

# STRUCTURAL DESIGN DRAWINGS

SITE NAME:

**HICKORY NC, NC**

SITE NUMBER:

**282219**

ATC STRUCTURAL ENGINEERING NUMBER:

**OAA724196\_C3\_03**

ATC MODIFICATION ENGINEERING NUMBER:

**OAA724196\_C6\_05**

SITE ADDRESS:

**148-A OCEAN BOULEVARD  
SOUTHERN SHORES, NC 27949  
(DARE COUNTY)  
N 36° 07' 14.88", W 75° 43' 25.32"**

## ATTENTION

QUALIFIED ENGINEERING SERVICES ARE AVAILABLE FROM TEP TO ASSIST CONTRACTORS IN CLASS IV RIGGING PLAN REVIEWS. FOR REQUESTED QUALIFIED ENGINEERING SERVICES, CONTACT TEP FOR QUOTE AT RIGGING@TEPGROUP.NET

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## PROJECT TEAM

### PROJECT CONTACT:

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### ENGINEERING FIRM PROJECT MANAGER:

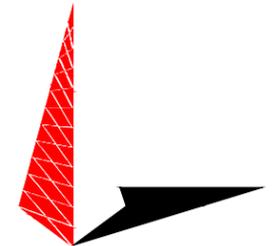
NAME TOWER ENGINEERING PROFESSIONALS, INC.  
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PLANS PREPARED FOR:



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PLANS PREPARED BY:



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N.C. LICENSE # P-1403

SEAL:



June 08, 2018

REV	DATE	ISSUED FOR:
0	06-08-18	MODIFICATION DRAWINGS

DRAWN BY: RTP CHECKED BY: RJR

SHEET TITLE:

**TITLE SHEET**

SHEET NUMBER:

**T-1**

REVISION:

**0**

TEP#: 60448.202443

MI CHECKLIST		
REQUIRED	REPORT ITEM	BRIEF DESCRIPTION
<b>PRE-CONSTRUCTION</b>		
X	MI CHECKLIST DRAWING	THIS CHECKLIST SHALL BE INCLUDED IN THE MI REPORT.
NA	EOR APPROVED SHOP DRAWINGS	ONCE THE PRE-MODIFICATION MAPPING IS COMPLETE AND PRIOR TO FABRICATION, THE CONTRACTOR SHALL PROVIDE DETAILED ASSEMBLY DRAWINGS AND/OR SHOP DRAWINGS. THESE ARE TO INCLUDE, BUT ARE NOT LIMITED TO, A VISUAL LAYOUT OF NEW REINFORCEMENT, EXISTING REINFORCEMENT CONFIGURATION, PORTHOLES, MOUNTS, STEP PEGS, SAFETY CLIMBS AND ANY OTHER MISCELLANEOUS ITEMS WHICH MAY AFFECT SUCCESSFUL INSTALLATION OF MODIFICATIONS ON THE TOWER. THESE DRAWINGS SHALL BE SUBMITTED TO THE EOR FOR APPROVAL. APPROVED ASSEMBLY/SHOP DRAWINGS SHALL BE SUBMITTED TO THE MI INSPECTOR FOR INCLUSION IN THE MI REPORT.
X	FABRICATION INSPECTION	A LETTER FROM THE FABRICATOR, STATING THAT THE WORK WAS PERFORMED IN ACCORDANCE WITH INDUSTRY STANDARDS AND THE CONTRACT DOCUMENTS, SHALL BE PROVIDED TO THE MI INSPECTOR FOR INCLUSION IN THE MI REPORT.
X	FABRICATOR CERTIFIED WELD INSPECTION	A CWI SHALL INSPECT ALL WELDING PERFORMED ON STRUCTURAL MEMBERS DURING FABRICATION. A WRITTEN REPORT SHALL BE PROVIDED TO THE MI INSPECTOR FOR INCLUSION IN THE MI REPORT.
X	MATERIAL TEST REPORTS (MTR)	MATERIAL TEST REPORTS SHALL BE PROVIDED FOR MATERIAL USED. MTRS SHALL BE PROVIDED TO THE MI INSPECTOR FOR INCLUSION IN THE MI REPORT.
X	FABRICATOR NDE INSPECTION REPORT	CRITICAL SHOP WELDS THAT REQUIRE TESTING ARE NOTED ON THESE CONTRACT DRAWINGS. A CERTIFIED NDT INSPECTOR SHALL PERFORM NON-DESTRUCTIVE EXAMINATION AND A REPORT SHALL BE PROVIDED TO THE MI INSPECTOR FOR INCLUSION IN THE MI REPORT.
NA	NDE OF MONOPOLE BASE PLATE	A NDE OF THE POLE TO BASE PLATE CONNECTION IS REQUIRED AND A WRITTEN REPORT SHALL BE PROVIDED TO THE MI INSPECTOR FOR INCLUSION IN THE MI REPORT.
X	PACKING SLIPS	THE MATERIAL SHIPPING LIST SHALL BE PROVIDED TO THE MI INSPECTOR FOR INCLUSION IN THE MI REPORT.
ADDITIONAL TESTING AND INSPECTIONS:		
NA		
<b>CONSTRUCTION</b>		
NA	FOUNDATION INSPECTIONS	A VISUAL OBSERVATION OF THE EXCAVATION AND REBAR SHALL BE PERFORMED BEFORE PLACING THE CONCRETE. A VISUAL OBSERVATION OF THE REBAR SHALL BE PERFORMED BEFORE PLACING THE EPOXY. A SEALED WRITTEN REPORT SHALL BE PROVIDED TO THE MI INSPECTOR FOR INCLUSION IN THE MI REPORT.
NA	CONCRETE COMP. STRENGTH AND SLUMP TESTS	THE CONCRETE MIX DESIGN, SLUMP TEST, AND COMPRESSIVE STRENGTH TESTS SHALL BE PROVIDED AS PART OF THE FOUNDATION REPORT.
NA	EARTHWORK	FOUNDATION SUB-GRADES SHALL BE INSPECTED AND APPROVED BY A GEOTECHNICAL ENGINEER AND RESULTS INCLUDED AS PART OF THE FOUNDATION REPORT.
NA	MICROPILE/ROCK ANCHOR	MICROPILES/ROCK ANCHORS SHALL BE INSPECTED BY THE FOUNDATION INSPECTION VENDOR AND SHALL BE INCLUDED AS PART OF THE FOUNDATION INSPECTION REPORT, ADDITIONAL TESTING AND/OR INSPECTION REQUIREMENTS ARE NOTED IN THESE CONTRACT DOCUMENTS.
NA	POST INSTALLED ANCHOR ROD VERIFICATION	POST INSTALLED ANCHOR ROD VERIFICATION SHALL BE PERFORMED AND A REPORT SHALL BE PROVIDED TO THE MI INSPECTOR FOR INCLUSION IN THE MI REPORT.
NA	BASE PLATE GROUT VERIFICATION	THE GENERAL CONTRACTOR SHALL PROVIDE DOCUMENTATION TO THE MI INSPECTOR THAT CERTIFIES THAT THE GROUT WAS REMOVED AND/OR INSTALLED IN ACCORDANCE WITH CONTRACTOR DOCUMENTS FOR INCLUSION IN THE MI REPORT.
NA	FIELD CERTIFIED WELD INSPECTION	AN AWS CERTIFIED WELD INSPECTOR SHALL INSPECT AND TEST FIELD WELDS, IN ACCORDANCE WITH AWS D1.1/D1.1M: "STRUCTURAL WELDING CODE - STEEL". A REPORT SHALL BE PROVIDED. NDE OF FIELD WELDS SHALL BE PERFORMED AS REQUIRED PER CONTRACT DOCUMENTS. THE NDE REPORT SHALL BE INCLUDED IN THE CWI REPORT.
X	ON SITE COLD GALVANIZING VERIFICATION	THE GENERAL CONTRACTOR SHALL PROVIDE WRITTEN AND PHOTOGRAPHIC DOCUMENTATION TO THE MI INSPECTOR VERIFYING THAT ANY ON-SITE COLD GALVANIZING WAS APPLIED PER MANUFACTURER SPECIFICATIONS AND APPLICABLE STANDARDS.
NA	TENSION TWIST AND PLUMB	THE GENERAL CONTRACTOR SHALL PROVIDE A REPORT IN ACCORDANCE WITH APPLICABLE STANDARDS DOCUMENTING TENSION TWIST AND PLUMB.
X	GC AS-BUILT DOCUMENTS	THE GENERAL CONTRACTOR SHALL SUBMIT A LEGIBLE COPY OF THE ORIGINAL DESIGN DRAWINGS EITHER STATING "INSTALLED AS DESIGNED" OR NOTING ANY CHANGES THAT WERE REQUIRED AND APPROVED BY THE ENGINEER OF RECORD. EOR/RFI FORMS APPROVING ALL CHANGES SHALL BE SUBMITTED WHEN THE EOR IS SPECIFYING ADDITIONAL INSPECTIONS DESCRIPTION AND APPLICABLE STANDARDS SHALL BE APPLIED.
ADDITIONAL TESTING AND INSPECTIONS:		
NA		
<b>POST-CONSTRUCTION</b>		
X	CONSTRUCTION COMPLIANCE LETTER	A LETTER FROM THE GENERAL CONTRACTOR STATING THAT THE WORKMANSHIP WAS PERFORMED IN ACCORDANCE WITH INDUSTRY STANDARDS AND THESE CONTRACT DRAWINGS, INCLUDING LISTING ADDITIONAL PARTIES TO THE MODIFICATION PROCESS.
NA	POST INSTALLED ANCHOR ROD PULL TESTS	POST-INSTALLED ANCHOR RODS SHALL BE TESTED IN ACCORDANCE WITH CONTRACT DOCUMENTS AND A REPORT SHALL BE PROVIDED INDICATING TESTING RESULTS.
X	PHOTOGRAPHS	PHOTOGRAPHS SHALL BE SUBMITTED TO THE MI. PHOTOS SHALL DOCUMENT ALL PHASES OF THE CONSTRUCTION. THE PHOTOS SHALL BE ORGANIZED IN A MANNER THAT EASILY IDENTIFIES THE EXACT LOCATION OF THE PHOTO.
NA	BOLT INSTALLATION AND VERIFICATION REPORT	THE MI INSPECTOR SHALL VERIFY THE INSTALLATION AND TIGHTNESS 10% OF ALL NON PRE-TENSIONED BOLTS INSTALLED AS PART OF THE MODIFICATION. THE MI INSPECTOR SHALL LOOSEN THE NUT AND VERIFY THE BOLT HOLE SIZE AND CONDITION. THE MI REPORT SHALL CONTAIN THE COMPLETED BOLT INSTALLATION VERIFICATION REPORT, INCLUDING THE SUPPORTING PHOTOGRAPHS.
X	PUNCHLIST DEVELOPMENT AND CORRECTION DOCUMENTATION	FINAL PUNCHLIST INDICATING ALL NONCONFORMANCE(S) IDENTIFIED AND THE FINAL RESOLUTION AND APPROVAL.
X	MI INSPECTOR REDLINE OR RECORD DRAWING(S)	THE MI INSPECTOR SHALL OBSERVE AND REPORT ANY DISCREPANCIES BETWEEN THE CONTRACTOR'S REDLINE DRAWING AND THE ACTUAL COMPLETED INSTALLATION.
ADDITIONAL TESTING AND INSPECTIONS:		
NA		

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 MI IS AN ON-SITE VISUAL AND HANDS-ON INSPECTION OF TOWER MODIFICATIONS INCLUDING A REVIEW OF CONSTRUCTION REPORTS AND ADDITIONAL PERTINENT DOCUMENTATION PROVIDED BY THE GENERAL CONTRACTOR (GC), AS WELL AS ANY INSPECTION DOCUMENTS PROVIDED BY 3RD PARTY INSPECTORS. THE MI IS TO ENSURE THE INSTALLATION WAS CONSTRUCTED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS, NAMELY THE MODIFICATION DRAWINGS AS DESIGNED BY THE ENGINEER OF RECORD (EOR).

NO DOCUMENT, CODE OR POLICY CAN ANTICIPATE EVERY SITUATION THAT MAY ARISE. ACCORDINGLY, THIS CHECKLIST IS INTENDED TO SERVE AS A SOURCE OF GUIDING PRINCIPLES IN ESTABLISHING GUIDELINES FOR MODIFICATION INSPECTION.

THE MI IS TO CONFIRM INSTALLATION CONFIGURATION AND WORKMANSHIP ONLY AND IS NOT A REVIEW OF THE MODIFICATION DESIGN ITSELF, AND THE MI INSPECTOR DOES NOT TAKE OWNERSHIP OF THE MODIFICATION DESIGN. OWNERSHIP OF THE STRUCTURAL MODIFICATION DESIGN EFFECTIVENESS AND INTEGRITY RESIDES WITH THE EOR AT ALL TIMES. THE MI INSPECTOR SHALL INSPECT AND NOTE CONFORMANCE/NONCONFORMANCE AND PROVIDE TO THE TOWER OWNER POINT OF CONTACT FOR EVALUATION.

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 PURCHASE ORDER (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 THE GC AND/OR INSPECTOR SHALL CONTACT THE TOWER OWNER POINT OF CONTACT.

**SERVICE LEVEL COMMITMENT**  
 THE FOLLOWING RECOMMENDATIONS AND SUGGESTIONS ARE OFFERED TO ENHANCE THE EFFICIENCY AND EFFECTIVENESS OF DELIVERING AN MI REPORT:

- THE GC SHALL 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.
- WHEN POSSIBLE, IT IS PREFERRED TO HAVE THE GC AND MI INSPECTOR ON-SITE DURING THE MI TO HAVE ANY MINOR 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.

**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
  - FINAL INSTALLED CONDITION
  - SURFACE COATING REPAIR
- POST CONSTRUCTION PHOTOGRAPHS
  - FINAL INFIELD CONDITION

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

PLANS PREPARED FOR:



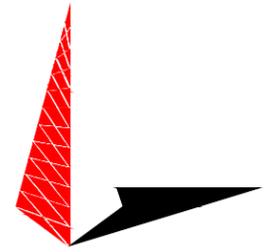
**AMERICAN TOWER CORPORATION**  
 3500 REGENCY PARKWAY, SUITE 100  
 CARY, NC 27518  
 OFFICE: (919) 466-5149

PROJECT INFORMATION:

**HICKORY NC, NC**  
**SITE #: 282219**

148-A OCEAN BOULEVARD  
 SOUTHERN SHORES, NC 27949  
 (DARE COUNTY)

PLANS PREPARED BY:



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N.C. LICENSE # P-1403

SEAL:



June 08, 2018

0	06-08-18	MODIFICATION DRAWINGS
REV	DATE	ISSUED FOR:

DRAWN BY: RTP CHECKED BY: RJR

SHEET TITLE:

**MI CHECKLIST AND NOTES**

SHEET NUMBER: **N-1** REVISION: **0**

TEP#: 60448.202443

**GENERAL NOTES:**

1. ALL REFERENCES TO THE OWNER IN THESE DOCUMENTS SHALL BE CONSIDERED AMERICAN TOWER CORPORATION 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 ITS 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/ASSE A10.48 (LATEST EDITION), FEDERAL, STATE, AND LOCAL REGULATIONS; AND ANY APPLICABLE INDUSTRY CONSENSUS STANDARDS RELATED TO THE CONSTRUCTION ACTIVITIES BEING PERFORMED. ALL RIGGING PLANS SHALL ADHERE TO ANSI/ASSE A10.48 (LATEST EDITION) INCLUDING THE REQUIRED INVOLVEMENT OF A QUALIFIED ENGINEER FOR CLASS IV CONSTRUCTION TO CERTIFY THE SUPPORTING STRUCTURE(S) IN ACCORDANCE WITH THE ANSI/TIA-322 (LATEST EDITION).

PLANS PREPARED FOR:



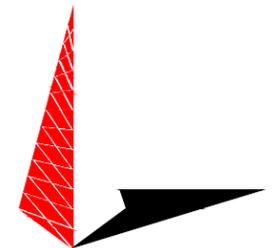
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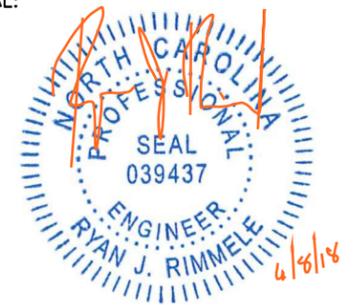


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SHEET TITLE:

**PROJECT NOTES I**

SHEET NUMBER: **N-2** REVISION: **0**  
TEP#: 60448.202443

## 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 A36
  - PIPE/TUBE: ASTM A500-46
  - PLATE: ASTM A36 (SELF SUPPORTING AND GUYED TOWERS)
  - PLATE: ASTM A572-65 (MONOPOLE)
  - A. 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 DEGREES (FAHRENHEIT). 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 AND 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 OR 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. PROVIDE WELDS ALL AROUND OR ADD SEAL WELDS WHERE STRUCTURAL WELDS ARE NOT SPECIFIED.

## BOLT TIGHTENING PROCEDURE:

1. UNLESS OTHERWISE NOTED, 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. WHEN SPECIFIED IN THE DRAWINGS, CONNECTION BOLTS 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.

## FIELD NDE MINIMUM REQUIREMENTS:

1. ALL NDE SHALL BE IN ACCORDANCE WITH AWS D1.1.
2. FOR NEW BASE STIFFENERS (INCLUSIVE OF TRANSITION STIFFENERS) AND ANCHOR ROD BRACKETS, COMPLETE JOINT PENETRATION WELDS SHALL BE 100% INSPECTED BY ULTRASONIC TESTING (UT). ALL PARTIAL JOINT PENETRATION AND FILLET WELDS SHALL BE 100% INSPECTED BY MAGNETIC PARTICLE TESTING (MT).
3. FOR NEW FLAT PLATE REINFORCEMENT AT THE BASE OF THE TOWER, COMPLETE JOINT PENETRATION WELDS SHALL BE 100% INSPECTED BY ULTRASONIC TESTING (UT). ALL PARTIAL JOINT PENETRATION AND FILLET WELDS SHALL BE 100% INSPECTED BY MAGNETIC PARTICLE TESTING (MT), BUT MAY BE LIMITED TO A HEIGHT OF 10'-0".
4. FOR NDE OF THE EXISTING BASE PLATE CIRCUMFERENTIAL WELD, GC SHALL REFERENCE THE MI CHECKLIST FOR APPLICABILITY. NOTIFY THE EOR AND TOWER OWNER IMMEDIATELY IF ANY CRACKS ARE SUSPECTED OR HAVE BEEN IDENTIFIED. THE NDE SHALL INCLUDE ALL EXISTING MODIFICATIONS THAT HAVE BEEN WELDED TO THE BASE PLATE.
5. ALL TESTING LIMITATIONS SHALL BE DETAILED IN THE NDE REPORT.

PLANS PREPARED FOR:



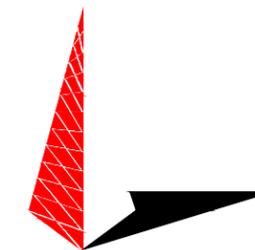
3500 REGENCY PARKWAY, SUITE 100  
CARY, NC 27518  
OFFICE: (919) 466-5149

PROJECT INFORMATION:

**HICKORY NC, NC**  
**SITE #: 282219**

148-A OCEAN BOULEVARD  
SOUTHERN SHORES, NC 27949  
(DARE COUNTY)

PLANS PREPARED BY:

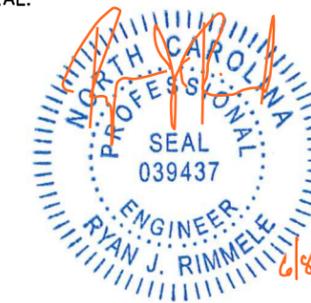


**TOWER ENGINEERING PROFESSIONALS**

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

N.C. LICENSE # P-1403

SEAL:



June 08, 2018

REV	DATE	ISSUED FOR:
0	06-08-18	MODIFICATION DRAWINGS

DRAWN BY: RTP CHECKED BY: RJR

SHEET TITLE:

**PROJECT NOTES II**

SHEET NUMBER:

**N-3**

REVISION:

**0**

TEP#: 60448.202443

**PROJECT BILL OF MATERIALS**

PART	SHEET REF.	MEMBER SIZE	LENGTH	GRADE	QTY	BOLT SIZE	BOLT GRADE	TOTAL BOLT QTY	WEIGHT PER PART (LB.)	TOTAL WEIGHT (LB.)
PIPE SECTION	S-2	14.000" O.D. (0.500" TH.)	30'	ASTM A53-B-42	1	-	-	-	2164.8	2164.8
PIPE SECTION	S-3	6.625" O.D. (0.864" TH.)	20'	ASTM A53-B-42	1	-	-	-	1064.0	1064.0
FLANGE PLATE	S-6	PL34½" O.D. (11" I.D.)	1½"	ASTM A572-50	1	¾"ø x 4½"	ASTM A325-X	16	39.0	78.0
FLANGE PLATE	S-8	PL20" O.D. (11" I.D.)	1½"	ASTM A572-50	1	¾"ø x 5½"	ASTM A325-X	12	90.6	90.6
FLANGE PLATE	S-8	PL20" O.D. (6¾" I.D.)	2"	ASTM A572-50	2	¾"ø x 4"	ASTM A325-X	6	154.3	308.7
BULKHEAD PLATE	S-6	PL34½" O.D. (14½" I.D. HOLE)	½"	ASTM A572-50	2	-	-	-	86.3	172.5
BULKHEAD PLATE	S-7	PL34½" O.D. (14½" I.D. HOLE)	½"	ASTM A572-50	1	-	-	-	85.4	85.4
BULKHEAD PLATE	S-7	PL36½" O.D. (6¾" I.D. HOLE)	½"	ASTM A572-50	1	-	-	-	119.2	119.2
CAP PLATE	S-8	PL36½" O.D.	½"	ASTM A572-50	1	-	-	-	147.9	147.9
RING PLATE	S-6	PL3"x35" O.D.	¼"	ASTM A36	2	-	-	-	23.2	46.4
RING PLATE	S-6	PL6"x35" O.D.	¼"	ASTM A36	3	-	-	-	46.4	139.3
RING PLATE	S-6	PL3"x37" O.D.	¼"	ASTM A36	2	-	-	-	24.6	49.1
STIFFENER PLATE	S-8	PL6"x9"	1"	ASTM A572-50	8	-	-	-	10.6	84.4
HANDHOLE	S-5	PL6"x9"x3½"	½"	ASTM A572-65	9	-	-	-	13.3	119.3
HEAVY HEX NUT	S-3	¾"	-	ASTM A563	34	-	-	-	0.2	6.6
PLATE WASHER	S-3	PL1½" O.D. (1½" I.D. HOLE)	¾"	ASTM F436	68	-	-	-	0.1	2.8
RIVET NUT	S-3	¾"	-	-	60	5/16" x 1½"	ASTM F593	60	0.1	3.0

PLANS PREPARED FOR:



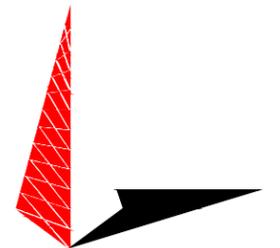
**AMERICAN TOWER CORPORATION**  
 3500 REGENCY PARKWAY, SUITE 100  
 CARY, NC 27518  
 OFFICE: (919) 466-5149

PROJECT INFORMATION:

**HICKORY NC, NC**  
**SITE #: 282219**

148-A OCEAN BOULEVARD  
 SOUTHERN SHORES, NC 27949  
 (DARE COUNTY)

PLANS PREPARED BY:

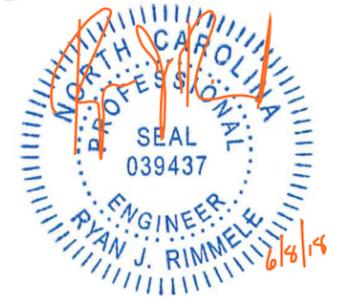


**TOWER ENGINEERING PROFESSIONALS**

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

N.C. LICENSE # P-1403

SEAL:



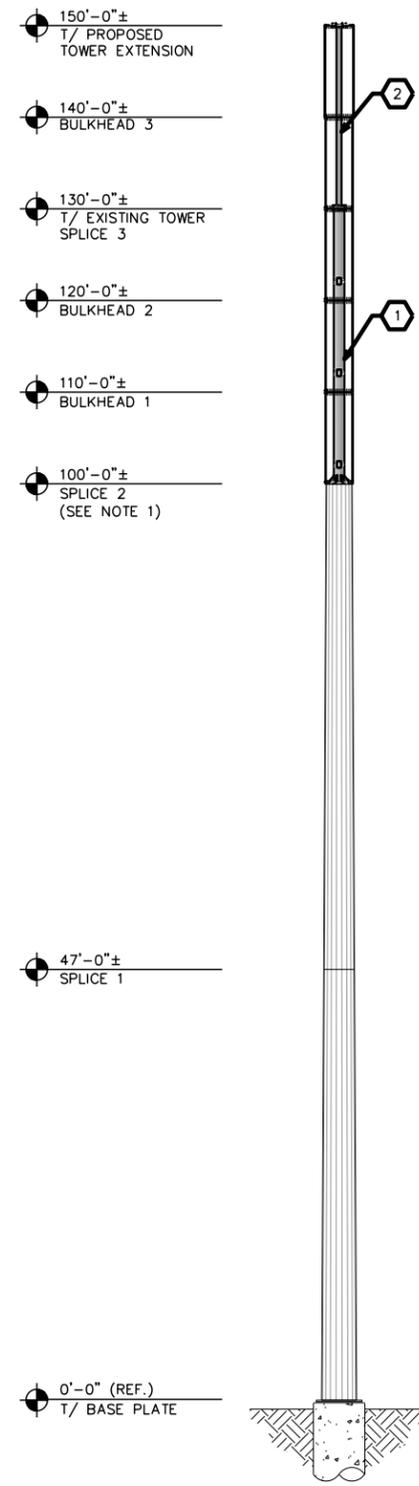
June 08, 2018

0	06-08-18	MODIFICATION DRAWINGS
REV	DATE	ISSUED FOR:

DRAWN BY: RTP    CHECKED BY: RJR

SHEET TITLE:  
**BILL OF MATERIALS**

SHEET NUMBER: **N-4**    REVISION: **0**  
 TEP#: 60448.202443



MODIFICATION SCHEDULE			
NO.	MODIFICATION DESCRIPTION	ELEVATION (FT.)	SHEET
1	REMOVE AND REPLACE EXISTING TOWER SECTION.	100.0 - 130.0	S-2 THROUGH S-10
2	INSTALL PROPOSED TOWER EXTENSION.	130.0 - 150.0	S-3 THROUGH S-10
3	CONTRACTOR TO PLUMB TOWER PER SECTION 13.3.3 OF ANSI/TIA-222-G.	-	-
4	MODIFICATION INSPECTION BY TEP. CONTACT TEP FOR FEE: PMI@TEPGROUP.NET	-	-

**NOTES:**

- CONTRACTOR SHALL FIELD VERIFY SPLICE ELEVATION PRIOR TO INSTALLATION. CONTACT TOWER OWNER AND ENGINEER OF RECORD IF SPLICE ELEVATIONS DIFFER FROM WHAT IS SHOWN. SHAFT REINFORCEMENT ELEVATIONS ARE DEPENDENT ON SPLICE ELEVATIONS AND MAY NEED TO BE ADJUSTED TO ACCOMMODATE ACTUAL SPLICE ELEVATION.
- ANTENNAS AND OTHER APPURTENANCES MAY NEED TO BE TEMPORARILY REMOVED OR MOVED DURING THE INSTALLATION OF THE MODIFICATIONS SHOWN ABOVE.
- CONTRACTOR SHALL ORDER AND INSTALL A NEW TOWER TAG IF THE EXISTING TOWER TAG IS MOVED OR DAMAGED DUE TO THE INSTALLATION OF THE MODIFICATION SHOWN ABOVE.
- PRIOR TO FABRICATION AND INSTALLATION, CONTRACTOR SHALL FIELD VERIFY ALL LENGTHS AND QUANTITIES GIVEN. LENGTH AND QUANTITIES PROVIDED ARE FOR QUOTING PURPOSES ONLY AND SHALL NOT BE USED FOR FABRICATION.
- NO DETAILED INFORMATION REGARDING INTERFERENCES WAS PROVIDED. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS. REPORT ANY AND ALL DISCREPANCIES TO TOWER ENGINEERING PROFESSIONALS, INC. AND AMERICAN TOWER CONSTRUCTION MANAGER IMMEDIATELY.

PLANS PREPARED FOR:



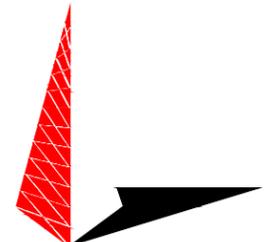
**AMERICAN TOWER**  
CORPORATION  
3500 REGENCY PARKWAY, SUITE 100  
CARY, NC 27518  
OFFICE: (919) 466-5149

PROJECT INFORMATION:

**HICKORY NC, NC**  
**SITE #: 282219**

148-A OCEAN BOULEVARD  
SOUTHERN SHORES, NC 27949  
(DARE COUNTY)

PLANS PREPARED BY:



**TOWER ENGINEERING PROFESSIONALS**  
326 TRYON ROAD  
RALEIGH, NC 27603  
OFFICE: (919) 661-6351  
www.tepgroup.net  
N.C. LICENSE # P-1403

SEAL:



June 08, 2018

REV	DATE	ISSUED FOR:
0	06-08-18	MODIFICATION DRAWINGS

DRAWN BY: RTP CHECKED BY: RJR

SHEET TITLE:

**TOWER ELEVATION AND MODIFICATION SCHEDULE**

SHEET NUMBER: **S-1** REVISION: **0**  
TEP#: 60448.202443

**TOWER ELEVATION**  
SCALE: 1" = 20'-0"



130'-0"±  
SPLICE 3

PROPOSED HANDHOLE,  
TYP. SEE SHEET S-4  
FOR DETAILS

121'-0"±  
PROPOSED  
HANDHOLE

120'-0"±  
BULKHEAD 2

PROPOSED HANDHOLE,  
TYP. SEE SHEET S-4  
FOR DETAILS

111'-0"±  
PROPOSED  
HANDHOLE

110'-0"±  
BULKHEAD 1

PROPOSED 14" XS  
(14.000" O.D. x 0.500")  
(ASTM A53-B-42)  
TOWER SECTION

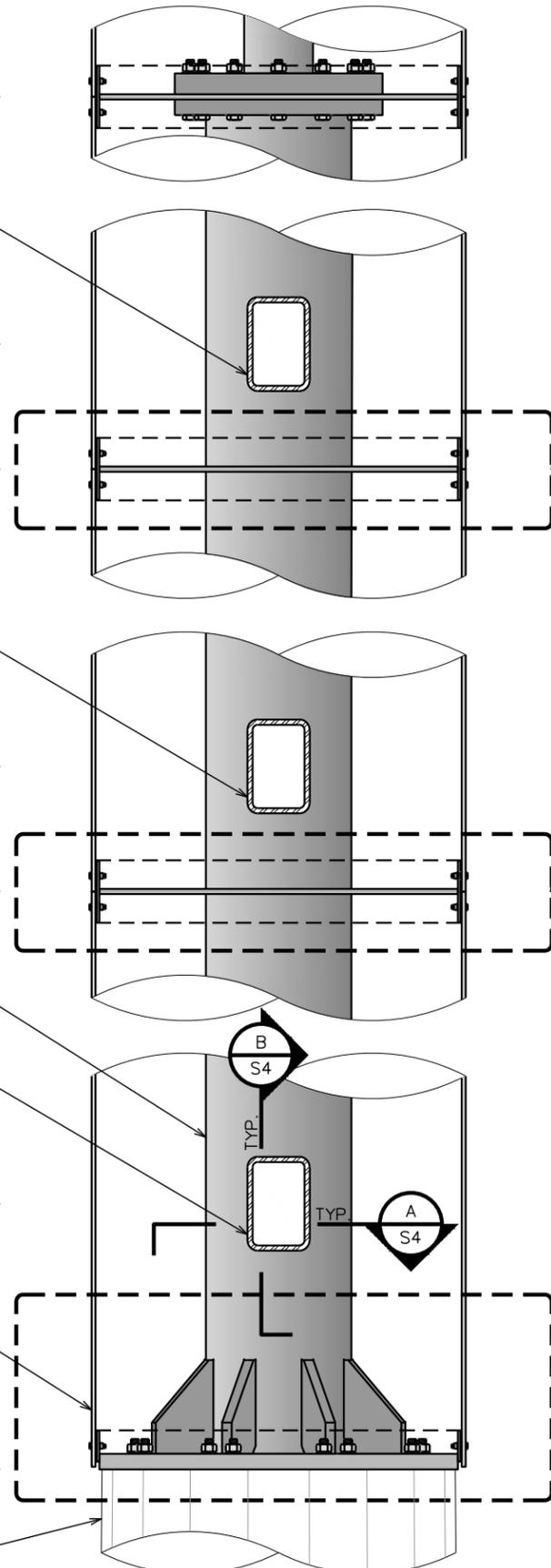
PROPOSED HANDHOLE,  
TYP. SEE SHEET S-4  
FOR DETAILS

102'-0"±  
PROPOSED  
HANDHOLE

PROPOSED  
CONCEALMENT  
CANISTER, TYP. SEE  
SHEETS S-4 AND S-9  
FOR DETAILS

100'-0"±  
SPLICE 2

EXISTING TOWER  
SECTION



PROPOSED TOWER SECTION.  
SEE THIS SHEET FOR  
DETAILS

PROPOSED BULKHEAD  
ASSEMBLY, TYP. (ASSEMBLY  
#2). SEE SHEETS S-4 AND  
S-6 FOR DETAILS

PROPOSED CONCEALMENT  
CANISTER ATTACHMENT  
BOLT, TYP. SEE SHEET S-4  
FOR DETAILS

PROPOSED CONCEALMENT  
CANISTER, TYP. SEE SHEETS  
S-4 AND S-9 FOR DETAILS

PROPOSED TOWER SECTION.  
SEE THIS SHEET FOR  
DETAILS

PROPOSED CONCEALMENT  
CANISTER, TYP. SEE SHEETS  
S-4 AND S-9 FOR DETAILS

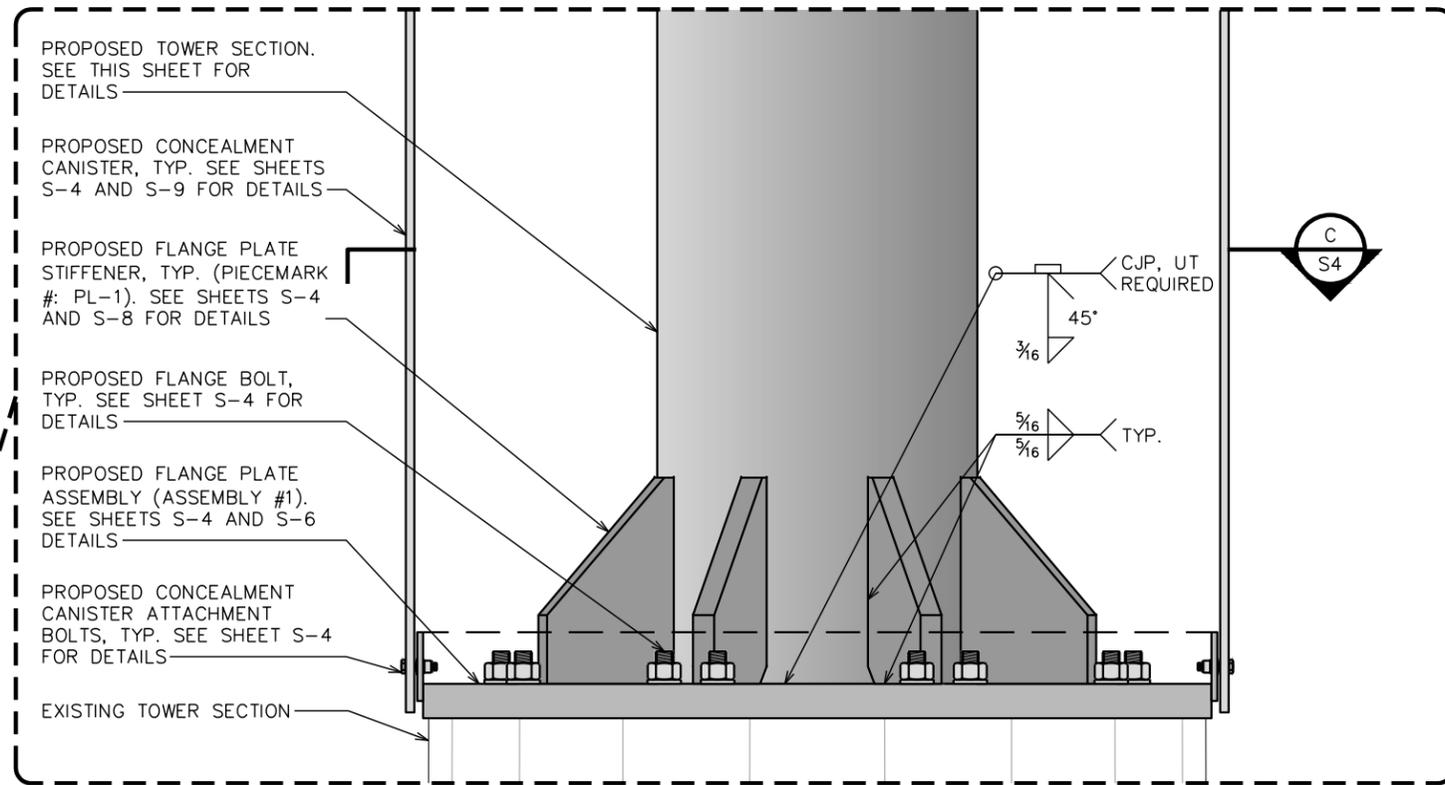
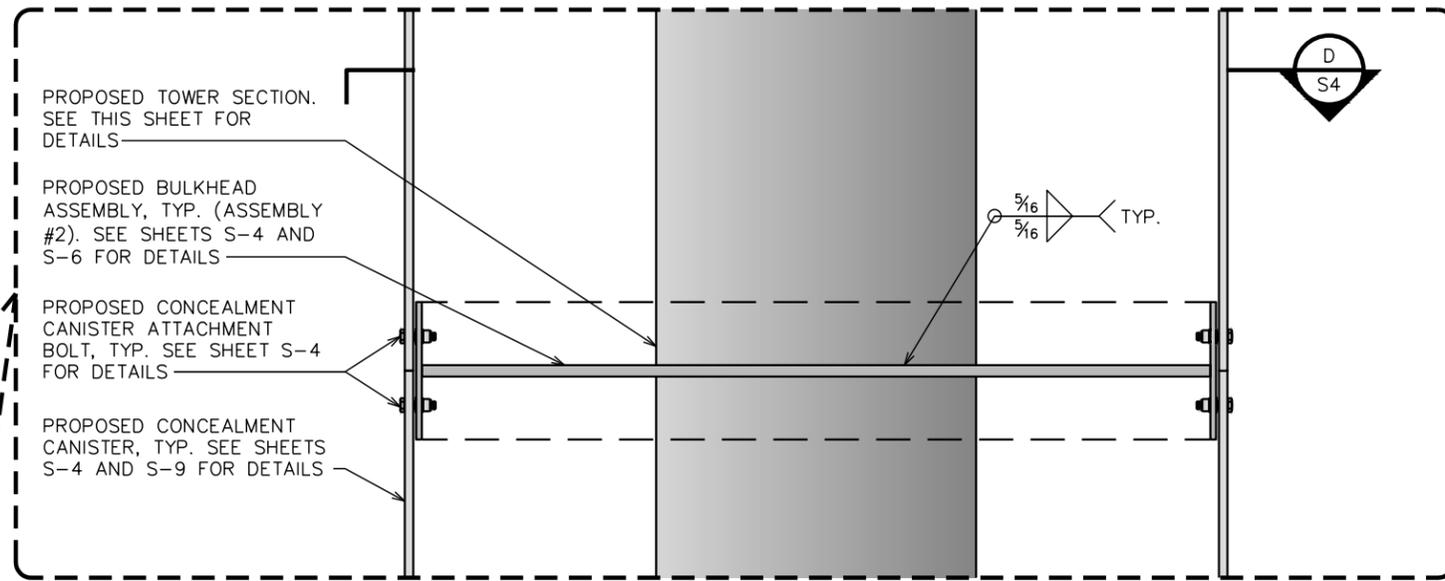
PROPOSED FLANGE PLATE  
STIFFENER, TYP. (PIECEMARK  
#: PL-1). SEE SHEETS S-4  
AND S-8 FOR DETAILS

PROPOSED FLANGE BOLT,  
TYP. SEE SHEET S-4 FOR  
DETAILS

PROPOSED FLANGE PLATE  
ASSEMBLY (ASSEMBLY #1).  
SEE SHEETS S-4 AND S-6  
DETAILS

PROPOSED CONCEALMENT  
CANISTER ATTACHMENT  
BOLTS, TYP. SEE SHEET S-4  
FOR DETAILS

EXISTING TOWER SECTION



### PARTIAL ELEVATION

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



PLANS PREPARED FOR:

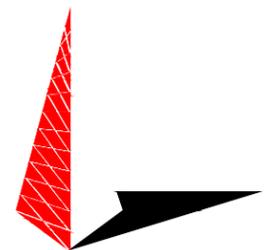
**AMERICAN TOWER CORPORATION**  
3500 REGENCY PARKWAY, SUITE 100  
CARY, NC 27518  
OFFICE: (919) 466-5149

PROJECT INFORMATION:

**HICKORY NC, NC  
SITE #: 282219**

148-A OCEAN BOULEVARD  
SOUTHERN SHORES, NC 27949  
(DARE COUNTY)

PLANS PREPARED BY:

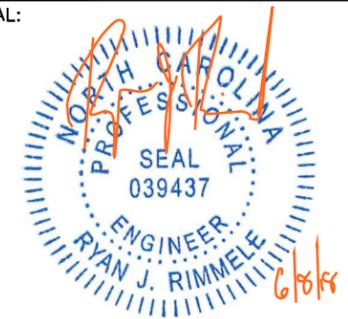


**TOWER ENGINEERING PROFESSIONALS**

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

N.C. LICENSE # P-1403

SEAL:



June 08, 2018

0	06-08-18	MODIFICATION DRAWINGS
REV	DATE	ISSUED FOR:

DRAWN BY: RTP | CHECKED BY: RJR

SHEET TITLE:

**TOWER  
REINFORCEMENT  
DETAILS I**

SHEET NUMBER: **S-2** REVISION: **0**

TEP#: 60448.202443

150'-0"±  
T/ PROPOSED  
EXTENSION

PROPOSED  
CONCEALMENT  
CANISTER, TYP. SEE  
SHEETS S-5 AND S-10  
FOR DETAILS

140'-0"±  
BULKHEAD 3

PROPOSED 6" XXS  
(6.625" O.D. x 0.864")  
(ASTM A53-B-42)  
TOWER SECTION

PROPOSED  
CONCEALMENT  
CANISTER, TYP. SEE  
SHEETS S-5 AND S-9  
FOR DETAILS

130'-0"±  
SPLICE 3

PROPOSED CAP PLATE  
ASSEMBLY (ASSEMBLY #5).  
SEE SHEETS S-5 AND S-8  
FOR DETAILS

PROPOSED CONCEALMENT  
CANISTER ATTACHMENT  
BOLTS, TYP. SEE SHEET S-5  
FOR DETAILS

PROPOSED CONCEALMENT  
CANISTER, TYP. SEE SHEETS  
S-5 AND S-10 FOR DETAILS

PROPOSED FLANGE PLATE  
(PIECEMARK #: PL-3). SEE  
SHEETS S-5 AND S-8 FOR  
DETAILS

PROPOSED FLANGE  
BOLT, TYP. SEE  
SHEET S-5 FOR  
DETAILS

PROPOSED TOWER  
SECTION. SEE THIS  
SHEET FOR DETAILS

PROPOSED CONCEALMENT  
CANISTER, TYP. SEE SHEETS  
S-5 AND S-10 FOR DETAILS

PROPOSED BULKHEAD  
ASSEMBLY (ASSEMBLY #4).  
SEE SHEETS S-5 AND S-7  
FOR DETAILS

PROPOSED CONCEALMENT  
CANISTER ATTACHMENT  
BOLT, TYP. SEE SHEET S-5  
FOR DETAILS

PROPOSED CONCEALMENT  
CANISTER, TYP. SEE SHEETS  
S-5 AND S-9 FOR DETAILS

PROPOSED TOWER  
SECTION. SEE THIS  
SHEET FOR DETAILS

5/16  
5/16 TYP.

PROPOSED CONCEALMENT  
CANISTER, TYP. SEE SHEETS  
S-5 AND S-9 FOR DETAILS

PROPOSED FLANGE PLATE  
(PIECEMARK #: PL-3). SEE  
SHEETS S-5 AND S-8 FOR  
DETAILS

PROPOSED BULKHEAD  
ASSEMBLY (ASSEMBLY #3).  
SEE SHEETS S-5 AND S-7  
FOR DETAILS

PROPOSED CONCEALMENT  
CANISTER ATTACHMENT  
BOLTS, TYP. SEE SHEET S-5  
FOR DETAILS

PROPOSED FLANGE PLATE  
(PIECEMARK #: PL-2). SEE  
SHEETS S-5 AND S-8 FOR  
DETAILS

PROPOSED TOWER SECTION.  
SEE SHEET S-2 FOR  
DETAILS

PROPOSED TOWER  
SECTION. SEE THIS  
SHEET FOR DETAILS

PROPOSED FLANGE  
BOLT, TYP. SEE  
SHEET S-5 FOR  
DETAILS

CJP, UT  
REQUIRED

45°  
3/16

G  
S5

F  
S5

E  
S5

PLANS PREPARED FOR:



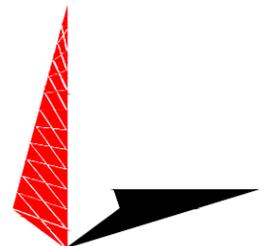
3500 REGENCY PARKWAY, SUITE 100  
CARY, NC 27518  
OFFICE: (919) 466-5149

PROJECT INFORMATION:

**HICKORY NC, NC**  
**SITE #: 282219**

148-A OCEAN BOULEVARD  
SOUTHERN SHORES, NC 27949  
(DARE COUNTY)

PLANS PREPARED BY:



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RALEIGH, NC 27603  
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N.C. LICENSE # P-1403

SEAL:



June 08, 2018

REV	DATE	ISSUED FOR:
0	06-08-18	MODIFICATION DRAWINGS

DRAWN BY: RTP | CHECKED BY: RJR

SHEET TITLE:  
**TOWER  
REINFORCEMENT  
DETAILS II**

SHEET NUMBER: **S-3** | REVISION: **0**  
TEP#: 60448.202443

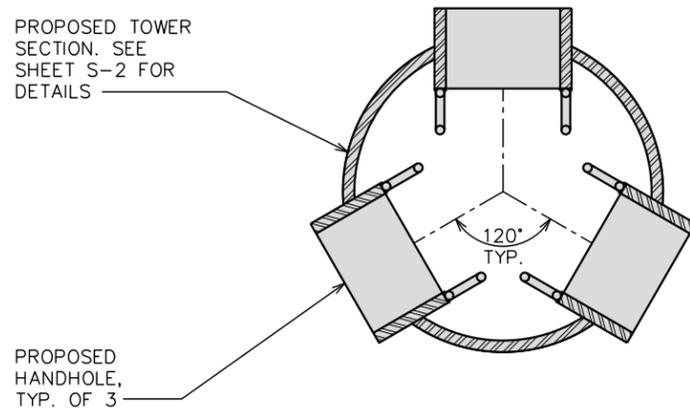
**PARTIAL ELEVATION**

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



**NOTE:**

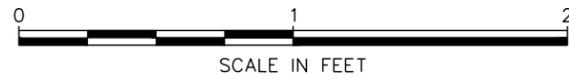
CONFIRM HANDHOLE ORIENTATION WITH THE PROPOSED CARRIER'S ANTENNA ORIENTATION PRIOR TO CONSTRUCTION.



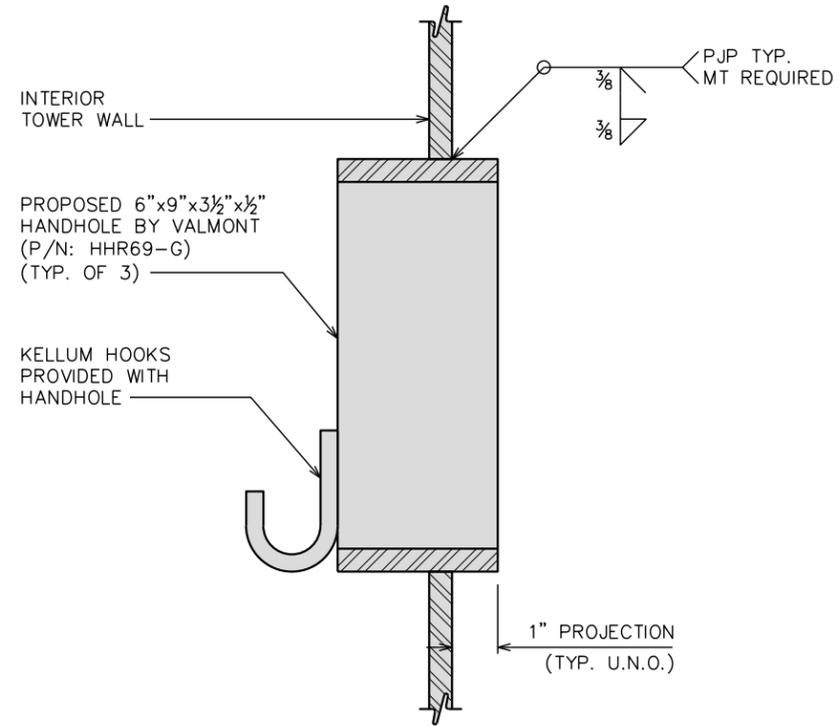
**SECTION**

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

A



SCALE IN FEET



**SECTION**

SCALE: 3" = 1'-0"

B



SCALE IN INCHES

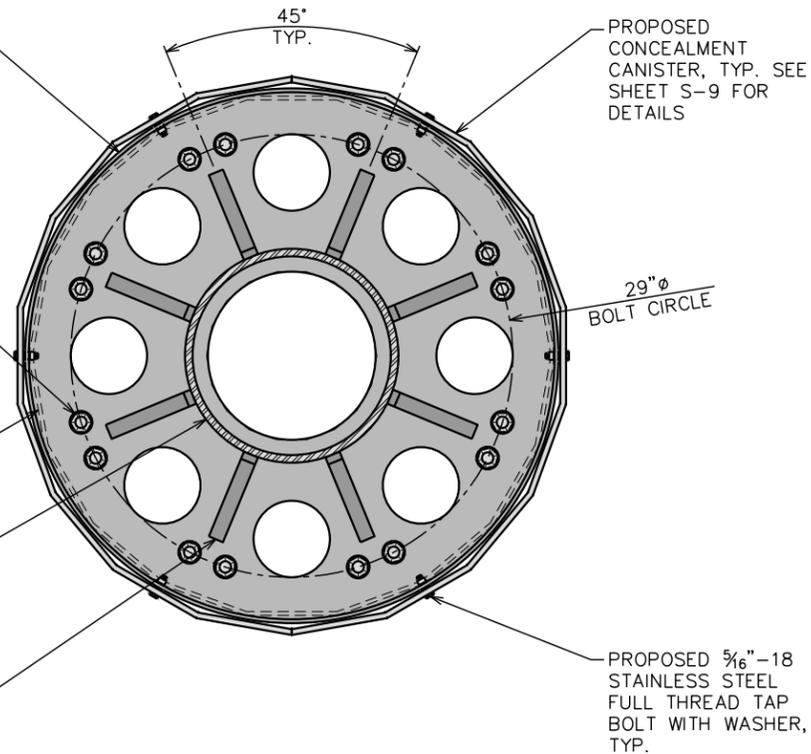
PROPOSED FLANGE PLATE ASSEMBLY (ASSEMBLY #1) SEE SHEET S-6 FOR DETAILS

(16) EXISTING BOLTS TO BE REMOVED AND REPLACED WITH PROPOSED 3/4"Ø ASTM A325-X BOLTS. CONTRACTOR TO FIELD VERIFY LOCATIONS. CONTRACTOR TO REAM BOLT HOLES IN EXISTING FLANGE PLATE TO 1 3/16"Ø. CONTRACTOR TO PRE-TENSION BOLTS. SEE SHEET N-3 FOR DETAILS

EXISTING TOWER SECTION (BELOW)

PROPOSED TOWER SECTION. SEE SHEET S-2 FOR DETAILS

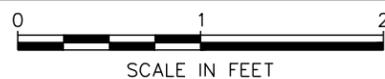
PROPOSED FLANGE PLATE STIFFENER, TYP. (PIECEMARK #: PL-1) SEE SHEET S-8 FOR DETAILS



**SECTION**

SCALE: 1" = 1'-0"

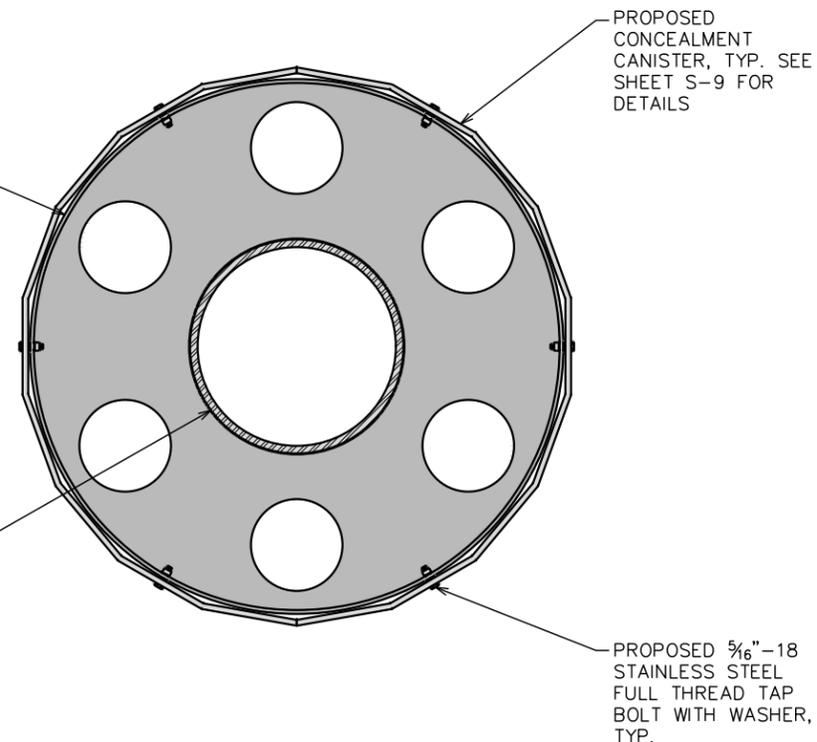
C



SCALE IN FEET

PROPOSED BULKHEAD ASSEMBLY, TYP. (ASSEMBLY #2) SEE SHEET S-6 FOR DETAILS

PROPOSED TOWER SECTION. SEE SHEET S-2 FOR DETAILS



**SECTION**

SCALE: 1" = 1'-0"

D



SCALE IN FEET

PLANS PREPARED FOR:



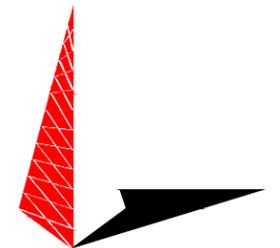
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PROJECT INFORMATION:

**HICKORY NC, NC**  
**SITE #: 282219**

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(DARE COUNTY)

PLANS PREPARED BY:

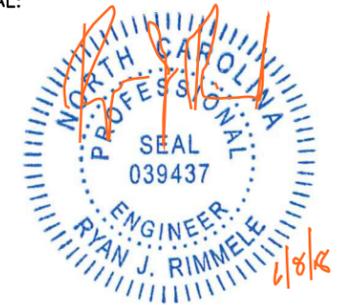


**TOWER ENGINEERING PROFESSIONALS**

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

N.C. LICENSE # P-1403

SEAL:



June 08, 2018

0	06-08-18	MODIFICATION DRAWINGS
REV	DATE	ISSUED FOR:

DRAWN BY: RTP CHECKED BY: RJR

SHEET TITLE:

**TOWER REINFORCEMENT DETAILS III**

SHEET NUMBER: <b>S-4</b>	REVISION: <b>0</b> TEP#: 60448.202443
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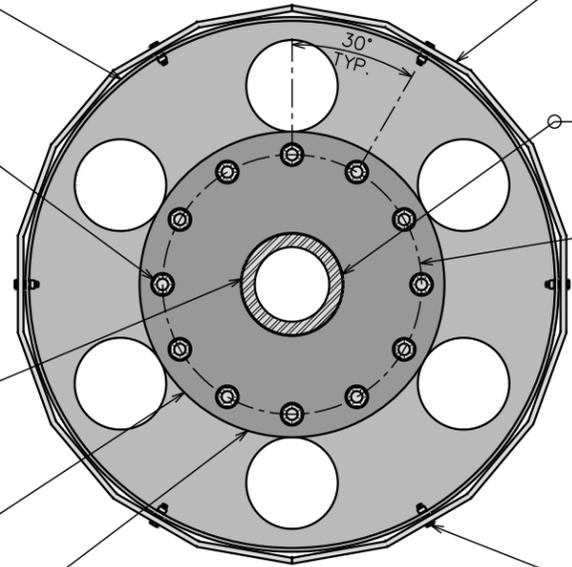
PROPOSED BULKHEAD ASSEMBLY, TYP. (ASSEMBLY #3) SEE SHEET S-7 FOR DETAILS

(12) PROPOSED 3/4"Ø ASTM A325-X BOLTS. CONTRACTOR TO PRE-TENSION BOLTS. SEE SHEET N-3 FOR DETAILS

PROPOSED TOWER SECTION. SEE SHEET S-3 FOR DETAILS

PROPOSED FLANGE PLATE (BELOW), (PIECEMARK #: PL-2) SEE SHEET S-8 FOR DETAILS

PROPOSED FLANGE PLATE, (PIECEMARK #: PL-3) SEE SHEET S-8 FOR DETAILS



PROPOSED CONCEALMENT CANISTER, TYP. SEE SHEET S-9 FOR DETAILS

SEE THIS SHEET FOR FLANGE PLATE WELD DETAIL

17"Ø BOLT CIRCLE

PROPOSED 5/16"-18 STAINLESS STEEL FULL THREAD TAP BOLT WITH WASHER, TYP.

30° TYP.

**SECTION**

E

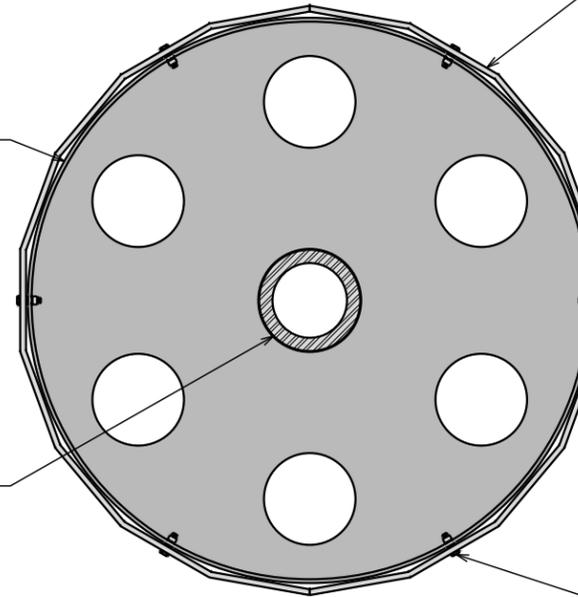
SCALE: 1" = 1'-0"



SCALE IN FEET

PROPOSED BULKHEAD ASSEMBLY (ASSEMBLY #4) SEE SHEET S-7 FOR DETAILS

PROPOSED TOWER SECTION. SEE SHEET S-3 FOR DETAILS



PROPOSED CONCEALMENT CANISTER, TYP. SEE SHEET S-10 FOR DETAILS

PROPOSED 5/16"-18 STAINLESS STEEL FULL THREAD TAP BOLT WITH WASHER, TYP.

**SECTION**

F

SCALE: 1" = 1'-0"



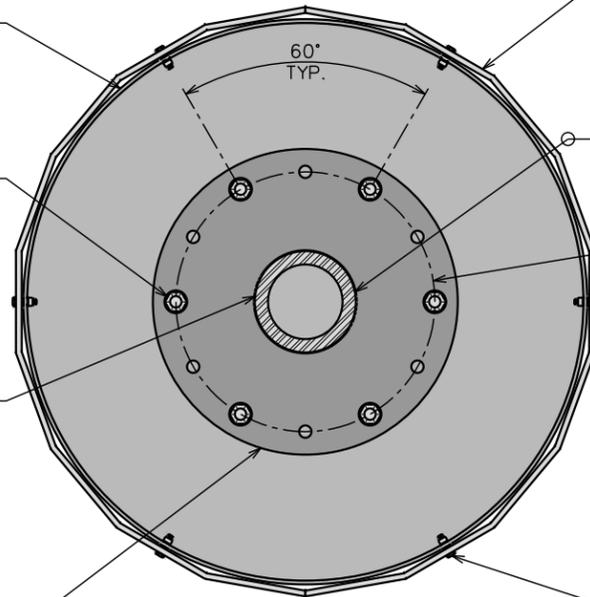
SCALE IN FEET

PROPOSED CAP PLATE ASSEMBLY, TYP. (ASSEMBLY #5) SEE SHEET S-8 FOR DETAILS

(6) PROPOSED 3/4"Ø ASTM A325-X BOLTS. CONTRACTOR TO PRE-TENSION BOLTS. SEE SHEET N-3 FOR DETAILS

PROPOSED TOWER SECTION. SEE SHEET S-3 FOR DETAILS

PROPOSED FLANGE PLATE, (PIECEMARK #: PL-3) SEE SHEET S-8 FOR DETAILS



PROPOSED CONCEALMENT CANISTER, TYP. SEE SHEET S-10 FOR DETAILS

SEE THIS SHEET FOR FLANGE PLATE WELD DETAIL

17"Ø BOLT CIRCLE

PROPOSED 5/16"-18 STAINLESS STEEL FULL THREAD TAP BOLT WITH WASHER, TYP.

60° TYP.

**SECTION**

G

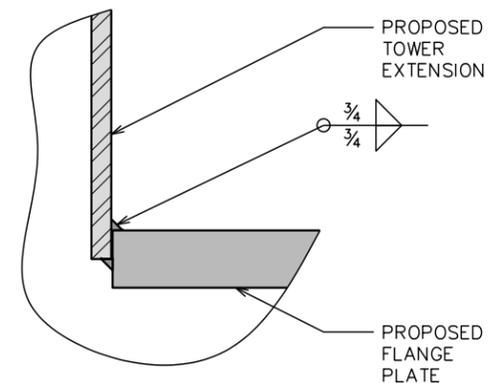
SCALE: 1" = 1'-0"



SCALE IN FEET

**FLANGE PLATE WELD DETAIL**

SCALE: N.T.S.



PROPOSED TOWER EXTENSION

PROPOSED FLANGE PLATE

PLANS PREPARED FOR:

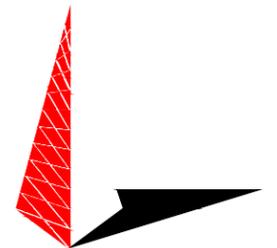
**AMERICAN TOWER CORPORATION**  
3500 REGENCY PARKWAY, SUITE 100  
CARY, NC 27518  
OFFICE: (919) 466-5149

PROJECT INFORMATION:

**HICKORY NC, NC**  
**SITE #: 282219**

148-A OCEAN BOULEVARD  
SOUTHERN SHORES, NC 27949  
(DARE COUNTY)

PLANS PREPARED BY:



**TOWER ENGINEERING PROFESSIONALS**

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

N.C. LICENSE # P-1403

SEAL:

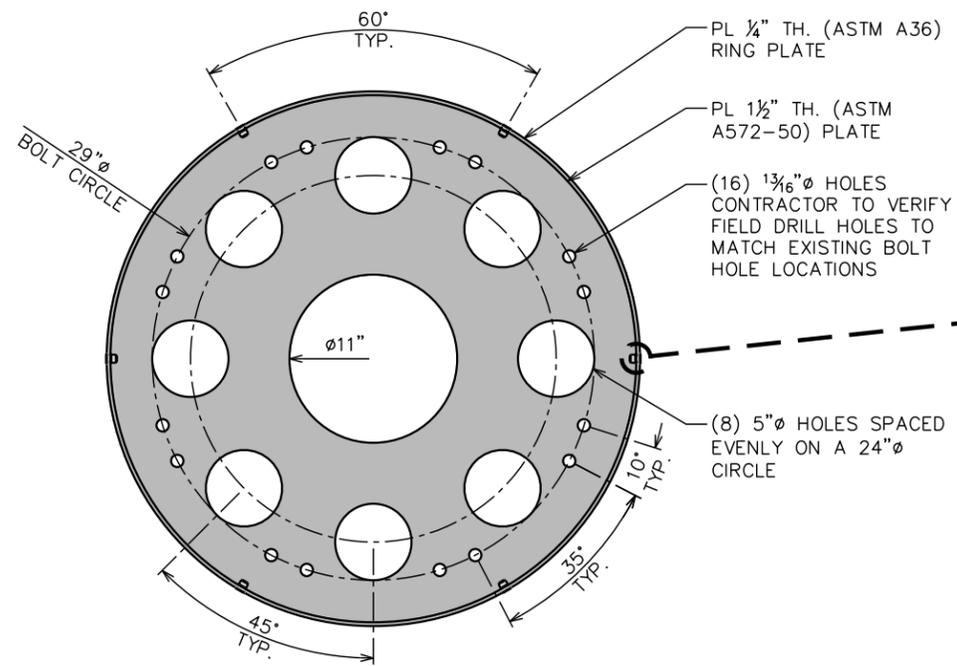


REV	DATE	ISSUED FOR:
0	06-08-18	MODIFICATION DRAWINGS

DRAWN BY: RTP | CHECKED BY: RJR

SHEET TITLE:  
**TOWER REINFORCEMENT DETAILS IV**

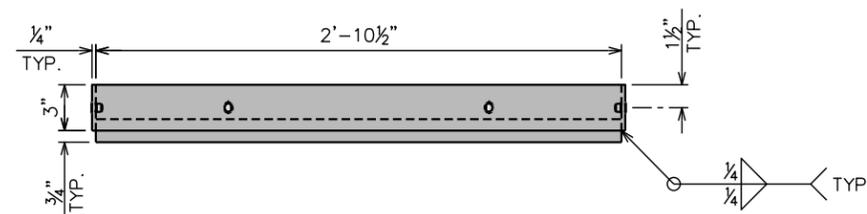
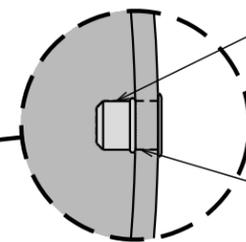
SHEET NUMBER: **S-5** | REVISION: **0**  
TEP#: 60448.202443



**PLAN VIEW**

**NOTE:**

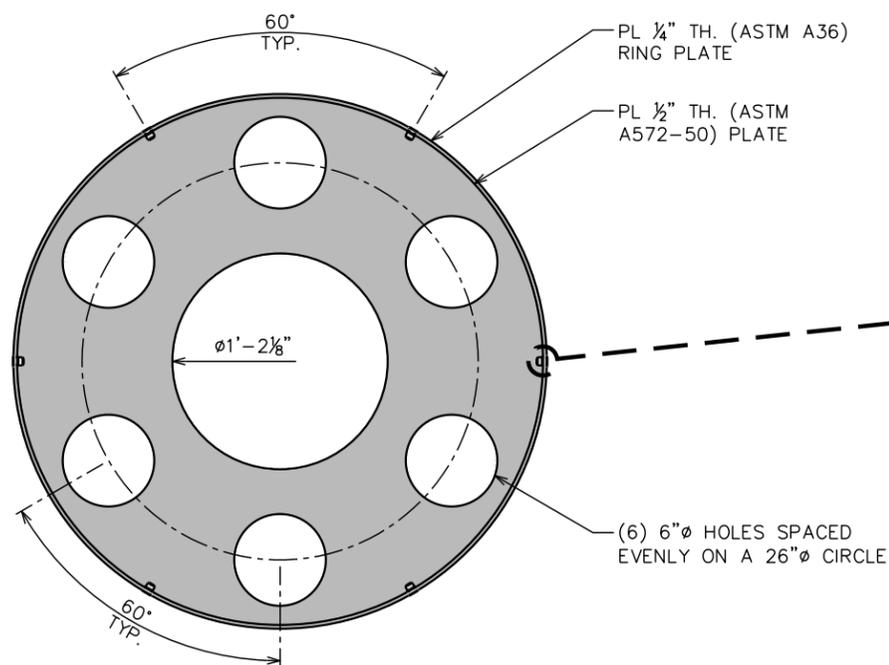
FOR ORDERING PARTS, CONTACT McMASTER-CARR AT: (404) 346-7000



**FRONT VIEW**

**FLANGE PLATE ASSEMBLY (ASSEMBLY #1)**

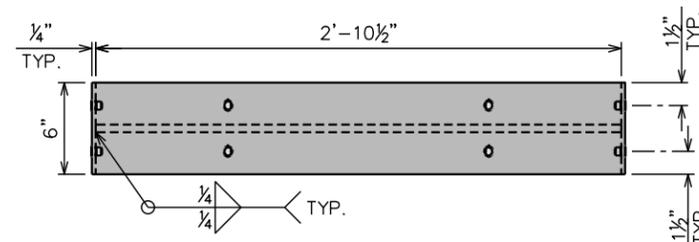
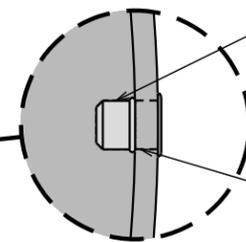
SCALE: 1" = 1'-0"



**PLAN VIEW**

**NOTE:**

FOR ORDERING PARTS, CONTACT McMASTER-CARR AT: (404) 346-7000



**FRONT VIEW**

**BULKHEAD ASSEMBLY (ASSEMBLY #2) - TYPICAL OF 2**

SCALE: 1" = 1'-0"



PLANS PREPARED FOR:



3500 REGENCY PARKWAY, SUITE 100  
CARY, NC 27518  
OFFICE: (919) 466-5149

PROJECT INFORMATION:

**HICKORY NC, NC**  
**SITE #: 282219**

148-A OCEAN BOULEVARD  
SOUTHERN SHORES, NC 27949  
(DARE COUNTY)

PLANS PREPARED BY:

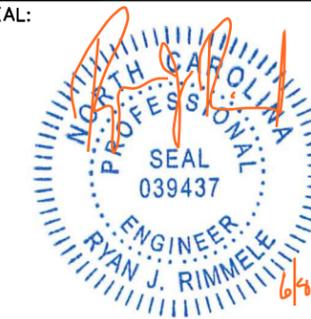


**TOWER ENGINEERING PROFESSIONALS**

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

N.C. LICENSE # P-1403

SEAL:



June 08, 2018

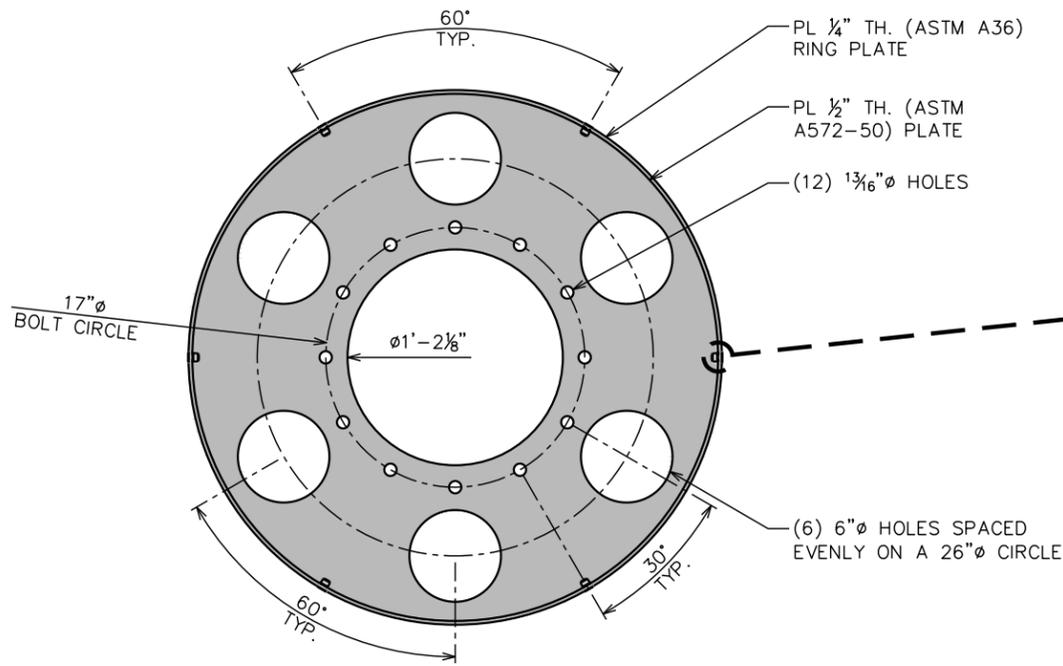
0	06-08-18	MODIFICATION DRAWINGS
REV	DATE	ISSUED FOR:

DRAWN BY: RTP CHECKED BY: RJR

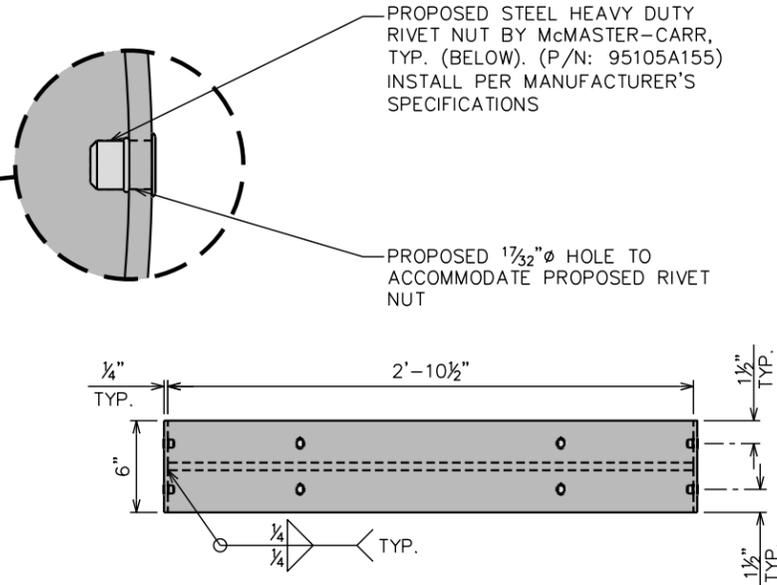
SHEET TITLE:

**TOWER REINFORCEMENT DETAILS V**

SHEET NUMBER: <b>S-6</b>	REVISION: <b>0</b>
TEP#: 60448.202443	



**NOTE:**  
FOR ORDERING PARTS, CONTACT McMASTER-CARR AT: (404) 346-7000

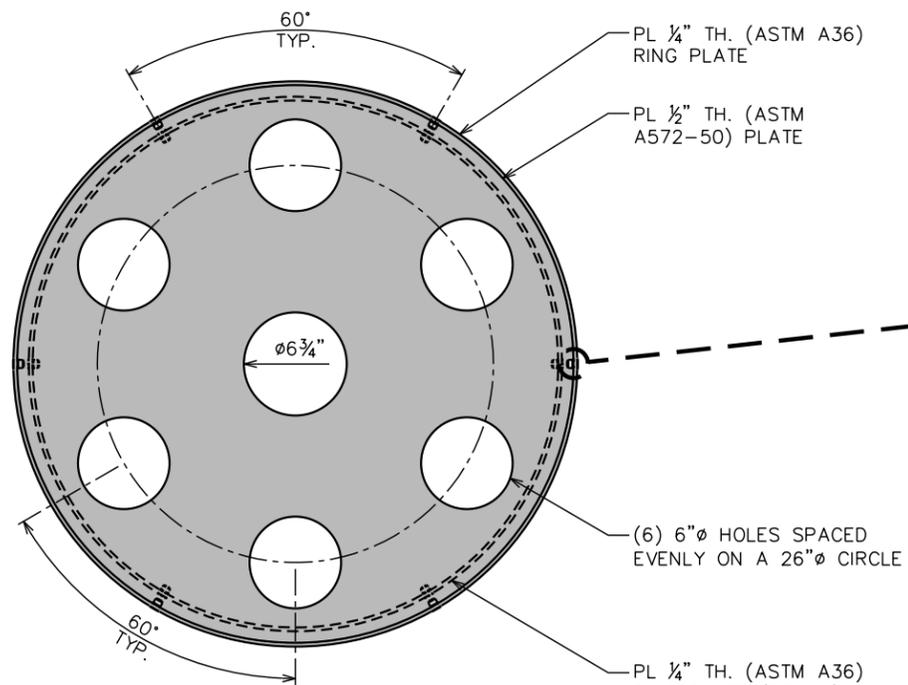


**PLAN VIEW**

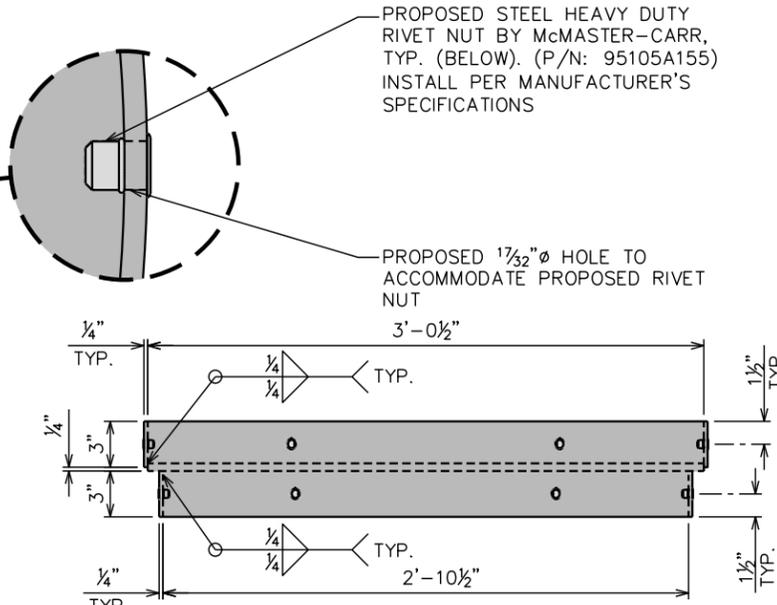
**FRONT VIEW**

**BULKHEAD ASSEMBLY (ASSEMBLY #3)**

SCALE: 1" = 1'-0"



**NOTE:**  
FOR ORDERING PARTS, CONTACT McMASTER-CARR AT: (404) 346-7000



**PLAN VIEW**

**FRONT VIEW**

**BULKHEAD ASSEMBLY (ASSEMBLY #4)**

SCALE: 1" = 1'-0"



PLANS PREPARED FOR:

AMERICAN TOWER CORPORATION  
3500 REGENCY PARKWAY, SUITE 100  
CARY, NC 27518  
OFFICE: (919) 466-5149

PROJECT INFORMATION:

**HICKORY NC, NC**  
**SITE #: 282219**

148-A OCEAN BOULEVARD  
SOUTHERN SHORES, NC 27949  
(DARE COUNTY)

PLANS PREPARED BY:

TOWER ENGINEERING PROFESSIONALS  
326 TRYON ROAD  
RALEIGH, NC 27603  
OFFICE: (919) 661-6351  
www.tepgroup.net  
N.C. LICENSE # P-1403

SEAL:

June 08, 2018

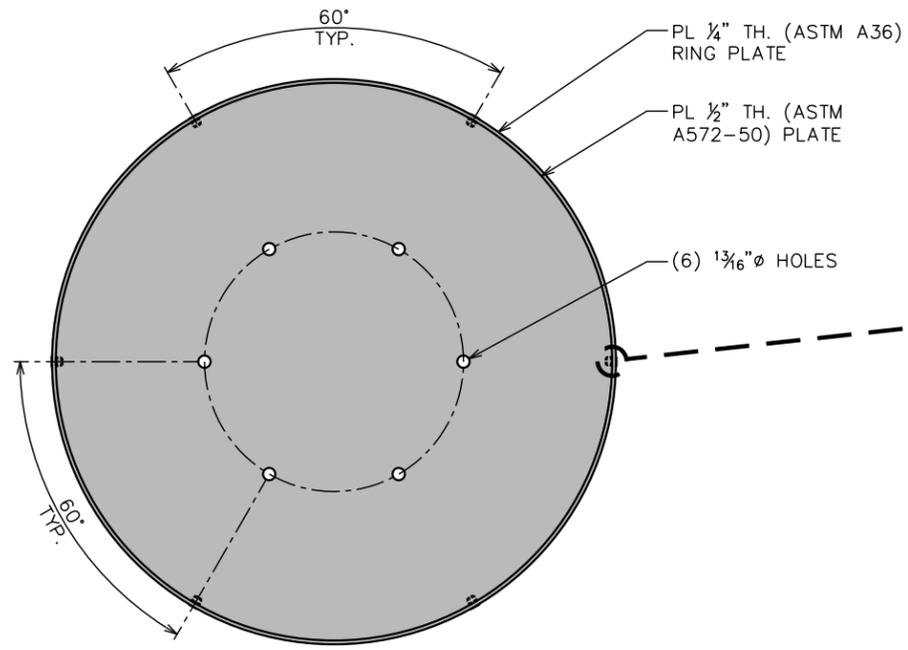
0	06-08-18	MODIFICATION DRAWINGS
REV	DATE	ISSUED FOR:

DRAWN BY: RTP | CHECKED BY: RJR

SHEET TITLE:

**TOWER REINFORCEMENT DETAILS VI**

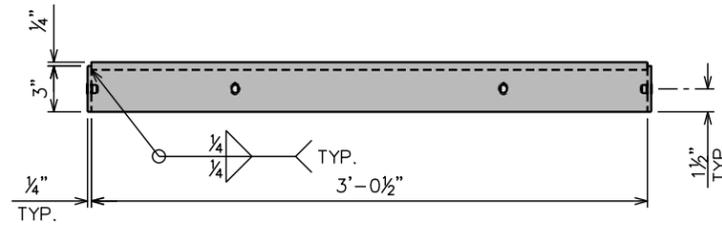
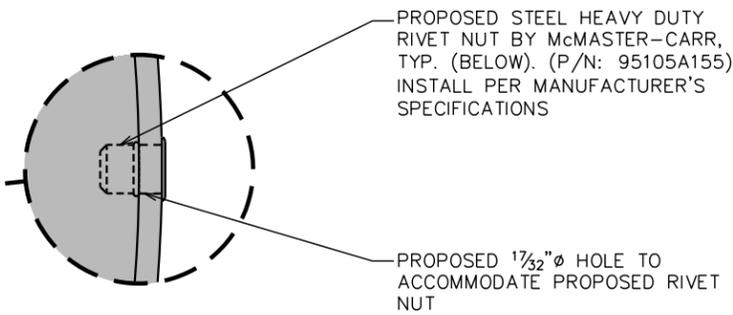
SHEET NUMBER: **S-7** | REVISION: **0**  
TEP#: 60448.202443



**PLAN VIEW**

**NOTE:**

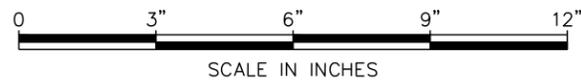
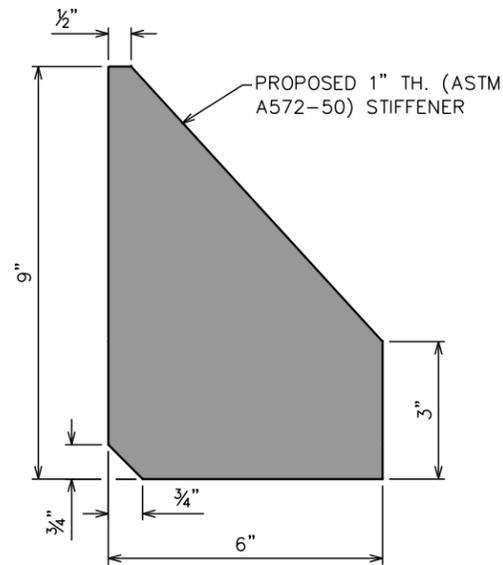
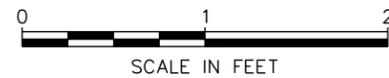
FOR ORDERING PARTS, CONTACT McMASTER-CARR AT: (404) 346-7000



**FRONT VIEW**

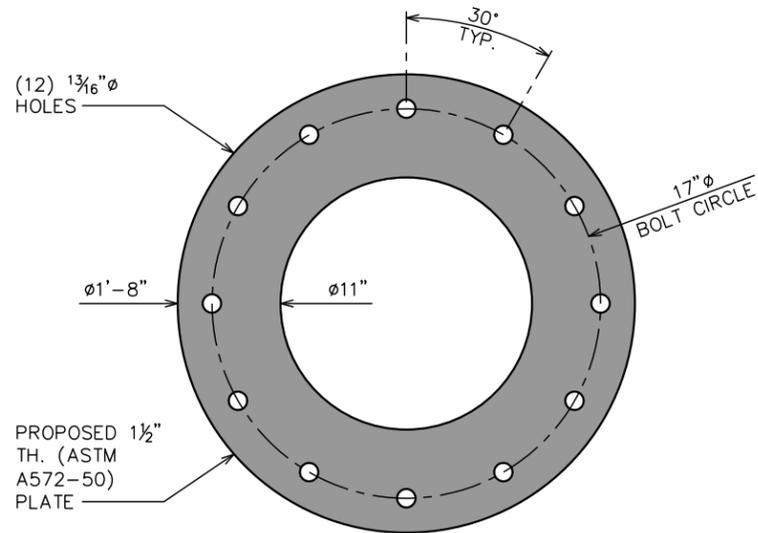
**CAP PLATE ASSEMBLY (ASSEMBLY #5)**

SCALE: 1" = 1'-0"



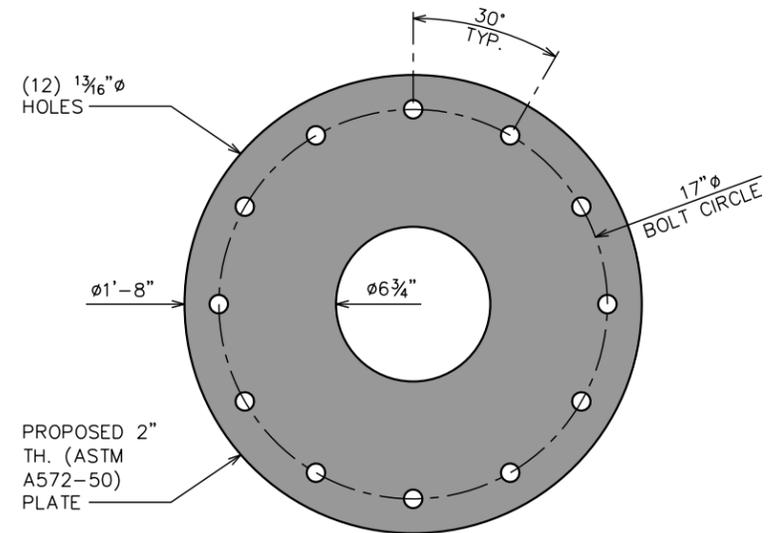
**PIECEMARK #: PL-1 - TYPICAL OF 8**

SCALE: 3" = 1'-0"



**PIECEMARK #: PL-2**

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



**PIECEMARK #: PL-3 - TYPICAL OF 2**

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

PLANS PREPARED FOR:



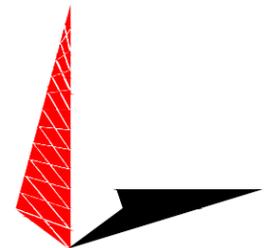
3500 REGENCY PARKWAY, SUITE 100  
CARY, NC 27518  
OFFICE: (919) 466-5149

PROJECT INFORMATION:

**HICKORY NC, NC**  
**SITE #: 282219**

148-A OCEAN BOULEVARD  
SOUTHERN SHORES, NC 27949  
(DARE COUNTY)

PLANS PREPARED BY:



**TOWER ENGINEERING PROFESSIONALS**

326 TRYON ROAD  
RALEIGH, NC 27603  
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www.tepgroup.net

N.C. LICENSE # P-1403

SEAL:



0	06-08-18	MODIFICATION DRAWINGS
REV	DATE	ISSUED FOR:

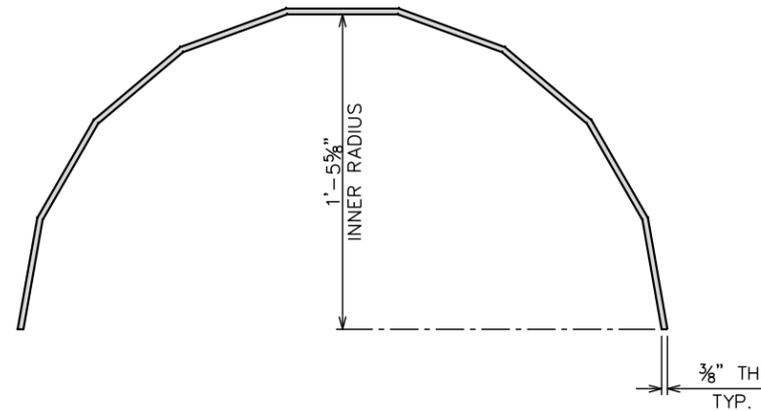
DRAWN BY: RTP CHECKED BY: RJR

SHEET TITLE:  
**TOWER REINFORCEMENT DETAILS VII**

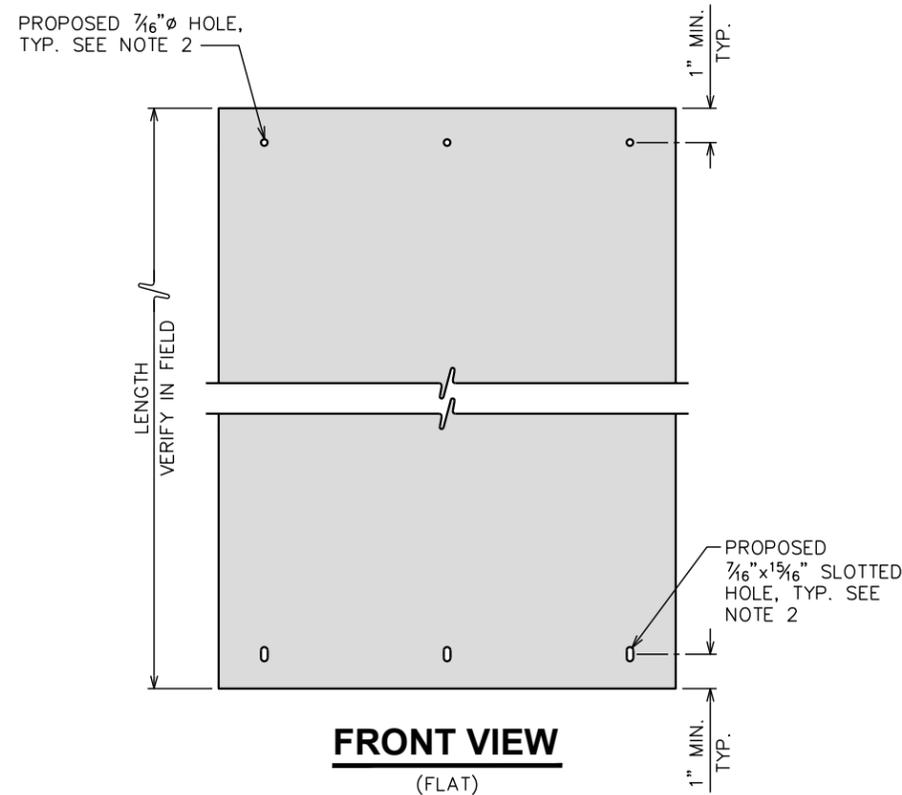
SHEET NUMBER: <b>S-8</b>	REVISION: <b>0</b>
TEP#: 60448.202443	

**NOTE:**

1. CONTRACTOR TO ORDER PARTS FROM CURBELL PLASTICS OR AN APPROVED EQUIVALENT. FOR ORDERING PARTS:  
- CONTACT CURBELL PLASTICS AT: (888) 834-7832.
2. CONTRACTOR TO FIELD VERIFY DRILL HOLE LOCATIONS.
3. CONCEALMENT CANISTERS MAY BE PERFORATED.



**PLAN VIEW**  
(9-SIDED CANISTER)



**FRONT VIEW**  
(FLAT)

PLANS PREPARED FOR:

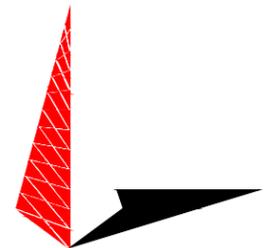


PROJECT INFORMATION:

**HICKORY NC, NC**  
**SITE #: 282219**

148-A OCEAN BOULEVARD  
SOUTHERN SHORES, NC 27949  
(DARE COUNTY)

PLANS PREPARED BY:

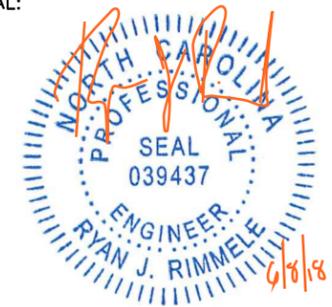


**TOWER ENGINEERING PROFESSIONALS**

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RALEIGH, NC 27603  
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N.C. LICENSE # P-1403

SEAL:



June 08, 2018

REV	DATE	ISSUED FOR:
0	06-08-18	MODIFICATION DRAWINGS

DRAWN BY: RTP | CHECKED BY: RJR

SHEET TITLE:

**CONCEALMENT  
CANISTER  
DETAILS I**

SHEET NUMBER: REVISION:

**S-9**

**0**

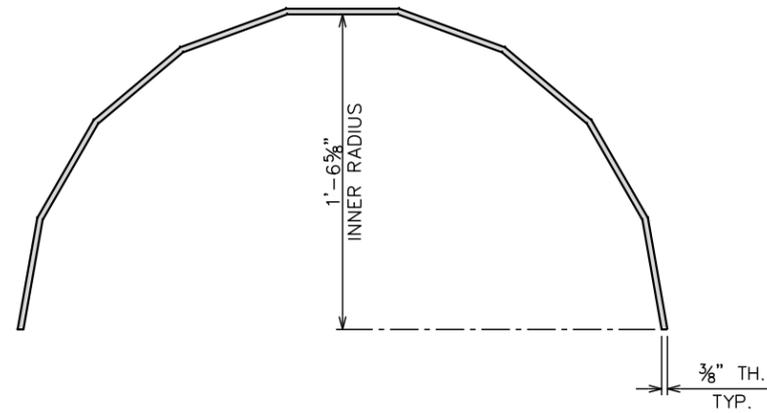
TEP#: 60448.202443

**CONCEALMENT CANISTER DETAILS - TYP. OF 2 PER SECTION**

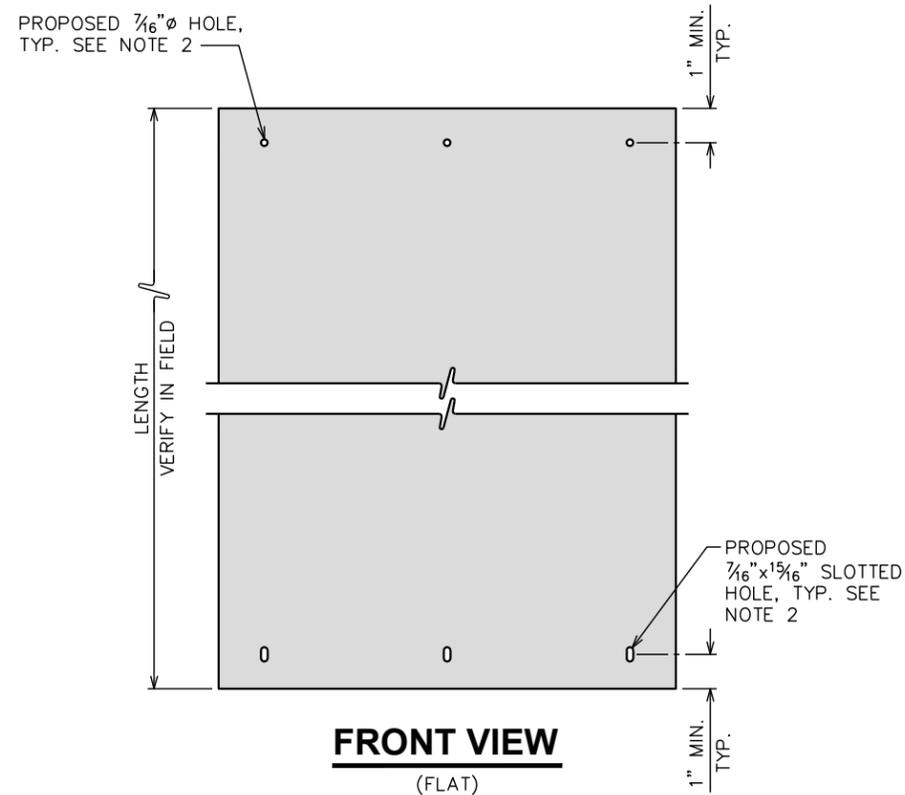
SCALE: N.T.S.

**NOTE:**

1. CONTRACTOR TO ORDER PARTS FROM CURBELL PLASTICS OR AN APPROVED EQUIVALENT. FOR ORDERING PARTS:  
- CONTACT CURBELL PLASTICS AT: (888) 834-7832.
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3. CONCEALMENT CANISTERS MAY BE PERFORATED.



**PLAN VIEW**  
(9-SIDED CANISTER)



**FRONT VIEW**  
(FLAT)

PLANS PREPARED FOR:

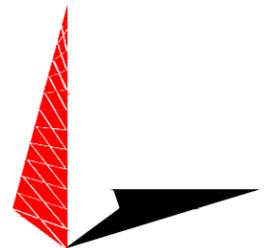


PROJECT INFORMATION:

**HICKORY NC, NC**  
**SITE #: 282219**

148-A OCEAN BOULEVARD  
SOUTHERN SHORES, NC 27949  
(DARE COUNTY)

PLANS PREPARED BY:



**TOWER ENGINEERING PROFESSIONALS**

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OFFICE: (919) 661-6351  
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N.C. LICENSE # P-1403

SEAL:



June 08, 2018

REV	DATE	ISSUED FOR:
0	06-08-18	MODIFICATION DRAWINGS

DRAWN BY: RTP | CHECKED BY: RJR

SHEET TITLE:

**CONCEALMENT  
CANISTER  
DETAILS II**

SHEET NUMBER: REVISION:

**S-10** **0**  
TEP#: 60448.202443

**CONCEALMENT CANISTER DETAILS - TYP. OF 2 PER SECTION**

SCALE: N.T.S.