contact the owner(s) of the antenna(s) before working closer than 3 feet from the antenna.

Contact AT&T at _____ prior to performing any maintenance or repairs near AT&T antennas. This is Site#_____

Contact the management office if this door/hatch/gate is found unlocked.

INFORMACION

En esta propiedad se ubican antenas de telecomunicationes operadas por AT&T. Favor mantener una distancia de no menos de 3 pies y obedecer todos los avisos.

Comuniquese con el propictario o los propicatarios de las antenas antes de trabajar o caminar a una distancia de menos de 3 pies de la antena.

Comuniquese con AT&T _____antes de realizar cualquier mantenimiento o reparaciones cerca de la antenas de AT&T.

Esta es la estacion base numero_____

Favor comunicarse con la oficina de la administracion del edificio si esta puerta o compuerta se encuentra sin candado.

at&t

INFO SIGN #1

at&t

INFORMATION

ACTIVE ANTENNAS ARE MOUNTED

- ☐ ON THE OUTSIDE OF THIS BUILDING
- ☐ BEHIND THIS PANEL
- ☐ ON THIS STRUCTURE

STAY BACK A MINIMUM
OF 3 FEET
FROM THESE ANTENNAS

Contact AT&T at _____ and follow their instructions prior to performing any maintenance or repairs closer than 3 feet from the antennas.

This is AT&T site# _____

at&t

INFO SIGN #2

ALERTING SIGN
(FOR CELL SITE BATTERIES)

ALERTING SIGN
(FOR DIESEL FUEL)

ALERTING SIGN
(FOR PROPANE)

STAY BACK 3 FEET FROM ANTENNA

at&t

INFO SIGN #3

GENERAL SIGNAGE GUIDELINES

Structure Type	INFO SIGN #1	INFO SIGN #2	INFO SIGN #3
Towers			
Monopole/Monopine/Monopalm	entrance gates, shelter doors OR on the outdoor cabinets	climbing side of the Tower	On backside of Antennas
SDE Towers / Towers with high oltage	entrance gates, shelter doors OR on the outdoor cabinets	climbing side of the Tower	On backside of Antennas
Light Poles / Flag Poles	entrance gates, shelter doors OR on the outdoor cabinets	on the pole, no less than 3ft below the Antenna and no less than 9ft above ground	On backside of Antennas
Utility wood Poles (JPA)	entrance gates, shelter doors OR on the outdoor cabinets	on the pole, no less than 3ft below the Antenna and no less than 9ft above ground	On backside of Antennas
Microcells mounted on non-JPA poles	entrance gates, shelter doors OR on the outdoor cabinets	on the pole, no less than 3ft below the Antenna and no less than 9ft above ground	On backside of Antennas
Roof Tops			
At all access points to the roof	X		
On AntEnnas	X		
Concealed Antennas	X	X	
Antennas mounted facing outside the building	X	X	
Antennas on support structure	X	X	
Roof view Graph:			
Radiation area is within 3ft from antenna	X	adjacent to each antenna	
Radiation area is beyond 3ft from antenna		adjacent to each antenna	
Church Steeples	Access to steeple	adjacent to antennas if antennas are concealed	On backside of Antennas
Water Stations	Access to ladder	adjacent to antennas if antennas are concealed	On backside of Antennas

Notes for Rooftop sites:

1. Either NOTICE or CAUTION signes need to be posted at each sector as close as possible to: the outer edge of the striped off area or the outer antennas of the sector.
2. If Roofview shows: only blue + Notice Sign, blue and yellow = Caution Sign, only yellow = Caution Sign to be installed.

SIGNAGE GUIDELINES CHART

at&t

AT&T MOBILITY
RTC BUILDING 3
18221 NE 72nd WAY
REDMOND, WA 98052

MasTec
Network Solutions

22263 68th AVE S
KENT, WA 98032

CORE ONE CONSULTING USA

13555 SE 36TH ST, SUITE 100
BELLEVUE, WA 98006

PROJECT NO: 2152U248

DRAWN BY: SAM

CHECKED BY: L.C.

SUBMITTALS

0	NOV 22/21	FINAL CD'S	MP
C	NOV 15/21	RF SIGNAGE ADDED	MP
B	OCT 28/21	REVISED PER MASTEC	MP
A	SEPT 02/21	ISSUED FOR 90% REVIEW	SAM

ASE SEAL

MICHAEL B. LEEPER
STATE OF WASHINGTON
56058
REGISTERED
PROFESSIONAL ENGINEER

SITE

WEST MERCER
SD17
2748 61ST AVE SE
MERCER ISLAND, WA
98040

FA #: 10092302

SHEET TITLE

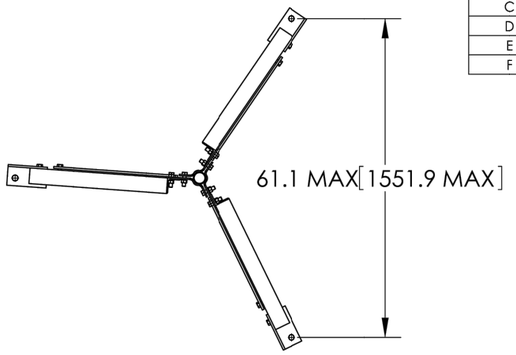
RF SIGNAGE DETAILS

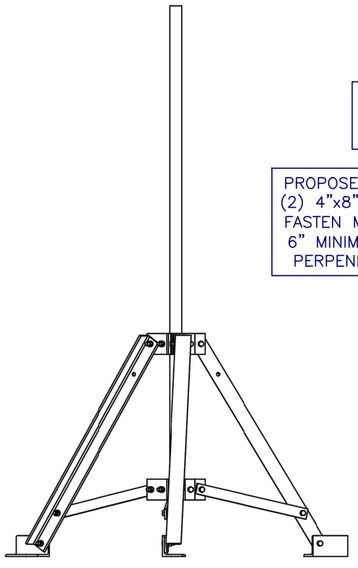
SHEET NUMBER

RF-4

ITEM	PART NO.	DESCRIPTION	TP-G238-B	TP-G238-72	TP-G238-96	TP-G238-126	WEIGHT
1	MT-651	2.375" OD x 72" PIPE	-	1	-	-	21.80 LBS
1	MT-651-96	∅2.375" OD X 96" PIPE	-	-	1	-	29.07 LBS
1	MT-537	∅2.375" OD x 126" PIPE	-	-	-	1	38.49 LBS
2	TPG238BHK	HARDWARE KIT (ITEMS 4-7)	1	1	1	1	-
3	TPG238B.02	2-3/8" TRIPOD CLAMP	6	6	6	6	2.64 LBS
4	TPG412B.04	TRIPOD BRACE	3	3	3	3	4.99 LBS
5	TPG412B.07	TRIPOD FOOT	3	3	3	3	5.84 LBS
6	TPG412B.03	TRIPOD LEG ANGLE	3	3	3	3	19.26 LBS
7	TPG238BH	HARDWARE KIT (ITEMS 8-9)	1	1	1	1	-
8	GB-05205	5/8" X 2" GALV BOLT KIT	12	12	12	12	0.27 LBS
9	GB-05225	5/8" X 2-1/4" GALV BOLT KIT	6	6	6	6	0.29 LBS

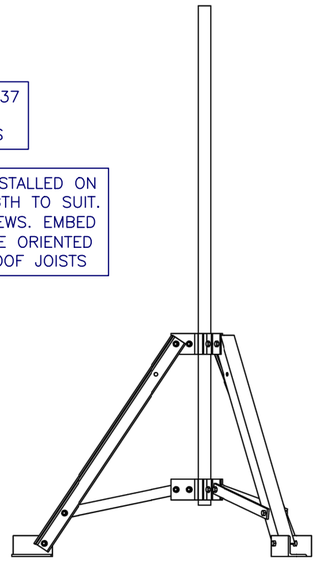
REVISIONS				
REV.	ZONE	DESCRIPTION	BY	DATE
B		REDRAWN & REVISED	DMW	05/29/01
C		UPDATE PART LIST	ACG	02/24/04
D		VIEWS ADDED, REDRAWN IN SOLIDWORKS	ACG	08/09/06
E		UPDATE TRIPOD KICKER LEG & TRIPOD FOOT	ACG	10/17/07
F		UPDATED KICKER LEG	DRR	02/28/13

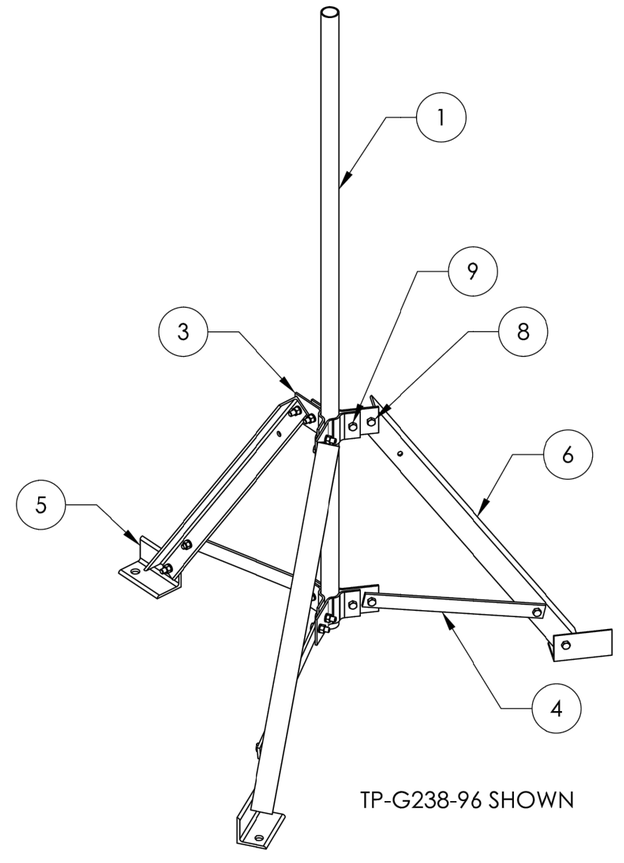




PIPE TO BE PART NO. MT–537
126" LONG PIPE FOR ALL
PROPOSED TRIPOD MOUNTS

PROPOSED TRIPOD MOUNTS TO BE INSTALLED ON (2) 4"x8" PT TIMBER SLEEPERS, LENGTH TO SUIT. FASTEN MOUNTS WITH 3/4" LAG SCREWS. EMBED 6" MINIMUM. TIMBER SLEEPERS TO BE ORIENTED PERPENDICULAR TO THE EXISTING ROOF JOISTS





TP-G238-96 SHOWN

NOTES:
1. ALL METRIC DIMENSIONS ARE IN BRACKETS.

ALL DIMENSIONS ARE IN INCHES U.O.S.
TOLERANCES UNLESS OTHERWISE SPECIFIED:
.X = ± .06 ANGLES ±2°
.XX = ± .03 FRACTIONS ±1/32
.XXX= ± .010
REMOVE BURRS AND BREAK EDGES .005
DO NOT SCALE THIS PRINT

DRAWN BY: ACG	SHEET: 1 of 1	PART NUMBER: TP-G238-Series	
CHECKED BY: TP	SCALE: NTS	DESCRIPTION: ∅2-3/8" O.D. PIPE MOUNT TRIPOD BASE	
DATE: 08/09/06	MATERIAL: A36, A53	DRAWING TYPE: ASSEMBLY DRAWING	
REVISION: F	FINISH: GALV A123	COMMSCOPE® Hickory, NC 28602 U.S.A.	
	WEIGHT: 142.02 LBS		

1 PROPOSED TRI–POD MOUNT DETAILS
N.T.S.

at&t
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CORE ONE CONSULTING USA
13555 SE 36TH ST, SUITE 100
BELLEVUE, WA 98006

PROJECT NO: 2152U248
DRAWN BY: SAM
CHECKED BY: L.C.

SUBMITTALS

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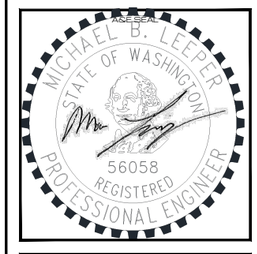

SITE
WEST MERCER
SD17
2748 61ST AVE SE
MERCER ISLAND, WA
98040
FA #: 10092302

SHEET TITLE
CONSTRUCTION DETAILS

SHEET NUMBER
S-1

GENERAL NOTES:

1. EXAMINE THE SITE CONDITIONS VERY CAREFULLY AND THE SCOPE OF PROPOSED WORK TOGETHER WITH THE WORK OF ALL OTHER TRADES AND INCLUDE IN THE BID PRICE ALL COSTS FOR WORK SUCH AS EQUIPMENT AND WIRING MADE NECESSARY TO ACCOMMODATE THE ELECTRICAL SYSTEMS SHOWN AND SYSTEMS OF OTHER TRADES.
2. SUBMITTAL OF BID INDICATES CONTRACTOR IS COGNIZANT OF ALL JOB SITE CONDITIONS AND WORK TO BE PERFORMED UNDER THIS CONTRACT
3. PERFORM DETAILED VERIFICATION OF WORK PRIOR TO ORDERING THE ELECTRICAL EQUIPMENT AND COMMENCING CONSTRUCTION. ISSUE A WRITTEN NOTICE TO THE CONSULTANT OF ANY DISCREPANCIES.
4. OBTAIN ALL PERMITS, PAY ASSOCIATED FEES AND SCHEDULE INSPECTION.
5. PROVIDE ALL LABOR, MATERIAL, EQUIPMENT, INSURANCE, AND SERVICES TO COMPLETE THIS PROJECT IN ACCORDANCE WITH THE CONTRACT DOCUMENTS AND PRESENT IT AS FULLY OPERATIONAL TO THE SATISFACTION OF THE OWNER.
6. CARRY OUT WORK IN ACCORDANCE WITH ALL GOVERNING STATE, COUNTY AND LOCAL CODES AND O.S.H.A.
7. PRIOR TO BEGINNING WORK COORDINATE ALL POWER AND TELCO WORK WITH THE LOCAL UTILITY COMPANY AS IT MAY APPLY TO THIS SITE. ALL WORK TO COMPLY WITH THE RULES AND REGULATIONS OF THE UTILITIES INVOLVED.
8. FABRICATION AND INSTALLATION OF THE COMPLETE ELECTRICAL SYSTEM SHALL BE DONE IN A FIRST CLASS WORKMANSHIP PER NECA STANDARD 1–2000 BY QUALIFIED PERSONNEL EXPERIENCED IN SUCH WORK AND SHALL SCHEDULE THE WORK IN AN ORDERLY MANNER SO AS NOT TO IMPEDE PROGRESS OF THE PROJECT.
9. DURING PROGRESS OF THE WORK, MAINTAIN AN ACCURATE RECORD OF THE INSTALLATION OF THE ELECTRICAL SYSTEMS, LOCATING EACH CIRCUIT PRECISELY AND DIMENSIONING EQUIPMENT, CONDUIT AND CABLE LOCATIONS. UPON COMPLETION OF THE INSTALLATION, TRANSFER ALL RECORD DATA TO BLACK LINE PRINTS OF THE ORIGINAL DRAWINGS AND SUBMIT THESE DRAWINGS AS RECORD DRAWINGS TO THE CONSULTANT.
10. COMPLETE JOB SHALL BE GUARANTEED FOR A PERIOD OF ONE (1) YEAR AFTER THE DATE OF JOB ACCEPTANCE BY OWNER. ANY WORK, MATERIAL, OR EQUIPMENT FOUND TO BE FAULTY DURING THAT PERIOD SHALL BE CORRECTED AT ONCE UPON WRITTEN NOTIFICATION, AT THE EXPENSE OF THE CONTRACTOR.
11. GENERAL CONTRACTOR IS RESPONSIBLE FOR REQUESTING CONNECTION OF COMMERCIAL POWER FROM THE POWER COMPANY. ELECTRICAL CONTRACTOR SHALL COORDINATE THIS WORK WITH THE GENERAL CONTRACTOR.
12. COORDINATE EXACT TELEPHONE REQUIREMENTS AND SERVICE ROUTING WITH LOCAL TELEPHONE COMPANY. APPLY FOR TELEPHONE SERVICE IMMEDIATELY UPON AWARD OF CONTRACT.

BASIC MATERIALS AND METHODS:

1. ALL ELECTRICAL WORK SHALL CONFORM TO THE EDITION OF THE NEC ACCEPTED BY THE LOCAL JURISDICTION AND TO THE APPLICABLE LOCAL CODES AND REGULATIONS.
2. ALL MATERIALS AND EQUIPMENT SHALL BE NEW. MATERIALS AND EQUIPMENT SHALL BE THE STANDARD PRODUCTS OF MANUFACTURER'S CURRENT DESIGN. ANY FIRST–CLASS PRODUCT MADE BY A REPUTABLE MANUFACTURER MAY BE USED PROVIDING IT CONFORMS TO THE CONTRACT REQUIREMENTS AND MEETS THE APPROVAL OF THE CONSULTANT AND THE OWNER.
3. ARRANGE CONDUIT, WIRING, EQUIPMENT, AND OTHER WORK GENERALLY AS SHOWN, PROVIDING PROPER CLEARANCES AND ACCESS. CAREFULLY EXAMINE ALL CONTRACT DRAWINGS AND FIT THE WORK IN EACH LOCATION WITHOUT SUBSTANTIAL ALTERATION. WHERE DEPARTURES ARE PROPOSED BECAUSE OF FIELD CONDITIONS OR OTHER CAUSES, PREPARE AND SUBMIT DETAILED DRAWINGS FOR ACCEPTANCE.
4. THE CONTRACT DRAWINGS ARE GENERALLY DIAGRAMMATIC AND ALL OFFSETS, BENDS, FITTINGS AND ACCESSORIES ARE NOT NECESSARILY SHOWN. PROVIDE ALL SUCH ITEMS AS MAY BE REQUIRED TO FIT THE WORK TO THE CONDITIONS.
5. MAINTAIN ALL CLEARANCES AS REQUIRED BY NEC.
6. SEAL AROUND CONDUITS AND AROUND CONDUCTORS WITHIN CONDUITS ENTERING THE MODULAR CABINETS WHERE PENETRATION OCCURS WITH A SILICONE SEALANT TO PREVENT MOISTURE PENETRATION INTO BUILDING.
7. SILICONE SEAL AROUND ALL BOLTS AND SCREWS USED TO SECURE EQUIPMENT TO EXTERIOR OF BUILDING.
8. MAKE NECESSARY CONNECTIONS FOR BATTERY IN EMERGENCY LIGHT FIXTURE. CONNECT EXTERIOR LIGHT FIXTURE (PROVIDED BY SHELTER MANUFACTURER) TO EXTERNAL JUNCTION BOX.

CONDUCTORS AND CONNECTORS:

1. UNLESS NOTED OTHERWISE, ALL CONDUCTORS SHALL BE COPPER, MINIMUM SIZE #12 AWG, WITH THERMOPLASTIC INSULATION CONFORMING TO NEMA WC5 OR CROSS–LINKED POLYETHYLENE INSULATION CONFORMING TO NEMA WC7. (TYPES THHN OR THWN). INSULATION SHALL BE RATED FOR 90 CONDUCTORS SHALL BE COLOR CODED IN ACCORDANCE WITH NEC.
2. ALL CONDUCTORS USED FOR GROUNDING SHALL BE COPPER AND SHALL HAVE GREEN INSULATION.
3. FOR COPPER CONDUCTORS #6 AWG AND SMALLER USE 3M SCOTCH–LOK OR T&B STA–KON COMPRESSION TYPE CONNECTORS WITH INTEGRAL OR SEPARATE INSULATION CAPS. FOR COPPER CONDUCTORS LARGER THAN #6 AWG USE SOLDERLESS, IDENT HEX SCREW OR BOLT TYPE PRESSURE CONNECTORS OR DOUBLE COMPRESSION C–CLAMP CONNECTORS, UNLESS SPECIFIED OTHERWISE ON DRAWINGS.
4. UNLESS NOTED OTHERWISE ALL LUGS SHALL BE TIN PLATED COPPER, TWO–HOLE, LONG BARREL, COMPRESSION TYPE.

RACEWAYS AND BOXES:

1. ALL CONDUIT SHALL BE UL LABELED.
2. ALL EMPTY CONDUITS INSTALLED FOR FUTURE USE SHALL HAVE A PULL CORD.
3. SHEET METAL BOXES SHALL CONFORM TO NEMA OS1; CAST–METAL BOXES SHALL CONFORM TO NEMA 81 AND SHALL BE SIZED IN ACCORDANCE WITH NEC UNLESS NOTED OTHERWISE.

GROUNDING:

1. ALL SAFETY GROUNDING OF THE ELECTRICAL EQUIPMENT SHALL BE CARRIED OUT IN ACCORDANCE WITH THE CURRENT REVISION NEC.
2. GROUND LUGS ARE SPECIFIED UNDER SECTION 3 "CONDUCTORS AND CONNECTORS".
3. ALL GROUND LUG AND COMPRESSION CONNECTIONS SHALL BE COATED WITH ANTI–OXIDANT AGENT, SUCH AS NO–OX, NOALOX, PENETROX OR KOPRSHIELD.
4. GROUND ALL EXPOSED METALLIC OBJECTS ON BUILDING EXTERIOR INCLUDING BUILDING TIE DOWN BRACKETS.
5. PROVIDE LOCK WASHERS FOR ALL MECHANICAL CONNECTIONS FOR GROUND CONDUCTORS. USE STAINLESS STEEL HARDWARE THROUGHOUT.
6. DO NOT INSTALL GROUND RING OUTSIDE OF PROPERTY LINE.
7. REMOVE ALL PAINT AND CLEAN ALL DIRT FROM SURFACES REQUIRING GROUND CONNECTIONS, REPAINT TO MATCH AFTER CONNECTION IS MADE TO MAINTAIN CORROSION RESISTANCE.
8. ALL EXTERIOR GROUNDING CONDUCTORS INCLUDING EXTERIOR GROUND RING SHALL BE #2 AWG SOLID BARE TINNED COPPER. MAKE ALL GROUND CONNECTIONS AS SHORT AND DIRECT AS POSSIBLE. AVOID SHARP BENDS. THE RADIUS OF ANY BEND SHALL NOT BE LESS THAN 8" AND THE ANGLE OF ANY BEND SHALL NOT EXCEED 90°. GROUNDING CONDUCTORS SHALL BE ROUTED DOWNWARD TOWARD THE BURIED GROUND RING.
9. REPAIR ALL GALVANIZED SURFACES THAT HAVE BEEN DAMAGED BY THERMO–WELDING WITH ERICO T–319 GALVANIZING BAR.
10. ALL GROUND CONNECTIONS SHALL BE APPROVED FOR THE METALS BEING CONNECTED.
11. ALL EXTERNAL GROUND CONNECTIONS SHALL BE EXOTHERMICALLY WELDED. ALL EXOTHERMIC WELDS TO EXTERIOR GROUND RING SHALL BE THE PARALLEL TYPE, EXCEPT FOR THE GROUND RODS WHICH ARE TEE EXOTHERMIC WELDS. REPAIR ALL GALVANIZED SURFACES THAT HAVE BEEN DAMAGED BY EXOTHERMIC WELDING. USE SPRAY GALVANIZER SUCH AS HOLUB LECTROSOL #15–501.
12. CONTRACTOR SHALL NOTIFY AT&T WHEN THE BURIED GROUND RING IS INSTALLED SO THE REPRESENTATIVE CAN INSPECT THE GROUND RING BEFORE IT IS BACKFILLED WITH SOIL. CONTACT: AT&T PROJECT MGR.
13. FOR METAL FENCE POST GROUNDING, USE A HEAVY DUTY TYPE GROUNDING CLAMP OR EXOTHERMIC WELD CONNECTION TO POST.
14. WHERE MECHANICAL CONNECTORS (TWO–HOLE OR CLAMP) ARE USED, APPLY A LIBERAL PROTECTIVE COATING OF AN ANTI–OXIDE COMPOUND SUCH AS "NO OXIDE A" BY DEARBORN CHEMICAL COMPANY ON ALL CONNECTORS.
15. BOND ALL EXTERIOR CONDUITS, PIPES AND CYLINDRICAL METALLIC OBJECTS WITH A PENN–UNION GT SERIES CLAMP, BLACKBURN GUV SERIES CLAMP OR A BURNDY GAR 3900BU SERIES CLAMP ONLY, NO SUBSTITUTES ACCEPTED.

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CORE ONE CONSULTING USA
13555 SE 36TH ST, SUITE 100
BELLEVUE, WA 98006

PROJECT NO: 2152U248

DRAWN BY: SAM

CHECKED BY: L.C.

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SD17
2748 61ST AVE SE
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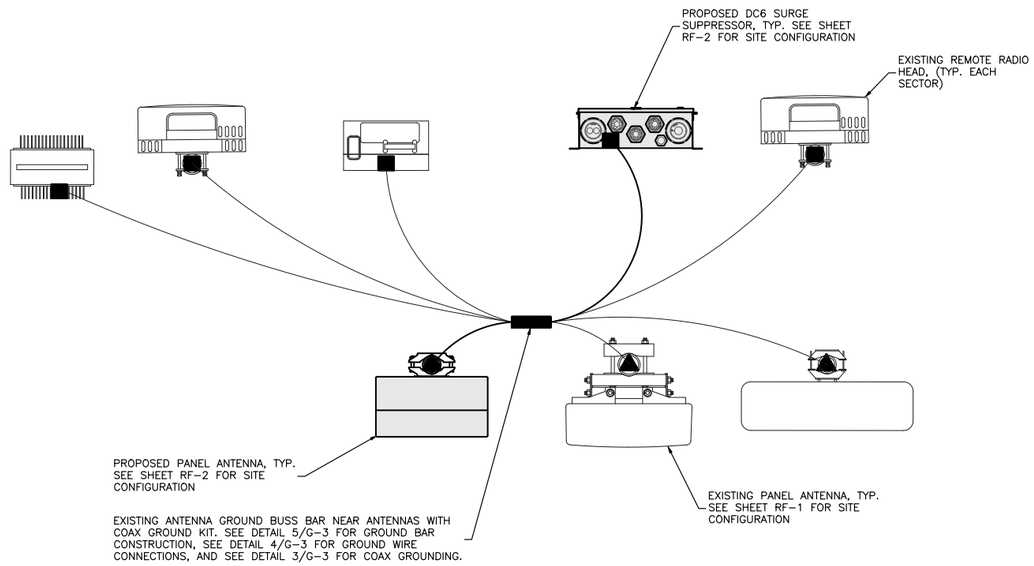
98040

FA #: 10092302

SHEET TITLE
GROUNDING NOTES

SHEET NUMBER
G-1



1 – TYPICAL ANTENNA GROUNDING PLAN
N.T.S.

GROUNDING NOTES:

1. ALL DETAILS ARE SHOWN IN GENERAL TERMS. ACTUAL INSTALLATION AND CONSTRUCTION MAY VARY DUE TO SITE SPECIFIC CONDITIONS.
2. 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.
3. ALL GROUND CONNECTIONS SHALL BE CADWELD. ALL WIRES SHALL BE COPPER THHN/THWN. ALL GROUND WIRE SHALL BE GREEN INSULATED WIRE ABOVE GROUND.
4. CONTRACTOR TO VERIFY AND TEST GROUND TO SOURCE. GROUNDING AND OTHER OPERATIONAL TESTING WILL BE WITNESSED BY NETWORK CARRIER REPRESENTATIVE.
5. REFER TO CURRENT NEL; GENERAL ELECTRICAL PROVISION AND COMPLY WITH ALL REQUIREMENTS OF GROUNDING STANDARDS.
6. ELECTRICAL CONTRACTOR TO PROVIDE DETAILED DESIGN OF GROUNDING SYSTEM, AND RECEIVE APPROVAL OF DESIGN BY AUTHORIZED AT&T MOBILITY REPRESENTATIVE, PRIOR TO INSTALLATION OF GROUNDING SYSTEM. PHOTO DOCUMENT ALL CADWELDS AND GROUND RING
7. NOTIFY CONSTRUCTION MANAGER IF THERE ARE ANY DIFFICULTIES INSTALLING GROUNDING SYSTEM DUE TO SITE SOIL CONDITIONS.

GROUNDING ROD NOTES:

1. ELECTRICAL CONTRACTOR SHALL ORDER GROUND RESISTANCE TESTING ONCE THE GROUND SYSTEM HAS BEEN INSTALLED; A QUALIFIED INDIVIDUAL, UTILIZING THE FALL OF POTENTIAL METHOD, SHOULD PERFORM THE TEST. THE REPORT WILL SHOW THE LOCATION OF THE TEST AND CONTAIN NO LESS THAN 9 TEST POINTS ALONG THE TESTING LINE, GRAPHED OUT TO SHOW THE PLATEAU.
2. 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.

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AFFIX SEAL

MICHAEL B. LEEPER
STATE OF WASHINGTON
56058
REGISTERED
PROFESSIONAL ENGINEER

SITE
WEST MERCER
SD17
2748 61ST AVE SE
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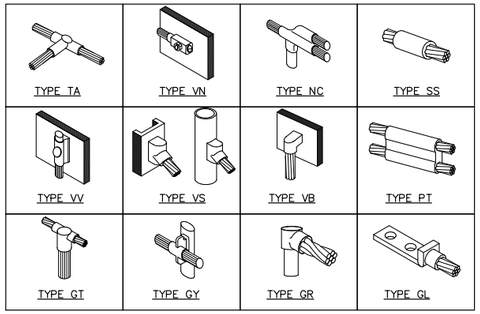
98040

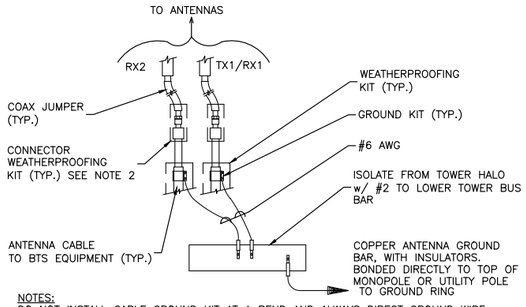
FA #: 10092302

SHEET TITLE
SCHEMATIC
GROUNDING PLAN

SHEET NUMBER
G-2



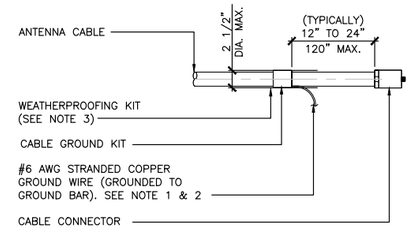
1 CADWELD GROUNDING CONNECTIONS
N.T.S.



NOTES:
DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO ANTENNA GROUND BAR.

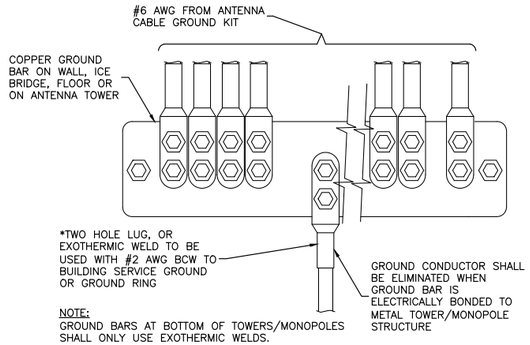
WEATHER PROOFING SHALL BE TWO-PART TAPE KIT. COLD SHRINK SHALL NOT BE USED.

2 GROUND CABLE CONNECTION
N.T.S.



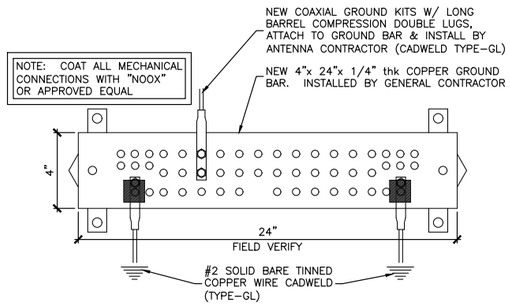
NOTES:
1. DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO GROUND BAR.
2. GROUNDING KIT SHALL BE TYPE AND PART NUMBER AS SUPPLIED OR RECOMMENDED BY CABLE MANUFACTURER.
3. WEATHER PROOFING SHALL BE TWO-PART TAPE KIT, COLD SHRINK SHALL NOT BE USED.

3 CABLE GROUND KIT CONNECTION
N.T.S.



NOTE:
GROUND BARS AT BOTTOM OF TOWERS/MONOPOLES SHALL ONLY USE EXOTHERMIC WELDS.

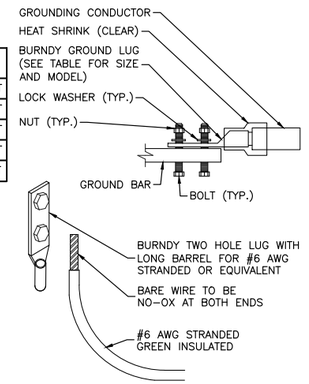
4 GROUND WIRE INSTALLATION
N.T.S.



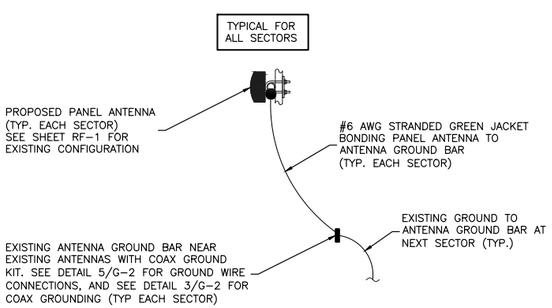
5 GROUND BAR
N.T.S.

WIRE SIZE	BURNDY LUG	BOLT SIZE
#6 AWG GREEN INSULATED	YA6C-2TC38	3/8" - 16 NC S 2 BOLT
#2 AWG SOLID TINNED	YA3C-2TC38	3/8" - 16 NC S 2 BOLT
#2 AWG STRANDED	YA2C-2TC38	3/8" - 16 NC S 2 BOLT
#2/0 AWG STRANDED	YA26-2TC38	3/8" - 16 NC S 2 BOLT
#4/0 AWG STRANDED	YA28-2N	1/2" - 16 NC S 2 BOLT

NOTES:
1. ALL HARDWARE BOLTS, NUTS, LOCK WASHERS SHALL BE STAINLESS STEEL. ALL HARDWARE ARE TO BE AS FOLLOWS: BOLT, FLAT WASHER, GROUND BAR, GROUND LUG, FLAT WASHER AND NUT.
2. COPPER SHIELD, ANTIOX, CR NO-OX OR EQUIVALENT SHALL BE PLACE WHERE ALL DISSIMILAR METALS CONNECT.
3. ALL LUGS ARE TO BE INSTALLED PER MANUFACTURER'S SPECIFICATIONS.



6 MECHANICAL LUG CONNECTION
N.T.S.



7 TYPICAL ANTENNA GROUNDING PLAN
N.T.S.

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56058
REGISTERED
PROFESSIONAL ENGINEER

SITE
WEST MERCER
SD17
2748 61ST AVE SE
MERCER ISLAND, WA
98040

FA #: 10092302

SHEET TITLE
GROUNDING DETAILS

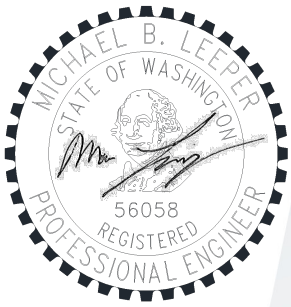
SHEET NUMBER
G-3

CORE ONE CONSULTING US LTD.
506 Second Avenue, Suite 1512
Seattle, Washington 98104

Structural Analysis
AT&T – 5G NR
November 23, 2021

Site Name	West Mercer
Site Number	SD17
FA #	10092302
PTN #	3801A0YF1Y
Pace #	MRWOR052670
Client	Mastec
Proposed Carrier	AT&T
Site Location	2748 61st Avenue Southeast Mercer Island, WA 98040 47.5855560° N NAD83 122.250833° W NAD83
Structure Type	Rooftop
Structural Usage Ratio	**80.0%**
Overall Result	**Pass**
Recommendation	--

Upon reviewing the results of this analysis, it is our opinion that the shelter supporting structure does meet the specified IBC/ASCE/TIA code and minimum design requirements. The existing structure is therefore deemed adequate to support the existing and proposed loading as listed in this report.



Summary of Contents

Assumptions and Limitations

Our structural calculations are completed assuming all information provided to CORE ONE CONSULTING USA is accurate and applicable to this site. For the purposes of calculations, we assume an overall structure condition of "like new" and all members and connections to be free of corrosion and/or structural defects. The structure owner and/or contractor shall verify the structure's condition prior to installation of any proposed equipment. If actual conditions differ from those described in this report CORE ONE CONSULTING USA should be notified immediately to complete a revised evaluation.

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

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

INTRODUCTION

At the request of **AT&T**, CORE ONE CONSULTING USA has performed a structural analysis for the existing antenna supporting structure. All supporting documents have been obtained from the client and are assumed to be accurate and applicable to this site. The structure was analyzed using Enercalc engineering software.

Supporting Documentation

Construction Drawing	Core One Consulting Site# SD17, Dated: 11/22/21
Previous Analysis	Mastec Site SD17, Dated 01/24/20
Proposed Loading	Core One Consulting Site# SD17, Dated: 11/22/21

Analysis Code Requirements

Wind Speed	98 mph (3-Second Gust)
Wind Speed w/ ice	30 mph (3-Second Gust) w/ 1" Ice
TIA	ANSI/TIA-222-H
ASCE	7-16
Structure Class	II
Exposure Category	C
Topographic Category	1
Calculated Crest Height	Kzt=1.00
Site Class	D- Stiff Soil
Spectral Response	Ss=1.403g, S1=0.488g

CONCLUSION

Upon reviewing the results of this analysis, it is our opinion that the shelter supporting structure does meet the specified IBC/ASCE/TIA code and minimum design requirements. The existing structure is therefore deemed adequate to support the existing and proposed loading as listed in this report.

Alexander Bazeley
Structural Engineering Lead | **Core One Consulting USA**
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Final Configuration

Mount Height (ft)	Qty.	Appurtenance	Mount type	Carrier
36.0	3	Nokia AEQK	Pipe	AT&T
	2	Commscope NNHH-65A-R4		
	1	Commscope NNHH-45A-R4		
	1	Commscope NNHH-45B-R4		
	4	Commscope 2NN2HH-33B-R4		
	6	Airscale RRH 4T4R B5		
	6	Alcatel Lucent RRH4x25-WCS-4R		
	6	Airscale RRH 4T4R B12/14		
	6	Airscale RRH 4T4R B25/66		
	6	TMA SDARS		
	6	Raycap DC6-48-60-18-8F		

Structure Usages Existing Frame

	Summary	
Rooftop*	80.0%	Pass
RATING =	80.0%	Pass

***Assumed (2-2x12 x 20.5' Long Roof joists spaced 2' O.C.)**

Structure Usages Proposed Tripod

	Summary	
Rooftop*	59.6%	Pass
RATING =	59.6%	Pass

***Assumed (2-2x12 x 20.5' Long Roof joists spaced 2' O.C.)**

Site Name	SD17
Client	Mastec
Carrier	ATT
Date	11/23/2021

Wind Loading Inputs:

		Design Wind Velocity:	98	ultimate 3-second gust	
		Exposure Category:	C		
		Adopted Building Code:	ASCE 7-16		
		Antenna Load Standard:	ASCE 7-16		
		Wind Centerline (ft):	36.00	ft	
		qz=	23.66		
Ice Wind	30	Cf=	2.00		
Ice Thickness	1	Gh=	1.00		
Fst_Ice(psf)	7.32	Fst (psf)=	47.32	Fp=	0.54

			Wind Force		Seismic Force	
Appurtenance Name	Total Quantity	Weight(lbs)	F-Norm (lbs)	F-Perp (lbs)	F-Norm (lbs)	F-Perp (lbs)
Nokia AEQK	3	99.2	102.9	56.5	53.4	53.4
COMMSCOPE_NNHH-65A-R4	2	67.2	215.4	99.0	36.2	36.2
Commscope NNHH-45A-R4	1	68.3	215.4	99.0	36.8	36.8
Commscope NNHH-45B-R4	1	68.3	215.4	99.0	36.8	36.8
Commscope 2NN2HH-33B-R4	4	125.7	457.5	256.5	67.7	67.7
ALCATEL LUCENT_RRH4X25-WCS_4R	6	91.0	90.7	78.9	49.0	49.0
Airscale_4T4R B5 160W AHCA	6	35.3	30.4	17.0	19.0	19.0
Airscale Dual 4T4R B12/14_AHLBA_	6	101.4	87.1	55.3	54.6	54.6
Airscale Dual 4T4R B25/66_AHFIB_	6	86.0	87.1	55.3	46.3	46.3
TMA SDARS	6	15.0	23.7	18.9	8.1	8.1
RAYCAP_DC6-48-60-18-8F	6	32.8	68.6	68.6	17.7	17.7

Seismic Loads

Latitude and longitude were determined from existing as-builts, customer records, and confirmed using GoogleEarth. Design spectral acceleration parameters were optained using NSHMP Hazard, a program by USGS for determining seismic values within the continental US. Input data and program output are provided at the end of this report.

Latitude:	47.58556	º
Longitude:	-122.2508	º

S_s =	1.403	g	Site Class:	D	
F_a =	1.20		Occupancy Category:	II	
S_{MS} =	1.684		Importance Factor, I:	1.00	
S_{DS} =	1.122		Seismic Design Catagory:	D	
S_1 =	0.488	g	Amplification Factor, a_p:	1.0	
F_v =	1.81		Response Factor, R_p:	2.5	
S_{M1} =	0.884		z =	36.0	ft
S_{D1} =	0.590		h =	36.0	ft

Telecommunication cabinets and radio equipment are non-structural components to be designed under the provisions of ASCE 7-16 chapter 13.

(ASCE 7-16 13.3-3) $F_{p,\min} = 0.3 S_{DS} I_p W_p$ = 0.337 w_p

(ASCE 7-16 13.3-1) $F_p = \dfrac{0.4 a_p S_{DS} W_p}{\left(\dfrac{R_p}{I_p}\right)}\left(1 + 2\dfrac{z}{h}\right)$ = 0.539 w_p

(ASCE 7-16 13.3-2) $F_{p,\max} = 1.6 S_{DS} I_p W_p$ = 1.796 w_p

Use F_p = 0.539 *wp*

Core One Consulting USA
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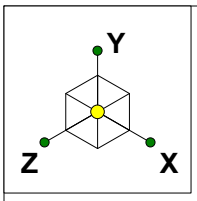
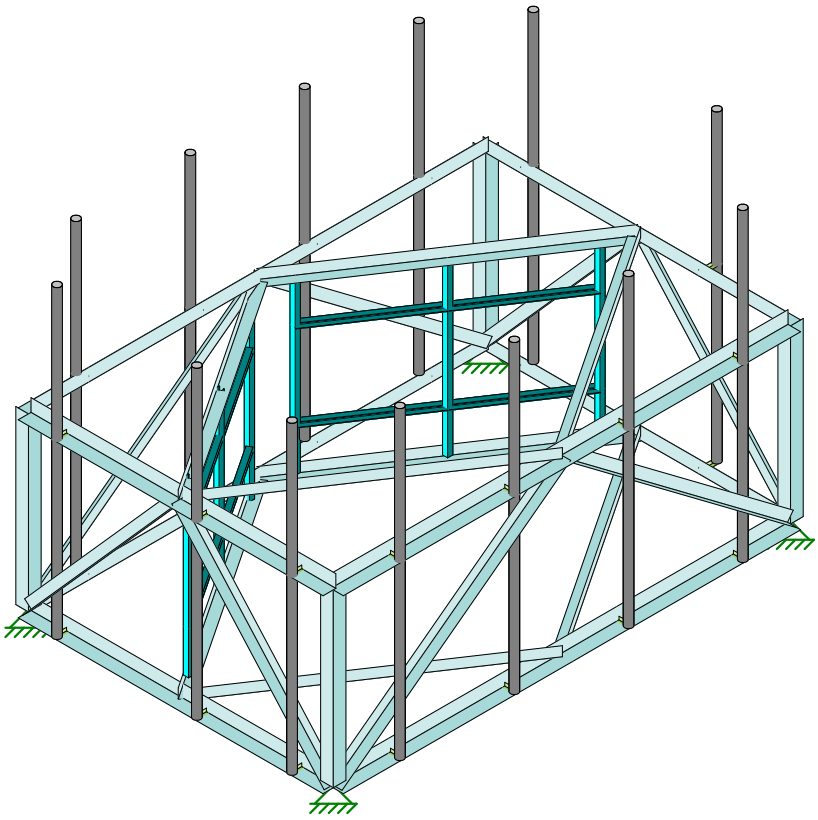
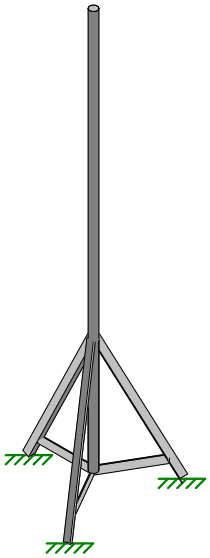
www.coreoneconsulting.com







Core One Consultants USA		
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		SD17.r3d

Project Title:
Engineer:
Project ID:
Project Descr:

Printed: 23 NOV 2021, 8:46PM

Wood Beam

File: SD17 roof joist.ec6

Lic. # : KW-06012251 CoreOne

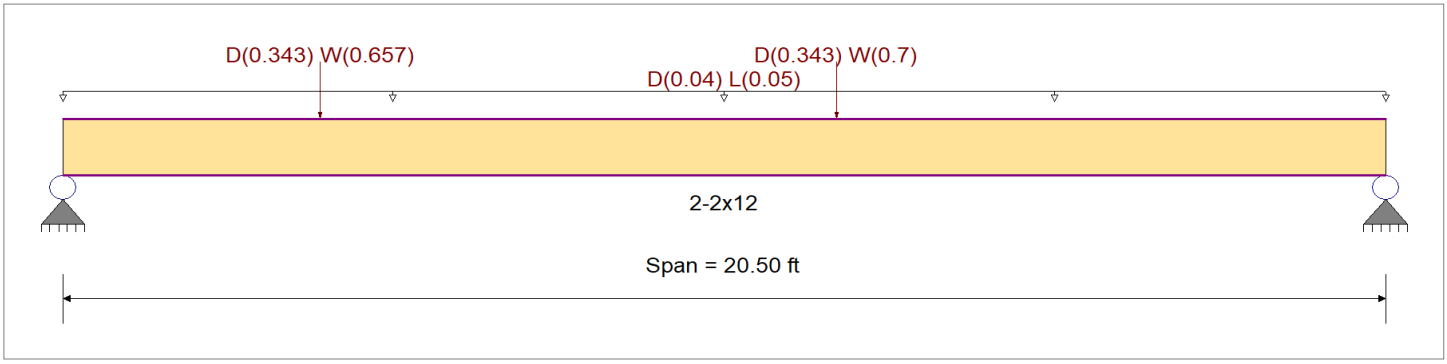
DESCRIPTIO --None--

CODE REFERENCES

Calculations per NDS 2015, IBC 2015, CBC 2016, ASCE 7-10
Load Combination Set : ASCE 7-16

Material Properties

Analysis Method	Load Resistance Factor D	Fb +	1350 psi	*E : Modulus of Elasti*	
Load Combinati	ASCE 7-16	Fb -	1350 psi	Ebend- xx	1400 ksi
		Fc - Prll	1600 psi	Eminbend - x	510 ksi
Wood Species	Douglas Fir-South	Fc - Perp	520 psi		
Wood Grade	Select Structural	Fv	180 psi		
		Ft	900 psi	Density	28.72 pcf
Beam Bracing	Beam is Fully Braced against lateral-torsional buckling				



Applied Loads

Service loads entered. Load Factors will be applied for calculations.

Uniform Load : D = 0.020, L = 0.0250 ksf, Tributary Width = 2.0 ft
Point Load : D = 0.3430, W = 0.6570 k @ 4.0 ft
Point Load : D = 0.3430, W = 0.70 k @ 12.0 ft

DESIGN SUMMARY

Design OK

Maximum Bending Stress Ratio	=	0.800 : 1	Maximum Shear Stress Ratio	=	0.256 : 1
Section used for this span		2-2x12	Section used for this span		2-2x12
fb: Actual	=	2,332.22 psi	fv: Actual	=	99.45 psi
Fb: Allowable	=	2,916.00 psi	Fv: Allowable	=	388.80 psi
Load Combination		+1.20D+0.50Lr+L+W+1.60H	Load Combination		+1.20D+0.50Lr+L+W+1.60H
Location of maximum on span	=	11.971 ft	Location of maximum on span	=	0.000 ft
Span # where maximum occurs	=	Span # 1	Span # where maximum occurs	=	Span # 1

Maximum Deflection

Max Downward Transient Deflection	0.649 in	Ratio =	379 >=360
Max Upward Transient Deflection	0.000 in	Ratio =	0 <360
Max Downward Total Deflection	1.239 in	Ratio =	198 >=180
Max Upward Total Deflection	0.000 in	Ratio =	0 <180

Maximum Forces & Stresses for Load Combinations

Load Combination / Segment Length	Span #	Max Stress Ratios M	V	λ	$C_{F/V}$	C_i	C_r	C_m	C_t	C_L	Moment Values Mu	fb	Fb	Shear Values Vu	fv	Fv
+1.40D+1.60H													0.00	0.00	0.00	0.00
Length = 20.50 ft	1	0.655	0.211	0.60	1.000	1.00	1.00	1.00	1.00	1.00	6.04	1,145.64	1749.60	1.11	49.30	233.28
+1.20D+0.50Lr+1.60L+1.60H					1.000	1.00	1.00	1.00	1.00	1.00			0.00	0.00	0.00	0.00
Length = 20.50 ft	1	0.758	0.243	0.80	1.000	1.00	1.00	1.00	1.00	1.00	9.33	1,768.93	2332.80	1.70	75.51	311.04
+1.20D+1.60L+0.50S+1.60H					1.000	1.00	1.00	1.00	1.00	1.00			0.00	0.00	0.00	0.00
Length = 20.50 ft	1	0.758	0.243	0.80	1.000	1.00	1.00	1.00	1.00	1.00	9.33	1,768.93	2332.80	1.70	75.51	311.04
+1.20D+1.60Lr+L+1.60H					1.000	1.00	1.00	1.00	1.00	1.00			0.00	0.00	0.00	0.00
Length = 20.50 ft	1	0.631	0.203	0.80	1.000	1.00	1.00	1.00	1.00	1.00	7.76	1,471.94	2332.80	1.42	63.04	311.04
+1.20D+1.60Lr+0.50W+1.60H					1.000	1.00	1.00	1.00	1.00	1.00			0.00	0.00	0.00	0.00
Length = 20.50 ft	1	0.607	0.194	0.80	1.000	1.00	1.00	1.00	1.00	1.00	7.46	1,415.08	2332.80	1.36	60.46	311.04
+1.20D+L+1.60S+1.60H					1.000	1.00	1.00	1.00	1.00	1.00			0.00	0.00	0.00	0.00
Length = 20.50 ft	1	0.631	0.203	0.80	1.000	1.00	1.00	1.00	1.00	1.00	7.76	1,471.94	2332.80	1.42	63.04	311.04

Project Title:
Engineer:
Project ID:
Project Descr:

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Wood Beam

File: SD17 roof joist.ec6

Lic. # : KW-06012251

CoreOne

DESCRIPTIO --None--

Load Combination / Segment Length	Span #	Max Stress Ratios M	V	λ	$C_{F/V}$	C_i	C_r	C_m	C_t	C_L	Moment Values Mu	fb	Fb	Shear Values Vu	fv	Fv
+1.20D+1.60S+0.50W+1.60H					1.000	1.00	1.00	1.00	1.00	1.00			0.00	0.00	0.00	0.00
Length = 20.50 ft	1	0.607	0.194	0.80	1.000	1.00	1.00	1.00	1.00	1.00	7.46	1,415.08	2332.80	1.36	60.46	311.04
+1.20D+0.50Lr+L+W+1.60H					1.000	1.00	1.00	1.00	1.00	1.00			0.00	0.00	0.00	0.00
Length = 20.50 ft	1	0.800	0.256	1.00	1.000	1.00	1.00	1.00	1.00	1.00	12.30	2,332.22	2916.00	2.24	99.45	388.80
+1.20D+L+0.50S+W+1.60H					1.000	1.00	1.00	1.00	1.00	1.00			0.00	0.00	0.00	0.00
Length = 20.50 ft	1	0.800	0.256	1.00	1.000	1.00	1.00	1.00	1.00	1.00	12.30	2,332.22	2916.00	2.24	99.45	388.80
+0.90D+W+1.60H					1.000	1.00	1.00	1.00	1.00	1.00			0.00	0.00	0.00	0.00
Length = 20.50 ft	1	0.550	0.175	1.00	1.000	1.00	1.00	1.00	1.00	1.00	8.45	1,602.69	2916.00	1.53	68.10	388.80
+1.20D+L+0.20S+E+1.60H					1.000	1.00	1.00	1.00	1.00	1.00			0.00	0.00	0.00	0.00
Length = 20.50 ft	1	0.505	0.162	1.00	1.000	1.00	1.00	1.00	1.00	1.00	7.76	1,471.94	2916.00	1.42	63.04	388.80
+0.90D+E+0.90H					1.000	1.00	1.00	1.00	1.00	1.00			0.00	0.00	0.00	0.00
Length = 20.50 ft	1	0.253	0.082	1.00	1.000	1.00	1.00	1.00	1.00	1.00	3.88	736.48	2916.00	0.71	31.70	388.80

Overall Maximum Deflections

Load Combination	Span	Max. "-" Defl	Location in Span	Load Combination	Max. "+" Defl	Location in Span
+D+0.750L+0.750S+0.450W+H	1	1.2388	10.250		0.0000	0.000

Vertical Reactions

Support notation : Far left is #1 Values in KIPS

Load Combination	Support 1	Support 2
Overall MAXimum	1.581	1.304
Overall MINimum	0.819	0.538
+D+H	0.828	0.678
+D+L+H	1.341	1.190
+D+Lr+H	0.828	0.678
+D+S+H	0.828	0.678
+D+0.750Lr+0.750L+H	1.213	1.062
+D+0.750L+0.750S+H	1.213	1.062
+D+0.60W+H	1.320	1.000
+D+0.750Lr+0.750L+0.450W+H	1.581	1.304
+D+0.750L+0.750S+0.450W+H	1.581	1.304
+0.60D+0.60W+0.60H	0.988	0.729
+D+0.70E+0.60H	0.828	0.678
+D+0.750L+0.750S+0.5250E+H	1.213	1.062
+0.60D+0.70E+H	0.497	0.407
D Only	0.828	0.678
L Only	0.513	0.513
W Only	0.819	0.538
H Only		

Project Title:
Engineer:
Project ID:
Project Descr:

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Wood Beam

File: SD17 roof joist.ec6

Lic. # : KW-06012251 CoreOne

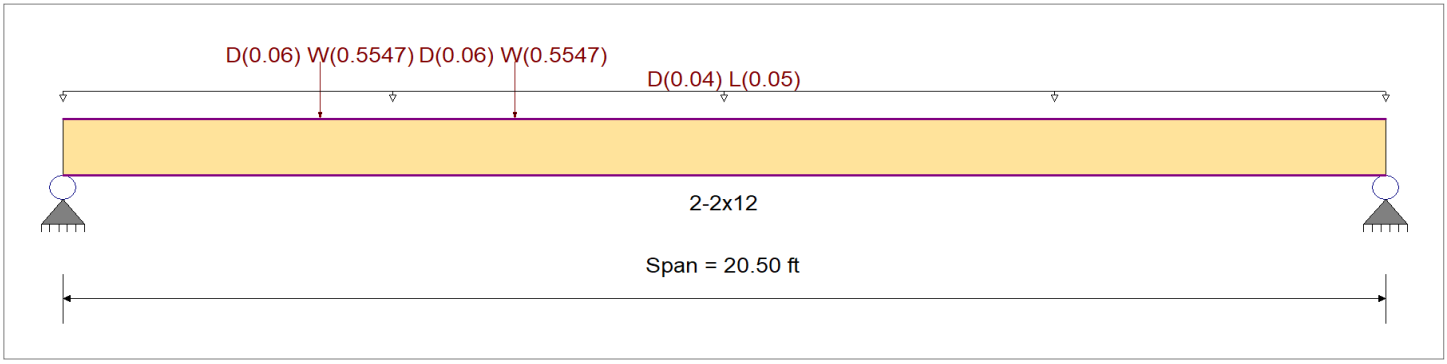
DESCRIPTIO --None--

CODE REFERENCES

Calculations per NDS 2015, IBC 2015, CBC 2016, ASCE 7-10
Load Combination Set : ASCE 7-16

Material Properties

Analysis Method	Load Resistance Factor D	Fb +	1350 psi	*E : Modulus of Elasti*	
Load Combinati	ASCE 7-16	Fb -	1350 psi	Ebend- xx	1400 ksi
		Fc - Prll	1600 psi	Eminbend - x	510 ksi
Wood Species	Douglas Fir-South	Fc - Perp	520 psi		
Wood Grade	Select Structural	Fv	180 psi		
		Ft	900 psi	Density	28.72 pcf
Beam Bracing	Beam is Fully Braced against lateral-torsional buckling				



Applied Loads

Service loads entered. Load Factors will be applied for calculations.

Uniform Load : D = 0.020, L = 0.0250 ksf, Tributary Width = 2.0 ft
Point Load : D = 0.060, W = 0.5547 k @ 4.0 ft
Point Load : D = 0.060, W = 0.5547 k @ 7.0 ft

DESIGN SUMMARY

Design OK

Maximum Bending Stress Ratio	=	0.596 : 1	Maximum Shear Stress Ratio	=	0.210 : 1
Section used for this span		2-2x12	Section used for this span		2-2x12
fb: Actual	=	1,738.83 psi	fv: Actual	=	81.49 psi
Fb: Allowable	=	2,916.00 psi	Fv: Allowable	=	388.80 psi
Load Combination		+1.20D+0.50Lr+L+W+1.60H	Load Combination		+1.20D+0.50Lr+L+W+1.60H
Location of maximum on span	=	7.033 ft	Location of maximum on span	=	0.000 ft
Span # where maximum occurs	=	Span # 1	Span # where maximum occurs	=	Span # 1

Maximum Deflection

Max Downward Transient Deflection	0.500 in	Ratio =	491 >=360
Max Upward Transient Deflection	0.000 in	Ratio =	0 <360
Max Downward Total Deflection	0.898 in	Ratio =	273 >=180
Max Upward Total Deflection	0.000 in	Ratio =	0 <180

Maximum Forces & Stresses for Load Combinations

Load Combination / Segment Length	Span #	Max Stress Ratios M	V	λ	$C_{F/V}$	C_i	C_r	C_m	C_t	C_L	Moment Values Mu	fb	Fb	Shear Values Vu	fv	Fv
+1.40D+1.60H													0.00	0.00	0.00	0.00
Length = 20.50 ft	1	0.371	0.123	0.60	1.000	1.00	1.00	1.00	1.00	1.00	3.42	648.89	1749.60	0.65	28.74	233.28
+1.20D+0.50Lr+1.60L+1.60H					1.000	1.00	1.00	1.00	1.00	1.00			0.00	0.00	0.00	0.00
Length = 20.50 ft	1	0.579	0.186	0.80	1.000	1.00	1.00	1.00	1.00	1.00	7.13	1,351.27	2332.80	1.30	57.89	311.04
+1.20D+1.60L+0.50S+1.60H					1.000	1.00	1.00	1.00	1.00	1.00			0.00	0.00	0.00	0.00
Length = 20.50 ft	1	0.579	0.186	0.80	1.000	1.00	1.00	1.00	1.00	1.00	7.13	1,351.27	2332.80	1.30	57.89	311.04
+1.20D+1.60Lr+L+1.60H					1.000	1.00	1.00	1.00	1.00	1.00			0.00	0.00	0.00	0.00
Length = 20.50 ft	1	0.451	0.146	0.80	1.000	1.00	1.00	1.00	1.00	1.00	5.55	1,052.76	2332.80	1.02	45.42	311.04
+1.20D+1.60Lr+0.50W+1.60H					1.000	1.00	1.00	1.00	1.00	1.00			0.00	0.00	0.00	0.00
Length = 20.50 ft	1	0.390	0.137	0.80	1.000	1.00	1.00	1.00	1.00	1.00	4.80	909.77	2332.80	0.96	42.67	311.04
+1.20D+L+1.60S+1.60H					1.000	1.00	1.00	1.00	1.00	1.00			0.00	0.00	0.00	0.00
Length = 20.50 ft	1	0.451	0.146	0.80	1.000	1.00	1.00	1.00	1.00	1.00	5.55	1,052.76	2332.80	1.02	45.42	311.04

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Engineer:
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Wood Beam

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Lic. # : KW-06012251

CoreOne

DESCRIPTIO --None--

Load Combination / Segment Length	Span #	Max Stress Ratios M	V	λ	$C_{F/V}$	C_i	C_r	C_m	C_t	C_L	Moment Values Mu	fb	Fb	Shear Values Vu	fv	Fv
+1.20D+1.60S+0.50W+1.60H					1.000	1.00	1.00	1.00	1.00	1.00			0.00	0.00	0.00	0.00
Length = 20.50 ft	1	0.390	0.137	0.80	1.000	1.00	1.00	1.00	1.00	1.00	4.80	909.77	2332.80	0.96	42.67	311.04
+1.20D+0.50Lr+L+W+1.60H					1.000	1.00	1.00	1.00	1.00	1.00			0.00	0.00	0.00	0.00
Length = 20.50 ft	1	0.596	0.210	1.00	1.000	1.00	1.00	1.00	1.00	1.00	9.17	1,738.83	2916.00	1.83	81.49	388.80
+1.20D+L+0.50S+W+1.60H					1.000	1.00	1.00	1.00	1.00	1.00			0.00	0.00	0.00	0.00
Length = 20.50 ft	1	0.596	0.210	1.00	1.000	1.00	1.00	1.00	1.00	1.00	9.17	1,738.83	2916.00	1.83	81.49	388.80
+0.90D+W+1.60H					1.000	1.00	1.00	1.00	1.00	1.00			0.00	0.00	0.00	0.00
Length = 20.50 ft	1	0.397	0.140	1.00	1.000	1.00	1.00	1.00	1.00	1.00	6.10	1,157.40	2916.00	1.23	54.55	388.80
+1.20D+L+0.20S+E+1.60H					1.000	1.00	1.00	1.00	1.00	1.00			0.00	0.00	0.00	0.00
Length = 20.50 ft	1	0.361	0.117	1.00	1.000	1.00	1.00	1.00	1.00	1.00	5.55	1,052.76	2916.00	1.02	45.42	388.80
+0.90D+E+0.90H					1.000	1.00	1.00	1.00	1.00	1.00			0.00	0.00	0.00	0.00
Length = 20.50 ft	1	0.143	0.048	1.00	1.000	1.00	1.00	1.00	1.00	1.00	2.20	417.14	2916.00	0.42	18.48	388.80

Overall Maximum Deflections

Load Combination	Span	Max. "-" Defl	Location in Span	Load Combination	Max. "+" Defl	Location in Span
+D+0.750L+0.750S+0.450W+H	1	0.8983	9.951		0.0000	0.000

Vertical Reactions

Support notation : Far left is #1 Values in KIPS

Load Combination	Support 1	Support 2
Overall MAXimum	1.247	0.961
Overall MINimum	0.812	0.298
+D+H	0.498	0.442
+D+L+H	1.010	0.955
+D+Lr+H	0.498	0.442
+D+S+H	0.498	0.442
+D+0.750Lr+0.750L+H	0.882	0.827
+D+0.750L+0.750S+H	0.882	0.827
+D+0.60W+H	0.985	0.621
+D+0.750Lr+0.750L+0.450W+H	1.247	0.961
+D+0.750L+0.750S+0.450W+H	1.247	0.961
+0.60D+0.60W+0.60H	0.786	0.444
+D+0.70E+0.60H	0.498	0.442
+D+0.750L+0.750S+0.5250E+H	0.882	0.827
+0.60D+0.70E+H	0.299	0.265
D Only	0.498	0.442
L Only	0.513	0.513
W Only	0.812	0.298
H Only		

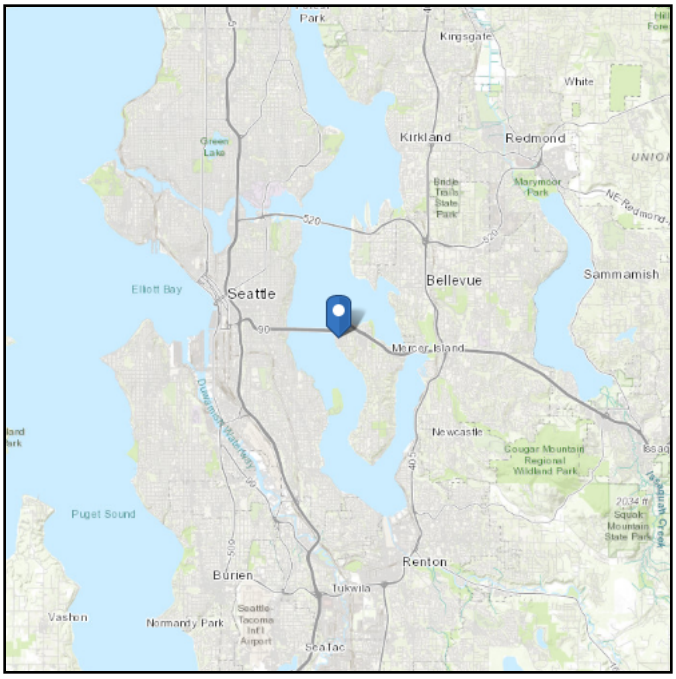
APPENDIX A
Design Tables & Resources

ASCE 7 Hazards Report

Address:
No Address at This Location

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

Elevation: 84.82 ft (NAVD 88)
Latitude: 47.585556
Longitude: -122.250833



Wind

Results:

Wind Speed:	98 Vmph
10-year MRI	67 Vmph
25-year MRI	74 Vmph
50-year MRI	78 Vmph
100-year MRI	83 Vmph

Data Source: ASCE/SEI 7-16, Fig. 26.5-1B and Figs. CC.2-1–CC.2-4, and Section 26.5.2
Date Accessed: Tue Nov 23 2021

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

Site is not in a hurricane-prone region as defined in ASCE/SEI 7-16 Section 26.2.

Seismic

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

Results:

S_S :	1.403	S_{D1} :	N/A
S_1 :	0.488	T_L :	6
F_a :	1.2	PGA :	0.6
F_v :	N/A	PGA_M :	0.72
S_{MS} :	1.684	F_{PGA} :	1.2
S_{M1} :	N/A	I_e :	1
S_{DS} :	1.122	C_v :	1.381

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

Data Accessed: Tue Nov 23 2021

Date Source: USGS Seismic Design Maps

Ice

Results:

Ice Thickness:	1.00 in.
Concurrent Temperature:	25 F
Gust Speed:	30 mph
Data Source:	Standard ASCE/SEI 7-16, Figs. 10-2 through 10-8
Date Accessed:	Tue Nov 23 2021

Ice thicknesses on structures in exposed locations at elevations higher than the surrounding terrain and in valleys and gorges may exceed the mapped values.

Values provided are equivalent radial ice thicknesses due to freezing rain with concurrent 3-second gust speeds, for a 500-year mean recurrence interval, and temperatures concurrent with ice thicknesses due to freezing rain. Thicknesses for ice accretions caused by other sources shall be obtained from local meteorological studies. Ice thicknesses in exposed locations at elevations higher than the surrounding terrain and in valleys and gorges may exceed the mapped values.