CAD Designers

Exceeding Expectations

Wireless Telecom Drafting Services



Executive Summary

CAD Designers has been in business since 1999. We specialize in and have a wide range of experience with the Wireless Telecom Industry including Lease Exhibits, Construction Drawings, Site Mods, Structural Mods, Collocations, Monopoles, Lattice Towers, Guyed Towers, Rooftops and Water Tanks. Drawings are produced to the standards specified by our clients. We charge a flat fee for each service, which includes redlines, or provide an hourly rate. We have the ability to meet the fast pace required for wireless telecommunication deliverables. All work is completed by our drafting team, which is based in Raleigh, North Carolina, serving clients nationwide. We work in AutoCAD and deliver native DWG files with PDFs.

Philosophy

Our philosophy is simple: Client, Time Management and Quality Assurance. Our client is the most important. We strive to communicate and provide our client what they need when they need it. We meet the exacting deadlines that the Telecom industry expects. We have the ability to meet the fast pace required for wireless telecommunication deliverables. Most projects carry a 5 business day guarantee. All redline deliverables carry a 1 business day guarantee. All work is completed by our drafting team, which is based in Raleigh, North Carolina, serving clients nationwide. As part of our Quality Assurance program, every drawing is reviewed and checked to make sure it matches the template provided by our clients. It is our goal to be a leader in the Wireless Telecom Drawing/Drafting field. We feel that with our Client, Time Management and Quality Assurance Philosophy, we can meet or exceed your expectations. It is our goal to give you a final product that meets your objectives on a fast-paced timeline.

Contracting CAD Services

CAD Designers has been a dependable wireless telecom drafting partner providing professional services at a competitive price. In today's economic climate, contracting your drafting needs is smart business. While many of our larger clients utilize CAD Designers as an overflow solution, our smaller clients tend to use CAD Designers for all of their drafting needs. Outsourcing your drafting to CAD Designers can save your company money by not having to direct-hire additional staff at times of economic uncertainty. When the need arises, we can help you complete your project without adding any long-term overhead costs.

CAD Designers Company Information

Company Name:	CAD Designers, Inc.
Mailing Address:	CAD Designers, Inc. PO Box 91113 Raleigh, NC 27675
Contact:	Charlie Seymour, President
Phone:	919-696-5476
Email:	charlie-cad@cad-designers.com

CAD Designers Wireless Telecom Work Summary

- T-Mobile
- Verizon Wireless
- AT&T
- Dish Wireless
- Sirius XM
- NYC 5 Boroughs FDNY, DOB, LPC
- Lease Exhibits
- Construction Drawings
- Site Modifications
- Structural Mods
- Generator Add
- Tower Elevations
- Monopoles
- Lattice Towers
- Guyed Towers
- Rooftops
- Water Tanks
- Small Cell/Macro Cell

CAD Designers has completed thousands of Wireless Telecom drawings in our 25+ year history. Drawings are produced to the standards specified by our clients. Our goal is not only to meet, but always exceed your expectations.

We meet the exacting deadlines that the Telecom industry expects. We charge a flat fee for each service, which includes redlines, or provide an hourly rate. We have the ability to meet the fast pace required for wireless telecommunication deliverables.

We take pride in our QA/QC program. We ensure that each project is thoroughly reviewed and correct prior to being delivered to our clients. It is our goal to minimize revisions. This can be done by properly preparing before each project begins. We have an initial kickoff with all of our clients so we may completely understand their goals, objectives and preferred drawing formats. As we complete a few projects for our clients, the revisions are reduced to a minimum. All redline deliverables carry a 1 business day guarantee. It is our goal to give you a final product that meets your objectives on a fast-paced timeline. Request a quote at cad-designers.com/contact-cad-designers/. We reply by the next business day.

Our Team

Charlie Seymour, President

Charlie has extensive Drafting and Design experience. Charlie graduated from North Carolina State University with a BS in the Physical Mathematics/Sciences with a concentration in Business Management in December 1992. Charlie has worked for several Engineering Firms in the Carolinas and has extensive knowledge in Wireless Telecom, AV and Security, Electrical/Mechanical, Environmental, Manufacturing and Structural Drafting and Design. Charlie leads the QA/QC program to ensure each client receives a quality product, in a timely manner.

Chris, Senior CAD Designer

Chris has worked in the Environmental and Manufacturing Industries his entire career. Chris graduated from The University of Rochester with a BS in Geomechanics (Geology/Mechanical Engineering) in May of 1989. Chris has worked for several Engineering Consulting Firms along the East Coast and has extensive knowledge in Wireless Telecom, Environmental, and Manufacturing Drafting and Design. Chris has OSHA 40-Hour Hazardous Waste (HAZWOPER) Training Certification and has taken the OSHA 8-Hour Supervisor Course.

Larry, Senior CAD Designer

Larry has worked in the Manufacturing and Environmental Industry his entire career. Larry graduated from Florence-Darlington Technical College with an A.S. Degree in Drafting and Design. Larry has worked for several Engineering Consulting and Manufacturing Firms in North and South Carolina. Larry has extensive knowledge and experience in Mechanical and Structural Drafting.

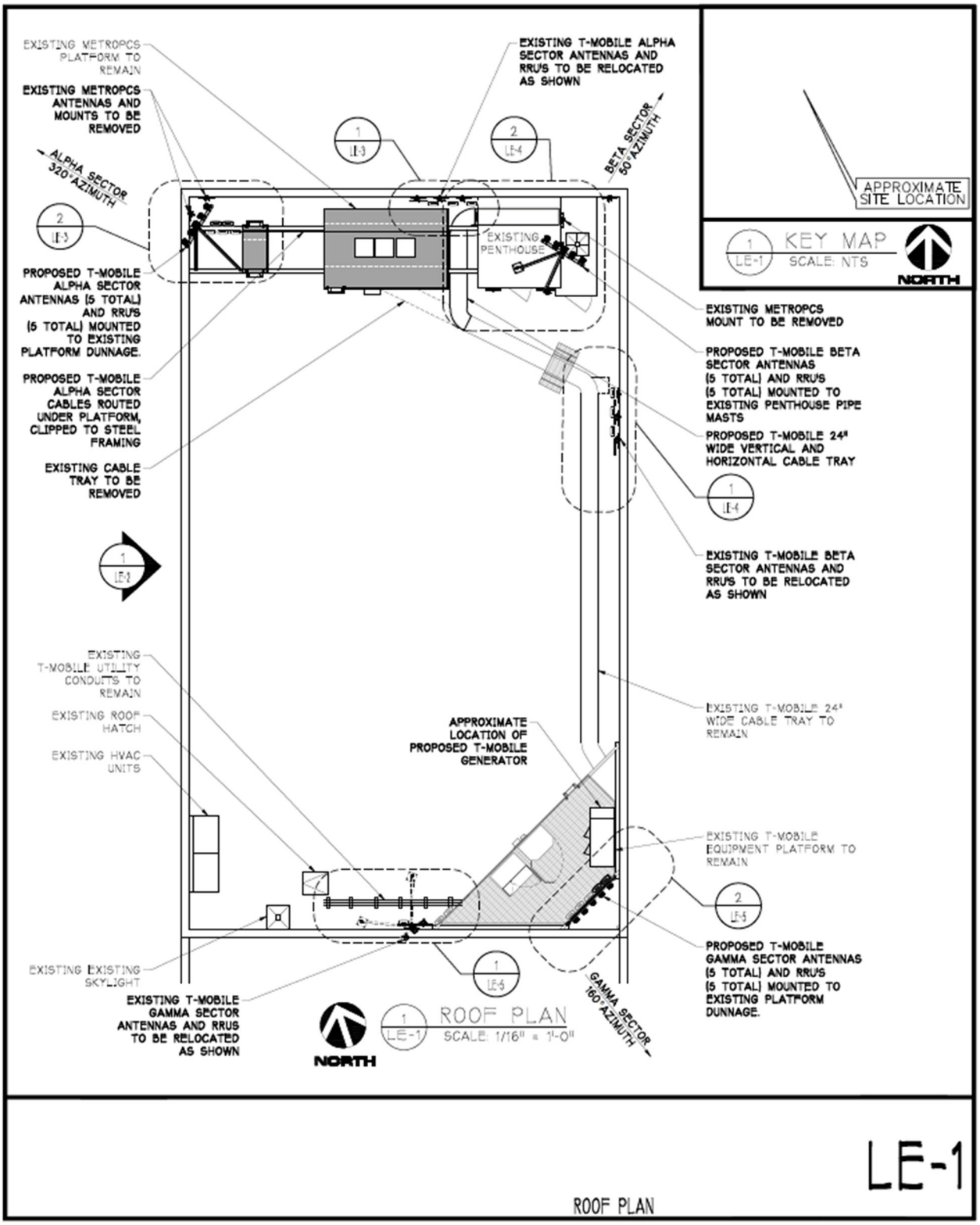
Schafer, CAD Designer

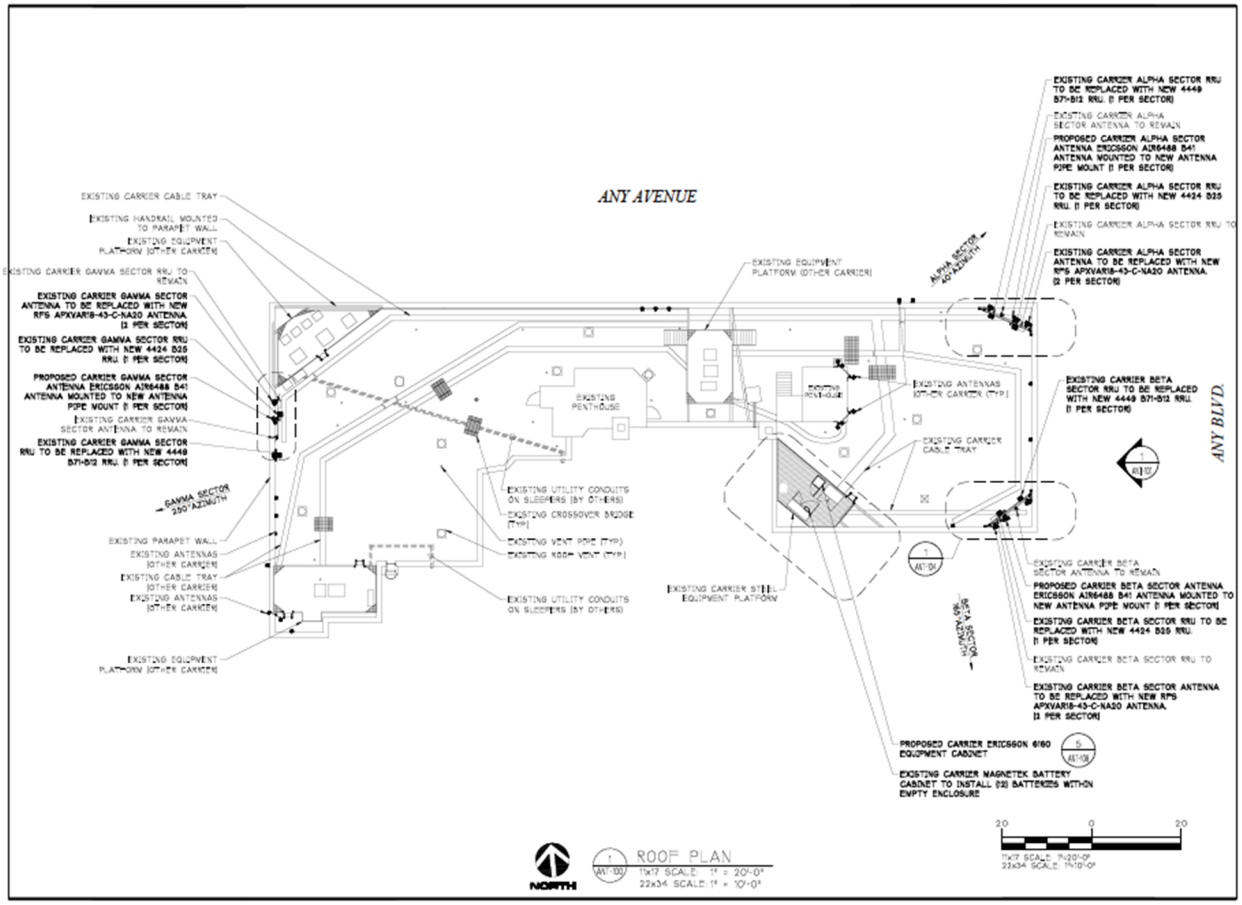
Schafer has CAD Drafting experience in Wireless Telecom, AV and Security and Environmental Drafting. Schafer helps with the completion of projects as well as redlines and with the QA/QC program. Schafer has MS Office Certification.

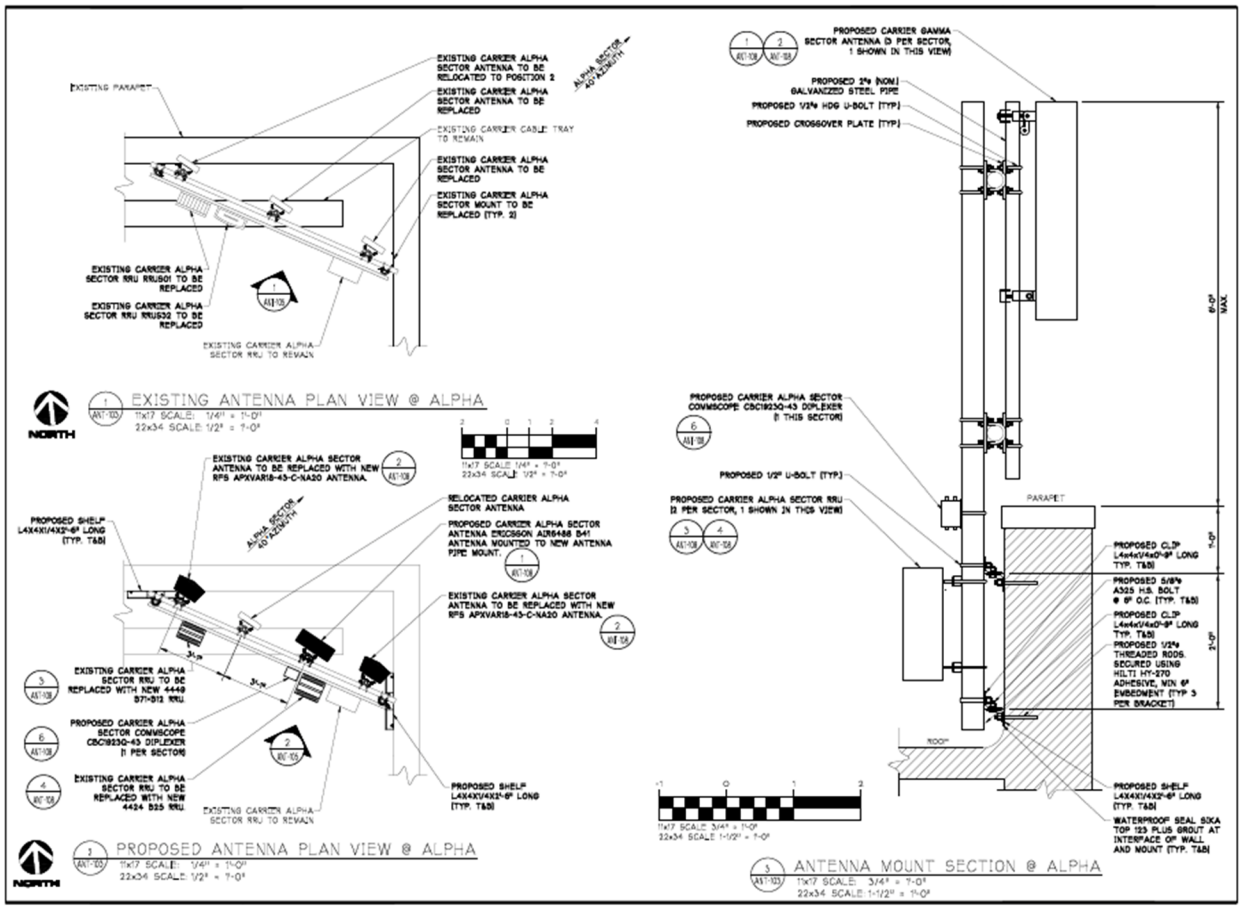
Mitchell, CAD Drafter

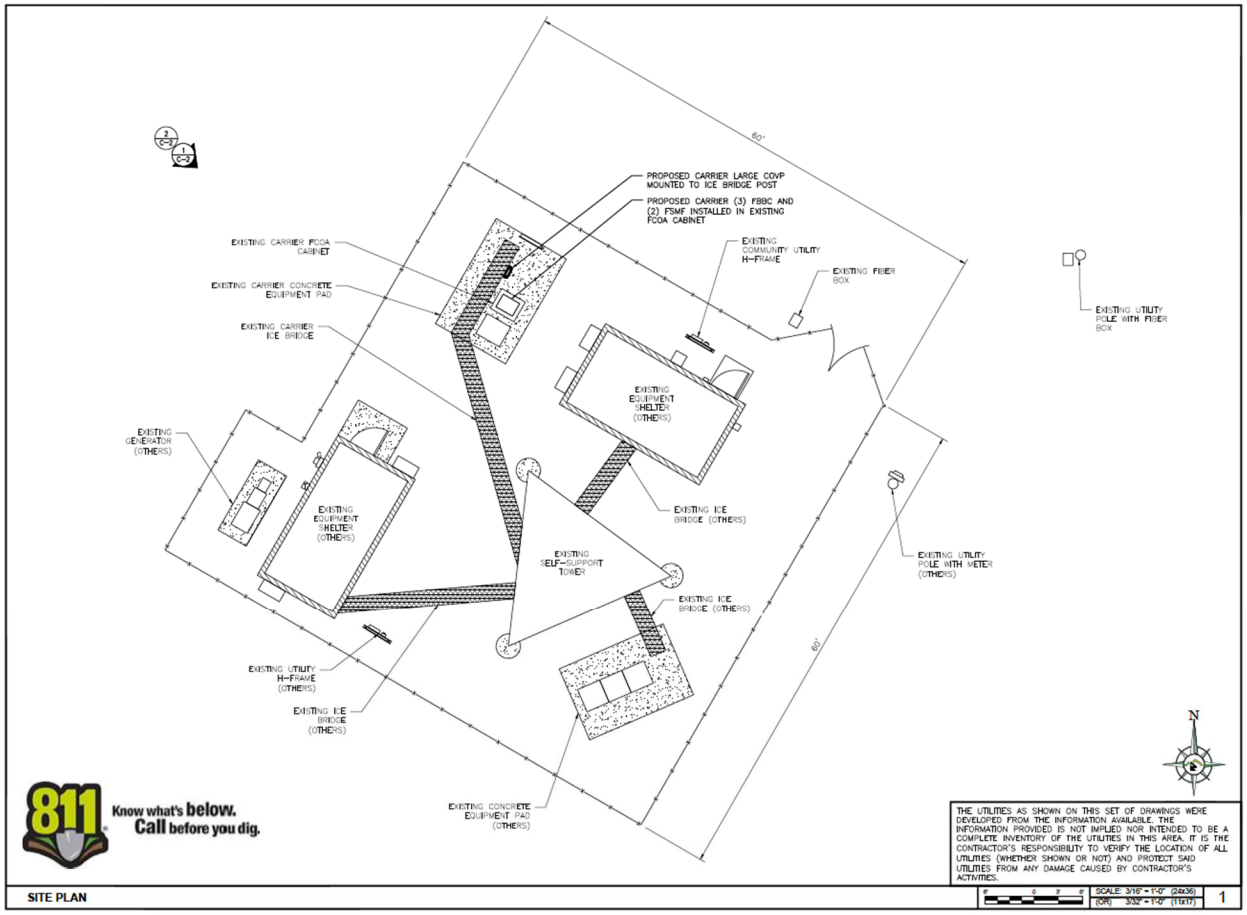
Mitchell has CAD Drafting experience in Wireless Telecom, Manufacturing and Environmental Drafting. Mitchell has MS Office Certification and helps with redlines and setting up templates for the team.

Example Drawings

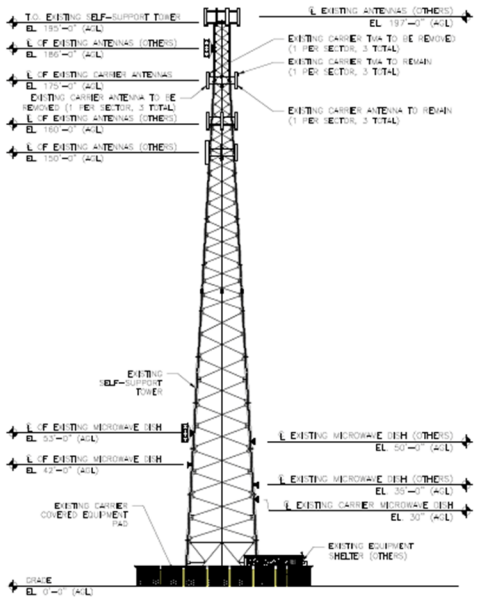



ANY AVENUE
ANY BLVD.
EXISTING CARRIER CABLE TRAY
EXISTING HANDRAIL MOUNTED TO PARAPET WALL
EXISTING EQUIPMENT PLATFORM (OTHER CARRIER)
EXISTING CARRIER GAMMA SECTOR RRU TO REMAIN
EXISTING CARRIER GAMMA SECTOR ANTENNA TO BE REPLACED WITH NEW RFS APXVAR18-43-C-NA20 ANTENNA. (1 PER SECTOR)
EXISTING CARRIER GAMMA SECTOR RRU TO BE REPLACED WITH NEW 4424 B25 RRU. (1 PER SECTOR)
PROPOSED CARRIER GAMMA SECTOR ANTENNA ERICSSON AIR6488 B41 ANTENNA MOUNTED TO NEW ANTENNA PIPE MOUNT (1 PER SECTOR)
EXISTING CARRIER GAMMA SECTOR ANTENNA TO REMAIN
EXISTING CARRIER GAMMA SECTOR RRU TO BE REPLACED WITH NEW 4449 B71+B12 RRU. (1 PER SECTOR)
GAMMA SECTOR 250° AZIMUTH
EXISTING PARAPET WALL
EXISTING ANTENNAS (OTHER CARRIER)
EXISTING CABLE TRAY (OTHER CARRIER)
EXISTING ANTENNAS (OTHER CARRIER)
EXISTING EQUIPMENT PLATFORM (OTHER CARRIER)
EXISTING EQUIPMENT PLATFORM (OTHER CARRIER)
EXISTING PENTHOUSE
EXISTING UTILITY CONDUITS ON SLEEPERS (BY OTHERS)
EXISTING CROSSOVER BRIDGE (TYP.)
EXISTING VENT PIPE (TYP.)
EXISTING ROOF VENT (TYP.)
EXISTING UTILITY CONDUITS ON SLEEPERS (BY OTHERS)
EXISTING CARRIER STEEL EQUIPMENT PLATFORM
EXISTING EQUIPMENT PLATFORM
ALPHA SECTOR 40° AZIMUTH
EXISTING ANTENNAS (OTHER CARRIER) (TYP.)
EXISTING CARRIER CABLE TRAY
EXISTING CARRIER ALPHA SECTOR RRU TO BE REPLACED WITH NEW 4449 B71+B12 RRU. (1 PER SECTOR)
EXISTING CARRIER ALPHA SECTOR ANTENNA TO REMAIN
PROPOSED CARRIER ALPHA SECTOR ANTENNA ERICSSON AIR6488 B41 ANTENNA MOUNTED TO NEW ANTENNA PIPE MOUNT (1 PER SECTOR)
EXISTING CARRIER ALPHA SECTOR RRU TO BE REPLACED WITH NEW 4424 B25 RRU. (1 PER SECTOR)
EXISTING CARRIER ALPHA SECTOR RRU TO REMAIN
EXISTING CARRIER ALPHA SECTOR ANTENNA TO BE REPLACED WITH NEW RFS APXVAR18-43-C-NA20 ANTENNA. (2 PER SECTOR)
EXISTING CARRIER BETA SECTOR RRU TO BE REPLACED WITH NEW 4449 B71+B12 RRU. (1 PER SECTOR)
EXISTING CARRIER BETA SECTOR ANTENNA TO REMAIN
PROPOSED CARRIER BETA SECTOR ANTENNA ERICSSON AIR6488 B41 ANTENNA MOUNTED TO NEW ANTENNA PIPE MOUNT (1 PER SECTOR)
EXISTING CARRIER BETA SECTOR RRU TO BE REPLACED WITH NEW 4424 B25 RRU. (1 PER SECTOR)
EXISTING CARRIER BETA SECTOR RRU TO REMAIN
EXISTING CARRIER BETA SECTOR ANTENNA TO BE REPLACED WITH NEW RFS APXVAR18-43-C-NA20 ANTENNA. (2 PER SECTOR)
BETA SECTOR 160° AZIMUTH
PROPOSED CARRIER ERICSSON 6160 EQUIPMENT CABINET
EXISTING CARRIER MAGNETEK BATTERY CABINET TO INSTALL (12) BATTERIES WITHIN EMPTY ENCLOSURE
NORTH
1 ROOF PLAN
11x17 SCALE: 1" = 20'-0"
22x34 SCALE: 1" = 10'-0"
20 0 20
11x17 SCALE: 1"=20'-0"
22x34 SCALE: 1"=10'-0"


EXISTING PARAPET
EXISTING CARRIER ALPHA SECTOR ANTENNA TO BE RELOCATED TO POSITION 2
EXISTING CARRIER ALPHA SECTOR ANTENNA TO BE REPLACED
EXISTING CARRIER CABLE TRAY TO REMAIN
EXISTING CARRIER ALPHA SECTOR ANTENNA TO BE REPLACED
EXISTING CARRIER ALPHA SECTOR MOUNT TO BE REPLACED (TYP. 2)
ALPHA SECTOR 40° AZIMUTH
EXISTING CARRIER ALPHA SECTOR RRU RRU901 TO BE REPLACED
EXISTING CARRIER ALPHA SECTOR RRU RRU932 TO BE REPLACED
EXISTING CARRIER ALPHA SECTOR RRU TO REMAIN
NORTH
1 EXISTING ANTENNA PLAN VIEW @ ALPHA
11x17 SCALE: 1/4" = 1'-0"
22x34 SCALE: 1/2" = 1'-0"
2 0 1 2 4
11x17 SCALE 1/4" = 1'-0"
22x34 SCALE: 1/2" = 1'-0"
EXISTING CARRIER ALPHA SECTOR ANTENNA TO BE REPLACED WITH NEW RFS APXVAR18-43-C-NA20 ANTENNA.
ALPHA SECTOR 40° AZIMUTH
PROPOSED SHELF L4X4X1/4X2'-6" LONG (TYP. T&B)
RELOCATED CARRIER ALPHA SECTOR ANTENNA
PROPOSED CARRIER ALPHA SECTOR ANTENNA ERICSSON AIR6488 B41 ANTENNA MOUNTED TO NEW ANTENNA PIPE MOUNT.
EXISTING CARRIER ALPHA SECTOR ANTENNA TO BE REPLACED WITH NEW RFS APXVAR18-43-C-NA20 ANTENNA.
3'-0"
3'-0"
EXISTING CARRIER ALPHA SECTOR RRU TO BE REPLACED WITH NEW 4449 B71+B12 RRU.
PROPOSED CARRIER ALPHA SECTOR COMMSCOPE CBC1923Q-43 DIPLEXER (1 PER SECTOR)
EXISTING CARRIER ALPHA SECTOR RRU TO BE REPLACED WITH NEW 4424 B25 RRU.
EXISTING CARRIER ALPHA SECTOR RRU TO REMAIN
PROPOSED SHELF L4X4X1/4X2'-6" LONG (TYP. T&B)
NORTH
3 PROPOSED ANTENNA PLAN VIEW @ ALPHA
11x17 SCALE: 1/4" = 1'-0"
22x34 SCALE: 1/2" = 1'-0"
PROPOSED CARRIER GAMMA SECTOR ANTENNA (1 PER SECTOR, 1 SHOWN IN THIS VIEW)
PROPOSED 2"ø (NOM.) GALVANIZED STEEL PIPE
PROPOSED 1/2"ø HDG U-BOLT (TYP.)
PROPOSED CROSSOVER PLATE (TYP.)
6'-0" MAX.
PROPOSED CARRIER ALPHA SECTOR COMMSCOPE CBC1923Q-43 DIPLEXER (1 THIS SECTOR)
PROPOSED 1/2" U-BOLT (TYP.)
PROPOSED CARRIER ALPHA SECTOR RRU (2 PER SECTOR, 1 SHOWN IN THIS VIEW)
PARAPET
PROPOSED CLIP L4x4x1/4x0'-9" LONG TYP. T&B
1'-0"
PROPOSED 5/8"ø A325 H.S. BOLT @ 9" O.C. (TYP. T&B)
PROPOSED CLIP L4x4x1/4x0'-9" LONG TYP. T&B
PROPOSED 1/2"ø THREADED RODS. SECURED USING HILTI HY-270 ADHESIVE, MIN 6" EMBEDMENT (TYP 3 PER BRACKET)
2'-0"
ROOF
PROPOSED SHELF L4X4X1/4X2'-6" LONG (TYP. T&B)
WATERPROOF SEAL SIKA TOP 123 PLUS GROUT AT INTERFACE OF WALL AND MOUNT (TYP. T&B)
-1 0 1 2
11x17 SCALE 3/4" = 1'-0"
22x34 SCALE 1-1/2" = 1'-0"
5 ANTENNA MOUNT SECTION @ ALPHA
11x17 SCALE: 3/4" = 1'-0"
22x34 SCALE: 1-1/2" = 1'-0"



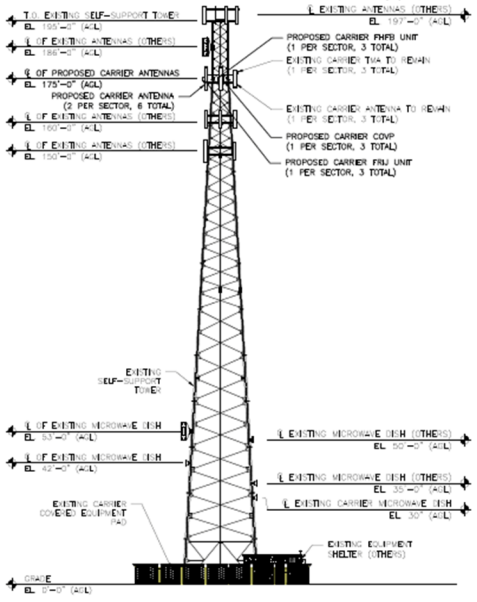
SITE PLAN 1



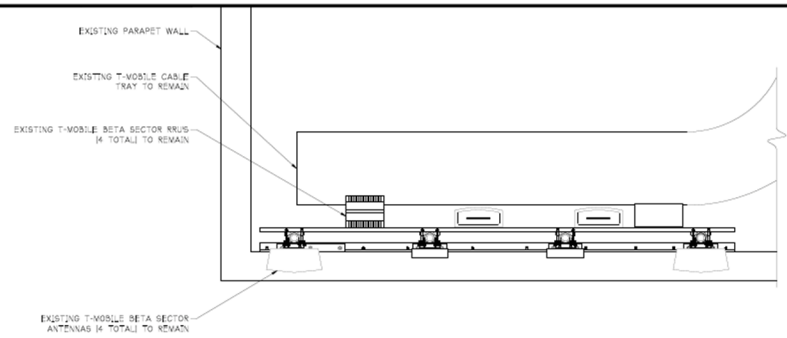
TOWER ELEVATION (EXISTING) SCALE: 1" = 15' (24x36) (OR) 1" = 30' (11x17) 2

NOTE:
STRUCTURAL ANALYSIS MUST BE PERFORMED ON ALL ROOFTOPS, FLAGPOLES, LIGHT POLES, AND TOWER SITES BEFORE INSTALLATION OF NEW ANTENNAS, RADIO UNITS, ETC.

TRANSMISSION LINES:
(1) ADDITIONAL HYBRID CABLE TO BE INSTALLED FOR A TOTAL OF (2) HYBRID CABLES AND (12) COAX LINES.



TOWER ELEVATION (PROPOSED) SCALE: 1" = 15' (24x36) (OR) 1" = 30' (11x17) 1

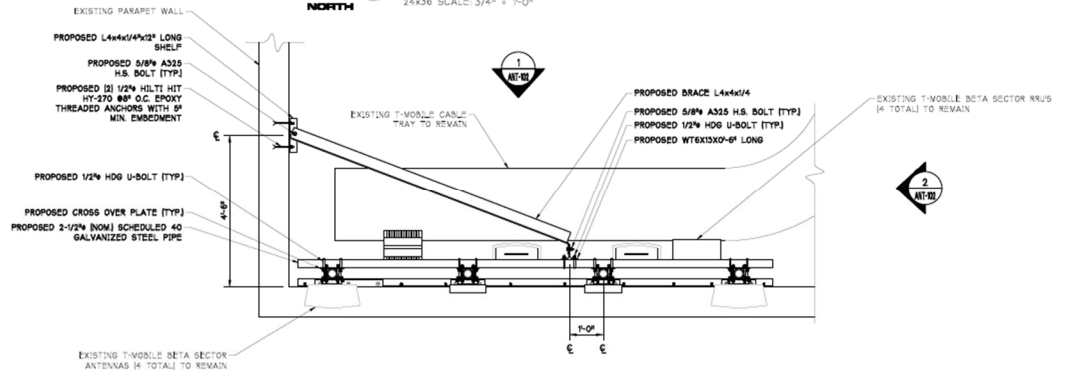


NORTH

1 ANT-100 EXISTING ANTENNA PLAN VIEW @ BETA

11x17 SCALE: 3/8" = 1'-0"

24x36 SCALE: 3/4" = 1'-0"



NORTH

1 ANT-100 PROPOSED ANTENNA PLAN VIEW @ BETA

11x17 SCALE: 3/8" = 1'-0"

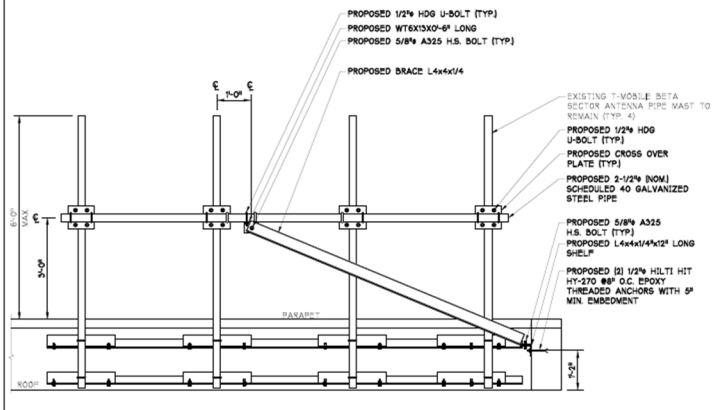
24x36 SCALE: 3/4" = 1'-0"

-1 0 1 2 4

11x17 SCALE 3/8" = 1'-0"

22x34 SCALE 3/4" = 1'-0"

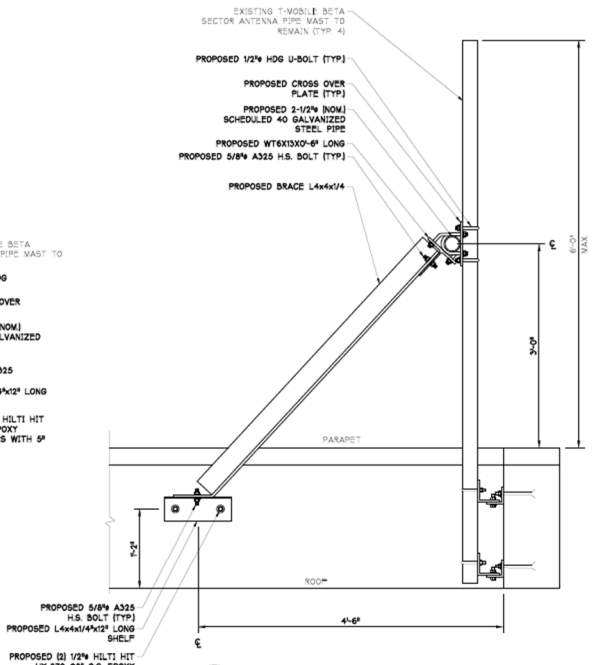
NOTE:
ANTENNAS AND RRUS NOT SHOWN FOR CLARITY



1 ANT-100 BETA SECTOR ELEVATION VIEW

11x17 SCALE: 3/8" = 1'-0"

24x36 SCALE: 3/4" = 1'-0"



2 ANT-100 BETA SECTOR SECTION VIEW

11x17 SCALE: 3/4" = 1'-0"

24x36 SCALE: 1-1/2" = 1'-0"

-1 0 1 2 4

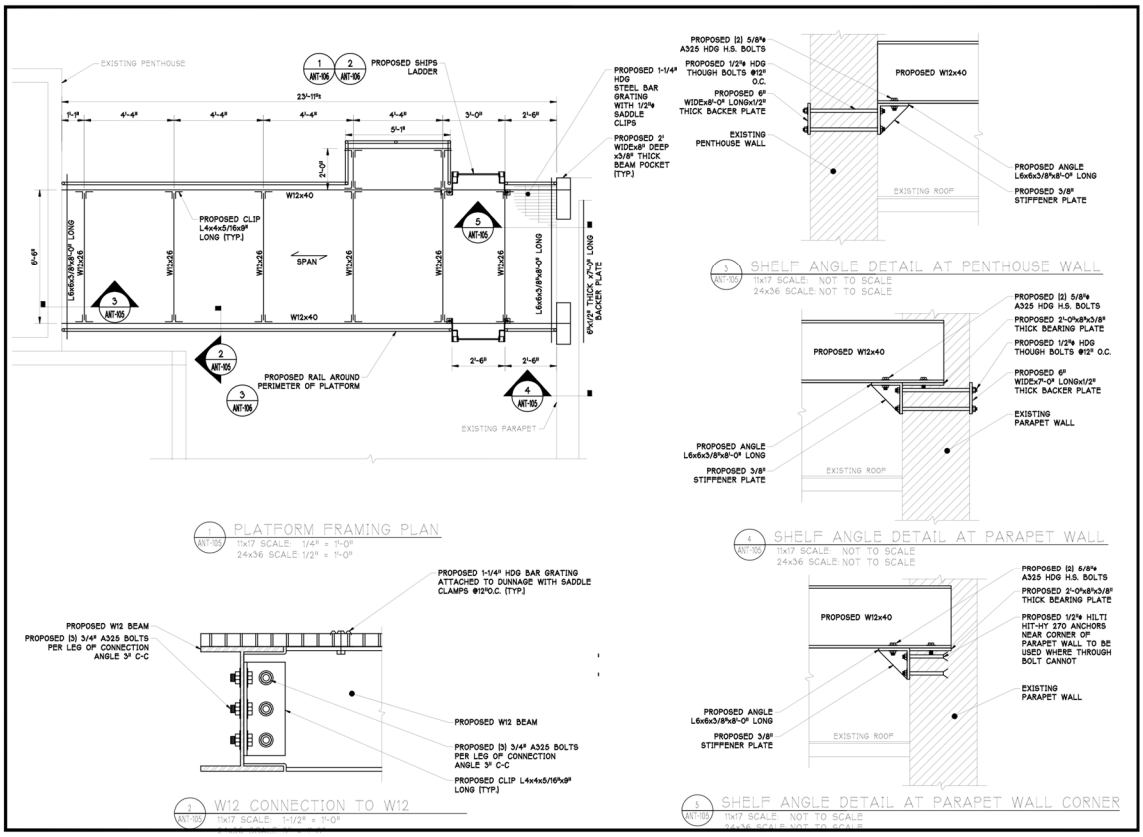
11x17 SCALE 3/8" = 1'-0"

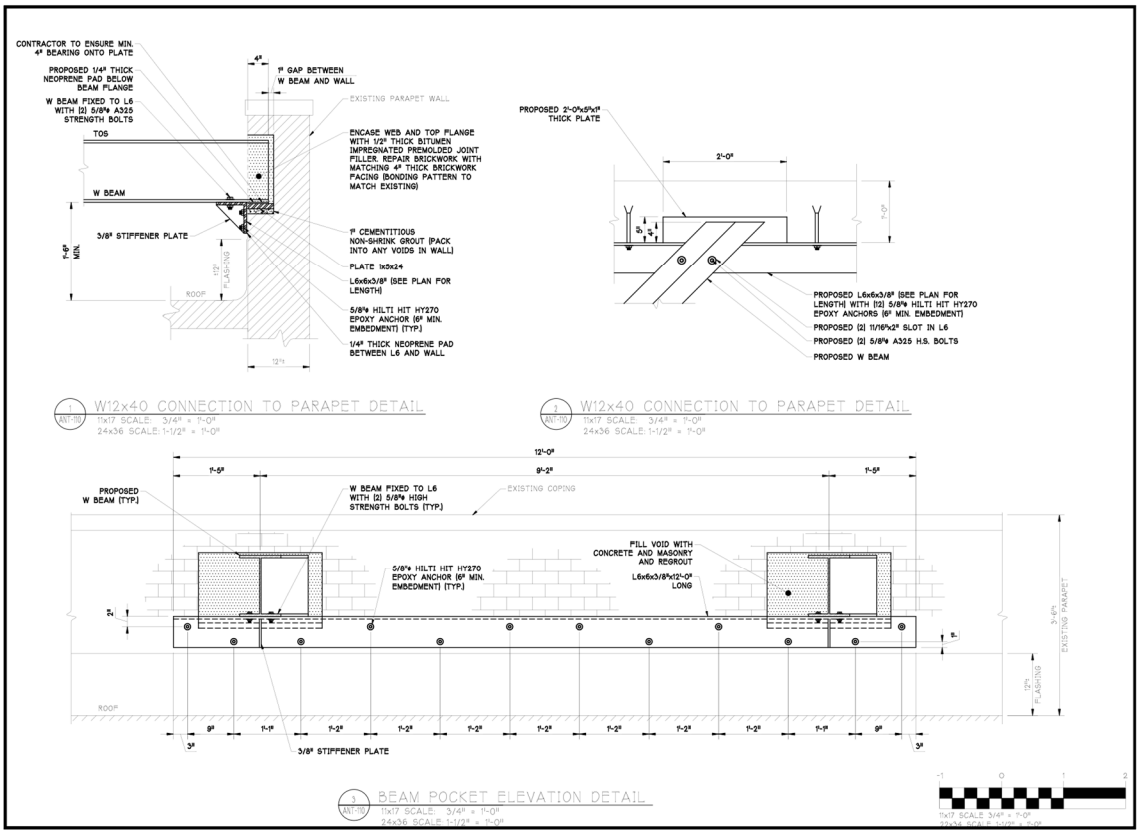
22x34 SCALE 3/4" = 1'-0"

-1 0 1 2

11x17 SCALE 3/4" = 1'-0"

22x34 SCALE 1-1/2" = 1'-0"


EXISTING PENTHOUSE
PROPOSED SHIPS LADDER
PROPOSED 1-1/4" HDG STEEL BAR GRATING WITH 1/2"ø SADDLE CLIPS
PROPOSED 2' WIDExø" DEEP x3/8" THICK BEAM POCKET (TYP.)
PROPOSED CLIP L4x4x5/16x9" LONG (TYP.)
W12x40
SPAN
W12x26
L6x6x3/8x8'-0" LONG
6"x1/2" THICK 2'-7" LONG BACKER PLATE
PROPOSED RAIL AROUND PERIMETER OF PLATFORM
EXISTING PARAPET
PROPOSED (2) 5/8"ø A325 HDG H.S. BOLTS
PROPOSED 1/2"ø HDG THOUGH BOLTS @12" O.C.
PROPOSED 6" WIDEx8'-0" LONGx1/2" THICK BACKER PLATE
EXISTING PENTHOUSE WALL
PROPOSED W12x40
PROPOSED ANGLE L6x6x3/8"x8'-0" LONG
PROPOSED 3/8" STIFFENER PLATE
EXISTING ROOF
SHELF ANGLE DETAIL AT PENTHOUSE WALL
11x17 SCALE: NOT TO SCALE
24x36 SCALE: NOT TO SCALE
PROPOSED (2) 5/8"ø A325 HDG H.S. BOLTS
PROPOSED 2'-0"x8"x3/8" THICK BEARING PLATE
PROPOSED 1/2"ø HDG THOUGH BOLTS @12" O.C.
PROPOSED 6" WIDEx7'-0" LONGx1/2" THICK BACKER PLATE
EXISTING PARAPET WALL
PROPOSED ANGLE L6x6x3/8"x8'-0" LONG
PROPOSED 3/8" STIFFENER PLATE
EXISTING ROOF
SHELF ANGLE DETAIL AT PARAPET WALL
11x17 SCALE: NOT TO SCALE
24x36 SCALE: NOT TO SCALE
PLATFORM FRAMING PLAN
11x17 SCALE: 1/4" = 1'-0"
24x36 SCALE: 1/2" = 1'-0"
PROPOSED 1-1/4" HDG BAR GRATING ATTACHED TO DUNNAGE WITH SADDLE CLAMPS @12"O.C. (TYP.)
PROPOSED W12 BEAM
PROPOSED (3) 3/4" A325 BOLTS PER LEG OF CONNECTION ANGLE 3" C-C
PROPOSED CLIP L4x4x5/16"x9" LONG (TYP.)
W12 CONNECTION TO W12
11x17 SCALE: 1-1/2" = 1'-0"
PROPOSED (2) 5/8"ø A325 HDG H.S. BOLTS
PROPOSED 2'-0"x8"x3/8" THICK BEARING PLATE
PROPOSED 1/2"ø HILTI HIT-HY 270 ANCHORS NEAR CORNER OF PARAPET WALL TO BE USED WHERE THROUGH BOLT CANNOT
EXISTING PARAPET WALL
PROPOSED ANGLE L6x6x3/8"x8'-0" LONG
PROPOSED 3/8" STIFFENER PLATE
EXISTING ROOF
SHELF ANGLE DETAIL AT PARAPET WALL CORNER
11x17 SCALE: NOT TO SCALE
24x36 SCALE: NOT TO SCALE


CONTRACTOR TO ENSURE MIN. 4" BEARING ONTO PLATE
PROPOSED 1/4" THICK NEOPRENE PAD BELOW BEAM FLANGE
W BEAM FIXED TO L6 WITH (2) 5/8"ø A325 STRENGTH BOLTS
TOS
W BEAM
5/8" STIFFENER PLATE
1" GAP BETWEEN W BEAM AND WALL
EXISTING PARAPET WALL
ENCASE WEB AND TOP FLANGE WITH 1/2" THICK BITUMEN IMPREGNATED PREMOLDED JOINT FILLER. REPAIR BRICKWORK WITH MATCHING 4" THICK BRICKWORK FACING (BONDING PATTERN TO MATCH EXISTING)
1" CEMENTITIOUS NON-SHRINK GROUT (PACK INTO ANY VOIDS IN WALL)
PLATE 1x9x24
L6x6x3/8" (SEE PLAN FOR LENGTH)
5/8"ø HILTI HIT HY270 EPOXY ANCHOR (6" MIN. EMBEDMENT) (TYP.)
1/4" THICK NEOPRENE PAD BETWEEN L6 AND WALL
ROOF
FLASHING
W12x40 CONNECTION TO PARAPET DETAIL
11x17 SCALE: 3/4" = 1'-0"
24x36 SCALE: 1-1/2" = 1'-0"
PROPOSED 2'-0"x5"x1" THICK PLATE
PROPOSED L6x6x3/8" (SEE PLAN FOR LENGTH) WITH (2) 5/8"ø HILTI HIT HY270 EPOXY ANCHORS (6" MIN. EMBEDMENT)
PROPOSED (2) 11/16"x2" SLOT IN L6
PROPOSED (2) 5/8"ø A325 H.S. BOLTS
PROPOSED W BEAM
W12x40 CONNECTION TO PARAPET DETAIL
11x17 SCALE: 3/4" = 1'-0"
24x36 SCALE: 1-1/2" = 1'-0"
12'-0"
9'-2"
1'-5"
PROPOSED W BEAM (TYP.)
W BEAM FIXED TO L6 WITH (2) 5/8"ø HIGH STRENGTH BOLTS (TYP.)
EXISTING COPING
FILL VOID WITH CONCRETE AND MASONRY AND REGROUT
L6x6x3/8"x12'-0" LONG
5/8"ø HILTI HIT HY270 EPOXY ANCHOR (6" MIN. EMBEDMENT) (TYP.)
3'-6" EXISTING PARAPET
12" FLASHING
ROOF
3/8" STIFFENER PLATE
BEAM POCKET ELEVATION DETAIL
11x17 SCALE: 3/4" = 1'-0"
24x36 SCALE: 1-1/2" = 1'-0"