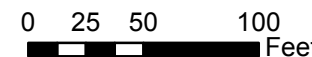




This document is a graphic representation only,  
created from the best available sources.  
The City of Raleigh assumes no responsibility for any errors,  
or misuse of this document.

5 W HARGETT  
STREET  
(RALEIGH BANKING  
& TRUST)

# RALEIGH HISTORIC LANDMARK



Nature of Project: Install wall mount antennas on penthouse; install equipment platform and shelter on rooftop; install cable trays on rooftop.

APPLICANT:  
AT&T MOBILITY



# Raleigh Historic Development Commission – Certificate of Appropriateness (COA) Application



**DEVELOPMENT  
SERVICES  
DEPARTMENT**

**Development Services  
Customer Service Center**  
One Exchange Plaza  
1 Exchange Plaza, Suite 400  
Raleigh, North Carolina 27601  
Phone 919-996-2495  
eFax 919-996-1831



- ☐ Minor Work (staff review) – **1 copy**
- ☐ Major Work (COA Committee review) – **10 copies**
- ☐ Additions Greater than 25% of Building Square Footage  
☐ New Buildings  
☐ Demo of Contributing Historic Resource  
☐ All Other

☒ Post Approval Re-review of Conditions of Approval

## For Office Use Only

Transaction # 502558  
 File # 019-17-CA  
 Fee 147.00  
 Amount Paid \_\_\_\_\_  
 Received Date 2/3/17  
 Received By (Signature)

**Property Street Address** 5 West Hargett Street, Raleigh, NC 27601

**Historic District** ~~Fayetteville Street Historic District~~ →

**Historic Property/Landmark name (if applicable)** Raleigh Banking and Trust Company Building

**Owner's Name** The Raleigh Building LLC

**Lot size** 0.17 acres (width in feet) 114 (depth in feet) 66

For applications that require review by the COA Committee (Major Work), provide addressed, stamped envelopes to owners of all properties within 100 feet (i.e. both sides, in front (across the street), and behind the property) not including the width of public streets or alleys ([Label Creator](#)).

Property Address	Property Address
5 W HARGETT ST, RALEIGH NC 27601-1357	222 W HARGETT ST, RALEIGH NC 27601-1316
PO BOX 27644, RALEIGH NC 27611-7644	112 N EAST ST, RALEIGH NC 27601-1112
2912 HIGHWOODS BLVD STE 100, RALEIGH NC 27604-1095	
PO BOX 11117, CHARLOTTE NC 28220-1117	205 FAYETTEVILLE ST, RALEIGH NC 27601-1364
8428 SMITH RD, APEX NC 27539-8180	PO BOX 1030, RALEIGH NC 27602-1030
133 FAYETTEVILLE ST STE 600, RALEIGH NC 27601-2911	
680 5TH AVE FL 20, NEW YORK NY 10019-5463	201 FAYETTEVILLE ST, RALEIGH NC 27601-1309
133 FAYETTEVILLE ST FL 6, RALEIGH NC 27601-1356	

14 env

**I understand that all applications that require review by the commission's Certificate of Appropriateness Committee must be submitted by 4:00 p.m. on the application deadline; otherwise, consideration will be delayed until the following committee meeting. An incomplete application will not be accepted.**

**Type or print the following:**

**Applicant** AT&T Mobility

**Mailing Address** Ramsey Development Solutions, LLC 12450 Cleveland Road, Suite 202

City Garner

**State** NC

**Zip Code** 27529

Date \_\_\_\_\_

**Daytime Phone** (919) 621-5847

**Email Address**      lyn@ramseydevelopmentsolutions.com

**Applicant Signature**

Ly. A. Fitzinger

Will you be applying for rehabilitation tax credits for this project? ☐ Yes ☒ No

Did you consult with staff prior to filing the application? ☒ Yes ☐ No

Office Use Only

### Type of Work

150, 62, 11

**Design Guidelines** - Please cite the applicable sections of the design guidelines ([www.rhdc.org](http://www.rhdc.org)).

[illegible]



### Minor Work Approval (office use only)

Upon being signed and dated below by the Planning Director or designee, this application becomes the Minor Work Certificate of Appropriateness. It is valid until \_\_\_\_\_. Please post the enclosed placard form of the certificate as indicated at the bottom of the card. Issuance of a Minor Work Certificate shall not relieve the applicant, contractor, tenant, or property owner from obtaining any other permit required by City Code or any law. Minor Works are subject to an appeals period of 30 days from the date of approval.

Signature (City of Raleigh) \_\_\_\_\_ Date \_\_\_\_\_

TO BE COMPLETED BY APPLICANT			TO BE COMPLETED BY CITY STAFF		
	YES	N/A	YES	NO	N/A
Attach 8-1/2" x 11" or 11" x 17" sheets with written descriptions and drawings, photographs, and other graphic information necessary to completely describe the project. Use the checklist below to be sure your application is complete.					
<a href="#">Minor Work</a> (staff review) – 1 copy					
<a href="#">Major Work</a> (COA Committee review) – 10 copies					
1. <b>Written description.</b> Describe clearly and in detail the nature of your project. Include exact dimensions for materials to be used (e.g. width of siding, window trim, etc.)	<input checked="" type="checkbox"/>				
2. <b>Description of materials</b> (Provide samples, if appropriate)	<input checked="" type="checkbox"/>				
3. <b>Photographs</b> of existing conditions are required. Minimum image size 4" x 6" as printed. Maximum 2 images per page.	<input checked="" type="checkbox"/>				
4. <a href="#">Paint Schedule</a> (if applicable)	<input type="checkbox"/>	<input checked="" type="checkbox"/>			
5. <a href="#">Plot plan</a> (if applicable). A plot plan showing relationship of buildings, additions, sidewalks, drives, trees, property lines, etc., must be provided if your project includes any addition, demolition, fences/walls, or other landscape work. Show accurate measurements. You may also use a copy of the survey you received when you bought your property. Revise the copy as needed to show existing conditions and your proposed work.	<input checked="" type="checkbox"/>	<input type="checkbox"/>			
6. <b>Drawings</b> showing existing and proposed work <ul style="list-style-type: none"> <li><input type="checkbox"/> Plan drawings</li> <li><input type="checkbox"/> Elevation drawings showing the façade(s)</li> <li><input type="checkbox"/> Dimensions shown on drawings and/or graphic scale (required)</li> <li><input type="checkbox"/> 11" x 17" or 8-1/2" x 11" reductions of full-size drawings. If reduced size is so small as to be illegible, make 11" x 17" or 8-1/2" x 11" snap shots of individual drawings from the big sheet.</li> </ul>	<input checked="" type="checkbox"/>	<input type="checkbox"/>			
7. Stamped envelopes addressed to all property owners within 100 feet of property not counting the width of public streets and alleys (required for Major Work). Use the <a href="#">Label Creator</a> to determine the addresses.	<input checked="" type="checkbox"/>	<input type="checkbox"/>			
8. <b>Fee</b> ( <a href="#">See Development Fee Schedule</a> )	<input checked="" type="checkbox"/>				



**Certificate of Appropriateness: Written Description**

To whom it may concern,

AT&T will be installing a telecommunication facility on the rooftop of the historic Raleigh Banking and Trust Company Building. Additions to the existing building include antennas, antenna wall mounts, equipment platform, equipment shelter and cable trays. Below are descriptions of each, including reference drawings and documents.

**Equipment Platform**

A 3'-0" x 11'-7 1/4" x 20'-8 1/4" (H x W x D) steel equipment platform will be installed on eastern side of the rooftop, lined up with existing columns from the building. A 4'-0" x 5'-6" x 3'-0" steel staircase will be attached to the eastern side for access to the platform. See Structural Steel Drawings by TEP dated January 31, 2017 for more details.

**Equipment Shelter**

An 9-3 1/4" x 16'-0" x 11'-5" lightweight equipment shelter painted to match the existing brick finish by Sabre will be installed on top of the equipment platform. See Sabre Lightweight Shelter drawings dated August 21, 2013 for more details.

**Antennas**

Six (6) Andrew SBNHH-1D65B LTE antennas (72.0" x 11.9" x 7.1") will be installed on the penthouse using wall mounts with a radiation centerline of 142'-0" above top of existing building gradeline. Antennas will be painted to match the existing brick of each sector of the building. See Construction Drawings by TEP dated January 31, 2017 for more details.

**Cable Tray**

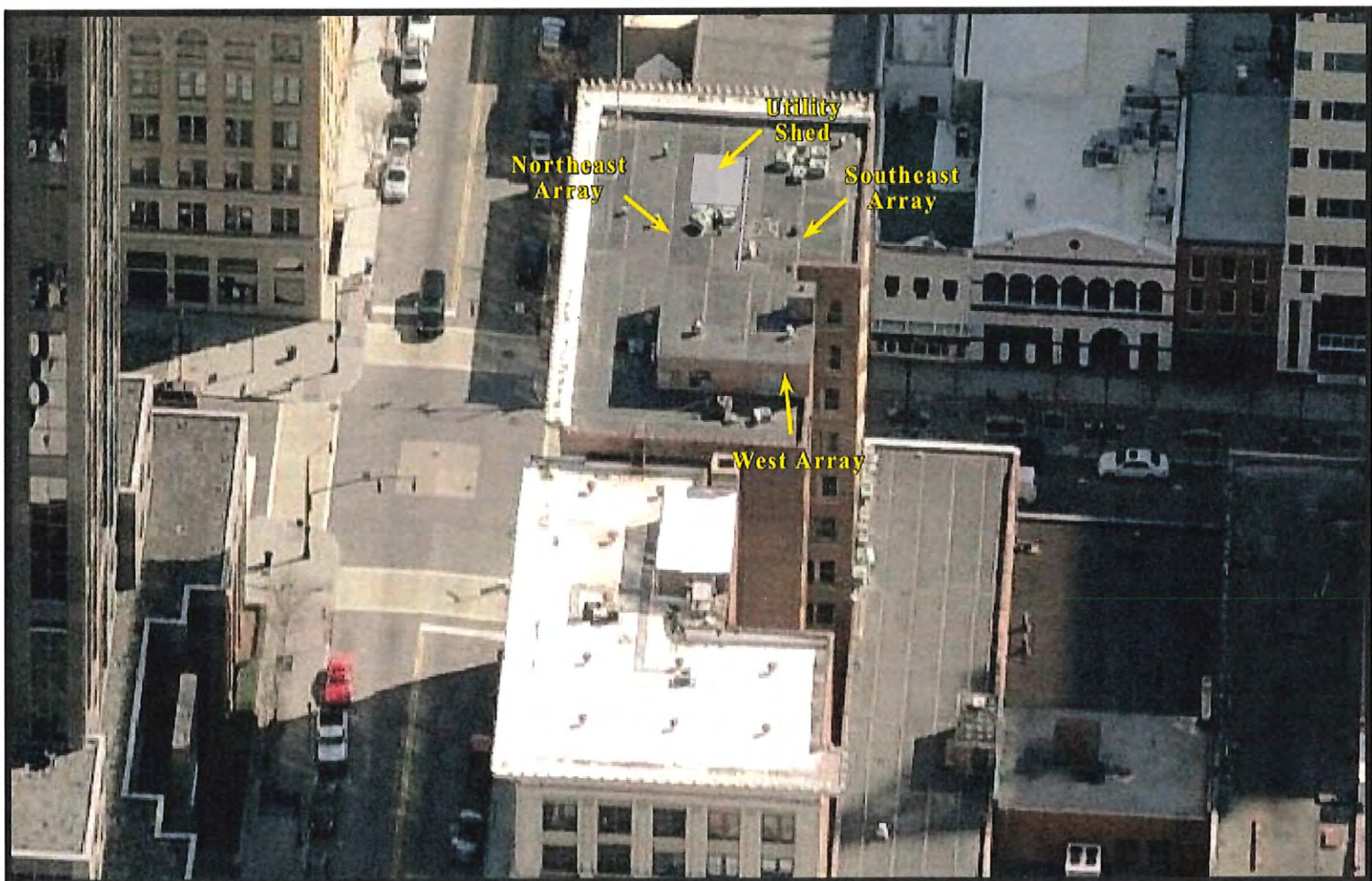
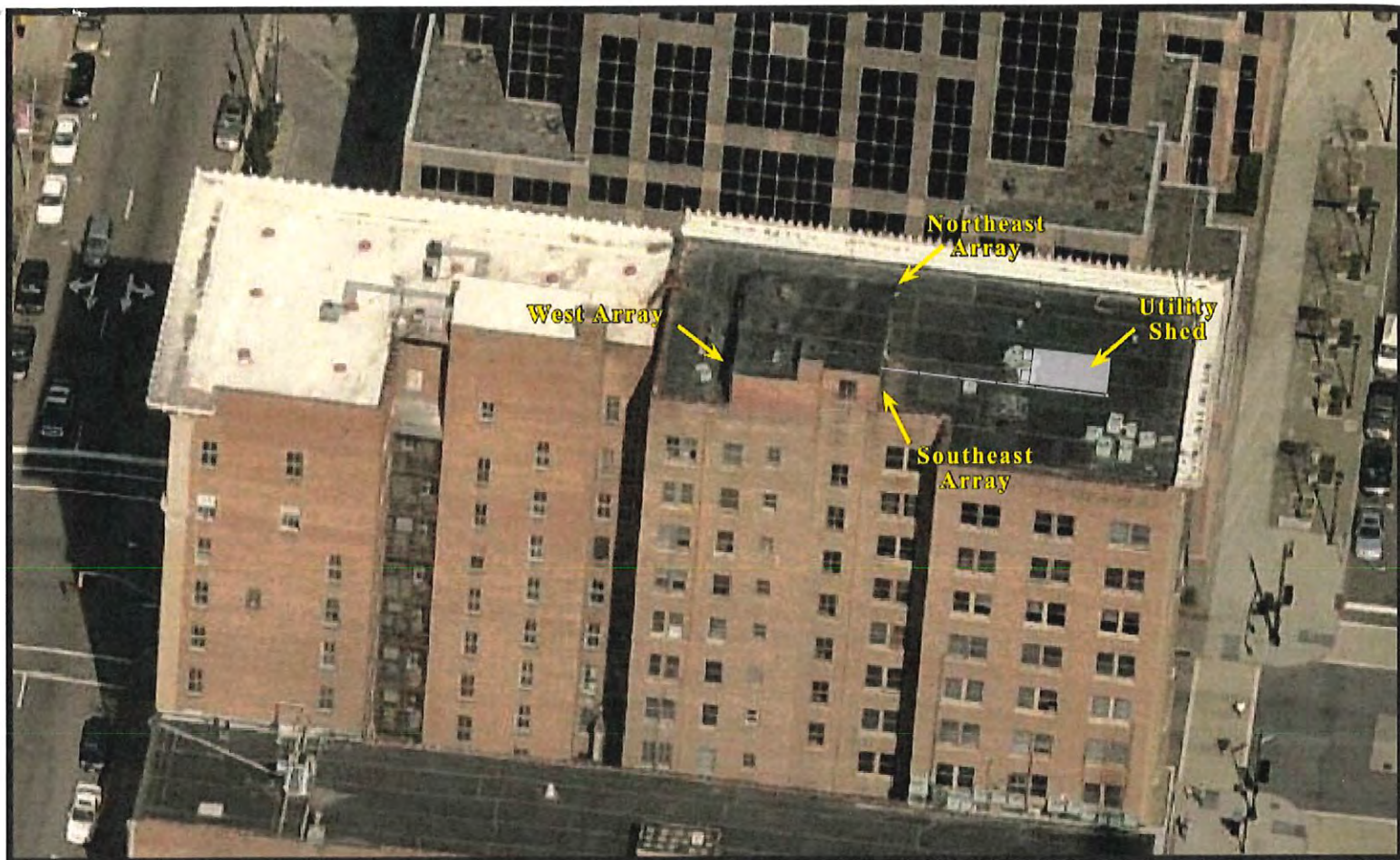
Galvanized steel cable trays (3 1/2" x 96" x 11 1/4") by Primus (Part No. MT-F1543) will be installed on the rooftop. These will be run from the equipment shelter to the three (3) sectors of antennas. See Construction Drawings by TEP dated January 31, 2017 for more details.

**Wall Mount**

Three (3) Antenna Wall Mounts will be installed on the western side of the rooftop penthouse. See Construction Drawings by TEP dated January 31, 2017 for more details. The components are as follows:

- SitePro bracket wall mounts (Part No. SBWM-312)
- 3" O.D. x 12'-0" mount pipes for antenna mounting
- Standoff Mount (Part No. PM#)

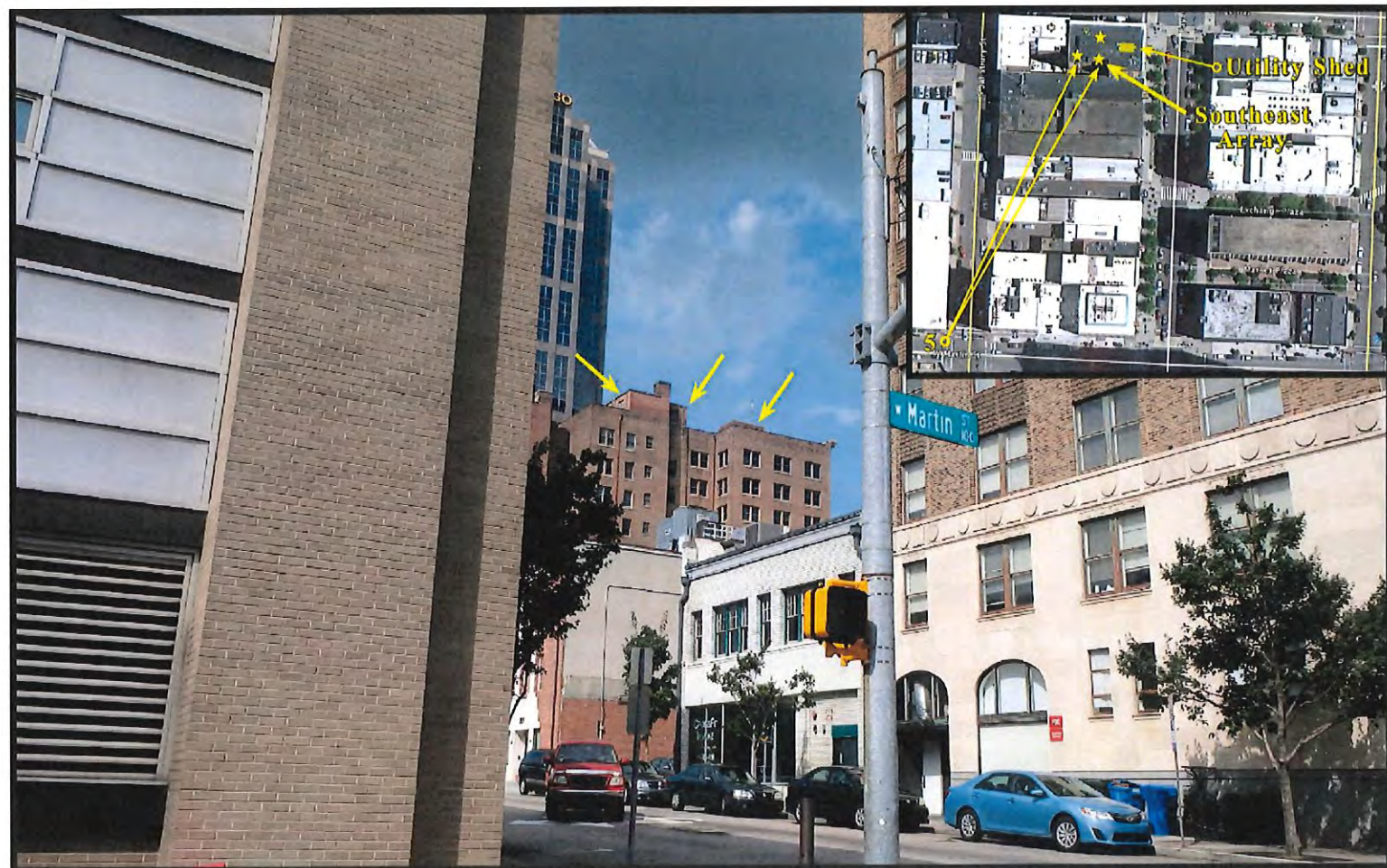
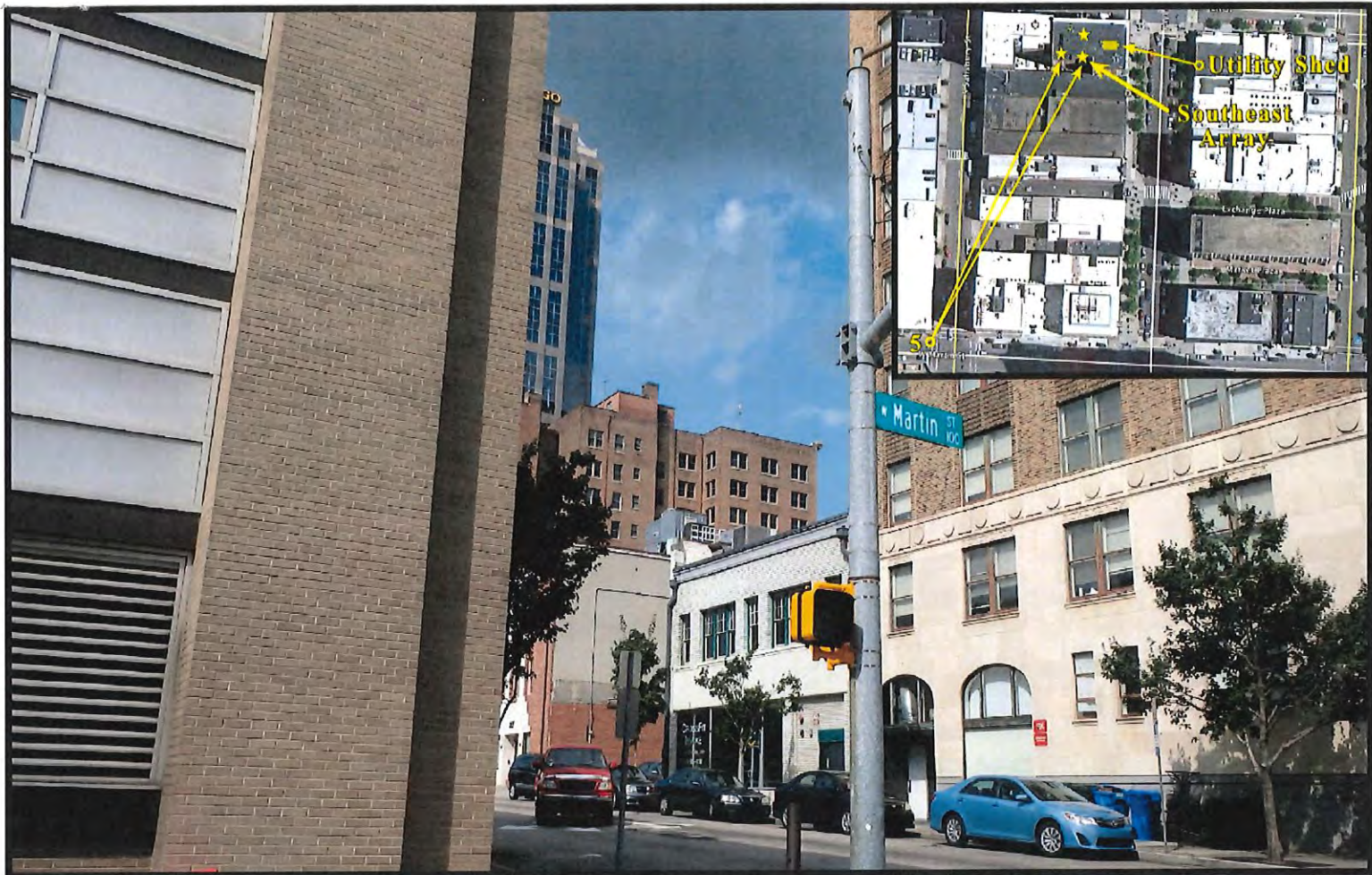












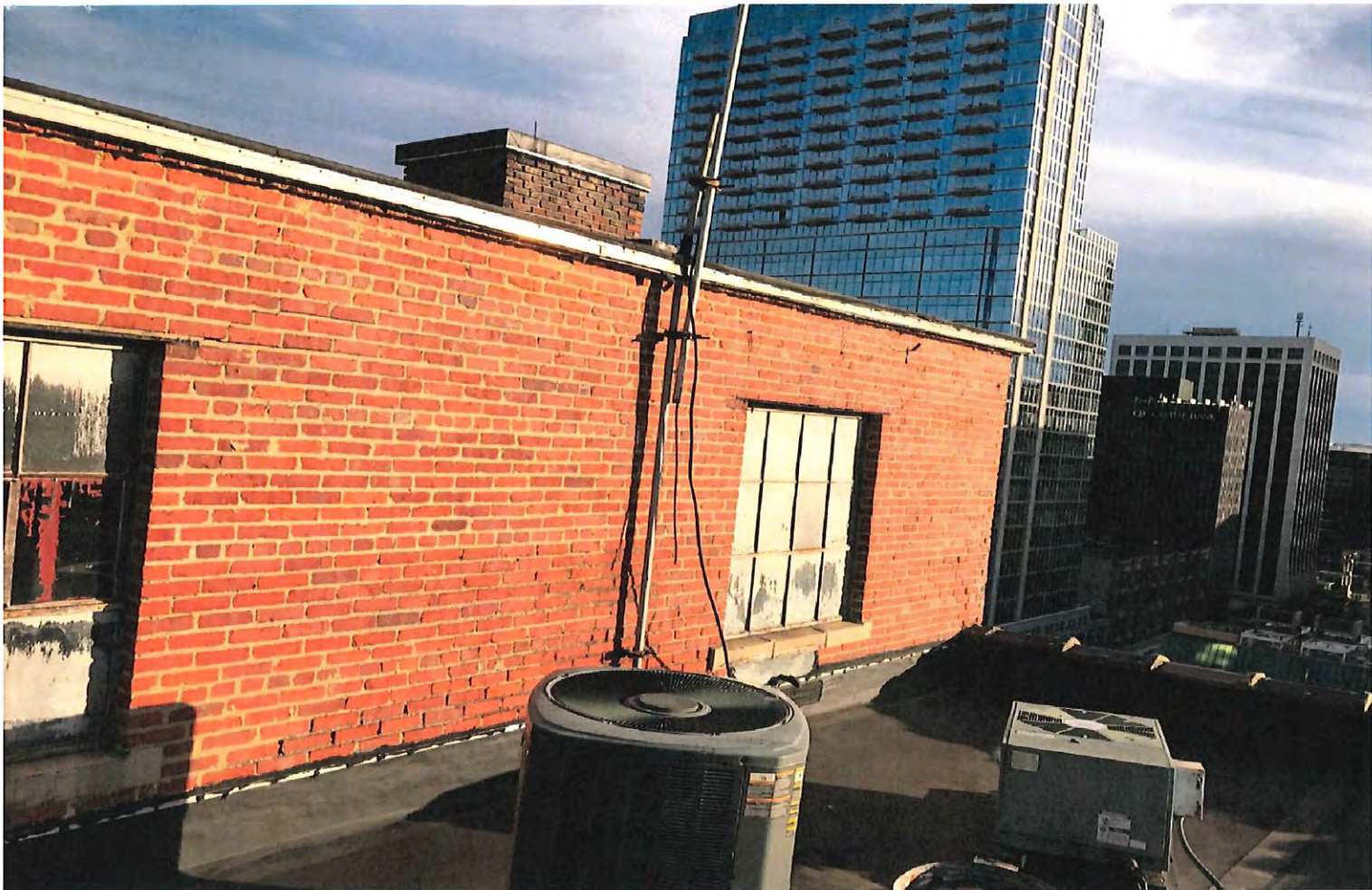














# INDEX OF SHEETS

SABRE INDUSTRIES(TM) PROPRIETARY DOCUMENT

## CODE SUMMARY

2005-2015	INTERNATIONAL BUILDING CODE
2009-2012	UNIFORM MECHANICAL CODE
2006-2015	INTERNATIONAL MECHANICAL CODE
2004	CHICAGO BUILDING CODE
2013	KENTUCKY BUILDING CODE
2015	MINNESOTA STATE BUILDING CODE
2015	MINNESOTA STATE MECHANICAL CODE (CH. 1346-2012 IMC & 2012 IFGC W/ AMEND.)
2015	MINNESOTA STATE ENERGY CODE (CH. 1323)
2009	NEW MEXICO COMMERCIAL BUILDING CODE
2014	NEW MEXICO ELECTRICAL CODE
2009	NEW MEXICO MECHANICAL CODE
2012	MICHIGAN BUILDING CODE
2012	MICHIGAN MECHANICAL CODE
2011	MICHIGAN ELECTRICAL CODE
2013	CALIFORNIA BUILDING CODE
2013	CALIFORNIA GREEN BUILDING STANDARDS
2013	CALIFORNIA ENERGY CODE TITLE 24
2013	CALIFORNIA ELECTRICAL CODE
2013	CALIFORNIA FIRE CODE
2010	NEW YORK CITY BUILDING CODE
2014	NORTH DAKOTA ELECTRICAL WIRING STANDARDS
2014	FLORIDA BUILDING CODE
2014	FLORIDA BUILDING CODE MECHANICAL
2014	FLORIDA BUILDING CODE FUEL GAS
5TH	MASSACHUSETTS STATE BUILDING CODE
2011	OHIO BUILDING CODE
2011	OHIO MECHANICAL CODE
2011	OHIO FIRE CODE
2014	OREGON STRUCTURAL SPECIALTY CODE
2014	OREGON MECHANICAL SPECIALTY CODE
2014	OREGON ENERGY EFFICIENCY SPECIALTY CODE
2012	NORTH CAROLINA BUILDING CODE
2014	NORTH CAROLINA ELECTRICAL CODE
2012	NORTH CAROLINA MECHANICAL CODE
2012	NORTH CAROLINA ENERGY CONSERVATION CODE
2012	TEXAS ACCESSIBILITY STANDARDS
1996-2014	NATIONAL ELECTRICAL CODE
2004,2007,2010,2013	ASHRAE 90.1
2006,2009,2012,2015	INTERNATIONAL ENERGY CONSERVATION CODE
2003,2005,2006,2009,2012,2015	NFPA 101 LIFE SAFETY CODE
2009,2012	INTERNATIONAL FUEL GAS CODE
2012	NFPA 1 UNIFORM FIRE CODE WITH 2013 AMENDMENTS
2002	ARKANSAS FIRE PREVENTION CODE
2012	NORTH CAROLINA FIRE PREVENTION CODE
2012	RHODE ISLAND FIRE SAFETY CODE

## NOTES

1. LISTED CODES INCLUDE LATEST STATE ADOPTED AMENDMENTS AND APPENDICES.
2. THIS SHELTER IS AN "ENCLOSED STRUCTURE" NOT INTENDED FOR HUMAN HABITATION.
3. APPROVED MODEL MAY BE MIRROR IMAGE.
4. OCCUPANT LOAD = 0, OHIO = 2
5. SPECIAL CONDITIONS AND PERMISSIBLE TYPES OF GASES: N/A
6. SHELTER HAS NO COUNTY PLACEMENT RESTRICTION IN THE STATE OF MARYLAND.
7. STATE INSIGNIA LABEL/DECAL IS LOCATED NEAR MAIN ELECTRICAL SERVICE PANEL.
8. DOOR MUST BE MINIMUM 90 MINUTE FIRE RATED IF USED IN 2 HOUR FIRE RATED SHELTER AND MINIMUM 45 MINUTE FIRE RATED IF USED IN 1 HOUR FIRE RATED SHELTER.
9. NOT SUBJECT TO FLORIDA FIRE SAFETY CODE, COMPLIANCE IS THE RESPONSIBILITY OF THE LOCAL JURISDICTION OFFICIAL.
10. ACCESS TO SHELTER SHALL COMPLY WITH MARYLAND ACCESSIBILITY CODE COMAR .05.02.02.07/ADAAG SECTION 4.1.2.
11. APPLICABLE INTERNAL PRESSURE COEFFICIENT (N/A) - THESE SHELTERS CONFORM TO THE REQUIREMENTS OF (2000,03,06,09 IBC), ASCE 7-05, METHOD 1 SIMPLIFIED PROCEDURE; (2012,15 IBC, 2014 FBC) ASCE 7-10 SIMPLIFIED DIAPHRAM LOW-RISE BUILDINGS.
12. WIND IMPORTANCE FACTOR -  $IW = 1.000$
13. THESE PLANS ARE DESIGNED TO BE USED FOR THE CONSTRUCTION OF COMMERCIAL MODULAR UNITS, IN ACCORDANCE WITH CA HEALTH AND SAFETY CODE SECTION 18028, 1891 UBC, 1993 IBC, ANSI A117.1-1986.
14. HVAC UNITS ARE SIZED PER CUSTOMER REQUIREMENTS.
15. EXTERNAL GROUNDING BY OTHERS.
16. SHELTER CONSTRUCTED IN ACCORDANCE WITH 61020-3.006.
17. THIS BUILDING DOES NOT CONTAIN PLUMBING FACILITIES. PLUMBING FACILITIES SHALL BE PROVIDED ON SITE SUBJECT TO THE LOCAL AUTHORITY HAVING JURISDICTION.

## LAYOUT DRAWINGS

0-0	COVER SHEET
0-1	PARTS LIST
0-2	CUT LIST/SHOP DETAILS
0-3	CUT LIST/SHOP DETAILS
0-4	OPTIONAL COMPONENTS
0-5	OPTIONAL COMPONENTS CONTD.
0-6	OPTIONAL COMPONENTS CONTD.
0-7	OPTIONAL COMPONENTS CONTD.
0-8	OPTIONAL COMPONENTS CONTD.
*1-0	EXTERIOR ELEVATION "A"
*1-1	EXTERIOR ELEVATION "C"
*1-2	EXTERIOR ELEVATION "B"
*1-3	EXTERIOR ELEVATION "D"
2-0	FLOOR PLAN
2-1	EQUIPMENT LAYOUT
2-2	REFLECTED CEILING PLAN (OVERLAY)
3-0-1	REFLECTED CEILING PLAN (ELECT)(1HR)
3-0-2	REFLECTED CEILING PLAN (ELECT)(2HR)
3-1	WIREWAY DETAILS
3-2-1	REFLECTED CEILING PLAN (MECH)(1HR)
3-2-2	REFLECTED CEILING PLAN (MECH)(2HR)
4-0-1	INTERIOR ELEVATION "A" 1HR - (ELECTRICAL)
4-0-2	INTERIOR ELEVATION "A" 2HR - (ELECTRICAL)
4-1	INTERIOR ELEVATION "C" 1HR/2HR - (ELECTRICAL)
4-2	INTERIOR ELEVATION "B" 1HR/2HR - (ELECTRICAL)
4-3	INTERIOR ELEVATION "D" 1HR/2HR - (ELECTRICAL)
5-0	INTERIOR ELEVATION "A" (MECHANICAL)
5-1	INTERIOR ELEVATION "C" (MECHANICAL)
5-2	INTERIOR ELEVATION "B" (MECHANICAL)
5-3	INTERIOR ELEVATION "D" (MECHANICAL)
5-4	INTERIOR GROUND BAR DETAILS
5-5	TELECOM/EXTERIOR GROUND BAR DETAIL
5-6	GROUNDING NOTES

\* = DENOTES SHEETS WHICH MAY CONTAIN FIELDWORK

## REFERENCE DRAWINGS

108-005	STEEL FRAME FOUNDATION PLAN
108-007	ABBREVIATIONS AND SYMBOLS
108-015	GENERAL ELECTRICAL NOTES & LEGEND
108-016	GENERAL CASTING SPECIFICATIONS
108-039	ANGLED/FLAT TIEDOWN DETAILS
108-087	CANOPY FIELD INSTALLATION
108-098	STANDING SEAM ROOF
108-135	STEEL SHELTER HARDIE BOARD FLORIDA
108-138	LIGHTWEIGHT CROSS SECTION
503-001	ATN STANDARD LIFTING DETAILS
503-002	ATN STANDARD LOW VOLTAGE WIRING SCHEMATICS
503-003	ATN STANDARD ALARM BLOCK TERMINATION LOCATIONS
503-011	ATN STANDARD SMOKE-HYDROGEN WIRING SCHEMATIC
503-012	ATN STANDARD MARVAIR DC CONTROLLER WIRING SCHEMATIC
503-013	ATN STANDARD MC4000A WIRING SCHEMATIC
503-014	ATN STANDARD GENERATOR INTERFACE WIRING SCHEMATIC
503-015	ATN STANDARD ELECTRICAL SCHEMATIC NO GENERATOR
503-020	ATN STANDARD MARVAIR COMSTAT 4 WIRING SCHEMATIC
503-023	ATN STANDARD FIKE SYSTEM LAYOUT
503-047	AT&T STANDARD COOLINKS LEAD/LAG CONTROLLER SCHEMATICS

## STRUCTURAL DRAWINGS (MANUFACTURE ONLY)

S1	OF 14	STRUCTURAL SPECIFICATIONS
S2	OF 14	ELOCK PANEL CUT LIST
S3	OF 14	ELOCK PANEL CUT LIST
S4	OF 14	SHEET METAL CUT LIST
S5	OF 14	ELOCK PANEL LAYOUT END WALL "A"
S6	OF 14	STR. & METAL LAYOUT END WALL "A"
S7	OF 14	ELOCK PANEL LAYOUT SIDE WALL "B"
S8	OF 14	STRUCTURAL LAYOUT SIDE WALL "B"
S9	OF 14	SHEET METAL LAYOUT SIDE WALL "B"
S10	OF 14	ELOCK PANEL LAYOUT END WALL "C"
S11	OF 14	STR. & METAL LAYOUT END WALL "C"
S12	OF 14	ELOCK PANEL LAYOUT SIDE WALL "D"
S13	OF 14	STRUCTURAL LAYOUT SIDE WALL "D"
S14	OF 14	SHEET METAL LAYOUT SIDE WALL "D"

## DESIGN PARAMETERS

USE GROUP: B (BOCA, MASBC)  
S-2 (FBC, IBC, SBC, UBC)  
U (IBC)

CONSTRUCTION TYPE: 5B (BOCA, MASBC)  
N-UNP (SBC)  
V-B (IBC, FBC)  
V-N (UBC)

OCCUPANCY CATEGORY: II

ROOF LIVE LOAD: 100 PSF

CONCRETE FLOOR LIVE LOAD: = 234 PSF

2HR RATED STEEL FLOOR LIVE LOAD: = 807 PSF

GROUND SNOW LOAD: 119 PSF (NO GPS LOAD FOR BC 2007)

WIND SPEED: 150 MPH/EXPOSURE C

SEISMIC ZONE FOR BC & BC: 4  
SEISMIC DESIGN CATEGORY FOR IBC: E (IBC)  
USE GROUP-III (IBC)  
SITE CLASS-D (IBC)

CONCRETE  $f'_c$ : 5000 PSI AT 28 DAYS  
CONCRETE UNIT WEIGHT: 110 PCF

FIRE RATING OPTIONS:  
1 HR WALL UL ASSY # U418 (EXPOSED TO FIRE ON INTERIOR FACE ONLY)  
2 HR WALL UL ASSY # U418 (EXPOSED TO FIRE ON INTERIOR FACE ONLY)  
(LIMITATIONS MAY APPLY DUE TO OPENINGS AND PROXIMITY ON SITE)

-BATTERY RACK TO CONTAIN LESS THAN 50 GALLONS ELECTROLYTE.  
-SHELTER MAY BE BUILT AS MIRROR IMAGE. (MODEL DATN28)

## PHYSICAL PROPERTIES

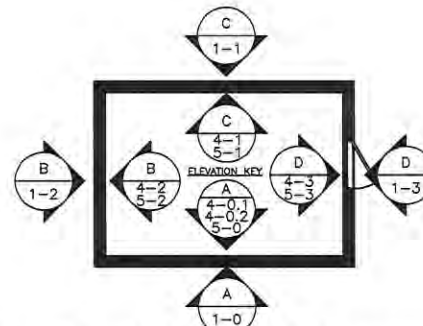
SHELTER DIMENSIONS: 11'-5" W X 16'-0" L  
SHIPPING DIMENSIONS: 12'-10 1/2" W X 18'-1 1/2" L X 10'-7 1/4" H [CONC]  
12'-10 1/2" W X 18'-1 1/2" L X 11'-3 1/4" H [1HR/2HR]

## SHELTER WEIGHT (SHELTER ONLY):

1 HR SHELTER W/CONCRETE FLOOR	= 23,300 LBS
2 HR SHELTER W/CONCRETE FLOOR	= 24,300 LBS
1 HR SHELTER W/2 HOUR FLOOR	= 20,700 LBS
2 HR SHELTER W/2 HOUR FLOOR	= 21,700 LBS

## FLOORS

220-1105X1600-01	CONCRETE FLOOR ASSY KIT, 11'-5"X16'-0"	[M1]
225-1105X1600-01	STRUCTO 2HR FLOOR KIT, 11'-5"X16'-0"	[M2]
526-1111X1606-10	ROOF ASSY, KIT STD,SS, 11'-11"X16'-6"	[F1]
526-1105X1600X3-11	ROOF ASSY, KIT, STD,ELAST, 11'-5"X16'-0"	[F2]



ZONE	EXTERIOR COMPONENTS AND CLADDING POSITIVE AND NEGATIVE PRESSURES IN TERMS OF PSF			
	2000 IBC, 120 MPH WIND SPEED	2003 IBC, 2006 IBC, 120 MPH WIND SPEED	2000,03,06,09,12,15 IBC, 150 MPH WIND SPEED	2014 FBC, 180 MPH WIND SPEED
ROOF ZONE 1 (100 SF EFFECTIVE WIND AREA)	+12.1/-28.7	+10.0/-28.7	+15.7/-44.8	+22.7/-64.5
ROOF ZONE 2 (20 SF EFFECTIVE WIND AREA)	+12.1/-46.9	+12.0/-46.9	+18.6/-73.4	+26.9/-105.8
ROOF ZONE 3 (10 SF EFFECTIVE WIND AREA)	+12.7/-79.1	+12.7/-79.1	+20.0/-123.7	+28.7/-178.1
WALL ZONE 4 (200 SF EFFECTIVE WIND AREA)	+25.8/-28.4	+25.8/-28.4	+39.6/-43.4	+58.2/-64.1
WALL ZONE 5 (30 SF EFFECTIVE WIND AREA)	+29.3/-38.0	+29.3/-38.0	+45.9/-59.2	+65.9/-92.3

D	SB	5/20/16	REPLACED REF. DWG. 108-001-01 WITH 108-039		
C	DB	02/20/15	UPDATED SHEETS, REF & STRUCTURAL DRAWINGS	BOB	02/20/15
B	MOB	10/28/14	UPDATED INDEX OF SHEETS	BOB	10/28/14
A	SLC	03/21/14	UPDATED INDEX OF SHEETS SHEET & ELEVATION BUBBLES	WR	03/24/14
REV	BY	DATE	DESCRIPTION	APP	BY DATE

THIS DRAWING IS THE CONFIDENTIAL PROPERTY AND CONTAINS TRADE SECRETS OF CELLION, LLC. ANY USE OF THESE DRAWINGS OR THE INFORMATION CONTAINED HEREIN FOR ANY REASON OTHER THAN AS EXPRESSLY AUTHORIZED BY SABRE INDUSTRIES, INC. IS STRICTLY PROHIBITED. THIS DRAWING HAS BEEN DISTRIBUTED WITH THE UNDERSTANDING THAT ANYONE RECEIVING OR OTHERWISE OBTAINING POSSESSION OF IT WILL BE EXPRESSLY NOTIFIED OF ITS CONFIDENTIAL NATURE.

**Sabre Industries**  
Building Systems by CellXion  
5031 Hazel Jones Road  
Bossier City, LA 71111  
Voice: (318) 213-2900  
Fax: (318) 213-2919  
www.sabreindustries.com

CUSTOMER:  
**AT&T WIRELESS SERVICES**

PROJECT:  
**11'-5" X 16'-0" 1HR/2HR STEEL SHELTER COVERSHEET**

FILENAME:  
/DATN27.dwg  
SCALE: N.T.S. TOLERANCE:  
DRWN. BY: D.LONG DATE: 8/21/13  
CHK. BY: D. BROYLES DATE: 8/21/13  
APP. BY: D. BRANNEN DATE: 8/21/13  
SHEET NO. 0-0

DRAWING NO.: DATN27 REV: D

SABRE INDUSTRIES(TM) PROPRIETARY DOCUMENT



ITEM	QTY	U/M	P/N	DEPT	PART LIST DESCRIPTION	MFG	MFG P/N
1	7.0000	FT.	170000	20	PIPE,PVC,SCH 40,1"		
2	1.0000	EA.	350060	20	TELCO BOARD,4"X8",POLY,030,W/5/8"OB (OR EQUAL)	CELLXION	350025
3	2.0000	EA.	168283	30	BUSHING, PLASTIC, 1/2", SNAP-IN, HEYCO (OR EQUAL)	HEYCO	SB875-11
4	2.0000	EA.	170037	30	PIPE,GALV,SCH 40,1",CAP (OR EQUAL)	FASTENAL	66690
5	1.0000	EA.	170128	30	PIPE,GALV,2",CAP (OR EQUAL)	FASTENAL	66693
6	3.0000	EA.	400108	30	LUG,2H,4,GY,1/4"BOLT,3/4"C/C,LB (OR EQUAL)	PANDUIT	LCC4-14B-L
7	1.0000	EA.	400108-01	30	LUG,2H,4,GY,1/4"LB,KIT W/10FT DROP	CELLXION	400377-01
8	2.0000	EA.	410100	30	NIPPLE,EMT,3/4",CHASE		
9	1.0000	EA.	410140	30	NIPPLE,RIGID,2",CLOSE		
10	12.0000	EA.	430005	30	BOX,JUNCT,4"X4",2-1/2"-3/4"KO (OR EQUAL)	STEEL CITY	521711234E
11	3.0000	EA.	430008	30	BOX,6X6X4,SCREW COVER,NEMA 1,0-KO (OR EQUAL)	HOFFMAN	ASE6X6X4NK
12	8.0000	EA.	430029	30	BOX,JUNCT,4-11/16"X4-11/16"D-2 1/8" (OR EQUAL)	STEEL CITY	721711234
13	2.0000	EA.	430030	30	BOX,JUNCT,2X4,WP,(3) 1/2"HOLES (OR EQUAL)	LEGAND	WPB23
14	2.0000	EA.	430049	30	WIREWAY,GALV,4"X4",CLOSURE PLATE,NO (OR EQUAL)	HOFFMAN	F-44GCPNKG
15	5.0000	EA.	430050	30	WIREWAY,GALV,4"X4",U-CONNECTOR (OR EQUAL)	HOFFMAN	F-44GICGV
16	1.0000	EA.	430054	30	BOX,JUNCT,2"X4",1 7/8" (OR EQUAL)	STEEL CITY	103-W-1/2
17	3.0000	EA.	430061	30	WIREWAY,GALV,4X4,90D ELBOW (OR EQUAL)	HOFFMAN	F-4490EGV
18	1.0000	EA.	430266	30	PIPE,GALV,SCH 40,1/2",CAP (OR EQUAL)	FASTENAL	66688
19	1.0000	EA.	430267	30	WIREWAY,GALV,4"X4"X24",W/O KO'S (OR EQUAL)	HOFFMAN	F-44T124GV
20	1.0000	EA.	430268	30	WIREWAY,GALV,4"X4"X48",W/O KO'S (OR EQUAL)	HOFFMAN	F-44T148GV
21	2.0000	EA.	430319	30	WIREWAY,GALV,4"X4"X36",W/O KO'S (OR EQUAL)	HOFFMAN	F-44T136GV
22	1.0000	EA.	430336	30	WIREWAY,GALV,4"X4"X12",W/O KO'S (OR EQUAL)	HOFFMAN	F-44T112GV
23	1.0000	EA.	430366	30	BOX,JUNCT,4X4,WEATHERPROOF,3/4"KO (OR EQUAL)	BELL	5341-0
24	1.0000	EA.	430644	30	PLUG,4",RED PLASTIC		
25	1.0000	EA.	430755	30	EXTENSION RING,4 11/16",WITH 1" KOS (OR EQUAL)	STEEL CITY	73171 1
26	3.0000	EA.	431181	30	BOX,JUNCT,4-11/16" SQ,D-2 1/8",1"KO (OR EQUAL)	STEEL CITY	721711
27	1.0000	EA.	431360	30	BOX,JUNCT,MULTI,4-1/2" x 6-13/16" x 1-5/8" (OR EQUAL)	RACO	951
28	1.0000	EA.	431427	30	ALARM BLOCK,SEMON,S66B3-100MH-49 (OR EQUAL)	SIEMON	S66B3-100MH-49
29	3.0000	EA.	431468	30	BOX,JUNCT,4"X2 1/8"D, W/3/4"KO (OR EQUAL)	STEEL CITY	541511234
30	1.0000	EA.	460015	30	CONTROLLER,5/09481,PRISM MARVAIR	MARVAIR	S/09481
31	2.0000	EA.	470615	30	LIGHT FIXTURE,32W,2 BULB,4FT,WR,1-8	TEXAS FLUORESCENTS	207A232-MVC-D
32	9.0000	EA.	510142	30	UNISTRUT,1 5/8"CHANNEL,GOLDGALV,9" (OR EQUAL)	THOMAS & BETTS	A1200HST0
33	1.0000	EA.	168186	40	WASHER,1/2" FLAT,STAINLESS (OR EQUAL)	FASTENAL	78021
34	40.0000	FT.	410111	40	CONDUIT,LFMC,3/4",SEALTITE (OR EQUAL)	ANAMET ELECTRICAL, INC	EF34
36	8.0000	FT.	410119	40	CONDUIT,LFMC,1",SEALTITE (OR EQUAL)	ANAMET ELECTRICAL, INC	EF1
37	10.0000	EA.	410128	40	CONNECTOR,LFMC,3/4",450,SEALTITE (OR EQUAL)	T&B	5243
38	4.0000	EA.	410129	40	CONNECTOR,LFMC,3/4",STRAIGHT,ST (OR EQUAL)	T&B	5233
39	2.0000	EA.	410155	40	CONNECTOR,LFMC,1",450,SEALTITE (OR EQUAL)	T&B	5244
40	2.0000	EA.	420006	40	LABEL,BLK,ELECT,"GFCI"		
41	1.0000	EA.	420007	40	LABEL,BLK,ELECT,"ALARM BLOCK"		
42	1.0000	EA.	420009	40	LABEL,BLK,ELECT,"INTERIOR LIGHT"		
43	1.0000	EA.	420010	40	LABEL,BLK,ELECT,"AC PANEL"		
44	1.0000	EA.	420016	40	LABEL,BLK,ELECT,"LEAD-LAG CONTROL"		
45	1.0000	EA.	420017	40	LABEL,BLK,ELECT,"HVAC #2"		
46	1.0000	EA.	420018	40	LABEL,BLK,ELECT,"HVAC #1"		
47	1.0000	EA.	420024	40	LABEL,BLK,ELECT,"EXTERIOR LIGHT"		
48	16.0000	EA.	420033	40	LABEL, SELF TRANSFER, PANDUIT TTSL2		
49	1.0000	EA.	420034	40	LABEL,BLK,ELECT,"DC LIGHT"		
50	1.0000	EA.	420041	40	LABEL,"ARC FLASH AND SHOCK WARNING"		
51	1.0000	EA.	420143	40	LABEL,RED, ELECT,BONDING TAG		
52	1.0000	EA.	420591	40	LABEL,BLK,ELECT,"FIXED" (OR EQUAL)	CELLXION	420591
53	1.0000	EA.	420592	40	LABEL,BLK,ELECT,"PORTABLE" (OR EQUAL)	CELLXION	420592
54	1.0000	EA.	430001	40	COVER,BLANK PLATE,4X2,HANDY (OR EQUAL)	RACO	860
55	4.0000	EA.	430012	40	COVER,BLANK PLATE,4X4 (OR EQUAL)	APPLETON	8465
56	12.0000	EA.	430014	40	COVER,BLANK PLATE,4 11/16" (OR EQUAL)	APPLETON	8487
57	5.0000	EA.	430025	40	COVER,RECT PLATE,4X4,2R (OR EQUAL)	APPLETON	8365N
58	2.0000	EA.	430033	40	RECEPTACLE,GFCI,120V,20A,NEMAS,WR (OR EQUAL)	HUBBELL	GFTK20I
59	5.0000	EA.	430034	40	RECEPTACLE,DUPLEX,125V,20A,IVORY (OR EQUAL)	COOPER	CR20V
60	2.0000	EA.	430072	40	COVER,SWITCH PLATE,4X4,2 SWITCH (OR EQUAL)	STEEL CITY	456
61	3.0000	EA.	430084	40	SWITCH,SPST,20A,120V,IVORY (OR EQUAL)	HUBBELL	CS1221I
62	100.0000	EA.	430214	40	ALARM BLOCK,BRIDGE CLIPS,SA1-SS		
63	1.0000	EA.	430367	40	COVER,BLANK PLATE,4X4 WP (OR EQUAL)	BELL	5175-0
64	2.0000	EA.	430384	40	COVER,GFCI,2 REC,WTS615A-C,W/P (OR EQUAL)	STEEL CITY	WTS615A-C

## DEPT CODES:

- 30 - CONDUIT
- 40 - ELECTRICAL
- 50 - MECHANICAL
- 51 - DOORS
- 55 - HVAC
- 70 - TILE/FLOORING
- 75 - GENERATOR
- 95 - MULTI-TASK
- 99 - PACKING LIST
- 150 - INSTALLATION DEPT

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CUSTOMER:

**AT&T WIRELESS  
SERVICES**

PROJECT:  
**11'-5" X 16'-0"**  
**1HR/2HR STEEL SHELTER**  
**PARTS LIST**

FILENAME:  
**/DATN27.dwg**  
SCALE: **N.T.S.** TOLERANCE:  
DRWN. BY: **D.LONG** DATE: **8/21/13**  
CHK. BY: **D. BROYLES** DATE: **8/21/13**  
APP. BY: **D. BRANNEN** DATE: **8/21/13**  
SHEET NO.  
**0-1**

DRAWING NO.: **DATN27** REV.: **D**

C DB 02/20/15 UPDATED BOM: BDB 02/20/15  
A SLC 03/21/14 UPDATED PER MARKUPS WR 03/24/14  
REV. BY DATE DESCRIPTION APP. BY DATE

## SABRE INDUSTRIES(TM) PROPRIETARY DOCUMENT

ITEM	QTY	U/M	P/N	DEPT	PART LIST DESCRIPTION	MFG	MFG P/N
65	1.0000	EA.	430437	40	SWITCH,SPST,125VAC,24/48VDC,TOGGLE (OR EQUAL)	SELECTA	SS209-8-BG
66	2.0000	EA.	470047	40	LIGHT FIXTURE,LENS,2-BULB T-8	TEXAS FLUORESCENTS	
67	1.0000	EA.	470056	40	LIGHT FIXTURE,COMBO EXIT/EMERGENCY (OR EQUAL)	COMPASS	CCR
68	4.0000	EA.	470058	40	LIGHT BULB,F32 T-8 MED BIPIN		
69	3.0000	EA.	470083	40	LIGHT FIXTURE,60W/250V,PORCELAIN (OR EQUAL)	LEVITON	49875-2
70	3.0000	EA.	470085	40	LIGHT,STEEL GUARD FOR INCANDESCENT (OR EQUAL)	MCMASTER-CARR	1591K11
71	3.0000	EA.	470428	40	LIGHT BULB,50W INCANDESCENT,48V		
72	1.0000	EA.	470736	40	LIGHT,EXT,LED,MOTION/PHOTO,29 WATT	COOPER LIGHTING	MST18920L
73	1.0000	EA.	480000	40	ALARM,MAGNETIC DOOR CONTACT (OR EQUAL)	HONEYWELL	7939WG-2GY
74	1.0000	EA.	480049	40	DETECTOR,HUMIDITY,HA-1,WINLAND (OR EQUAL)	WINLAND ELECTRONICS, INC.	HA-1 (PN#1190)
75	1.0000	EA.	480098	40	DETECTOR,H2,24-50VDC,15W/0.25W/C (OR EQUAL)	ABRORH MANUFACTURING	H2D1-OR-DC
76	12.0000	EA.	400021	50	C-TAP,BROWN,54720 (OR EQUAL)	PANDUIT	CTAPF4-12TP-C
	62.0000	FT.	400030	50	WIRE,#6 THHN,STRAND,GRN		
	61.0000	FT.	400050	50	WIRE,#2 THHN,STRAND,GRN		
81	17.0000	EA.	400051	50	C-TAP,ORANGE,54740 (OR EQUAL)	PANDUIT	CTAPF1/0-12TP-L
82	72.0000	FT.	400099	50	WIRE,#2 SOLID COPPER,BARE,TINNED		
83	7.0000	EA.	400108	50	LUG,2H,#4,GRY,1/4"BOLT,3/4"C/C,LB (OR EQUAL)	PANDUIT	LCC4-14B-L
84	2.0000	EA.	400108-01	50	LUG,2H,#4,GRY,1/4"B,KIT W/10FT DROP	CELLXION	400377-01
85	35.0000	EA.	400174	50	C-TAP,PINK,54730 (OR EQUAL)	PANDUIT	CTAPF2-12TP-C
86	6.0000	EA.	400259	50	LUG,2H,#2,BRN,3/8"BOLT,1"C/C,LBFW (OR EQUAL)	PANDUIT	LCCXF2-38D-L
87	13.0000	EA.	400371	50	LUG,2H,#6,BLU,1/4"BOLT,3/4"C/C,LBFW (OR EQUAL)	PANDUIT	LCCXF6-14B-L
88	3.0000	EA.	400390	50	LUG,2H,#2,BRN,1/4"BOLT,3/4"C/C,LBFW (OR EQUAL)	PANDUIT	LCCXF2-14B-L
89	9.0000	EA.	400500	50	CLAMP,GROUND 1/2"-1"GC-1Z,WEAVER (OR EQUAL)	NEER	GC-1Z
90	3.0000	EA.	400623	50	CLAMP,GROUND 1 1/2"RB12B,PERPENDIC (OR EQUAL)	MARGER	RB12B
91	118.0000	EA.	410343	50	WIRE STANDOFF,1 3/4"		
92	30.0000	EA.	410396	50	BUSHING,INSULATING,CEILING BRACKET (OR EQUAL)	NYLON & ALLOYS, LTD	125WS3104
93	1.0000	EA.	480005	50	SABRE GRAY/BLUE SERIAL NO. PLATE	CELLXION	480005
94	1.0000	EA.	480025	50	DESK,FOLD DOWN,20"X15"X2-3/4"		
	2.0000	EA.	510000	50	CABLE LADDER,12"X9"8 1/2",YELLOW ZI		
	2.0000	EA.	510061	50	CABLE LADDER,6"X9"8 1/2",Y/Z (OR EQUAL)	CENTRAL STEEL FABRICATORS, INC.	
99	3.0000	PAIR	510014	50	CABLE LADDER,WALL,CLIP,WC12,PAIR (OR EQUAL)	CENTRAL STEEL FABRICATORS	WC12
100	29.0000	EA.	510027	50	CABLE LADDER,AUX CABLE BRK,ACB2SZY (OR EQUAL)	CENTRAL STEEL FABRICATORS	ACB2SZY
101	2.0000	EA.	510049	50	CABLE LADDER,18"X9"8 1/2",YELLOW ZI (OR EQUAL)	CENTRAL STEEL FABRICATORS, INC.	10018ZY
102	4.0000	EA.	510061	50	CABLE LADDER,BLACK, END CAP (OR EQUAL)	CENTRAL STEEL FABRICATORS	RFCH1
103	24.0000	EA.	510151	50	CABLE LADDER,TRAY HANGER,11"		
104	14.0000	EA.	540218	50	GROUND STRAP ASSY,#6 THHN,14 1/2"		
105	1.0000	EA.	540427	50	GROUND STRAP ASSY,#2 SOLID,22"		
106	1.0000	EA.	P540162-01	50	G-BAR ASSY,540162 & HARDWARE,W 1-14	CELLXION	P540162-01
107	1.0000	EA.	P540227-05	50	G-BAR ASSY,540227-05 KIT & HARDWARE		
108	1.0000	EA.	P540251-01	50	G-BAR ASSY,540251-01 & HARDWARE,ANT		
109	1.0000	EA.	P540505-02	50	G-BAR ASSY,540505-02 & HARDWARE	CELLXION	P540505-02
110	1.0000	EA.	504128	51	DOOR,PEEP HOLE,200 DEGREE VIEW (OR EQUAL)	BATTALION	1HEW7
111	1.0000	EA.	504501	51	CORE,LOCKSET,BEST,CONSTRUCT,GREEN		
112	1.0000	EA.	540216	51	GROUND STRAP ASSY,1/2 BRAIDED,18"	CELLXION	540216
113	2.0000	EA.	146514-005	55	DRIP CAP,48"X3",HVAC	CELLXION	146514-005
114	188.0000	EA.	320021	70	TILE VINYL,1/8",VINYLASA,VLS56		
115	1.0000	EA.	420048	90	LABEL,DATA,STANDARD SHELTER (OR EQUAL)	CELLXION	420048
116	1.0000	EA.	480001	90	PLATE,DATA,ALUM,8"X12",GRAY	CELLXION	480001
117	1.0000	EA.	430523	95	BOX,ENCLOSURE,24"X24X6",FIBERGLASS		
118	1.0000	EA.	480355	95	SIGN,SITE LOG BOOK		
119	1.0000	EA.	480356	95	SIGN,FCC LICENSE		
120	1.0000	EA.	480357	95	SIGN,AUTHORIZED PERSONNEL ONLY		
121	2.0000	EA.	480371	95	SIGN, CAUTION NO RACKS		
122	1.0000	EA.	504222	95	DOOR,WEATHERSTRIPPING,303-TF-3670 (OR EQUAL)	PEMCO	303-TF-3670
123	1.0000	EA.	480000	99	TRAY,WALL FILE PLASTIC,LR-SMOKE (PACKING LIST ITEM)		
124	1.0000	EA.	480022	99	BROOM,ANGLE,258481 (PACKING LIST ITEM)		
125	1.0000	EA.	480023	99	PAN,DUST WITH HOOK,418929 (PACKING LIST ITEM)		
126	1.0000	EA.	480032	99	CHAIR,SECURITY BLACK,#053688B (PACKING LIST ITEM)		
127	1.0000	EA.	480087-01	99	PACKING KIT,TYPICAL EVERY SHELTER (PACKING LIST ITEM)		
128	1.0000	EA.	530118	99	SEAL,TELCO ENTRY,ROXTEC R100/4,4"PC (PACKING LIST)	ROXTEC	SRKT810000029

## DEPT CODES:

- 30 - CONDUIT
- 40 - ELECTRICAL
- 50 - MECHANICAL
- 51 - DOORS
- 55 - HVAC
- 70 - TILE/FLOORING
- 75 - GENERATOR
- 95 - MULTI-TASK
- 99 - PACKING LIST
- 150 - INSTALLATION DEPT

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Fax: (318) 213-2919  
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## CUSTOMER:

**AT&T WIRELESS SERVICES**

PROJECT:  
**11'-5" X 16'-0"**  
**1HR/2HR STEEL SHELTER**  
**PARTS LIST CONT'D.**

FILENAME:  
/BATN27.dwg  
SCALE: N.T.S. TOLERANCE:  
DRWN. BY: D.LONG DATE: 8/21/13  
CHK. BY: D. BROYLES DATE: 8/21/13  
APP. BY: D. BRANNEN DATE: 8/21/13  
SHEET NO.  
0-2

DRAWING NO.: DATN27 REV.: D

C DB 02/20/15 UPDATED BOM: BOB 02/20/15  
A SLC 03/21/14 UPDATED PER MARKUPS WR 03/24/14  
REV BY DATE DESCRIPTION APP BY DATE

## SABRE INDUSTRIES(TM) PROPRIETARY DOCUMENT



CUT LIST					
ITEM	P/N	DEPT	DESCRIPTION	CUT	PCS
1	170000	20	PIPE,PVC,SCH 40,1"	12"	7
19	430267	30	WIREWAY,GALV,4"x4"x24",W/O KO'S (OR EQUAL)	24"	1
20	430268	30	WIREWAY,GALV,4"x4"x48",W/O KO'S (OR EQUAL)	48"	1
21	430319	30	WIREWAY,GALV,4"x4"x36",W/O KO'S (OR EQUAL)	36"	2
22	430336	30	WIREWAY,GALV,4"x4"x12",W/O KO'S (OR EQUAL)	12"	1
34	410111	40	CONDUIT,LFMC,3/4" SEALTITE (OR EQUAL)	96"	3
35	410111	40	CONDUIT,LFMC,3/4" SEALTITE (OR EQUAL)	48"	4
36	410119	40	CONDUIT,LFMC,1" SEALTITE (OR EQUAL)	96"	1
77	400030	50	WIRE,#6 THHN,STRAND,GRN	504"	1
78	400030	50	WIRE,#6 THHN,STRAND,GRN	240"	1
79	400050	50	WIRE,#2 THHN,STRAND,GRN	660"	1
80	400050	50	WIRE,#2 THHN,STRAND,GRN	36"	2
82	400099	50	WIRE,#2 SOLID COPPER,BARE,TINNED	216"	4
95	510000	50	CABLE LADDER,12"x9"8 1/2",YELLOW ZI	99"	1
96	510000	50	CABLE LADDER,12"x9"8 1/2",YELLOW ZI	63"	1
97	510001	50	CABLE LADDER,8"x9"8 1/2",1/2" (OR EQUAL)	99"	1
98	510001	50	CABLE LADDER,8"x9"8 1/2",1/2" (OR EQUAL)	70"	1
101	510049	50	CABLE LADDER,18"x9"8 1/2",YELLOW ZI (OR EQUAL)	105"	2

## DEPT CODES:

30 - CONDUIT	70 - TILE/FLOORING
40 - ELECTRICAL	75 - GENERATOR
50 - MECHANICAL	95 - MULTI-TASK
51 - DOORS	99 - PACKING LIST
55 - HVAC	150 - INSTALLATION DEPT



SHOP DETAILS		SHOP DETAILS		SHOP DETAILS	
DWG NO.	DESCRIPTION	DWG NO.	DESCRIPTION	DWG NO.	DESCRIPTION
20-036	TELCO ENTRY STD PVC INSTALLATION	50-030	#2 HALO TO #2 SOLID Y DROP	51-017	GROUND STRAP TO DOOR FRAME
30-002	BOX TO BOX PENETRATION DETAIL	50-034	HVAC GRILL GROUNDING DETAIL	51-019	GROUNDING CANOPY TO DOOR FRAME
30-004	BOX TO GFCI PENETRATION DETAIL	50-035	THRU WALL PENETRATION 45" PVC PIPE	51-021	PANALIZED SHELTER DOOR HARDWARE INSTALL
30-009	CONDUIT TO WIREWAY CONNECTION	50-038	HALO GROUND TO WIREWAY	51-029	MAGNETIC DOOR ALARM INSTALLATION
30-011	PLASTIC CAPS INSTALLATION	50-042	STAND OFF BRACKET INSTALLATION	51-041	AT&T SIGN LAYOUT FOR DOORS
30-012	RIGID, NIPPLE, CLOSE & CHASE APPLICATION	50-075	MECHANICAL LUG TO STEEL CONNECTION - LOCKWASHER	52-003	STRAIGHT CLAMP INSTALLATION
30-013	PANEL TO WIREWAY CONNECTION	50-076	LUG TO GROUND BAR CONNECTION	52-004	CORNER CLAMP INSTALLATION
30-019	CONDUIT STANDARD INTERIOR LIGHTFIXTURE DETAIL	50-079	SINGLE CONNECTOR AT STEEL - AT&T	52-009	WALL MOUNT INSTALLATION
30-020	JUNCTION BOX MOUNTING DETAIL	50-081	ALARM BLOCK WITH METAL HOUSING	52-017	DOG LEG INSTALLATION
40-008	GROUND BOND DETAIL	50-082	AUXILIARY BRACKET FISH PAPER AND WAX STRING INSTALLATION	52-018	HANGER BAR CONNECTION
40-010	TYPICAL WIRE SECURING AT LOADCENTER	50-083	GROUNDING CLAMP USAGE DETAIL	52-021	HANGER BRACKET 1-LAYER INSTALLATION
40-012	WARNING LABEL PLACEMENT DETAILS	51-003	2 PC THRESHOLD INSTALLATION	52-023	ONE-LAYER-EQUIPMENT-30-LARGER-INSTALL
50-001	GROUND BAR MOUNTING INSTALLATION	51-005	WEATHERSTRIP INSTALLATION	53-001	WAVEGUIDE ENTRY INSTALLATION
50-006	GROUNDING DETAILS T-JUNCTION	51-006	DOOR DRIP CAP INSTALLATION	55-006	HVAC INSTALLATION AND CONNECTIONS
50-008	GROUNDING DETAILS SPLICE JUNCTION	51-007	DOOR LOCKGUARD INSTALLATION	55-010	HVAC DRIP CAP INSTALLATION
50-012	HALO GROUND TO PANEL & 6X6 BOX	51-011	DOOR CLOSER W HOLD OPEN INSTALLATION	70-001	TILE INSTALLATION DETAIL
50-013	HALO GROUND TO DOORFRAME	51-012	DOOR CANOPY INSTALLATION	70-002	BASE MOLDING INSTALLATION DETAIL
50-020	BONDING AT CONDUIT DETAIL	51-013	ID SIGN LOCATION	80-001	1/2" PVC PIPE STANDOFF
50-026	Y DROP INSTALLATION-#6 WIRE				

D	SB	05/20/16	ADDED DWG. REF. 40-012		
C	DB	02/20/15	UPDATED BOM:	BOB	02/20/15
A	SLC	03/21/14	UPDATED PER MARKUPS	WR	03/24/14
REV BY	DATE	DESCRIPTION		APP BY	DATE

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CUSTOMER:

AT&amp;T WIRELESS SERVICES

PROJECT:  
11'-5" X 16'-0"  
1HR/2HR STEEL SHELTER  
OPTIONAL COMPONENTS  
LIST/ SHOP DETAILS

FILENAME:  
/DATN27.dwg  
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DATE: 8/21/13  
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0-3

DRAWING NO.: DATN27  
REV.: D



SABRE INDUSTRIES(TM) PROPRIETARY DOCUMENT

## OPTIONAL COMPONENTS

OPT.	OPT. NO.	TAG NO.	QTY	U/M	PART NO.	DEPT.	DESCRIPTION	CUT	PCS
A	A1 WAVEGUIDE LOCATION B1	1	27.75	FT.	400050	50	WIRE, #2, THHN, STRANDED, GREEN	333.00	1
		2	24.75	FT.	400050	50	WIRE, #2, THHN, STRANDED, GREEN	297.00	1
		3	35	EA.	410343	50	WIRE STANDOFF, 1 3/4"		
		4	35	EA.	168230	50	SCREW, DECK, #BX1 1/4", PH, ZINC		
		5	35	EA.	400245	50	CABLE TIE, TYWRAP 8" BLACK, BT2S-MO		
	A2 WAVEGUIDE LOCATION C1	1	28	FT.	400050	50	WIRE, #2, THHN, STRANDED, GREEN	336.00	1
		2	38	FT.	400050	50	WIRE, #2, THHN, STRANDED, GREEN	456.00	1
		3	44	EA.	410343	50	WIRE STANDOFF, 1 3/4"		
		4	44	EA.	168230	50	SCREW, DECK, #BX1 1/4", PH, ZINC		
		5	44	EA.	400245	50	CABLE TIE, TYWRAP 8" BLACK, BT2S-MO		
		6	1	EA.	510052	50	CABLE LADDER, 24" X 9" 1/2", YELLOW ZI	15"	1
		7	2	EA.	410396	50	BUSHING, INSULATING, CEILING BRACKET		
		8	2	EA.	510151	50	CABLE LADDER, TRAY HANGER, 11"		
		9	2	EA.	510053	50	CABLE LADDER, 24", CLOSING BRACKET, YZ		
		10	4	EA.	540218	50	GROUND STRAP ASSY, #6 THHN, 14 1/2"		
	A3 WAVEGUIDE LOCATION D1	1	46	FT.	400050	50	WIRE, #2, THHN, STRANDED, GREEN	552.00	2
		2	43	FT.	400050	50	WIRE, #2, THHN, STRANDED, GREEN	516.00	1
		3	90	EA.	410343	50	WIRE STANDOFF, 1 3/4"		
		4	90	EA.	168230	50	SCREW, DECK, #BX1 1/4", PH, ZINC		
		5	90	EA.	400245	50	CABLE TIE, TYWRAP 8" BLACK, BT2S-MO		
	A4 WAVEGUIDE LOCATION D2	1	37.5	FT.	400050	50	WIRE, #2, THHN, STRANDED, GREEN	450.00	1
		2	38	FT.	400050	50	WIRE, #2, THHN, STRANDED, GREEN	456.00	1
		3	50	EA.	410343	50	WIRE STANDOFF, 1 3/4"		
		4	50	EA.	168230	50	SCREW, DECK, #BX1 1/4", PH, ZINC		
		5	50	EA.	400245	50	CABLE TIE, TYWRAP 8" BLACK, BT2S-MO		
B	B1	1	1	EA.	430282	30	DISCONNECT, SQD, 200A, FUSED, D224NRB		
		2	2	EA.	430127	40	FUSE, 200 AMP, FLNR200ID		
		3	1	EA.	540104	40	G-BAR KIT, SQUARE D, PTOGTA-6		
		4	1	EA.	420008	40	LABEL, BLK, ELECT, "SERVICE DISCONNECT"		
		5	1	EA.	420041	40	LABEL, "ARC FLASH AND SHOCK WARNING"		
	B2	6	2	EA.	400108	50	LUG, 2H, #4, GRY, 1/4" BOLT, 3/4" C, LB		
		7	2	FT.	400099	50	WIRE, #2 SOLID COPPER, BARE, TINNED		
		1	1	EA.	170125	30	PIPE CAP, PLASTIC, NPT, NIAGARA #257		
		2	1	EA.	410080	30	BUSHING, 2", PLASTIC		
		1	1	EA.	430349	30	DISCONNECT, SQD, 200A, FUSED, D324NRB		
	B3	2	3	EA.	430127	40	FUSE, 200 AMP, FLNR200ID		
		3	1	EA.	540104	40	G-BAR KIT, SQUARE D, PTOGTA-6		
		4	1	EA.	420008	40	LABEL, BLK, ELECT, "SERVICE DISCONNECT"		
		5	1	EA.	420041	40	LABEL, "ARC FLASH AND SHOCK WARNING"		
		6	2	EA.	400108	50	LUG, 2H, #4, GRY, 1/4" BOLT, 3/4" C, LB		
	B4	7	2	FT.	400099	50	WIRE, #2 SOLID COPPER, BARE, TINNED		
		1	1	EA.	431463	30	DISCONNECT, W/GEN. INTERFACE, 200A, 1P		
		2	1	EA.	540104	40	G-BAR KIT, SQUARE D, PTOGTA-6		
		3	1	EA.	420008	40	LABEL, BLK, ELECT, "SERVICE DISCONNECT"		
		4	1	EA.	420041	40	LABEL, "ARC FLASH AND SHOCK WARNING"		
		5	2	EA.	400108	50	LUG, 2H, #4, GRY, 1/4" BOLT, 3/4" C, LB		
		6	2	FT.	400099	50	WIRE, #2 SOLID COPPER, BARE, TINNED		

SHELTER REQUIRES ONE OPTION NUMBER FROM EACH OPTION LISTED.

NOTE THAT SOME OPTION NUMBERS ARE A KIT W/ MULTIPLE PARTS.

OPTIONS ARE IDENTIFIED ON THE DRAWING BY THE OPTION LETTER [X], BY OPTION NO. [XX], OR BY THE OPTION TAG NO. [XX-X]

## DEPT. CODES:

30 - CONDUIT	70 - TILE/FLOORING
40 - ELECTRICAL	75 - GENERATOR
50 - MECHANICAL	95 - MULTI-TASK
51 - DOORS	99 - PACKING LIST
55 - HVAC	150 - INSTALLATION DEPT

## OPTIONAL COMPONENTS

OPT.	OPT. NO.	TAG NO.	QTY	U/M	PART NO.	DEPT.	DESCRIPTION	CUT	PCS
C	C1	1	1	EA.	500001	51	DOOR, 3070, CURRIES, LH/RHT, 16G		
		2	1	EA.	501004	11	DOOR FRM, 3070, LH, CURRIES, 16G, GALV		
		3	3	EA.	504000	51	DOOR, HINGES, STAINLESS STEEL 32D		
		4	1	EA.	504109	51	DOOR, CLOSER, W/90 DEGREE HOLD OPEN		
	C2 (FLORIDA)	1	1	EA.	500005	51	DOOR, 3070, LH, CURRIES, 18G, MORTIS		
		2	1	EA.	501004	11	DOOR FRM, 3070, LH, CURRIES, 16G, GALV		
		3	3	EA.	504000	51	DOOR, HINGES, STAINLESS STEEL 32D		
		4	1	EA.	504109	51	DOOR, CLOSER, W/90 DEGREE HOLD OPEN		
	C3	-	-	-	-	-	NOT REQUIRED		
	C4 (FLORIDA)	-	-	-	-	-	NOT REQUIRED		
		1	1	EA.	500188-001	51	DOOR, 3070, RHRB, CURRIES, 752 ULBR		
		2	1	EA.	500188-002	11	DOOR FRM, 3070, RHRB, CURRIES, ULBRL3		
		3	1	EA.	504011	51	DOOR, HINGE, CONTINUOUS, BR, 304SS		
	C5	4	1	EA.	504143	51	DOOR, CLOSER, W/90 DEGREE HOLD OPEN		
		1	1	EA.	500188-003	51	DOOR, 3070, LHRB, REP, ULBR, BR, L3, MRT		
	C6 (FLORIDA)	2	1	EA.	500188-002	11	DOOR FRM, 3070, RHRB, CURRIES, ULBRL3		
		3	1	EA.	504011	51	DOOR, HINGE, CONTINUOUS, BR, 304SS		
		4	1	EA.	504143	51	DOOR, CLOSER, W/90 DEGREE HOLD OPEN		
	C7	-	-	-	-	-	NOT REQUIRED		
	C8 (FLORIDA)	-	-	-	-	-	NOT REQUIRED		

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Fax: (318) 213-2919  
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CUSTOMER:

**AT&T WIRELESS SERVICES**

PROJECT:  
**11'-5" X 16'-0"**  
**1HR/2HR STEEL SHELTER**  
**OPTIONAL COMPONENTS**  
**LIST/ SHOP DETAILS**

FILENAME:  
**/DATN27.dwg**  
SCALE: **N.T.S.** TOLERANCE:  
DRWN. BY: **D.LONG** DATE: **8/21/13**  
CHK. BY: **D. BROYLES** DATE: **8/21/13**  
APP. BY: **D. BRANNEN** DATE: **8/21/13**  
SHEET NO.  
**0-4**

DRAWING NO.: **DATN27** REV.: **D**

C DB 02/20/15 UPDATED OPTION A2: BDB 02/20/15  
A SLC 03/21/14 UPDATED PER MARKUPS WR 03/24/14  
REV BY DATE DESCRIPTION APP BY DATE

SABRE INDUSTRIES(TM) PROPRIETARY DOCUMENT



OPTIONAL COMPONENTS										OPTIONAL COMPONENTS									
OPT.	OPT. NO.	TAG NO.	QTY	U/M	PART NO.	DEPT.	DESCRIPTION	CUT	PCS	OPT.	OPT. NO.	TAG NO.	QTY	U/M	PART NO.	DEPT.	DESCRIPTION	CUT	PCS
	D1	-	-	-	-	-	NOT REQUIRED												
	D2	-	-	-	-	-	NOT REQUIRED												
	D3	-	-	-	-	-	NOT REQUIRED												
	D4	-	-	-	-	-	NOT REQUIRED												
	D5	-	-	-	-	-	NOT REQUIRED												
D	A	1	2	EA	520185	55	HVAC,WALL,4T,5KW,MARV,VDC,ATN			D	K	1	2	EA	520409	55	HVAC,WALL,4T,5KW,MARV,VDC,COAT		
		2	2	EA	400284	40	BREAKER,SQD,2P 40A,BOLT ON,Q0B240					2	2	EA	400284	40	BREAKER,SQD,2P 40A,BOLT ON,Q0B240		
		3	2	EA	521002	50	HVAC,GRILL,SUPPLY,10"X30"					3	2	EA	521002	50	HVAC,GRILL,SUPPLY,10"X30"		
		4	2	EA	521102	50	HVAC,GRILL,RETURN,16"X30"					4	2	EA	521102	50	HVAC,GRILL,RETURN,16"X30"		
		5	2	EA	522001-00006	20	HVAC,SLEEVE,10"X30"X5"					5	2	EA	522001-00006	20	HVAC,SLEEVE,10"X30"X5"		
		6	2	EA	522001-00012	20	HVAC,SLEEVE,16"X30"X5"					6	2	EA	522001-00012	20	HVAC,SLEEVE,16"X30"X5"		
	B	1	2	EA	520405	55	HVAC,WALL,5T,5KW,MARV,VDC,ATN				L	1	2	EA	520410	55	HVAC,WALL,4T,MARV,VDC,COASTAL		
		2	2	EA	400297	40	BREAKER,SQD,2P 50A,BOLT ON,Q0B250					2	2	EA	400284	40	BREAKER,SQD,2P 40A,BOLT ON,Q0B240		
		3	2	EA	521002	50	HVAC,GRILL,SUPPLY,10"X30"					3	2	EA	521002	50	HVAC,GRILL,SUPPLY,10"X30"		
		4	2	EA	521102	50	HVAC,GRILL,RETURN,16"X30"					4	2	EA	521102	50	HVAC,GRILL,RETURN,16"X30"		
		5	2	EA	522001-00006	20	HVAC,SLEEVE,10"X30"X5"					5	2	EA	522001-00006	20	HVAC,SLEEVE,10"X30"X5"		
		6	2	EA	522001-00012	20	HVAC,SLEEVE,16"X30"X5"					6	2	EA	522001-00012	20	HVAC,SLEEVE,16"X30"X5"		
	C	1	2	EA	520184	55	HVAC,WALL,3T,5KW,MARV,VDC,ATN				M	1	2	EA	520071	55	HVAC,WALL,5T,5KW,MARV,VDC,COATED		
		2	2	EA	400287	40	BREAKER,SQD,2P 35A,BOLT ON,Q0B235					2	2	EA	400297	40	BREAKER,SQD,2P 50A,BOLT ON,Q0B250		
		3	2	EA	521002	50	HVAC,GRILL,SUPPLY,10"X30"					3	2	EA	521002	50	HVAC,GRILL,SUPPLY,10"X30"		
		4	2	EA	521102	50	HVAC,GRILL,RETURN,16"X30"					4	2	EA	521102	50	HVAC,GRILL,RETURN,16"X30"		
		5	2	EA	522001-00006	20	HVAC,SLEEVE,10"X30"X5"					5	2	EA	522001-00006	20	HVAC,SLEEVE,10"X30"X5"		
		6	2	EA	522001-00012	20	HVAC,SLEEVE,16"X30"X5"					6	2	EA	522001-00012	20	HVAC,SLEEVE,16"X30"X5"		
	D	1	2	EA	520076	55	HVAC,WALL,3T,5KW,MARV,VDC				N	1	2	EA	520072	55	HVAC,WALL,5T,5KW,MARV,VDC,COASTAL		
		2	2	EA	400284	40	BREAKER,SQD,2P 40A,BOLT ON,Q0B240					2	2	EA	400297	40	BREAKER,SQD,2P 50A,BOLT ON,Q0B250		
		3	2	EA	521002	50	HVAC,GRILL,SUPPLY,10"X30"					3	2	EA	521002	50	HVAC,GRILL,SUPPLY,10"X30"		
		4	2	EA	521102	50	HVAC,GRILL,RETURN,16"X30"					4	2	EA	521102	50	HVAC,GRILL,RETURN,16"X30"		
		5	2	EA	522001-00006	20	HVAC,SLEEVE,10"X30"X5"					5	2	EA	522001-00006	20	HVAC,SLEEVE,10"X30"X5"		
		6	2	EA	522001-00012	20	HVAC,SLEEVE,16"X30"X5"					6	2	EA	522001-00012	20	HVAC,SLEEVE,16"X30"X5"		
D6	E	-	-	-	-	-	NOT REQUIRED				P	-	-	-	-	-	NOT REQUIRED		
		1	2	EA	520407	55	HVAC,WALL,3T,5KW,MARV,VDC,COATED					1	2	EA	520390	55	HVAC,WALL,3T,5KW,MARV,VDC,RH		
		2	2	EA	400287	40	BREAKER,SQD,2P 35A,BOLT ON,Q0B235					2	2	EA	400287	40	BREAKER,SQD,2P 35A,BOLT ON,Q0B235		
		3	2	EA	521002	50	HVAC,GRILL,SUPPLY,10"X30"					3	2	EA	521002	50	HVAC,GRILL,SUPPLY,10"X30"		
		4	2	EA	521102	50	HVAC,GRILL,RETURN,16"X30"					4	2	EA	521102	50	HVAC,GRILL,RETURN,16"X30"		
		5	2	EA	522001-00006	20	HVAC,SLEEVE,10"X30"X5"					5	2	EA	522001-00006	20	HVAC,SLEEVE,10"X30"X5"		
	F	6	2	EA	522001-00012	20	HVAC,SLEEVE,16"X30"X5"				Q	-	-	-	-	-	NOT REQUIRED		
		1	2	EA	520408	55	HVAC,WALL,3T,5KW,MARV,VDC,COASTAL				R CALF.	1	2	EA	520391	55	HVAC,WALL,3T,5KW,MARV,VDC,ATN,CA		
		2	2	EA	400287	40	BREAKER,SQD,2P 35A,BOLT ON,Q0B235					2	2	EA	400284	40	BREAKER,SQD,2P 40A,BOLT ON,Q0B240		
		3	2	EA	521002	50	HVAC,GRILL,SUPPLY,10"X30"					3	2	EA	521002	50	HVAC,GRILL,SUPPLY,10"X30"		
		4	2	EA	521102	50	HVAC,GRILL,RETURN,16"X30"					4	2	EA	521102	50	HVAC,GRILL,RETURN,16"X30"		
		5	2	EA	522001-00006	20	HVAC,SLEEVE,10"X30"X5"					5	2	EA	522001-00006	20	HVAC,SLEEVE,10"X30"X5"		
	G	6	2	EA	522001-00012	20	HVAC,SLEEVE,16"X30"X5"				S CALF.	6	2	EA	522001-00012	20	HVAC,SLEEVE,16"X30"X5"		
		1	2	EA	520069	55	HVAC,WALL,3T,5KW,MARV,VDC,COATED				T CALF.	1	2	EA	520392	50	HVAC,WALL,4T,5KW,MARV,VDC,ATN,CA		
		2	2	EA	400284	40	BREAKER,SQD,2P 40A,BOLT ON,Q0B240					2	2	EA	400284	40	BREAKER,SQD,2P 40A,BOLT ON,Q0B240		
		3	2	EA	521002	50	HVAC,GRILL,SUPPLY,10"X30"					3	2	EA	521002	50	HVAC,GRILL,SUPPLY,10"X30"		
		4	2	EA	521102	50	HVAC,GRILL,RETURN,16"X30"					4	2	EA	521102	50	HVAC,GRILL,RETURN,16"X30"		
		5	2	EA	522001-00006	20	HVAC,SLEEVE,10"X30"X5"				U CALF.	5	2	EA	522001-00006	20	HVAC,SLEEVE,10"X30"X5"		
	H	6	2	EA	522001-00012	20	HVAC,SLEEVE,16"X30"X5"					6	2	EA	522001-00012	20	HVAC,SLEEVE,16"X30"X5"		
		1	2	EA	520070	55	HVAC,WALL,3T,5KW,MARV,VDC,COASTAL					1	2	EA	520393	50	HVAC,WALL,5T,5KW,MARV,VDC,ATN,CA		
		2	2	EA	400284	40	BREAKER,SQD,2P 40A,BOLT ON,Q0B240					2	2	EA	400297	40	BREAKER,SQD,2P 50A,BOLT ON,Q0B250		
		3	2	EA	521002	50	HVAC,GRILL,SUPPLY,10"X30"					3	2	EA	521002	50	HVAC,GRILL,SUPPLY,10"X30"		
		4	2	EA	521102	50	HVAC,GRILL,RETURN,16"X30"					4	2	EA	521102	50	HVAC,GRILL,RETURN,16"X30"		
D6	J	5	2	EA	522001-00006	20	HVAC,SLEEVE,10"X30"X5"				A,B,C,D,F,G,H,J, K,L,M,N,R,S,T,U	5	2	EA	522001-00006	20	HVAC,SLEEVE,10"X30"X5"		
		6	2	EA	522001-00012	20	HVAC,SLEEVE,16"X30"X5"					6	2	EA	522001-00012	20	HVAC,SLEEVE,16"X30"X5"		
		1	1	EA	460024	30	CONTROLLER,PRISM,PLC,MARVAIR					1	1	EA	460024	30	CONTROLLER,PRISM,PLC,MARVAIR		
		2	1	EA	460015-001	30	OUTDOOR TEMP SENSOR MOUNTING KIT					2	1	EA	460015-001	30	OUTDOOR TEMP SENSOR MOUNTING KIT		



## NOTES:

1. SHELTER REQUIRES ONE OPTION NUMBER FROM EACH OPTION LISTED.
2. NOTE THAT SOME OPTION NUMBERS ARE A KIT WITH MULTIPLE PARTS.
3. OPTIONS ARE IDENTIFIED ON THE DRAWING BY THE OPTION LETTER [X], BY OPTION NO. [XX], OR BY THE OPTION TAG NO. [XX-X]

## DEPT CODES:

- |                 |                         |
|-----------------|-------------------------|
| 30 - CONDUIT    | 70 - TILE/FLOORING      |
| 40 - ELECTRICAL | 75 - GENERATOR          |
| 50 - MECHANICAL | 95 - MULTI-TASK         |
| 51 - DOORS      | 99 - PACKING LIST       |
| 55 - HVAC       | 150 - INSTALLATION DEPT |

D	SB	05/20/16	UPDATED PER NEW (ATN) STANDARDS (D1-D5 & D6 OPT.)		
C	DB	02/20/15	UPDATED OPTION D1-D5, ADD HI TEMP.	BD8	02/20/15
REV BY	DATE	DESCRIPTION		APP BY	DATE

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Fax: (318) 213-2919  
www.sabreindustries.com

## CUSTOMER:

**AT&T WIRELESS SERVICES**

PROJECT:  
11'-5" X 16'-0"  
1HR/2HR STEEL SHELTER  
OPTIONAL COMPONENTS  
LIST / SHOP DETAILS

FILENAME: /DATN27.dwg	
SCALE: N.T.S.	TOLERANCE:
DRWN. BY: D. LONG	DATE: 8/21/13
CHK. BY: D. BROYLES	DATE: 8/21/13
APP. BY: D. BRANNEN	DATE: 8/21/13
SHEET NO. 0-5	
DRAWING NO.: DATN27	REV.: D



OPTIONAL COMPONENTS										OPTIONAL COMPONENTS										
OPT.	OPT. NO.	TAG NO.	QTY	U/M	PART NO.	DEPT.	DESCRIPTION	CUT	PCS	OPT.	OPT. NO.	TAG NO.	QTY	U/M	PART NO.	DEPT.	DESCRIPTION	CUT	PCS	
D	D7	A	1	2	EA	520355	55	HVAC,WALL,4T,5KW,BARD,VDC,RH,ATN			N	1	2	EA	520360	55	HVAC,WALL,5T,BARD,VDC,COAST,RH,ATN			
			2	2	EA	400297	40	BREAKER,SQD,2P 50A,BOLT ON,QOB250				2	2	EA	400283	40	BREAKER,SQD,2P 60A,BOLT ON,QOB260			
			3	2	EA	521002	50	HVAC,GRILL,SUPPLY,10"X30"				3	2	EA	521002	50	HVAC,GRILL,SUPPLY,10"X30"			
			4	2	EA	521102	50	HVAC,GRILL,RETURN,16"X30"				4	2	EA	521102	50	HVAC,GRILL,RETURN,16"X30"			
			5	2	EA	522001-00006	20	HVAC,SLEEVE,10"X30"X5"				5	2	EA	522001-00006	20	HVAC,SLEEVE,10"X30"X5"			
			6	2	EA	522001-00012	20	HVAC,SLEEVE,16"X30"X5"				6	2	EA	522001-00012	20	HVAC,SLEEVE,16"X30"X5"			
		B	1	2	EA	520356	55	HVAC,WALL,5T,5KW,BARD,VDC,RH,ATN			P	1	—	—	—	—	NOT REQUIRED			
			2	2	EA	400297	40	BREAKER,SQD,2P 50A,BOLT ON,QOB250				Q	1	—	—	—	—	NOT REQUIRED		
			3	2	EA	521002	50	HVAC,GRILL,SUPPLY,10"X30"					1	2	EA	520395	55	HVAC,WALL,3T,0KW,BARD,VDC,RH		
			4	2	EA	521102	50	HVAC,GRILL,RETURN,16"X30"					2	2	EA	400284	40	BREAKER,SQD,2P 40A,BOLT ON,QOB240		
			5	2	EA	522001-00006	20	HVAC,SLEEVE,10"X30"X5"			3		2	EA	521002	50	HVAC,GRILL,SUPPLY,10"X30"			
			6	2	EA	522001-00012	20	HVAC,SLEEVE,16"X30"X5"			4	2	EA	521102	50	HVAC,GRILL,RETURN,16"X30"				
		C	1	2	EA	520353	55	HVAC,WALL,3T,5KW,BARD,VDC,RH,ATN			5	2	EA	522001-00006	20	HVAC,SLEEVE,10"X30"X5"				
			2	2	EA	400284	40	BREAKER,SQD,2P 40A,BOLT ON,QOB240			6	2	EA	522001-00012	20	HVAC,SLEEVE,16"X30"X5"				
			3	2	EA	521002	50	HVAC,GRILL,SUPPLY,10"X30"			S	1	2	EA	520396	55	HVAC,WALL,3,5T,0KW,BARD,VDC,LH			
			4	2	EA	521102	50	HVAC,GRILL,RETURN,16"X30"				2	2	EA	400284	40	BREAKER,SQD,2P 40A,BOLT ON,QOB240			
			5	2	EA	522001-00006	20	HVAC,SLEEVE,10"X30"X5"				3	2	EA	521002	50	HVAC,GRILL,SUPPLY,10"X30"			
			6	2	EA	522001-00012	20	HVAC,SLEEVE,16"X30"X5"				4	2	EA	521102	50	HVAC,GRILL,RETURN,16"X30"			
		D	1	2	EA	520354	55	HVAC,WALL,3,5T,5KW,BARD,VDC,RH,ATN			5	2	EA	522001-00006	20	HVAC,SLEEVE,10"X30"X5"				
			2	2	EA	400284	40	BREAKER,SQD,2P 40A,BOLT ON,QOB240			6	2	EA	522001-00012	20	HVAC,SLEEVE,16"X30"X5"				
			3	2	EA	521002	50	HVAC,GRILL,SUPPLY,10"X30"			T	1	2	EA	520397	55	HVAC,WALL,4T,0KW,BARD,VDC,LH			
			4	2	EA	521102	50	HVAC,GRILL,RETURN,16"X30"				2	2	EA	400284	40	BREAKER,SQD,2P 40A,BOLT ON,QOB240			
			5	2	EA	522001-00006	20	HVAC,SLEEVE,10"X30"X5"				3	2	EA	521002	50	HVAC,GRILL,SUPPLY,10"X30"			
			6	2	EA	522001-00012	20	HVAC,SLEEVE,16"X30"X5"				4	2	EA	521102	50	HVAC,GRILL,RETURN,16"X30"			
		E	1	—	—	—	—	NOT REQUIRED			5	2	EA	522001-00006	20	HVAC,SLEEVE,10"X30"X5"				
		F	1	—	—	—	—	NOT REQUIRED			6	2	EA	522001-00012	20	HVAC,SLEEVE,16"X30"X5"				
		G	1	2	EA	520357	55	HVAC,WALL,3T,BARD,VDC,COAST,RH,ATN			U	1	2	EA	520398	55	HVAC,WALL,5T,0KW,BARD,VDC,LH			
			2	2	EA	400284	40	BREAKER,SQD,2P 40A,BOLT ON,QOB240				2	2	EA	400297	40	BREAKER,SQD,2P 50A,BOLT ON,QOB250			
			3	2	EA	521002	50	HVAC,GRILL,SUPPLY,10"X30"				3	2	EA	521002	50	HVAC,GRILL,SUPPLY,10"X30"			
			4	2	EA	521102	50	HVAC,GRILL,RETURN,16"X30"				4	2	EA	521102	50	HVAC,GRILL,RETURN,16"X30"			
			5	2	EA	522001-00006	20	HVAC,SLEEVE,10"X30"X5"				5	2	EA	522001-00006	20	HVAC,SLEEVE,10"X30"X5"			
			6	2	EA	522001-00012	20	HVAC,SLEEVE,16"X30"X5"				6	2	EA	522001-00012	20	HVAC,SLEEVE,16"X30"X5"			
		H	1	—	—	—	—	NOT REQUIRED			V (END WALL WITH WAVEGUIDE)	1	1	EA	520453	55	HVAC,WALL,3T,5KW,BARD,VDC,LH,ATN			
		J	1	2	EA	520358	55	HVAC,WPU,3,5T,BARD,VDC,COAST,RH,ATN				2	1	EA	520353	55	HVAC,WALL,3T,5KW,BARD,VDC,RH,ATN			
			2	2	EA	400284	40	BREAKER,SQD,2P 40A,BOLT ON,QOB240				3	2	EA	400284	40	BREAKER,SQD,2P 40A,BOLT ON,QOB240			
			3	2	EA	521002	50	HVAC,GRILL,SUPPLY,10"X30"				4	2	EA	521002	50	HVAC,GRILL,SUPPLY,10"X30"			
			4	2	EA	521102	50	HVAC,GRILL,RETURN,16"X30"				5	2	EA	521102	50	HVAC,GRILL,RETURN,16"X30"			
			5	2	EA	522001-00006	20	HVAC,SLEEVE,10"X30"X5"				6	2	EA	522001-00006	20	HVAC,SLEEVE,10"X30"X5"			
		6	2	EA	522001-00012	20	HVAC,SLEEVE,16"X30"X5"			7		2	EA	522001-00012	20	HVAC,SLEEVE,16"X30"X5"				
		K	1	—	—	—	—	NOT REQUIRED				W (END WALL WITH WAVEGUIDE)	1	1	EA	520354	55	HVAC,WALL,3,5T,5KW,BARD,VDC,RH,ATN		
		L	1	2	EA	520359	55	HVAC,WALL,4T,BARD,VDC,COAST,RH,ATN			2		1	EA	520454	55	HVAC,WALL,3,5T,5KW,BARD,VDC,LH,ATN			
			2	2	EA	400297	40	BREAKER,SQD,2P 50A,BOLT ON,QOB250			3		2	EA	400284	40	BREAKER,SQD,2P 40A,BOLT ON,QOB240			
			3	2	EA	521002	50	HVAC,GRILL,SUPPLY,10"X30"			4		2	EA	521002	50	HVAC,GRILL,SUPPLY,10"X30"			
			4	2	EA	521102	50	HVAC,GRILL,RETURN,16"X30"			5		2	EA	521102	50	HVAC,GRILL,RETURN,16"X30"			
			5	2	EA	522001-00006	20	HVAC,SLEEVE,10"X30"X5"			6		2	EA	522001-00006	20	HVAC,SLEEVE,10"X30"X5"			
			6	2	EA	522001-00012	20	HVAC,SLEEVE,16"X30"X5"			7		2	EA	522001-00012	20	HVAC,SLEEVE,16"X30"X5"			
M	1	—	—	—	—	NOT REQUIRED														

D

## NOTES:

1. SHELTER REQUIRES ONE OPTION NUMBER FROM EACH OPTION LISTED.
2. NOTE THAT SOME OPTION NUMBERS ARE A KIT WITH MULTIPLE PARTS.
3. OPTIONS ARE IDENTIFIED ON THE DRAWING BY THE OPTION LETTER [X], BY OPTION NO. [XX], OR BY THE OPTION TAG NO. [XX-X]

## DEPT CODES:

- |                 |                         |
|-----------------|-------------------------|
| 30 - CONDUIT    | 70 - TILE/FLOORING      |
| 40 - ELECTRICAL | 75 - GENERATOR          |
| 50 - MECHANICAL | 95 - MULTI-TASK         |
| 51 - DOORS      | 99 - PACKING LIST       |
| 55 - HVAC       | 150 - INSTALLATION DEPT |

D SB 05/20/16	UPDATED PER NEW (ATN) STANDARDS (D7 OPTION)		
C DB 02/20/15	UPDATED OPTION 06, ADD R, S, T, U, V:	BDB 02/20/15	
REV BY	DATE	DESCRIPTION	APP BY DATE

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CUSTOMER:

AT&amp;T WIRELESS SERVICES

PROJECT:  
11'-5" X 16'-0"  
1HR/2HR STEEL SHELTER  
OPTIONAL COMPONENTS  
LIST/ SHOP DETAILS

FILENAME: /DATN27.dwg	
SCALE: N.T.S.	TOLERANCE:
DRWN. BY: D. LONG	DATE: 8/21/13
CHK. BY: D. BROYLES	DATE: 8/21/13
APP. BY: D. BRANNEN	DATE: 8/21/13

SHEET NO.  
0-6DRAWING NO.:  
DATN27REV.:  
D



## SABRE INDUSTRIES(TM) PROPRIETARY DOCUMENT

## OPTIONAL COMPONENTS

OPT.	OPT. NO.	TAG NO.	QTY	U/M	PART NO.	DEPT.	DESCRIPTION	CUT	PCS
D	X (END WALL WITH WAVEGUIDE)	1	1	EA	520355	55	HVAC,WALL,4T,5KW,BARD,VDC,RH,ATN		
		2	1	EA	520455	55	HVAC,WALL,4T,5KW,BARD,VDC,LH,ATN		
		3	2	EA	400297	40	BREAKER,S0D,2P 50A,BOLT ON,Q0B250		
		4	2	EA	521002	50	HVAC,GRILL,SUPPLY,10"X30"		
		5	2	EA	521102	50	HVAC,GRILL,RETURN,16"X30"		
		6	2	EA	522001-00006	20	HVAC,SLEEVE,10"X30"X5"		
		7	2	EA	522001-00012	20	HVAC,SLEEVE,16"X30"X5"		
	Y (END WALL WITH WAVEGUIDE)	1	1	EA	520356	55	HVAC,WALL,5T,5KW,BARD,VDC,RH,ATN		
		2	1	EA	520456	55	HVAC,WALL,5T,5KW,BARD,VDC,LH,ATN		
		3	2	EA	400283	40	BREAKER,S0D,2P 60A,BOLT ON,Q0B260		
		4	2	EA	521002	50	HVAC,GRILL,SUPPLY,10"X30"		
		5	2	EA	521102	50	HVAC,GRILL,RETURN,16"X30"		
		6	2	EA	522001-00006	20	HVAC,SLEEVE,10"X30"X5"		
		7	2	EA	522001-00012	20	HVAC,SLEEVE,16"X30"X5"		
	Z (END WALL WITH WAVEGUIDE)	1	1	EA	520357	55	HVAC,WALL,3T,BARD,VDC,COAST,RH,ATN		
		2	1	EA	520457	55	HVAC,WALL,3T,BARD,VDC,COAST,LH,ATN		
		3	2	EA	400284	40	BREAKER,S0D,2P 40A,BOLT ON,Q0B240		
		4	2	EA	521000	50	HVAC,GRILL,SUPPLY,8"X28",710807		
		5	2	EA	521100	50	HVAC,GRILL,RETURN,14"X28",710820		
		6	2	EA	522001-00003	20	HVAC,SLEEVE,8"X28"X5"		
		7	2	EA	522001-00009	20	HVAC,SLEEVE,14"X28"X5"		
	AA (END WALL WITH WAVEGUIDE)	1	1	EA	520358	55	HVAC,WPU,3.5T,BARD,VDC,COAST,RH,ATN		
		2	1	EA	520458	55	HVAC,WPU,3.5T,BARD,VDC,COAST,LH,ATN		
		3	2	EA	400284	40	BREAKER,S0D,2P 40A,BOLT ON,Q0B240		
		4	2	EA	521002	50	HVAC,GRILL,SUPPLY,10"X30"		
		5	2	EA	521102	50	HVAC,GRILL,RETURN,16"X30"		
		6	2	EA	522001-00006	20	HVAC,SLEEVE,10"X30"X5"		
		7	2	EA	522001-00012	20	HVAC,SLEEVE,16"X30"X5"		
	AB (END WALL WITH WAVEGUIDE)	1	1	EA	520359	55	HVAC,WALL,4T,BARD,VDC,COAST,RH,ATN		
		2	1	EA	520459	55	HVAC,WALL,4T,BARD,VDC,COAST,LH,ATN		
		3	2	EA	400297	40	BREAKER,S0D,2P 50A,BOLT ON,Q0B250		
		4	2	EA	521002	50	HVAC,GRILL,SUPPLY,10"X30"		
		5	2	EA	521102	50	HVAC,GRILL,RETURN,16"X30"		
		6	2	EA	522001-00006	20	HVAC,SLEEVE,10"X30"X5"		
		7	2	EA	522001-00012	20	HVAC,SLEEVE,16"X30"X5"		
	AC (END WALL WITH WAVEGUIDE)	1	1	EA	520360	55	HVAC,WALL,5T,BARD,VDC,COAST,RH,ATN		
		2	1	EA	520460	55	HVAC,WALL,5T,BARD,VDC,COAST,LH,ATN		
		3	2	EA	400283	40	BREAKER,S0D,2P 60A,BOLT ON,Q0B260		
		4	2	EA	521002	50	HVAC,GRILL,SUPPLY,10"X30"		
		5	2	EA	521102	50	HVAC,GRILL,RETURN,16"X30"		
		6	2	EA	522001-00006	20	HVAC,SLEEVE,10"X30"X5"		
		7	2	EA	522001-00012	20	HVAC,SLEEVE,16"X30"X5"		
	A,B,C,D,F,G,H,J, K,L,M,N,R,S,T,U, V,W,X,Y,Z,AA,AB, AC	1	1	EA	460017	30	CONTROL SYSTEM,BARD,LC1000-200		



## OPTIONAL COMPONENTS

OPT.	OPT. NO.	TAG NO.	QTY	U/M	PART NO.	DEPT.	DESCRIPTION	CUT	PCS
E	E1	1	14	EA	300004-00001	60	PANEL,EXT,ACC,SUNSET BEACH,STD,111"		
		2	7	EA	300005-00001	60	PANEL,INT,TRIM,7/16"CAPX12"		
		3	4	EA	300005-00002	60	PANEL,CORNER-TRIM,7/16"CAPX10"		
	E2	1	14	EA	300004-00013	60	PANEL,EXT,VINYL BRICK,RED BLEND		
		1	1	EA	526-1111X1606-10	11	ROOF ASSY KIT,STD,SS,11"11"X16"06"		
		1	1	EA	526-1105X1600X3-11	11	ROOF ASSY KIT,STD,ELAST,11"5"X16"0"		
	F1	1	1	EA	526-1105X1600X3-11	11	ROOF ASSY KIT,STD,ELAST,11"5"X16"0"		
		1	1	EA	526-1105X1600X3-11	11	ROOF ASSY KIT,STD,ELAST,11"5"X16"0"		
	G1	1	1	EA	526-1105X1600X3-11	11	ROOF ASSY KIT,STD,ELAST,11"5"X16"0"		
		1	1	EA	526-1105X1600X3-11	11	ROOF ASSY KIT,STD,ELAST,11"5"X16"0"		
H	H1	1	1	EA	430713	30	PANEL,MICRIN,CAMLOCK,200A,1 PHASE		
		2	1	EA	430847	40	CONNECTOR,MICRIN ALARM CONTACT CBL		
		3	1	EA	900106	40	CONNECTOR,MICRIN ALARM CONTACT SHRT		
	H2	1	1	EA	431525	30	PANEL,INTERSECT,CAMLOCK,200A,1P		
		1	1	EA	430712	30	PANEL,MICRIN,CAMLOCK,200A,3PH		
		2	1	EA	430847	40	CONNECTOR,MICRIN ALARM CONTACT CBL		
	H3	1	1	EA	900106	40	CONNECTOR,MICRIN ALARM CONTACT SHRT		
		3	1	EA	431615	30	PANEL,INTERSECT,CAMLOCK,200A,3P		
		1	1	EA	431615	30	PANEL,INTERSECT,CAMLOCK,200A,3P		
	H4	1	1	EA	431615	30	PANEL,INTERSECT,CAMLOCK,200A,3P		
		1	1	EA	431615	30	PANEL,INTERSECT,CAMLOCK,200A,3P		
J	J1	1	1	EA	504507	51	LOCKSET,PB,CYD,SIMPLEX,LVR,LR1021B-		
		2	1	EA	504300	51	DOOR,LOCKGUARD,10" 32D		
		1	1	EA	504626	51	LOCKSET,DB,MRT,RUSSWIN,LH,ML2065		
	K1	1	1	EA	504303	51	DOOR,LOCKGUARD,MLP-111-630 3"X11"SS		
		2	1	EA	504658	51	LOCKSET,ELECT/PB,CYD,KABA,E2031BL6		
		2	1	EA	504300	51	DOOR,LOCKGUARD,10" 32D		
	K2	1	1	EA	504715	51	LOCKSET,ELECT,CYD,KABA,POWERPLEX		
		2	1	EA	504300	51	DOOR,LOCKGUARD,10" 32D		
		1	2	EA	504721	51	LOCKSET,ELECT,MRT,KABA,POWERPLEX		
	K3	1	2	EA	504303	51	DOOR,LOCKGUARD,MLP-111-630 3"X11"SS		
		2	2	EA	504723	51	LOCKSET,ELECT,MRT,KABA,E-PLEX,2000		
L	L1 (1HR)	1	1	EA	504303	51	DOOR,LOCKGUARD,MLP-111-630 3"X11"SS		
		2	1	EA	410537	30	NIPPLE,RIGID,4"X8"		
		2	4	EA	410184	30	NIPPLE,RIGID,1/2"X7 1/2"		
	L2 (2HR)	3	6	EA	410183	30	NIPPLE,RIGID,3/4"X7 1/2"		
		4	2	EA	410217	30	NIPPLE,RIGID,1"X8"		
		5	3	EA	410205	30	NIPPLE,RIGID,2"X8"		
	M1	6	1	EA	410315	30	NIPPLE,RIGID,1/2"X3" LONG		
		1	1	EA	410298	30	NIPPLE,RIGID,4"X8 1/2"		
		2	4	EA	410207	30	NIPPLE,RIGID,1/2"X8"		
	N1	3	6	EA	410206	30	NIPPLE,RIGID,3/4"X8"		
		4	2	EA	410229	30	NIPPLE,RIGID,1"X8 1/2"		
M	M1	5	3	EA	410181	30	NIPPLE,RIGID,2"X8 1/2"		
		6	1	EA	410289	30	NIPPLE,RIGID,1/2"X3 1/2" LONG		
		7	16	EA	310054	20	GYP SUM,5/8"X4"X10",TYPE X (2HR WALL)		
	M2	1	1	EA	220-1105X1600-01	11	CONCRETE FLOOR ASSY KIT,11"5"X16"0" (CONCRETE)		
		2	1	EA	504468	51	DOOR,THRESHOLD 48"X8.25",.090 ALUM		
		1	1	EA	504468	51	DOOR,THRESHOLD 48"X8.25",.090 ALUM		
	M3	1	1	EA	225-1105X1600-01	11	STRUCTO-FLR KIT,11"5"X16"0",2 HR		
		2	1	EA	504468	51	DOOR,THRESHOLD 48"X8.25",.090 ALUM		
		1	1	EA	530023	50	WAVEGUIDE ENTRY,24 PORT,4"X6"		
	N1	1	1	EA	530036	50	WAVEGUIDE ENTRY,ROXTEC,SPECIAL PLAT		
		2	1	EA	530043	99	WAVEGUIDE ENTRY,ROXTEC,ATT KIT		
N	N2	3	1	EA	530119	50	ROXTEC ADAPTER PLATE,28"X39 1/2"		
		1	1	EA	530119	50	ROXTEC ADAPTER PLATE,28"X39 1/2"		
		1	1	EA	530119	50	ROXTEC ADAPTER PLATE,28"X39 1/2"		
	P1	1	1	EA	530119	50	ROXTEC ADAPTER PLATE,28"X39 1/2"		
		2	1	EA	530119	50	ROXTEC ADAPTER PLATE,28"X39 1/2"		
		1	1	EA	530119	50	ROXTEC ADAPTER PLATE,28"X39 1/2"		
	P2	1	1	EA	530119	50	ROXTEC ADAPTER PLATE,28"X39 1/2"		
		2	1	EA	530119	50	ROXTEC ADAPTER PLATE,28"X39 1/2"		
		1	1	EA	530119	50	ROXTEC ADAPTER PLATE,28"X39 1/2"		
	P3	1	1	EA	530119	50	ROXTEC ADAPTER PLATE,28"X39 1/2"		
		2	1	EA	530119	50	ROXTEC ADAPTER PLATE,28"X39 1/2"		
		1	1	EA	530119	50	ROXTEC ADAPTER PLATE,28"X39 1/2"		

## NOTES:

- SHELTER REQUIRES ONE OPTION NUMBER FROM EACH OPTION LISTED.
- NOTE THAT SOME OPTION NUMBERS ARE A KIT WITH MULTIPLE PARTS.
- OPTIONS ARE IDENTIFIED ON THE DRAWING BY THE OPTION LETTER [X], BY OPTION NO. [XX], OR BY THE OPTION TAG NO. [XX-X]

## DEPT CODES:

- |                 |                         |
|-----------------|-------------------------|
| 30 - CONDUIT    | 70 - TILE/FLOORING      |
| 40 - ELECTRICAL | 75 - GENERATOR          |
| 50 - MECHANICAL | 95 - MULTI-TASK         |
| 51 - DOORS      | 99 - PACKING LIST       |
| 55 - HVAC       | 150 - INSTALLATION DEPT |

D	SB	05/20/16	UPDATED PER NEW (ATN) STANDARDS (D7, G & J OPT.)	BDB	02/20/15
C	DB	02/20/15	UPDATED OPTION D7, ADD R, S, T, U, V:	APP	BY
REV	BY	DATE	DESCRIPTION	APP	BY

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AT&amp;T WIRELESS SERVICES

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11'-5" X 16'-0"  
1HR/2HR STEEL SHELTER  
OPTIONAL COMPONENTS  
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FILENAME:  
/DATN27.dwg  
SCALE: N.T.S.  
TOLERANCE:  
DRWN. BY: D.LONG  
DATE: 8/21/13  
CHK. BY: D. BROYLES  
DATE: 8/21/13  
APP. BY: D. BRANNEN  
DATE: 8/21/13  
SHEET NO.  
0-7

DRAWING NO.: DATN27  
REV.: D



## OPTIONAL COMPONENTS

OPT.	OPT. NO.	TAG NO.	QTY	U/M	PART NO.	DEPT	DESCRIPTION	CUT	PCS
Q	Q1	—	—	—	—	—	NOT REQUIRED		
		1	3	EA.	400271	40	BREAKER,S00,2P 30A,BOLT ON,Q0B230		
		2	2	EA.	410128	40	CONNECTOR,LFMC,3/4",45D,SEALTITE		
	Q2	3	10	FT.	410111	40	CONDUIT,LFMC,3/4",SEALTITE		
		1	5	EA.	400271	30	BREAKER,S00,2P 30A,BOLT ON,Q0B230		
		2	2	EA.	410128	30	CONNECTOR,LFMC,3/4",45D,SEALTITE		
	Q3	3	10	FT.	410111	40	CONDUIT,LFMC,3/4",SEALTITE		
		4	2	EA.	410146	30	CONNECTOR,LFMC,1/2",45D,SEALTITE		
		5	10	FT.	410112	40	CONDUIT,LFMC,1/2",SEALTITE		
		1	7	EA.	400271	40	BREAKER,S00,2P 30A,BOLT ON,Q0B230		
		2	2	EA.	410128	40	CONNECTOR,LFMC,3/4",45D,SEALTITE		
	Q4	3	10	FT.	410111	30	CONDUIT,LFMC,3/4",SEALTITE		
		4	4	EA.	410146	40	CONNECTOR,LFMC,1/2",45D,SEALTITE		
		5	20	FT.	410112	40	CONDUIT,LFMC,1/2",SEALTITE		
		1	1	EA.	490067	40	DETECTOR,SMOKE,48V,PHOTO,SENTRON		
		2	1	EA.	431468	40	BOX,JUNCT,OCT,4"x2 1/8"D. W/3/4"KO		
R	R1	1	1	EA.	390000-03	40	FIKE ASSY KIT,ATT.16"END DOOR		
	R2	1	1	EA.	490005	40	DETECTOR,SMOKE,24V,PHOTO,SENTRON		
	R3	2	1	EA.	431468	40	BOX,JUNCT,OCT,4"x2 1/8"D. W/3/4"KO		
S	S1	1	1	EA.	430548	30	PANEL,CMBIN,INT,200A,42S,ATS,TVSS,3		
	S2	1	1	EA.	431469	30	PANEL,CMBIN,INT,3P200A,42S,21VSS,3S		
T	T1	—	—	—	—	—	NOT REQUIRED		
	U1	—	—	—	—	—	NOT REQUIRED		
U	U2	1	1	EA.	570018	99	DOOR,CANOPY,54",METAL (PACKING LIST ITEM)		
		2	1	EA.	570005	51	DOOR,CANOPY,48",MOUNTING BRACKET		
		3	1	EA.	540427	99	GROUND STRAP ASSY,#2 SOLID,22"		



## NOTES:

- SHELTER REQUIRES ONE OPTION NUMBER FROM EACH OPTION LISTED.
- NOTE THAT SOME OPTION NUMBERS ARE A KIT WITH MULTIPLE PARTS.
- OPTIONS ARE IDENTIFIED ON THE DRAWING BY THE OPTION LETTER [X], BY OPTION NO. [XX], OR BY THE OPTION TAG NO. [XX-X]

## DEPT CODES:

30 - CONDUIT	70 - TILE/FLOORING
40 - ELECTRICAL	75 - GENERATOR
50 - MECHANICAL	95 - MULTI-TASK
51 - DOORS	99 - PACKING LIST
55 - HVAC	150 - INSTALLATION DEPT

D	SB	05/20/16	UPDATED PER NEW (ATN) STANDARDS (Q & U OPTIONS)		
C	DB	02/20/15	ADD SHEET 0-8:	BDB	02/20/15
REV	BY	DATE	DESCRIPTION	APP	BY DATE

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Fax: (318) 213-2919  
www.sabreindustries.com

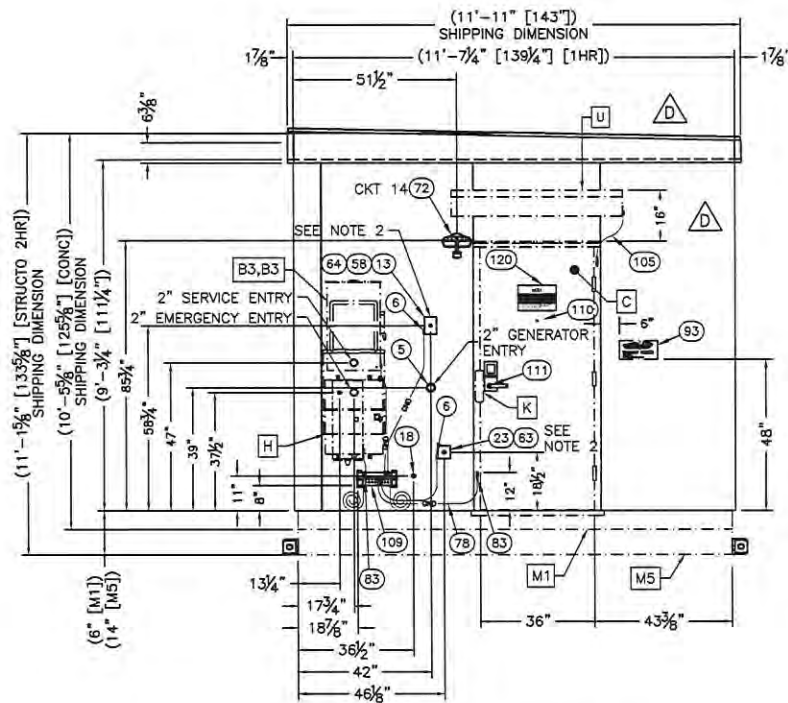
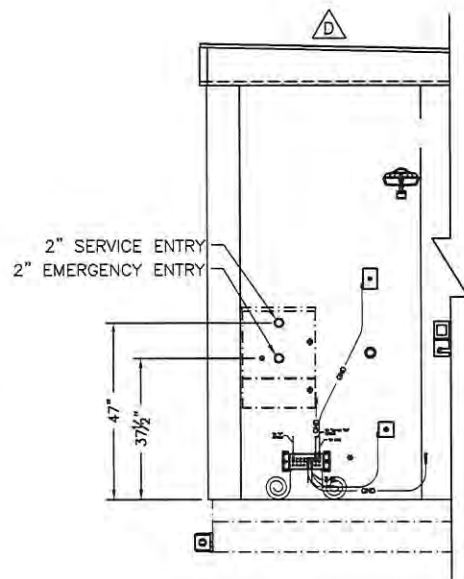
CUSTOMER:

AT&T WIRELESS  
SERVICES

PROJECT:  
11'-5" X 16'-0"  
1HR/2HR STEEL SHELTER  
OPTIONAL COMPONENTS  
LIST / SHOP DETAILS

FILENAME: /DATN27.dwg	
SCALE: N.T.S.	TOLERANCE:
DRAWN BY: D.LONG	DATE: 8/21/13
CHK. BY: D. BROYLES	DATE: 8/21/13
APP. BY: D. BRANNEN	DATE: 8/21/13
SHEET NO. 0-8	
DRAWING NO.: DATN27	REV.: D





EXTERIOR ELEVATION "A"

## NOTES:

1. INSTALL GFCI IN A VERTICAL POSITION.
2. BOX TO BE POSITIONED WITH KNOCKOUTS AT THE TOP AND BOTTOM.

D	SB	05/20/18	UPDATED PER NEW (ATN) STANDARDS		
C	DB	02/20/19	UPDATE VIEWS:	BDB	02/20/19
A	SLC	03/21/14	UPDATED PER MARKUPS; ADDED "D6" & "N" CALLOUTS	WR	03/24/14
REV	BY	DATE	DESCRIPTION	APP. BY	DATE

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www.sabreindustries.com

CUSTOMER:

**AT&T WIRELESS  
SERVICES**

PROJECT:  
11'-5" X 16'-0"  
1HR/2HR STEEL SHELTER  
EXTERIOR ELEVATIONS  
A

FILENAME:

/DATN27.dwg

SCALE:

3/8"=1'-0"

DRWN. BY:

D. LONG

CHK. BY:

D. BROYLES

APP. BY:

D. BRANNEN

SHEET NO.

1-0

DRAWING NO.:

DATN27

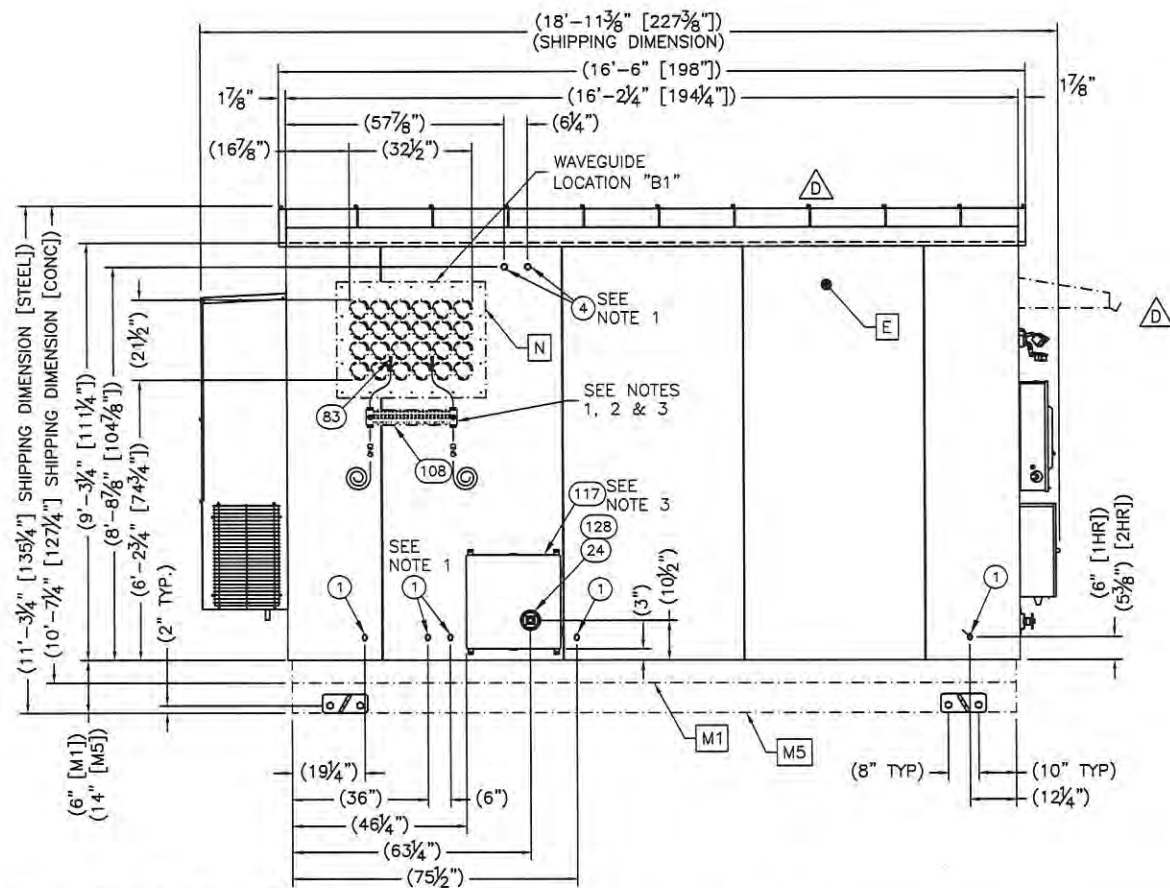
REV.:

D









## NOTES:

1. INSTALL ONLY WHEN WAVEGUIDE LOCATION IS REQUIRED.
2. PLACE GROUND BAR 6" BELOW WAVEGUIDE AND CENTERED.
3. REMOVE FOR SHIPPING.

EXTERIOR ELEVATION "B"

D	SB	05/20/16	UPDATED PER NEW (ATN) STANDARDS		
C	DB	02/20/15	UPDATE VIEWS;	BOB	02/20/15
B	MDR	10/28/14	MOVE TELCO & BOX;	BOB	10/28/14
A	SLC	03/21/14	ADDED OPTION "N" CALLOUT; UPDATED SHIPPING DIM	WR	03/24/14
REV	BY	DATE	DESCRIPTION	APP	BY DATE

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www.sabreindustries.com

CUSTOMER:

AT&T WIRELESS  
SERVICES

PROJECT:

11'-5" X 16'-0"  
1HR/2HR STEEL SHELTER  
EXTERIOR ELEVATION  
A

FILENAME:

/DATN27.dwg

SCALE:

3/8"=1'-0"

TOLERANCE:

DRWN BY:

D. LONG

DATE:

8/21/13

CHK BY:

D. BROYLES

DATE:

8/21/13

APP BY:

D. BRANNEN

DATE:

8/21/13

SHEET NO.

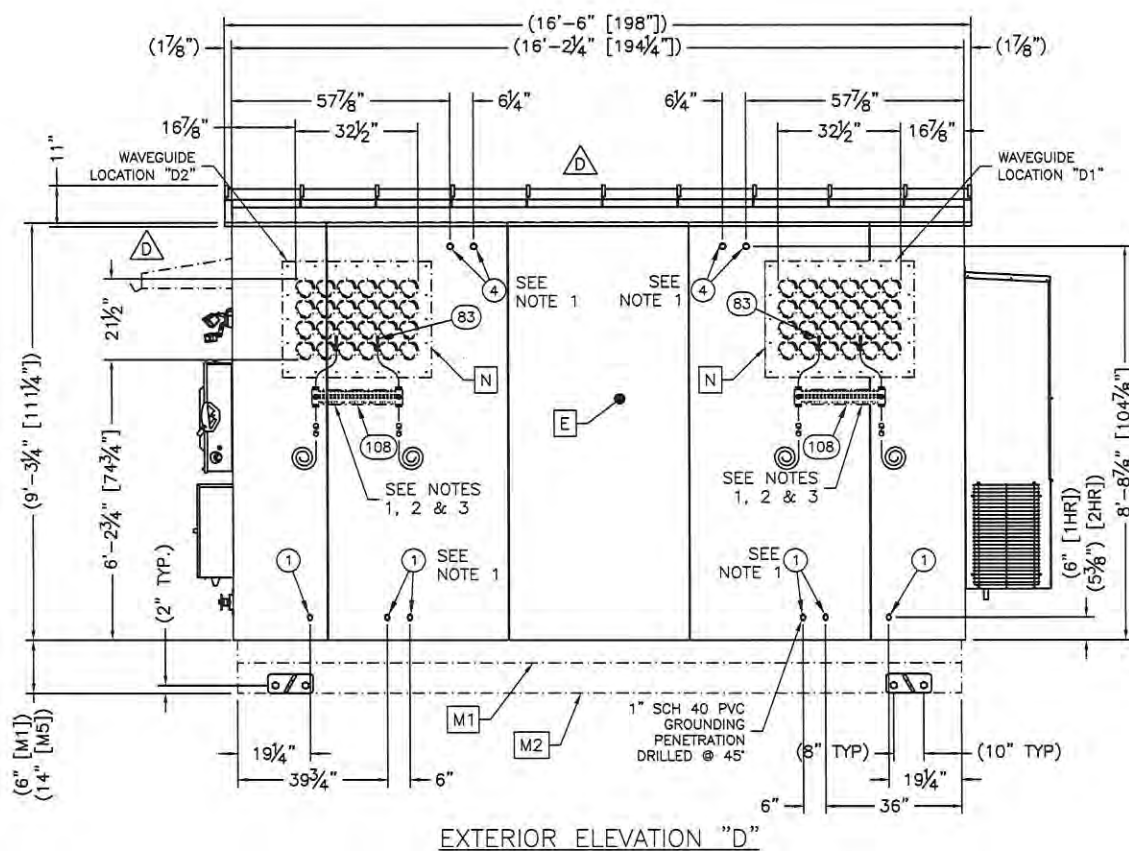
1-2

DRAWING NO.:

DATN27

REV.:

D



## NOTES:

1. INSTALL ONLY WHEN WAVEGUIDE LOCATION IS REQUIRED.
2. PLACE GROUND BAR 6" BELOW WAVEGUIDE AND CENTERED.
3. REMOVE FOR SHIPPING.

D	SB	05/20/16	UPDATED PER NEW (ATN) STANDARDS		
C	DB	02/20/15	UPDATE VIEWS, REMOVED D6 OPT:	BDB	02/20/15
A	SLC	03/21/14	UPDATED TEMP SENSOR; ADDED OPTION "N"	WR	03/24/14
REV	BY	DATE	DESCRIPTION	APP. BY	DATE

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www.sabreindustries.com

CUSTOMER:

AT&amp;T WIRELESS SERVICES

PROJECT:

11'-5" X 16'-0"  
1HR/2HR STEEL SHELTER  
EXTERIOR ELEVATION  
C

FILENAME:

/DATN27.dwg

SCALE:

3/8"=1'-0"

TOLERANCE:

DRWN. BY:

D. LONG

DATE:

8/21/13

CHK. BY:

D. BROYLES

DATE:

8/21/13

APP. BY:

D. BRANNEN

DATE:

8/21/13

SHEET NO.

1-3

DRAWING NO.:

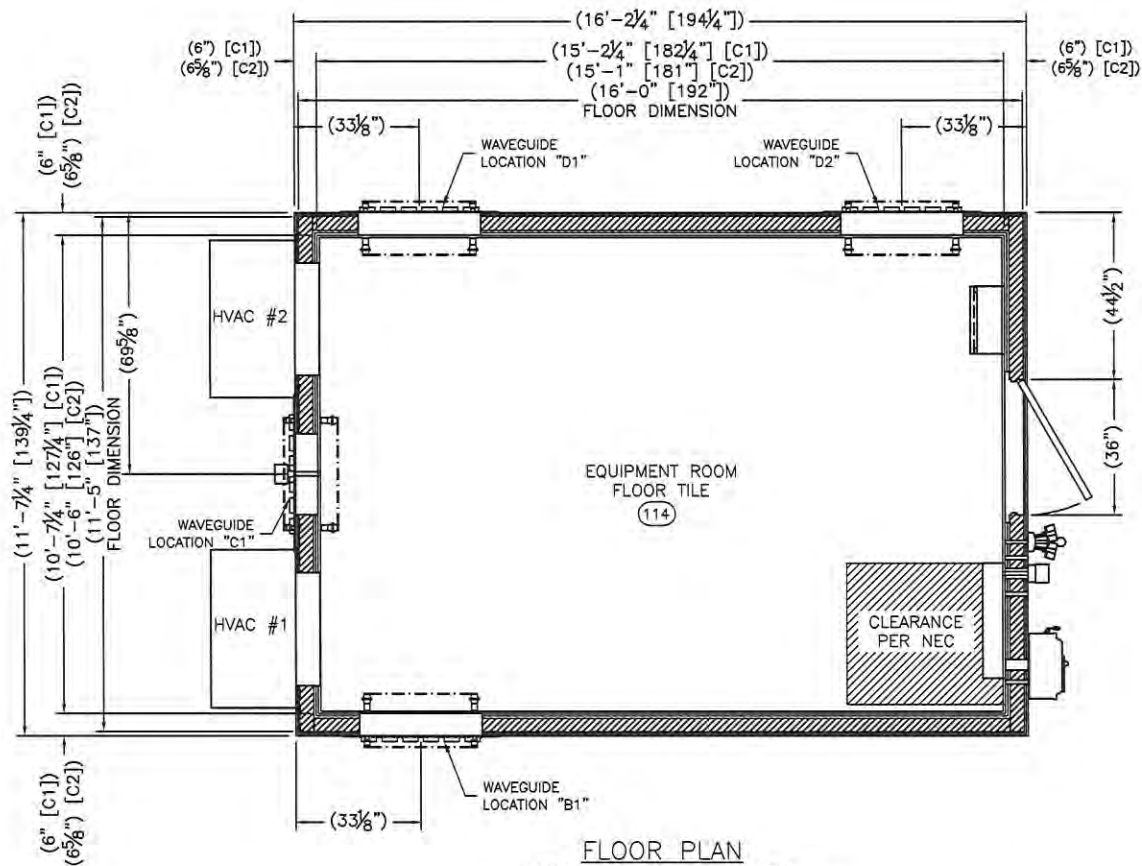
DATN27

REV.:

D



SUB-PARTS LIST			
ITEM	P/N	ORIGINAL DESCRIPTION	PCS
114	320021	TILE VINYL 1/8" VINYLASA.VL556	188



**FLOOR PLAN**  
 187.84 SQ. FT. EXTERIOR AREA  
 161.05 SQ. FT. INTERIOR AREA [1 HOUR]  
 158.38 SQ. FT. INTERIOR AREA [2 HOUR]

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 Fax: (318) 213-2919  
 www.sabreindustries.com

CUSTOMER:

**AT&T WIRELESS SERVICES**

PROJECT:

**11'-5" X 16'-0"  
 1HR/2HR STEEL SHELTER  
 FLOOR PLAN**

FILENAME:

/DATN27.dwg

SCALE:

3/8"=1'-0"

TOLERANCE:

3/8"=1'-0"

DRWN. BY:

D. LONG

DATE:

8/21/13

CHK. BY:

D. BROYLES

DATE:

8/21/13

APP. BY:

D. BRANNEN

DATE:

8/21/13

SHEET NO.

2-0

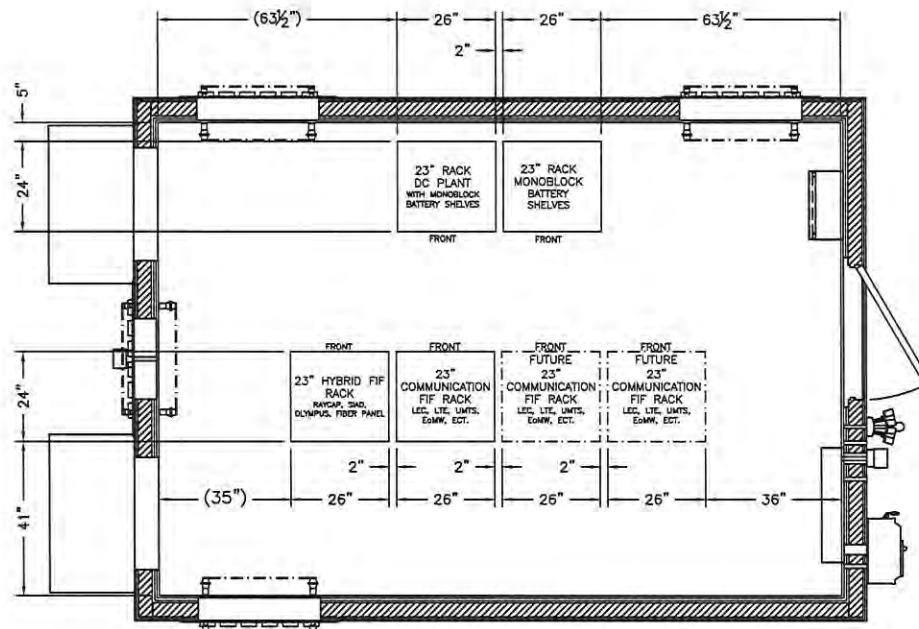
DRAWING NO.:

DATN27

REV.:

D

A	SLC	03/21/24	UPDATED NEC AREA	WR	03/24/14
REV. BY	DATE	DESCRIPTION	APP. BY	DATE	

**NOTES:**

1. ALL DIMENSIONS ARE 2HR.

**EQUIPMENT LAYOUT**

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CUSTOMER:

**AT&T WIRELESS  
SERVICES**

PROJECT:  
**11'-5" X 16'-0"  
1HR/2HR STEEL SHELTER  
EQUIPMENT LAYOUT**

FILENAME:

/DATN27.dwg

SCALE:

3/8"=1'-0"

TOLERANCE:

3/8"=1'-0"

DRWN. BY:

D. LONG

DATE:

8/21/13

CHK. BY:

D. BROYLES

DATE:

8/21/13

APP. BY:

D. BRANNEN

DATE:

8/21/13

SHEET NO.

2-1

DRAWING NO.:

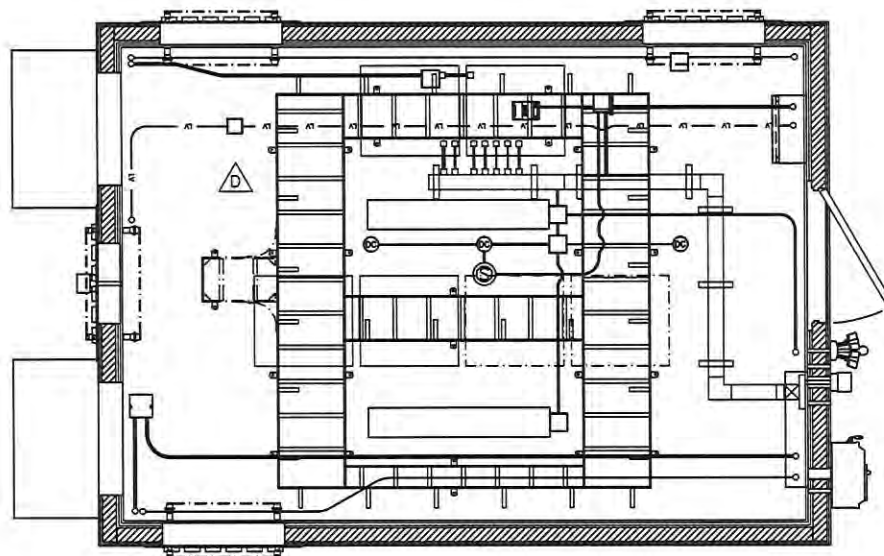
DATN27

REV.:

D

REV. BY	DATE	DESCRIPTION	APP. BY	DATE
C. DB	02/20/13	NEW EQUIPMENT LAYOUT:	BDB	02/20/13





EQUIPMENT OVERLAY LAYOUT

D	SB	05/20/16	UPDATED PER NEW (ATN) STANDARDS				
C	DB	02/20/15	NEW EQUIPMENT LAYOUT:			BDB	02/20/15
REV	BY	DATE	DESCRIPTION			APP. BY	DATE

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CUSTOMER:

AT&T WIRELESS  
SERVICES

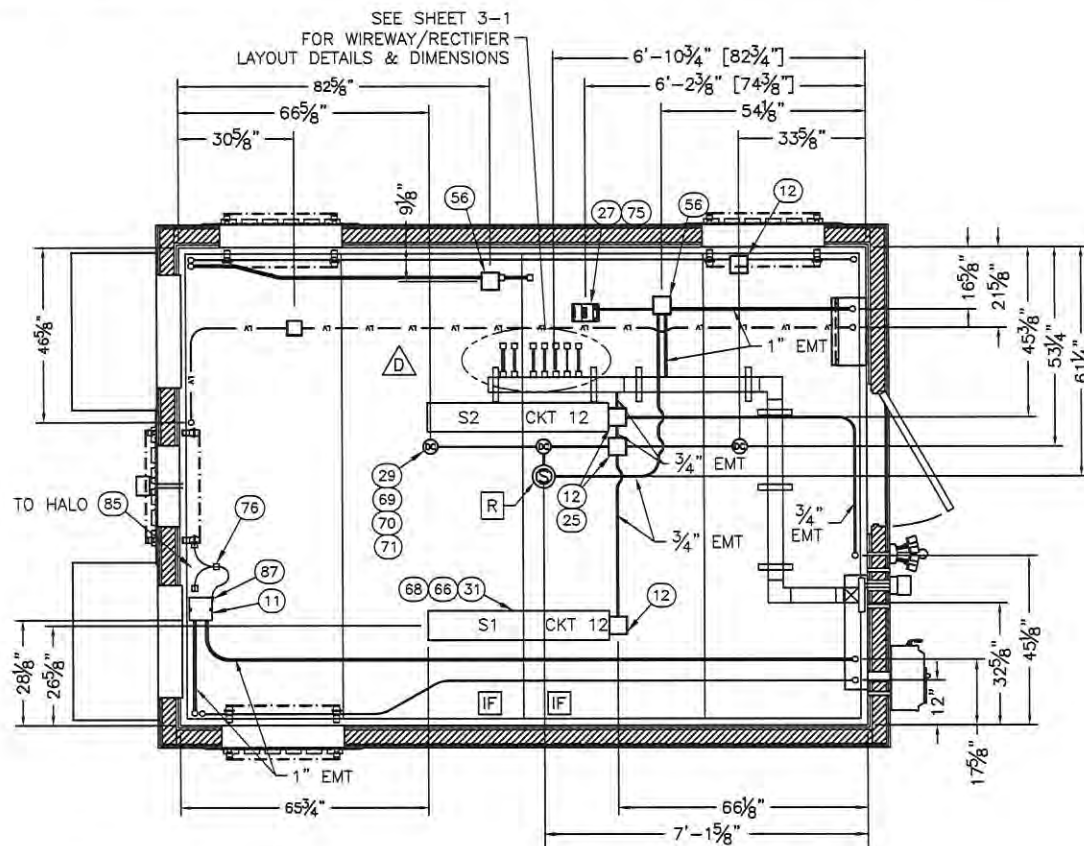
PROJECT:  
11'-5" X 16'-0"  
1HR/2HR STEEL SHELTER  
EQUIPMENT OVERLAY  
LAYOUT

FILENAME:  
/DATN27.dwg  
SCALE:  
3/8"=1'-0" TOLERANCE:  
DRWN. BY:  
D. LONG DATE:  
8/21/13  
CHK. BY:  
D. BROYLES DATE:  
8/21/13  
APP. BY:  
D. BRANNEN DATE:  
8/21/13  
SHEET NO.  
2-2

DRAWING NO.:  
DATN27 REV.:  
D

SABRE INDUSTRIES(TM) PROPRIETARY DOCUMENT

SUB-PARTS LIST					
ITEM	P/N	ORIGINAL DESCRIPTION	CUT	ITEM	P/N
20	430268	WIREWAY,GALV.4"x4"x48",W/O KO'S	48"	34	410111
21	430319	WIREWAY,GALV.4"x4"x36",W/O KO'S	36"	36	410119
22	430336	WIREWAY,GALV.4"x4"x12",W/O KO'S	12"		
					CONDUIT,LFGC,3/4",SEALTITE
					CONDUIT,LFGC,1",SEALTITE
					96"



[IF] = INTERIOR FINISH START PANEL.

### REFLECTED CEILING PLAN ELECTRICAL (1 HOUR)

D	SB	05/20/16	UPDATED PER NEW (ATN) STANDARDS		
C	DB	02/20/15	NEW ELECTRICAL LAYOUT:	BDB	02/20/15
A	SLC	03/21/14	ADDED OPTIONAL RECTIFIER DROPS	WR	03/24/14
REV	BY	DATE	DESCRIPTION	APP	BY DATE

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CUSTOMER:  
**AT&T WIRELESS  
SERVICES**

PROJECT:  
**11'-5" X 16'-0"  
1HR/2HR STEEL SHELTER  
REFLECTED CEILING  
PLAN-ELECTRICAL-1HR**

FILENAME:  
**/DATN27.dwg**  
SCALE:  
**3/8"=1'-0"**  
TOLERANCE:  
DRWN. BY:  
**D. LONG**  
DATE:  
**8/21/13**  
CHK. BY:  
**D. BROYLES**  
DATE:  
**8/21/13**  
APP. BY:  
**D. BRANNEN**  
DATE:  
**8/21/13**  
SHEET NO.  
**3-0.1**

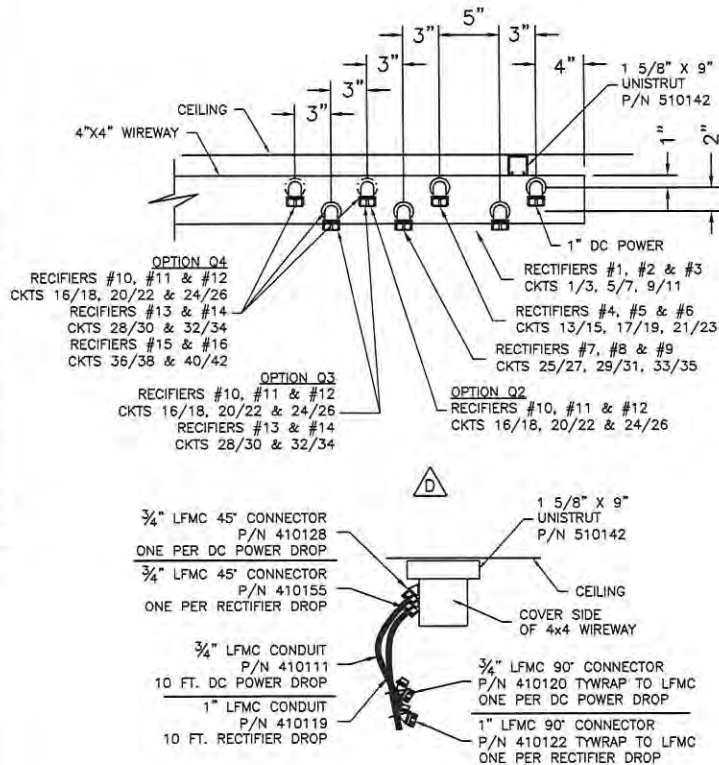
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**DATN27**  
REV.:  
**D**

SABRE INDUSTRIES(TM) PROPRIETARY DOCUMENT

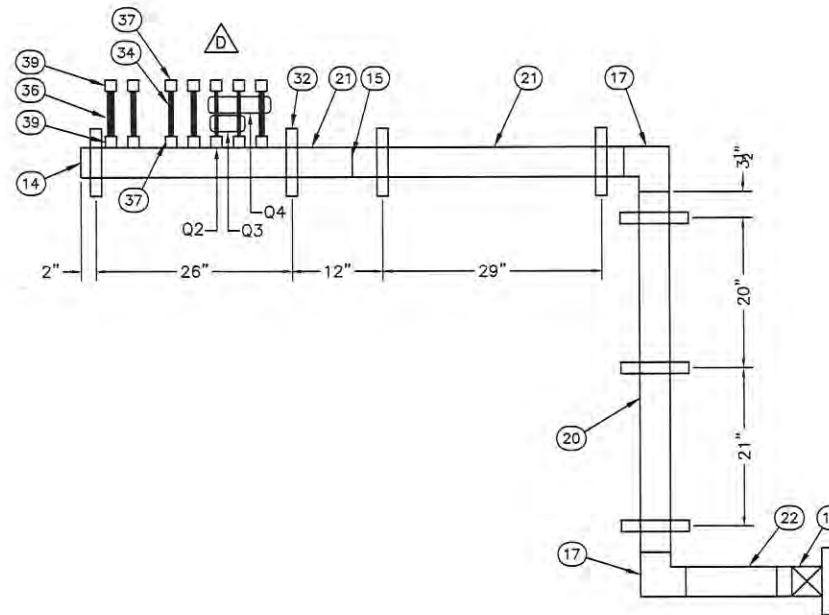




SUB-PARTS LIST			
ITEM	P/N	ORIGINAL DESCRIPTION	CUT
20	430258	WIREWAY, GALV. 4"x4"x48", W/O KO'S	48"
21	430319	WIREWAY, GALV. 4"x4"x36", W/O KO'S	36"
22	430336	WIREWAY, GALV. 4"x4"x12", W/O KO'S	12"
34	410111	CONDUIT, LFMC, 3/4" SEALTITE	96"
36	410119	CONDUIT, LFMC, 1" SEALTITE	96"



RECTIFIER DROP DETAILS



WIREWAY/RECTIFIER LAYOUT DETAILS

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Fax: (318) 213-2919  
www.sabreindustries.com

CUSTOMER:

AT&amp;T WIRELESS SERVICES

PROJECT:  
11'-5" X 16'-0"  
1HR/2HR STEEL SHELTER  
REFLECTED CEILING  
PLAN-ELECTRICAL-2HR

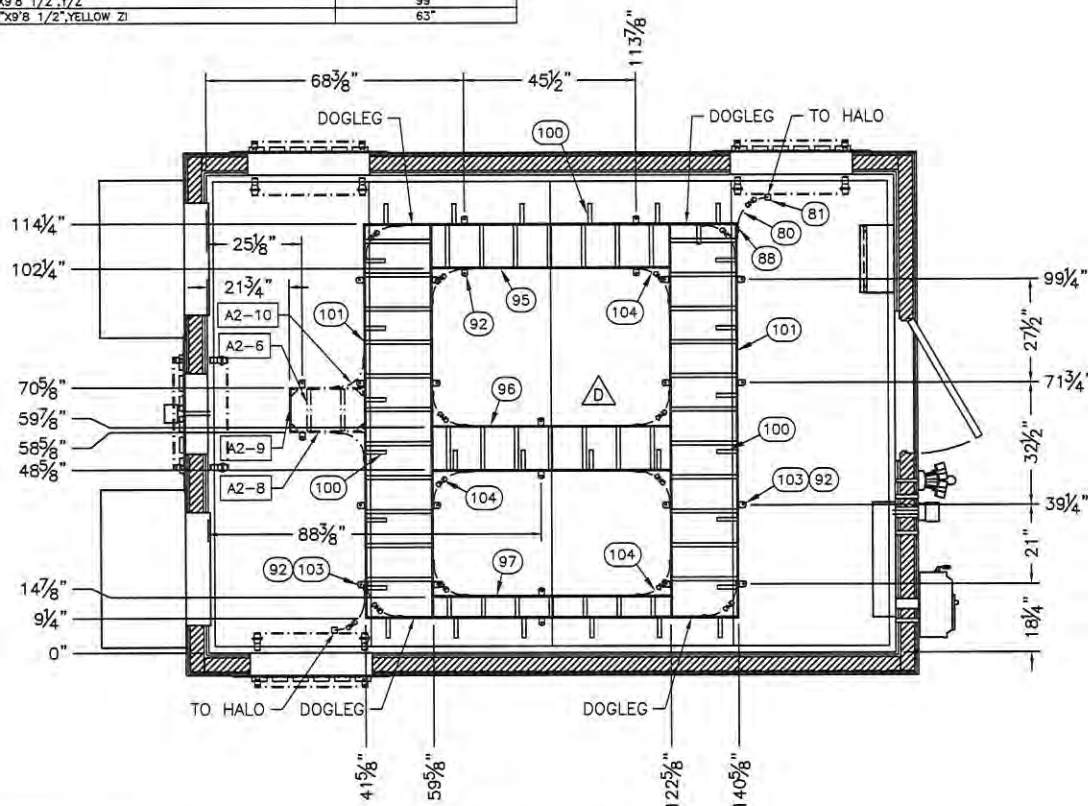
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SCALE:  
3/8"=1'-0"  
TOLERANCE:  
DRWN. BY:  
D.LONG  
DATE:  
8/21/13  
CHK. BY:  
D. BROYLES  
DATE:  
8/21/13  
APP. BY:  
D. BRANNEN  
DATE:  
8/21/13  
SHEET NO.  
3-1

DRAWING NO.:  
DATN27  
REV.:  
D

D	SB	15/20/16	UPDATED PER NEW (ATN) STANDARDS		
C	DB	02/20/15	UPDATE DETAIL VIEWS	BDB	02/20/15
A	SLC	03/21/14	ADDED OPTIONAL RECTIFIERS	WR	03/24/14
REV. BY	DATE	DESCRIPTION		APP. BY	DATE



SUB-PARTS LIST			
ITEM	P/N	ORIGINAL DESCRIPTION	CUT
80	400050	WIRE, #2 THIN, STRAND, GRN	36"
101	510049	CABLE LADDER, 18"X9'8 1/2", YELLOW ZI	105"
95	510000	CABLE LADDER, 12"X9'8 1/2", YELLOW ZI	99"
97	510001	CABLE LADDER, 6"X9'8 1/2", Y/Z	99"
96	510000	CABLE LADDER, 12"X9'8 1/2", YELLOW ZI	63"



## NOTES:

1. ALL DIMENSIONS ARE 2HR.

## LEGEND:

1. [F] = FACTORY END OF CABLE TRAY.
2. CABLE TRAY MOUNTED 8'-2 5/8" AFF [2 HOUR]  
CABLE TRAY MOUNTED 8'-1 1/8" AFF [CONCRETE]
3. [IF] = INTERIOR FINISH START PANEL.
4. [⊕] = CABLE LADDER SPLICE.

### REFLECTED CEILING PLAN MECHANICAL (1 HR)

D	SB	05/20/18	UPDATED PER NEW (ATN) STANDARDS		
C	DB	02/20/15	UPDATE CABLE TRAY LAYOUT	BOB	02/20/15
REV	BY	DATE	DESCRIPTION	APP. BY	DATE

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www.sabreindustries.com

CUSTOMER:

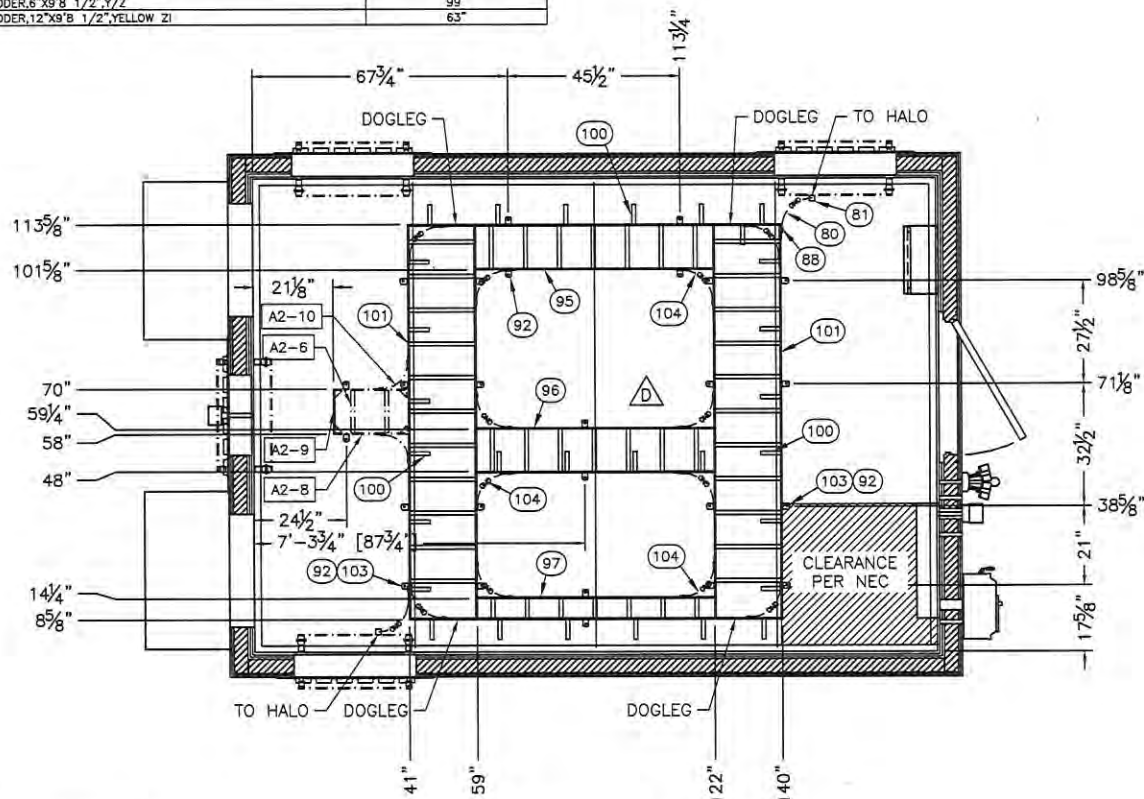
AT&T WIRELESS  
SERVICES

PROJECT:  
11'-5" X 16'-0"  
1HR/2HR STEEL SHELTER  
REFLECTED CEILING  
PLAN-MECHANICAL-1HR

FILENAME: /DATN27.dwg	
SCALE: 3/8"=1'-0"	TOLERANCE:
DRWN. BY: D. LONG	DATE: 8/21/13
CHK. BY: D. BROYLES	DATE: 8/21/13
APP. BY: D. BRANNEN	DATE: 8/21/13
SHEET NO. 3-2.1	

DRAWING NO.:  
DATN27REV.:  
D

SUB-PARTS LIST			
ITEM	P/N	ORIGINAL DESCRIPTION	CUT
80	400050	WIRE, #2 THHN, STRAND, GRN	36"
101	510049	CABLE LADDER, 18"X9" 8 1/2", YELLOW ZI	105"
95	510000	CABLE LADDER, 12"X9" 8 1/2", YELLOW ZI	99"
97	510001	CABLE LADDER, 6"X9" 8 1/2", Y/Z	99"
96	510000	CABLE LADDER, 12"X9" 8 1/2", YELLOW ZI	63"



## NOTES:

1. ALL DIMENSIONS ARE 2HR.

## LEGEND:

1. [F] = FACTORY END OF CABLE TRAY.
2. CABLE TRAY MOUNTED 8'-2 5/8" AFF [2 HOUR]  
CABLE TRAY MOUNTED 8'-1 1/8" AFF [CONCRETE]
3. [IF] = INTERIOR FINISH START PANEL.
4. [⊕] = CABLE LADDER SPLICE.

### REFLECTED CEILING PLAN MECHANICAL (2 HR)

D	SB	05/20/16	UPDATED PER NEW (ATN) STANDARDS		
C	DB	02/20/15	UPDATE CABLE TRAY LAYOUT	BOB	02/20/15
REV	BY	DATE	DESCRIPTION	APP. BY	DATE

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Fax: (318) 213-2919  
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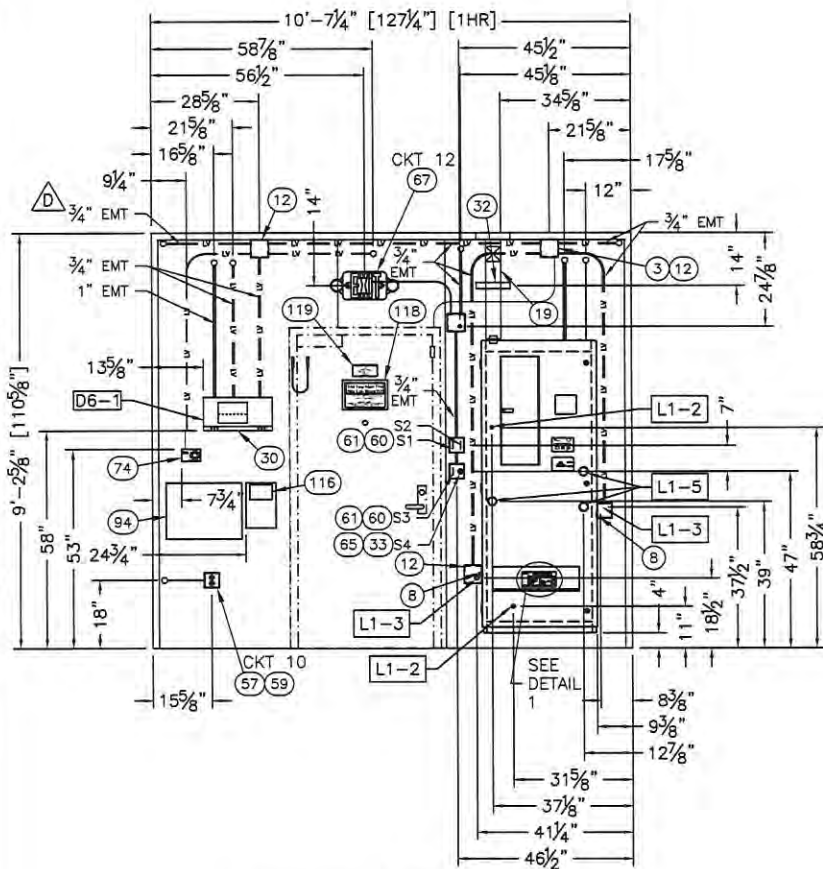
## CUSTOMER:

**AT&T WIRELESS  
SERVICES**

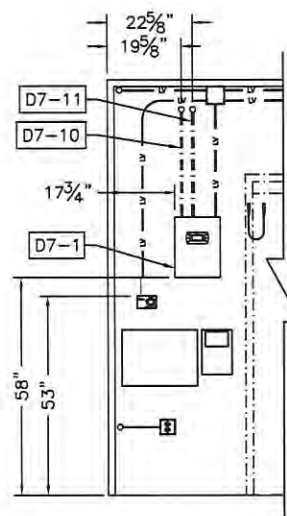
PROJECT:  
**11'-5" X 16'-0"**  
**1HR/2HR STEEL SHELTER**  
**REFLECTED CEILING**  
**PLAN-MECHANICAL-2HR**

FILENAME: /DATN27.dwg	
SCALE: 3/8"=1'-0"	TOLERANCE:
DRWN. BY: D. LONG	DATE: 8/21/13
CHK. BY: D. BROYLES	DATE: 8/21/13
APP. BY: D. BRANNEN	DATE: 8/21/13
SHEET NO. 3-2.2	
DRAWING NO.: DATN27	REV.: D





INTERIOR ELEVATION "A"  
ELECTRICAL 1HR



OPTION D7 ONLY

D	SB	05/20/16	UPDATED PER NEW (ATN) STANDARDS	WR	6/17/16
C	DB	02/20/15	UPDATE CONTROLLER LAYOUT	BDB	02/20/15
A	SLC	03/21/14	ADDED DETAIL 1 AND 4 11/16 BOXES	WR	03/24/14
REV	BY	DATE	DESCRIPTION	APP. BY	DATE

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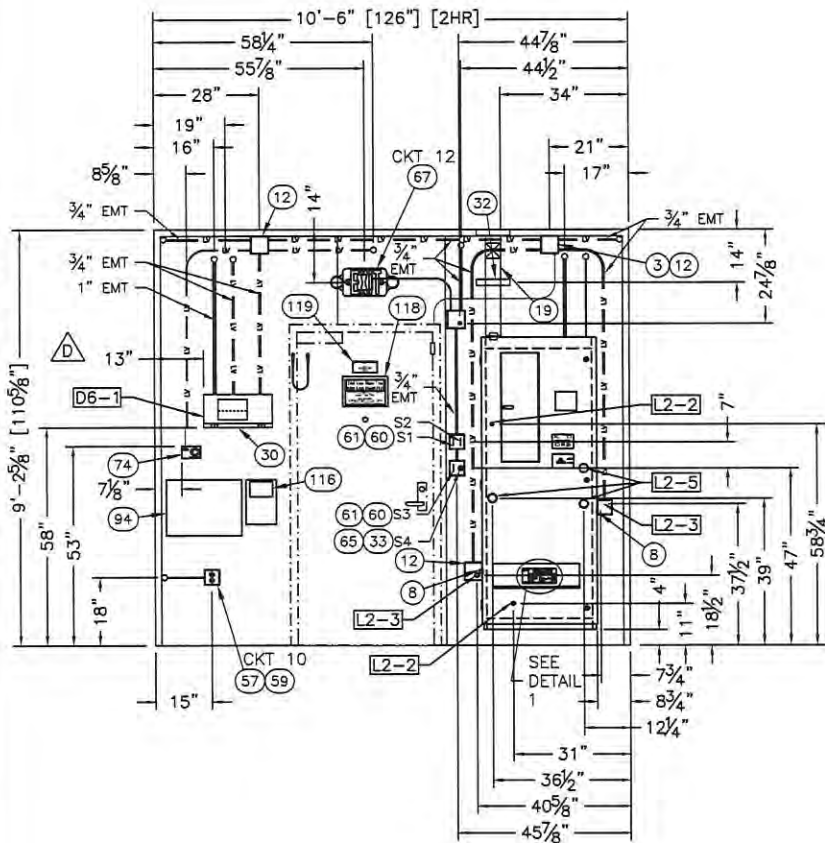
CUSTOMER:

AT&T WIRELESS  
SERVICES

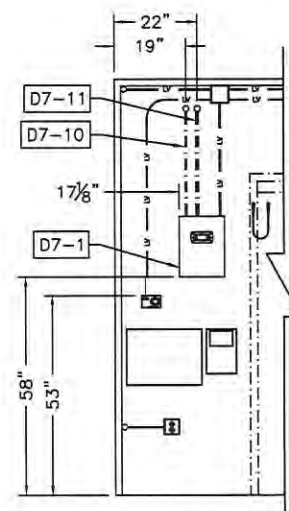
PROJECT:  
11'-5" X 16'-0"  
1HR/2HR STEEL SHELTER  
INTERIOR ELEVATIONS  
"A" ELECTRICAL 1HR

FILENAME:  
/DATN27.dwg  
SCALE:  
3/8"=1'-0"  
TOLERANCE:  
DRWN. BY:  
D.LONG  
DATE:  
8/21/13  
CHK. BY:  
D. BROYLES  
DATE:  
8/21/13  
APP. BY:  
D. BRANNEN  
DATE:  
8/21/13  
SHEET NO.  
4-0.1

DRAWING NO.:  
DATN27  
REV.:  
D



INTERIOR ELEVATION "A"  
ELECTRICAL 2HR



OPTION D7 ONLY

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CUSTOMER:  
**AT&T WIRELESS  
SERVICES**

PROJECT:  
11'-5" X 16'-0"  
1HR/2HR STEEL SHELTER  
INTERIOR ELEVATIONS  
A 2HR

FILENAME: /DAT127.dwg	
SCALE: 3/8"=1'-0"	TOLERANCE:
DRWN. BY: D.LONG	DATE: 8/21/13
CHK. BY: D. BROYLES	DATE: 8/21/13
APP. BY: D. BRANNEN	DATE: 8/21/13
SHEET NO. 4-0.2	

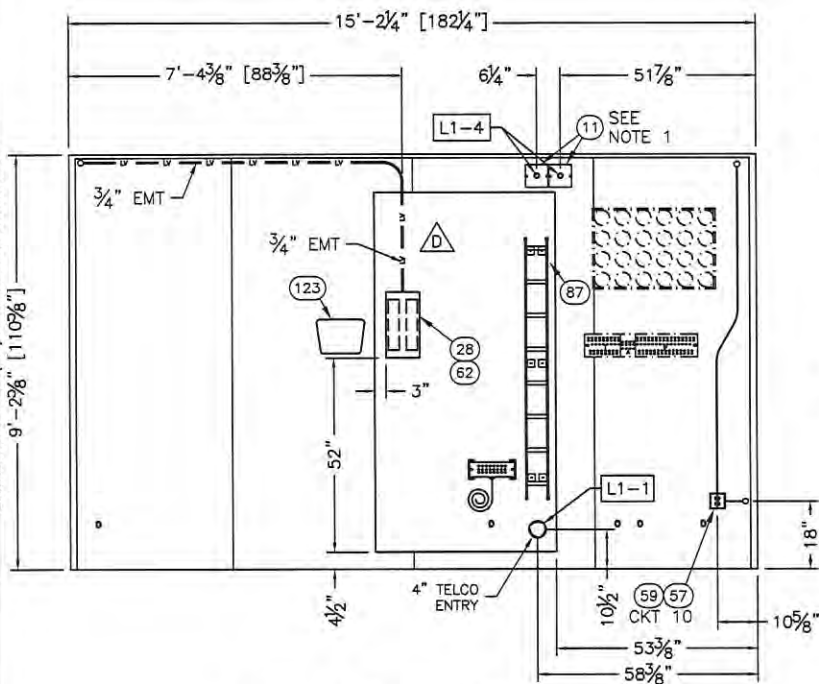
DRAWING NO.:	REV.
DATN27	D

D	SB	05/20/16	UPDATED PER NEW (ATN) STANDARDS		
C	DB	02/20/15	UPDATE CONTROLLER LAYOUT;	BDB	02/20/15
A	SLC	03/21/14	ADDED DETAIL 1 & 4 11/16 BOXES	WR	03/24/14
REV	BY	DATE	DESCRIPTION	APP BY	DATE





SUB-PARTS LIST			
ITEM	P/N	ORIGINAL DESCRIPTION	CUT
98	510001	CABLE LADDER, 6"X9" 1/2"Y/Z	70"

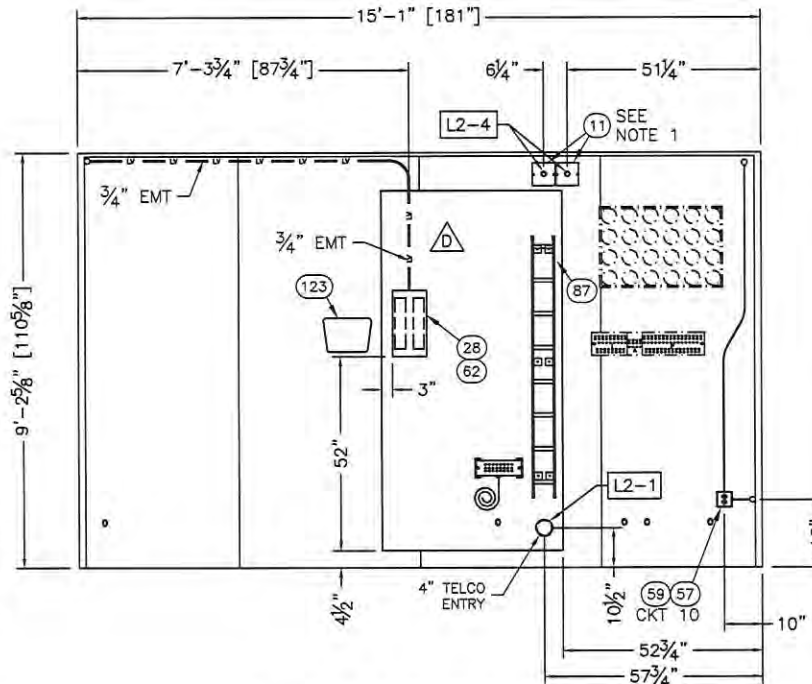


INTERIOR ELEVATION "B"  
(ELECTRICAL 1HR)

## NOTES:

1. INSTALL ONLY AT REQUIRED WAVEGUIDE LOCATION.
2. INSTALL ALARM DIRECTORY TO INSIDE COVER OF ALARM BOX

1. INSTALL ONLY AT REQUIRED WAVEGUIDE LOCATIONS



INTERIOR ELEVATION "B"  
(ELECTRICAL 2HR)

D	SB	05/20/16	UPDATED PER NEW (ATN) STANDARDS		
C	DB	02/20/15	ADD 1HR AND 2HR TO SAME SHEET:	BDB	02/20/15
REV BY	DATE		DESCRIPTION	APP BY	DATE

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CUSTOMER:

AT&T WIRELESS  
SERVICES

PROJECT:

11'-5" X 16'-0"  
1HR/2HR STEEL SHELTER  
INTERIOR ELEVATION  
"B" 1HR/2HR

FILENAME:

/DATN27.dwg

SCALE:

3/8"=1'-0"

TOLERANCE:

DRWN BY:

D. LONG

DATE:

8/21/13

CHK BY:

D. BROYLES

DATE:

8/21/13

APP BY:

D. BRANNEN

DATE:

8/21/13

SHEET NO.

4-2

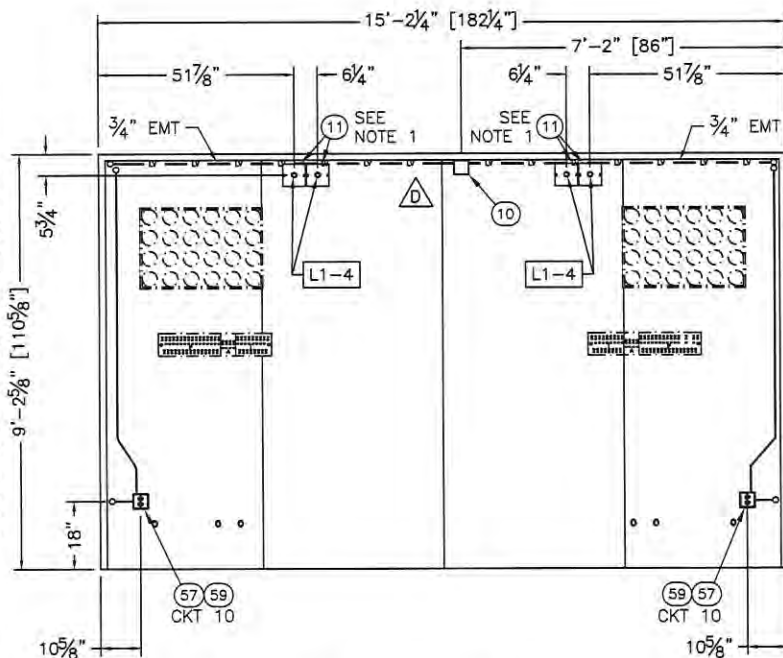
DRAWING NO.:

DATN27

REV.:

D

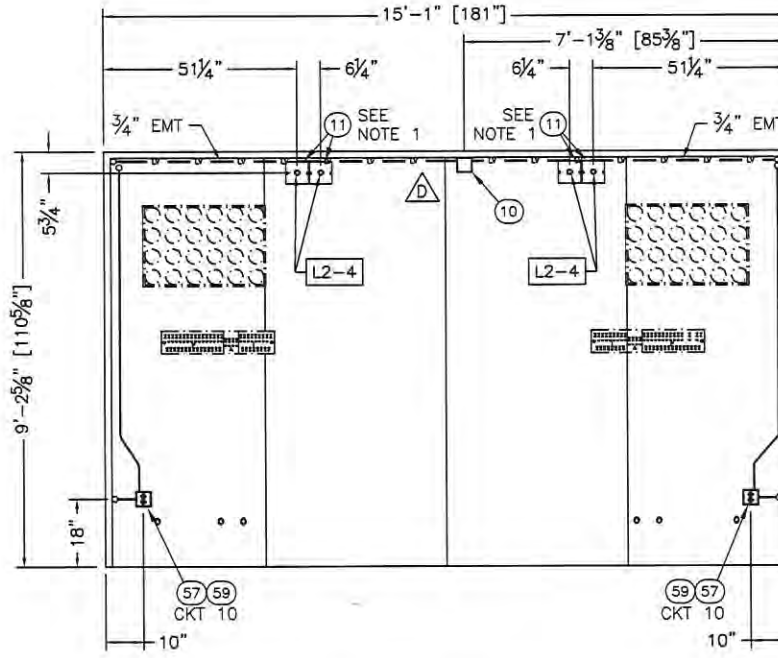




INTERIOR ELEVATION "D"  
(1 HOUR)

## NOTES:

1. INSTALL ONLY WHEN WAVEGUIDE LOCATION IS REQUIRED.



INTERIOR ELEVATION "D"  
(2 HOUR)

D	SB	05/20/16	UPDATED PER NEW (ATN) STANDARDS				
C	DB	02/20/15	ADD 1HR AND 2HR TO SAME SHEET:			BDG	02/20/15
REV	BY	DATE	DESCRIPTION			APP	BY

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CUSTOMER:

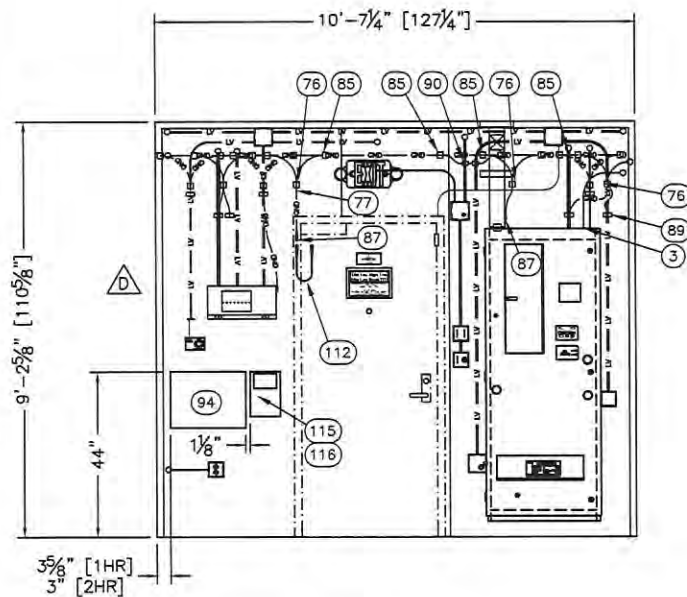
AT&T WIRELESS  
SERVICES

PROJECT:  
11'-5" X 16'-0"  
1HR/2HR STEEL SHELTER  
INTERIOR ELEVATION  
C 1HR/2HR

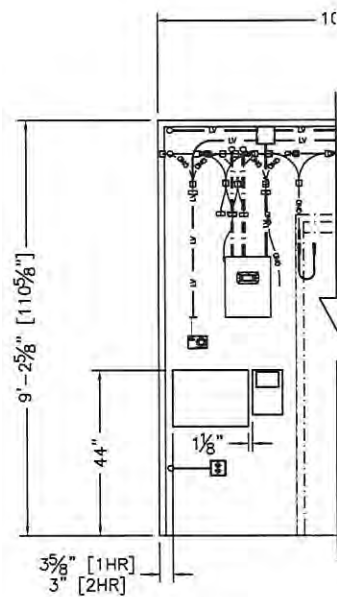
FILENAME: /DATN27.dwg	
SCALE: 3/8"=1'-0"	TOLERANCE:
DRWN. BY: D. LONG	DATE: 8/21/13
CHK. BY: D. BROYLES	DATE: 8/21/13
APP. BY: D. BRANNEN	DATE: 8/21/13
SHEET NO. 4-3	

DRAWING NO.:  
DATN27

REV.:  
D



INTERIOR ELEVATION "A"  
MECHANICAL 1HR/2HR



OPTION D7  
(MECHANICAL)

D	SB	05/20/16	UPDATED PER NEW (ATN) STANDARDS		
C	DB	02/20/15	UPDATE GROUNDING TO NEW CHG'S	BDB	02/20/15
REV BY	DATE		DESCRIPTION	APP BY	DATE

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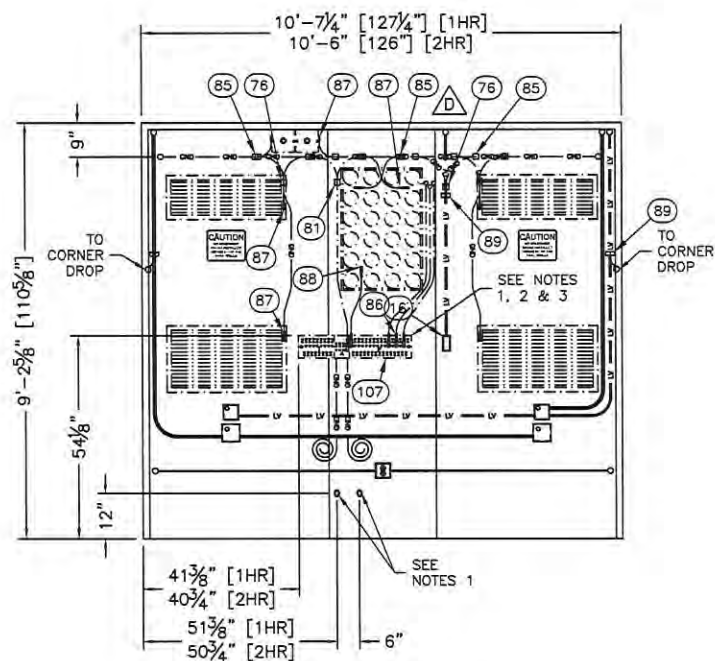
CUSTOMER:

AT&T WIRELESS  
SERVICES

PROJECT:  
11'-5" X 16'-0"  
1HR/2HR STEEL SHELTER  
INTERIOR ELEVATION "A"  
MECHANICAL 1HR/2HR

FILENAME:  
/DATN27.dwg  
SCALE: N.T.S. TOLERANCE:  
DRWN BY: D.LONG DATE: 8/21/13  
CHK BY: D. BROYLES DATE: 8/21/13  
APP BY: D. BRANNEN DATE: 8/21/13  
SHEET NO.  
5-0

DRAWING NO.:  
DATN27  
REV.:  
D



**INTERIOR ELEVATION "C"**  
(MECHANICAL 1HR/2HR)

**NOTES:**

1. INSTALL ONLY IF WAVEGUIDE LOCATION IS REQUIRED.
2. ADD LABELS TO BOTH ENDS OF GROUND CONDUCTORS TO MASTER GROUND BAR.
3. SEE SHEET 5-4 FOR GROUNDING DETAILS.

D	SB	05/20/16	UPDATED PER NEW (ATN) STANDARDS		
C	DB	02/20/15	UPDATE GROUNDING TO NEW CHG'S:	908	02/20/15
REV	BY	DATE	DESCRIPTION	APP. BY	DATE

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Fax: (318) 213-2919  
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**CUSTOMER:**

**AT&T WIRELESS SERVICES**

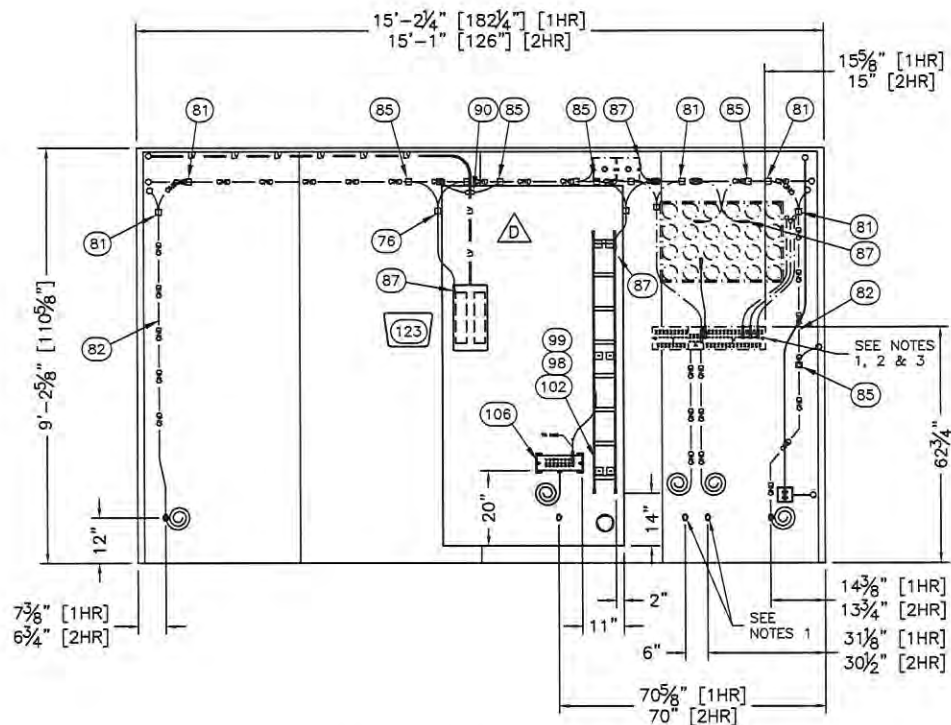
**PROJECT:**

**11'-5" X 16'-0"**  
**1HR/2HR STEEL SHELTER**  
**INTERIOR ELEVATION "C"**  
**MECHANICAL 1HR/2HR**

FILENAME: <b>/DATN27.dwg</b>	
SCALE: <b>N.T.S.</b>	TOLERANCE:
DRWN. BY: <b>D. LONG</b>	DATE: <b>8/21/13</b>
CHK. BY: <b>D. BROYLES</b>	DATE: <b>8/21/13</b>
APP. BY: <b>D. BRANNEN</b>	DATE: <b>8/21/13</b>
SHEET NO. <b>5-1</b>	

DRAWING NO.: <b>DATN27</b>	REV.: <b>D</b>
-------------------------------	-------------------





INTERIOR ELEVATION "B"  
(MECHANICAL 1HR/2HR)

## NOTES:

1. INSTALL ONLY IF WAVEGUIDE LOCATION IS REQUIRED.
2. ADD LABELS TO BOTH ENDS OF GROUND CONDUCTORS TO MASTER GROUND BAR.
3. SEE SHEET 5-4 FOR GROUNDING DETAILS.

D	SB	05/20/16	UPDATED PER NEW (ATN) STANDARDS		
C	DB	02/20/15	UPDATE GROUNDING TO NEW CHG'S	BDG	02/20/15
REV	BY	DATE	DESCRIPTION	APP. BY	DATE

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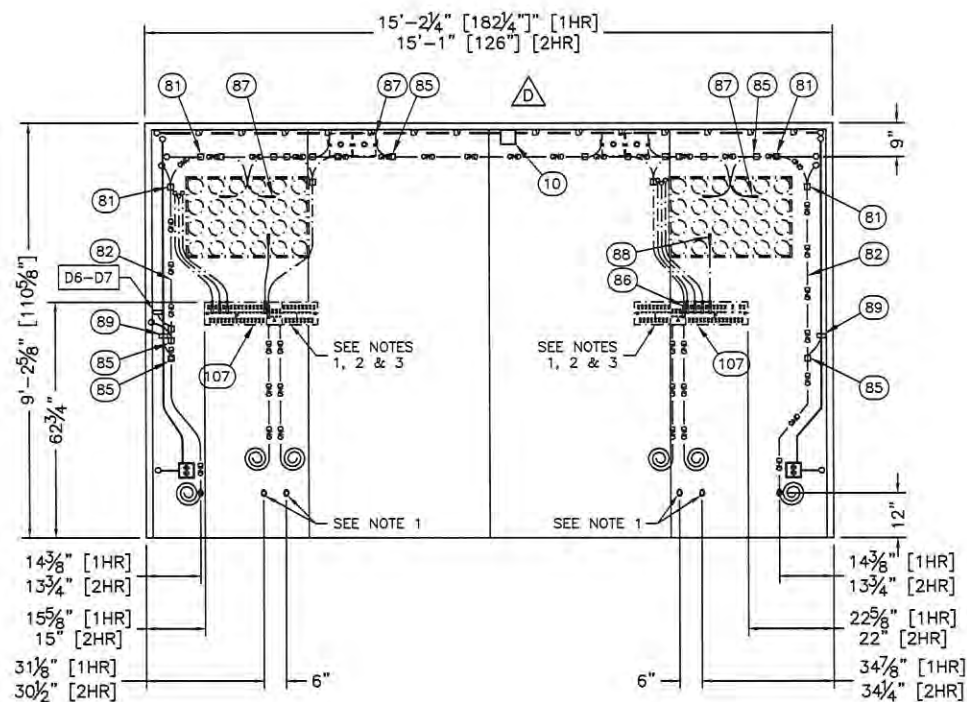
CUSTOMER:

**AT&T WIRELESS  
SERVICES**

PROJECT:  
**11'-5" X 16'-0"**  
**1HR/2HR STEEL SHELTER**  
**INTERIOR ELEVATION "B"**  
**MECHANICAL 1HR/2HR**

FILENAME:  
**/DATN27.dwg**  
SCALE:  
**N.T.S.**  
TOLERANCE:  
DRWN. BY:  
**D. LONG**  
DATE:  
**8/21/13**  
CHK. BY:  
**D. BROYLES**  
DATE:  
**8/21/13**  
APP. BY:  
**D. BRANNEN**  
DATE:  
**8/21/13**  
SHEET NO.  
**5-2**

DRAWING NO.:  
**DATN27**  
REV.:  
**D**



**INTERIOR ELEVATION "D"**  
(MECHANICAL 1HR/2HR)

**NOTES:**

1. INSTALL ONLY IF WAVEGUIDE LOCATION IS REQUIRED.
2. ADD LABELS TO BOTH ENDS OF GROUND CONDUCTORS TO MASTER GROUND BAR.
3. SEE SHEET 5-4 FOR GROUNDING DETAILS.

D	SB	02/20/15	UPDATED PER NEW (ATN) STANDARDS		
C	DB	02/20/15	UPDATE GROUNDING TO NEW CHG'S	BDB	02/20/15
REV	BY	DATE	DESCRIPTION	APP	BY DATE

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CUSTOMER:

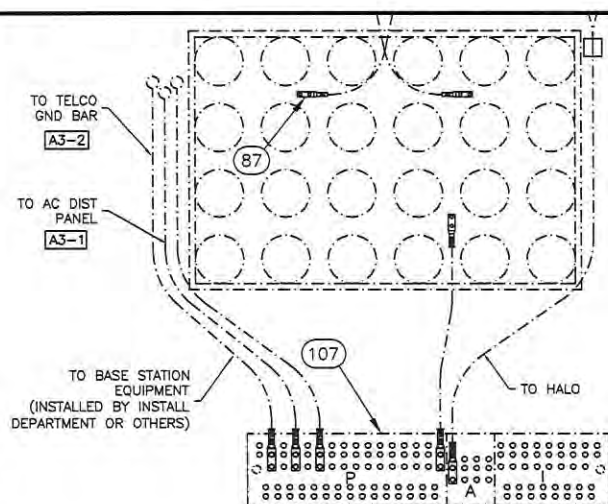
**AT&T WIRELESS SERVICES**

PROJECT:  
**11'-5" X 16'-0"**  
**1HR/2HR STEEL SHELTER**  
**INTERIOR ELEVATION "D"**  
**MECHANICAL 1HR/2HR**

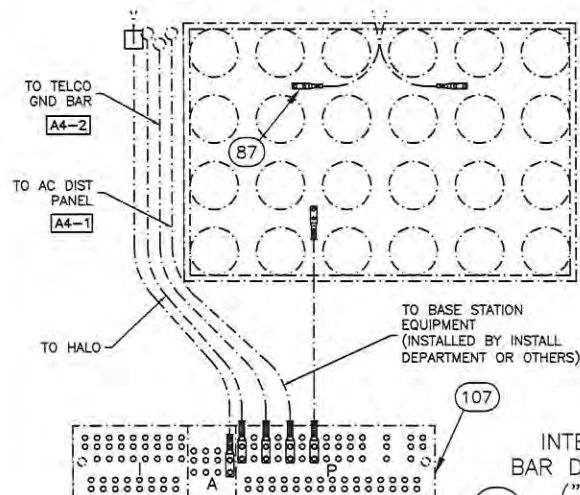
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SCALE: <b>N.T.S.</b>	TOLERANCE:
DRAWN BY: <b>D.LONG</b>	DATE: <b>8/21/13</b>
CHK. BY: <b>D. BROYLES</b>	DATE: <b>8/21/13</b>
APP. BY: <b>D. BRANNEN</b>	DATE: <b>8/21/13</b>
SHEET NO. <b>5-3</b>	

DRAWING NO.:  
**DATN27**

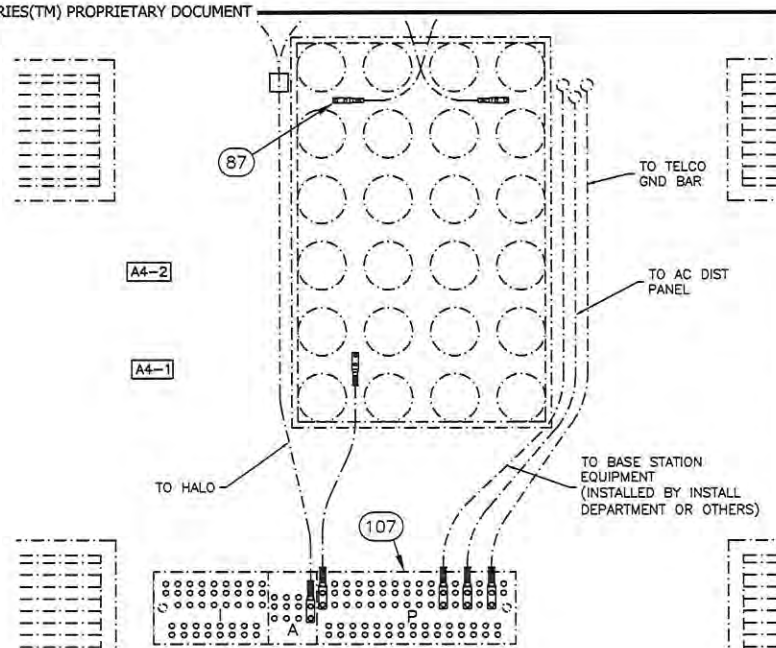
REV.:  
**D**



INTERIOR GROUND  
BAR DETAIL  
(WAVEGUIDE "D1")  
SCALE: N.T.S.



INTERIOR GROUND  
BAR DETAIL WAVEGUIDE  
("B1" & "D2")  
SCALE: N.T.S.



INTERIOR GROUND  
BAR DETAIL  
(WAVEGUIDE "C1")  
SCALE: N.T.S.

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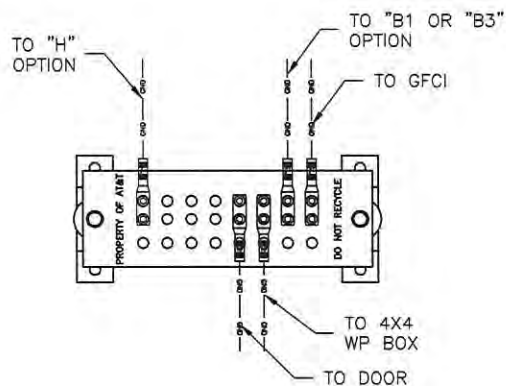
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CUSTOMER:  
**AT&T WIRELESS SERVICES**

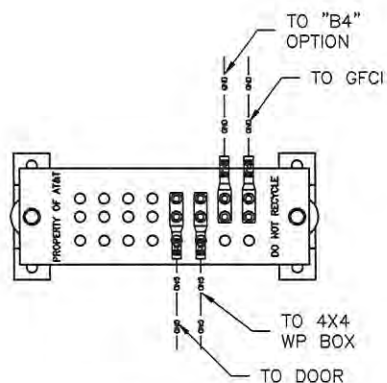
PROJECT:  
**11'-5" X 16'-0"  
1HR/2HR STEEL SHELTER  
INTERIOR GROUND BAR  
DETAILS**

FILENAME: /DATN27.dwg	
SCALE: N.T.S.	TOLERANCE:
DRWN. BY: D.LONG	DATE: 8/21/13
CHK. BY: D. BROYLES	DATE: 8/21/13
APP. BY: D. BRANNEN	DATE: 8/21/13
SHEET NO. 5-4	
DRAWING NO.: DATN27	REV.: D

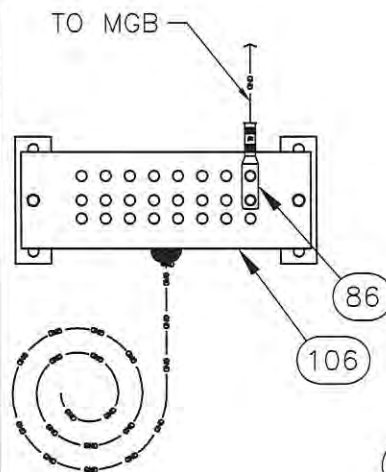




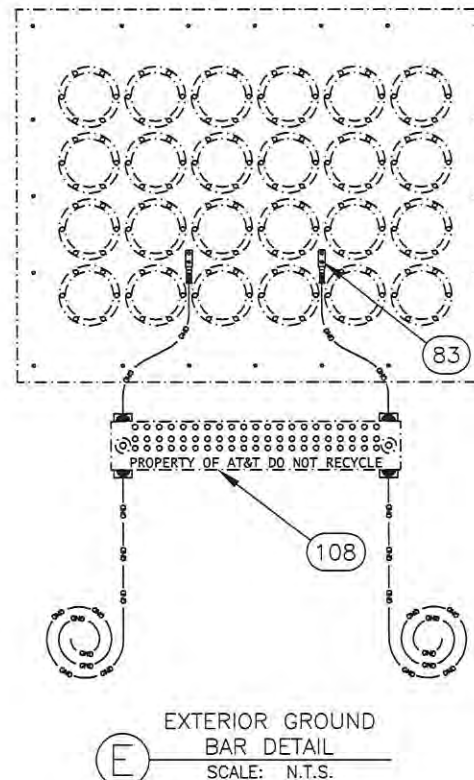
EXTERIOR GROUND BAR  
DETAIL OPTION  
("B1" & "B3")  
SCALE: N.T.S.



EXTERIOR GROUND BAR  
DETAIL OPTION  
("B4")  
SCALE: N.T.S.



ITELCO GROUND  
BAR DETAIL  
SCALE: N.T.S.



EXTERIOR GROUND  
BAR DETAIL  
SCALE: N.T.S.

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Fax: (318) 213-2919  
www.sabreindustries.com

CUSTOMER:

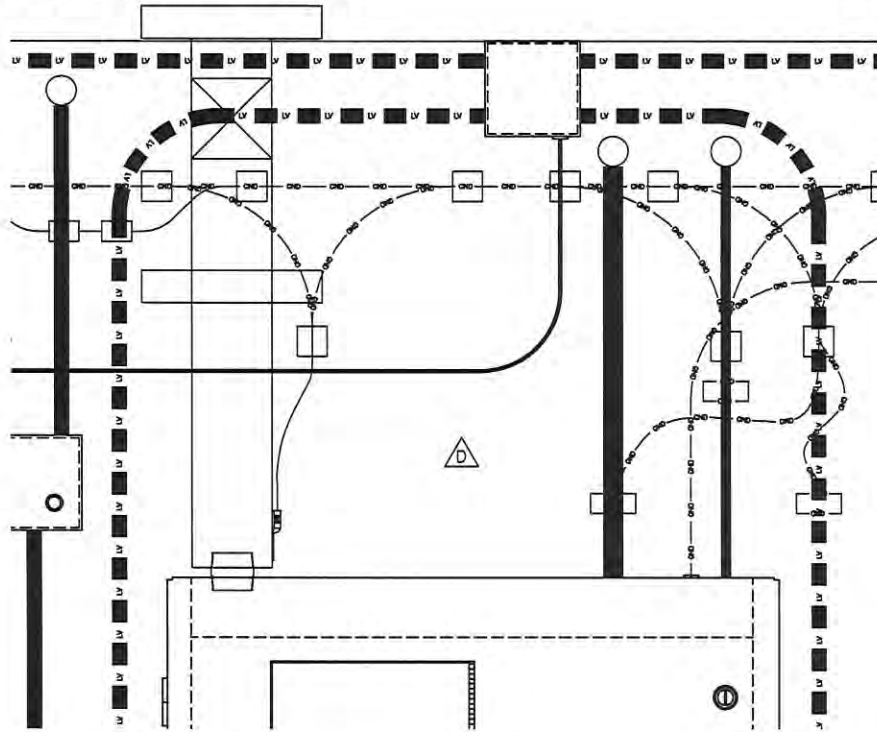
AT&T WIRELESS  
SERVICES

PROJECT:  
11'-5" X 16'-0"  
1HR/2HR STEEL SHELTER  
TELCO/EXTERIOR  
GROUND BAR DETAIL

FILENAME: /DATN27.dwg	
SCALE: N.T.S.	TOLERANCE:
DRWN. BY: D. LONG	DATE: 8/21/13
CHK. BY: D. BROYLES	DATE: 8/21/13
APP. BY: D. BRANNEN	DATE: 8/21/13
SHEET NO. 5-5	
DRAWING NO.: DATN27	REV.: D

## GROUNDING NOTES:

1. HALO GROUND TO BE #2 GREEN INSULATED STRANDED COPPER WIRE.
2. VERTICAL DROPS TO BE #2 SOLID TINNED COPPER WIRE 17FT LONG. PULL TO 45° PENETRATION AND COIL ADDITIONAL WIRE.
3. ALL BENDS MIN. 8" RADIUS.
4. APPLY ANTI-OXIDATION COMPOUND TO ALL CONNECTIONS.
5. GROUND CABLE TRAY AS SHOWN WITH #6 STRANDED GREEN COPPER CONDUCTOR AND 2-HOLE LUG.
6. GROUNDING OF CONDUIT TO HALO SHOULD NOT EXCEED 3 CONDUITS PER CONNECTION.
7. CONNECT CABLE RACK TO HALO GROUND WITH #2 STRANDED GREEN COPPER CONDUCTOR, C-TAP AND 2-HOLE LUG.
8. CONNECT #2 STRANDED GREEN COPPER CONDUCTOR TO GROUND BAR IN LOADCENTER AND CONNECT TO CELL REFERENCE GROUND BAR.
9. CONNECT TELCO GROUND BAR TO CELL REFERENCE GROUND BAR WITH #2 STRANDED GREEN COPPER CONDUCTOR.
10. TO GROUND EXTERIOR METAL COMPONENTS, CONNECT #2 SOLID TINNED COPPER WIRE W/ 2-HOLE MECHANICAL LUG. PULL TO GROUND AND COIL 10'-0" EXTRA.
11. ALL GROUND DROPS FROM THE HALO TO BE BI-DIRECTIONAL.
12. EACH GROUND CONDUCTOR TERMINATING ON ANY GROUND BAR SHALL HAVE AN IDENTIFICATION TAG ATTACHED AT EACH END THAT WILL IDENTIFY ITS ORIGIN AND DESTINATION.
13. EACH GROUND BAR TO BE LABELED AS SHOWN IN QUOTED.
14. INSTALL GROUND BAR IN LOCATIONS AS SPECIFIED BY PROJECT MANAGER.
15. BOND ALL BOXES 6" X 6" AND LARGER TO THE HALO GROUND WITH #6 STRANDED GREEN COPPER CONDUCTOR.
16. INSULATE #2 SOLID TINNED DROP AS IT CROSSES ANY METALLIC ITEM. USE FISH PAPER P/N 540204 (MINIMUM 2 COMPLETE WRAPS) OR HEAT SHRINK P/N 400538. EXTEND INSULATION MATERIAL 1" PASS THE POINT OF CONTACT WITH METALLIC SURFACE.
17. USE STANDOFF BRACKETS PART # 410343 TO SUPPORT GROUNDING CONDUCTORS, SUPPORTS SHALL BE SPACED AT 24" C/C MAX.
18. SECURE EXTERIOR TOWER LIGHT PENETRATIONS WITH LOCKNUTS, REDUCING WASHER, AND CAP.
19. INSTALL TOWER LIGHT CONTROLLER BOXES AT INSTALLED WAVEGUIDE LOCATION.



THIS DRAWING IS THE CONFIDENTIAL PROPERTY AND CONTAINS TRADE SECRETS OF CELLIXION, LLC. ANY USE OF THESE DRAWINGS OR THE INFORMATION CONTAINED HEREIN FOR ANY REASON OTHER THAN AS EXPRESSLY AUTHORIZED BY SABRE INDUSTRIES, INC. IS STRICTLY PROHIBITED. THIS DRAWING HAS BEEN DISTRIBUTED WITH THE UNDERSTANDING THAT ANYONE RECEIVING OR OTHERWISE OBTAINING POSSESSION OF IT WILL BE EXPRESSLY NOTIFIED OF ITS CONFIDENTIAL NATURE.

**Sabre Industries™**  
Building Systems by Cellixion  
5031 Hazel Jones Road  
Bossier City, LA 71111  
Voice: (318) 213-2900  
Fax: (318) 213-2919  
www.sabreindustries.com

CUSTOMER:

AT&T WIRELESS  
SERVICES

PROJECT:  
11'-5" X 16'-0"  
1HR/2HR STEEL SHELTER  
INTERIOR GROUND BAR  
DETAILS

FILENAME:

/BATN27.dwg

SCALE:

N.T.S.

TOLERANCE:

DRWN. BY:

D.LONG

DATE:

8/21/13

CHK. BY:

D. BROYLES

DATE:

8/21/13

APP. BY:

D. BRANNEN

DATE:

8/21/13

SHEET NO.

5-6

DRAWING NO.:

DATN27

REV.:

D

D	SB	05/20/16	UPDATED PER NEW (ATN) STANDARDS		
REV. BY	DATE	DESCRIPTION	APP. BY	DATE	

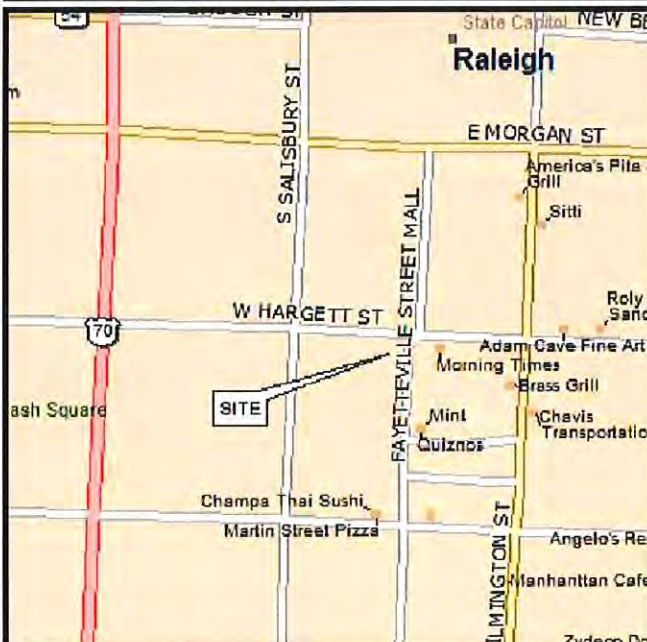


AT&T SITE NUMBER : 368-615  
PROJECT DESCRIPTION: CO-LOCATION ON AN EXISTING ROOFTOP  
TOWER TYPE: ROOFTOP  
SITE ADDRESS: 5 WEST HARGETT STREET  
RALEIGH, NC 27601  
(WAKE COUNTY)  
JURISDICTION: WAKE COUNTY  
AREA OF CONSTRUCTION: 400 ± SQ. FT.  
PRESENT OCCUPANCY TYPE: TELECOMMUNICATIONS FACILITY  
CURRENT ZONING: HISTORIC SITE  
PIN NUMBER: 1703689301-000

### PROJECT INFORMATION

LATITUDE: N 35° 46' 41.131"  
LONGITUDE: W 78° 38' 22.06"  
GROUND ELEV. (AMSL) = 342±

### SITE COORDINATES



### LOCATION MAP

FROM GREENSBORO, HEAD EAST ON W MARKET ST TOWARD N GREENE ST. TURN RIGHT ONTO S DUDLEY ST. CONTINUE ONTO BENNETT ST. TURN LEFT ONTO E LEE ST. TURN LEFT TO MERGE ONTO I-40 E/45BUS N TOWARD BURLINGTON/DURHAM. MERGE ONTO I-40 E/45 N. SLIGHT RIGHT ONTO I-40 E (SIGNS FOR INTERSTATE 40/RALEIGH). TAKE EXIT 298B FOR S SAUNDERS ST N TOWARD RALEIGH/DOWNTOWN. MERGE ONTO S SAUNDERS ST. SLIGHT RIGHT ONTO MCDOWELL ST. TURN RIGHT ONTO W HARGETT ST. DESTINATION WILL BE ON THE RIGHT.

### DRIVING DIRECTIONS

### PROJECT INFORMATION:



5 WEST HARGETT STREET  
RALEIGH, NC 27601  
(WAKE COUNTY)  
AT&T SITE #: 368-615  
FA LOCATION CODE: 10549293

### BUILDING OWNER:

NAME: THE RALEIGH BUILDING LLC  
ADDRESS: 5 WEST HARGETT STREET, RM 102  
CITY, STATE, ZIP: RALEIGH, NC 27601  
CONTACT: STEVE LEWIS  
PHONE: (910) 256-2198  
SITE NUMBER: N/A

### SITE PROJECT MANAGER:

NAME: MASTEC NETWORK SOLUTIONS  
ADDRESS: 1000 CENTRE GREEN WAY, STE 300  
CITY, STATE, ZIP: CARY, NC 27513  
CONTACT: YVETTE RHINEHARDT  
PHONE: (919) 674-5864

### APPLICANT/LESSEE:

NAME: AT&T MOBILITY  
ADDRESS: 2002 PISGAH CHURCH ROAD STE 300  
CITY, STATE, ZIP: GREENSBORO, NC 27455  
CONTACT: KEN WELKER  
PHONE: (336) 549-9987  
NOC #: (800) 638-2822

### CIVIL ENGINEER:

NAME: TOWER ENGINEERING PROFESSIONALS  
ADDRESS: 326 TRYON ROAD  
CITY, STATE, ZIP: RALEIGH, NC 27603  
CONTACT: KIMBERLY S. MARTIN, P.E.  
PHONE: (919) 661-6351

### ELECTRICAL ENGINEER:

NAME: TOWER ENGINEERING PROFESSIONALS  
ADDRESS: 326 TRYON ROAD  
CITY, STATE, ZIP: RALEIGH, NC 27603  
CONTACT: MARK S. QUAKENBUSH, P.E.  
PHONE: (919) 661-6351

### STRUCTURAL ENGINEER:

NAME: TOWER ENGINEERING PROFESSIONALS  
ADDRESS: 326 TRYON ROAD  
CITY, STATE, ZIP: RALEIGH, NC 27603  
CONTACT: MATTHEW D. FOSTER, P.E., S.E.  
PHONE: (919) 661-6351

### CONTACT INFORMATION

ALL WORK AND MATERIALS SHALL BE PERFORMED AND INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL GOVERNING AUTHORITIES. NOTHING IN THESE PLANS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THE LATEST EDITIONS OF THE FOLLOWING:

1. NORTH CAROLINA BUILDING CODE (2012 EDITION)
2. NORTH CAROLINA CODE COUNCIL
3. ANSI/TIA-222-G-2009
4. NCEC 2014 (NEC 2014 + NC ADDENDUM)
5. LOCAL BUILDING CODE
6. CITY/COUNTY ORDINANCES

### CODE COMPLIANCE

### UTILITIES:

POWER COMPANY: DUKE ENERGY  
CONTACT: CUSTOMER CARE  
PHONE: (800) 653-5307  
METER # NEAR SITE: 119-215-111

### TELEPHONE COMPANY:

AT&T  
CONTACT: CUSTOMER SERVICE  
PHONE: (800) 487-4722  
PHONE # NEAR SITE: (919) 881-7111  
PEDESTAL # NEAR SITE: UNKNOWN

### APPLICANT/LESSEE:



2002 PISGAH CHURCH ROAD, SUITE 300  
GREENSBORO, NC 27455  
OFFICE: (336) 286-6163  
NOC #: (800) 638-2822

### PLANS PREPARED FOR:

MasTec  
Network Solutions

1000 CENTRE GREEN WAY, SUITE 300  
CARY, NC 27513  
OFFICE: (919) 674-5846

SHEET	DESCRIPTION	REV
T1	TITLE SHEET	4
T2	GENERAL NOTES	3
T3	APPENDIX B	1
T4	APPENDIX B	1
T5	APPENDIX B	1
T6	APPENDIX B	1
T7	APPENDIX B	1
T8	APPENDIX B	1
T9	APPENDIX B	1
C1	SITE PLAN	3
C2	ROOFTOP PLAN	4
C3	BUILDING ELEVATION	3
C4	PLATFORM AND EQUIPMENT DETAILS	3
C5	ANTENNA MOUNT DETAILS	2
C6	CONDUIT PENETRATION DETAILS I	1
C7	CONDUIT PENETRATION DETAILS II	1
C8	CONDUIT PENETRATION DETAILS III	1
E1	ELECTRICAL NOTES	2
E2	ELECTRICAL ROUTING DETAILS I	3
E2A	ELECTRICAL ROUTING DETAILS II	2
E2B	ELECTRICAL ROUTING DETAILS III	3
E3	ROOFTOP ROUTING PLAN	3
E4	ROOFTOP GROUNDING PLAN	3
E5	PANELBOARD SCHEDULE	1
E6	GROUNDING DETAILS	1
N1	MI CHECKLIST AND NOTES	0
N2	PROJECT NOTES I	0
N3	PROJECT NOTES II	0
N4	ROOFING NOTES	0
S1	ROOF PLAN LAYOUT	2
S2	PARTIAL ROOF PLAN WITH REINFORCEMENTS	2
S3	PLATFORM FRAMING PLAN	2
S4	PLATFORM FRAMING SECTIONS	2
S5	PLATFORM FRAMING DETAILS I	2
S6	PLATFORM FRAMING DETAILS II	2
S7	PLATFORM FRAMING DETAILS III	2

### INDEX OF SHEETS

### PLANS PREPARED BY:



TOWER ENGINEERING PROFESSIONALS  
3703 JUNCTION BOULEVARD  
RALEIGH, NC 27603-5263  
OFFICE: (919) 661-6351  
www.tepgroup.net

N.C. LICENSE # C-1794

REV	DATE	ISSUED FOR:
4	01-31-17	CONSTRUCTION
3	01-25-17	CONSTRUCTION
2	01-06-17	CONSTRUCTION
1	12-14-16	CONSTRUCTION
0	10-18-16	PRELIMINARY

DRAWN BY: CSM CHECKED BY: KSM

### SEAL:



January 31, 2017

### SEAL:



January 31, 2017

SHEET NUMBER: T-1 REVISION: 4  
TEP #: 32795.80932



1. ALL REFERENCES MADE TO OWNER IN THESE DOCUMENTS SHALL BE CONSIDERED AT&T OR IT'S DESIGNATED REPRESENTATIVE.
2. ALL WORK PRESENTED ON THESE DRAWINGS MUST BE COMPLETED BY THE CONTRACTOR UNLESS NOTED OTHERWISE. THE CONTRACTOR MUST HAVE CONSIDERABLE EXPERIENCE IN PERFORMANCE OF WORK SIMILAR TO THAT DESCRIBED HEREIN. BY ACCEPTANCE OF THIS ASSIGNMENT, THE CONTRACTOR IS ATTESTING THAT HE DOES HAVE SUFFICIENT EXPERIENCE AND ABILITY, THAT HE IS KNOWLEDGEABLE OF THE WORK TO BE PERFORMED AND THAT HE IS PROPERLY LICENSED AND PROPERLY REGISTERED TO DO THIS WORK IN THE STATE OF NORTH CAROLINA.
3. THE STRUCTURE SHALL BE DESIGNED IN ACCORDANCE WITH ANSI/TIA-222-G-2-2009. THIS CONFORMS TO THE REQUIREMENTS OF THE NORTH CAROLINA BUILDING CODE, 2012 EDITION.
4. WORK SHALL BE COMPLETED IN ACCORDANCE WITH THE NORTH CAROLINA BUILDING CODE, 2012 EDITION.
5. UNLESS SHOWN OR NOTED OTHERWISE ON THE CONTRACT DRAWINGS, OR IN THE SPECIFICATIONS, THE FOLLOWING NOTES SHALL APPLY TO THE MATERIALS LISTED HEREIN, AND TO THE PROCEDURES TO BE USED ON THIS PROJECT.
6. ALL HARDWARE ASSEMBLY MANUFACTURER'S INSTRUCTIONS SHALL BE FOLLOWED EXACTLY AND SHALL SUPERSEDE ANY CONFLICTING NOTES ENCLOSED HEREIN.
7. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO DETERMINE ERECTION PROCEDURE AND SEQUENCE TO INSURE THE SAFETY OF THE STRUCTURE AND IT'S COMPONENT PARTS DURING ERECTION AND/OR FIELD MODIFICATIONS. THIS INCLUDES, BUT IS NOT LIMITED TO, THE ADDITION OF TEMPORARY BRACING, GUYS OR TIE DOWNS THAT MAY BE NECESSARY. SUCH MATERIAL SHALL BE REMOVED AND SHALL REMAIN THE PROPERTY OF THE CONTRACTOR AFTER THE COMPLETION OF THE PROJECT.
8. ALL DIMENSIONS, ELEVATIONS, AND EXISTING CONDITIONS SHOWN ON THE DRAWINGS SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO BEGINNING ANY MATERIALS ORDERING, FABRICATION OR CONSTRUCTION WORK ON THIS PROJECT. CONTRACTOR SHALL NOT SCALE CONTRACT DRAWINGS IN LIEU OF FIELD VERIFICATION. ANY DISCREPANCIES SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE OWNER AND THE OWNER'S ENGINEER. THE DISCREPANCIES MUST BE RESOLVED BEFORE THE CONTRACTOR IS TO PROCEED WITH THE WORK. THE CONTRACT DOCUMENTS DO NOT INDICATE THE METHOD OF CONSTRUCTION. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK AND SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES. OBSERVATION VISITS TO THE SITE BY THE OWNER AND/OR THE ENGINEER SHALL NOT INCLUDE INSPECTION OF THE PROTECTIVE MEASURES OR THE PROCEDURES.
9. ALL MATERIALS AND EQUIPMENT FURNISHED SHALL BE NEW AND OF GOOD QUALITY, FREE FROM FAULTS AND DEFECTS AND IN CONFORMANCE WITH THE CONTRACT DOCUMENTS. ANY AND ALL SUBSTITUTIONS MUST BE PROPERLY APPROVED AND AUTHORIZED IN WRITING BY THE OWNER AND ENGINEER PRIOR TO INSTALLATION. THE CONTRACTOR SHALL FURNISH SATISFACTORY EVIDENCE AS TO THE KIND AND QUALITY OF THE MATERIALS AND EQUIPMENT BEING SUBSTITUTED.
10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INITIATING, MAINTAINING, AND SUPERVISING ALL SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK. THE CONTRACTOR IS RESPONSIBLE FOR INSURING THAT THIS PROJECT AND RELATED WORK COMPLIES WITH ALL APPLICABLE LOCAL, STATE, AND FEDERAL SAFETY CODES AND REGULATIONS GOVERNING THIS WORK. RENTAL CHARGES, SAFETY, PROTECTION AND MAINTENANCE OF RENTED EQUIPMENT SHALL BE THE CONTRACTOR'S RESPONSIBILITY.
11. ACCESS TO THE PROPOSED WORK SITE MAY BE RESTRICTED. THE CONTRACTOR SHALL COORDINATE INTENDED CONSTRUCTION ACTIVITY, INCLUDING WORK SCHEDULE AND MATERIALS ACCESS, WITH THE AT&T PROJECT MANAGER.
12. BILL OF MATERIALS AND PART NUMBERS LISTED ON CONSTRUCTION DRAWINGS ARE INTENDED TO AID CONTRACTOR/OWNER. CONTRACTOR/OWNER SHALL VERIFY PARTS AND QUANTITIES WITH MANUFACTURER PRIOR TO BIDDING AND/OR ORDERING MATERIALS.
13. ALL PERMITS THAT MUST BE OBTAINED ARE THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR WILL BE RESPONSIBLE FOR ABIDING BY ALL CONDITIONS AND REQUIREMENTS OF THE PERMITS.
14. 24 HOURS PRIOR TO THE BEGINNING OF ANY CONSTRUCTION, THE CONTRACTOR MUST NOTIFY THE APPLICABLE JURISDICTIONAL (STATE, COUNTY OR CITY) ENGINEER.
15. THE CONTRACTOR SHALL REWORK (DRY, SCARIFY, ETC.) ALL MATERIAL NOT SUITABLE FOR SUBGRADE IN ITS PRESENT STATE. AFTER REWORKING, IF THE MATERIAL REMAINS UNSUITABLE, THE CONTRACTOR SHALL UNDERCUT THIS MATERIAL AND REPLACE WITH APPROVED MATERIAL. ALL SUBGRADES SHALL BE PROOFROLLED WITH A FULLY LOADED TANDEM AXLE DUMP TRUCK PRIOR TO PAVING. ANY SOFT MATERIAL SHALL BE REWORKED OR REPLACED.
16. THE CONTRACTOR IS REQUIRED TO MAINTAIN ALL PIPES, DITCHES, AND OTHER DRAINAGE STRUCTURES FREE FROM OBSTRUCTION UNTIL WORK IS ACCEPTED BY THE OWNER. THE CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGES CAUSED BY FAILURE TO MAINTAIN DRAINAGE STRUCTURE IN OPERABLE CONDITION.
17. THE OWNER SHALL HAVE A SET OF APPROVED PLANS AVAILABLE AT THE SITE AT ALL TIMES WHILE WORK IS BEING PERFORMED. A DESIGNATED RESPONSIBLE EMPLOYEE SHALL BE AVAILABLE FOR CONTACT BY GOVERNING AGENCY INSPECTORS.
18. TEMPORARY FACILITIES FOR PROTECTION OF TOOLS AND EQUIPMENT SHALL CONFORM TO LOCAL REGULATIONS AND SHALL BE THE CONTRACTOR'S RESPONSIBILITY.
19. THE CONTRACTOR AND ITS SUBCONTRACTORS SHALL CARRY LIABILITY INSURANCE IN THE AMOUNTS AND FORM IN ACCORDANCE WITH AT&T SPECIFICATIONS. CERTIFICATES DEMONSTRATING PROOF OF COVERAGE SHALL BE PROVIDED TO AT&T PRIOR TO THE START OF THE WORK ON THE PROJECT.

20. THE CONTRACTOR SHALL CONTACT ALL APPLICABLE UTILITY SERVICES TO VERIFY LOCATIONS OF EXISTING UTILITIES AND REQUIREMENTS FOR NEW UTILITY CONNECTIONS PRIOR TO EXCAVATING.
21. THE CONTRACTOR SHALL MAINTAIN THE JOB CLEAR OF TRASH AND DEBRIS. ALL WASTE MATERIALS SHALL BE REMOVED FROM THE SITE PRIOR TO SUBSTANTIAL COMPLETION AND PRIOR TO FINAL ACCEPTANCE. THE CONTRACTOR SHALL FURNISH ONE 55 GALLON BARREL, AND TRASH BAGS, AND SHALL REMOVE TRASH, DEBRIS, ETC., ON A DAILY BASIS.
22. THE CONTRACTOR SHALL VISIT THE SITE AND BECOME FAMILIAR WITH ALL CONDITIONS PRIOR TO SUBMITTING HIS PROPOSAL. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS SHOWN ON THESE DRAWINGS WITH THOSE AT THE SITE. ANY VARIATION WHICH REQUIRES PHYSICAL CHANGE SHALL BE BROUGHT TO THE ATTENTION OF THE AT&T PROJECT ENGINEER FOR FACILITIES/CONSTRUCTION.
23. THE CONTRACTOR SHALL GUARANTEE THE WORK PERFORMED ON THE PROJECT BY THE CONTRACTOR AND ANY OR ALL OF THE SUBCONTRACTORS WHO PERFORMED WORK FOR THE CONTRACTOR ON THIS PROJECT. THE GUARANTEE SHALL BE FOR A FULL YEAR FOLLOWING ISSUANCE OF THE FINAL PAYMENT OF RETAINAGE. ALL MATERIALS AND WORKMANSHIP SHALL BE WARRANTED FOR ONE YEAR FROM ACCEPTANCE DATE.

### ROOF NOTES:

1. TEMPORARY ROOF PROTECTION - PROVIDE TEMPORARY PROTECTION USING 3/4" STYROFOAM PADDING AGAINST THE ROOFING MATERIAL WITH 3/4" PLYWOOD BETWEEN THE PADDING AND ANY EQUIPMENT. MATERIALS, AND TOOLS STORED ON THE ROOF. THE ROOF AROUND WORKING AREAS SHALL ALSO BE TEMPORARILY PROTECTED AS WELL AS THE PATHS BETWEEN THE WORK AREA AND ROOF ENTRY DOORS. THE METHOD OF PROTECTION SHALL ALSO COMPLY WITH ANY ROOF WARRANTY THAT MAY BE IN EFFECT. IF PENETRATING SUBSTANCES, SUCH AS ACIDS, CHEMICALS, OR TOOLS ARE TO BE USED DURING CONSTRUCTION, PROVIDE ADDITIONAL PROTECTION TO PREVENT ROOF DAMAGE.
2. WATER PROTECTION - THE CONTRACTOR SHALL PROVIDE PROTECTION FROM WATER PENETRATION DURING THE INSTALLATION OF ROOF PENETRATING SUPPORT SYSTEMS OR ANY OTHER ROOF PENETRATING PROCEDURE. METHODS SHALL COMPLY WITH ANY ROOF WARRANTY OR ANY SPECIFICATION BY ROOFING MANUFACTURER IN EFFECT.
3. FIRE PROTECTION - COMPLY WITH OSHA STANDARDS THROUGHOUT THE PROJECT. WHEN OPERATING TOOLS THAT PRODUCE SPARKS, FLAME OR HEAT, THE CONTRACTOR WILL DESIGNATE AN INDIVIDUAL TO STAND-BY THE INDIVIDUAL OPERATING THE TOOL WITH A 20 LB. ABC FIRE EXTINGUISHER WITH IT'S PIN REMOVED AND READY TO USE IN CASE OF A FIRE. THE CONTRACTOR SHALL PROVIDE AT ALL TIMES ONE PROPERLY CHARGED 20 LB. ABC FIRE EXTINGUISHER WITHIN CLOSE PROXIMITY TO THE WORK AREA. THE FIRE EXTINGUISHER SHALL HAVE BEEN INSPECTED WITHIN THE PAST YEAR. IT SHALL BE KEPT IN A CONSPICUOUS LOCATION AND EASILY ACCESSABLE. PATHS TO THE FIRE EXTINGUISHER AND OTHER FIRE FIGHTING EQUIPMENT SHALL BE KEPT CLEAR.
4. REINSTATEMENT - ANY ROOFING, PAVEMENT, FOOTPATH, CURB, GUTTERS, WALLS, FLOORS, SERVICES, AND EXISTING FEATURES OR OTHER PROPERTIES DISTURBED OR DESTROYED DURING CONSTRUCTION SHALL BE REINSTATED BY THE CONTRACTOR TO A CONDITION AT LEAST EQUAL TO THAT EXISTING BEFORE COMMENCEMENT OF OPERATIONS AT NO COST TO THE OWNER OR THE CLIENT.
5. REPAIRS - THE CONTRACTOR SHALL USE THE EXISTING ROOFING WARRANTY CONTRACTOR TO REPAIR HOLES, DAMAGES, AND ALTERATIONS TO THE ROOF. IF EXCESSIVE COSTS ARE ASSOCIATED WITH THE ROOFING CONTRACTOR, THE CONTRACTOR SHALL NOTIFY THE CLIENT OF THE SITUATION AND PROVIDE AN ALTERNATE ROOFING CONTRACTOR TO PERFORM THE WORK.
6. CONTRACTOR SHALL REMOVE ONLY THE AMOUNT OF ROOFING AND INSULATION REQUIRED TO PERFORM THE WORK. AFTER THE COMPLETION OF WORK, REPLACE THE DEMOLISHED INSULATION WITH A COMPATABLE INSULATION, PROVIDING A TIGHT JOINT ALL AROUND. FLASH IN NEW BUILT-UP ROOFING TO THE EXISTING BUILT-UP ROOFING AS RECOMMENDED BY THE ROOFING MANUFACTURER TO PROVIDE A WATERTIGHT ROOF.

### LEASE AGREEMENT NOTE:

TENANT AGREES TO THE FOLLOWING PROVISIONS REGARDING NATURE AND COST OF THE INSTALLATION OF ANY EQUIPMENT INSTALLED BY TENANT ON THE STRUCTURE AT ANY TIME DURING THE TERM OF THIS LEASE: TENANT SHALL PAY THE COST OF (i) ANY EQUIPMENT INSTALLED BY TENANT ON OR ABOUT THE STRUCTURE: (ii) ANY INFRASTRUCTURE IMPROVEMENTS TO THE STRUCTURE REQUIRED FOR THE INSTALLATION OF TENANT'S COMMUNICATION FACILITY, INCLUDING WITHOUT LIMITATION BRINGING INTO THE PROPERTY A 600 AMP ELECTRICAL SERVICE WHEREBY 200 AMP WILL BE USED BY TENANT AND THE REMAINING 400 AMP SERVICE WILL BE AVAILABLE FOR USE BY LANDLORD AT ITS SOLE DISCRETION, INSTALLING A METER ON TENANT'S 200 AMP SERVICE TO FACILITATE LANDLORD'S BILLING OF ELECTRICAL USAGE BY TENANT, PERFORMING ANY CORE DRILLING AND INSTALLING ANY CONDUIT FOR SAID ELECTRICAL OR FIBER OPTIC CABLES, INSTALLING ROOF PROTECTION AND WALKWAY PADS AS DETERMINED BY LANDLORD AND LANDLORD'S ROOFING CONTRACTOR FOR A WALKING PATH FROM THE ROOF ACCESS DOORS TO TENANT'S EQUIPMENT, AND A RAMP(S) OR OTHER SUITABLE MEANS OF ACCESS OVER THE CABLE TRAY(S) SHOWN ON EXHIBIT 1, ANY CONDUIT FOR FIBER REQUIRED FOR THE TENANT'S EQUIPMENT, AND ROOF PROTECTION OF TENANT'S CHOOSING TO BE INSTALLED UNDER TENANT'S EQUIPMENT. IN ADDITION, AN PENETRATIONS OF THE STRUCTURE AND ANY CONNECTIONS TO THE BUILDING STEEL OF THE STRUCTURE WHICH TENANT MAY REQUIRE FOR THE INSTALLATION OF ITS EQUIPMENT SHALL BE SUBJECT TO LANDLORD'S ADVANCE APPROVAL.

### GENERAL NOTES

PLANS PREPARED FOR:



2002 PISGAH CHURCH ROAD, SUITE 300  
GREENSBORO, NC 27455

PLANS PREPARED FOR:



1000 CENTRE GREEN WAY, SUITE 300  
CARY, NC 27513

PROJECT INFORMATION:

**AT&T #: 368-615**

5 WEST HARGETT STREET  
RALEIGH, NC 27601  
(WAKE COUNTY)

PLANS PREPARED BY:



**TOWER ENGINEERING PROFESSIONALS**

326 TRYON ROAD  
RALEIGH, NC 27603-5263  
OFFICE: (919) 661-6351  
www.tepgroup.net  
N.C. LICENSE # C-1794

SEAL:



January 25, 2017

3	01-25-17	CONSTRUCTION
2	01-06-17	CONSTRUCTION
REV	DATE	ISSUED FOR:

DRAWN BY: CSN CHECKED BY: GMA

SHEET TITLE:

**GENERAL NOTES**

SHEET NUMBER:	REVISION:
<b>T-2</b>	<b>3</b>
TEP #: 32795.80932	



**CITY OF RALEIGH  
BUILDING CODE SUMMARY  
FOR ALL COMMERCIAL PROJECTS  
NC 2012 BUILDING CODE**

(EXCEPT 1 AND 2-FAMILY DWELLINGS AND TOWNHOUSES)  
(Reproduce the following data on the building plans sheet 1 or 2.)

Name of Project: 368-615  
Address: 5 West Hargett Street, Raleigh, NC Suite #: \_\_\_\_\_  
Owner or Authorized Agent: Valma Wood Phone: (919) 674-8743  
Email: valma.wood@mastec.com Fax: \_\_\_\_\_  
Owned By: ☒ Privately ☐ City/County ☐ State  
Code Enforcement Jurisdiction: ☒ City ☐ County ☐ City/County  
Name of Jurisdiction: City of Raleigh

**PROJECT SUMMARY:**

**Building Description:**

Cellxion 11'-5" X 16' pre-fabricated telecommunications equipment shelter

**Scope of Work:**

- \*Construct platform
- \*Set pre-fabricated equipment shelter

**Code Compliance Summary:**

\*2012 North Carolina Building Code      \*2012 North Carolina Electric Code  
\*ANSI/TIA-222-G

**Alternative Means of Compliance Request:**

**Lead Design Professional/Project Coordinator:** Kimberly S. Martin, P.E.

DESIGNER	FIRM	NAME	LICENSE	TELEPHONE
Architectural:				
Civil:	Tower Engineering Professionals	Kimberly S. Martin, P.E.	037920	(919) 661-6351
Electrical:	Tower Engineering Professionals	MARK S. QUAKENBUSH, P.E.	042109	(919) 661-6351
Fire Alarm:				
Plumbing:				
Mechanical:				
Sprinkler-Standpipe:				
Structural:				
Precast:				
Trusses:				
Retaining Walls >5' High:				
Other:				

Note: Special Inspections and Inspectors to be listed at end of this document.

Revised 02/11/13 rlh

Building Code: ☒ 2012 North Carolina State Building Code (NCSBC)  
☐ 2012 Chapter 34 (attach summary)  
☐ 2009 NC Rehab  
☐ 1995 Existing Building Code Volume 9

New Building: ☒ New Building ☐ Shell Building ☐ First Time Interior Completion  
☐ Addition ☐ Alteration to Shell

[Accessibility Compliance Form](#) (when applicable)

Existing Building: ☐ Renovation ☐ Interior Completion ☐ Tenant Alteration  
☐ Reconstruction ☐ Repair ☐ Alteration to Shell  
☐ Change of Use Tenant Space ☐ Change of Occupancy

Note: Zoning Review May Be Required for Change of Use or Occupancy

Original Occupancy: Undisturbed Rooftop

Proposed Occupancy: Telecommunication Facility

**OCCUPANCY INFORMATION**

**Primary Occupancies:** Assembly: ☐ A-1 ☐ A-2 ☐ A-3 ☐ A-4 ☐ A-5  
☐ Business ☐ Educational ☐ Factory-Industrial: ☐ F-1 ☐ F-2  
High-Hazard: ☐ H-1 ☐ H-2 ☐ H-3 ☐ H-4 ☐ H-5  
Institutional: ☐ I-1 ☐ I-2 ☐ I-3 ☐ I-4  
I-3 USE CONDITION: ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5  
☐ Mercantile ☐ Residential: ☐ R-1 ☐ R-2 ☐ R-3 ☐ R-4  
Storage: ☒ S-1 ☐ S-2 ☐ High-piled  
S-1 SPECIAL CONDITION: ☐ Repair Garage (406.6)  
S-2 SPECIAL CONDITION -- Parking Garage: ☐ Open (406.3) ☐ Enclosed (406.4)  
☐ Utility and Miscellaneous

**Other Uses:**

Accessory Uses (Indicate Percentages): \_\_\_\_\_

Incidental Uses: \_\_\_\_\_

**Special Occupancies:** ☐ 402 ☐ 403 ☐ 404 ☐ 405 ☐ 406 ☐ 407 ☐ 408  
☐ 409 ☐ 410 ☐ 411 ☐ 412 ☐ 413 ☐ 414 ☐ 415  
☐ 416 ☐ 417 ☐ 418 ☐ 419 ☐ 420 ☐ 421

Revised 02/11/13 rlh

PLANS PREPARED FOR:



2002 PISGAH CHURCH ROAD, SUITE 300  
GREENSBORO, NC 27455

PLANS PREPARED FOR:

**MasTec**  
Network Solutions

1000 CENTRE GREEN WAY, SUITE 300  
CARY, NC 27513

PROJECT INFORMATION:

**AT&T #: 368-615**

5 WEST HARGETT STREET  
RALEIGH, NC 27601  
(WAKE COUNTY)

PLANS PREPARED BY:



**TOWER ENGINEERING PROFESSIONALS**

326 TRYON ROAD  
RALEIGH, NC 27603-5263  
OFFICE: (919) 661-6351  
www.tepgroup.net  
N.C. LICENSE # C-1794

SEAL:



December 14, 2016

I	12-14-16	CONSTRUCTION
O	10-18-16	PRELIMINARY
REV	DATE	ISSUED FOR:

DRAWN BY: CSN CHECKED BY: KSM

SHEET TITLE:

**APPENDIX B**

SHEET NUMBER: <b>T-3</b>	REVISION: <b>1</b> TEP #: 32795.80932
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SHEET NUMBER: <b>T-4</b>	REVISION: <b>1</b>
	TEP #:32795.8093



**FIRE PROTECTION REQUIREMENTS**  
THIS SECTION REQUIRED FOR ALL PROJECTS

Life Safety Plan Sheet #, if Provided \_\_\_\_\_

BUILDING ELEMENT	FIRE SEPARATION DISTANCE (FEET)	RATING		DETAIL # AND SHEET #	DESIGN # FOR RATED ASSEMBLY	DESIGN # FOR RATED PENETRATION	DESIGN # FOR RATED JOINTS
		REQ'D*	PROVIDED (w/____ HR* REDUCTION)				
Bearing walls Exterior							
North			1 HR				
East			1 HR				
West			1 HR				
South			1 HR				
Interior Bearing Walls							
Nonbearing walls Exterior							
North							
East							
West							
South							
Interior Non Bearing Walls							
Structural frame, including columns, girders, trusses							
Floor construction, including supporting beams and joists. List construction type.							
Floor Ceiling Assembly							
Columns Supporting Floors							
Roof construction, including supporting beams and joists **			1 HR				
Roof Ceiling Assembly							
Columns Supporting Roof							
Shafts – Exit Enclosures							
Shafts – Other (describe)							
Shafts – Other (describe)							
Corridor Separation							
Occupancy Separation							
Party/Fire Wall Separation							
Incidental Use Separation							
Dwelling/Sleeping unit Separation							
Smoke Barrier Separation							
Tenant Separation							

\* Indicate section number permitting reduction  
\*\* Indicated if using Table 601 Note C exception

Revised 02/11/13 rlh

**PERCENTAGE OF WALL OPENING CALCULATIONS**  
THIS SECTION FOR ADDITIONS, NEW AND CHANGE OF USE

Allowable openings per Table 704.8


**WALL LEGENDS**  
THIS SECTION REQUIRED FOR ALL PROJECTS

CHECK IF THE FOLLOWING ARE PRESENT AND INDICATE BY A WALL LEGEND ON ALL PLANS

- ☐ Fire Partitions 708 ☐ Fire Walls 705 ☐ Fire Barriers 706 ☐ Smoke Partitions 710  
☐ Smoke Barriers 709 ☐ Shaft Enclosure 707


**LIFE SAFETY SYSTEM REQUIREMENTS**  
THIS SECTION REQUIRED FOR ALL PROJECTS

- Emergency Lighting: ☐ No \* ☒ Yes  
Exit Signs: ☐ No \* ☒ Yes  
Fire Alarm: ☐ No \* ☒ Yes  
Smoke Detection Systems: ☐ No \* ☒ Yes  
Panic Hardware: ☒ No ☐ Yes

\*SEE CELLXION LIGHTWEIGHT SHELTER DRAWINGS DATED 8-16-13 FOR DETAILS.


**EXIT REQUIREMENTS**  
NUMBER AND ARRANGEMENT OF EXITS  
THIS SECTION REQUIRED FOR ALL PROJECTS

FLOOR, ROOM AND/OR SPACE DESIGNATION	MINIMUM <sup>1</sup> NUMBER OF EXITS		TRAVEL DISTANCE		ARRANGEMENT MEANS OF EGRESS <sup>1,3</sup> (SECTION 1015.2)	
	REQUIRED	SHOWN ON PLANS	ALLOWABLE TRAVEL DISTANCE (TABLE 1015.1)	ACTUAL TRAVEL DISTANCE SHOWN ON PLANS	REQUIRED DISTANCE BETWEEN EXIT DOORS	ACTUAL DISTANCE SHOWN ON PLANS
EQUIP. ROOM	1	1	300'	20'	-	20'

- <sup>1</sup> Corridor dead ends (Section 1017.3)  
<sup>2</sup> Single exits (Section 1015.1; Section 1019.2)  
<sup>3</sup> Common Path of Egress Travel (Section 1014.3)

Revised 02/11/13 rlh

PLANS PREPARED FOR:



2002 PISGAH CHURCH ROAD, SUITE 300  
GREENSBORO, NC 27455

PLANS PREPARED FOR:

  
Network Solutions

1000 CENTRE GREEN WAY, SUITE 300  
CARY, NC 27513

PROJECT INFORMATION:

**AT&T #: 368-615**

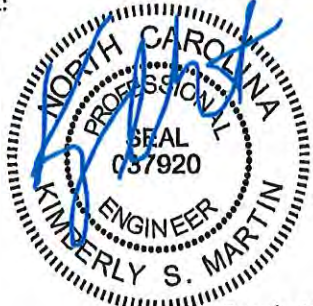
5 WEST HARGETT STREET  
RALEIGH, NC 27601  
(WAKE COUNTY)

PLANS PREPARED BY:



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N.C. LICENSE # C-1794

SEAL:



December 14, 2016

1	12-14-16	CONSTRUCTION
0	10-18-16	PRELIMINARY
REV	DATE	ISSUED FOR:

DRAWN BY: CSN CHECKED BY: KSM

SHEET TITLE:

**APPENDIX B**

SHEET NUMBER:	REVISION:
<b>T-5</b>	<b>1</b>
TEP #: 32795.80932	



[illegible]<sup>5</sup> Assembly occupancies (Section 1025)

OCCUPANCY	WATERCLOSETS		URINALS	LAVATORIES		SHOWERS/ TUBS	DRINKING FOUNTAINS	
	MALE	FEMALE		MALE	FEMALE		REGULAR	ACCESSIBLE
Total Required								
Total Provided								

Revised 02/11/13 rlh

## Revised 02/11/13 rllh

<div style="display: flex; align-items: center; justify-content: center;"><div><h1 style="margin: 0;">at&amp;t</h1></div></div> <p style="text-align: center; margin-top: 10px;">2002 PISGAH CHURCH ROAD, SUITE 300 GREENSBORO, NC 27455</p>		
<p>PLANS PREPARED FOR:</p> <div style="text-align: center;"><h2 style="margin: 0;">MasTec</h2><p style="margin: 0;">Network Solutions</p><p style="margin: 0;">1000 CENTRE GREEN WAY, SUITE 300 CARY, NC 27513</p></div>		
<p>PROJECT INFORMATION:</p> <div style="text-align: center;"><h3 style="margin: 0;">AT&amp;T #: 368-615</h3><p style="margin: 0;">5 WEST HARGETT STREET RALEIGH, NC 27601 (WAKE COUNTY)</p></div>		
<p>PLANS PREPARED BY:</p> <div style="text-align: center;"><h3 style="margin: 10px 0;">TOWER ENGINEERING PROFESSIONALS</h3><p style="margin: 0;">326 TRYON ROAD RALEIGH, NC 27603-5263 OFFICE: (919) 661-6351 <a href="http://www.tepgroup.net">www.tepgroup.net</a> N.C. LICENSE # C-1794</p></div>		
<p>SEAL:</p> <div style="text-align: center;"><p style="margin-top: 10px;"><i>December 14, 2016</i></p></div>		
I	12-14-16	CONSTRUCTION
O	10-18-16	PRELIMINARY
REV	DATE	ISSUED FOR:
DRAWN BY: CSN		CHECKED BY: KSM
<p>SHEET TITLE:</p> <h2 style="margin: 0;">APPENDIX B</h2>		
<p>SHEET NUMBER:</p> <h1 style="margin: 0;">T-6</h1>		<p>REVISION:</p> <div style="border: 1px solid black; width: 50px; height: 50px; display: flex; align-items: center; justify-content: center; margin: 0 auto;"><h1 style="margin: 0;">1</h1></div> <p style="margin-top: 5px;">TEP #: 32795.80932</p>



41	Analysis Procedure Used =	**	**EQUIVALENT LATERAL FORCE
42	Seismic Base Shear, Sx	1.3	KIPS
43	Seismic Base Shear, Sy	1.3	KIPS
44	Soil Data		
45	Presumptive Soil Bearing Pressure =	2000	PSF
46	Bearing Pressure per Soils Report	N/A	PSF
47	Deep Foundation Type	N/A	
48	Deep Foundation Allowable Loads	N/A	TONS, downward
49	Uplift	N/A	KIPS
50	Lateral	N/A	KIPS

### ACCESSIBLE PARKING

LOT OR PARKING AREA	TOTAL # OF PARKING SPACES		# OF ACCESSIBLE SPACES PROVIDED		TOTAL # ACCESSIBLE PROVIDED
	REQUIRED	PROVIDED	REGULAR WITH 5' ACCESS AISLE	VAN SPACES WITH 8' ACCESS AISLE	
TOTAL					

### SPECIAL APPROVALS

(Describe special approvals from local jurisdictions, County or State Department of Health, NC Department of Insurance, International Code Council, etc.)

Revised 02/11/13 rlh

### ENERGY SUMMARY

THIS SECTION FOR NEW, ADDITIONS CHANGE OF USE, AND INTERIOR COMPLETION

#### ENERGY REQUIREMENTS:

The following data shall be considered minimum and any special attribute required to meet the energy code shall also be provided. Each Designer shall furnish the required portions of the project information for the plan data sheet. If energy cost budget method, state the annual energy cost budget vs. allowable annual energy cost budget.

#### THERMAL ENVELOPE

##### Method of Compliance:

☐ Prescriptive ☒ Performance ☐ Energy Cost Budget

##### Roof/ceiling Assembly (each assembly)

Description of assembly  $\frac{3}{8}$ " OSB + R13 BATT INSUL. + R13 BATT INSUL. + 18 GA. STEEL STUD+ 18 GA. STEEL PANEL

U-Value of total assembly 0.036

R-Value of insulation 27.458

Skylights in each assembly

U-Value of skylight

Total square footage of skylights in each assembly

##### Exterior Walls (each assembly)

Description of assembly  $\frac{5}{8}$ " FIRE RATED GYPSUM +  $\frac{5}{8}$ " FIRE RATED GYPSUM + R13 BATT INSUL. + 18 GA. STEEL STUD + 18 GA. STEEL ELOCK PANEL +  $\frac{1}{2}$ " WATER RESIST. GYPSUM

U-Value of total assembly 0.065

R-Value of insulation 15.502

Openings (windows or doors with glazing)

U-Value of assembly

Shading coefficient

Projection factor

Low-e required, if applicable

Door R-Values

##### Walls adjacent to unconditioned space (each assembly)

Description of assembly

U-Value of total assembly

R-Value of insulation

Openings (windows or doors with glazing)

U-Value of assembly

Low-e required, if applicable

Door R-Values

##### Walls below grade (each assembly)

Description of assembly

U-Value of total assembly

R-Value of insulation

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Network Solutions

1000 CENTRE GREEN WAY, SUITE 300  
CARY, NC 27513

PROJECT INFORMATION:

**AT&T #: 368-615**

5 WEST HARGETT STREET  
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(WAKE COUNTY)

PLANS PREPARED BY:



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**APPENDIX B**

SHEET NUMBER:	REVISION:
<b>T-7</b>	<b>1</b>
	TEP #:32795.80932



Floors over unconditioned space (each assembly)  
Description of assembly 28GA STEEP FLOOR DECKING + 3" WOOL INSUL. + 3"  
WOOL INSUL. + STEEL JOIST + 18GA GALV. SHEET STEEL + 18 MM VIROC CEMENT BOARD + TILE  
U-Value of total assembly 0.033  
R-Value of insulation 31.011  
Floors slab on grade (each assembly)  
Description of assembly  
U-Value of total assembly  
R-Value of insulation  
Horizontal/Vertical requirement  
Slab heated

ELECTRICAL SUMMARY

ELECTRICAL SYSTEM AND EQUIPMENT  
THIS SECTION REQUIRED FOR ALL PROJECTS THAT INCLUDE ELECTRICAL DESIGN

Method of Compliance:  
☐ Prescriptive ☒ Performance ☐ Energy Cost Budget

Lighting Schedule  
Lamp type required in fixture 32 Fluorescent  
Number of lamps in fixture 2  
Ballast type used in the fixture Electrical  
Number of ballasts in fixture 1  
Total wattage per fixture 71  
Total interior wattage specified vs. allowed 1.23 < 1.40 Intermittent use @ repair time only  
Total exterior wattage specified vs. allowed 100 < 90 - Motion Detector

Equipment schedules with motors (not used for mechanical systems) N/A  
Motor horsepower  
Number of phases  
Minimum efficiency  
Motor type  
No. of poles

Revised 02/11/13 rlh

MECHANICAL SUMMARY

MECHANICAL SYSTEMS, SERVICE SYSTEMS AND EQUIPMENT  
THIS SECTION REQUIRED FOR ALL PROJECTS THAT INCLUDE MECHANICAL DESIGN

Method of Compliance:  
☐ Prescriptive ☒ Performance ☐ Energy Cost Budget

Thermal zone  
Winter dry bulb 19  
Summer dry bulb 94

Interior design conditions  
Winter dry bulb 69°F  
Summer dry bulb 60°F  
Relative humidity 50°F

Building heating load  
Building cooling load  
Mechanical Spacing Conditioning System

Unitary  
Description of unit Marvair  
Heating efficiency -  
Cooling efficiency 10.2  
Heat output of unit 5 kW  
Cooling output of unit 57,500 BTU/H  
Boiler N/A  
Total boiler output. If oversized, state reason  
Chiller N/A  
Total chiller capacity. If oversized, state reason

List equipment efficiencies  
Equipment schedules with motors (mechanical systems)

Motor horsepower  
Number of phases  
Minimum efficiency  
Motor type  
# of poles

Revised 02/11/13 rlh

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2002 PISGAH CHURCH ROAD, SUITE 300  
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1000 CENTRE GREEN WAY, SUITE 300  
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5 WEST HARGETT STREET  
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SEAL:  
  
December 14, 2016

I	12-14-16	CONSTRUCTION
O	10-18-16	PRELIMINARY
REV	DATE	ISSUED FOR:
DRAWN BY: CSN		CHECKED BY: KSM

SHEET TITLE:  
**APPENDIX B**

SHEET NUMBER: <b>T-8</b>	REVISION: <b>1</b> TEP #:32795.80932
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**Shell Variable Form**

**Required for all Shell, Alteration to Shell and Interior Completion Permits**

Check each applicable line to match scope of work. Edit as necessary to provide clear detail of installation.  
Reproduce on Cover Sheet

**Mechanical**

- ☐ No work  
☒ Equipment set ☐ with ☐ without power  
☐ Trunk line installed ☐ with ☐ without outlets  
☐ Gas Line  
☐ Install complete operational system  
Other \_\_\_\_\_

**Plumbing**

- ☒ No work  
☐ Install water service and sewer  
☐ Install building drain ☐ and ☐ or water distribution main ☐ with ☐ without branches  
☐ Install complete plumbing system  
Other \_\_\_\_\_

**Sprinkler**

- ☐ Install complete sprinkler system

**Building**

- ☒ Install slab ☐ partial ☒ complete  
☒ Install demising walls  
☐ Install interior partitioning ☐ partial ☐ complete  
☒ Install Ceilings  
☐ White box (additional interior completion permits are required for Certificate of Occupancy and power)  
Other \_\_\_\_\_

**Electrical**

- ☐ House panel  
☐ Service laterals to meter centers/panels located on buildings  
☐ Demise wall and ceilings only  
☐ Conduit, duct, raceway in slab  
☐ Power and lighting circuits to "J" Box  
☐ Install light fixtures  
☐ Install ☐ Heat/Ac ☐ Elevator ☐ Generator ☐ Parking lot lighting  
☒ Install complete system

Other \_\_\_\_\_

Please provide full information on any alternate methods and means incorporated into the design of this project. Provide specific details and incorporate into plan submittal any supporting documents or agreement letters.

Revised 02/11/13 rlh

**Special Inspections Chapter 17**

SPECIAL INSPECTIONS SHALL BE CONDUCTED ON ALL PROJECTS THAT FALL WITHIN BUILDING CATEGORIES AND/OR CONTAIN ELEMENTS SUBJECT TO SPECIAL INSPECTIONS AS PRESCRIBED BY REVISED SECTION 1704.

To schedule a **required** pre-construction meeting with the City of Raleigh, please call [Steve Luxton](#) at 919-996-2183. The main line number for the [Development Services Customer Service Center](#) is 919-996-2495.

List whom will inspect the required special inspections:

Fabricator of load bearing components \_\_\_\_\_

Soil tests \_\_\_\_\_

Concrete, caissons, piles, piers, pre-cast \_\_\_\_\_

Post tension concrete \_\_\_\_\_

Modular construction \_\_\_\_\_

Steel and connections, welds, bolts, anchors \_\_\_\_\_

Fire spray tests \_\_\_\_\_

Smoke control \_\_\_\_\_

Seismic, wind designs, Quality Assurance \_\_\_\_\_

Retaining walls \_\_\_\_\_

Masonry \_\_\_\_\_

Wood \_\_\_\_\_

Alternate Methods \_\_\_\_\_

EFIS \_\_\_\_\_

Other (describe) \_\_\_\_\_

Other (describe) \_\_\_\_\_

Owner or agent \_\_\_\_\_

Revised 02/11/13 rlh

PLANS PREPARED FOR:



2002 PISGAH CHURCH ROAD, SUITE 300  
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REV	DATE	ISSUED FOR:

DRAWN BY: CSN CHECKED BY: KSM

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**APPENDIX B**

SHEET NUMBER:	REVISION:
<b>T-9</b>	<b>1</b>
	TEP #: 32795.80932



LEGEND

- EXIST. PROPERTY LINE
- EXIST. UTILITY POLE
- EXIST. TELCO PEDESTAL
- PROPERTY CORNER
- 200 EXIST. CONTOUR LINE
- EDGE OF PAVEMENT
- OHW OVERHEAD WIRE
- R/W RIGHT-OF-WAY
- CHAIN LINK FENCE
- EXISTING TREE LINE

SALISBURY STREET

WEST HARGETT STREET

EXISTING RALEIGH BUILDING. SEE SHEET C-2 ROOF LAYOUT & C-3 FOR ELEVATION

N/F THE RALEIGH BUILDING LLC  
PIN # 170368901000  
DB 08380 PG 1885

EAST HARGETT STREET

FAYETTEVILLE STREET

NOTES:

- SITE PLAN SHOWN BELOW TAKEN FROM INFORMATION PROVIDED BY WAKE COUNTY GIS MAPS. CONTRACTOR TO VERIFY ALL EXISTING INFORMATION IS AS INDICATED ON SITE PLAN. CONTRACTOR IS TO ESTABLISH THE EXISTENCE AND LOCATION OF ALL EXISTING OVERHEAD AND UNDERGROUND UTILITIES. IMMEDIATELY NOTIFY THE CONSTRUCTION MANAGER OF ANY DISCREPANCIES
- EXISTING INFORMATION INDICATED ON THE SITE PLAN WAS REPRODUCED FROM MAPS TAKEN FROM WAKE COUNTY GIS MAPS. TEP DOES NOT GUARANTEE, OR ENSURE THE PRECISION, ACCURACY, OR CORRECTNESS AND ASSUMES NO RESPONSIBILITY OR LIABILITY FOR DAMAGES, LOSS OF REVENUE, OR INJURY THAT MIGHT OCCUR. THE INFORMATION SUPPLIED BY THE CUSTOMER WAS INCORPORATED FOR REFERENCE ONLY.
- FIBER COMPANY TO CONFIRM EASEMENT LOCATION PRIOR TO INSTALLATION.

PLANS PREPARED FOR:



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SEAL:



January 25, 2017

3	01-25-17	CONSTRUCTION
2	01-06-17	CONSTRUCTION
REV	DATE	ISSUED FOR:

DRAWN BY: CSN CHECKED BY: KSM

SHEET TITLE:

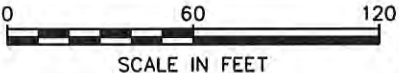
SITE PLAN

SHEET NUMBER:	REVISION:
C-1	3
	TEP #: 32795.80932

PROPERTY INFORMATION			
NO.	PIN #	N/F PROPERTY OWNER	DEED BK/PG
1	1703688565-000	ARI RCC 32 LLC ARI RCC 16 LLC	12565/0229
2	1703688302-000	ODD FELLOWS LANDLORD LLC	11989/1160
3	173688257-000	RALEIGH INVESTIGATING LLC	14908/2092
4	1703688253-000	KIMBRELLS INVESTMENT CO. INC	02522/0015
5	1703688159-000	BOYLAN PEARCE BUILDING LLC (DEAN DEBMAN)	15071/1437
6	1703688146-000	BRIGGS BUILDING RESTORATION	07524/0271
7	1703688143-000	ALAMANCE ASSOCIATES II LLC	09450/0623
8	1703688048-000	STROUD, E. STEPHEN MIDYETTE, W CARLTON JR	15330/1895
9	1703781303-000	FIRST CHURCH OF CHRIST	02356/0093
10	1703781248-000	THIGPEN BLUE & STEPHENS & STEPHENS, RALPH L	10826/2263
11	1703780297-000	207 FAYETTEVILLE LLC	12506/2711
12	1703781263-000	T S & H INVESTORS	03338/0203
13	1703781200-800	CITY OF RALEIGH	10628/1761
14	1703780495-000	ANISA EMPIRE TEMPLE LLC	08843/1541
15	1703781483-000	MECHANICS & FARMERS BANK	03273/0912

SITE PLAN

SCALE: 1" = 60'





PROPOSED ANTENNA/CABLE SCHEDULE

ANT.	SECTOR	MANUFACTURER (MODEL #)	TECH.	MOUNTING HEIGHT	AZIMUTH	ELEC. D-TILT	MECH. D-TILT	RRU MODEL	RAYCAP MODEL	CABLES
A1	ALPHA	COMMSCOPE SBNHH-1D65B	LTE 700 LTE AWS	℄ @ 142'-0"	30°	4° 3°	0°	RRUS-11 RRUS-12 + RRUS A2 MODULE	(1) DC6-48-60-18-8F	(2) DC POWER (1) FIBER
A2	ALPHA	COMMSCOPE SBNHH-1D65B	LTE WCS	℄ @ 142'-0"	30°	1°	0°	RRUS-32		
B1	BETA	COMMSCOPE SBNHH-1D65B	LTE 700 LTE AWS	℄ @ 142'-0"	150°	9° 3°	0°	RRUS-11 RRUS-12 + RRUS A2 MODULE	(1) DC6-48-60-18-8F	(2) DC POWER (1) FIBER
B2	BETA	COMMSCOPE SBNHH-1D65B	LTE WCS	℄ @ 142'-0"	150°	1°	0°	RRUS-32		
C1	GAMMA	COMMSCOPE SBNHH-1D65B	LTE 700 LTE AWS	℄ @ 142'-0"	270°	7° 3°	0°	RRUS-11 RRUS-12 + RRUS A2 MODULE	(1) DC6-48-60-18-8F	(2) DC POWER (1) FIBER
C2	GAMMA	COMMSCOPE SBNHH-1D65B	LTE WCS	℄ @ 142'-0"	270°	1°	0°	RRUS-32		

NOTES:

1. PROPOSED AT&T EQUIPMENT MOUNTED TO PENTHOUSE TO BE PAINTED TO MATCH BRICK FACE.
2. PROPOSED AT&T SHELTER TO BE PAINTED TO MATCH EXISTING BUILDING PENTHOUSE EXTERIOR.
3. CONDUITS AND CABLES TO BE RUN INSIDE CABLE TRAY ALONG ROOF. CABLES TO BE RUN ALONG PENTHOUSE WALL USING UNISTRUTS TO EACH SECTOR. CABLES AND UNISTRUTS TO BE PAINTED TO MATCH BRICK FACE.

LANDLORD NOTE:

CONTRACTOR TO INSTALL 2 CYPHER LOCKS, ONE ON EACH PENTHOUSE DOOR. LOCKS ARE REQUIRED TO BE FUNCTIONAL WITH THE BUILDING MASTER LOCK SYSTEM.

PLANS PREPARED FOR:



2002 PISGAH CHURCH ROAD, SUITE 300  
GREENSBORO, NC 27455

PLANS PREPARED FOR:

MasTec  
Network Solutions

1000 CENTRE GREEN WAY, SUITE 300  
CARY, NC 27513

PROJECT INFORMATION:

AT&T #: 368-615

5 WEST HARGETT STREET  
RALEIGH, NC 27601  
(WAKE COUNTY)

PLANS PREPARED BY:



TOWER ENGINEERING PROFESSIONALS  
326 TRYON ROAD  
RALEIGH, NC 27603-5263  
OFFICE: (919) 661-6351  
www.tepgroup.net  
N.C. LICENSE # C-1794

SEAL:



January 31, 2017

4	01-31-17	CONSTRUCTION
3	01-25-17	CONSTRUCTION
REV	DATE	ISSUED FOR:

DRAWN BY: CSN CHECKED BY: KSM

SHEET TITLE:

ROOFTOP PLAN

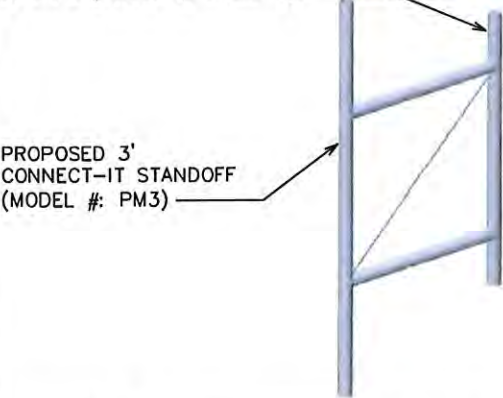
SHEET NUMBER: REVISION:

C-2

4

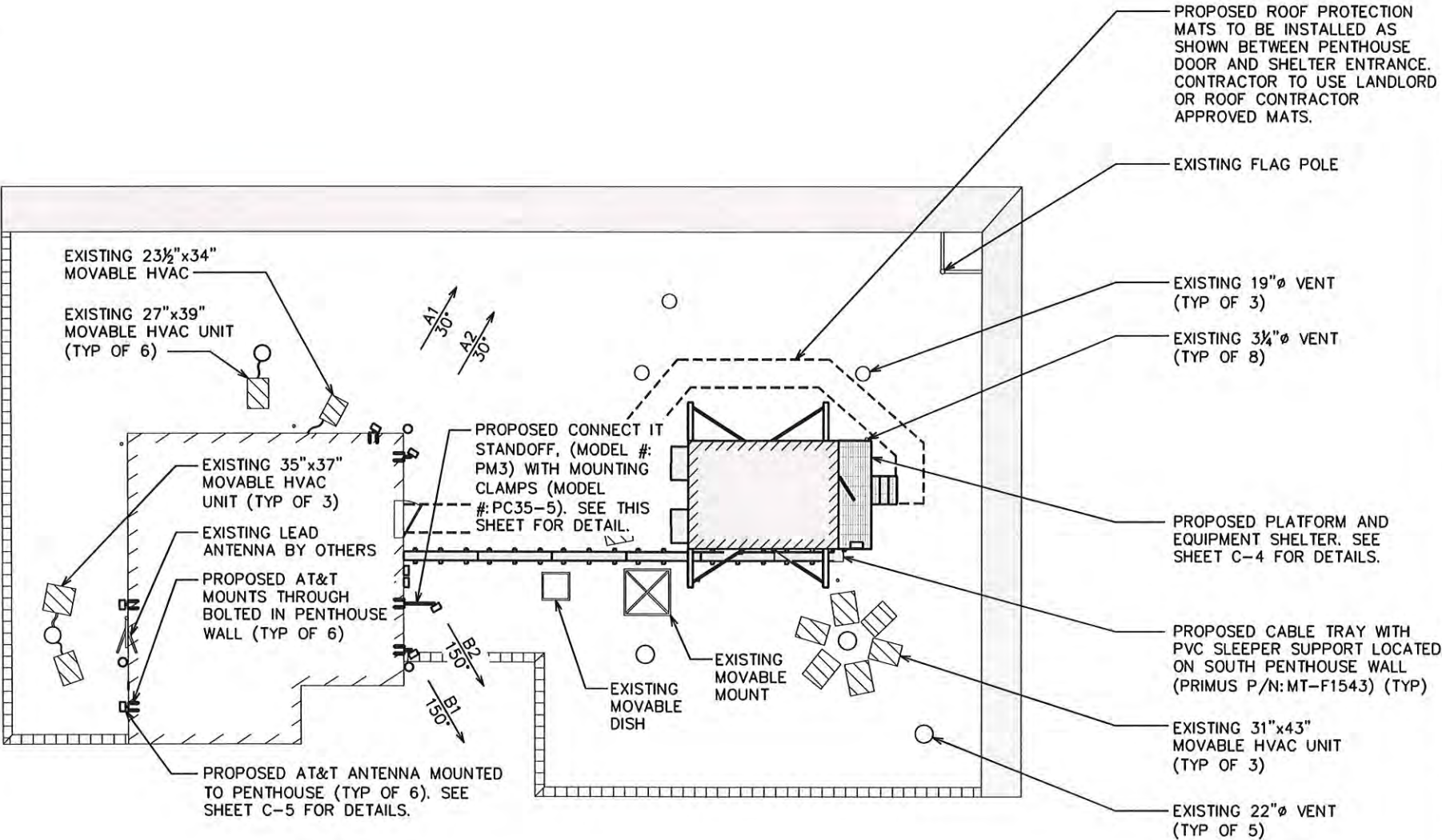
TEP #: 32795.80932

PROPOSED STANDOFF TO BE MOUNTED TO PROPOSED 3"Ø X 12'-0" MOUNT PIPE (DETAIL ON SHEET C-5) WITH MOUNTING CLAMPS (MODEL #: PC35-5)



PROP. STANDOFF DETAIL

SCALE: N.T.S.



ROOFTOP PLAN

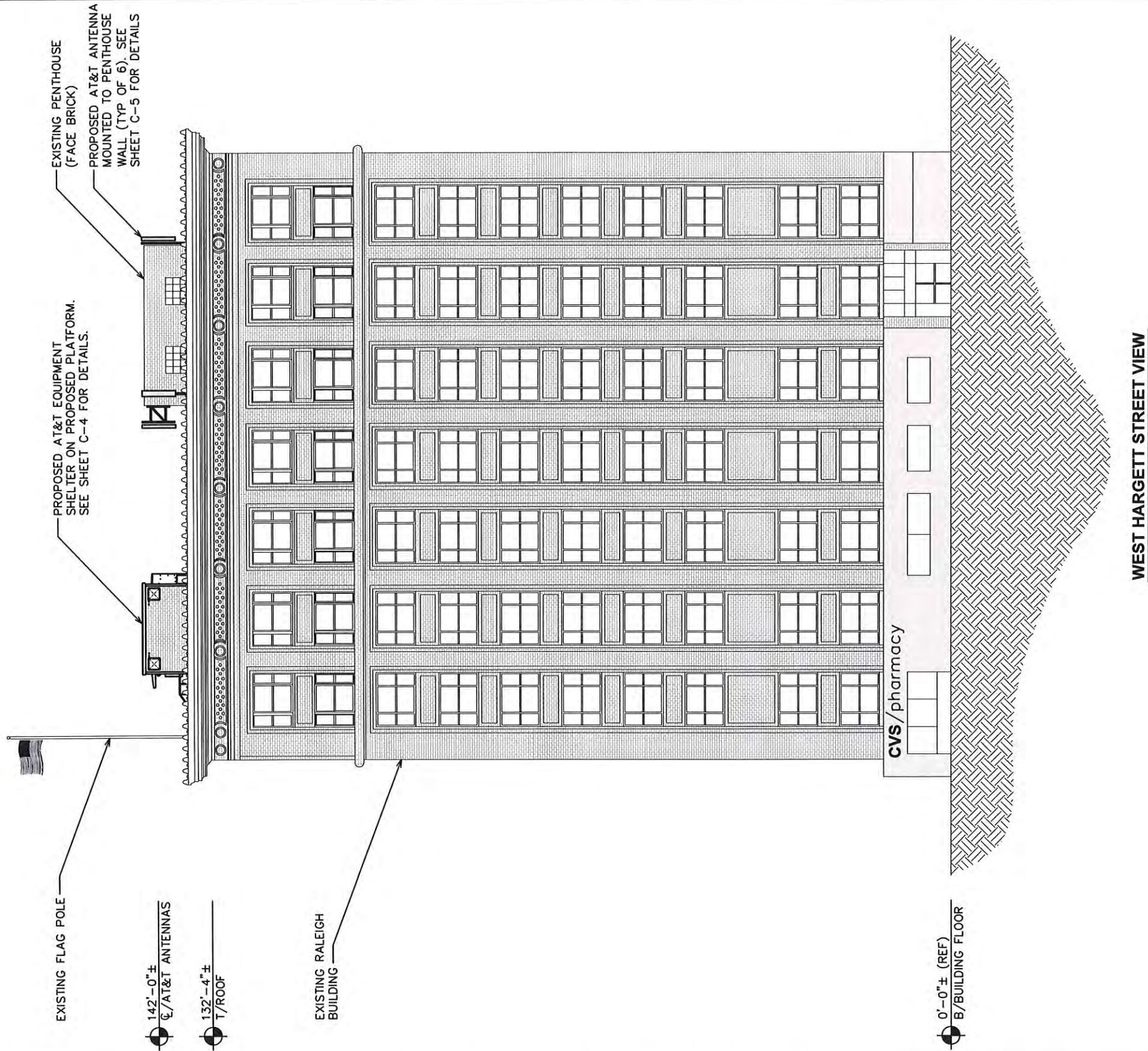
SCALE: 1/8" = 1'-0"





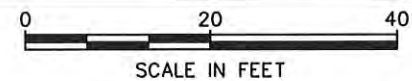
**NOTES:**

1. PROPOSED AT&T EQUIPMENT & SHELTER MOUNTED TO PENTHOUSE TO BE PAINTED TO MATCH BRICK FACE.
2. PROPOSED AT&T SHELTER TO BE PAINTED TO MATCH EXISTING PENTHOUSE EXTERIOR.



**BUILDING ELEVATION (NORTH FACE)**

SCALE: 1" = 20'



PLANS PREPARED FOR:

 **at&t**

2002 PISGAH CHURCH ROAD, SUITE 300  
GREENSBORO, NC 27455

PLANS PREPARED FOR:

 **MasTec**  
Network Solutions

1000 CENTRE GREEN WAY, SUITE 300  
CARY, NC 27513

PROJECT INFORMATION:

**AT&T #: 368-615**


5 WEST HARGETT STREET  
RALEIGH, NC 27601  
(WAKE COUNTY)

PLANS PREPARED BY:



**TOWER ENGINEERING PROFESSIONALS**  
326 TRYON ROAD  
RALEIGH, NC 27603-5263  
OFFICE: (919) 661-6351  
www.tepgroup.net  
N.C. LICENSE # C-1794

SEAL:



January 25, 2017

3	01-25-17	CONSTRUCTION
2	01-06-17	CONSTRUCTION
REV	DATE	ISSUED FOR:

DRAWN BY: CSN CHECKED BY: KSM

SHEET TITLE:

**BUILDING ELEVATION**

SHEET NUMBER: **C-3**

REVISION: **3**

TEP #: 32795.80932



**NOTE:**

PROPOSED AT&T EQUIPMENT SHELTER  
TO BE PAINTED TO MATCH BRICK FACE.

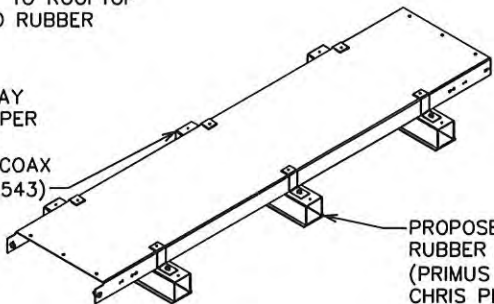


PROPOSED CABLE TRAY RAMP  
AS NEEDED PER LANDLORD'S  
STANDARDS (EATON GRATEWALK  
P/N: RW) OR EQUIVALENT

**NOTES:**

ATTACH RUBBER MAT TO ROOFTOP  
AND PVC SLEEPER TO RUBBER  
MAT USING SILICONE

PROPOSED CABLE TRAY  
WITH PVC ROOF SLEEPER  
TO ACCEPT SNAP-IN  
HANGERS. (8) RUNS COAX  
(PRIMUS P/N: MT-F1543)



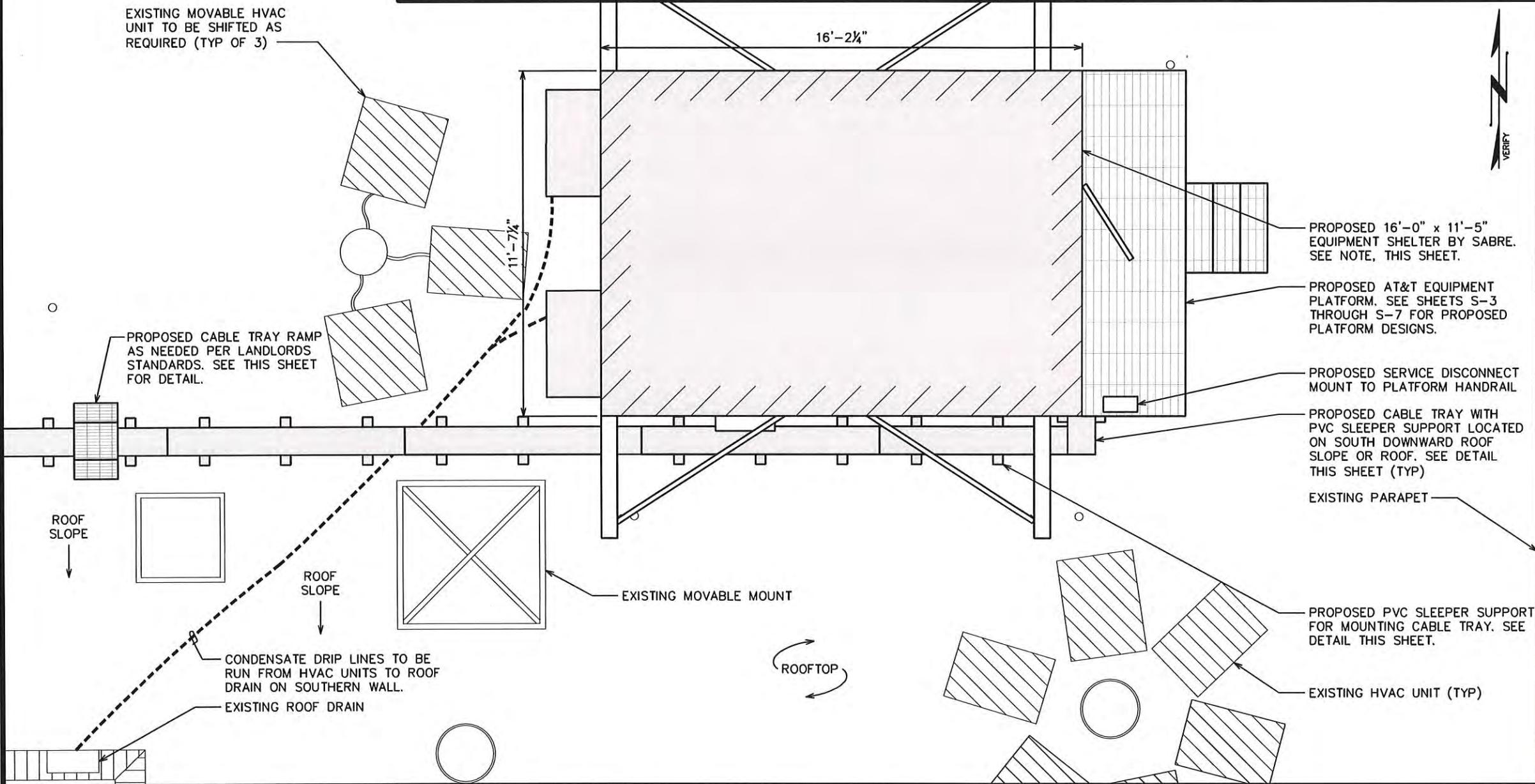
PROPOSED ANDREW  
RUBBER MAT  
(PRIMUS P/N: RP4-10)  
CHRIS PLEIBEL, PRIMUS  
PHONE: (800) 435-1636

**CABLE TRAY RAMP DETAIL**

SCALE: N.T.S.

**CABLE TRAY DETAIL**

SCALE: N.T.S.



**PLATFORM AND EQUIPMENT DETAILS**

SCALE: 1/4" = 1'-0"

PLANS PREPARED FOR:



2002 PISGAH CHURCH ROAD, SUITE 300  
GREENSBORO, NC 27455

PLANS PREPARED FOR:



1000 CENTRE GREEN WAY, SUITE 300  
CARY, NC 27513

PROJECT INFORMATION:

**AT&T #: 368-615**

5 WEST HARGETT STREET  
RALEIGH, NC 27601  
(WAKE COUNTY)

PLANS PREPARED BY:



**TOWER ENGINEERING PROFESSIONALS**

326 TRYON ROAD  
RALEIGH, NC 27603-5263  
OFFICE: (919) 661-6351  
www.tepgroup.net  
N.C. LICENSE # C-1794

SEAL:



3	01-25-17	CONSTRUCTION
2	01-06-17	CONSTRUCTION
REV	DATE	ISSUED FOR:

DRAWN BY: CSN CHECKED BY: KSM

SHEET TITLE:

**PLATFORM AND  
EQUIPMENT DETAILS**

SHEET NUMBER:	REVISION:
<b>C-4</b>	<b>3</b>
	TEP #: 32795.80932

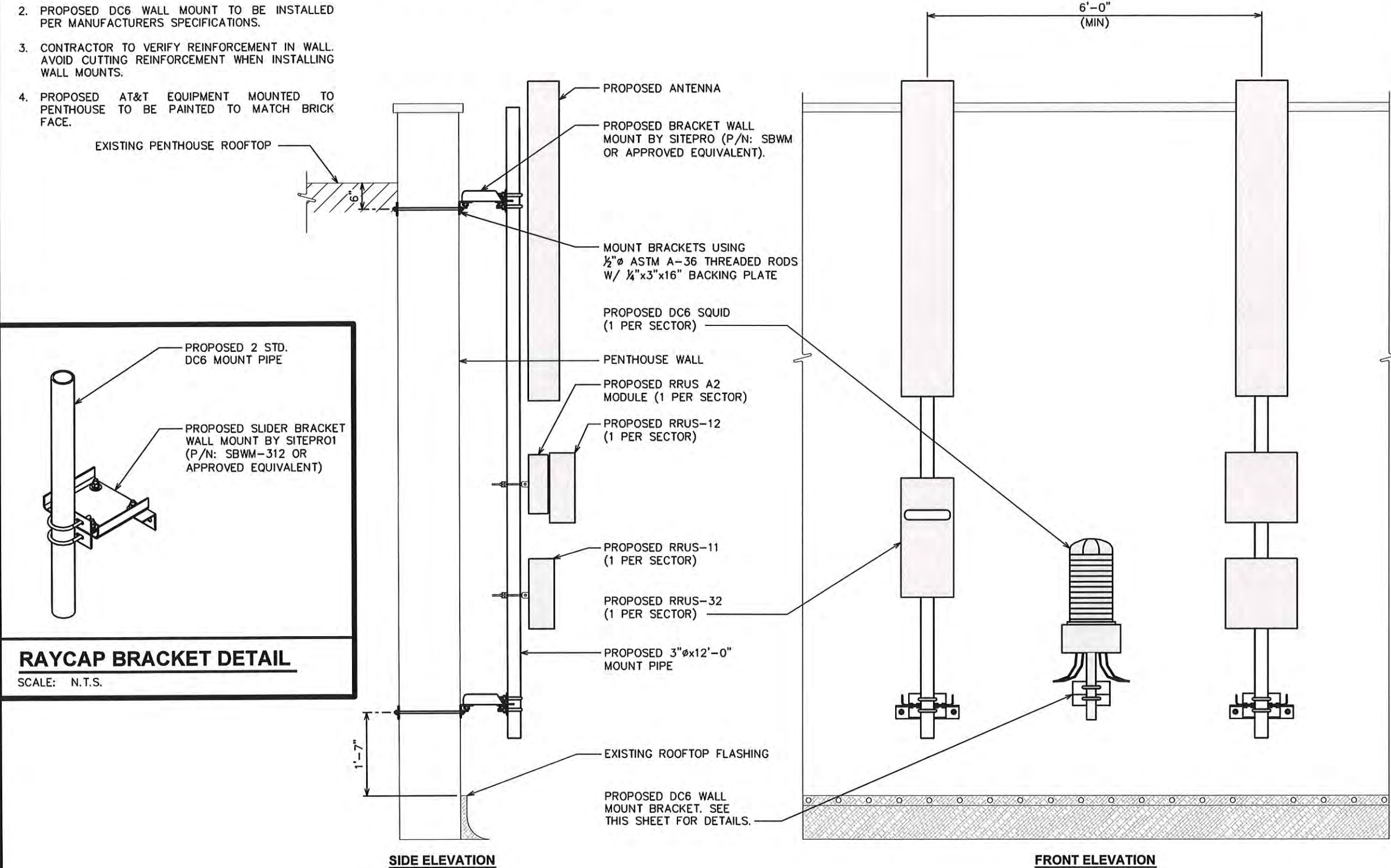


**NOTES:**

1. PROPOSED ANTENNA WALL MOUNT TO BE INSTALLED PER MANUFACTURERS SPECIFICATIONS.
2. PROPOSED DC6 WALL MOUNT TO BE INSTALLED PER MANUFACTURERS SPECIFICATIONS.
3. CONTRACTOR TO VERIFY REINFORCEMENT IN WALL. AVOID CUTTING REINFORCEMENT WHEN INSTALLING WALL MOUNTS.
4. PROPOSED AT&T EQUIPMENT MOUNTED TO PENTHOUSE TO BE PAINTED TO MATCH BRICK FACE.

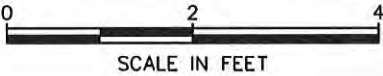
**COAX NOTE:**

PROPOSED MOUNTING BRACKETS ON THE PENTHOUSE TO BE BOLTED INTO MORTAR JOINTS.



**ANTENNA MOUNTING DETAILS**

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



PLANS PREPARED FOR:



2002 PISGAH CHURCH ROAD, SUITE 300  
GREENSBORO, NC 27455

PLANS PREPARED FOR:



Network Solutions

1000 CENTRE GREEN WAY, SUITE 300  
CARY, NC 27513

PROJECT INFORMATION:

**AT&T #: 368-615**

5 WEST HARGETT STREET  
RALEIGH, NC 27601  
(WAKE COUNTY)

PLANS PREPARED BY:



**TOWER ENGINEERING PROFESSIONALS**

326 TRYON ROAD  
RALEIGH, NC 27603-5263  
OFFICE: (919) 661-6351  
www.tepgroup.net  
N.C. LICENSE # C-1794

SEAL:



January 6, 2017

2	01-06-17	CONSTRUCTION
1	12-14-16	CONSTRUCTION
REV	DATE	ISSUED FOR:
DRAWN BY:	CSN	CHECKED BY: KSM

SHEET TITLE:

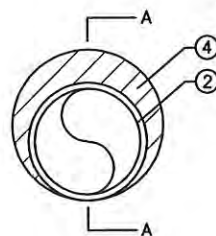
**ANTENNA MOUNT DETAILS**

SHEET NUMBER:	REVISION:
<b>C-5</b>	<b>2</b>
TEP #: 32795.80932	



U.L. SYSTEM NO. C-AJ-1150  
CONDUIT THROUGH BEARING WALL SIMILAR TO U.L. DESIGN NO. U902

F RATING = 3-HR.  
T RATING = 0-HR.



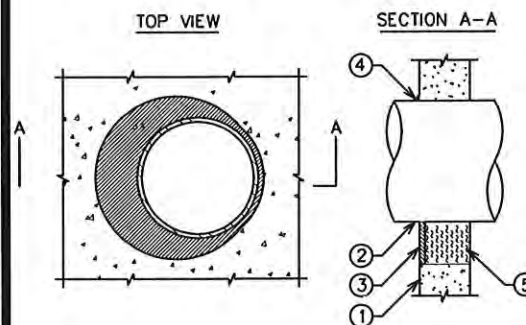
- FLOOR OR WALL ASSEMBLY -- MINIMUM 4-1/2" THICK REINFORCED LIGHTWEIGHT OR NORMAL WEIGHT (100-150 PCF) CONCRETE. WALL MAY ALSO BE CONSTRUCTED OF ANY UL CLASSIFIED CONCRETE BLOCKS \*. MAXIMUM DIAMETER OF OPENING IS 8". SEE CONCRETE BLOCKS (CAZT) CATEGORY IN THE FIRE RESISTANCE DIRECTORY FOR NAMES OF MANUFACTURERS.
  - THROUGH PENETRATIONS -- ONE METALLIC PIPE OR CONDUIT TO BE INSTALLED WITHIN THE FIRESTOP SYSTEM. PIPE OR CONDUIT TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF FLOOR OR WALL ASSEMBLY. THE ANNULAR SPACE SHALL BE MINIMUM 0". (POINT CONTACT) TO MAXIMUM 1-3/8". THE FOLLOWING TYPES AND SIZES OF METALLIC PIPES OR CONDUITS MAY BE USED:
    - STEEL PIPE -- NOMINAL 6" DIAMETER (OR SMALLER) SCHEDULE 40 (OR HEAVIER) STEEL PIPE.
    - IRON PIPE -- NOMINAL 6" DIAMETER (OR SMALLER) CAST OR DUCTILE IRON PIPE.
    - CONDUIT -- NOMINAL 4" DIAMETER (OR SMALLER) STEEL ELECTRICAL METALLIC TUBING OR NOMINAL 6" DIAMETER (OR SMALLER) STEEL CONDUIT.
  - PACKING MATERIAL -- MINIMUM 4" THICKNESS OF MINIMUM 4.0 PCF MINERAL WOOL BATTING INSULATION FIRMLY PACKED INTO OPENING AS A PERMANENT FORM. PACKING MATERIAL TO BE RECESSED FROM TOP SURFACE OF FLOOR OR FROM BOTH SURFACES OF WALL AS REQUIRED TO ACCOMMODATE THE REQUIRED THICKNESS OF FILL MATERIAL.
  - FILL, VOID, OR CAVITY MATERIAL\* -- SEALANT -- MINIMUM 1/4" THICKNESS OF FILL MATERIAL APPLIED WITHIN THE ANNULUS, FLUSH WITH TOP SURFACE OF FLOOR AND WITH BOTH SURFACES OF WALL. AT THE POINT CONTACT LOCATION BETWEEN PIPE AND CONCRETE, A MINIMUM 1/2" DIAMETER BEAD OF FILL MATERIAL SHALL BE APPLIED AT THE CONCRETE/PIPE INTERFACE ON THE TOP SURFACE OF FLOOR AND ON BOTH SURFACES OF WALL. U.L. RATING APPLIES ONLY WHEN CP601S OR CP604 SEALANT IS USED. HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC -- CP601S, CP604, CP606 OR FS-ONE SEALANT
- \*BEARING THE UL CLASSIFICATION MARK

## PENETRATION NOTES:

- USE GROUND PENETRATING RADAR PRIOR TO CORE DRILLING. NO CUTTING/DAMAGING OF EXISTING REBAR IS ALLOWED.
- MAXIMUM DIAMETER OF OPENING = 8".
- ANNULAR SPACE = MINIMUM 0", MAXIMUM 2".
- WALLS REQUIRE 1/2" DEPTH OF SEALANT FLUSH WITH BOTH SIDES.
- IF MAXIMUM PIPE SIZE IS 4" NOMINAL DIAMETER, A MINIMUM 3" THICKNESS OF MINERAL WOOL MAY BE USED.
- SEE HILTI FIRESTOP INSTALLATION MANUAL FOR ADDITIONAL INSTRUCTIONS - HILTI, INC. TULSA, OK 1-800-879-8000

U.L. SYSTEM NO. C-AJ-1498  
METAL PIPE THROUGH CONCRETE FLOOR, WALL, OR BLOCK WALL

F RATING = 2-HR.  
T RATING = 0-HR.



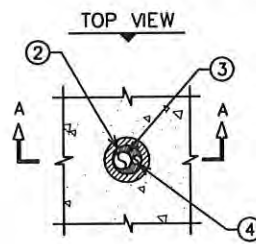
NOTE:  
HILTI FS-ONE MATERIAL IS SUITABLE FOR USE IN CONCRETE, BRICK, TILE, GYPSUM, AND WOOD WALLS

- CONCRETE FLOOR OR WALL ASSEMBLY:
  - LIGHTWEIGHT OR NORMAL WEIGHT CONCRETE FLOOR (MINIMUM 4-1/2" THICK).
  - LIGHTWEIGHT OR NORMAL WEIGHT CONCRETE WALL (MINIMUM 4-1/2" THICK).
  - ANY U.L. CLASSIFIED CONCRETE BLOCK WALL.
- THROUGH PENETRATIONS TO INCLUDE ANY OF THE FOLLOWING:
  - MAXIMUM 8" NOMINAL DIAMETER STEEL PIPE.
  - MAXIMUM 4" NOMINAL DIAMETER COPPER PIPE.
  - MAXIMUM 4" NOMINAL DIAMETER EMT.
  - MAXIMUM 4" NOMINAL DIAMETER STEEL CONDUIT.
- MINIMUM 1/2" DEPTH HILTI FS-ONE HIGH PERFORMANCE INTUMESCENT 2-HR FIRESTOP SEALANT.
- MINIMUM 1/2" BEAD HILTI FS-ONE HIGH PERFORMANCE INTUMESCENT 2-HR FIRESTOP SEALANT. 5. MINIMUM 4" THICK MINERAL WOOL (MINIMUM 4 PCF DENSITY) (SEE NOTE NO. 4).

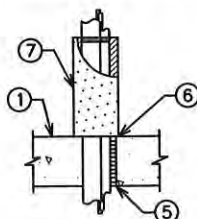
## WALL PENETRATION - LOAD BEARING

SCALE: N.T.S.

U.L. SYSTEM NO. C-BJ-8020  
MULTIPLE PENETRANTS THROUGH CONCRETE FLOOR/WALL OR BLOCK WALL  
F RATING = 2-HR; T RATING = 0-HR OR 2-HR.



SECTION A-A



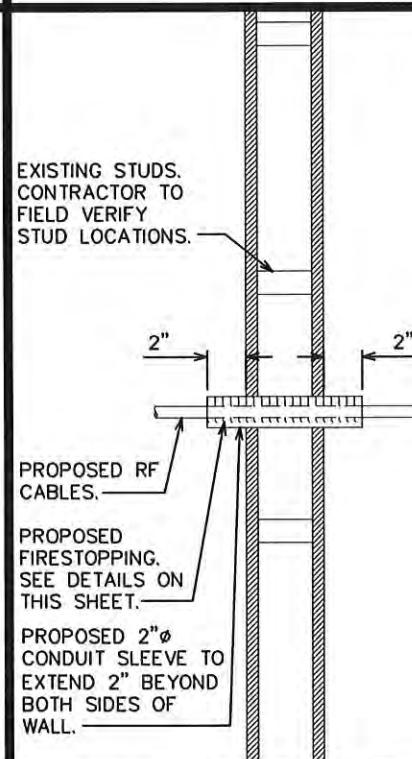
- CONCRETE FLOOR ASSEMBLY (2HR FIRE RATING):
  - LIGHTWEIGHT OR NORMAL WEIGHT CONCRETE FLOOR OR WALL (MINIMUM 6" THICK).
  - PRECAST (HOLLOW-CORE) CONCRETE FLOOR (MINIMUM 6" THICK).
  - ANY UL/CUL CLASSIFIED CONCRETE BLOCK WALL.
- ANY COMBINATION OF THE FOLLOWING METALLIC PENETRANTS MAY BE WITHIN GROUPING (ONLY 1 PIPE MAY EXCEED 1" NOMINAL DIAMETER):
  - MAXIMUM 2" NOMINAL DIAMETER STEEL PIPE (SCHEDULE 10 OR HEAVIER).
  - MAXIMUM 2" NOMINAL DIAMETER CAST OR DUCTILE IRON PIPE.
  - MAXIMUM 2" NOMINAL DIAMETER STEEL CONDUIT OR EMT.
- MAXIMUM 1/4" NOMINAL DIAMETER COPPER PIPE OR TUBING (MAX QTY. = 2) MAY BE WITHIN GROUPING.
- MAXIMUM 7/C NO.12 AWG POWER CABLE (MAX QTY. = 3) MAYBE WITHIN GROUPING.
- MINIMUM 5-3/4" THICKNESS MINERAL WOOL (MIN. 4PCF DENSITY) TIGHTLY PACKED.
- MINIMUM 1/4" DEPTH HILTI FS-ONE INTUMESCENT FIRESTOP SEALANT.
- [OPTIONAL] NOMINAL 1" THICK GLASS-FIBER PIPE INSULATION (12" HIGH) INSTALLED AROUND GROUPING OF PENETRANTS, RESTING FLUSH WITH TOP SURFACE OF FLOOR.

### NOTES :

- MAXIMUM DIAMETER OF OPENING = 4"
- ANNULAR SPACE = MINIMUM 0", MAXIMUM 2".
- ONE GROUPING OF ANY COMBINATION OF THE ABOVE LISTED PIPES, TUBING, CONDUITS AND CABLES TO BE INSTALLED WITHIN THE OPENING.
- WHEN PIPE IS USED, T-RATING = 2HR.
- WHEN PIPE INSULATION IS USED, APPLY A MINIMUM 1/2" DEPTH HILTI FS-ONE INTUMESCENT FIRESTOP SEALANT BETWEEN THE GROUPING OF PENETRANTS AND THE PIPE INSULATION, FLUSH WITH TOP END OF INSULATION.
- MINIMUM 1/4" DEPTH HILTI FS-ONE INTUMESCENT FIRESTOP SEALANT IS REQUIRED ON BOTH SIDES OF A WALL.

## FLOOR/WALL PENETRATION

SCALE: N.T.S.



U.L. SYSTEM NO. W-L-1084

- WALL ASSEMBLY --
  - STUDS --
    - WOOD -- NOMINAL 2x4 IN. LUMBER SPACED 16" O.C.
    - STEEL CHANNEL -- MINIMUM 3-5/8" WIDE AND SPACED MAXIMUM 24" O.C.
  - GYPSUM BOARD -- NOMINAL 5/8" THICK GYPSUM WALLBOARD OPENING IS 1-1/2" LARGER THAN THE OUTSIDE DIAMETER OF THE PIPE.
- THROUGH PENETRATIONS -- ONE METALLIC PIPE, CONDUIT OR TUBING TO BE INSTALLED WITHIN THE FIRESTOP SYSTEM, RIGIDLY SUPPORTED ON BOTH SIDES OF FLOOR OR WALL ASSEMBLY. ANNULAR SPACE MIN. 3/4".
  - STEEL PIPE -- NOMINAL 12" (OR SMALLER) SCHEDULE 10 (OR HEAVIER) STEEL PIPE.
  - CONDUIT -- NOMINAL 6" (OR SMALLER) ELECTRICAL METALLIC TUBING OR STEEL CONDUIT.
  - COPPER TUBING -- NOMINAL 6" (OR SMALLER) TYPE L (OR HEAVIER) COPPER TUBING.
  - COPPER PIPE -- NOMINAL 6" (OR SMALLER) REGULAR (OR HEAVIER) COPPER PIPE.
- FILL, VOID, OR CAVITY MATERIAL\* -- SEALANT -- MINIMUM 5/8" THICKNESS OF FILL MATERIAL APPLIED WITHIN ANNULUS, FLUSH WITH BOTH SURFACES OF WALL ASSEMBLY.

3M COMPANY -FB-2000+

\*BEARING THE UL CLASSIFICATION MARK

## WALL PENETRATION

SCALE: N.T.S.

PLANS PREPARED FOR:



2002 PISGAH CHURCH ROAD, SUITE 300  
GREENSBORO, NC 27455

PLANS PREPARED FOR:

**MasTec**  
Network Solutions

1000 CENTRE GREEN WAY, SUITE 300  
CARY, NC 27513

PROJECT INFORMATION:

**AT&T #: 368-615**

5 WEST HARGETT STREET  
RALEIGH, NC 27601  
(WAKE COUNTY)

PLANS PREPARED BY:



**TOWER ENGINEERING PROFESSIONALS**

326 TRYON ROAD  
RALEIGH, NC 27603-5263  
OFFICE: (919) 661-6351  
www.tepgroup.net  
N.C. LICENSE # C-1794

SEAL:



1	12-14-16	CONSTRUCTION
0	10-18-16	PRELIMINARY
REV	DATE	ISSUED FOR:

DRAWN BY: CHECKED BY:

SHEET TITLE:

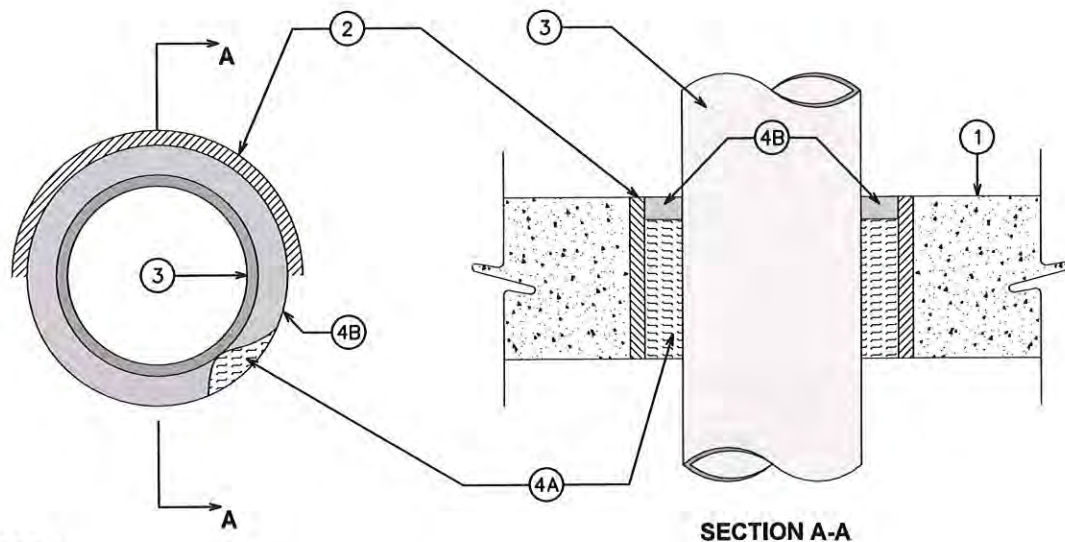
**CONDUIT  
PENETRATION  
DETAILS I**

SHEET NUMBER:	REVISION:
<b>C-6</b>	<b>1</b>
TEP #: 32795.80932	

## MULTIPLE PENETRANTS THROUGH CONCRETE/BLOCK FLOOR/WALL

SCALE: N.T.S.





#### NOTE:

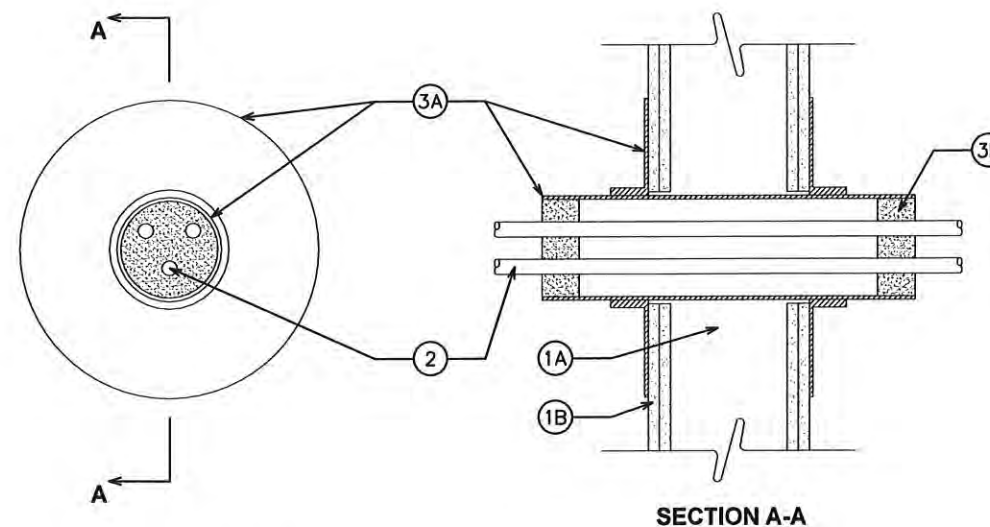
THE FOLLOWING NOTES WERE EDITED FROM UL FIRE RESISTIVE DIRECTORY VOL 2 FOR THIS PARTICULAR APPLICATION.

### THROUGH-PENETRATION FIRESTOP SYSTEM NUMBER: C-AJ-1224 (UL)

1. FLOOR OF WALL ASSEMBLY: MINIMUM  $4\frac{1}{2}$ " THICK REINFORCED LIGHTWEIGHT OR NORMAL WEIGHT (100-150 PCF) CONCRETE FLOOR OR MINIMUM 5" THICK REINFORCED LIGHTWEIGHT OR NORMAL WEIGHT CONCRETE WALL. WALL MAY ALSO BE CONSTRUCTED OF ANY UL CLASSIFIED CONCRETE BLOCKS. MAXIMUM DIAMETER OF OPENING IS 16".
2. METALLIC SLEEVE: 4" SCHEDULE 40 STEEL SLEEVE CAST OR GROUTED INTO FLOOR OR WALL ASSEMBLY, FLUSH WITH FLOOR OR WALL SURFACES.
3. THROUGH PENETRATION: ONE METALLIC PIPE, CONDUIT OR TUBING TO BE INSTALLED EITHER CONCENTRICALLY OR ECCENTRICALLY WITHIN THE FIRESTOP SYSTEM. PIPE, CONDUIT OR TUBING TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF FLOOR OR WALL ASSEMBLY. A STEEL PIPE 2" DIAMETER (OR SMALLER) SCHEDULE 10 (OR HEAVIER) SHOULD BE USED.
4. FIRESTOP SYSTEM: THE FIRESTOP SYSTEM SHALL CONSIST OF THE FOLLOWING:
  - A. PACKING MATERIAL: MINIMUM 4" THICKNESS OF MINIMUM 4 PCF MINERAL WOOL BATT INSULATION FIRMLY PACKED INTO OPENING AS A PERMANENT FORM. PACKING MATERIAL TO BE RECESSED FROM TOP SURFACE OF FLOOR OR FROM BOTH SURFACES OF WALL AS REQUIRED TO ACCOMMODATE THE REQUIRED THICKNESS OF FILL MATERIAL.
  - B. FILL, VOID OR CAVITY MATERIAL SEALANT: MINIMUM  $\frac{1}{2}$ " THICKNESS OF FILL MATERIAL APPLIED WITHIN THE ANNULUS, FLUSH WITH TOP SURFACE OF FLOOR OR WITH BOTH SURFACES OF WALL ASSEMBLY. ADDITIONAL FILL MATERIAL TO BE INSTALLED SUCH THAT A MINIMUM  $\frac{1}{4}$ " CROWN IS FORMED AROUND THE PENETRATING ITEM. AT THE POINT CONTACT LOCATION BETWEEN THROUGH PENETRANT AND CONCRETE, A MINIMUM  $\frac{3}{8}$ " DIAMETER BEAD OF FILL MATERIAL SHALL BE APPLIED AT THE CONCRETE/ THROUGH PENETRANT INTERFACE ON THE TOP SURFACE OF FLOOR AND ON BOTH SURFACES OF WALL.

#### FIRESTOP DETAIL I

SCALE: N.T.S.



### THROUGH-PENETRATION FIRESTOP SYSTEM NUMBER: W-L-3138 (UL)

1. WALL ASSEMBLY: THE 1 OR 2 HR FIRE RATED GYPSUM WALLBOARD/STUD WALL ASSEMBLY SHALL BE CONSTRUCTED OF THE MATERIALS AND IN THE MANNER DESCRIBE IN THE INDIVIDUAL U300 AND U400 SERIES WALL OR PARTITION DESIGNS IN THE UL FIRE RESISTANCE DIRECTORY AND SHALL INCLUDE THE FOLLOWING CONSTRUCTION FEATURES:
  - A. STUDS - WALL FRAMING SHALL CONSIST OF EITHER WOOD STUDS OR STEEL CHANNEL STUDS. WOOD STUDS TO CONSIST OF NOM 2 BY 4-IN LUMBER SPACED IN 16 IN OC. STEEL STUDS TO BE MIN 3  $\frac{5}{8}$ -INCH WIDE AND SPACED 24-IN OC.
  - B. GYPSUM BOARD -  $\frac{5}{8}$ -INCH THICK, 4 FT WIDE WITH SQUARE OR TAPERED EDGES. THE GYPSUM WALLBOARD TYPE, THICKNESS, NUMBER OF LAYERS, FASTENER TYPE AND SHEET ORIENTATION SHALL BE AS SPECIFIED IN THE INDIVIDUAL U300 OR U400 SERIES DESIGNS IN THE UL FIRE RESISTANCE DIRECTORY. THE HOURLY F RATING OF THE FIRESTOP SYSTEM IS EQUAL TO THE HOURLY FIRE RATING OF THE WALL ASSEMBLY IN WHICH IT IS INSTALLED.
2. CABLES - AGGREGATE CROSS-SECTIONAL AREA OF CABLES IN THREADED SLEEVE TO BE MIN 8 PERCENT TO MAX 48 PERCENT OF THE AGGREGATE CROSS SECTIONAL AREA OF THE THREADED SLEEVE. CABLES TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF THE WALL ASSEMBLY. ANY COMBINATION OF THE FOLLOWING TYPES AND SIZE CABLES MAY BE USED:
  - A. MAX 200 PAIR NO 24 AWG (OR SMALLER) COPPER CONDUCTOR CABLE WITH POLYVINYL CHLORIDE (PVC) JACKETING AND INSULATION.
  - B. MAX 1/C 750 KCMIL POWER CABLE WITH COPPER CONDUCTORS AND CROSS-LINKED POLYETHYLENE (XLPE) JACKETING.
  - C. MAX 3/C NO. 2/0 AWG (OR SMALLER) ALUMINUM OR COPPER CONDUCTOR SERVICE ENTRANCE CABLE WITH PVC INSULATION AND JACKET.
  - D. MAX 2/C NO. 8 AWG (OR SMALLER) NON METALLIC SHEATHED (ROMEX) CABLE WITH COPPER CONDUCTORS PVC INSULATION AND JACKET.
  - E. MAX 7/C NO. 2/0 AWG (OR SMALLER) MULTICONDUCTOR POWER AND CONTROL CABLES WITH XLPE OR PVC INSULATION AND XLPE OR PVC JACKET.
  - F. MAX RG59/U (OR SMALLER) COAXIAL CABLE WITH FLOURINATED ETHYLENE INSULATION AND JACKETING.
  - G. MAX 62.R/48 FIBER OPTIC CABLE WITH PVC INSULATION AND JACKETING.
  - H. MAX 4 PAIR NO. 24 AWG (OR SMALLER) COPPER CONDUCTOR CATEGORY WITH HYLAR INSULATION AND JACKET.
3. FIRESTOP SYSTEMS - FIRESTOP SYSTEM SHALL CONSIST OF THE FOLLOWING:
  - A. FIRESTOP DEVICE - THREADED STEEL SLEEVE DEVICE INCORPORATING FLAT WASHERS SECURED BY THREADED COUPLERS. DEVICE SHALL BE INSTALLED AROUND CABLES IN ACCORDANCE WITH THE ACCOMPANYING INSTALLATION INSTRUCTIONS. DEVICE PROVIDED IN NUM 1,2 AND 4-INCH SIZES. MAX DIAMETER OF OPENING IN WALL FOR 1,2, AND 4 INCH SIZE DEVICES ARE 1- $\frac{1}{4}$ , 2  $\frac{7}{16}$  AND 4  $\frac{1}{2}$  IN RESPECTIVELY.
 

UNIQUE'S FIRE STOP PRODUCTS INC - THREADED SLEEVE
  - B. FILL, VOID OR CAVITY MATERIAL - SEALANT OR PUTTY - MIN 1 IN THICKNESS OF FILL MATERIAL APPLIED WITHIN THE THREADED SLEEVE, FLUSH WITH BOTH ENDS

SPECIFIED TECHNOLOGIES INC. - SPECSEAL SERIES 100 SEALANT OR SPECSEAL PUTTY.

#### FIRESTOP DETAIL II

SCALE: N.T.S.

PLANS PREPARED FOR:



2002 PISGAH CHURCH ROAD, SUITE 300  
GREENSBORO, NC 27455

PLANS PREPARED FOR:



1000 CENTRE GREEN WAY, SUITE 300  
CARY, NC 27513

PROJECT INFORMATION:

**AT&T #: 368-615**

5 WEST HARGETT STREET  
RALEIGH, NC 27601  
(WAKE COUNTY)

PLANS PREPARED BY:



**TOWER ENGINEERING PROFESSIONALS**  
326 TRYON ROAD  
RALEIGH, NC 27603-5263  
OFFICE: (919) 661-6351  
www.tepgroup.net  
N.C. LICENSE # C-1794

SEAL:



1	12-14-16	CONSTRUCTION
0	10-18-16	PRELIMINARY
REV	DATE	ISSUED FOR:

DRAWN BY: CHECKED BY:

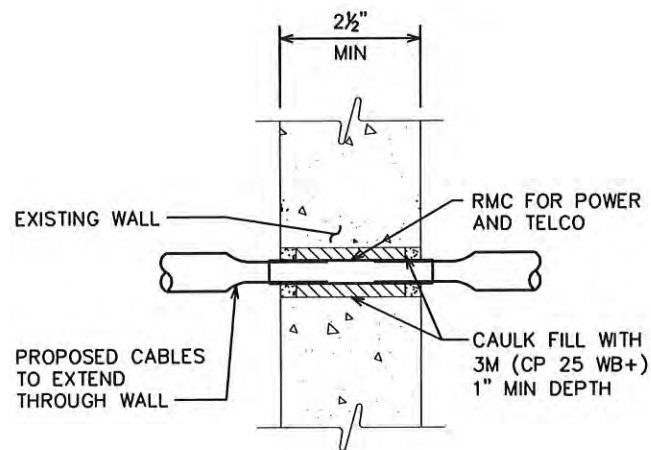
SHEET TITLE:

**CONDUIT  
PENETRATION  
DETAILS II**

SHEET NUMBER:	REVISION:
<b>C-7</b>	<b>1</b>
	TEP #: 32795.80932

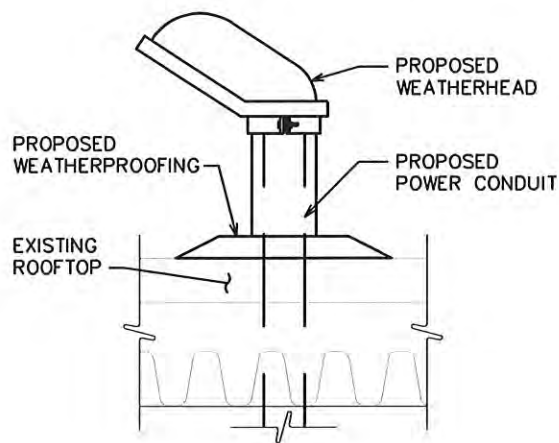


**NOTE:**  
PENETRATION PROTECTION BASED  
ON UL SYSTEM NO. C-AJ-3030,  
(4 HOUR RATED).



**FIRESTOP DETAIL III**  
SCALE: N.T.S.

**NOTE:**  
PROPOSED WEATHERHEAD TO BE  
ROUTED THROUGH PROPOSED ROOF  
PENETRATION. CONTRACTOR TO  
VERIFY SUFFICIENT SPACE EXISTS  
WITHIN PROPOSED ROOF PENETRATION  
FOR INSTALLATION OF WEATHERHEAD.



**WEATHERHEAD DETAIL**  
SCALE: N.T.S.

PLANS PREPARED FOR:



2002 PISGAH CHURCH ROAD, SUITE 300  
GREENSBORO, NC 27455

PLANS PREPARED FOR:



Network Solutions  
1000 CENTRE GREEN WAY, SUITE 300  
CARY, NC 27513

PROJECT INFORMATION:


**AT&T #: 368-615**  
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RALEIGH, NC 27601  
(WAKE COUNTY)

PLANS PREPARED BY:



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326 TRYON ROAD  
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N.C. LICENSE # C-1794

SEAL:



December 14, 2016

1	12-14-16	CONSTRUCTION
0	10-18-16	PRELIMINARY
REV	DATE	ISSUED FOR:

DRAWN BY: CHECKED BY:

SHEET TITLE:

**CONDUIT  
PENETRATION  
DETAILS III**

SHEET NUMBER:	REVISION:
<b>C-8</b>	<b>1</b>
	TEP #: 32795.80932



SCOPE:

1. PROVIDE LABOR, MATERIALS, INSPECTION, AND TESTING TO PROVIDE CODE COMPLIANCE FOR ELECTRIC, TELEPHONE, AND GROUNDING/LIGHTNING SYSTEMS.

CODES:

1. THE INSTALLATION SHALL COMPLY WITH APPLICABLE LAWS AND CODES. THESE INCLUDE BUT ARE NOT LIMITED TO THE LATEST ADOPTED EDITIONS OF:
- A. THE NATIONAL ELECTRICAL SAFETY CODE
  - B. THE NATIONAL ELECTRIC CODE – NFPA-70
  - C. REGULATIONS OF THE SERVING UTILITY COMPANY
  - D. LOCAL AND STATE AMENDMENTS
  - E. THE INTERNATIONAL ELECTRIC CODE – IEC (WHERE APPLICABLE)
2. PERMITS REQUIRED SHALL BE OBTAINED BY THE CONTRACTOR.
3. AFTER COMPLETION AND FINAL INSPECTION OF THE WORK, THE OWNER SHALL BE FURNISHED A CERTIFICATE OF COMPLETION AND APPROVAL.

TESTING:

1. UPON COMPLETION OF THE INSTALLATION, OPERATE AND ADJUST THE EQUIPMENT AND SYSTEMS TO MEET SPECIFIED PERFORMANCE REQUIREMENTS. THE TESTING SHALL BE DONE BY QUALIFIED PERSONNEL.

GUARANTEE:

1. IN ADDITION TO THE GUARANTEE OF THE EQUIPMENT BY THE MANUFACTURER, EACH PIECE OF EQUIPMENT SPECIFIED HEREIN SHALL ALSO BE GUARANTEED FOR DEFECTS OF MATERIAL OR WORKMANSHIP OCCURRING DURING A PERIOD OF ONE (1) YEAR FROM FINAL ACCEPTANCE OF THE WORK BY THE OWNER AND WITHOUT EXPENSE TO THE OWNER.
2. THE WARRANTEE CERTIFICATES & GUARANTEES FURNISHED BY THE MANUFACTURERS SHALL BE TURNED OVER TO THE OWNER.

UTILITY CO-ORDINATION:

1. CONTRACTOR SHALL COORDINATE WORK WITH THE POWER AND TELEPHONE COMPANIES AND SHALL COMPLY WITH THE SERVICE REQUIREMENTS OF EACH UTILITY COMPANY.

EXAMINATION OF SITE:

1. PRIOR TO BEGINNING WORK, THE CONTRACTOR SHALL VISIT THE SITE OF THE JOB AND SHALL FAMILIARIZE HIMSELF WITH THE CONDITIONS AFFECTING THE PROPOSED ELECTRICAL INSTALLATION AND SHALL MAKE PROVISIONS AS TO THE COST THEREOF. FAILURE TO COMPLY WITH THE INTENT OF THIS SECTION WILL IN NO WAY RELIEVE THE CONTRACTOR OF PERFORMING THE WORK NECESSARY FOR A COMPLETE AND WORKING SYSTEM OR SYSTEMS.

CUTTING, PATCHING AND EXCAVATION:

1. COORDINATION OF SLEEVES, CHASES, ETC., BETWEEN SUBCONTRACTORS WILL BE REQUIRED PRIOR TO THE CONSTRUCTION OF ANY PORTION OF THE WORK. CUTTING AND PATCHING OF WALLS, PARTITIONS, FLOORS, AND CHASES IN CONCRETE, WOOD, STEEL OR MASONRY SHALL BE DONE AS PROVIDED ON THE DRAWINGS.
2. NECESSARY EXCAVATIONS AND BACKFILLING INCIDENTAL TO THE ELECTRICAL WORK SHALL BE PROVIDED BY THE ELECTRICAL CONTRACTOR UNLESS SPECIFICALLY NOTED OTHERWISE ON THE DRAWING.
3. SEAL PENETRATIONS THROUGH RATED WALLS, FLOORS, ETC., WITH APPROVED METHOD AS LISTED BY UL.

RACEWAYS / CONDUITS GENERAL:

1. CONDUCTORS SHALL BE INSTALLED IN LISTED RACEWAYS. CONDUIT SHALL BE RIGID STEEL, EMT, SCH40 PVC, OR SCH80PVC AS INDICATED ON THE DRAWINGS. THE RACEWAY SYSTEM SHALL BE COMPLETE BEFORE INSTALLING CONDUCTORS.
2. EXTERIOR RACEWAYS AND GROUNDING SLEEVES SHALL BE SEALED AT POINTS OF ENTRANCE AND EXIT. THE RACEWAY SYSTEM SHALL BE BONDED PER NEC.

EXTERIOR CONDUIT:

1. EXPOSED CONDUIT SHALL BE NEATLY INSTALLED AND RUN PARALLEL OR PERPENDICULAR TO STRUCTURAL ELEMENTS. SUPPORTS AND MOUNTING HARDWARE SHALL BE HOT DIPPED GALVANIZED STEEL.
2. THE CONDUIT SHALL BE RIGID STEEL AT GRADE TRANSITIONS OR WHERE EXPOSED TO DAMAGE.
3. UNDERGROUND CONDUITS SHALL BE RIGID STEEL, SCH40 PVC, OR SCH80 PVC AS INDICATED ON THE DRAWINGS.
4. BURIAL DEPTH OF CONDUITS SHALL BE AS REQUIRED BY CODE FOR EACH SPECIFIC CONDUIT TYPE AND APPLICATION, BUT SHALL NOT BE LESS THAN THE FROST DEPTH AT THE SITE.
5. CONDUIT ROUTES ARE SCHEMATIC. CONTRACTOR SHALL FIELD VERIFY ROUTES BEFORE BID. COORDINATE ROUTE WITH WIRELESS CARRIER AND/OR BUILDING OWNER.

INTERIOR CONDUIT:

1. CONCEALED CONDUIT IN WALLS OR INTERIOR SPACES ABOVE GRADE MAY BE EMT OR PVC.
2. CONDUIT RUNS SHALL USE APPROVED COUPLINGS AND CONNECTORS. PROVIDE INSULATED BUSHING FOR ALL CONDUIT TERMINATIONS. CONDUIT RUNS IN A WET LOCATION SHALL HAVE WATERPROOF FITTINGS.
3. PROVIDE SUPPORTS FOR CONDUITS IN ACCORDANCE WITH NEC REQUIREMENTS. CONDUITS SHALL BE SIZED AS REQUIRED BY NEC.

EQUIPMENT:

1. DISCONNECT SWITCHES SHALL BE SERVICE ENTRANCE RATED, HEAVY DUTY TYPE.
2. CONTRACTOR SHALL VERIFY MAXIMUM AVAILABLE FAULT CURRENT AND COORDINATE INSTALLATION WITH THE LOCAL UTILITY BEFORE STARTING WORK. CONTRACTOR WILL VERIFY THAT EXISTING CIRCUIT BREAKERS ARE RATED FOR MORE THAN AVAILABLE FAULT CURRENT AND REPLACE AS NECESSARY.
3. NEW CIRCUIT BREAKERS SHALL BE RATED TO WITHSTAND THE MAXIMUM AVAILABLE FAULT CURRENT AS DETERMINED BY THE LOCAL UTILITY.

CONDUCTORS:

1. FURNISH AND INSTALL CONDUCTORS SPECIFIED IN THE DRAWINGS. CONDUCTORS SHALL BE COPPER AND SHALL HAVE TYPE THWN (MIN) (75° C) INSULATION, RATED FOR 600 VOLTS.
2. THE USE OF ALUMINUM CONDUCTORS SHALL BE LIMITED TO THE SERVICE FEEDERS INSTALLED BY THE UTILITY.
3. CONDUCTORS SHALL BE PROVIDED AND INSTALLED AS FOLLOWS:
- A. MINIMUM WIRE SIZE SHALL BE #12 AWG.
  - B. CONDUCTORS SIZE #8 AND LARGER SHALL BE STRANDED. CONDUCTORS SIZED #10 AND #12 MAY BE SOLID OR STRANDED.
  - C. CONNECTION FOR #10 AWG #12 AWG SHALL BE BY TWISTING TIGHT AND INSTALLING INSULATED PRESSURE OR WIRE NUT CONNECTIONS.
  - D. CONNECTION FOR #8 AWG AND LARGER SHALL BE BY USE OF STEEL CRIMP-ON SLEEVES WITH NYLON INSULATOR.

3. CONDUCTORS SHALL BE COLOR CODED IN ACCORDANCE WITH NEC STANDARDS.

UL COMPLIANCE:





1. ELECTRICAL MATERIALS, DEVICES, CONDUCTORS, APPLIANCES, AND EQUIPMENT SHALL BE LABELED/LISTED BY UL OR ACCEPTED BY JURISDICTION (I.E., LOCAL COUNTY OR STATE) APPROVED THIRD PARTY TESTING AGENCY.

GROUNDING:

1. ELECTRICAL NEUTRALS, RACEWAYS AND NON-CURRENT CARRYING PARTS OF ELECTRICAL EQUIPMENT AND ASSOCIATED ENCLOSURES SHALL BE GROUNDED IN ACCORDANCE WITH NEC ARTICLE 250. THIS SHALL INCLUDE NEUTRAL CONDUCTORS, CONDUITS, SUPPORTS, CABINETS, BOXES, GROUND BUSSES, ETC. THE NEUTRAL CONDUCTOR FOR EACH SYSTEM SHALL BE GROUNDED AT A SINGLE POINT.
2. PROVIDE GROUND CONDUCTOR IN RACEWAYS PER NEC.
3. PROVIDE BONDING AND GROUND TO MEET NFPA 780 – "LIGHTNING PROTECTION" AS A MINIMUM.
4. PROVIDE GROUNDING SYSTEM AS INDICATED ON THE DRAWINGS, AS REQUIRED BY THE NATIONAL ELECTRIC CODE, RADIO EQUIPMENT MANUFACTURERS, AND MOTOROLA R56 (AS APPLICABLE).

ABBREVIATIONS AND LEGEND

A – AMPERE	PNLBD – PANELBOARD
AFG – ABOVE FINISHED GRADE	PVC – RIGID NON-METALLIC CONDUIT
ATS – AUTOMATIC TRANSFER SWITCH	RGS – RIGID GALVANIZED STEEL CONDUIT
AWG – AMERICAN WIRE GAUGE	SW – SWITCH
BCW – BARE COPPER WIRE	TGB – TOWER GROUND BAR
BFG – BELOW FINISHED GRADE	UL – UNDERWRITERS LABORATORIES
BKR – BREAKER	V – VOLTAGE
C – CONDUIT	W – WATTS
CKT – CIRCUIT	XFMR – TRANSFORMER
DISC – DISCONNECT	XMTR – TRANSMITTER
EGR – EXTERNAL GROUND RING	
EMT – ELECTRIC METALLIC TUBING	
FSC – FLEXIBLE STEEL CONDUIT	
GEN – GENERATOR	
GPS – GLOBAL POSITIONING SYSTEM	
GRD – GROUND	
IGB – ISOLATED GROUND BAR	
IGR – INTERIOR GROUND RING (HALO)	
KW – KILOWATTS	
NEC – NATIONAL ELECTRIC CODE	
PCS – PERSONAL COMMUNICATION SYSTEM	
PH – PHASE	
PNL – PANEL	

----	E	----	UNDERGROUND ELECTRICAL CONDUIT
----	T	----	UNDERGROUND TELEPHONE CONDUIT
			KILOWATT-HOUR METER
-----			UNDERGROUND BONDING AND GROUNDING CONDUCTOR.
			GROUND ROD
			CADWELD
			GROUND ROD WITH INSPECTION WELL

PLANS PREPARED FOR:



2002 PISGAH CHURCH ROAD, SUITE 300  
GREENSBORO, NC 27455

PLANS PREPARED FOR:



1000 CENTRE GREEN WAY, SUITE 300  
CARY, NC 27513

PROJECT INFORMATION:

**AT&T #: 368-615**

5 WEST HARGETT STREET  
RALEIGH, NC 27601  
(WAKE COUNTY)

PLANS PREPARED BY:



**TOWER ENGINEERING PROFESSIONALS**  
326 TRYON ROAD  
RALEIGH, NC 27603-5263  
OFFICE: (919) 661-6351  
www.tepgroup.net  
N.C. LICENSE # C-1794

SEAL:



January 6, 2017

2	01-06-17	CONSTRUCTION
1	12-14-16	CONSTRUCTION
REV	DATE	ISSUED FOR:

DRAWN BY: CSN CHECKED BY: FTH

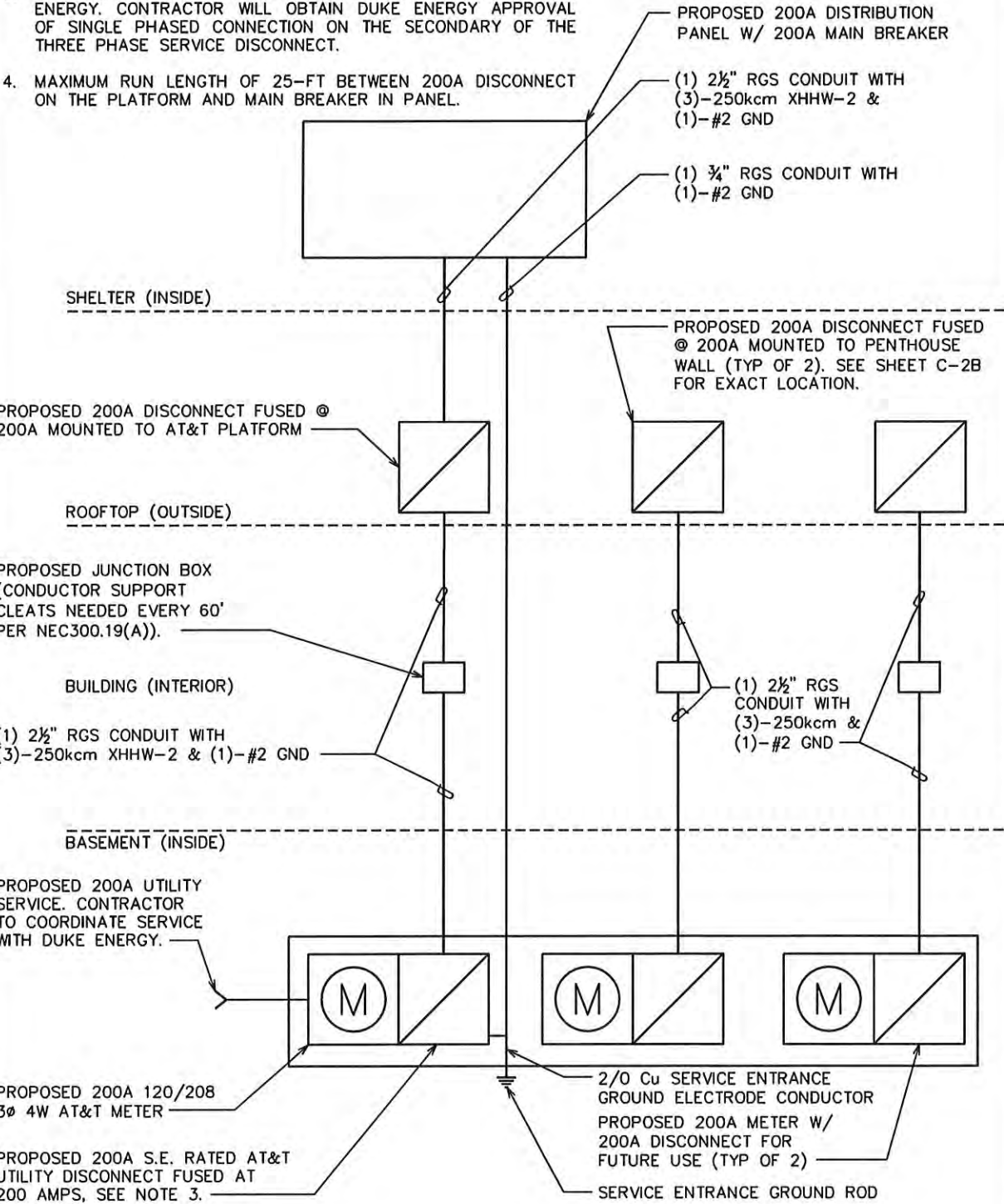
SHEET TITLE:  
**ELECTRICAL NOTES**

SHEET NUMBER: <b>E-1</b>	REVISION: <b>2</b> TEP #:32795.80932
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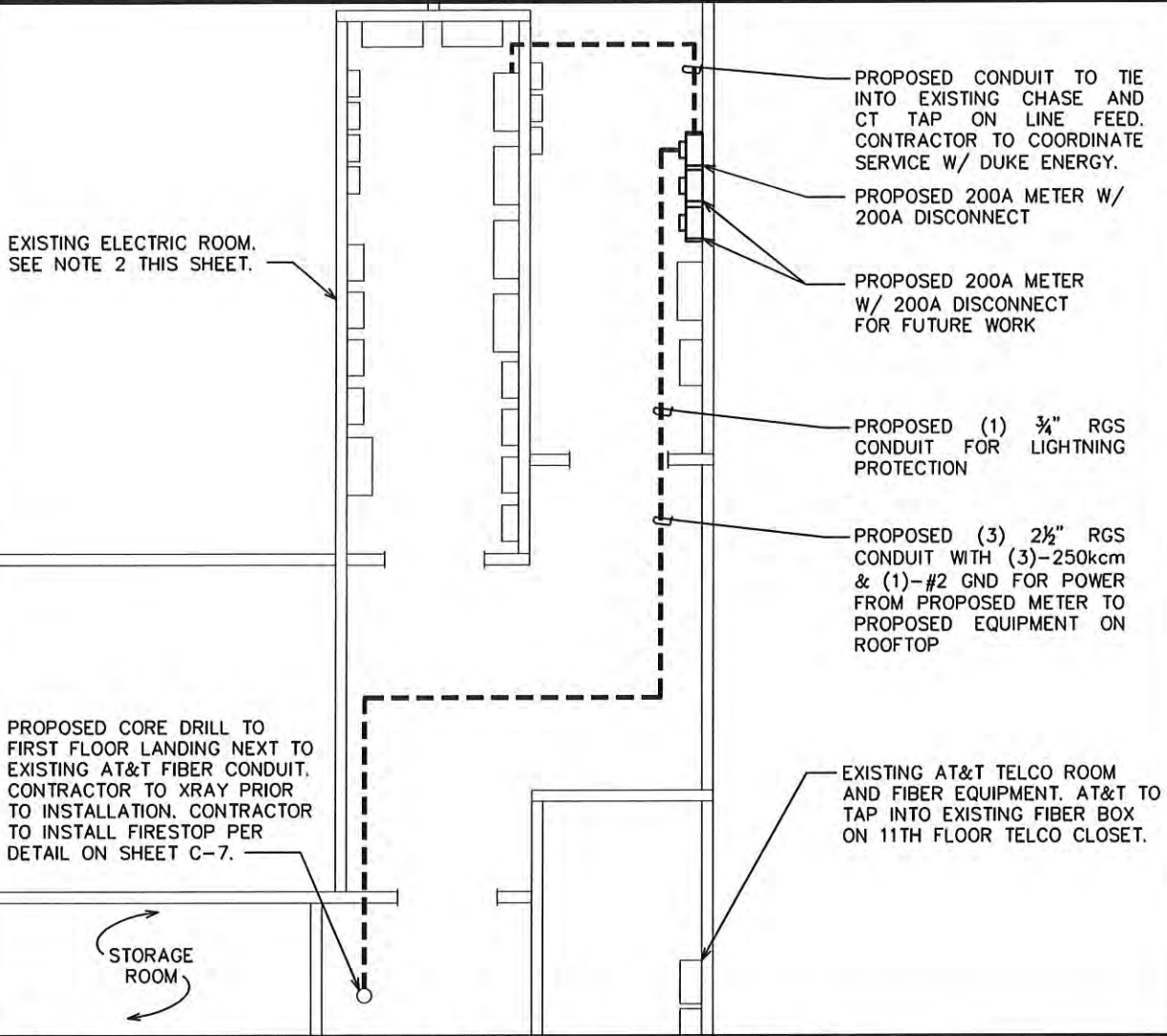
NOTES:

- 1. CONTRACTOR TO PROVIDE PHENOLIC LABELS AS NECESSARY TO COMPLY WITH NEC LABELING REQUIREMENTS IDENTIFYING UTILITY DISCONNECT SWITCH, AVAILABLE FAULT CURRENT, ARC-FLASH HAZARD, ETC.
- 2. CONTRACTOR TO VERIFY THAT THE NUMBER OF METER DISCONNECTS IN THE ELECTRICAL ROOM DOES NOT EXCEED THE NUMBER OF DISCONNECTS ALLOWED IN ONE AREA.
- 3. CONTRACTOR WILL COORDINATE UTILITY SERVICE WITH DUKE ENERGY. CONTRACTOR WILL OBTAIN DUKE ENERGY APPROVAL OF SINGLE PHASE CONNECTION ON THE SECONDARY OF THE THREE PHASE SERVICE DISCONNECT.
- 4. MAXIMUM RUN LENGTH OF 25-FT BETWEEN 200A DISCONNECT ON THE PLATFORM AND MAIN BREAKER IN PANEL.



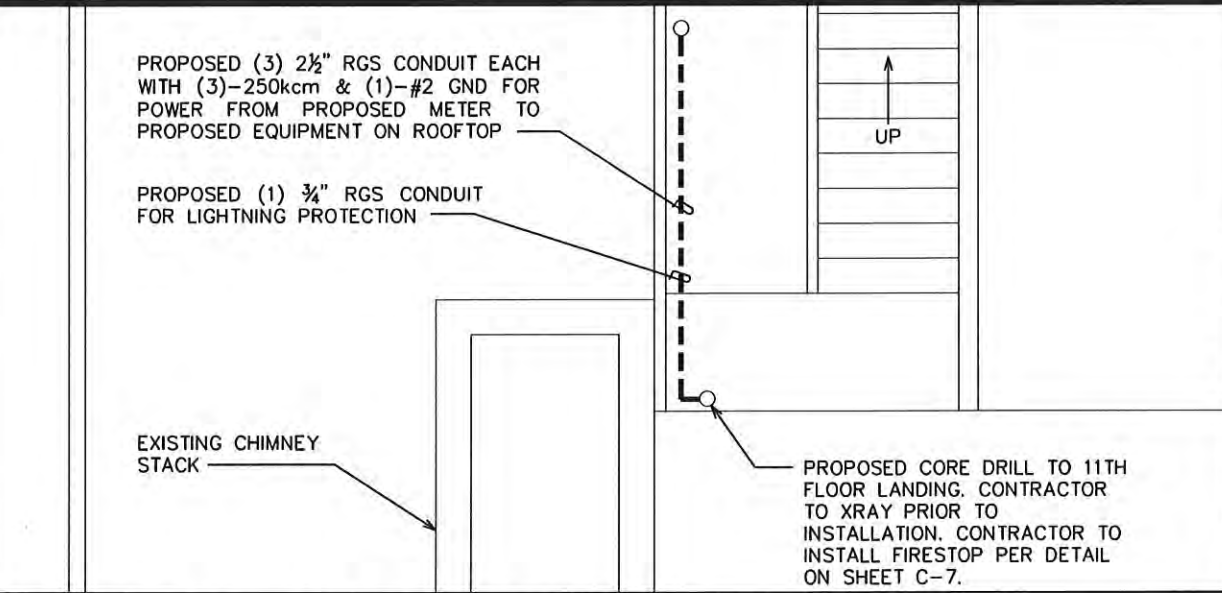
ONE-LINE DIAGRAM

SCALE: N.T.S.



ELECTRICAL ROUTING PLAN - BASEMENT LEVEL

SCALE: N.T.S.



POWER ROUTING PLAN - 1ST LEVEL

SCALE: N.T.S.

PLANS PREPARED FOR:



2002 PISGAH CHURCH ROAD, SUITE 300  
GREENSBORO, NC 27455

PLANS PREPARED FOR:



1000 CENTRE GREEN WAY, SUITE 300  
CARY, NC 27513

PROJECT INFORMATION:

AT&T #: 368-615

5 WEST HARGETT STREET  
RALEIGH, NC 27601  
(WAKE COUNTY)

PLANS PREPARED BY:



TOWER ENGINEERING PROFESSIONALS

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N.C. LICENSE # C-1794

SEAL:



3	01-25-17	CONSTRUCTION
2	01-06-17	CONSTRUCTION
REV	DATE	ISSUED FOR:

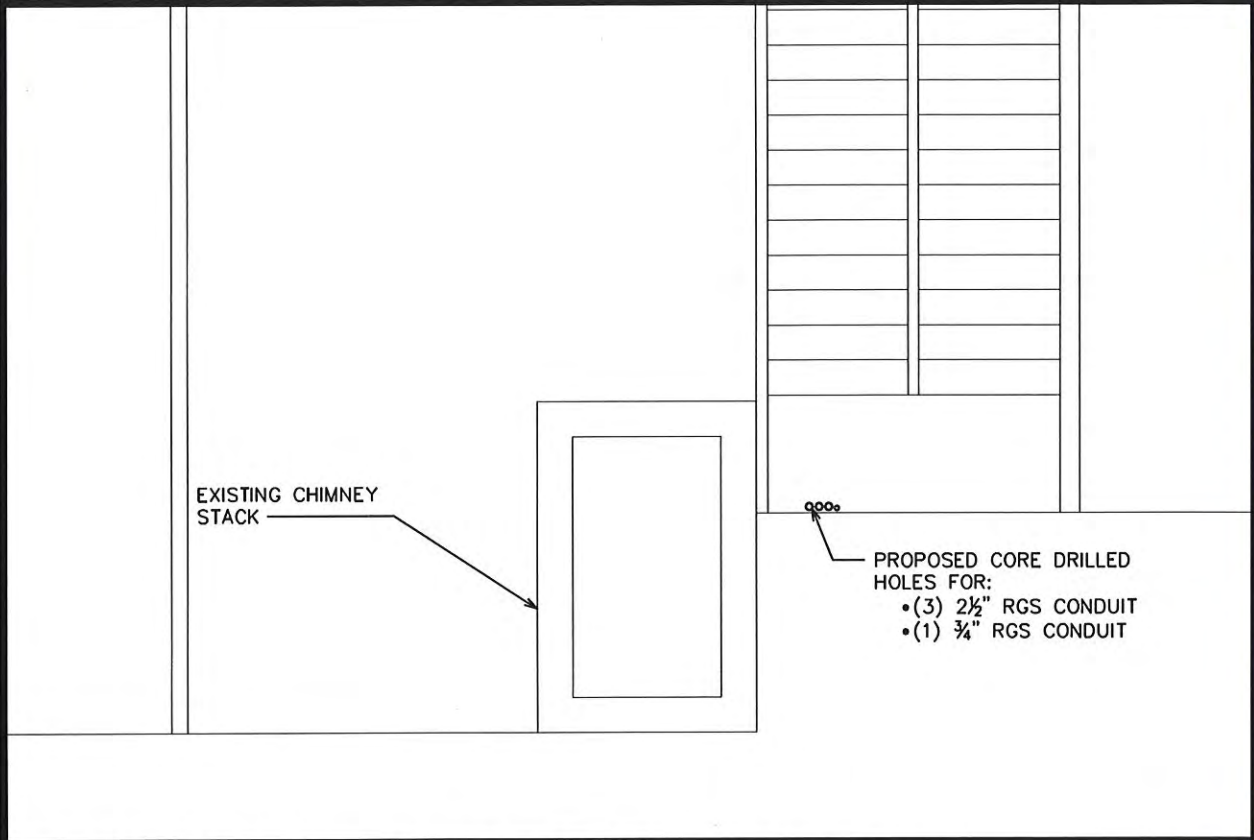
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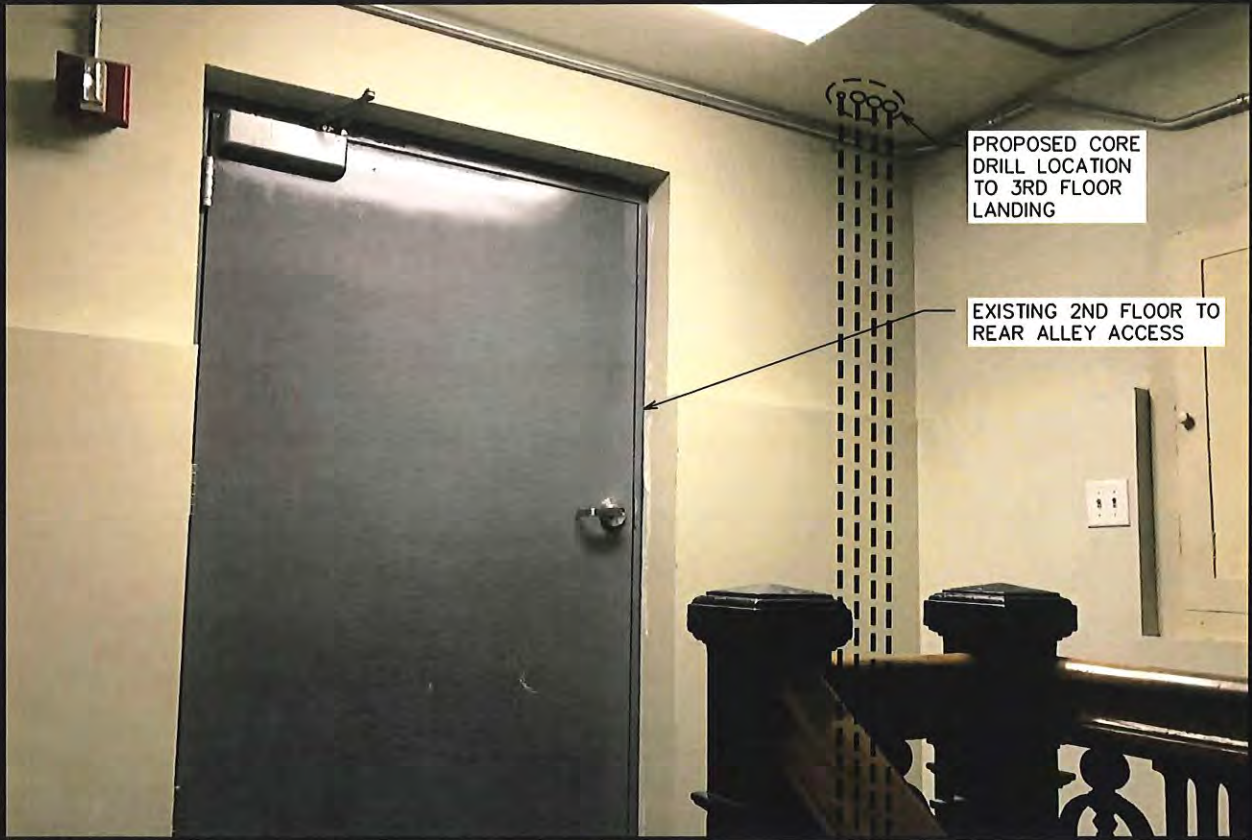
ELECTRICAL ROUTING  
DETAILS I

SHEET NUMBER:	REVISION:
E-2	3
	TEP #:32795.80932

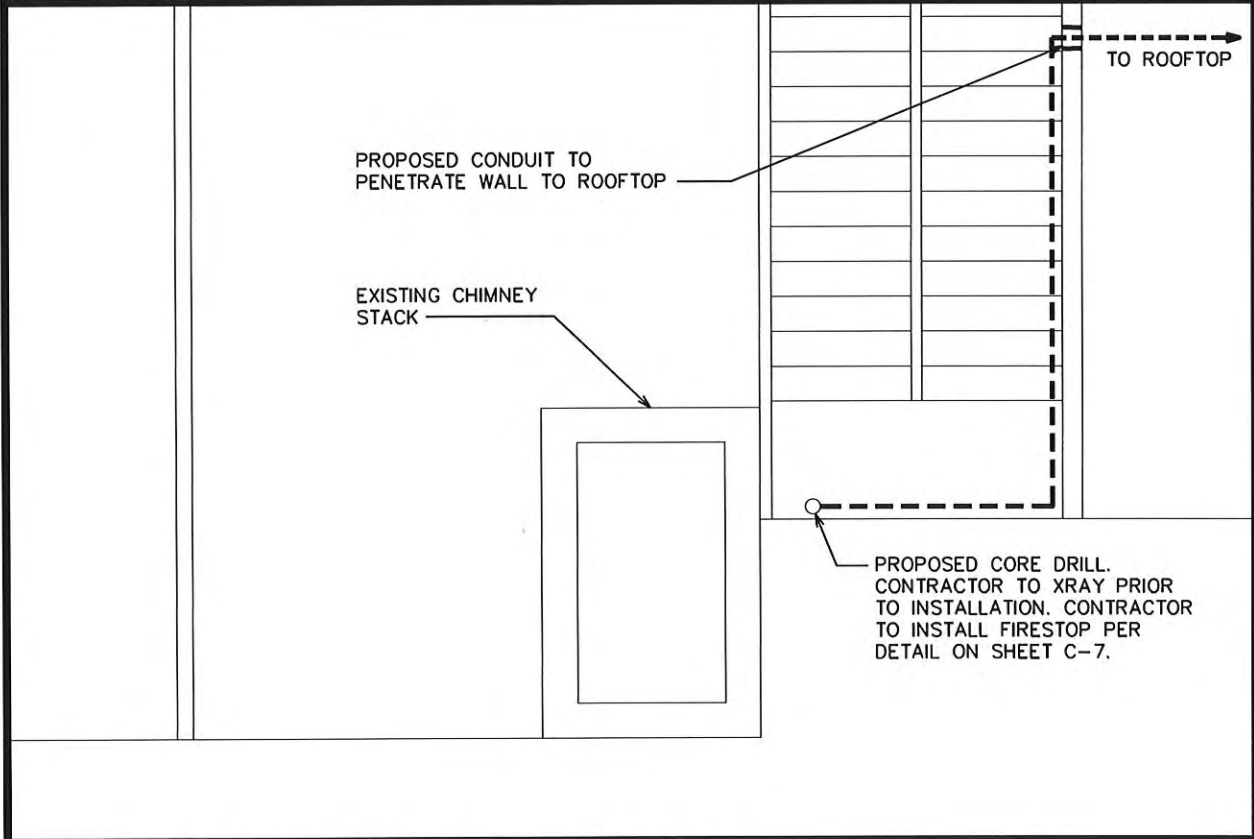




**POWER ROUTING PLAN - 2ND THROUGH 11TH LEVEL**  
SCALE: N.T.S.



**2ND FLOOR CORE DRILL LOCATION**  
SCALE: N.T.S.



**POWER ROUTING PLAN - PENTHOUSE**  
SCALE: N.T.S.



**PENTHOUSE CORE DRILL LOCATION**  
SCALE: N.T.S.

PLANS PREPARED FOR:

  
2002 PISGAH CHURCH ROAD, SUITE 300  
GREENSBORO, NC 27455

PLANS PREPARED FOR:

  
Network Solutions  
1000 CENTRE GREEN WAY, SUITE 300  
CARY, NC 27513

PROJECT INFORMATION:

**AT&T #: 368-615**  
5 WEST HARGETT STREET  
RALEIGH, NC 27601  
(WAKE COUNTY)

PLANS PREPARED BY:

  
**TOWER ENGINEERING PROFESSIONALS**  
326 TRYON ROAD  
RALEIGH, NC 27603-5263  
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N.C. LICENSE # C-1794

SEAL:

  
January 16, 2017

REV	DATE	ISSUED FOR:
3	01-16-17	CONSTRUCTION
2	01-06-17	CONSTRUCTION

DRAWN BY: LMM CHECKED BY: FTH

SHEET TITLE:

**ELECTRICAL ROUTING DETAILS II**

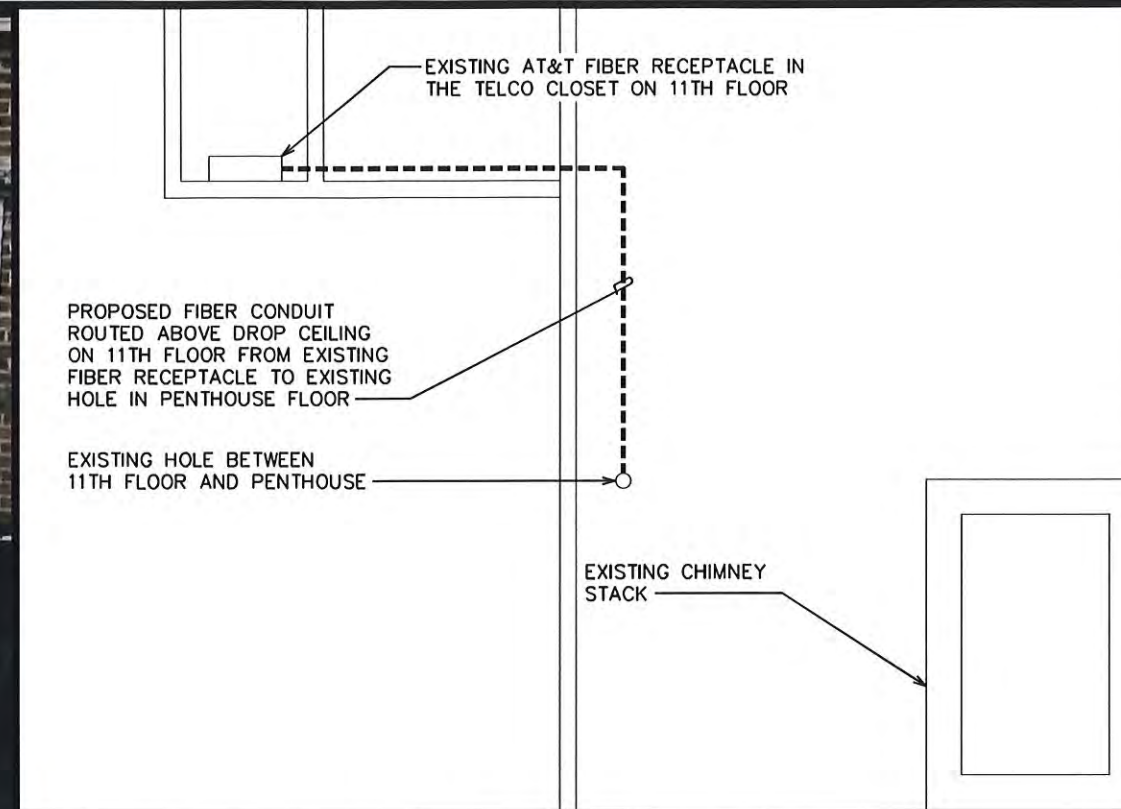
SHEET NUMBER: **E-2A** REVISION: **3**  
TEP #: 32795.80932





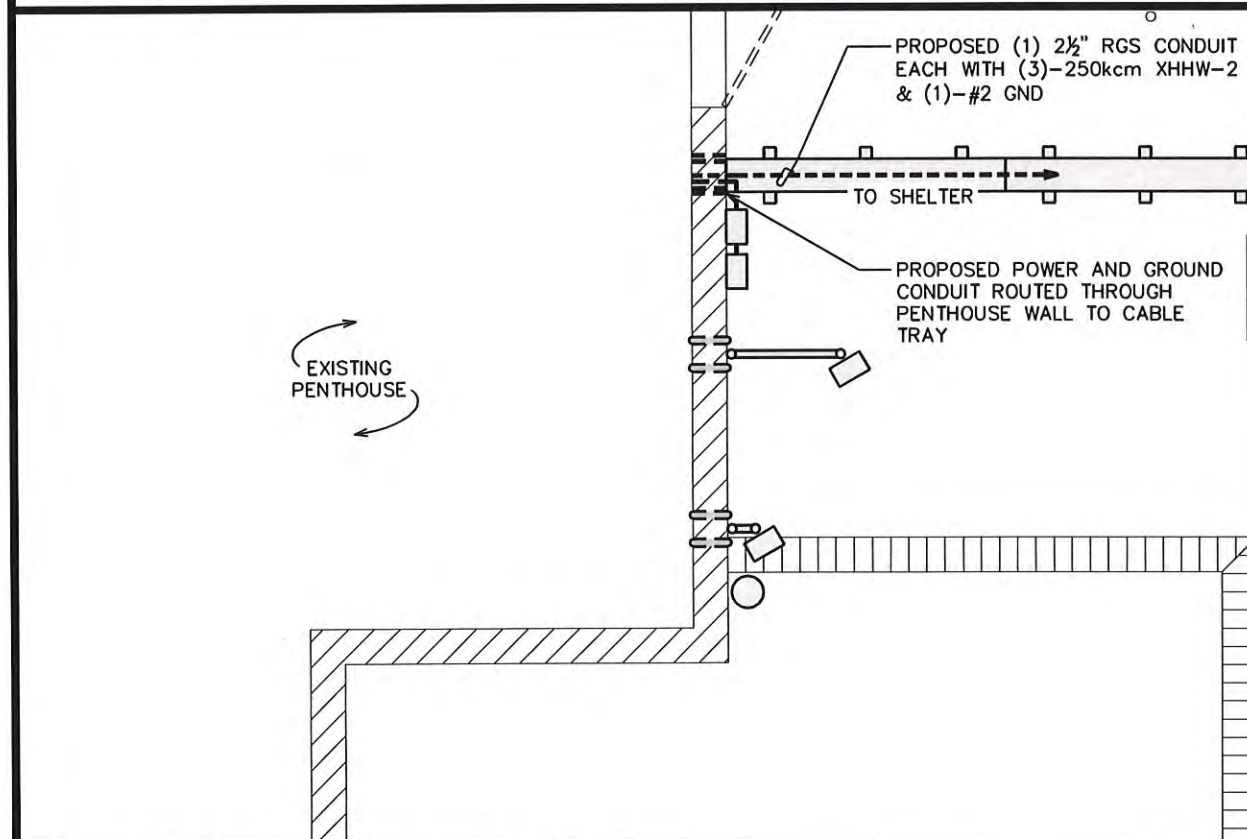
### ROOFTOP CORE DRILL LOCATION

SCALE: N.T.S.



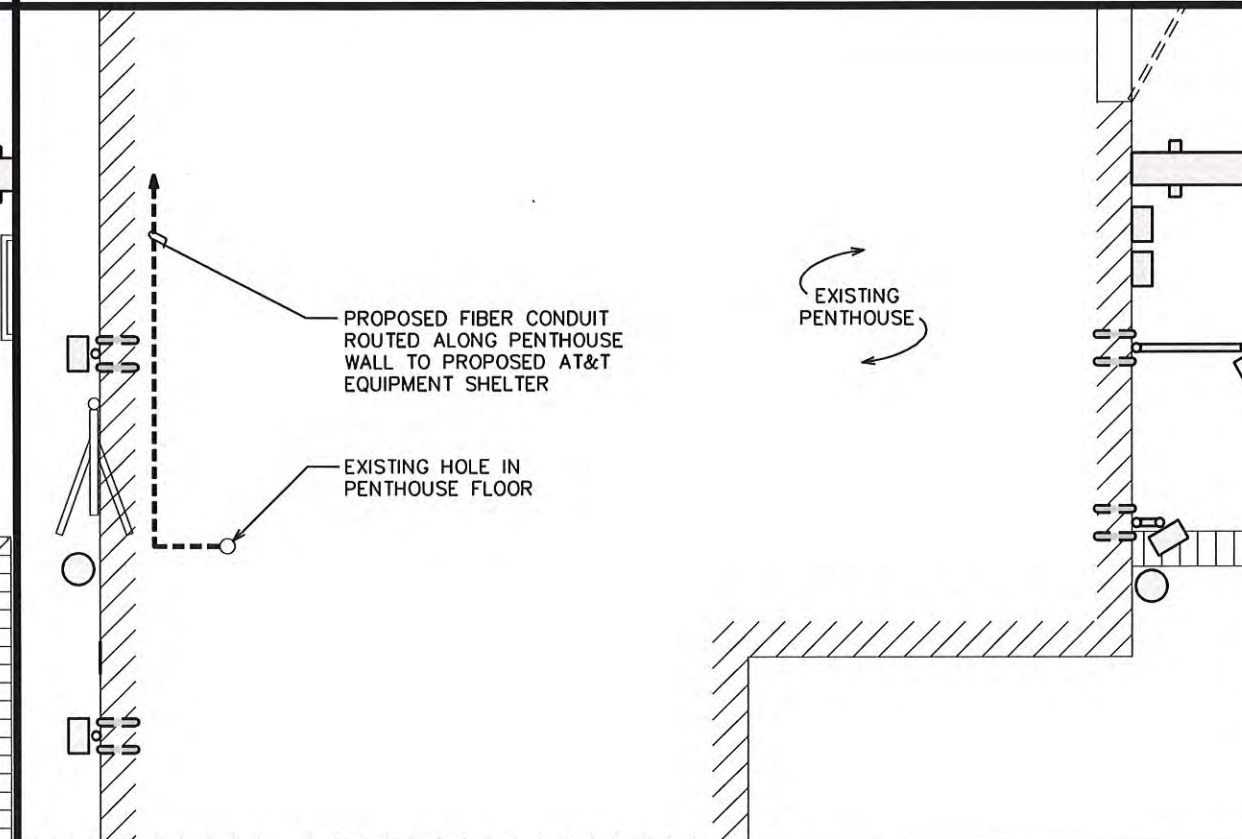
### FIBER ROUTING PLAN - 11TH LEVEL

SCALE: N.T.S.



### POWER ROUTING PLAN - ROOFTOP

SCALE: N.T.S.



### FIBER ROUTING PLAN - ROOFTOP

SCALE: N.T.S.

PLANS PREPARED FOR:



2002 PISGAH CHURCH ROAD, SUITE 300  
GREENSBORO, NC 27455

PLANS PREPARED FOR:



1000 CENTRE GREEN WAY, SUITE 300  
CARY, NC 27513

PROJECT INFORMATION:

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5 WEST HARGETT STREET  
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PLANS PREPARED BY:



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N.C. LICENSE # C-1794

SEAL:



January 25, 2017

3	01-25-17	CONSTRUCTION
2	01-06-17	CONSTRUCTION
REV	DATE	ISSUED FOR:

DRAWN BY: LMM CHECKED BY: FTH

SHEET TITLE:

**ELECTRICAL ROUTING  
DETAILS III**

SHEET NUMBER: REVISION:

**E-2B**

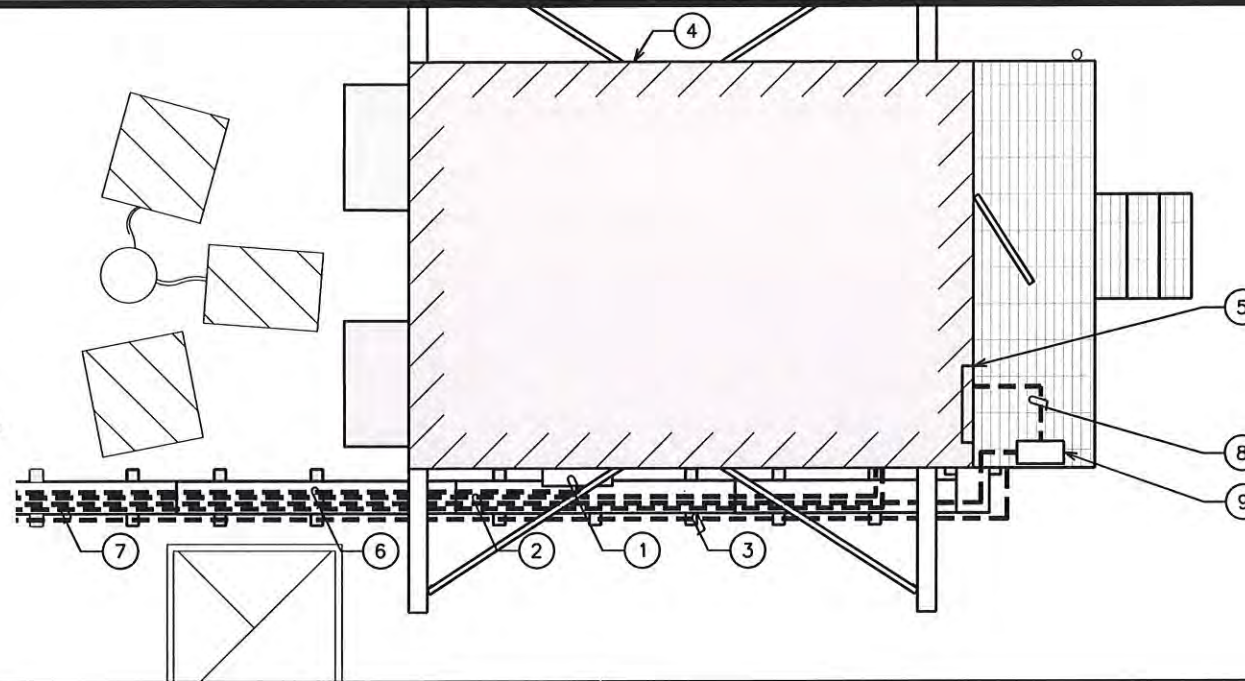
**3**

TEP #:32795.80932



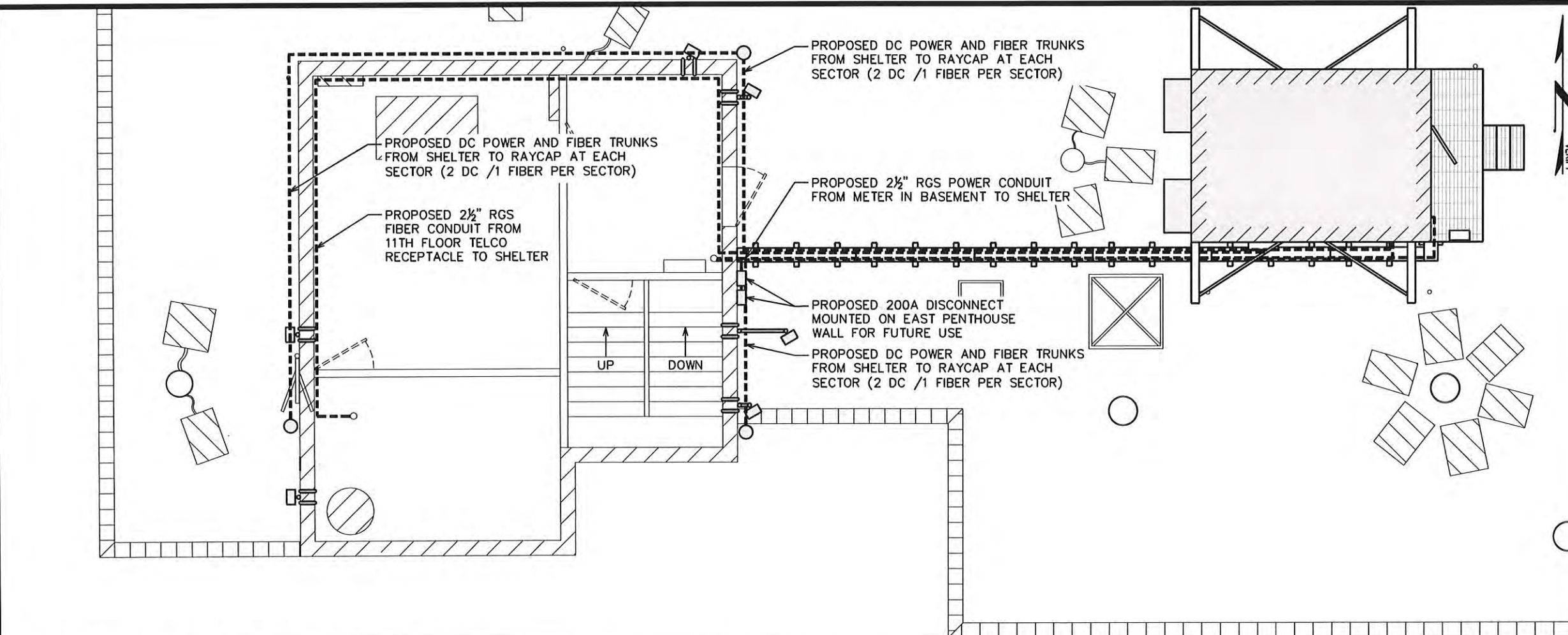
## PLAN NOTES:

- ① (1) - 2½" RGS FIBER CONDUIT FROM 11TH FLOOR TELCO RECEPTACLE TO SHELTER
- ② (1) - 2½" RGS POWER CONDUIT FROM METER IN BASEMENT TO SHELTER
- ③ (1) - ¾" GROUND CONDUIT FROM PLATFORM GROUND BAR TO S.E. RATED GROUND ROD IN BASEMENT
- ④ PROPOSED AT&T EQUIPMENT SHELTER
- ⑤ PROPOSED DISTRIBUTION PANEL INSIDE SHELTER
- ⑥ PROPOSED 3" CONDUIT FOR FIBER TO PROPOSED ANTENNA (TYP). ALL RUNS NOT SHOWN FOR CLARITY.
- ⑦ PROPOSED 3" CONDUIT FOR POWER TO PROPOSED ANTENNA (TYP). ALL RUNS NOT SHOWN FOR CLARITY.
- ⑧ (1) - 2½" RGS POWER CONDUIT FROM DISCONNECT TO PANEL INSIDE SHELTER. CONTRACTOR TO VERIFY RUN LENGTH FROM 200A DISCONNECT ON PLATFORM TO MAIN BREAKER IN PANEL IS NO LONGER THAN 25'
- ⑨ PROPOSED 200A DISCONNECT MOUNTED TO PLATFORM HANDRAIL



## SHELTER FIBER/POWER ROUTING PLAN

SCALE: N.T.S.



## ROOFTOP FIBER/POWER ROUTING PLAN

SCALE: ⅛" = 1'-0"

0 8 16  
SCALE IN FEET

PLANS PREPARED FOR:



2002 PISGAH CHURCH ROAD, SUITE 300  
GREENSBORO, NC 27455

PLANS PREPARED FOR:



1000 CENTRE GREEN WAY, SUITE 300  
CARY, NC 27513

PROJECT INFORMATION:

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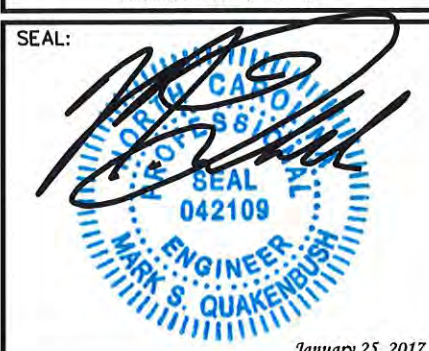
PLANS PREPARED BY:



**TOWER ENGINEERING PROFESSIONALS**

326 TRYON ROAD  
RALEIGH, NC 27603-5263  
OFFICE: (919) 661-6351  
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N.C. LICENSE # C-1794

SEAL:



January 25, 2017

3	01-25-17	CONSTRUCTION
2	01-06-17	CONSTRUCTION
REV	DATE	ISSUED FOR:

DRAWN BY: CSN CHECKED BY: MSQ

SHEET TITLE:

**ROOFTOP  
ROUTING PLAN**

SHEET NUMBER:	REVISION:
<b>E-3</b>	<b>3</b>
	TEP #: 32795.80932

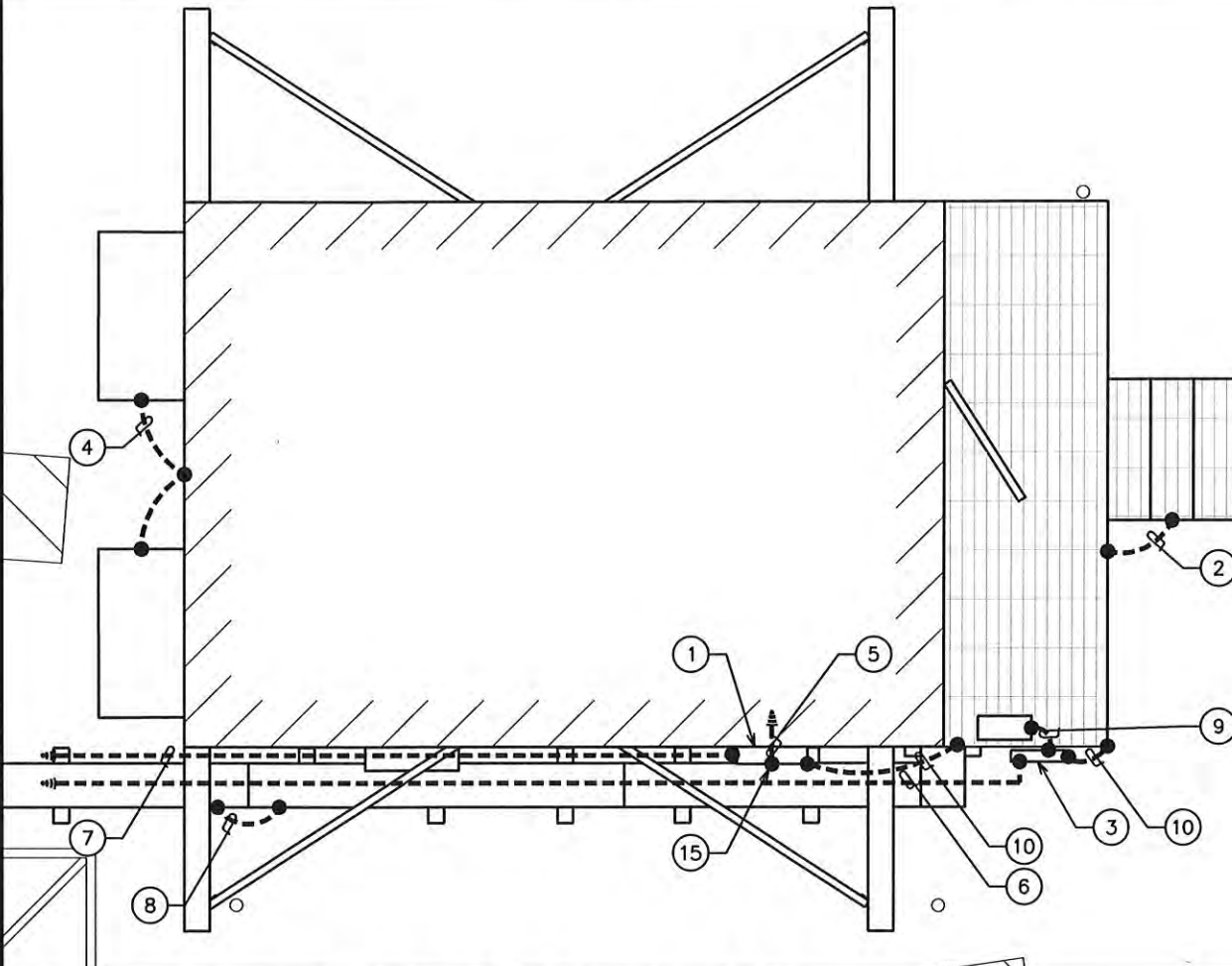


DRAWING NOTES:

- 1 CIGBE MOUNTED ON OUTSIDE OF SHELTER
- 2 #2 AWG BOND BETWEEN PLATFORM MEMBERS (TYP)
- 3 MASTER PLATFORM GROUND BAR
- 4 HVAC GROUNDING MECHANICAL CONNECTIONS AT HVAC UNITS TO PLATFORM STEEL
- 5 #2 AWG BOND FROM GROUND BAR TO HALO GROUND RING (TYP)
- 6 #2 AWG BOND TO SERVICE ENTRANCE GROUND AT GROUND LEVEL. SEE SHEET E-2 FOR ROUTING.
- 7 #2 AWG BOND FROM SHELTER GROUND BAR TO ANTENNA GROUND BAR (TYP)
- 8 #2 AWG BOND BETWEEN CABLE TRAYS (TYP)
- 9 #2 AWG BOND FROM DISCONNECT TO GROUND BAR
- 10 #2 AWG BOND FROM GROUND BAR TO PLATFORM STEEL (TYP)
- 11 ANTENNA GROUND BAR
- 12 #2 AWG BOND TO ANTENNA MOUNTING PIPE (TYP)
- 13 #2 AWG BOND TO DC6 RAYCAP (TYP)
- 14 #2 AWG BOND TO RRUS (TYP)
- 15 CADWELD (TYP)

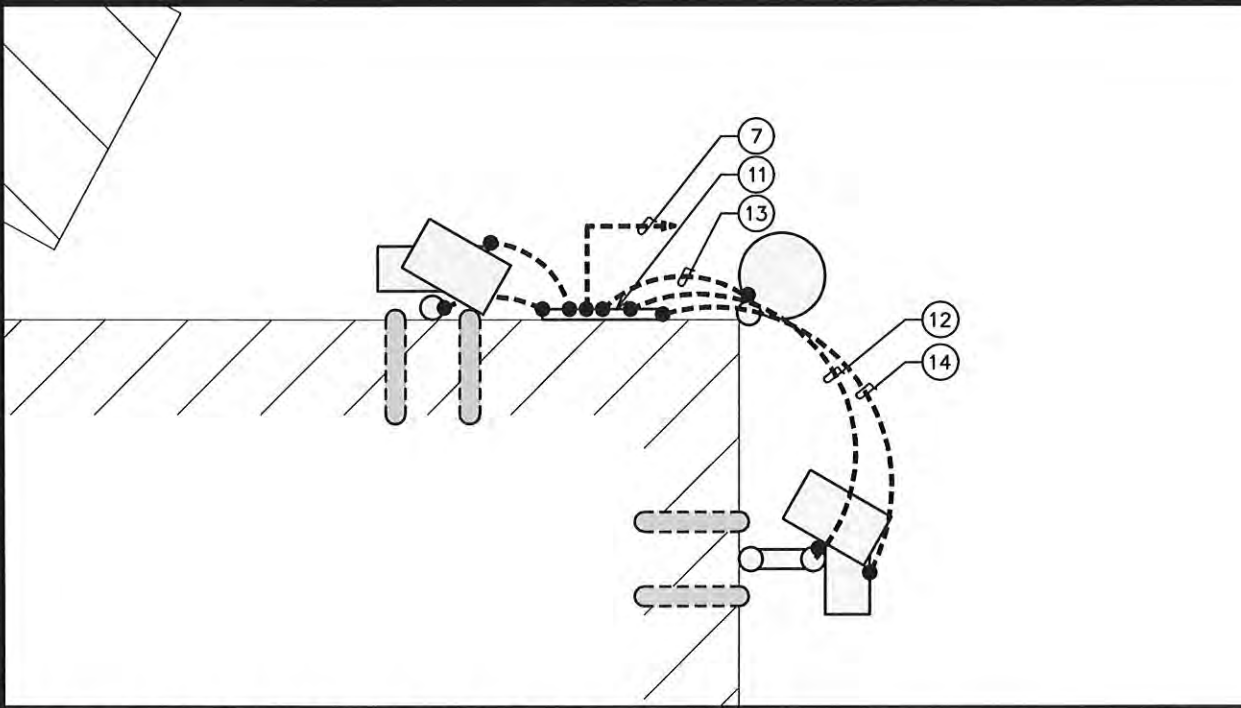
NOTES

SCALE: N.T.S.



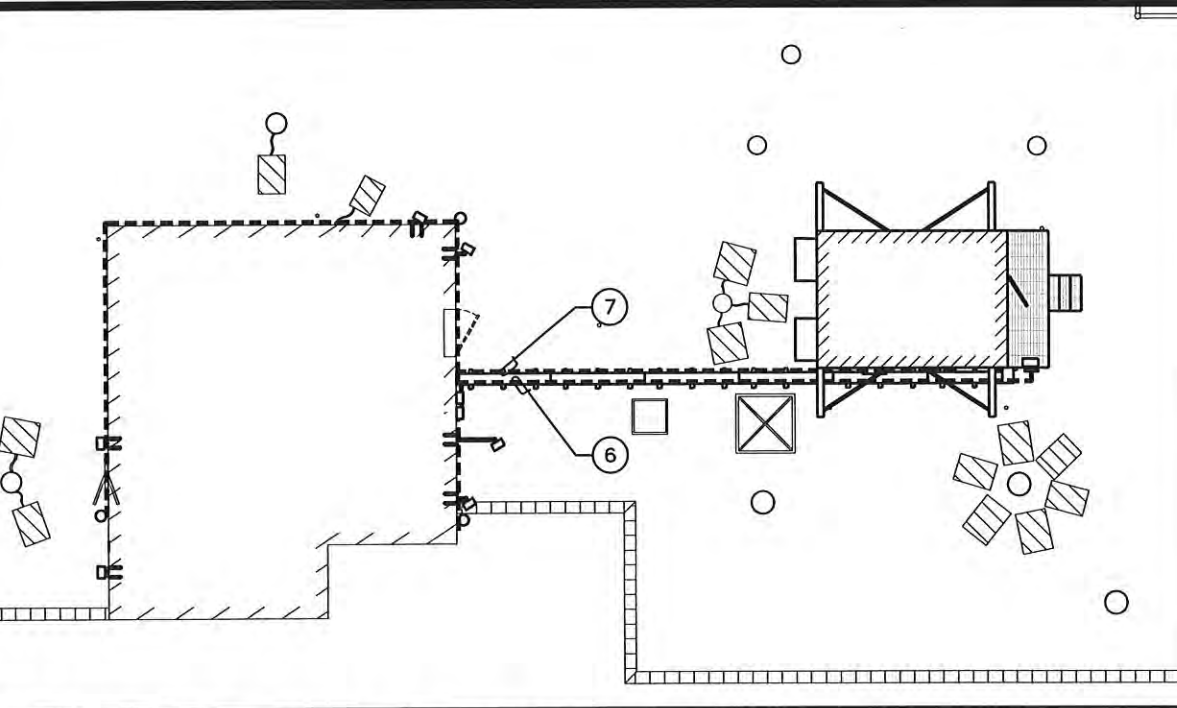
SHELTER & PLATFORM GROUNDING PLAN

SCALE: N.T.S.



TYPICAL ANTENNA GROUNDING

SCALE: N.T.S.



ROOFTOP GROUNDING PLAN

SCALE: N.T.S.

PLANS PREPARED FOR:

2002 PISGAH CHURCH ROAD, SUITE 300  
GREENSBORO, NC 27455

PLANS PREPARED FOR:

1000 CENTRE GREEN WAY, SUITE 300  
CARY, NC 27513

PROJECT INFORMATION:

**AT&T #: 368-615**

5 WEST HARGETT STREET  
RALEIGH, NC 27601  
(WAKE COUNTY)

PLANS PREPARED BY:

**TOWER ENGINEERING PROFESSIONALS**  
326 TRYON ROAD  
RALEIGH, NC 27603-5263  
OFFICE: (919) 661-6351  
www.tepgroup.net  
N.C. LICENSE # C-1794

SEAL:

January 25, 2017

3	01-25-17	CONSTRUCTION
2	01-06-17	CONSTRUCTION
REV	DATE	ISSUED FOR:

DRAWN BY: CSN CHECKED BY: FTH

SHEET TITLE:

**ROOFTOP  
GROUNDING PLAN**

SHEET NUMBER:	REVISION:
<b>E-4</b>	<b>3</b>
TEP #:32795.80932	



NOTE: PANEL LOADING TAKEN FROM 10'-0" X 16'-0" 1HR/2HR STEEL SHELTER DRAWINGS BY CELLXION

PROPOSED 200A, 120/240 VAC AT&T POWER PANEL SCHEDULE																									
LOAD SERVED	VOLT AMPERES (WATTS)		WIRE	BREAKER		CKT #	PHASE	CKT #	BREAKER		WIRE	VOLT AMPERES (WATTS)		LOAD SERVED											
	L1	L2		P	TRIP				TRIP	P		L1	L2												
RECTIFIER #1	1250		-	2	30	1	A	2	40	2	-	2500		3 TON HVAC #1											
		1250				3	B	4					2500												
RECTIFIER #2	1250		-	2	30	5	A	6	40	2	-	2500		3 TON HVAC #2											
		1250				7	B	8					2500												
RECTIFIER #3	1250		-	2	30	9	A	10	-	-	-	-		SPARE											
		1250				11	B	12				-	-	-	-	SPARE									
RECTIFIER #4	1250		-	2	30	13	A	14	20	1	-	540		RECEPTACLES											
		1250				15	B	16				20	1	-		200	INTERIOR LIGHTS								
RECTIFIER #5	1250		-	2	30	17	A	18	20	1	-	200		EXTERIOR LIGHTS											
		1250				19	B	20				-	-	-		-	SPARE								
RECTIFIER #6	1250		-	2	30	21	A	22	-	-	-	-		SPARE											
		1250				23	B	24				-	-	-		-	SPARE								
RECTIFIER #7 (NOT USED)	-		-	2	30	25	A	26	-	-	-	-		SPARE											
		-				27	B	28				-	-	-		-	SPARE								
RECTIFIER #8 (NOT USED)	-		-	2	30	29	A	30	-	-	-	-		SPARE											
		-				31	B	32				-	-	-		-	SPARE								
RECTIFIER #9 (NOT USED)	-		-	2	30	33	A	34	-	-	-	-		SPARE											
		-				35	B	36				-	-	-		-	SPARE								
SPARE	-		-	-	-	37	A	38	-	-	-	-		SPARE											
SPARE		-	-	-	-	39	B	40	-	-	-		-	SPARE											
GFCI	180		-	1	20	41	A	42	-	-	-	-		SPARE											
VOLT AMPS	7680	7500											5740	5200	VOLT AMPS										
						L1 VOLT AMPERES	13420	12700	L2 VOLT AMPERES																
						L2 AMPS	111.8	105.8							L1 AMPS										
						111.8		MAX AMPS																	
						139.8															*MAX AMPS X 125%				

\*A VOLTAGE DROP OF GREATER THAN 3% CAN OCCUR WITH LOADING BEYOND 140A

PLANS PREPARED FOR:



2002 PISGAH CHURCH ROAD, SUITE 300  
GREENSBORO, NC 27455

PLANS PREPARED FOR:



1000 CENTRE GREEN WAY, SUITE 300  
CARY, NC 27513

PROJECT INFORMATION:

**AT&T #: 368-615**

5 WEST HARGETT STREET  
RALEIGH, NC 27601  
(WAKE COUNTY)

PLANS PREPARED BY:



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RALEIGH, NC 27603-5263  
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SEAL:



December 14, 2016

I	12-14-16	CONSTRUCTION
O	10-18-16	PRELIMINARY
REV	DATE	ISSUED FOR:

DRAWN BY: CSN CHECKED BY: MSQ

SHEET TITLE:

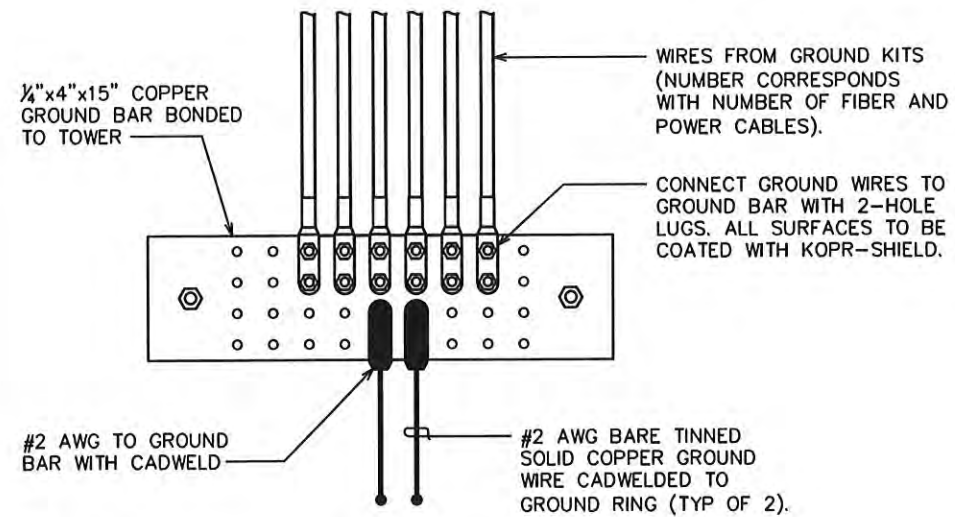
**PANELBOARD  
SCHEDULE**

SHEET NUMBER:	REVISION:
<b>E-5</b>	<b>1</b>
TEP #: 32795.80932	

## PANELBOARD SCHEDULE

SCALE: N.T.S.

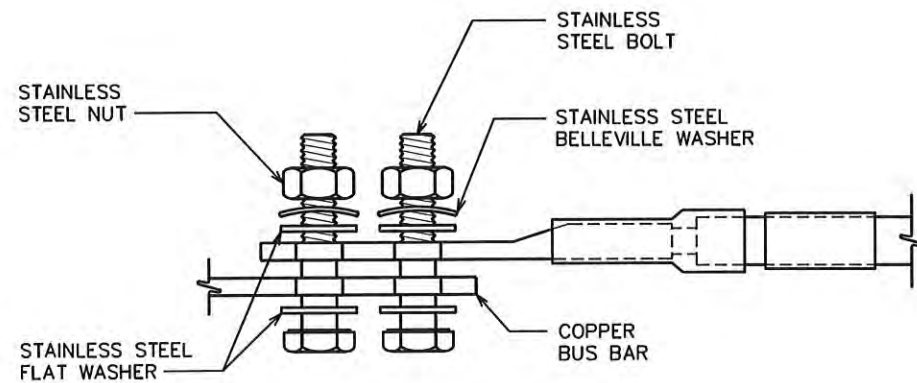




END VIEW

### LOWER GROUND BAR DETAIL

SCALE: N.T.S.



### NOTES:

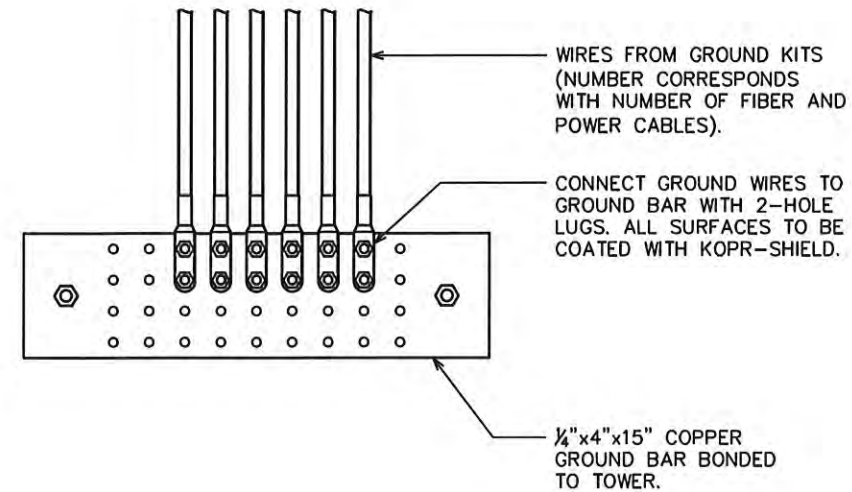
- ALL HARDWARE SHALL BE 18-8 STAINLESS STEEL, INCLUDING THE BELLEVILLE WASHERS. COAT ALL SURFACES WITH KOPR-SHIELD BEFORE MATING.
- FOR GROUND BOND TO STEEL ONLY; INSERT A DRAGON TOOTH WASHER BETWEEN THE LUG AND STEEL. COAT ALL SURFACES WITH KOPR-SHIELD.

### LUG DETAIL

SCALE: N.T.S.

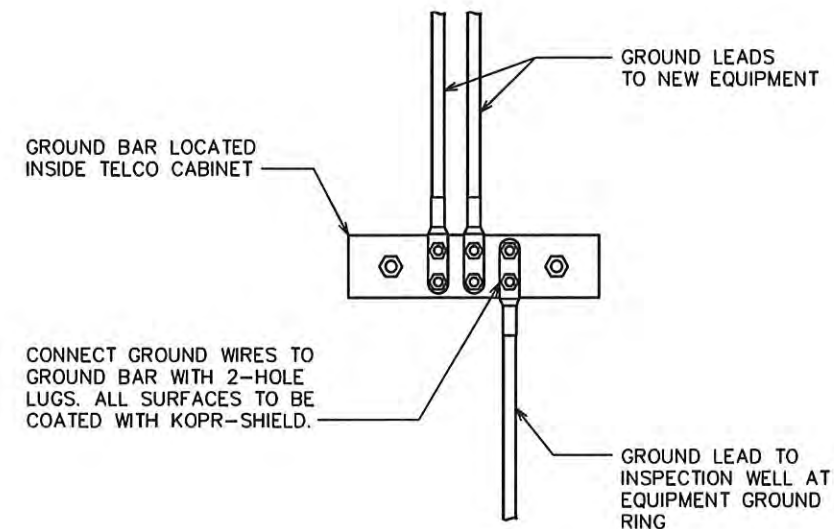
### NOTE:

THE CONTRACTOR SHALL UTILIZE AN INTERMEDIATE GROUND BAR FOR ANTENNA RAD CENTERS OVER 200'.



### UPPER / INTERMEDIATE GROUND BAR DETAIL

SCALE: N.T.S.



### GROUND BAR IN TELCO CABINET DETAIL

SCALE: N.T.S.

PLANS PREPARED FOR:



2002 PISGAH CHURCH ROAD, SUITE 300  
GREENSBORO, NC 27455

PLANS PREPARED FOR:



1000 CENTRE GREEN WAY, SUITE 300  
CARY, NC 27513

PROJECT INFORMATION:

**AT&T #: 368-615**

5 WEST HARGETT STREET  
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SEAL:



December 14, 2016

1	12-14-16	CONSTRUCTION
0	10-18-16	PRELIMINARY
REV	DATE	ISSUED FOR:

DRAWN BY: CSN CHECKED BY: MSQ

SHEET TITLE:

**GROUNDING  
DETAILS**

SHEET NUMBER:	REVISION:
<b>E-6</b>	<b>1</b>
	TEP #: 32795.80932



# MI CHECKLIST

CONSTRUCTION/INSTALLATION  
INSPECTIONS AND TESTING  
REQUIRED (COMPLETED BY EOR)

REPORT ITEM

## PRE-CONSTRUCTION

X	MI CHECKLIST DRAWING
NA	EOR APPROVED SHOP DRAWINGS
X	FABRICATION INSPECTION
X	FABRICATOR CERTIFIED WELD INSPECTION
X	MATERIAL TEST REPORT (MTR)
NA	FABRICATOR NDE INSPECTION
NA	NDE REPORT OF MONOPOLE BASE PLATE
X	PACKING SLIPS

ADDITIONAL TESTING AND INSPECTIONS:

## CONSTRUCTION

X	CONSTRUCTION INSPECTIONS
NA	CONTINUOUS FOUNDATION INSPECTIONS
NA	CONCRETE COMP. STRENGTH AND SLUMP TESTS
NA	GROUT COMP. STRENGTH (ASTM C109)
NA	POST INSTALLED ANCHOR ROD VERIFICATION
NA	BASE PLATE GROUT VERIFICATION
X	CONTRACTOR'S CERTIFIED WELD INSPECTION AND NDE REPORTS
NA	EARTHWORK: LIFT AND DENSITY
X	ON SITE COLD GALVANIZING VERIFICATION
NA	GUY WIRE TENSION REPORT
X	GC AS-BUILT DOCUMENTS

ADDITIONAL TESTING AND INSPECTIONS:

## POST-CONSTRUCTION

X	MI INSPECTOR REDLINE OR RECORD DRAWING(S)
NA	POST INSTALLED ANCHOR ROD PULL-OUT TESTING
X	PHOTOGRAPHS

ADDITIONAL TESTING AND INSPECTIONS:

NOTE: X DENOTES A DOCUMENT NEEDED FOR THE PMI REPORT  
NA DENOTES A DOCUMENT THAT IS NOT REQUIRED FOR THE PMI REPORT

# MODIFICATION INSPECTION NOTES:

## GENERAL

THE MODIFICATION INSPECTION (MI) IS A VISUAL INSPECTION OF TOWER MODIFICATIONS AND A REVIEW OF CONSTRUCTION INSPECTIONS AND OTHER REPORTS TO ENSURE THE INSTALLATION WAS CONSTRUCTED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS, NAMELY THE MODIFICATION DRAWINGS, AS DESIGNED BY THE ENGINEER OF RECORD (EOR).

THE MI IS TO CONFIRM INSTALLATION CONFIGURATION AND WORKMANSHIP ONLY AND IS NOT A REVIEW OF THE MODIFICATION DESIGN ITSELF, NOR DOES THE MI INSPECTOR TAKE OWNERSHIP OF THE MODIFICATION DESIGN. OWNERSHIP OF THE STRUCTURAL MODIFICATION DESIGN EFFECTIVENESS AND INTEGRITY RESIDES WITH THE EOR AT ALL TIMES.

ALL MI'S SHALL BE CONDUCTED BY AN OWNER APPROVED ENGINEERING VENDOR THAT IS APPROVED TO PERFORM ELEVATED WORK FOR THE OWNER.

TO ENSURE THAT THE REQUIREMENTS OF THE MI ARE MET, IT IS VITAL THAT THE GENERAL CONTRACTOR (GC) AND THE MI INSPECTOR BEGIN COMMUNICATING AND COORDINATING AS SOON AS A PO IS RECEIVED. IT IS EXPECTED THAT EACH PARTY WILL BE PROACTIVE IN REACHING OUT TO THE OTHER PARTY. IF CONTACT INFORMATION IS NOT KNOWN, CONTACT THE PROJECT CONTACT LISTED ON SHEET T-1.

## MI INSPECTOR

THE MI INSPECTOR IS REQUIRED TO CONTACT THE GC AS SOON AS RECEIVING A PO FOR THE MI TO, AT A MINIMUM:

- REVIEW THE REQUIREMENTS OF THE MI CHECKLIST
- WORK WITH THE GC TO DEVELOP A SCHEDULE TO CONDUCT ON-SITE INSPECTIONS, INCLUDING FOUNDATION INSPECTIONS

THE MI INSPECTOR IS RESPONSIBLE FOR COLLECTING ALL GENERAL CONTRACTOR (GC) INSPECTION AND TEST REPORTS, REVIEWING THE DOCUMENTS FOR ADHERENCE TO THE CONTRACT DOCUMENTS, CONDUCTING THE IN-FIELD INSPECTIONS, AND SUBMITTING THE MI REPORT TO THE OWNER.

## GENERAL CONTRACTOR

THE GC IS REQUIRED TO CONTACT THE MI INSPECTOR AS SOON AS RECEIVING A PO FOR THE MODIFICATION INSTALLATION OR TURNKEY PROJECT TO, AT A MINIMUM:

- REVIEW THE REQUIREMENTS OF THE MI CHECKLIST.
- WORK WITH THE MI INSPECTOR TO DEVELOP A SCHEDULE TO CONDUCT ON-SITE MI INSPECTIONS, INCLUDING FOUNDATION INSPECTIONS.
- BETTER UNDERSTAND ALL INSPECTION AND TESTING REQUIREMENTS.

THE GC SHALL PERFORM AND RECORD THE TEST AND INSPECTION RESULTS IN ACCORDANCE WITH THE REQUIREMENTS OF THE MI CHECKLIST.

## RECOMMENDATIONS

THE FOLLOWING RECOMMENDATIONS AND SUGGESTIONS ARE OFFERED TO ENHANCE THE EFFICIENCY AND EFFECTIVENESS OF DELIVERING A MI REPORT:

- IT IS SUGGESTED THAT THE GC PROVIDE A MINIMUM OF 5 BUSINESS DAYS NOTICE, PREFERABLY 10, TO THE MI INSPECTOR AS TO WHEN THE SITE WILL BE READY FOR THE MI TO BE CONDUCTED.
- THE GC AND MI INSPECTOR COORDINATE CLOSELY THROUGHOUT THE ENTIRE PROJECT.
- WHEN POSSIBLE, IT IS PREFERRED TO HAVE THE GC AND MI INSPECTOR ON-SITE SIMULTANEOUSLY FOR ANY GUY WIRE TENSIONING OR RE-TENSIONING OPERATIONS.
- IT MAY BE BENEFICIAL TO INSTALL ALL TOWER MODIFICATIONS PRIOR TO CONDUCTING THE FOUNDATION INSPECTIONS TO ALLOW FOUNDATION AND MI INSPECTION(S) TO COMMENCE WITH ONE SITE VISIT.
- WHEN POSSIBLE, IT IS PREFERRED TO HAVE THE GC AND MI INSPECTOR ON-SITE DURING THE MI TO HAVE ANY DEFICIENCIES CORRECTED DURING THE INITIAL MI. THEREFORE, THE GC MAY CHOOSE TO COORDINATE THE MI CAREFULLY TO ENSURE ALL CONSTRUCTION FACILITIES ARE AT THEIR DISPOSAL WHEN THE MI INSPECTOR IS ON SITE.

## CANCELLATION OR DELAYS IN SCHEDULED MI

IF THE GC AND MI INSPECTOR AGREE TO A DATE ON WHICH THE MI WILL BE CONDUCTED, AND EITHER PARTY CANCELS OR DELAYS, THE OWNER SHALL NOT BE RESPONSIBLE FOR ANY COSTS, FEES, LOSS OF DEPOSITS AND/OR OTHER PENALTIES RELATED TO THE CANCELLATION OR DELAY INCURRED BY EITHER PARTY FOR ANY TIME (E.G. TRAVEL AND LODGING, COSTS OF KEEPING EQUIPMENT ON-SITE, ETC.). IF THE OWNER CONTRACTS DIRECTLY FOR A THIRD PARTY MI, EXCEPTIONS MAY BE MADE IN THE EVENT THAT THE DELAY/CANCELLATION IS CAUSED BY WEATHER OR OTHER CONDITIONS THAT MAY COMPROMISE THE SAFETY OF THE PARTIES INVOLVED.

## CORRECTION OF FAILING MI'S

IF THE MODIFICATION INSTALLATION WOULD FAIL THE MI ("FAILED MI"), THE GC SHALL WORK WITH THE OWNER TO COORDINATE A REMEDIATION PLAN IN ONE OF TWO WAYS:

- CORRECT FAILING ISSUES TO COMPLY WITH THE SPECIFICATIONS CONTAINED IN THE ORIGINAL CONTRACT DOCUMENTS AND COORDINATE A SUPPLEMENT MI.
- OR, WITH THE OWNER'S APPROVAL, THE GC MAY WORK WITH THE EOR TO RE-ANALYZE THE MODIFICATION/REINFORCEMENT USING THE AS-BUILT CONDITION.

## MI VERIFICATION INSPECTIONS

THE OWNER RESERVES THE RIGHT TO CONDUCT A MI VERIFICATION INSPECTION TO VERIFY THE ACCURACY AND COMPLETENESS OF PREVIOUSLY COMPLETED MI INSPECTION(S) ON TOWER MODIFICATION PROJECTS.

ALL VERIFICATION INSPECTIONS SHALL BE HELD TO THE SAME SPECIFICATIONS AND REQUIREMENTS IN THE CONTRACT DOCUMENTS.

VERIFICATION INSPECTION MAY BE CONDUCTED BY AN INDEPENDENT INSPECTION FIRM AFTER A MODIFICATION PROJECT IS COMPLETED, AS MARKED BY THE DATE OF AN ACCEPTED "PASSING MI" OR "PASS AS NOTED MI" REPORT FOR THE ORIGINAL PROJECT.

## REQUIRED PHOTOS

BETWEEN THE GC AND THE MI INSPECTOR THE FOLLOWING PHOTOGRAPHS, AT A MINIMUM, ARE TO BE TAKEN AND INCLUDED IN THE MI REPORT:

- PRE-CONSTRUCTION GENERAL SITE CONDITION
- PHOTOGRAPHS DURING THE REINFORCEMENT MODIFICATION CONSTRUCTION/ERECTION AND INSPECTION:
  - RAW MATERIALS
  - PHOTOS OF ALL CRITICAL DETAILS
  - FOUNDATION MODIFICATIONS
  - WELD PREPARATION
  - BOLT INSTALLATION AND TORQUE
  - FINAL INSTALLED CONDITION
  - SURFACE COATING REPAIR
- POST CONSTRUCTION PHOTOGRAPHS
  - FINAL IN FIELD CONDITION

PHOTOS OF ELEVATED MODIFICATIONS TAKEN FROM THE GROUND SHALL BE CONSIDERED INADEQUATE.

PLANS PREPARED FOR:



218 COLLEGE STREET, 5TH FLOOR  
GREENVILLE, SC 29601  
OFFICE: (864) 421-1542

PLANS PREPARED FOR:



1000 CENTRE GREEN WAY, SUITE 300  
CARY, NC 27513

PROJECT INFORMATION:

**AT&T #: 368-615**

5 WEST HARGETT STREET  
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N.C. LICENSE # C-1794

SEAL:



January 13, 2017

2	01-13-17	REVISED MOD. DRAWINGS
1	01-06-17	REVISED MOD. DRAWINGS
0	12-09-16	MODIFICATION DRAWINGS
REV	DATE	ISSUED FOR:

DRAWN BY: JAL CHECKED BY: MDF

SHEET TITLE:

**MI CHECKLIST  
AND NOTES**

SHEET NUMBER:	REVISION:
<b>N-1</b>	<b>2</b>
	TEP #:32795.101281



GENERAL NOTES:

- 1. ALL REFERENCES TO THE OWNER IN THESE DOCUMENTS SHALL BE CONSIDERED AT&T MOBILITY SERVICES, LCC. OR ITS DESIGNATED REPRESENTATIVE.
- 2. ALL WORK PRESENTED ON THESE DRAWINGS MUST BE COMPLETED BY THE CONTRACTOR UNLESS NOTED OTHERWISE. THE CONTRACTOR MUST HAVE CONSIDERABLE EXPERIENCE IN PERFORMANCE OF WORK SIMILAR TO THAT DESCRIBED HEREIN. BY ACCEPTANCE OF THIS ASSIGNMENT, THE CONTRACTOR IS ATTESTING THAT HE DOES HAVE SUFFICIENT EXPERIENCE AND ABILITY, THAT HE IS KNOWLEDGEABLE OF THE WORK TO BE PERFORMED AND THAT HE IS PROPERLY LICENSED AND PROPERLY REGISTERED TO DO THIS WORK IN THE STATE OF NORTH CAROLINA.
- 3. WORK SHALL BE COMPLETED IN ACCORDANCE WITH THE 2012 NORTH CAROLINA STATE BUILDING CODE.
- 4. UNLESS SHOWN OR NOTED OTHERWISE ON THE CONTRACT DRAWINGS, OR IN THE SPECIFICATIONS, THE FOLLOWING NOTES SHALL APPLY TO THE MATERIALS LISTED HEREIN, AND TO THE PROCEDURES TO BE USED ON THIS PROJECT.
- 5. ALL HARDWARE ASSEMBLY MANUFACTURER'S INSTRUCTIONS SHALL BE FOLLOWED EXACTLY AND SHALL SUPERSEDE ANY CONFLICTING NOTES ENCLOSED HEREIN.
- 6. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO DETERMINE ERECTION PROCEDURE AND SEQUENCE TO ENSURE THE SAFETY OF THE STRUCTURE AND IT'S COMPONENT PARTS DURING ERECTION AND/OR FIELD MODIFICATIONS. THIS INCLUDES, BUT IS NOT LIMITED TO, THE ADDITION OF TEMPORARY BRACING, GUYS OR TIE DOWNS THAT MAY BE NECESSARY. SUCH MATERIAL SHALL BE REMOVED AND SHALL REMAIN THE PROPERTY OF THE CONTRACTOR AFTER THE COMPLETION OF THE PROJECT.
- 7. ALL DIMENSIONS, ELEVATIONS, AND EXISTING CONDITIONS SHOWN ON THE DRAWINGS SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO BEGINNING ANY MATERIALS ORDERING, FABRICATION OR CONSTRUCTION WORK ON THIS PROJECT. CONTRACTOR SHALL NOT SCALE CONTRACT DRAWINGS IN LIEU OF FIELD VERIFICATIONS. ANY DISCREPANCIES SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE OWNER AND THE OWNER'S ENGINEER. THE DISCREPANCIES MUST BE RESOLVED BEFORE THE CONTRACTOR IS TO PROCEED WITH THE WORK. THE CONTRACT DOCUMENTS DO NOT INDICATE THE METHOD OF CONSTRUCTION. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK AND SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES. OBSERVATION VISITS TO THE SITE BY THE OWNER AND/OR THE ENGINEER SHALL NOT INCLUDE INSPECTION OF THE PROTECTIVE MEASURES OR THE PROCEDURES.
- 8. ALL MATERIALS AND EQUIPMENT FURNISHED SHALL BE NEW AND OF GOOD QUALITY, FREE FROM FAULTS AND DEFECTS AND IN CONFORMANCE WITH THE CONTRACT DOCUMENTS. ANY AND ALL SUBSTITUTIONS MUST BE PROPERLY APPROVED AND AUTHORIZED IN WRITING BY THE OWNER AND ENGINEER PRIOR TO INSTALLATION. THE CONTRACTOR SHALL FURNISH SATISFACTORY EVIDENCE AS TO THE KIND AND QUALITY OF THE MATERIALS AND EQUIPMENT BEING SUBSTITUTED.
- 9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INITIATING, MAINTAINING, AND SUPERVISING ALL SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT THIS PROJECT AND RELATED WORK COMPLIES WITH ALL APPLICABLE LOCAL, STATE, AND FEDERAL SAFETY CODES AND REGULATIONS GOVERNING THIS WORK.
- 10. ACCESS TO THE PROPOSED WORK SITE MAY BE RESTRICTED. THE CONTRACTOR SHALL COORDINATE INTENDED CONSTRUCTION ACTIVITY, INCLUDING WORK SCHEDULE AND MATERIALS ACCESS, WITH THE RESIDENT LEASING AGENT FOR APPROVAL.
- 11. ALL PERMITS THAT MUST BE OBTAINED ARE THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR WILL BE RESPONSIBLE FOR ABIDING BY ALL CONDITIONS AND REQUIREMENTS OF THE PERMITS.
- 12. IF APPLICABLE, ALL CONCRETE WORK SHALL COMPLY TO LOCAL CODES AND THE ACI 318-08, "BUILDING REQUIREMENTS FOR STRUCTURAL CONCRETE".
- 13. 24 HOURS PRIOR TO THE BEGINNING OF ANY CONSTRUCTION, THE CONTRACTOR MUST NOTIFY THE APPLICABLE JURISDICTIONAL (STATE, COUNTY OR CITY) ENGINEER.
- 14. ALL MATERIALS AND WORKMANSHIP SHALL BE WARRANTED FOR ONE YEAR FROM ACCEPTANCE DATE.
- 15. ALL TOWER DIMENSIONS SHALL BE VERIFIED WITH THE PLANS (LATEST REVISION) PRIOR TO COMMENCING CONSTRUCTION. NOTIFY THE ENGINEER IMMEDIATELY IF ANY DISCREPANCIES ARE DISCOVERED. THE OWNER SHALL HAVE A SET OF APPROVED PLANS AVAILABLE AT THE SITE AT ALL TIMES WHILE WORK IS BEING PERFORMED. A DESIGNATED RESPONSIBLE EMPLOYEE SHALL BE AVAILABLE FOR CONTACT BY GOVERNING AGENCY INSPECTORS.
- 16. THE CLIMBING FACILITIES, SAFETY CLIMB AND ALL PARTS THEREOF SHALL NOT BE IMPEDED, MODIFIED OR ALTERED WITHOUT THE EXPRESS WRITTEN APPROVAL OF THE TOWER OWNER OR ENGINEER OF RECORD.
- 17. ANY WORK PERFORMED WITHOUT A PREFABRICATION MAPPING IS DONE AT THE RISK OF THE GC AND/OR FABRICATOR.

ATTENTION

ALL CONSTRUCTION MEANS AND METHODS; INCLUDING BUT NOT LIMITED TO, ERECTION PLANS, RIGGING PLANS, CLIMBING PLANS, AND RESCUE PLANS SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR RESPONSIBLE FOR THE EXECUTION OF THE WORK CONTAINED HEREIN AND SHALL MEET ANSI/TIA 1019 (LATEST EDITION), OSHA, AND GENERAL INDUSTRY STANDARDS. ALL RIGGING PLANS SHALL ADHERE TO ANSI/TIA-1019 (LATEST EDITION) INCLUDING THE REQUIRED INVOLVEMENT OF A QUALIFIED ENGINEER FOR CLASS IV CONSTRUCTION.

STRUCTURAL STEEL NOTES:

- 1. THE FABRICATION AND ERECTION OF STRUCTURAL STEEL SHALL CONFORM TO THE AISC STEEL CONSTRUCTION MANUAL, LOAD AND RESISTANCE FACTOR DESIGN (LRFD), 13TH EDITION.
- 2. UNLESS OTHERWISE NOTED, ALL STRUCTURAL ELEMENTS SHALL CONFORM TO THE FOLLOWING REQUIREMENTS: STRUCTURAL STEEL:
  - ANGLE: ASTM A572-50
  - W-SHAPE: ASTM A992
  - PIPE/TUBE: ASTM A500-46
  - PLATE: ASTM A572-50A. ALL BOLTS, ASTM A325 TYPE I GALVANIZED HIGH STRENGTH BOLTS.  
B. ALL U-BOLTS, ASTM A193 GRADE B7  
C. ALL NUTS, ASTM A563 CARBON AND ALLOY STEEL NUTS.  
D. ALL WASHERS, ASTM F436 HARDENED STEEL WASHERS.
- 3. ALL CONNECTIONS NOT FULLY DETAILED ON THESE PLANS SHALL BE DETAILED BY THE STEEL FABRICATOR IN ACCORDANCE WITH AISC STEEL CONSTRUCTION MANUAL, LRFD, 13TH EDITION.
- 4. HOLES SHALL NOT BE FLAME CUT THROUGH STEEL UNLESS APPROVED BY THE ENGINEER.
- 5. HOT-DIP GALVANIZE ALL ITEMS UNLESS OTHERWISE NOTED, AFTER FABRICATION WHERE PRACTICABLE. GALVANIZING: ASTM A123, ASTM, A153/A153M OR ASTM A653/A653M, G90, AS APPLICABLE. ADDITIONALLY, ALL NEW STEEL SHALL BE PAINTED TO MATCH EXISTING STEEL. CONTRACTOR SHALL OBTAIN WRITTEN PERMISSION TO PROTECT STEEL BY ANY OTHER MEANS.
- 6. REPAIR DAMAGED SURFACES WITH GALVANIZING REPAIR METHOD AND PAINT CONFORMING TO ASTM A780 OR BY APPLICATION OF STICK OR THICK PASTED MATERIAL SPECIFICALLY DESIGNED FOR REPAIR OF GALVANIZING. CLEAN AREAS TO BE REPAIRED AND REMOVE SLAG FROM WELDS. HEAT SURFACES TO WHICH STICK OR PASTE MATERIAL IS APPLIED, WITH A TORCH TO A TEMPERATURE SUFFICIENT TO MELT THE METALLICS IN STICK OR PASTED; SPREAD MOLTEN MATERIAL UNIFORMLY OVER SURFACES TO BE COATED AND WIPE OFF EXCESS MATERIAL. AFTER REPAIR, STEEL SHALL BE REPAINTED TO MATCH EXISTING FINISH (IF APPLICABLE).
- 7. A NUT LOCKING DEVICE SHALL BE INSTALLED ON ALL PROPOSED AND/OR REPLACED BOLTS.
- 8. ALL PROPOSED AND/OR REPLACED BOLTS SHALL BE OF SUFFICIENT LENGTH TO EXCLUDE THE THREADS FROM THE SHEAR PLANE.
- 9. ALL PROPOSED AND/OR REPLACED BOLTS SHALL BE OF SUFFICIENT LENGTH SUCH THAT THE END OF THE BOLT BE AT LEAST FLUSH WITH THE FACE OF THE NUT. IT IS NOT PERMITTED FOR THE BOLT END TO BE BELOW THE FACE OF THE NUT AFTER TIGHTENING IS COMPLETED.
- 10. GALVANIZED ASTM A325 BOLTS SHALL NOT BE REUSED.

WELDING NOTES:

- 1. ALL WELDING SHALL BE IN ACCORDANCE WITH THE AWS D1.1/D1.1M: 2010 "STRUCTURAL WELDING CODE-STEEL".
- 2. ALL WELDING SHALL BE PERFORMED BY AWS CERTIFIED WELDERS.
- 3. CONTRACTOR SHALL RETAIN AN AWS CERTIFIED WELD INSPECTOR TO PERFORM VISUAL INSPECTIONS ON FIELD WELDS. A LETTER AND REPORT SHALL BE ISSUED TO THE CONTRACTOR. CONTRACTOR SHALL SUBMIT LETTER AND REPORT TO TOWER ENGINEERING PROFESSIONALS.
- 4. GRIND THE SURFACE ADJACENT TO THE WELD FOR A DISTANCE OF 2" MINIMUM ALL AROUND. GRIND THE SURFACE OF THE ROD TO BE INSTALLED FOR A DISTANCE OF 2" MINIMUM ALL AROUND THE AREA TO BE WELDED. ENSURE BOTH AREAS ARE 100% FREE OF ALL GALVANIZING. SURFACES TO BE WELDED SHALL BE FREE FROM SCALE, SLAG, RUST, MOISTURE, GREASE OR ANY OTHER FOREIGN MATERIAL THAT WOULD PREVENT PROPER WELDING.
- 5. DO NOT WELD IF THE TEMPERATURE OF THE STEEL IN THE VICINITY OF THE WELD AREA IS BELOW 0°F. THE MINIMUM PREHEAT AND INTERPASS TEMPERATURE REQUIREMENTS SHALL COMPLY WITH SECTION 3.5.1 AND TABLE 3.2 OF THE AWS D1.1/D1.1M:2010.
- 6. DO NOT WELD ON WET OR FROST-COVERED SURFACES & PROVIDE ADEQUATE PROTECTION FROM HIGH WINDS.
- 7. FOR ALL WELDING, USE 70 KSI LOW HYDROGEN ELECTRODES. ELECTRODES SHALL BE APPROPRIATE FOR THE WELDING POSITION REQUIRED TO MAKE THE JOINT.
- 8. AFTER FINAL INSPECTION, THE AREA OF THE WELDS, THE INSTALLATION AND ALL SURFACES DAMAGED BY WELDING OF GRINDING SHALL RECEIVE A COLD-GALVANIZED COATING. THIS COATING SHALL BE APPLIED BY BRUSH. THE GALVANIZING COMPOUND SHALL CONTAIN A MINIMUM OF 95% ± PURE ZINC. THE FINISHED COATING SHALL BE A MINIMUM THICKNESS OF 3 MILS.
- 9. FOR MONOPOLE TOWERS FULL PENETRATION WELDS IN THE VICINITY OF THE BASE OF THE TOWER ARE REQUIRED TO BE 100% NDE INSPECTED BY ULTRASONIC TESTING (UT) IN ACCORDANCE WITH AWS D1.1.
- 10. FOR MONOPOLE TOWERS PARTIAL PENETRATION AND FILLET WELDS IN THE VICINITY OF THE BASE OF THE TOWER ARE REQUIRED TO BE 50% NDE INSPECTED BY MAGNETIC PARTICLE (MT) IN ACCORDANCE WITH AWS D1.1.
- 11. PROVIDE WELDS ALL AROUND OR ADD SEAL WELDS WHERE STRUCTURAL WELDS ARE NOT SPECIFIED.

PLANS PREPARED FOR:



218 COLLEGE STREET, 5TH FLOOR  
GREENVILLE, SC 29601  
OFFICE: (864) 421-1542

PLANS PREPARED FOR:



1000 CENTRE GREEN WAY, SUITE 300  
CARY, NC 27513

PROJECT INFORMATION:

AT&T #: 368-615

5 WEST HARGETT STREET  
RALEIGH, NC 27601  
(WAKE COUNTY)

PLANS PREPARED BY:

TOWER ENGINEERING PROFESSIONALS

326 TRYON ROAD  
RALEIGH, NC 27603  
OFFICE: (919) 661-6351  
www.tepgroup.net



N.C. LICENSE # C-1794

SEAL:



January 13, 2017

REV	DATE	ISSUED FOR:
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1	01-06-17	REVISED MOD. DRAWINGS
0	12-09-16	MODIFICATION DRAWINGS

DRAWN BY: JAL CHECKED BY: MDF

SHEET TITLE:

PROJECT NOTES I

SHEET NUMBER:	REVISION:
N-2	2
	TEP #:32795.101281



ROOFING NOTES:

1. TEMPORARY ROOF PROTECTION – PROVIDE TEMPORARY PROTECTION USING 3/4" STYROFOAM PADDING AGAINST THE ROOFING MATERIAL WITH 3/4" PLYWOOD BETWEEN THE PADDING AND ANY EQUIPMENT, MATERIALS, AND TOOLS STORED ON THE ROOF. THE ROOF AROUND WORKING AREAS SHALL ALSO BE TEMPORARILY PROTECTED AS WELL AS THE PATHS BETWEEN THE WORK AREA AND ROOF ENTRY DOORS. THE METHOD OF PROTECTION SHALL ALSO COMPLY WITH ANY ROOF WARRANTY THAT MAY BE IN EFFECT. IF PENETRATING SUBSTANCES, SUCH AS ACIDS, CHEMICALS, OR TOOLS ARE TO BE USED DURING CONSTRUCTION, PROVIDE ADDITIONAL PROTECTION TO PREVENT ROOF DAMAGE.
2. WATER PROTECTION – THE CONTRACTOR SHALL PROVIDE PROTECTION FROM WATER PENETRATION DURING THE INSTALLATION OF ROOF PENETRATING SUPPORT SYSTEMS OR ANY OTHER ROOF PENETRATING PROCEDURE. METHODS SHALL COMPLY WITH ANY ROOF WARRANTY IN EFFECT.
3. FIRE PROTECTION – COMPLY WITH OSHA STANDARDS THROUGHOUT THE PROJECT. WHEN OPERATING TOOLS THAT PRODUCE SPARKS, FLAME OR HEAT, THE CONTRACTOR WILL DESIGNATE AN INDIVIDUAL TO STAND-BY THE INDIVIDUAL OPERATING THE TOOL WITH A 20 LB. ABC FIRE EXTINGUISHER WITH IT'S PIN REMOVED AND READY TO USE IN CASE OF A FIRE. THE CONTRACTOR SHALL PROVIDE AT ALL TIMES ONE PROPERLY CHARGED 20 LB. ABC FIRE EXTINGUISHER WITHIN CLOSE PROXIMITY TO THE WORK AREA. THE FIRE EXTINGUISHER SHALL HAVE BEEN INSPECTED WITHIN THE PAST YEAR. IT SHALL BE KEPT IN A CONSPICUOUS LOCATION AND EASILY ACCESSIBLE. PATHS TO THE FIRE EXTINGUISHER AND OTHER FIRE FIGHTING EQUIPMENT SHALL BE KEPT CLEAR.
4. REINSTATEMENT – ANY ROOFING, PAVEMENT, FOOTPATH, CURB, GUTTERS, WALLS, FLOORS, SERVICES, AND EXISTING FEATURES OR OTHER PROPERTIES DISTURBED OR DESTROYED DURING CONSTRUCTION SHALL BE REINSTATED BY THE CONTRACTOR TO A CONDITION AT LEAST EQUAL TO THAT EXISTING BEFORE COMMENCEMENT OF OPERATIONS AT NO COST TO THE OWNER OR THE CLIENT.
5. REPAIRS – THE CONTRACTOR SHALL USE THIS EXISTING ROOFING WARRANTY CONTRACTOR TO REPAIR HOLES, DAMAGES, AND ALTERATIONS TO THE ROOF. IF EXCESSIVE COSTS ARE ASSOCIATED WITH THIS ROOFING CONTRACTOR, THE CONTRACTOR SHALL NOTIFY THE CLIENT OF THE SITUATION AND PROVIDE AN ALTERNATE ROOFING CONTRACTOR TO PERFORM THE WORK.
6. CONTRACTOR SHALL REMOVE ONLY THE AMOUNT OF ROOFING AND INSULATION REQUIRED TO PERFORM THE WORK. AFTER THE COMPLETION OF WORK, REPLACE THE DEMOLISHED INSULATION WITH A COMPATIBLE INSULATION, PROVIDING A TIGHT JOINT ALL AROUND. FLASH IN NEW BUILT-UP ROOFING TO THE EXISTING BUILT-UP ROOFING AS RECOMMENDED BY THE ROOFING MANUFACTURER TO PROVIDE A WATERTIGHT ROOF.

DESIGN LOADS:

DESIGN UNITS:  
LIVE LOAD = 60 PSF  
SHELTER AND EQUIPMENT: 32 KIPS

SNOW  
GROUND SNOW LOAD P<sub>s</sub>: 15 PSF

WIND  
V: 95 MPH  
RISK CATEGORY: II  
EXPOSURE: B  
V<sub>x</sub>: 3.6 KIPS  
V<sub>y</sub>: 5 KIPS

SEISMIC  
RISK CATEGORY: II  
I<sub>e</sub>: 0.20  
S<sub>s</sub>: 0.08  
S<sub>i</sub>: 0.336  
SITE CLASS: (ASSUMED) D  
SEISMIC DESIGN CATEGORY: B  
V<sub>x</sub>: 2.2 KIPS  
V<sub>y</sub>: 2.2 KIPS  
CS: 0.07  
R: 3

ANALYSIS PROCEDURE USED: EQUIVALENT LATERAL FORCE ANALYSIS

SEISMIC FORCE RESISTING SYSTEM: STEEL SYSTEM NOT SPECIFICALLY DETAILED FOR SEISMIC RESISTANCE

PLANS PREPARED FOR:



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GREENVILLE, SC 29601  
OFFICE: (864) 421-1542

PLANS PREPARED FOR:



1000 CENTRE GREEN WAY, SUITE 300  
CARY, NC 27513

PROJECT INFORMATION:

**AT&T #: 368-615**

5 WEST HARGETT STREET  
RALEIGH, NC 27601  
(WAKE COUNTY)

PLANS PREPARED BY:

**TOWER ENGINEERING PROFESSIONALS**

326 TRYON ROAD  
RALEIGH, NC 27603  
OFFICE: (919) 661-6351  
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N.C. LICENSE # C-1794

SEAL:



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DRAWN BY: JAL CHECKED BY: MDF

SHEET TITLE:

**PROJECT NOTES II**

SHEET NUMBER:	REVISION:
<b>N-3</b>	<b>2</b>
	TEP #: 32795.101281



BOLT TIGHTENING PROCEDURE:

1. UNLESS OTHERWISE NOTED ON DRAWINGS OR BELOW ALL BOLTED CONNECTIONS SHALL BE BROUGHT TO A SNUG TIGHT CONDITION AS DEFINED IN SECTION 8.1 OF THE AISC SPECIFICATION FOR STRUCTURAL JOINTS USING A325 OR A490 BOLTS, LOCATED IN THE AISC MANUAL OF STEEL CONSTRUCTION. ALL SNUG TIGHT BOLTS SHALL BE INSTALLED WITH A NUT-LOCKING DEVICE OR MECHANISM SUCH AS, BUT NOT LIMITED TO, LOCK NUTS, LOCK WASHERS, OR PALNUTS, TO PREVENT LOOSENING.
2. CONNECTION BOLTS SUBJECT TO DIRECT TENSION SHALL BE INSTALLED AND TIGHTENED AS PER SECTION 8.2.1 OF THE AISC SPECIFICATION FOR STRUCTURAL JOINTS USING A325 OR A490 BOLTS, LOCATED IN THE AISC MANUAL OF STEEL CONSTRUCTION. THE INSTALLATION PROCEDURE IS PARAPHRASED AS FOLLOWS:

8.2.1 TURN-OF-THE-NUT TIGHTENING

BOLTS SHALL BE INSTALLED IN ALL HOLES OF THE CONNECTION AND BROUGHT TO A SNUG TIGHT CONDITION AS DEFINED IN SECTION 8.1, UNTIL ALL THE BOLTS ARE SIMULTANEOUSLY SNUG TIGHT AND THE CONNECTION IS FULLY COMPACTED. FOLLOWING THIS INITIAL OPERATION ALL BOLTS IN THE CONNECTION SHALL BE TIGHTENED FURTHER BY THE APPLICABLE AMOUNT OF ROTATION SPECIFIED BELOW. DURING THE TIGHTENING OPERATION THERE SHALL BE NO ROTATION OF THE PART NOT TURNED BY THE WRENCH. TIGHTENING SHALL PROGRESS SYSTEMATICALLY FROM THE MOST RIGID PART OF THE JOINT IN A MANNER THAT WILL MINIMIZE RELAXATION OF PREVIOUSLY PRETENSIONED BOLTS.

3. PRE-TENSIONED BOLTS AS SPECIFIED ON THE DRAWINGS SHALL BE TIGHTENED IN ACCORDANCE WITH AISC - "TURN OF THE NUT" METHOD, USING THE CHART BELOW.

BOLT LENGTHS UP TO AND INCLUDING FOUR DIA.

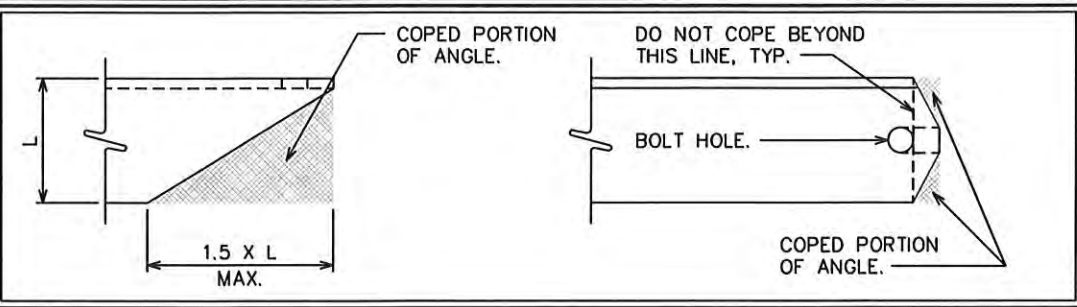
1/2"	BOLTS UP TO AND INCLUDING 2.0 INCH LENGTH	+1/3 TURN BEYOND SNUG TIGHT
5/8"	BOLTS UP TO AND INCLUDING 2.5 INCH LENGTH	+1/3 TURN BEYOND SNUG TIGHT
3/4"	BOLTS UP TO AND INCLUDING 3.0 INCH LENGTH	+1/3 TURN BEYOND SNUG TIGHT
7/8"	BOLTS UP TO AND INCLUDING 3.5 INCH LENGTH	+1/3 TURN BEYOND SNUG TIGHT
1"	BOLTS UP TO AND INCLUDING 4.0 INCH LENGTH	+1/3 TURN BEYOND SNUG TIGHT

BOLT LENGTHS OVER FOUR DIA. BUT NOT EXCEEDING EIGHT DIA.

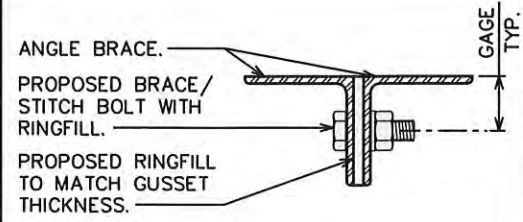
1/2"	BOLTS 2.25 TO 4.0 INCH LENGTH	+1/2 TURN BEYOND SNUG TIGHT
5/8"	BOLTS 2.75 TO 5.0 INCH LENGTH	+1/2 TURN BEYOND SNUG TIGHT
3/4"	BOLTS 3.25 TO 6.0 INCH LENGTH	+1/2 TURN BEYOND SNUG TIGHT
7/8"	BOLTS 3.75 TO 7.0 INCH LENGTH	+1/2 TURN BEYOND SNUG TIGHT
1"	BOLTS 4.25 TO 8.0 INCH LENGTH	+1/2 TURN BEYOND SNUG TIGHT

4. ALL ONE-SIDED BOLTS SHALL BE TIGHTENED IN ACCORDANCE WITH MANUFACTURER RECOMMENDATIONS.

ALLOWABLE ANGLE COPE



SECTION AT CENTER AND STITCH CONNECTION

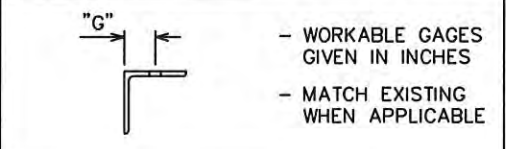


NOTE:

ALL STITCH WASHERS ARE TO BE NEW ASTM A36 MATERIAL AND BE OF EQUAL SIZE TO THE ANGLE LEG HEIGHT. THICKNESS TO MATCH EXISTING GUSSET/LEG THICKNESS.

WORKABLE GAGES

LEG	4	3 1/2	3	2 1/2	2	1 1/4
G	2	1 3/4	1 1/2	1 1/4	1	3/8



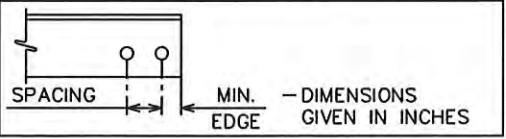
NOMINAL HOLE DIMENSIONS

BOLT DIAMETER	STANDARD HOLE	SHORT SLOT
1/2	9/16	9/16 X 1/16
5/8	1 1/16	1 1/16 X 7/16
3/4	1 3/16	1 3/16 X 1
7/8	1 5/16	1 5/16 X 1 1/8
1	1 1/2	1 1/2 X 1 5/16

- DIMENSIONS GIVEN IN INCHES

BOLT EDGE AND SPACING

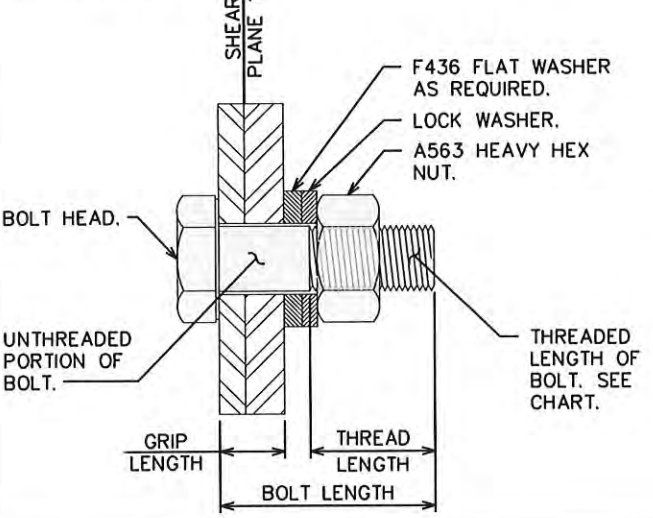
BOLT DIAMETER	MIN. EDGE	SPACING
1/2	7/8	1 1/2
5/8	1 1/8	1 7/8
3/4	1 1/4	2 1/4
7/8	1 1/2	2 5/8
1	1 3/4	3



BOLT DETAILS

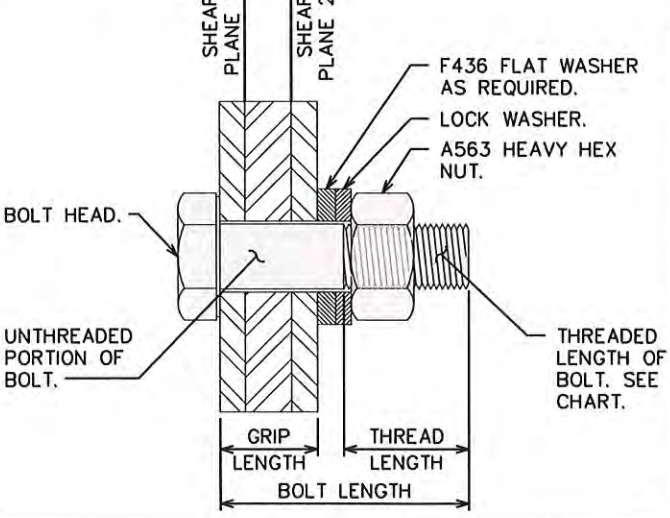
SINGLE SHEAR CONNECTIONS:

A325-X BOLT:  
UNTHREADED LENGTH OF BOLT PASSES THROUGH SHEAR PLANE.



DOUBLE SHEAR CONNECTIONS:

A325-X BOLT:  
UNTHREADED LENGTH OF BOLT PASSES THROUGH SHEAR PLANES.



BOLT THREADS

BOLT DIAMETER	THREAD LENGTH
1/2"	1"
5/8"	1 1/4"
3/4"	1 3/8"
7/8"	1 1/2"
1"	1 3/4"
1 1/8"	2"
1 1/4"	2"

PLANS PREPARED FOR:



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GREENVILLE, SC 29601  
OFFICE: (864) 421-1542

PLANS PREPARED FOR:



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CARY, NC 27513

PROJECT INFORMATION:

AT&T #: 368-615

5 WEST HARGETT STREET  
RALEIGH, NC 27601  
(WAKE COUNTY)

PLANS PREPARED BY:

TOWER ENGINEERING PROFESSIONALS

326 TRYON ROAD  
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DRAWN BY: JAL CHECKED BY: MDF

SHEET TITLE:

PROJECT NOTES III

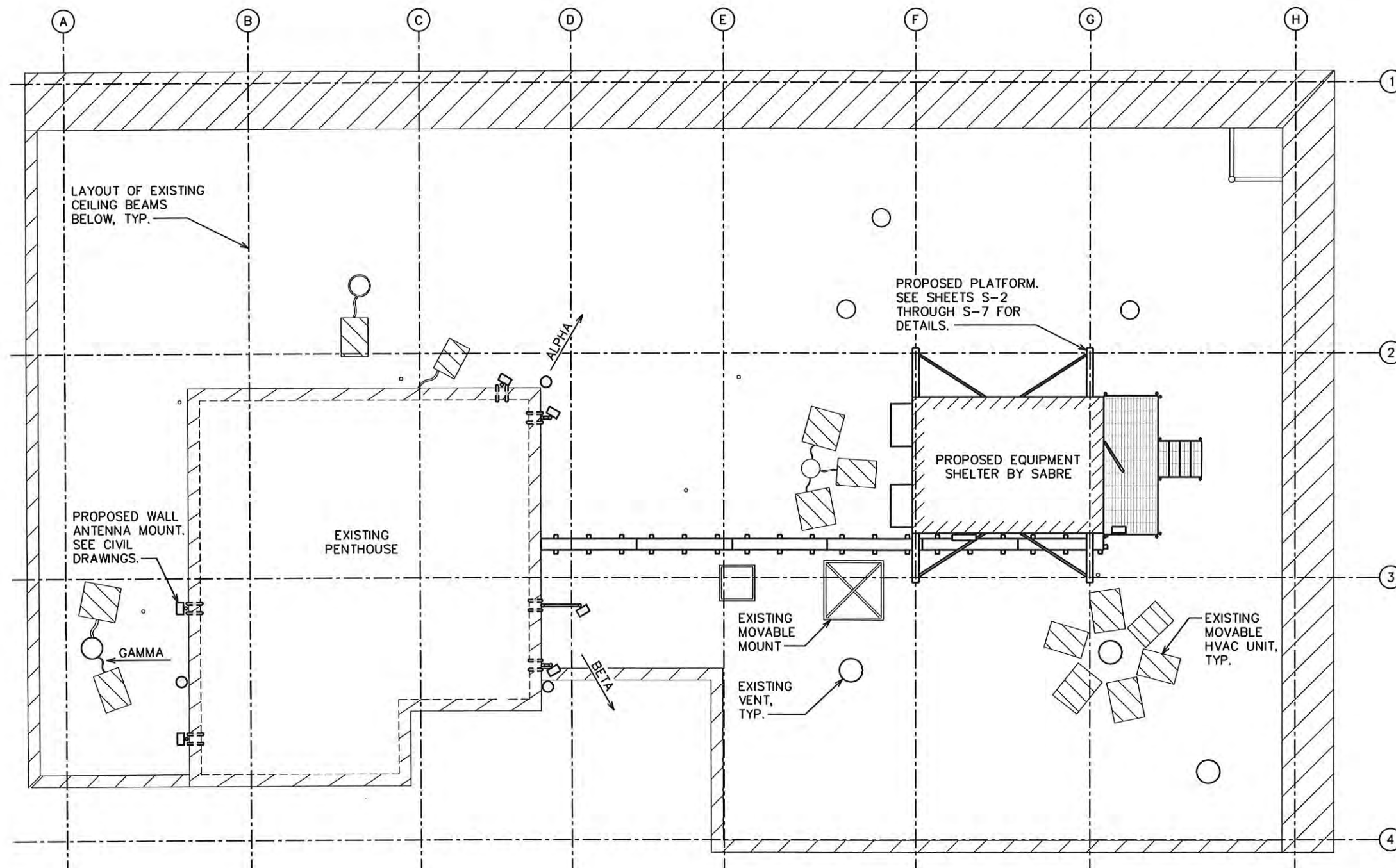
SHEET NUMBER: REVISION:

N-4

2

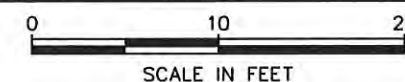
TEP #:32795.101281





# ROOF PLAN LAYOUT

SCALE: 1" = 10'-0"



PLANS PREPARED FOR:



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SHEET TITLE:

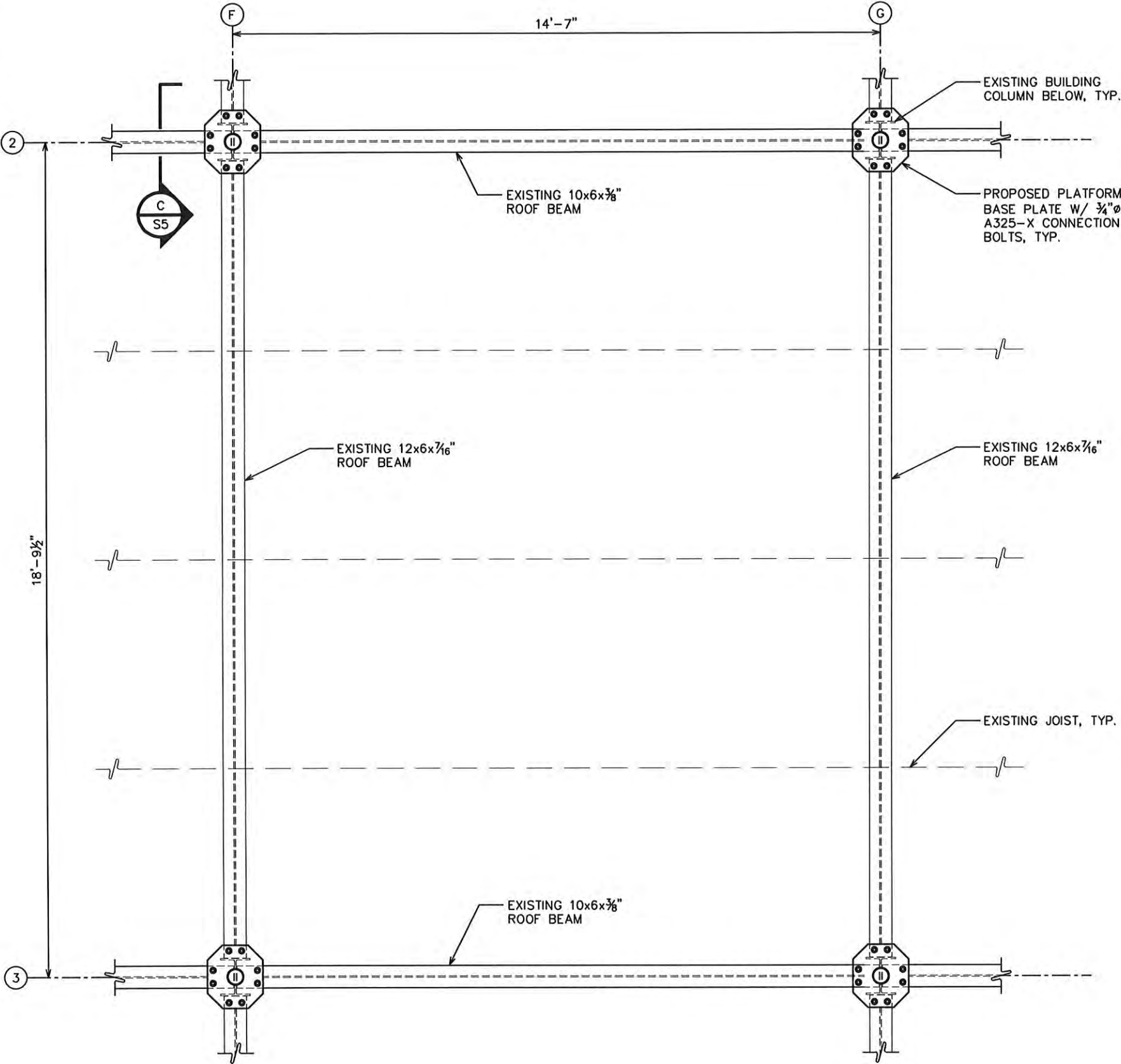
**ROOF PLAN  
LAYOUT**

SHEET NUMBER:	REVISION:
<b>S-1</b>	<b>2</b>
	TEP #32795.101281



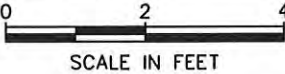
**NOTES:**

1. CONTRACTOR TO VERIFY PROPOSED BASE PLATES DO NOT CONFLICT WITH EXISTING ROOF JOISTS OR EXISTING MECH. OR ELECTRICAL EQUIPMENT.
2. CONTRACTOR TO VERIFY DIMENSIONS WITH EXISTING BUILDING.



**PARTIAL ROOF BEAM PLAN WITH BASE PLATES**

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



PLANS PREPARED FOR:



PLANS PREPARED FOR:



PROJECT INFORMATION:

**AT&T #: 368-615**  
5 WEST HARGETT STREET  
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(WAKE COUNTY)

PLANS PREPARED BY:



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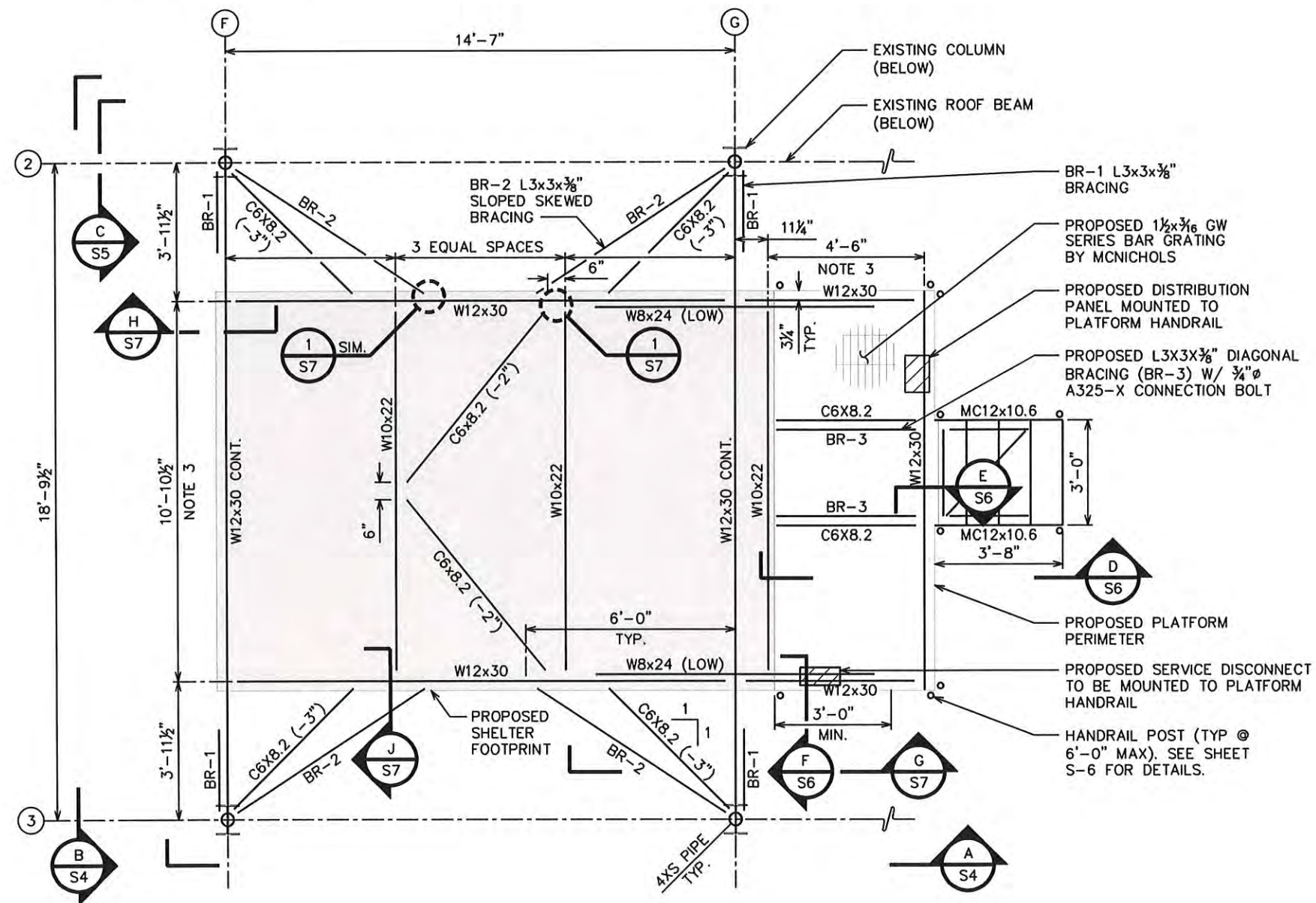
DRAWN BY: JAL CHECKED BY: MDF

SHEET TITLE:  
**PARTIAL ROOF  
BEAM PLAN WITH  
BASE PLATES**

SHEET NUMBER: <b>S-2</b>	REVISION: <b>2</b> TEP #32795.101281
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1. CONTRACTOR TO VERIFY DIMENSIONS WITH EXISTING BUILDING.
2. CONTRACTOR TO VERIFY ROOF TO BOTTOM OF PLATFORM CLEARANCE REQUIREMENTS ARE ADEQUATE.
3. CONTRACTOR TO VERIFY ALL DIMENSIONS AND CLEARANCES W/ SHELTER AND EQUIPMENT MANUFACTURER.
4. TOP OF PLATFORM STEEL TO BE +3'-10" FROM TOP OF REFERENCED EXISTING ROOF BEAM ELEVATION OF 0'-0".
5. ( $\pm$  NO.) DENOTES TOP OF BEAM ELEVATION FROM REFERENCED TOP OF PLATFORM STEEL ELEVATION.
6. PLATFORM LOCATION TO BE VERIFIED WITH CD'S.
7. SEE SHEET S-6 FOR ATTACHMENT DETAIL OF SHELTER TO PLATFORM.
8. ATTACH GRATING TO PLATFORM AS REQUIRED BY GRATING MANUFACTURER.
9. PLATFORM DESIGNED TO SUPPORT A COMBINED SHELTER AND EQUIPMENT WEIGHT OF 32,000 LBS.

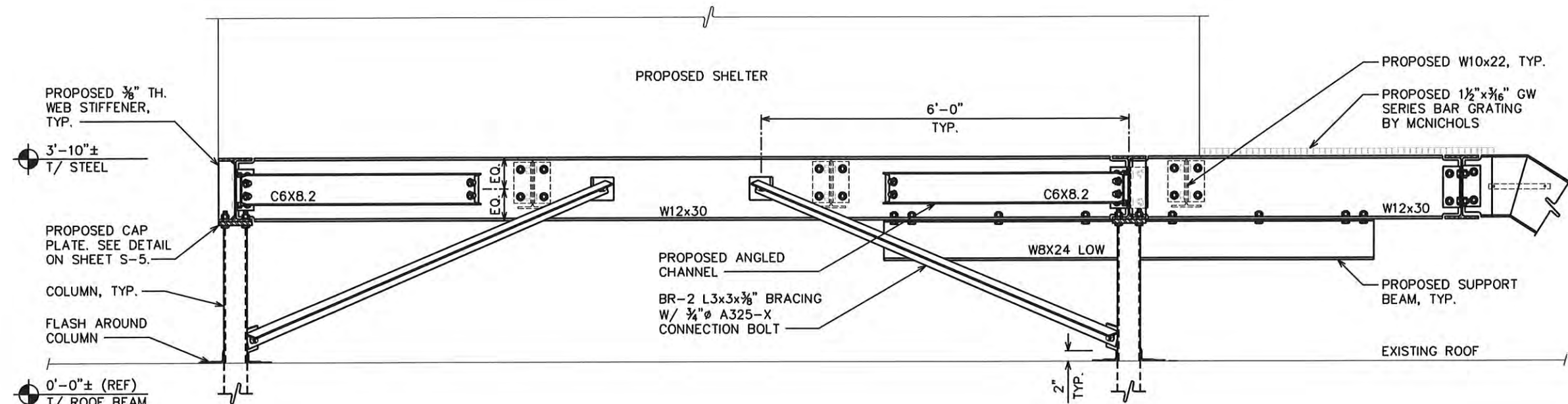


SCALE:  $\frac{1}{4}" = 1'-0"$



SHEET NUMBER: <b>S-3</b>	REVISION: <b>2</b>
	TEP #:32795.101281

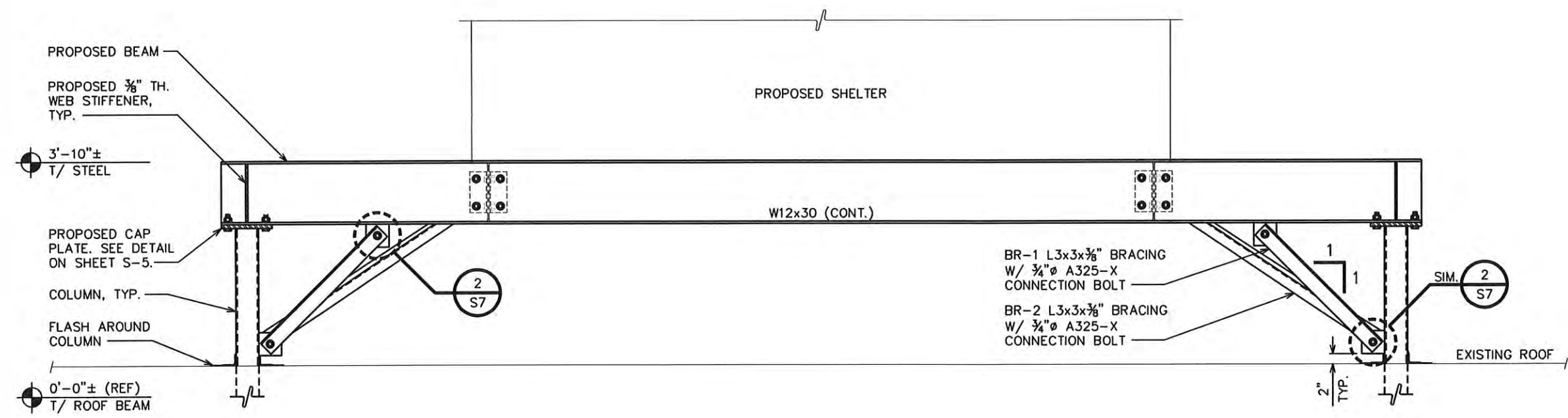
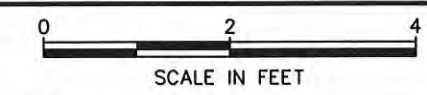




**SECTION**

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

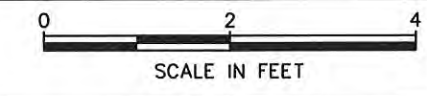
(A)



**SECTION**

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

(B)



PLANS PREPARED FOR:



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GREENVILLE, SC 29601  
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PROJECT INFORMATION:

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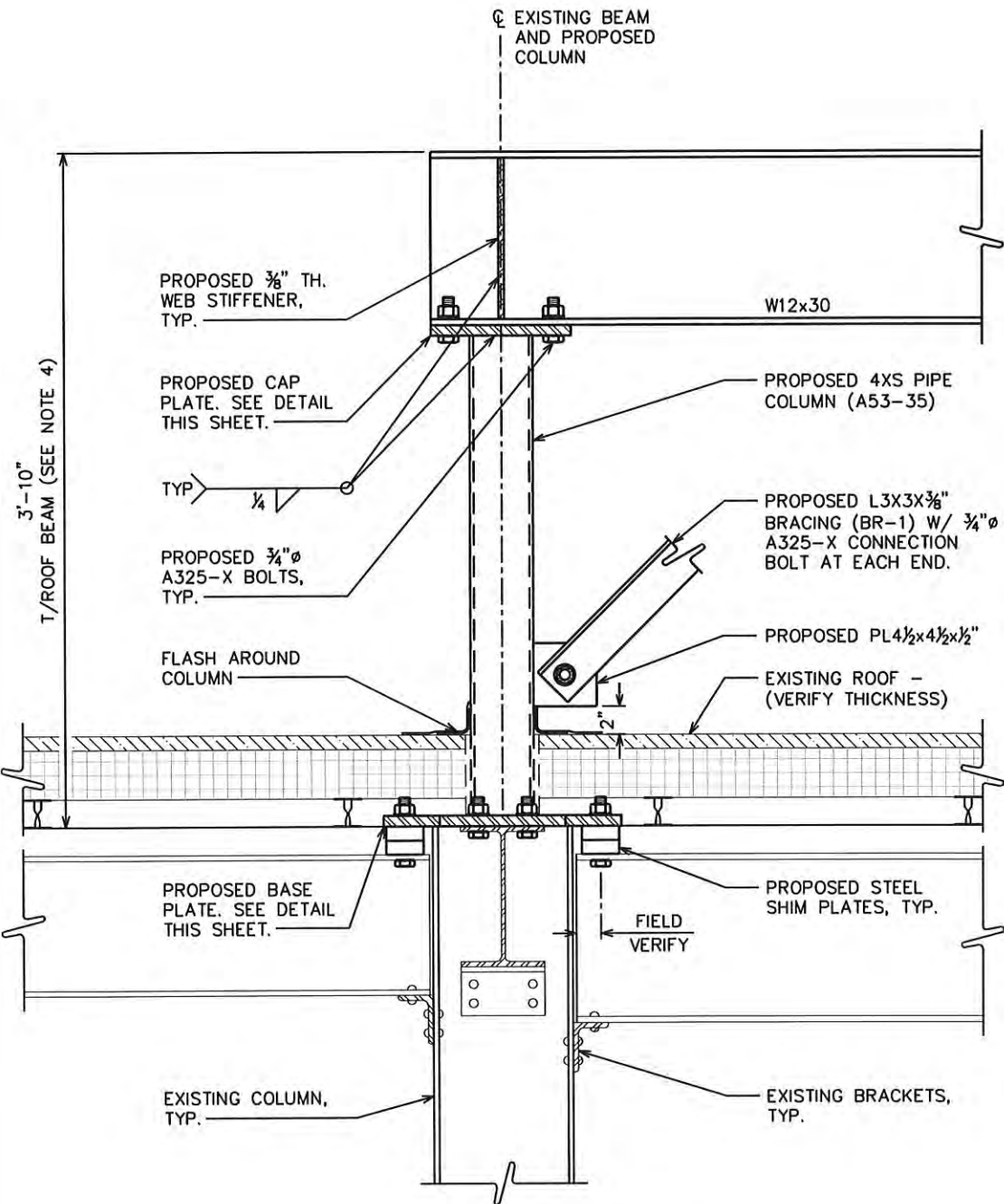
SHEET TITLE:  
**PLATFORM FRAMING SECTIONS**

SHEET NUMBER: **S-4** REVISION: **2**  
TEP #: 32795.101281



**NOTES:**

1. SEE SHEET N-3 FOR GAGE, BOLT SPACING, MINIMUM EDGE DISTANCE, AND MAXIMUM ALLOWABLE ANGLE COPE.
2. PRIOR TO FABRICATION AND INSTALLATION, CONTRACTOR SHALL FIELD VERIFY ALL LENGTHS AND QUANTITIES GIVEN. AVERAGE LENGTH AND QUANTITIES PROVIDED ARE FOR QUOTING PURPOSES ONLY, AND SHALL NOT BE USED FOR FABRICATION.
3. ALL CONNECTIONS NOT FULLY DETAILED ON THESE PLANS SHALL BE DETAILED BY THE STEEL FABRICATOR IN ACCORDANCE WITH THE AISC STEEL CONSTRUCTION MANUAL, LRFD, 13TH EDITION.
4. TOP OF PLATFORM STEEL TO BE +3'-10" FROM TOP OF REFERENCED ROOF ELEVATION OF 0'-0".



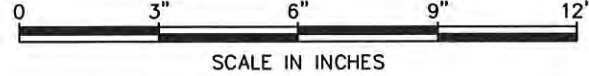
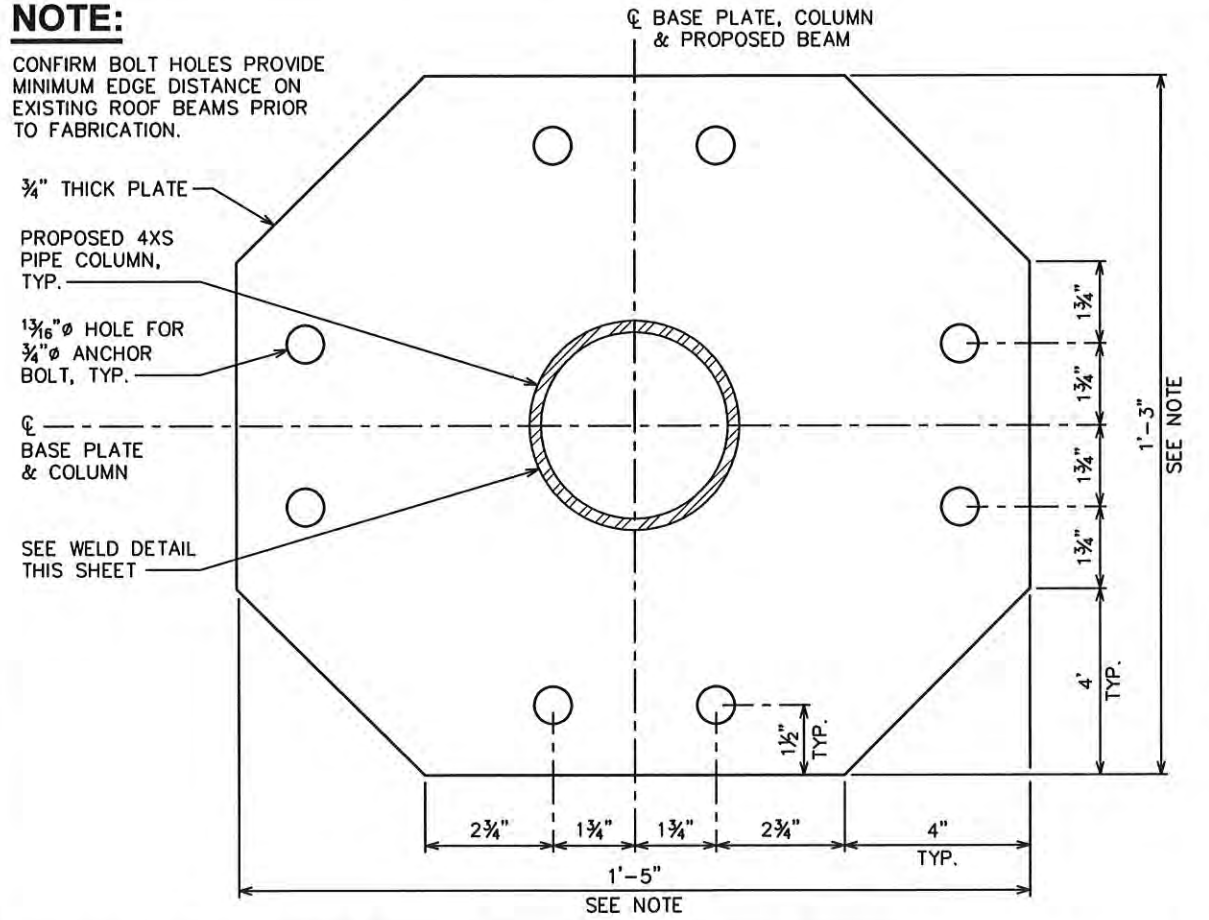
**SECTION**

SCALE: 1" = 1'-0"



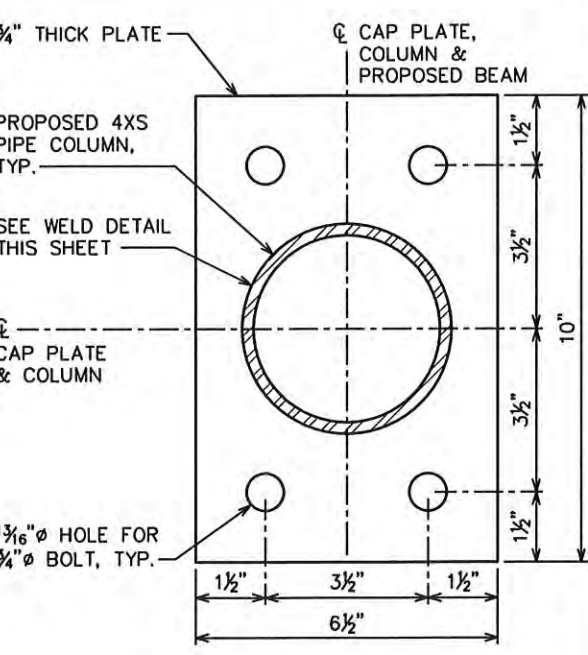
**BASE PLATE DETAIL**

SCALE: 3" = 1'-0"



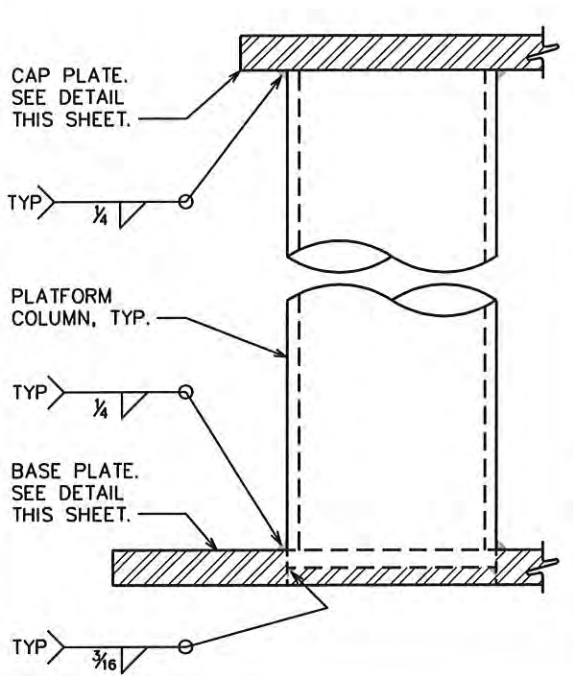
**CAP PLATE DETAIL**

SCALE: 3" = 1'-0"



**WELD DETAIL**

SCALE: 3" = 1'-0"



**NOTE:**

CONFIRM BOLT HOLES PROVIDE MINIMUM EDGE DISTANCE ON EXISTING ROOF BEAMS PRIOR TO FABRICATION.

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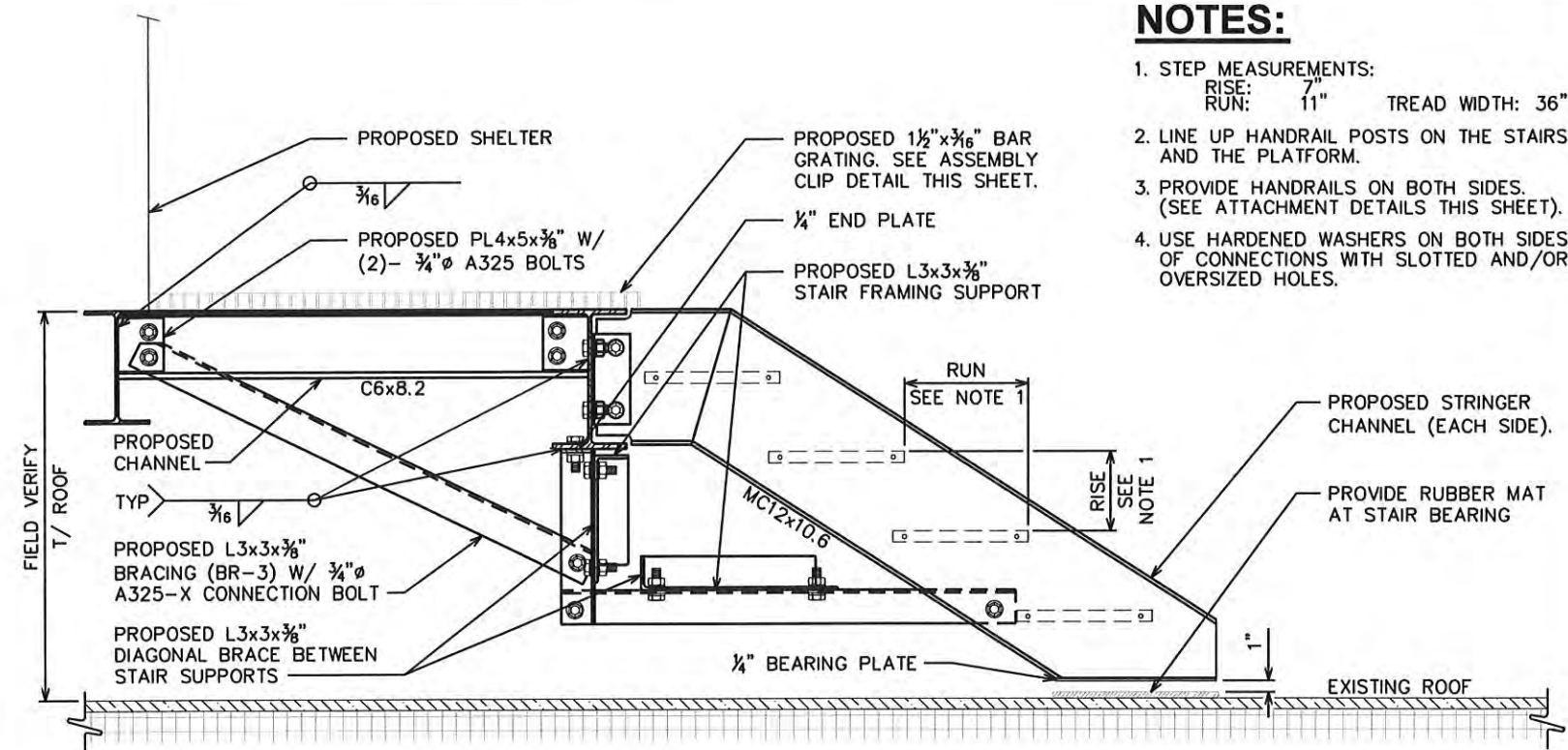
DRAWN BY: JAL CHECKED BY: MDF

SHEET TITLE:

**PLATFORM FRAMING  
DETAILS I**

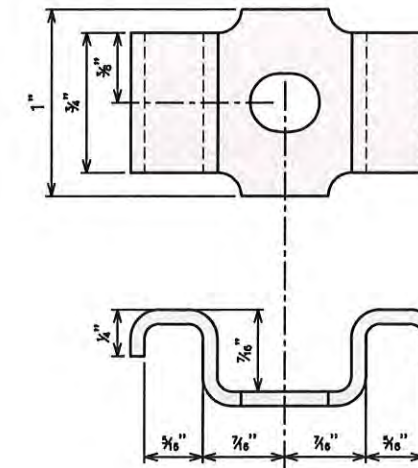
SHEET NUMBER:	REVISION:
<b>S-5</b>	<b>2</b>
TEP #: 32795.101281	





### NOTE:

GRATING TO BE ASSEMBLED USING STANDARD B-CLIPS BY IKG.



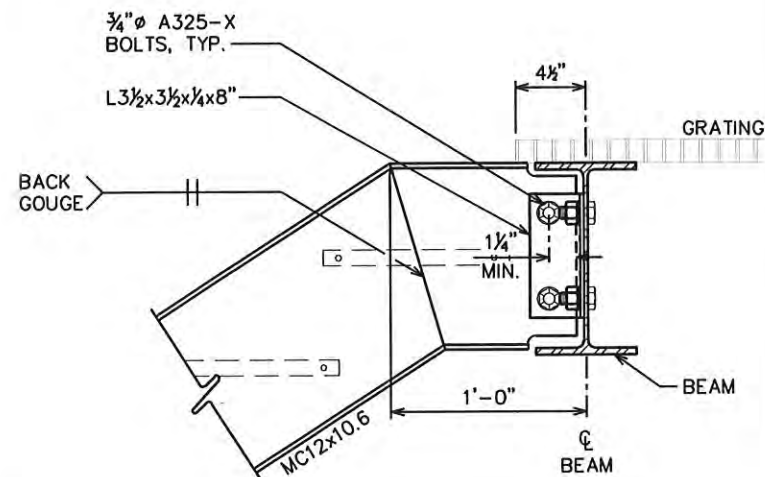
### GRATING B-CLIP DETAIL

SCALE: N.T.S.

### SECTION

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

D



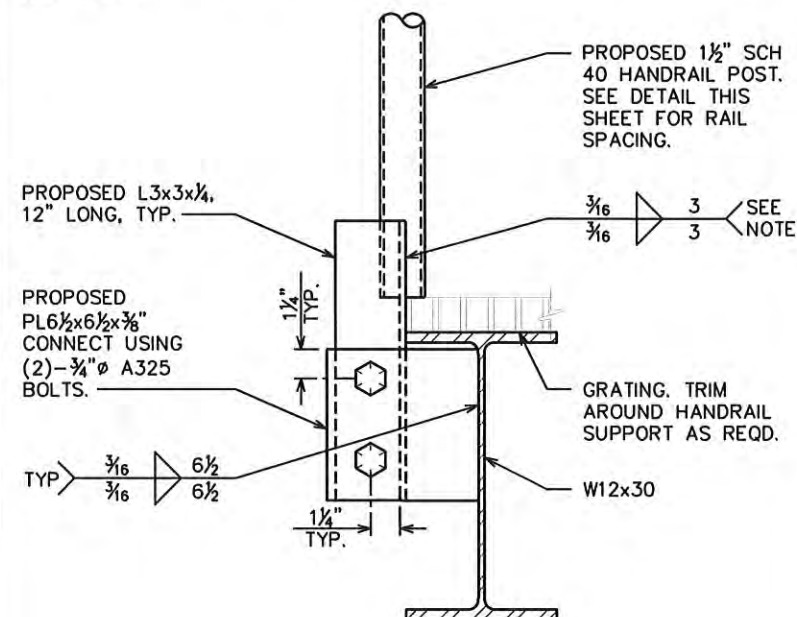
### STAIR CONNECTION AT TOP

SCALE: 1" = 1'-0"

E

### NOTE:

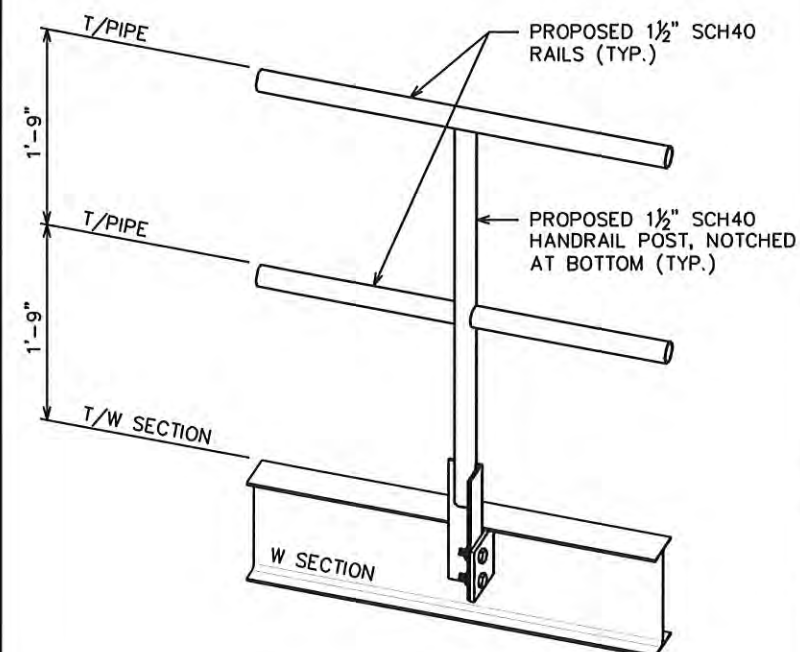
CUT 3/32"x3" SLOTS AT BOTTOM OF POST. WELD TO ANGLE AT TOE AND HEEL.



### HANDRAIL CONNECTION

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

F



### HANDRAIL LAYOUT

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

PLANS PREPARED FOR:



218 COLLEGE STREET, 5TH FLOOR  
GREENVILLE, SC 29601  
OFFICE: (864) 421-1542

PLANS PREPARED FOR:



1000 CENTRE GREEN WAY, SUITE 300  
CARY, NC 27513

PROJECT INFORMATION:

**AT&T #: 368-615**

5 WEST HARGETT STREET  
RALEIGH, NC 27601  
(WAKE COUNTY)

PLANS PREPARED BY:



**TOWER ENGINEERING PROFESSIONALS**

326 TRYON ROAD  
RALEIGH, NC 27603  
OFFICE: (919) 661-6351  
www.tepgroup.net

N.C. LICENSE # C-1794

SEAL:



REV	DATE	ISSUED FOR:
2	01-13-17	REVISED MOD. DRAWINGS
1	01-06-17	REVISED MOD. DRAWINGS
0	12-09-16	MODIFICATION DRAWINGS

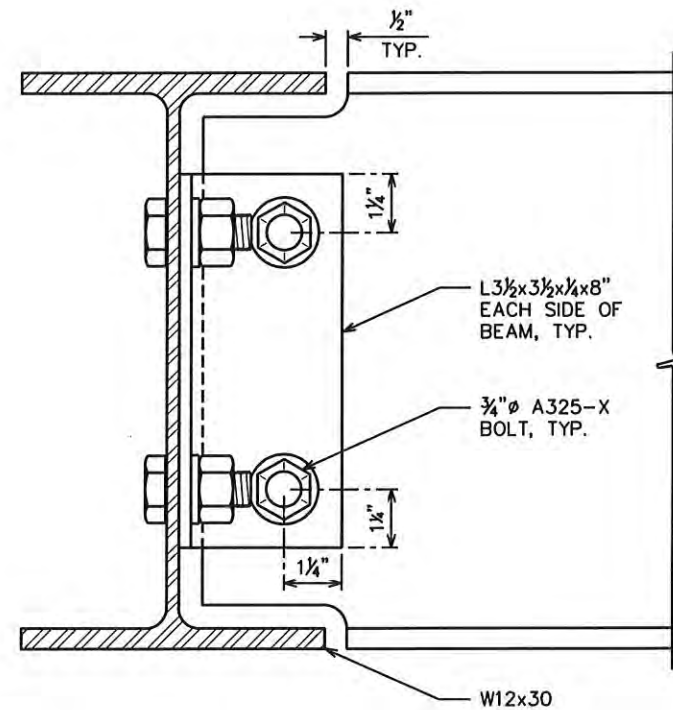
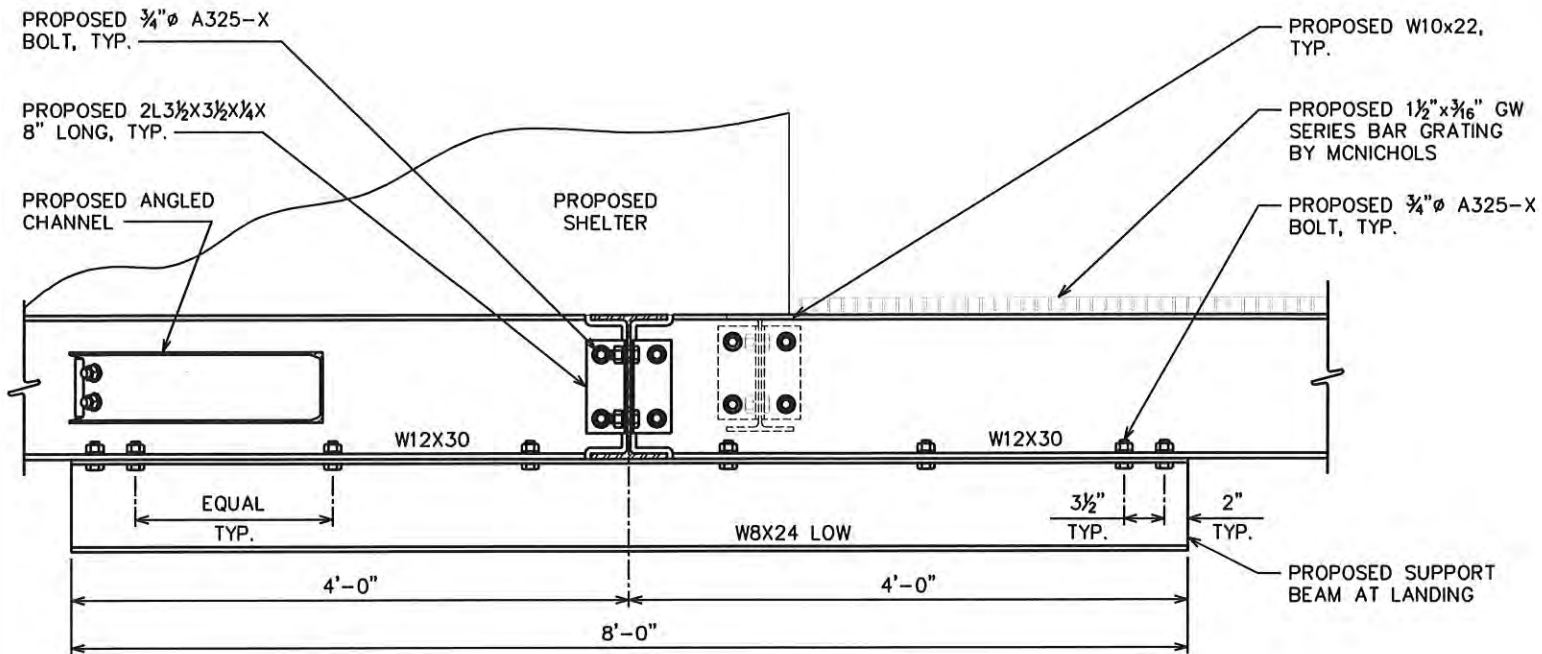
DRAWN BY: JAL CHECKED BY: MDF

SHEET TITLE:

**PLATFORM FRAMING  
DETAILS II**

SHEET NUMBER:	REVISION:
<b>S-6</b>	<b>2</b>
	TEP #: 32795.101281





## SECTION

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

G

0 1 2  
SCALE IN FEET

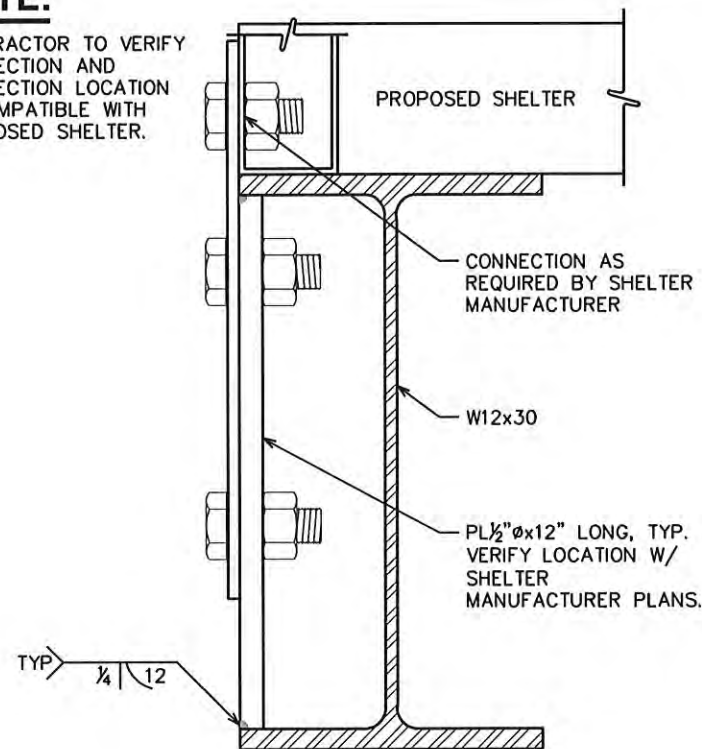
## SECTION

SCALE: 3" = 1'-0"

H

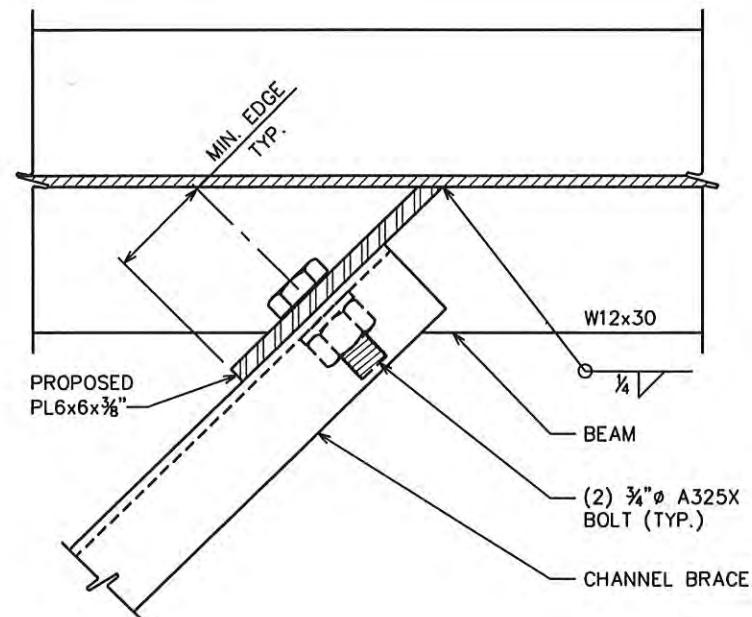
## NOTE:

CONTRACTOR TO VERIFY CONNECTION AND CONNECTION LOCATION IS COMPATIBLE WITH PROPOSED SHELTER.



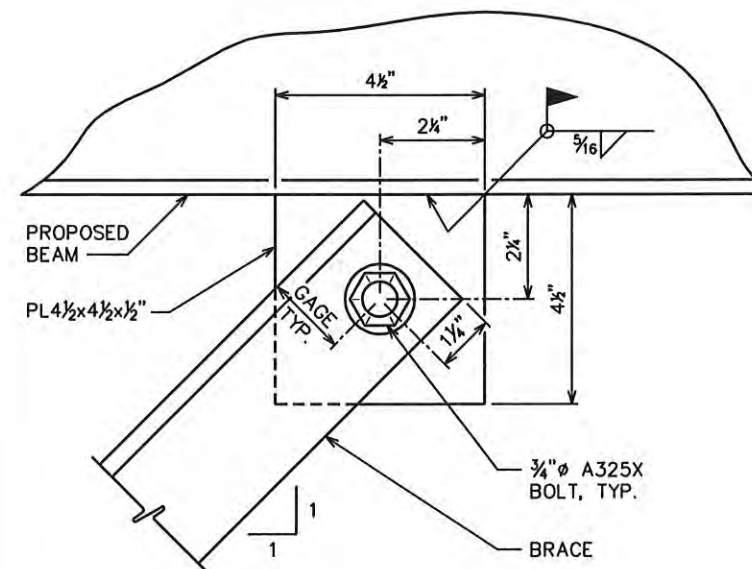
## NOTE:

TOP FLANGE OF BEAM NOT SHOWN FOR CLARITY.



## NOTE:

BOLTS SHALL MEET MINIMUM EDGE AND SPACING REQUIREMENTS AS SPECIFIED BY AISC. SEE SHEET N-3.



## SECTION

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

J

## DETAIL

SCALE: 3" = 1'-0"

1

## DETAIL

SCALE: 3" = 1'-0"

2

PLANS PREPARED FOR:



218 COLLEGE STREET, 5TH FLOOR  
GREENVILLE, SC 29601  
OFFICE: (864) 421-1542

PLANS PREPARED FOR:

**MasTec**  
Network Solutions

1000 CENTRE GREEN WAY, SUITE 300  
CARY, NC 27513

PROJECT INFORMATION:

**AT&T #: 368-615**

5 WEST HARGETT STREET  
RALEIGH, NC 27601  
(WAKE COUNTY)

PLANS PREPARED BY:

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326 TRYON ROAD  
RALEIGH, NC 27603  
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N.C. LICENSE # C-1794

SEAL:



January 13, 2017

REV	DATE	ISSUED FOR:
2	01-13-17	REVISED MOD. DRAWINGS
1	01-06-17	REVISED MOD. DRAWINGS
0	12-09-16	MODIFICATION DRAWINGS

DRAWN BY: JAL CHECKED BY: MDF

SHEET TITLE:

**PLATFORM FRAMING  
DETAILS III**

SHEET NUMBER:

**S-7**

REVISION:

**2**

TEP #: 32795.101281