



Ann Machado
City of Portland, Maine
389 Congress Street
Portland ME, 04101
Tel: (207) 874-8703

ATC Site: 10047 – Portland ME, ME (225 Riverside Industrial Parkway, Portland, ME 04103)

Subject: Verification of Modification Installation for City of Portland Building Permit ID 2017-01925

Modifications recommended in ATC Structural Analysis (Engineering # OAA706994_C3_01, dated July 26, 2017) and designed per ATC Project # OAA706994_C6_03, dated September 6, 2017) have been installed. Confirmation of the installation has been received by ATC through a Tower-Post Modification Special Inspection provided by ETS (ETS # 180314, dated February 27, 2018).

Review of the documentation and photos provided show the modifications have been installed with any alterations both clearly marked in the drawings and emails confirming approval by an Engineer of Record from ATC. These documents have been attached following this letter.

With the completion of these modifications, the tower and foundation now adequately meets the required minimum capacity per the ANSI/TIA-222-G, 2009 IBC, and Maine Model Building Code for the design loads listed in the aforementioned analysis.

If you have further questions regarding this report, please contact ATC Engineering at engineering@americantower.com.

Christopher L. Jolly
Structural Engineer III

Joshua H. Walton, PE, CWI
Structural Engineer, Technical Lead



Engineered Tower Solutions
2624 Leighton Ridge Dr., Suite 100
Wake Forest, NC 27587

(919) 782-2710
(919) 782-2495
ETS # 180314

TOWER-POST MODIFICATION SPECIAL INSPECTION GUYED TOWER



**PORTLAND ME
10047**

PREPARED FOR:



PREPARED BY:

Tarma Liranzo
Project Manager
Engineered Tower Solutions, PLLC

DATE:

February 27, 2018





SI REPORT SUMMARY

CLIENT:	<u>American Tower Corporation</u>	DATE AT SITE:	<u>Wednesday, February 21, 2018</u>
SITE NAME:	<u>PORTLAND ME</u>	ATC PROJECT#:	<u>OAA706994_C6_03</u>
SITE NUMBER:	<u>10047</u>	TOWER TYPE:	<u>GUYED TOWER</u>
ADDRESS:	<u>225 Riverside Industrial Pkwy</u> <u>Portland, ME 04106</u>	TOWER HEIGHT:	<u>275'</u>
LEAD:	<u>Doug Kosiba, P.E.</u>	WEATHER:	<u>Partly Cloudy, 68°F, Wind 8-21 MPH</u>
		SUPPORT:	<u>Wes Williams</u>

PROJECT SUMMARY:

Subject: **TOWER-POST MODIFICATION SPECIAL INSPECTION**

Location: 225 Riverside Industrial Pkwy
Portland, ME 04106
Lat: 43.70602°N Long: 70.31074°W

Structure: **GUYED TOWER**

Purpose: The purpose of this special inspection report is to ensure that the proposed construction and or construction activities have been completed and undertaken per design and meet all required Codes, Specifications, and Guidelines.

PARTICIPATION PERSONNEL

ATC Representatives: Jon Rodgers
ATC Construction Manager (CM)
10 Presidential Way, Woburn, MA 01801
(617) 839-5143

Engineer of Record: Joshua Walton, P.E.
Structural Engineer - Technical Lead
ATC Tower Services, Inc
3500 Regency Pkwy, Suite 100, Cary, NC 27518
(919) 468-0112

General Contractor: Bill Jackson
VP Operations
East Coast Communications
29 Cyr Dr, Gorham, ME 04038
(207) 839-3488

SUPPLEMENTAL INFORMATION

Appendix A - Special Inspection Checklist	Appendix E - Foundation Installation Report
Appendix B - Modification Drawings - As Built	Appendix F - Tension, Twist & Plumb
Appendix C - EOR Approval Email	Appendix G - Field Density & Gradation Report
Appendix D - Concrete Test Report	Appendix H - Cold Galv Verification



SI REPORT CHECKLIST

CLIENT: American Tower Corporation DATE AT SITE: Wednesday, February 21, 2018
SITE NAME: PORTLAND ME ATC PROJECT#: OAA706994_C6_03
SITE NUMBER: 10047 TOWER TYPE: GUYED TOWER
ADDRESS: 225 Riverside Industrial Pkwy TOWER HEIGHT: 275'
Portland, ME 04106 WEATHER: Partly Cloudy, 68°F, Wind 8-21 MPH
LEAD: Doug Kosiba, P.E. SUPPORT: Wes Williams

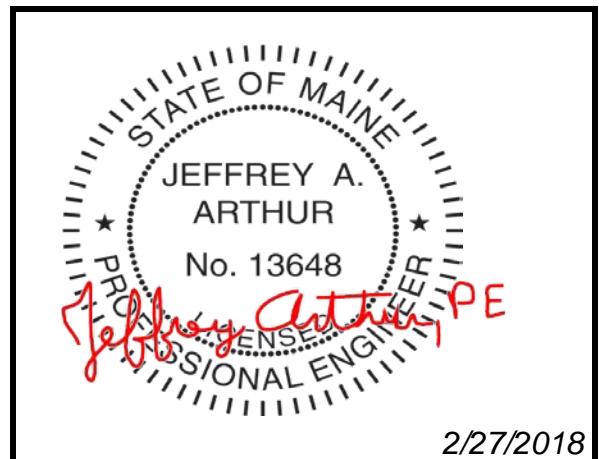
PROJECT

Subject: **TOWER-POST MODIFICATION SPECIAL INSPECTION**

Structure: **GUYED TOWER**

Inspection Approvals:

TOWER-POST MODIFICATION SI	
DK/WW	Fit-up of materials
DK/WW	Material grade, shape, fabrication, placement
DK/WW	Verification of proper material coating
N/A	Structural weld verification
DK/WW	Structural bolting / Expansion bolting verification
DK/WW	Guy tension verification
DK/WW	Full installation verifications per design



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Inspection Item Description

All modifications are within conformance to the modification documents provided by ATC Towers Services, Inc., ATC Project Number : OAA706994_C6_04 ,Dated: September 11, 2017 with all deviations approved by the EOR.





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LEAD:	<u>Doug Kosiba, P.E.</u>	SUPPORT:	<u>Wes Williams</u>

APPENDIX A SI CHECKLIST

SEE FOLLOWING PAGES

MODIFICATION INSPECTION NOTES

THE SPECIAL INSPECTION (SI) PROCEDURE IS INTENDED TO CONFIRM THAT CONSTRUCTION AND INSTALLATION MEETS ENGINEERING DESIGN, ATC PROCEDURES AND ATC STANDARD SPECIFICATIONS FOR WIRELESS TOWER SITES.

TO ENSURE THAT THE REQUIREMENTS OF THE SI ARE MET, IT IS VITAL THAT THE GENERAL CONTRACTOR AND THE INSPECTOR BEGIN COMMUNICATING AND COORDINATING AS SOON AS A PO IS RECEIVED FROM AMERICAN TOWER CORPORATION (ATC). IT IS EXPECTED THAT EACH PARTY WILL PROACTIVELY REACH OUT TO THE OTHER PARTY. IF CONTACT INFORMATION IS NOT KNOWN, CONTACT YOUR AMERICAN TOWER POINT OF CONTACT.

SPECIAL INSPECTOR

THE SPECIAL INSPECTOR IS REQUIRED TO CONTACT THE GENERAL CONTRACTOR AS SOON AS RECEIVING A PO FROM ATC. UPON RECEIVING A PO FROM ATC THE SPECIAL INSPECTOR AT A MINIMUM MUST:

- REVIEW THE REQUIREMENTS OF THE SI CHECKLIST.
- WORK WITH THE GENERAL CONTRACTOR TO DEVELOP A SCHEDULE TO CONDUCT ON-SITE INSPECTIONS, INCLUDING FOUNDATION INSPECTIONS.
- ANY CONCERNS WITH THE SCOPE OF WORK OR PROJECT COMMITMENT MUST BE RELAYED TO THE ATC POINT OF CONTACT IMMEDIATELY.

THE SPECIAL INSPECTOR IS RESPONSIBLE FOR COLLECTING ALL GENERAL CONTRACTOR INSPECTION AND TEST REPORTS, REVIEWING THESE DOCUMENTS FOR ADHERENCE TO CONTRACT DOCUMENTS, CONDUCTING THE IN-FIELD INSPECTIONS, AND SUBMITTING THE SI REPORT TO AMERICAN TOWER CORPORATION.

GENERAL CONTRACTOR

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

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

THE GENERAL CONTRACTOR SHALL PERFORM AND RECORD THE TEST AND INSPECTION RESULTS IN ACCORDANCE WITH THE REQUIREMENTS OF THE SI CHECKLIST.

SPECIAL INSPECTION CHECKLIST

INSPECTION DOCUMENT	DESCRIPTION	INSPECTION TESTING REQUIRED	RESPONSIBILITY	SI REVIEW REQUIRED			INSPECTION FREQUENCY	
				PRE CX	DURING CX	POST CX	PERIODIC	CONTINUOUS
SPECIAL INSPECTION FIELD WORK & REPORT	DOCUMENTATION AND SITE VISIT CONDUCTED BY AN ATC APPROVED SPECIAL INSPECTOR AS REQUIRED BY ATC AND OTHER AUTHORITIES HAVING JURISDICTION. INSPECTION PARAMETERS TO FOLLOW ATC'S STANDARD SPECIFICATION FOR WIRELESS TOWER SITES.	✓	SI			✓		
ENGINEERING ASSEMBLY DRAWINGS	GC SHALL SUBMIT DRAWINGS TO SI FOR INCLUSION IN SI REPORT	✓	GC	✓				
FABRICATED MATERIAL VERIFICATION & INSPECTION	MTR AND OR MILL CERTIFICATIONS FOR SUPPLIED MATERIALS GC SHALL SUPPLY SI WITH REPORTS TO BE INCLUDED IN SI REPORT WHEN REQUIRED BY ATC	✓	SI	✓				
CERTIFIED WELD INSPECTION	INSPECTION AND REPORT OF STRUCTURAL WELDING PERFORMED DURING PROJECT COMPLETED BY A CWI AND INCLUDED WITHIN SI REPORT		GC / TA					
FOUNDATION INSPECTION & VERIFICATION	VISUAL OBSERVATION AND APPROVAL OF FOUNDATION EXCAVATION, REBAR PLACEMENT, CASING/SHORING/FORMING PLACEMENT, AND ANCHOR TEMPLATE AND ANCHOR PLACEMENT - TO BE SI APPROVED PRIOR TO CONCRETE POUR AND DOCUMENTED IN THE SI REPORT	✓	SI		✓		✓	
ANCHOR, ROCK ANCHOR OR HELICAL PULL-OUT TEST	PULL TESTING OF INSTALLED ANCHORS TO BE COMPLETED AND DOCUMENTED IN SI REPORT		GC / TA					
CONCRETE INSPECTION & VERIFICATION	CONCRETE MIX DESIGN, SLUMP TEST, COMPRESSIVE TESTING, AND SAMPLE GATHERING TECHNIQUES ARE TO BE PROVIDED FOR INCLUSION IN THE SI REPORT. SI SHALL VERIFY CONCRETE PLACEMENT AS REQUIRED BY THE DESIGN DOCUMENTS (INSPECTION FREQUENCY IS MARKED CONTINUOUS)	✓	GC / TA		✓			✓
DYWIDAG PLACEMENT/ANCHOR BOLT EMBEDMENT - EPOXY/GROUT INSTALL	ANCHOR/BAR EMBEDMENT, HOLE SIZE, EPOXY/GROUT TYPE, INSTALLATION TEMPERATURE AND INSTALLATION SHALL BE VERIFIED BY THE SI AND INCLUDED IN THE SI REPORT	✓	GC / SI		✓			✓
BASE PLATE GROUT INSPECTION & VERIFICATION	BASE PLATE GROUTING TYPE AND PLACEMENT SHALL BE CONFIRMED BY THE SI AND INCLUDED IN THE SI REPORT		GC / SI					
EARTHWORK INSPECTION & VERIFICATION	EXCAVATION, FILL, SLOPE, GRADE AND OTHER EARTHWORK REQUIREMENTS PER PLANS SHALL BE VERIFIED BY THE SI AND INCLUDED IN THE SI REPORT	✓	GC / TA			✓	✓	
COMPACTION VERIFICATION	CONTRACTOR SHALL PROVIDE AN INDEPENDENT THIRD PARTY CERTIFIED INSPECTION WHICH PROVIDES TEST RESULTS FOR COMPACTION TEST OF SOILS IN PLACE TO ASTM STANDARDS.	✓	GC / TA			✓	✓	
GROUND TESTING & VERIFICATION	GC SHALL PROVIDE DOCUMENTATION SHOWING THAT THE GROUNDING SYSTEM SHALL HAVE A MEASURED RESISTANCE TO THE GROUND OF NOT MORE THAN THE RECOMMENDED 10 OHMS. PER THE ATC CONSTRUCTION SPECIFICATION UNDER SECTION 2.15 THIS DOCUMENTATION MUST BE AN INDEPENDENT CERTIFICATION.		GC					
STEEL CONSTRUCTION INSPECTION & VERIFICATION	VISUAL OBSERVATION AND APPROVAL OF STEEL CONSTRUCTION TO BE PERFORMED BY THE SI. INSPECTION TO INCLUDE VERIFICATION OF NEW CONSTRUCTION OR MODIFICATION OF EXISTING CONSTRUCTION PER ENGINEERED PLANS. DETAILED VERIFICATION SHALL BE INCLUDED IN SI REPORT.	✓	SI			✓	✓	
ON-SITE COLD GALVANIZING VERIFICATION	SI SHALL VERIFY WITH GC ALL COLD GALVANIZATION TYPE AND APPLICATION AND INCLUDE SUMMARY IN SI REPORT	✓	GC			✓	✓	
GUY WIRE TENSIONING & TOWER ALIGNMENT REPORT	GC SHALL PROVIDE SI EVIDENCE OF PROPER GUY TENSIONING AND TOWER PLUMB PER PLANS. SI SHALL VERIFY AND INCLUDE PLUMB AND TENSION REPORTING IN SI REPORT.	✓	GC			✓	✓	
GC AS-BUILT DRAWINGS WITH CONSTRUCTION RED-LINES	GC SHALL SUBMIT "AS-BUILT" DRAWINGS INDICATING ANY APPROVED CHANGES TO ENGINEERED PLANS TO SI FOR APPROVAL/REVIEW AND INCLUSION IN SI REPORT	✓	GC			✓		
SI AS-BUILT DRAWINGS WITH INSPECTION RED-LINES (AS REQUIRED)	SI SHALL SUBMIT "AS-BUILT" DRAWINGS INDICATING ANY APPROVED CHANGES TO ENGINEERED PLANS WITHIN SI REPORT	✓	SI			✓		
TIA INSPECTION	SI SHALL COMPLETE TIA INSPECTION AND PROVIDE SEPARATE TIA INSPECTION DOCUMENTATION TO ATC CM		SI					
PHOTOGRAPHS	PHOTOGRAPHIC EVIDENCE OF SPECIAL INSPECTION, ON SITE REMEDIATION, AND ITEMS FAILING INSPECTION & REQUIRING FOLLOW UP TO BE INCLUDED WITHIN THE SI REPORT. COMPLETE PHOTO LOG IS TO BE SUBMITTED WITHIN SI REPORT.	✓	GC / SI			✓		

NOTE: SPECIAL INSPECTIONS ARE INTENDED TO BE A COLLABORATIVE EFFORT BETWEEN GC AND SI. WHENEVER POSSIBLE GC IS TO PROVIDE SI WITH PHOTOGRAPHIC OR OTHER ACCEPTABLE EVIDENCE OF PROPER INSTALLATION IF PERIODIC INSPECTION FREQUENCY IS ACCEPTABLE. THE GC AND SI SHALL WORK TO COMPILE EVIDENCE OF PROPER CONSTRUCTION AND LIMIT THE NUMBER OF SI SITE VISITS REQUIRED.

TABLE KEY:

SI - ATC APPROVED SPECIAL INSPECTOR	CX - CONSTRUCTION
GC - GENERAL CONTRACTOR	CM - CONSTRUCTION MANAGER
TA - 3RD PARTY TESTING AGENCY	ATC - AMERICAN TOWER CORPORATION



THESE DRAWINGS AND/OR THE ACCOMPANYING SPECIFICATION AS INSTRUMENTS OR SERVICE ARE THE EXCLUSIVE PROPERTY OF AMERICAN TOWER. THEIR USE AND PUBLICATION SHALL BE RESTRICTED TO THE ORIGINAL SITE FOR WHICH THEY ARE PREPARED. ANY USE OR DISCLOSURE OTHER THAN THAT WHICH RELATES TO AMERICAN TOWER OR THE SPECIFIED CARRIER IS STRICTLY PROHIBITED. TITLE TO THESE DOCUMENTS SHALL REMAIN THE PROPERTY OF AMERICAN TOWER WHETHER OR NOT THE PROJECT IS EXECUTED. NEITHER THE ARCHITECT NOR THE ENGINEER WILL BE PROVIDING ON-SITE CONSTRUCTION REVIEW OF THIS PROJECT. CONTRACTOR(S) MUST VERIFY ALL DIMENSIONS AND ADVISE AMERICAN TOWER OF ANY DISCREPANCIES. ANY PRIOR ISSUANCE OF THIS DRAWING IS SUPERSEDED BY THE LATEST VERSION ON FILE WITH AMERICAN TOWER.

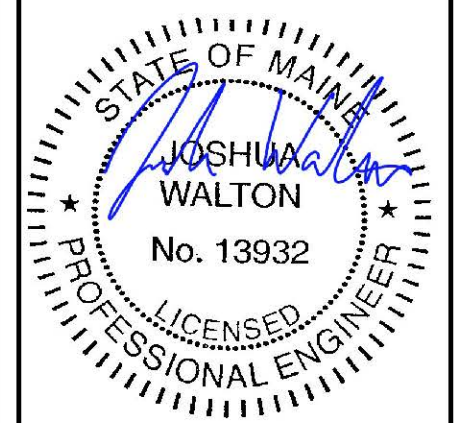
REV.	DESCRIPTION	BY	DATE
0	FIRST ISSUE	BJK	09/06/17

ATC SITE NUMBER:
10047

ATC SITE NAME:
PORTLAND ME

MAINE

SITE ADDRESS:
225 RIVERSIDE INDUSTRIAL PARKWAY
PORTLAND, ME 04103



Sep 11 2017 4:20 PM **cosign**

DRAWN BY:	BJK
APPROVED BY:	BMS/AT
DATE DRAWN:	09/06/17
ATC JOB NO:	OAA706994_C6_03

SPECIAL INSPECTION CHECKLIST	
SHEET NUMBER:	REVISION:
SIC	0



CLIENT:	<u>American Tower Corporation</u>	DATE AT SITE:	<u>Wednesday, February 21, 2018</u>
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LEAD:	<u>Doug Kosiba, P.E.</u>	SUPPORT:	<u>Wes Williams</u>

APPENDIX B
MODIFICATION DRAWINGS - AS BUILT

SEE FOLLOWING PAGES



AMERICAN TOWER®
ATC TOWER SERVICES, LLC
 3500 REGENCY PARKWAY
 SUITE 100
 CARY, NC 27518
 PHONE: (919) 468-0112

As Builds
 East Coast Communications
 02/23/2018
 Doug Howe

AMERICAN TOWER®
ATC TOWER SERVICES, LLC
 3500 REGENCY PARKWAY
 SUITE 100
 CARY, NC 27518
 PHONE: (919) 468-0112

THESE DRAWINGS AND/OR THE ACCOMPANYING SPECIFICATION AS INSTRUMENTS OR SERVICE ARE THE EXCLUSIVE PROPERTY OF AMERICAN TOWER. THEIR USE AND PUBLICATION SHALL BE RESTRICTED TO THE ORIGINAL SITE FOR WHICH THEY ARE PREPARED. ANY USE OR DISCLOSURE OTHER THAN THAT WHICH RELATES TO AMERICAN TOWER OR THE SPECIFIED CARRIER IS STRICTLY PROHIBITED. TITLE TO THESE DOCUMENTS SHALL REMAIN THE PROPERTY OF AMERICAN TOWER WHETHER OR NOT THE PROJECT IS EXECUTED. NEITHER THE ARCHITECT NOR THE ENGINEER WILL BE PROVIDING ON-SITE CONSTRUCTION REVIEW OF THIS PROJECT. CONTRACTOR(S) MUST VERIFY ALL DIMENSIONS AND ADVISE AMERICAN TOWER OF ANY DISCREPANCIES. ANY PRIOR ISSUANCE OF THIS DRAWING IS SUPERSEDED BY THE LATEST VERSION ON FILE WITH AMERICAN TOWER.

REV.	DESCRIPTION	BY	DATE
0	FIRST ISSUE	BJK	09/06/17

10047 - PORTLAND ME, MAINE

275 FT GUYED TOWER MODIFICATIONS

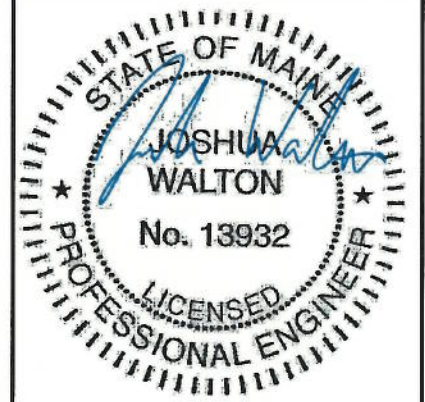
ATC SITE NUMBER:
10047

ATC SITE NAME:
PORTLAND ME

MAINE

SITE ADDRESS:
225 RIVERSIDE INDUSTRIAL PARKWAY
PORTLAND, ME 04103

AS-BUILT SIGN-OFF		
DESCRIPTION	SIGNATURE	DATE
CONTRACTOR NAME	East Coast Communications	
CONTRACTOR REPRESENTATIVE (PRINT NAME)	Doug Howe	
CONTRACTOR REPRESENTATIVE (SIGNATURE)	<i>Doug Howe</i>	02/23/2017
REDEVELOPMENT P.M. (PRINT NAME)		
REDEVELOPMENT P.M. (SIGNATURE)		



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PROJECT SUMMARY	PROJECT DESCRIPTION	SHEET	SHEET TITLE	REV.
ATC PROJECT NUMBER: OAA706994_C6_03 CUSTOMER: T-MOBILE CUSTOMER SITE NAME: ME267/DORLER TOWER (ATS) CUSTOMER SITE NUMBER: 4DN2267B SITE ADDRESS: 225 RIVERSIDE INDUSTRIAL PARKWAY PORTLAND, ME 04103 DATE: 09/06/17 GEOGRAPHIC COORDINATES: 43.70602 -70.31074	THE MODIFICATIONS PRESENTED ON THESE DRAWINGS ARE BASED ON THE RECOMMENDATIONS OUTLINED IN THE STRUCTURAL ANALYSIS COMPLETED UNDER ENGINEERING PROJECT NUMBER OAA706994_C3_01 DATED 07/26/17. SATISFACTORY COMPLETION OF THE WORK INDICATED ON THESE DRAWINGS WILL RESULT IN THE STRUCTURE MEETING THE REQUIREMENTS OF THE SPECIFICATIONS UNDER WHICH THE STRUCTURAL WAS COMPLETED.	IGN	IBC GENERAL NOTES	0
		SIC	SPECIAL INSPECTION CHECKLIST	0
		A-1	MODIFICATION PROFILE	0
		A-2	SITE PLAN	0
		A-3	FOUNDATION MODIFICATION INSTALLATION DETAILS	0
		A-RL	REBAR LIST	0
A-4	GUY WIRE TENSION CHART	0		
A-5	GUY WIRE RETENSIONING AND STANDARD SAFETY WIRE DETAILS	0		

DRAWN BY:	BJK
APPROVED BY:	BMS/AT
DATE DRAWN:	09/06/17
ATC JOB NO:	OAA706994_C6_03

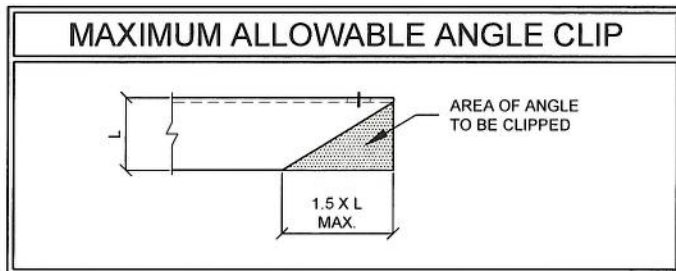
COVER	
SHEET NUMBER: COVER	REVISION: 0

GENERAL

- ALL WORK TO BE COMPLETED PER APPLICABLE LOCAL, STATE, FEDERAL CODES AND ORDINANCES AND COMPLY WITH ATC MASTER SPECIFICATIONS FOR WIRELESS TOWER SITES. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING AND ABIDING BY ALL REQUIRED PERMITS.
- ALL WORK INDICATED ON THESE DRAWINGS SHALL BE PERFORMED BY QUALIFIED CONTRACTORS EXPERIENCED IN TOWER AND FOUNDATION CONSTRUCTION.
- THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF RECORD IMMEDIATELY OF ANY INSTALLATION INTERFERENCES. ALL NEW WORK SHALL ACCOMMODATE EXISTING CONDITIONS. DETAILS NOT SPECIFICALLY SHOWN ON THE DRAWINGS SHALL FOLLOW SIMILAR DETAILS FOR THIS JOB.
- ANY SUBSTITUTIONS SHALL CONFORM TO THE REQUIREMENTS OF THESE NOTES AND SPECIFICATIONS, AND SHOULD BE SIMILAR TO THOSE SHOWN. ALL SUBSTITUTIONS SHALL BE SUBMITTED TO THE ENGINEER OF RECORD FOR REVIEW AND APPROVAL PRIOR TO FABRICATION.
- ANY MANUFACTURED DESIGN ELEMENTS SHALL CONFORM TO THE REQUIREMENTS OF THESE NOTES AND SPECIFICATIONS AND SHOULD BE SIMILAR TO THOSE SHOWN. THESE DESIGN ELEMENTS MUST BE STAMPED BY AN ENGINEER PROFESSIONALLY REGISTERED IN THE STATE OF THE PROJECT, AND SUBMITTED TO THE ENGINEER OF RECORD FOR APPROVAL PRIOR TO FABRICATION.
- ALL WORK SHALL BE DONE IN ACCORDANCE WITH LOCAL CODES AND OSHA SAFETY REGULATIONS.
- THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN AND EXECUTION OF ALL MISCELLANEOUS SHORING, BRACING, TEMPORARY SUPPORTS, ETC. NECESSARY, PER TIA-1019-A-2011, TO PROVIDE A COMPLETE AND STABLE STRUCTURE AS SHOWN ON THESE DRAWINGS.
- CONTRACTOR'S PROPOSED INSTALLATION SHALL NOT INTERFERE, NOR DENY ACCESS TO, ANY EXISTING OPERATIONAL AND SAFETY EQUIPMENT.

STRUCTURAL STEEL

- ALL DETAILING, FABRICATION AND ERECTION OF STRUCTURAL STEEL SHALL CONFORM TO THE AISC SPECIFICATIONS, LATEST EDITION.
- ALL EXPOSED STRUCTURAL STEEL MEMBERS SHALL BE HOT-DIPPED GALVANIZED AFTER FABRICATION PER ASTM A123. EXPOSED STEEL HARDWARE AND ANCHOR BOLTS SHALL BE GALVANIZED PER ASTM A153 OR B695.
- ALL U-BOLTS SHALL BE ASTM A36 OR EQUIVALENT, WITH LOCKING DEVICE, UNLESS NOTED OTHERWISE.
- FIELD CUT EDGES, EXCEPT DRILLED HOLES, SHALL BE GROUND SMOOTH.
- ALL FIELD CUT SURFACES, FIELD DRILLED HOLES & GROUND SURFACES WHERE EXISTING PAINT OR GALVANIZATION REMOVAL WAS REQUIRED SHALL BE REPAIRED WITH (2) BRUSHED COATS OF ZRC GALVILITE COLD GALVANIZING COMPOUND PER ASTM A780 AND MANUFACTURERS RECOMMENDATIONS.
- ALL STRUCTURAL STEEL EMBEDDED IN THE CONCRETE SHALL BE APPLIED WITH (2) BRUSHED COATS OF POLYGUARD CA-14 MASTIC OR EQUIVALENT. REFER TO THE MANUFACTURER SPECIFICATIONS FOR SURFACE PREPARATION AND APPLICATION. APPLICATION OF POLYGUARD 400 WRAP IS NOT ESSENTIAL.
- CONTRACTOR SHALL PERFORM WORK ON ONLY ONE (1) TOWER FACE AND REPLACE/REINFORCE ONE (1) BOLT/MEMBER AT A TIME.
- ALL FIELD DRILLED HOLES TO BE USED FOR FIELD BOLTING INSTALLATION SHALL BE STANDARD HOLES, AS DEFINED BY AISC, UNLESS NOTED OTHERWISE.



PAINT

- AS REQUIRED, CLEAN AND PAINT PROPOSED STEEL ACCORDING TO FAA ADVISORY CIRCULAR AC 70/7460-1K.

WELDING

- ALL WELDING TO BE PERFORMED BY AWS CERTIFIED WELDERS AND CONDUCTED IN ACCORDANCE WITH THE LATEST EDITION OF THE AWS WELDING CODE D1.1.
- ALL WELDS SHALL BE INSPECTED VISUALLY. IF DIRECTED BY ENGINEER OF RECORD, 25% OF WELDS SHALL BE INSPECTED WITH DYE PENETRANT OR MAGNETIC PARTICLE (100% IF REJECTABLE DEFECTS ARE FOUND) TO MEET THE ACCEPTANCE CRITERIA OF AWS D1.1. REPAIR ALL WELDS AS NECESSARY.
- INSPECTION SHALL BE PERFORMED BY AN AWS CERTIFIED WELD INSPECTOR.
- ALL ELECTRODES TO BE LOW HYDROGEN, MATCHING FILLER METAL, PER AWS D1.1, UNLESS NOTED OTHERWISE.
- ALL WELDING ON LATTICE TOWERS SHALL BE DONE WITH E70XX ELECTRODES. ALL WELDING ON POLE STRUCTURES SHALL BE DONE WITH E80XX ELECTRODES UNLESS NOTED OTHERWISE.
- PRIOR TO FIELD WELDING GALVANIZED MATERIAL, CONTRACTOR SHALL GRIND OFF GALVANIZING 1/2" BEYOND ALL FIELD WELD SURFACES. AFTER WELD AND WELD INSPECTION IS COMPLETE, REPAIR ALL GROUND AND WELDED SURFACES WITH ZRC GALVILITE COLD GALVANIZING COMPOUND PER ASTM A780 AND MANUFACTURERS RECOMMENDATIONS.

BOLT TIGHTENING PROCEDURE

- STRUCTURAL CONNECTIONS TO BE ASSEMBLED AND INSPECTED IN ACCORDANCE WITH RCSC-2004 (SPECIFICATIONS FOR STRUCTURAL JOINTS USING ASTM A325 OR ASTM A490 BOLTS.)
- FLANGE BOLTS SHALL BE INSTALLED AND TIGHTENED USING DIRECT TENSION INDICATING (DTI) SQUIRTER WASHERS. DTI SQUIRTER WASHERS ARE TO BE INSTALLED AND ORIENTED / TIGHTENED PER MANUFACTURER SPECIFICATIONS TO ACHIEVE DESIRED LEVEL OF BOLT PRE-TENSION.
- IN LIEU OF USING DTI SQUIRTER WASHERS, FLANGE BOLTS MAY BE TIGHTENED USING AISC / RCSC "TURN-OF-THE-NUT" METHOD, PENDING APPROVAL BY THE ENGINEER OF RECORD (EOR). TIGHTEN FLANGE BOLTS USING THE CHART BELOW:

BOLT LENGTHS UP TO AND INCLUDING FOUR DIAMETERS

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
1-1/8"	BOLTS UP TO AND INCLUDING 4.5 INCH LENGTH	+1/3 TURN BEYOND SNUG TIGHT
1-1/4"	BOLTS UP TO AND INCLUDING 5.0 INCH LENGTH	+1/3 TURN BEYOND SNUG TIGHT
1-3/8"	BOLTS UP TO AND INCLUDING 5.5 INCH LENGTH	+1/3 TURN BEYOND SNUG TIGHT
1-1/2"	BOLTS UP TO AND INCLUDING 6.0 INCH LENGTH	+1/3 TURN BEYOND SNUG TIGHT

BOLT LENGTHS OVER FOUR DIAMETERS BUT NOT EXCEEDING EIGHT DIAMETERS

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
1-1/8"	BOLTS 4.75 TO 9.0 INCH LENGTH	+1/2 TURN BEYOND SNUG TIGHT
1-1/4"	BOLTS 5.25 TO 10.0 INCH LENGTH	+1/2 TURN BEYOND SNUG TIGHT
1-3/8"	BOLTS 5.75 TO 11.0 INCH LENGTH	+1/2 TURN BEYOND SNUG TIGHT
1-1/2"	BOLTS 6.25 TO 12.0 INCH LENGTH	+1/2 TURN BEYOND SNUG TIGHT

- SPLICE 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:

FASTENERS SHALL BE INSTALLED IN PROPERLY ALIGNED HOLES AND TIGHTENED BY ONE OF THE METHODS DESCRIBED IN SUBSECTION 8.2.1 THROUGH 8.2.4.

8.2.1 TURN-OF-NUT PRETENSIONING

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 ABOVE. DURING THE TIGHTENING OPERATION THERE SHALL BE NO ROTATION OF THE PART NOT TURNED BY THE WRENCH. TIGHTENING SHALL PROGRESS SYSTEMATICALLY.

- ALL OTHER BOLTED CONNECTIONS SHALL BE BROUGHT TO A SNUG TIGHT CONDITION AS DEFINED IN SECTION 8.1 OF THE SPECIFICATION.

ALL BOLT HOLES SHALL BE ALIGNED TO PERMIT INSERTION OF THE BOLTS WITHOUT UNDUE DAMAGE TO THE THREADS. BOLTS SHALL BE PLACED IN ALL HOLES WITH WASHERS POSITIONED AS REQUIRED AND NUTS THREADED TO COMPLETE THE ASSEMBLY. COMPACTING THE JOINT TO THE SNUG-TIGHT CONDITION SHALL PROGRESS SYSTEMATICALLY FROM THE MOST RIGID PART OF THE JOINT. THE SNUG-TIGHTENED CONDITION IS THE TIGHTNESS THAT IS ATTAINED WITH A FEW IMPACTS OF AN IMPACT WRENCH OR THE FULL EFFORT OF AN IRONWORKER USING AN ORDINARY SPUD WRENCH TO BRING THE CONNECTED PLIES INTO FIRM CONTACT.

APPLICABLE CODES AND STANDARDS

- ANSI/TIA: STRUCTURAL STANDARDS FOR STEEL ANTENNA TOWERS AND ANTENNA SUPPORTING STRUCTURES, 222-G EDITION.
- 2009 INTERNATIONAL BUILDING CODE.
- MAINE MODEL BUILDING CODE.
- ACI 318: AMERICAN CONCRETE INSTITUTE, BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE, 318-08.
- CRSI: CONCRETE REINFORCING STEEL INSTITUTE, MANUAL OF STANDARD PRACTICE, LATEST EDITION.
- AISC: AMERICAN INSTITUTE OF STEEL CONSTRUCTION, MANUAL OF STEEL CONSTRUCTION, LATEST EDITION.
- AWS: AMERICAN WELDING SOCIETY D1.1, STRUCTURAL WELDING CODE, LATEST EDITION.

SPECIAL INSPECTION

- A QUALIFIED INDEPENDENT TESTING LABORATORY, EMPLOYED BY THE OWNER, SHALL PERFORM INSPECTION AND TESTING IN ACCORDANCE WITH IBC 2009, SECTION 1704 AS REQUIRED BY PROJECT SPECIFICATIONS FOR THE FOLLOWING CONSTRUCTION WORK:
 - a) STRUCTURAL WELDING (CONTINUOUS INSPECTION OF FIELD WELD ONLY)
 - b) HIGH STRENGTH BOLTS (PERIODIC INSPECTION OF A325 EXTENSION FLANGE BOLTS TO BE TIGHTENED PER "TURN-OF-THE-NUT" METHOD)
- THE INSPECTION AGENCY SHALL SUBMIT INSPECTION AND TEST REPORTS TO THE BUILDING DEPARTMENT, THE ENGINEER OF RECORD, AND THE OWNER IN ACCORDANCE WITH IBC 2009, SECTION 1704, UNLESS THE FABRICATOR IS APPROVED BY THE BUILDING OFFICIAL TO PERFORM SUCH WORK WITHOUT THE SPECIAL INSPECTIONS.

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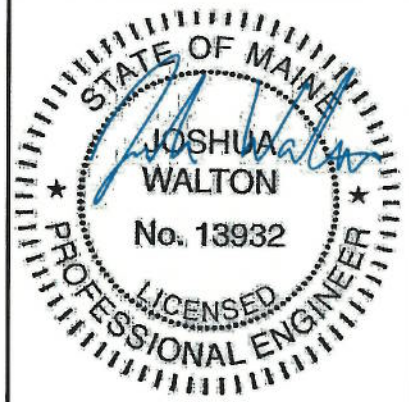
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IBC GENERAL NOTES	
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MODIFICATION INSPECTION NOTES

THE SPECIAL INSPECTION (SI) PROCEDURE IS INTENDED TO CONFIRM THAT CONSTRUCTION AND INSTALLATION MEETS ENGINEERING DESIGN, ATC PROCEDURES AND ATC STANDARD SPECIFICATIONS FOR WIRELESS TOWER SITES.

TO ENSURE THAT THE REQUIREMENTS OF THE SI ARE MET, IT IS VITAL THAT THE GENERAL CONTRACTOR AND THE INSPECTOR BEGIN COMMUNICATING AND COORDINATING AS SOON AS A PO IS RECEIVED FROM AMERICAN TOWER CORPORATION (ATC). IT IS EXPECTED THAT EACH PARTY WILL PROACTIVELY REACH OUT TO THE OTHER PARTY. IF CONTACT INFORMATION IS NOT KNOWN, CONTACT YOUR AMERICAN TOWER POINT OF CONTACT.

SPECIAL INSPECTOR

THE SPECIAL INSPECTOR IS REQUIRED TO CONTACT THE GENERAL CONTRACTOR AS SOON AS RECEIVING A PO FROM ATC. UPON RECEIVING A PO FROM ATC THE SPECIAL INSPECTOR AT A MINIMUM MUST:

- REVIEW THE REQUIREMENTS OF THE SI CHECKLIST.
- WORK WITH THE GENERAL CONTRACTOR TO DEVELOP A SCHEDULE TO CONDUCT ON-SITE INSPECTIONS, INCLUDING FOUNDATION INSPECTIONS.
- ANY CONCERNS WITH THE SCOPE OF WORK OR PROJECT COMMITMENT MUST BE RELAYED TO THE ATC POINT OF CONTACT IMMEDIATELY.

THE SPECIAL INSPECTOR IS RESPONSIBLE FOR COLLECTING ALL GENERAL CONTRACTOR INSPECTION AND TEST REPORTS, REVIEWING THESE DOCUMENTS FOR ADHERENCE TO CONTRACT DOCUMENTS, CONDUCTING THE IN-FIELD INSPECTIONS, AND SUBMITTING THE SI REPORT TO AMERICAN TOWER CORPORATION.

GENERAL CONTRACTOR

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

- REVIEW THE REQUIREMENTS OF THE SI CHECKLIST.
 - WORK WITH THE SI TO DEVELOP A SCHEDULE TO CONDUCT ON-SITE INSPECTIONS, INCLUDING FOUNDATION INSPECTIONS.
 - BETTER UNDERSTAND ALL INSPECTION AND TESTING REQUIREMENTS.
- THE GENERAL CONTRACTOR SHALL PERFORM AND RECORD THE TEST AND INSPECTION RESULTS IN ACCORDANCE WITH THE REQUIREMENTS OF THE SI CHECKLIST.

SPECIAL INSPECTION CHECKLIST

INSPECTION DOCUMENT	DESCRIPTION	INSPECTION TESTING REQUIRED	RESPONSIBILITY	SI REVIEW REQUIRED			INSPECTION FREQUENCY	
				PRE CX	DURING CX	POST CX	PERIODIC	CONTINUOUS
SPECIAL INSPECTION FIELD WORK & REPORT	DOCUMENTATION AND SITE VISIT CONDUCTED BY AN ATC APPROVED SPECIAL INSPECTOR AS REQUIRED BY ATC AND OTHER AUTHORITIES HAVING JURISDICTION. INSPECTION PARAMETERS TO FOLLOW ATC'S STANDARD SPECIFICATION FOR WIRELESS TOWER SITES.	✓	SI			✓		
ENGINEERING ASSEMBLY DRAWINGS	GC SHALL SUBMIT DRAWINGS TO SI FOR INCLUSION IN SI REPORT	✓	GC	✓				
FABRICATED MATERIAL VERIFICATION & INSPECTION	MTR AND OR MILL CERTIFICATIONS FOR SUPPLIED MATERIALS GC SHALL SUPPLY SI WITH REPORTS TO BE INCLUDED IN SI REPORT WHEN REQUIRED BY ATC	✓	SI	✓				
CERTIFIED WELD INSPECTION	INSPECTION AND REPORT OF STRUCTURAL WELDING PERFORMED DURING PROJECT COMPLETED BY A CWI AND INCLUDED WITHIN SI REPORT		GC / TA					
FOUNDATION INSPECTION & VERIFICATION	VISUAL OBSERVATION AND APPROVAL OF FOUNDATION EXCAVATION, REBAR PLACEMENT, CASING/SHORING/FORMING PLACEMENT, AND ANCHOR TEMPLATE AND ANCHOR PLACEMENT - TO BE SI APPROVED PRIOR TO CONCRETE POUR AND DOCUMENTED IN THE SI REPORT	✓	SI		✓		✓	
ANCHOR, ROCK ANCHOR OR HELICAL PULL-OUT TEST	PULL TESTING OF INSTALLED ANCHORS TO BE COMPLETED AND DOCUMENTED IN SI REPORT		GC / TA					
CONCRETE INSPECTION & VERIFICATION	CONCRETE MIX DESIGN, SLUMP TEST, COMPRESSIVE TESTING, AND SAMPLE GATHERING TECHNIQUES ARE TO BE PROVIDED FOR INCLUSION IN THE SI REPORT. SI SHALL VERIFY CONCRETE PLACEMENT AS REQUIRED BY THE DESIGN DOCUMENTS (INSPECTION FREQUENCY IS MARKED CONTINUOUS)	✓	GC / TA		✓			✓
DYWIDAG PLACEMENT/ANCHOR BOLT EMBEDMENT - EPOXY/GROUT INSTALL	ANCHOR/BAR EMBEDMENT, HOLE SIZE, EPOXY/GROUT TYPE, INSTALLATION TEMPERATURE AND INSTALLATION SHALL BE VERIFIED BY THE SI AND INCLUDED IN THE SI REPORT	✓	GC / SI		✓			✓
BASE PLATE GROUT INSPECTION & VERIFICATION	BASE PLATE GROUTING TYPE AND PLACEMENT SHALL BE CONFIRMED BY THE SI AND INCLUDED IN THE SI REPORT		GC / SI					
EARTHWORK INSPECTION & VERIFICATION	EXCAVATION, FILL, SLOPE, GRADE AND OTHER EARTHWORK REQUIREMENTS PER PLANS SHALL BE VERIFIED BY THE SI AND INCLUDED IN THE SI REPORT	✓	GC / TA			✓	✓	
COMPACTION VERIFICATION	CONTRACTOR SHALL PROVIDE AN INDEPENDENT THIRD PARTY CERTIFIED INSPECTION WHICH PROVIDES TEST RESULTS FOR COMPACTION TEST OF SOILS IN PLACE TO ASTM STANDARDS.	✓	GC / TA			✓	✓	
GROUND TESTING & VERIFICATION	GC SHALL PROVIDE DOCUMENTATION SHOWING THAT THE GROUNDING SYSTEM SHALL HAVE A MEASURED RESISTANCE TO THE GROUND OF NOT MORE THAN THE RECOMMENDED 10 OHMS. PER THE ATC CONSTRUCTION SPECIFICATION UNDER SECTION 2.15 THIS DOCUMENTATION MUST BE AN INDEPENDENT CERTIFICATION.		GC					
STEEL CONSTRUCTION INSPECTION & VERIFICATION	VISUAL OBSERVATION AND APPROVAL OF STEEL CONSTRUCTION TO BE PERFORMED BY THE SI. INSPECTION TO INCLUDE VERIFICATION OF NEW CONSTRUCTION OR MODIFICATION OF EXISTING CONSTRUCTION PER ENGINEERED PLANS. DETAILED VERIFICATION SHALL BE INCLUDED IN SI REPORT.	✓	SI			✓	✓	
ON-SITE COLD GALVANIZING VERIFICATION	SI SHALL VERIFY WITH GC ALL COLD GALVANIZATION TYPE AND APPLICATION AND INCLUDE SUMMARY IN SI REPORT	✓	GC			✓	✓	
GUY WIRE TENSIONING & TOWER ALIGNMENT REPORT	GC SHALL PROVIDE SI EVIDENCE OF PROPER GUY TENSIONING AND TOWER PLUMB PER PLANS. SI SHALL VERIFY AND INCLUDE PLUMB AND TENSION REPORTING IN SI REPORT.	✓	GC			✓	✓	
GC AS-BUILT DRAWINGS WITH CONSTRUCTION RED-LINES	GC SHALL SUBMIT "AS-BUILT" DRAWINGS INDICATING ANY APPROVED CHANGES TO ENGINEERED PLANS TO SI FOR APPROVAL/REVIEW AND INCLUSION IN SI REPORT	✓	GC			✓		
SI AS-BUILT DRAWINGS WITH INSPECTION RED-LINES (AS REQUIRED)	SI SHALL SUBMIT "AS-BUILT" DRAWINGS INDICATING ANY APPROVED CHANGES TO ENGINEERED PLANS WITHIN SI REPORT	✓	SI			✓		
TIA INSPECTION	SI SHALL COMPLETE TIA INSPECTION AND PROVIDE SEPARATE TIA INSPECTION DOCUMENTATION TO ATC CM		SI					
PHOTOGRAPHS	PHOTOGRAPHIC EVIDENCE OF SPECIAL INSPECTION, ON SITE REMEDIATION, AND ITEMS FAILING INSPECTION & REQUIRING FOLLOWUP TO BE INCLUDED WITHIN THE SI REPORT. COMPLETE PHOTO LOG IS TO BE SUBMITTED WITHIN SI REPORT.	✓	GC / SI			✓		

NOTE: SPECIAL INSPECTIONS ARE INTENDED TO BE A COLLABORATIVE EFFORT BETWEEN GC AND SI. WHENEVER POSSIBLE GC IS TO PROVIDE SI WITH PHOTOGRAPHIC OR OTHER ACCEPTABLE EVIDENCE OF PROPER INSTALLATION IF PERIODIC INSPECTION FREQUENCY IS ACCEPTABLE. THE GC AND SI SHALL WORK TO COMPILE EVIDENCE OF PROPER CONSTRUCTION AND LIMIT THE NUMBER OF SI SITE VISITS REQUIRED.

TABLE KEY:

SI - ATC APPROVED SPECIAL INSPECTOR	CX - CONSTRUCTION
GC - GENERAL CONTRACTOR	CM - CONSTRUCTION MANAGER
TA - 3RD PARTY TESTING AGENCY	ATC - AMERICAN TOWER CORPORATION

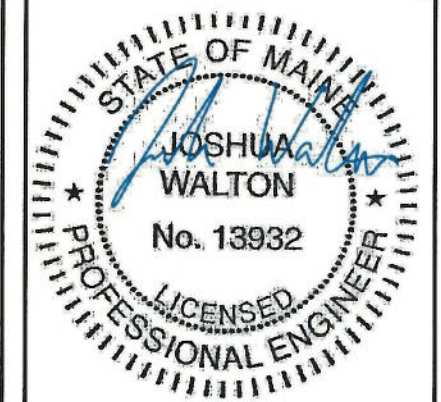


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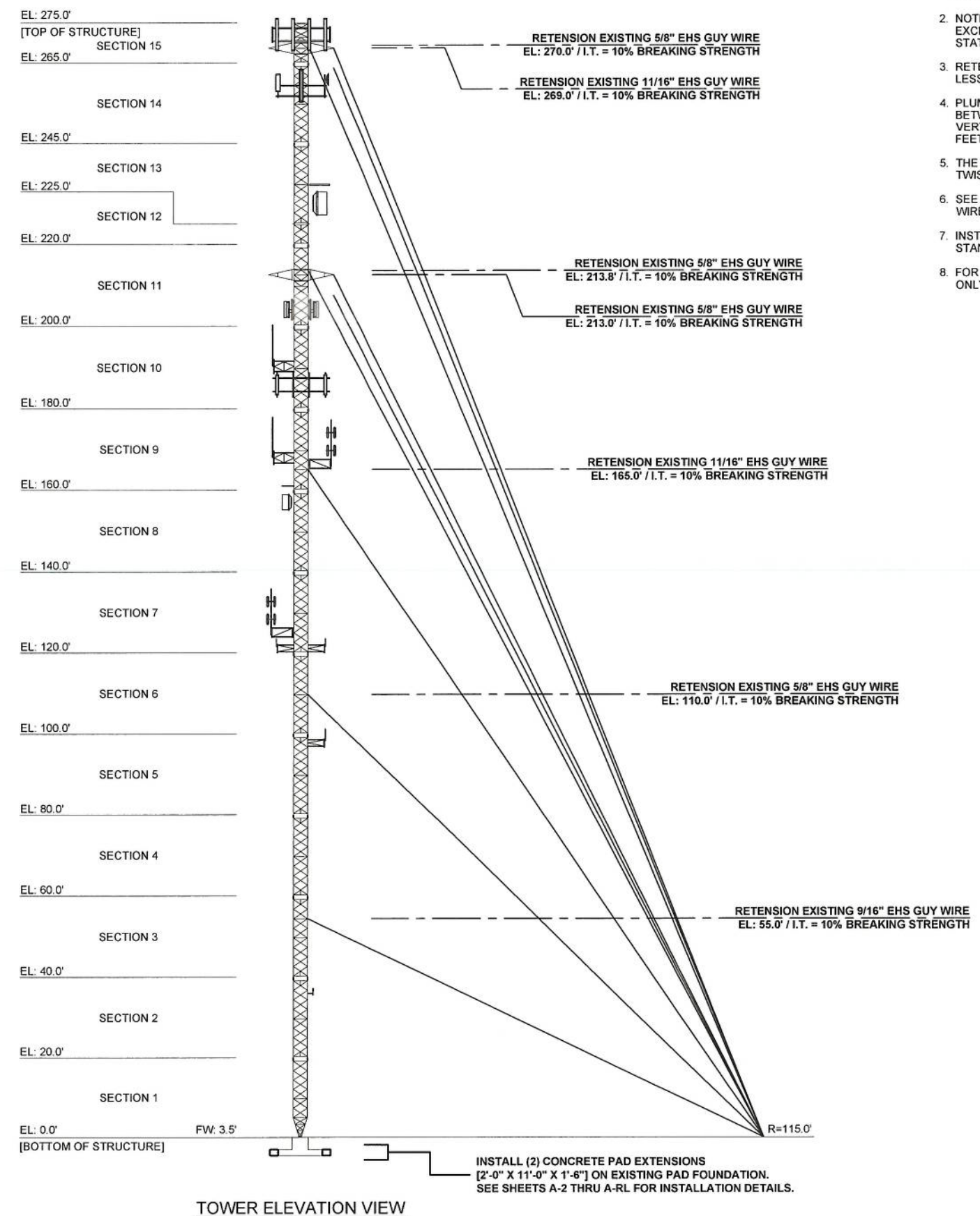
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SPECIAL INSPECTION CHECKLIST

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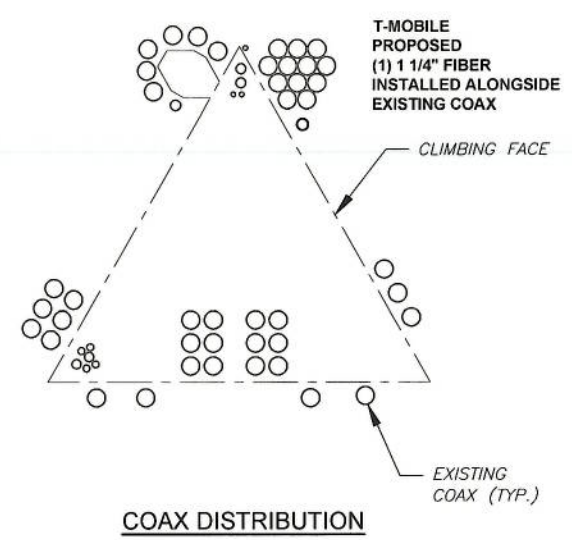
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TOWER ELEVATION VIEW

PLUMB AND TENSION NOTES:

1. PLUMB AND TENSION TOWER UPON THE COMPLETION OF ANY OTHER REQUIRED STRUCTURAL MODIFICATIONS DETAILED IN THE MODIFICATION PACKAGE. REFER TO GUY WIRE TENSION CHART FOR REQUIRED GUY WIRE TENSION VALUES.
2. NOTIFY ATC ENGINEERING PRIOR TO RETENSIONING IF THE GUY ANCHOR DROP, RISE OR RADIUS EXCEEDS 15 FT AT ANY GUY ANCHOR LOCATION OR IF ANY GUY WIRE SIZE DIFFERS FROM THOSE STATED IN THESE DRAWINGS.
3. RETENSIONING OF EXISTING GUY WIRES SHALL BE PERFORMED AT A TIME WHEN THE WIND VELOCITY IS LESS THAN 10 MPH AT GROUND LEVEL AND WITH NO ICE ON THE STRUCTURE AND THE GUY WIRES.
4. PLUMB THE TOWER WHILE RETENSIONING THE EXISTING GUY WIRES. THE HORIZONTAL DISTANCE BETWEEN THE VERTICAL CENTERLINES AT ANY TWO ELEVATIONS SHALL NOT EXCEED 0.25% OF THE VERTICAL DISTANCE BETWEEN THE TWO ELEVATIONS (EXAMPLE, NOT TO EXCEED 0.6 INCHES FOR 20 FEET VERTICAL DISTANCE).
5. THE TWIST BETWEEN ANY TWO ELEVATIONS SHALL NOT EXCEED 0.5 DEGREES IN 10 FEET. THE MAXIMUM TWIST OVER THE STRUCTURE HEIGHT SHALL NOT EXCEED 5 DEGREES.
6. SEE "GUY WIRE RETENSIONING AND STANDARD SAFETY WIRE DETAILS" SHEET FOR ACCEPTABLE GUY WIRE TERMINATION EXTENSION, IF REQUIRED.
7. INSTALL / REINSTALL THE GUY ANCHOR SAFETY WIRE AS SHOWN ON THE "GUY WIRE RETENSIONING AND STANDARD SAFETY WIRE DETAILS" SHEET.
8. FOR GUY WIRE REPLACEMENT, PROVIDE TEMPORARY GUYING TO SECURE TOWER. CONTRACTOR TO ONLY REPLACE (1) GUY WIRE AT A TIME.



NOTE:
CONTACT AMERICAN TOWER FIELD OPERATIONS WHEN EXISTING EQUIPMENT INTERFERES WITH INSTALLATION OF MODIFICATIONS. ONCE APPROVED, EXISTING EQUIPMENT MAY BE TEMPORARILY MOVED DURING INSTALLATION & REINSTALLED TO THE ORIGINAL HEIGHT & LOCATION BY CONTRACTOR POST COMPLETION OF MODIFICATIONS.

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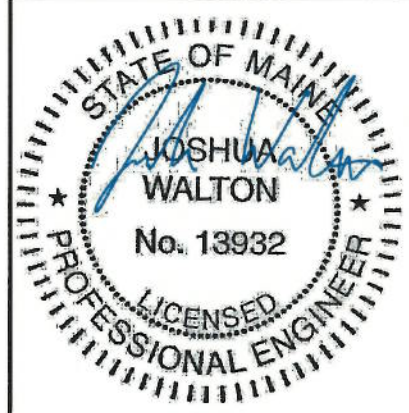
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MODIFICATION PROFILE	
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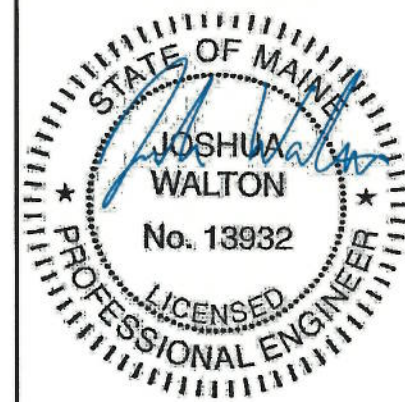


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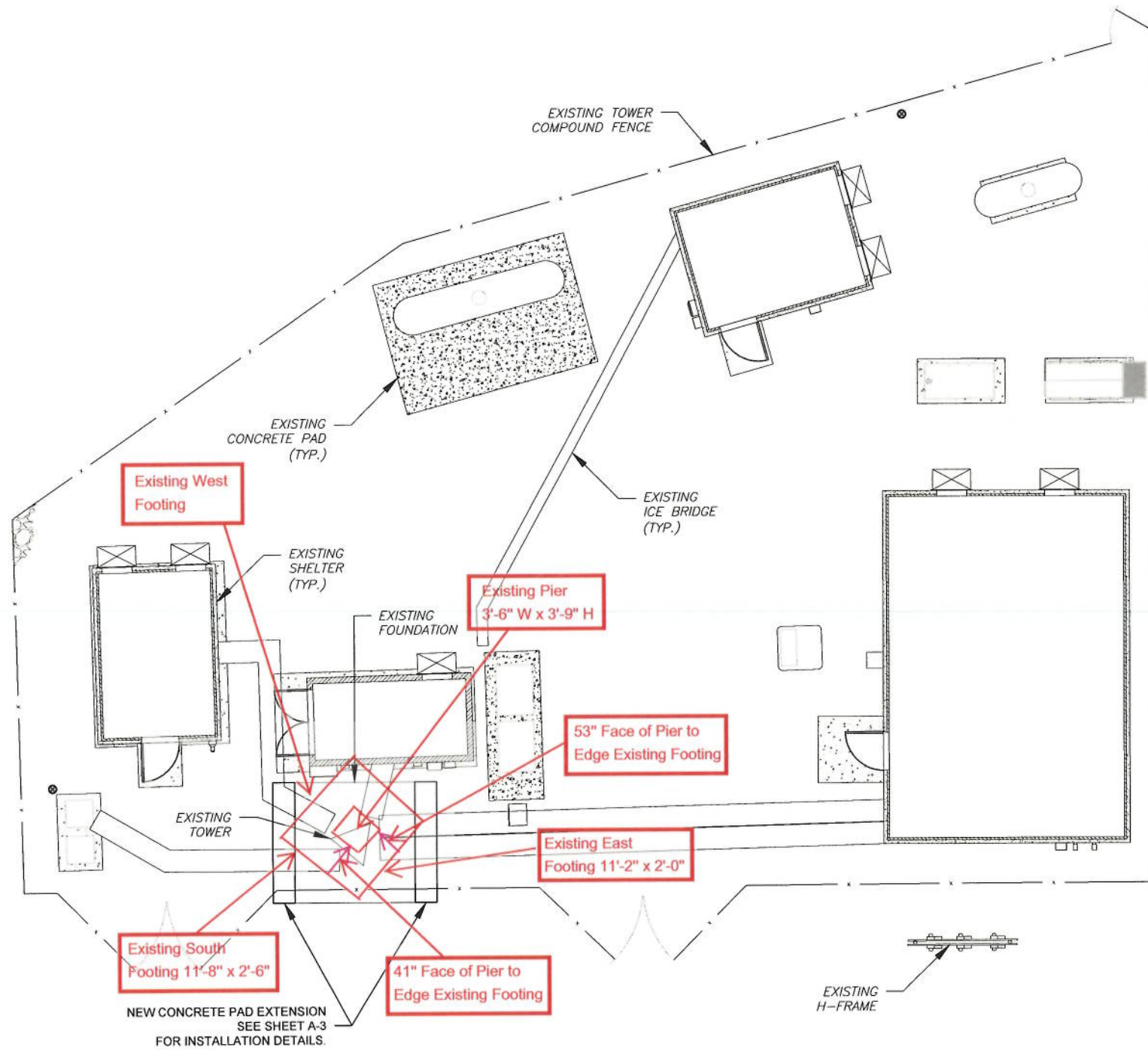


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SITE PLAN

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SITE PLAN
FOUNDATION MODIFICATION ORIENTATION

- NOTES:**
- EXISTING ICE BRIDGE SUPPORT POSTS MAY BE RELOCATED AS NEEDED TO INSTALL NEW CONCRETE PAD EXTENSION.
 - REROUTE ANY BURIED CONDUIT INTERFERING WITH INSTALLATION OF NEW CONCRETE PAD EXTENSION. ALL REROUTED CONDUITS TO BE INSTALLED 1'-0" MINIMUM OUTSIDE CONCRETE FORM AREA AND BURIED AT THEIR ORIGINAL DEPTHS BELOW GRADE.
 - EXISTING COMPOUND FENCING MAY BE TEMPORARILY REMOVED DURING NEW CONCRETE PAD EXTENSION INSTALLATION. COMPOUND FENCING MUST BE REINSTALLED IN SAME LOCATION ONCE INSTALLATION OF NEW CONCRETE PAD EXTENSION IS COMPLETE.

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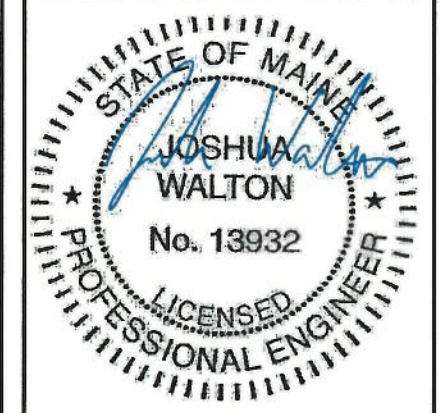


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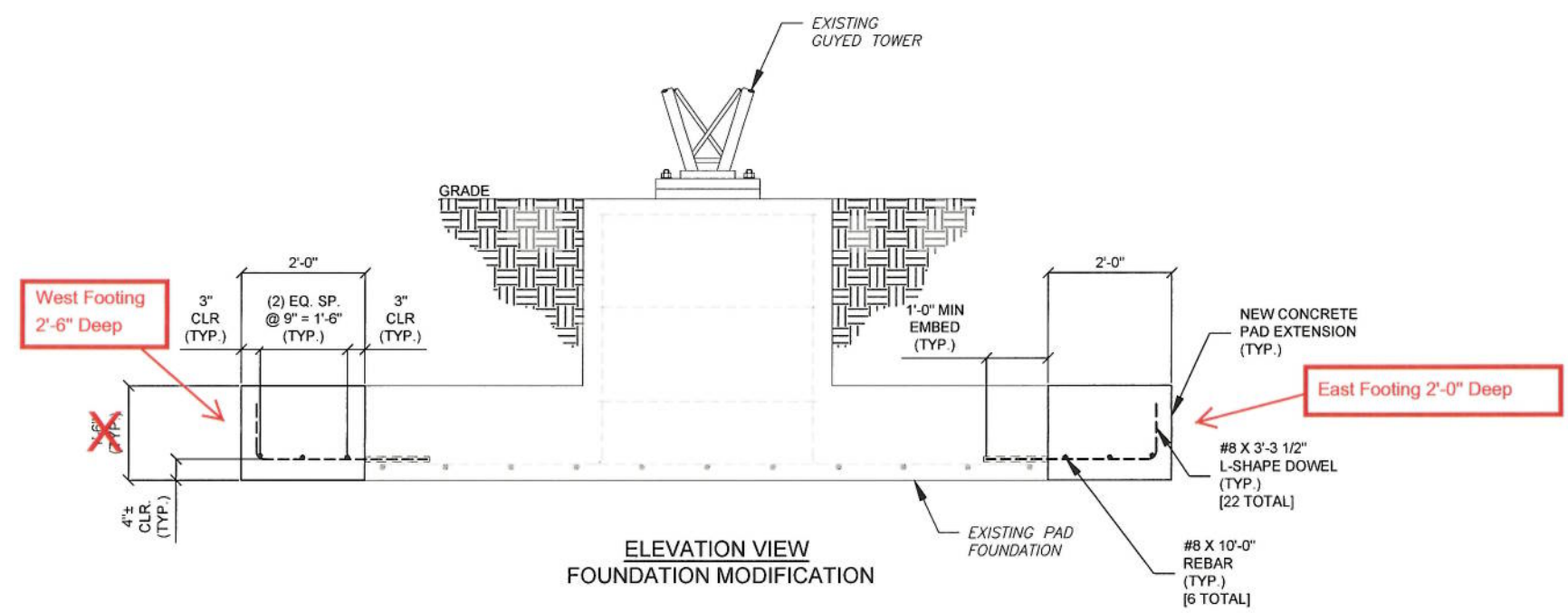


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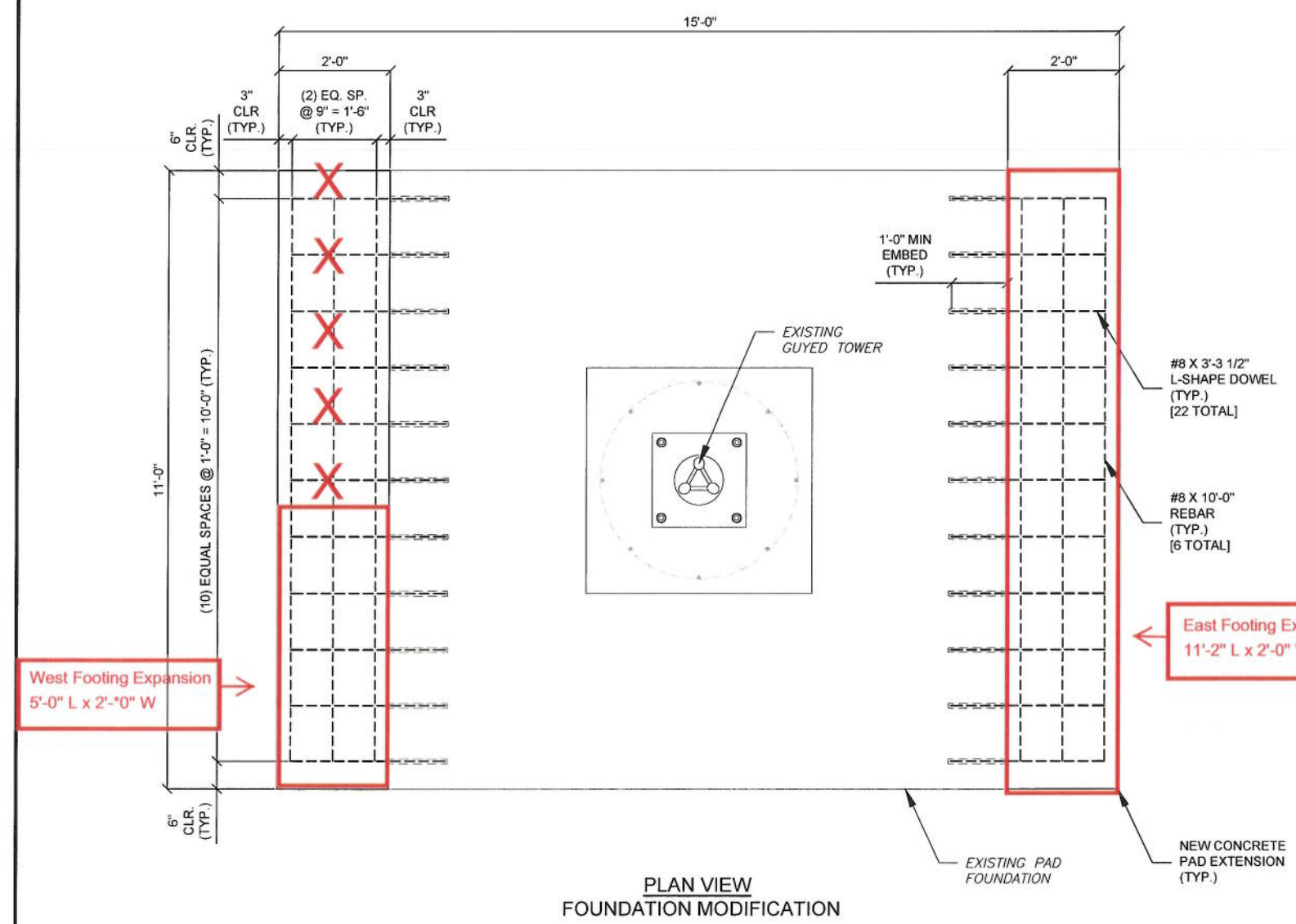
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**FOUNDATION MODIFICATION
 INSTALLATION DETAILS**

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- NOTES:**
- (2) CONCRETE FOUNDATION EXTENSIONS TO BE INSTALLED ON EXISTING PAD FOUNDATION. TOTAL CONCRETE REQUIRED: 2.5± CUBIC YARDS.
 - FOR REBAR LIST/FOUNDATION NOTES SEE SHEET A-RL.
 - CONCRETE COVER OVER REBAR 3" MIN. U.N.O. (TYP.)
 - CONCRETE COMPRESSIVE STRENGTH @ 28 DAYS = 4500 PSI.
 - SEE SHEET A-RL FOR DRILLED HOLE SIZES. DO NOT CUT REBAR IN EXISTING FOUNDATION.
 - DRILLED HOLES SHALL BE FREE OF MOISTURE, DEBRIS AND LAITANCE.
 - GROUT HORIZONTAL DOWELS INTO EXISTING FOUNDATION WITH HILTI HIT-RE 500 V3 EPOXY.
 - REMOVE ALL LOOSE CONCRETE FROM EXISTING FOUNDATION PIER AND PAD PRIOR TO POURING NEW CONCRETE.
 - COAT INTERFACE OF NEW AND EXISTING CONCRETE WITH SIKADUR 32, HI-MOD LPL BONDING AGENT OR APPROVED EQUIVALENT, PRIOR TO POURING NEW CONCRETE.
 - FOUNDATION EXTENSION TO BE INSTALLED IN DIRECTIONS WITH FEWEST INTERFERENCES. CONTRACTOR TO FIELD DETERMINE. INTERFERENCES, IF EXISTING, MAY NEED RELOCATION.
 - FOUNDATION DESIGN BASED UPON SOILS REPORTED BY: GEOSERVICES, LLC, GEOSERVICES PROJECT NO. 21-07254. DATED APRIL 27, 2008.



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GENERAL FOUNDATION AND CONSTRUCTION NOTES

1. CONCRETE TO HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4500 PSI AT 28 DAYS.
2. MAXIMUM ALLOWED WATER/CEMENT RATIO = 0.45
3. REINFORCED CONCRETE CONSTRUCTION AND MATERIALS SHALL BE IN ACCORDANCE WITH ACI STANDARDS 318.
4. MINIMUM CONCRETE COVER OVER REBAR IS 3", OR AS NOTED.
5. BACKFILL SHALL BE SELECTED MATERIAL, WELL COMPACTED IN LAYERS NOT EXCEEDING 12".
6. BACKFILL SHALL BE PLACED SO AS TO PREVENT ACCUMULATION OF WATER AROUND THE FOUNDATION.
7. REINFORCING MATERIAL SHALL BE IN ACCORDANCE WITH ASTM SPECIFICATION A615.
8. ALL REBAR TO BE GRADE 60 (UNLESS NOTED OTHERWISE).
9. ALL REBAR (HORIZONTAL & VERTICAL) SHALL BE SECURELY WIRE TIED TO PREVENT DISPLACEMENT DURING POURING OF CONCRETE.
10. GROUT ALL REBAR DOWELS INTO EXISTING FOUNDATION WITH HILTI HIT-RE 500 V3 EPOXY.
11. EMBEDDED STRUCTURAL ANCHOR STEEL SUPPLIED BY AMERICAN TOWER.
12. COLD CONSTRUCTION JOINTS TO BE THOROUGHLY CLEANED AND WETTED PRIOR TO SECOND POUR.

FOUNDATION AND ANCHOR TOLERANCES

ALL TOWERS

1. CONCRETE DIMENSIONS: PLUS OR MINUS 1"
2. DEPTH OF FOUNDATION: PLUS 3" OR MINUS 0"
3. DRILLED FOUNDATIONS OUT OF PLUMB: 1.0 DEGREE
4. REINFORCING STEEL PLACEMENT: PLUS OR MINUS 1/2" INCLUDING CONCRETE COVER
5. PROJECTIONS OF EMBEDMENTS: PLUS OR MINUS 1/4"
6. VERTICAL EMBEDMENTS OUT OF PLUMB: 1.0 DEGREE
7. SEE CHART BELOW FOR THE MINIMUM OVERLAP LENGTHS OF REBARS IF REQUIRED.

SELF SUPPORT TOWERS

8. FACE SPREAD DIMENSION CENTER TO CENTER OF ANCHOR BOLT CIRCLES: PLUS OR MINUS 1/8" PER 5'-0" OF FACE SPREAD
9. MAXIMUM DISTANCE FROM CENTERLINE OF ANCHOR BOLT TO CENTERLINE OF FOUNDATION: 1/24TH OF PIER DIAMETER UP TO A MAXIMUM OF 2"
10. MAXIMUM DIFFERENCE BETWEEN ANY TWO FOUNDATION ELEVATIONS: 2"
11. ANCHOR BOLT SPACING: PLUS OR MINUS 1/8"
12. ANCHOR BOLT CIRCLE ORIENTATION : PLUS OR MINUS 0.5 DEGREES
13. ANCHOR BOLT CIRCLE DIAMETER: PLUS OR MINUS 1/8"

GUYED TOWERS

14. GUY RADIUS: PLUS OR MINUS 3% OF TOWER HEIGHT
15. ANCHOR ELEVATION: 3% OF TOWER HEIGHT ABOVE OR BELOW TOWER BASE. IF ELEVATIONS OF ANCHORS VARY BY MORE THAN 3%, ANCHOR RADIUS IS TO BE CHANGED TO KEEP THE ANCHOR LOCATED ON THE GUY FORCE RESULTANT. CALL AMERICAN TOWER FOR ASSISTANCE IF REQUIRED.
16. ANCHOR ALIGNMENT: (PERPENDICULAR TO GUY RADIUS): PLUS OR MINUS 1 DEGREE.
17. ANCHOR ROD SLOPE: PLUS OR MINUS 1 DEGREE
18. ANCHOR ROD ALIGNMENT: TOWARDS TOWER CENTER POINT, PLUS OR MINUS 0.25 DEGREE
19. GUY ANCHOR HEAD SIDES VERTICAL: PLUS OR MINUS 1 DEGREE.

STANDARD REBAR CHART					
BAR SIZE	BAR DIAMETER (in.)	WEIGHT (lb/ft)	INSIDE BEND RADIUS	MINIMUM OVERLAP LENGTHS	DRILLED HOLE DIA.
3	0.375	0.376	1 1/8"	1'-0"	--
4	0.500	0.668	1 1/2"	1'-6"	5/8"
5	0.625	1.043	1 7/8"	2'-0"	3/4"
6	0.750	1.502	2 1/4"	2'-0"	7/8"
7	0.875	2.044	2 5/8"	2'-4"	1 1/8"
8	1.000	2.670	3"	2'-8"	1 1/4"
9	1.128	3.400	4 1/2"	3'-0"	1 3/8"
10	1.270	4.303	5"	3'-6"	1 1/2"
11	1.410	5.313	5 1/2"	4'-0"	1 5/8"

QTY REQ'D	REBAR SIZE	LENGTH	TOTAL WEIGHT (LBS)	TYPE	BENDING DIAGRAM					
					A	B	C	D	INSIDE RADIUS	
				ROUND TIE						
				SQUARE OR RECTANGULAR TIE						
				VERTICAL 90° BEND						
22	#8	3' - 3 1/2"	193	L-SHAPE 90° BEND	2' - 9"	0' - 9"	0' - 5"	2' - 5"	3"	
				U-SHAPE 90° BEND						
				U-SHAPE 60° BEND						
6	#8	10' - 0"	160	STRAIGHT	10' - 0"					
			TOTAL WEIGHT:							
			354							

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ATC TOWER SERVICES, LLC
 3500 REGENCY PARKWAY
 SUITE 100
 CARY, NC 27518
 PHONE: (919) 468-0112

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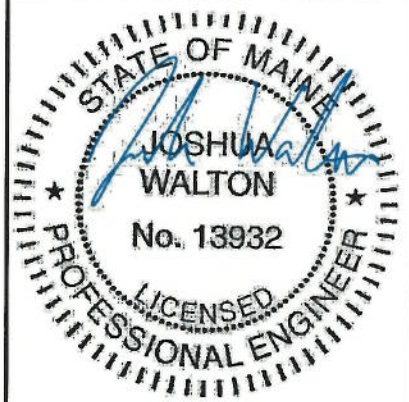
REV.	DESCRIPTION	BY	DATE
0	FIRST ISSUE	BJK	09/06/17

ATC SITE NUMBER:
10047

ATC SITE NAME:
PORTLAND ME

MAINE

SITE ADDRESS:
 225 RIVERSIDE INDUSTRIAL PARKWAY
 PORTLAND, ME 04103



Sep 11 2017 4:20 PM

DRAWN BY:	BJK
APPROVED BY:	BMS/AT
DATE DRAWN:	09/06/17
ATC JOB NO:	OAA706994_C6_03

REBAR LIST	
SHEET NUMBER:	REVISION:
A-RL	0

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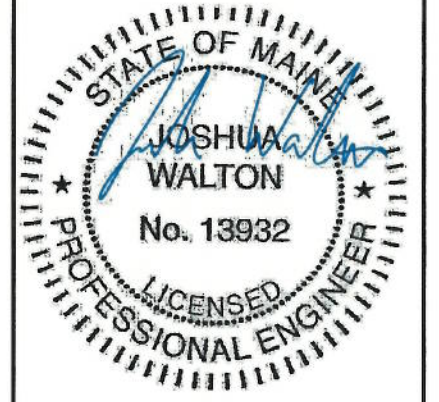
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△	FIRST ISSUE	BJK	09/06/17
△			
△			
△			
△			

GUY WIRE TENSION CHART

GUY WIRE DATA					MEASURED GUY WIRE TENSION IN POUNDS																											
GUY WIRE SIZE	GUY ELEV. (FT)	GUY ANCHOR RADIUS (FT)	GUY ANCHOR DROP		INITIAL TENSION %	TENSION DELTA DUE TO TEMP. (LBS/DEG)	0° F	5° F	10° F	15° F	20° F	25° F	30° F	35° F	40° F	45° F	50° F	55° F	60° F	65° F	70° F	75° F	80° F	85° F	90° F	95° F	100° F	105° F				
			(+/- FT)	LEG			LBS	LBS	LBS	LBS	LBS	LBS	LBS	LBS	LBS	LBS	LBS	LBS	LBS	LBS	LBS	LBS	LBS	LBS	LBS	LBS	LBS	LBS	LBS	LBS	LBS	
5/8" EHS	270.0	115.0	0.0	A,B,C	10 %	6.05	4603	4573	4542	4512	4482	4452	4421	4391	4361	4331	4300	4270	4240	4210	4180	4149	4119	4089	4059	4028	3998	3968				
11/16" EHS	269.0	115.0	0.0	A,B,C	10 %	7.42	5445	5408	5371	5334	5297	5260	5222	5185	5148	5111	5074	5037	5000	4963	4926	4889	4852	4815	4778	4740	4703	4666				
5/8" EHS	213.8	115.0	0.0	A,B,C	10 %	8.84	4770	4726	4682	4638	4594	4549	4505	4461	4417	4373	4328	4284	4240	4196	4152	4107	4063	4019	3975	3931	3886	3842				
5/8" EHS	213.0	115.0	0.0	A,B,C	10 %	8.89	4773	4729	4685	4640	4596	4551	4507	4462	4418	4373	4329	4284	4240	4196	4151	4107	4062	4018	3973	3929	3884	3840				
11/16" EHS	165.0	115.0	0.0	A,B,C	10 %	15.69	5942	5863	5785	5706	5628	5549	5471	5392	5314	5235	5157	5078	5000	4922	4843	4765	4686	4608	4529	4451	4372	4294				
5/8" EHS	110.0	115.0	0.0	A,B,C	10 %	20.57	5474	5371	5268	5166	5063	4960	4857	4754	4651	4549	4446	4343	4240	4137	4034	3931	3829	3726	3623	3520	3417	3314				
9/16" EHS	55.0	115.0	0.0	A,B,C	10 %	26.13	5068	4937	4807	4676	4545	4415	4284	4153	4023	3892	3761	3631	3500	3369	3239	3108	2977	2847	2716	2585	2455	2324				

ATC SITE NUMBER:
 10047
 ATC SITE NAME:
 PORTLAND ME
 MAINE
 SITE ADDRESS:
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 PORTLAND, ME 04103



Sep 11 2017 4:20 PM

DRAWN BY:	BJK
APPROVED BY:	BMS/AT
DATE DRAWN:	09/06/17
ATC JOB NO:	OAA706994_C6_03

GUY WIRE TENSION CHART

SHEET NUMBER: **A-4** REVISION: **0**

NOTES:
 THE MAXIMUM DEVIATION FROM THE DESIGN INITIAL TENSIONS ARE:
 1. ±10% FOR GUYS < 1" DIAMETER, OF THE INITIAL TENSIONS SPECIFIED ON THIS TEMPERATURE/TENSION CHART.
 2. ±5% FOR GUYS > 1" DIAMETER, OF THE INITIAL TENSIONS SPECIFIED ON THIS TEMPERATURE/TENSION CHART.

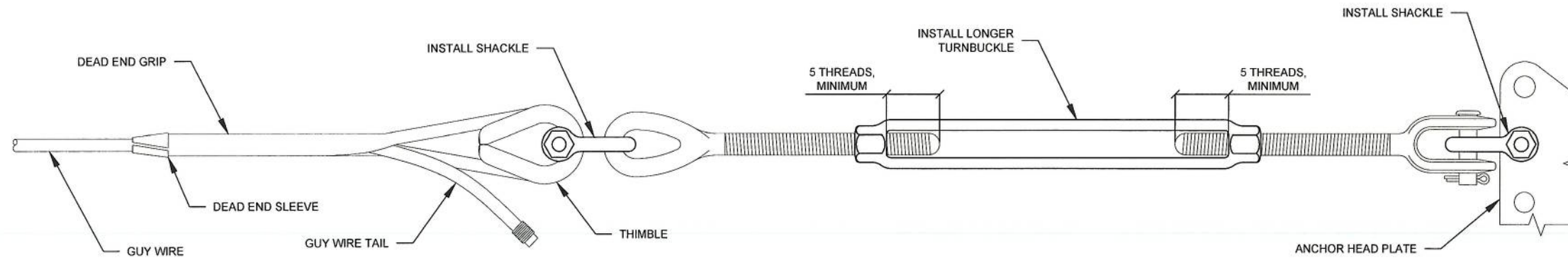
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STANDARD GUY WIRE HARDWARE

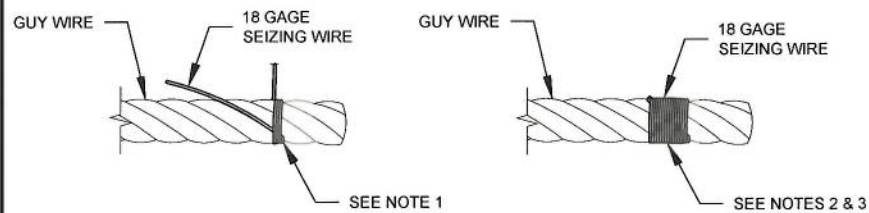
HARDWARE	GUY WIRE			JAW & EYE TURNBUCKLE Van Beest Green Pin® G-6315 OR Crosby® HG-227		DEAD END GRIP PREFORMED®	DEAD END SLEEVE PREFORMED®	THIMBLE Van Beest® E-6120 OR Crosby® G-414	SHACKLE Van Beest Green Pin® G-5263 OR Crosby® G-2130A	
	SIZE	U.T.S.	W.L.	SIZE	PIN Ø	SIZE	SIZE	SIZE	SIZE	PIN Ø
	9/16" EHS	35.0 K	17.5 K	7/8 X 18	3/4"	9/16"	9/16"	3/4" HVY	5/8"	3/4"
	5/8" EHS	42.4 K	21.2 K	1 X 24	7/8"	5/8"	5/8"	3/4" HVY	3/4"	7/8"
	11/16" EHS	50.0 K	25.0 K	1 X 24	7/8"	11/16"	11/16"	3/4" HVY	3/4"	7/8"

NOTE:

- TO OBTAIN CORRECT GUY WIRE TENSIONS, IT MAY BE NECESSARY TO REPLACE THE DEAD END GRIP (PREFORM) OF SOME GUY WIRES DUE TO EXISTING OVER-CONTRACTED TURNBUCKLES.
- IF EXISTING TURNBUCKLE IS ALREADY FULLY EXTENDED, THE COMBINATION OF SHACKLES AND A LONGER TURNBUCKLE AS SHOWN MAY BE USED TO PROVIDE REQUIRED ADJUSTMENT. ALTERNATIVELY, IF THE EXISTING GUY WIRE TAIL IS LONG ENOUGH, THE DEAD END GRIP (PREFORM) MAY BE REINSTALLED TO INCREASE THE OVERALL LENGTH OF THE GUY WIRE.
- IF REMOVAL OF EXISTING DEAD END GRIP (PREFORM) IS REQUIRED, IT CANNOT BE REUSED.
- IF EXISTING GUY WIRE GROUNDING IS REMOVED DURING MODIFICATION INSTALLATION, IT MUST BE RECONNECTED AFTER THE COMPLETION OF THE TOWER MODIFICATIONS. IF ORIGINAL GROUNDING IS BROKEN OR DAMAGED AND CANNOT BE RECONNECTED, GUY WIRE GROUNDING IS TO BE REPAIRED OR REPLACED.



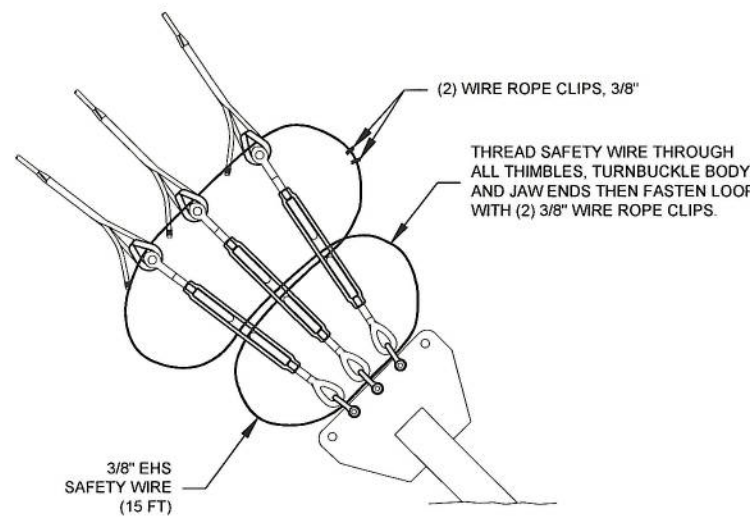
ALLOWED GUY WIRE TERMINATION MODIFICATION TO RETENSION GUY WIRES



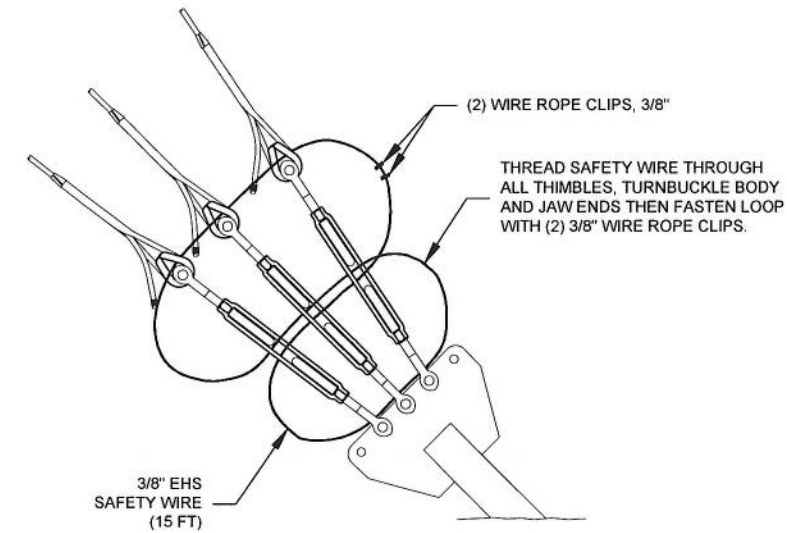
SEIZING WIRE INSTALLATION
TYPICAL DETAIL

SEIZING WIRE INSTALLATION:

- LAY ONE END OF THE SEIZING WIRE IN THE GROOVE BETWEEN TWO STRANDS IN THE GUY WIRE AND WRAP THE OTHER END TIGHTLY OVER THE PORTION IN THE GROOVE.
- CONTINUE TWISTING WITH PLIERS TO TAKE UP SLACK AND TIGHTEN. WRAP SEIZING WIRE AROUND GUY WIRE FOR A WIDTH EQUAL TO THE GUY WIRE DIAMETER.
- WRAP SEIZING WIRE TIGHTLY AGAINST SERVING, WINDING TWISTED WIRE INTO KNOT BEFORE CUTTING OFF ENDS OF THE WIRE. POUND KNOT SNUGLY AGAINST THE GUY WIRE.



TYPICAL SAFETY WIRE INSTALLATION
DETAIL W/ SHACKLES



TYPICAL SAFETY WIRE INSTALLATION
DETAIL W/O SHACKLES

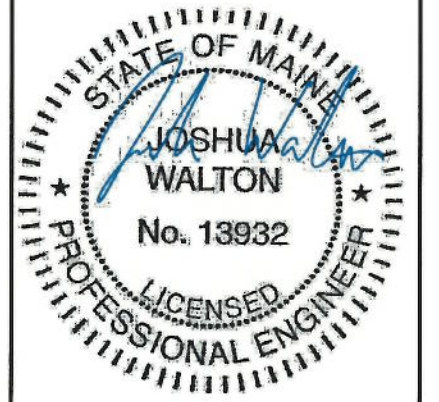


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REV.	DESCRIPTION	BY	DATE
0	FIRST ISSUE	BJK	09/06/17

ATC SITE NUMBER:
10047
 ATC SITE NAME:
PORTLAND ME
MAINE
 SITE ADDRESS:
 225 RIVERSIDE INDUSTRIAL PARKWAY
 PORTLAND, ME 04103



Sep 11 2017 4:20 PM **cosign**

DRAWN BY:	BJK
APPROVED BY:	BMS/AT
DATE DRAWN:	09/06/17
ATC JOB NO:	OAA706994_C6_03

GUY WIRE RETENSIONING AND STANDARD SAFETY WIRE DETAILS

SHEET NUMBER: A-5	REVISION: 0
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CLIENT:	<u>American Tower Corporation</u>	DATE AT SITE:	<u>Wednesday, February 21, 2018</u>
SITE NAME:	<u>PORTLAND ME</u>	ATC PROJECT#:	<u>OAA706994_C6_03</u>
SITE NUMBER:	<u>10047</u>	TOWER TYPE:	<u>GUYED TOWER</u>
ADDRESS:	<u>225 Riverside Industrial Pkwy</u>	TOWER HEIGHT:	<u>275'</u>
	<u>Portland, ME 04106</u>	WEATHER:	<u>Partly Cloudy, 68°F, Wind 8-21 MPH</u>
LEAD:	<u>Doug Kosiba, P.E.</u>	SUPPORT:	<u>Wes Williams</u>

APPENDIX C
EOR APPROVAL EMAIL

SEE FOLLOWING PAGES

From: PMI
Sent: Friday, February 09, 2018 8:38 AM
To: Jon Rodgers; PMI
Subject: RE: Crew on site - Mod NTP: T-Mobile @ Portland, ME - 10047 - Part 2

Jon,

Please use the full 30".

Christopher Jolly, P.E.
Structural Engineer III
American Tower Corporation
3500 Regency Parkway, Suite 100
Cary, NC 27518
(919) 466-5007
christopher.jolly@americantower.com

From: Jon Rodgers
Sent: Thursday, February 08, 2018 5:15 PM
To: PMI
Subject: RE: Crew on site - Mod NTP: T-Mobile @ Portland, ME - 10047 - Part 2

Hi Chris,

Just to be clear, Raise grade back up so there's 1'-6" of foundation exposed and install per plan, make sure rebar is embedded at least 12"

Or do we want to utilize the full 30" not sure if you noticed but there is rebar sticking out of the foundation in a few locations.

Thanks,

Jon Rodgers
Construction Manager
American Tower Corporation
10 Presidential Way
Woburn, MA. 01801
(781)-926-7855 (Office)
(617)-839-5143 (Mobile)
jon.rodgers@americantower.com

From: PMI
Sent: Thursday, February 08, 2018 4:44 PM
To: Jon Rodgers; PMI
Subject: RE: Crew on site - Mod NTP: T-Mobile @ Portland, ME - 10047 - Part 2

Jon,

The sloping is unexpected and unwelcome. That said, the original drawings only had the mat at 18" thick with the base at 4' below grade.

The rebar needs to be installed 12" into competent concrete. The may need to use longer bars to make this work.

Christopher Jolly, P.E.

Structural Engineer III

American Tower Corporation

3500 Regency Parkway, Suite 100

Cary, NC 27518

(919) 466-5007

christopher.jolly@americantower.com

From: Jon Rodgers

Sent: Thursday, February 08, 2018 4:24 PM

To: PMI

Subject: Crew on site - Mod NTP: T-Mobile @ Portland, ME - 10047 - Part 2

Importance: High

Hi PMI,

See email below and attached pictures.

Please advise. The existing foundation is in rough shape.

Do you want to have a quick call with the GC doing the work?

Thanks,

Jon Rodgers

Construction Manager

American Tower Corporation

10 Presidential Way

Woburn, MA. 01801

(781)-926-7855 (Office)

(617)-839-5143 (Mobile)

jon.rodgers@americantower.com

From: bill jackson [<mailto:bjackson@eastcoastcommunications.net>]

Sent: Thursday, February 08, 2018 3:57 PM

To: Jon Rodgers

Cc: jason kennedy

Subject: RE: Crew on site - Mod NTP: T-Mobile @ Portland, ME - 10047 - Part 2

Jon, I am going to give you a call from my desk phone take a look want to see what the engineer wants to do about the rebar embedment as they are looking for 12" deep and the foundation at bottom slopes in 4-6".

Thanks,

Bill Jackson
VP Operations/East Coast Communications/29 Cyr Drive/Gorham, ME 04038
Office: 207-839-3488/Fax: 207-839-3489/Cell: 207-650-5873



From: Jon Rodgers [<mailto:jon.rodgers@americantower.com>]
Sent: Friday, January 26, 2018 10:45 AM
To: bill jackson <bjackson@eastcoastcommunications.net>
Cc: Victoria McKee (victoria.mckee@ets-pllc.com) <victoria.mckee@ets-pllc.com>
Subject: FW: Crew on site - Mod NTP: T-Mobile @ Portland, ME - 10047 - Part 2

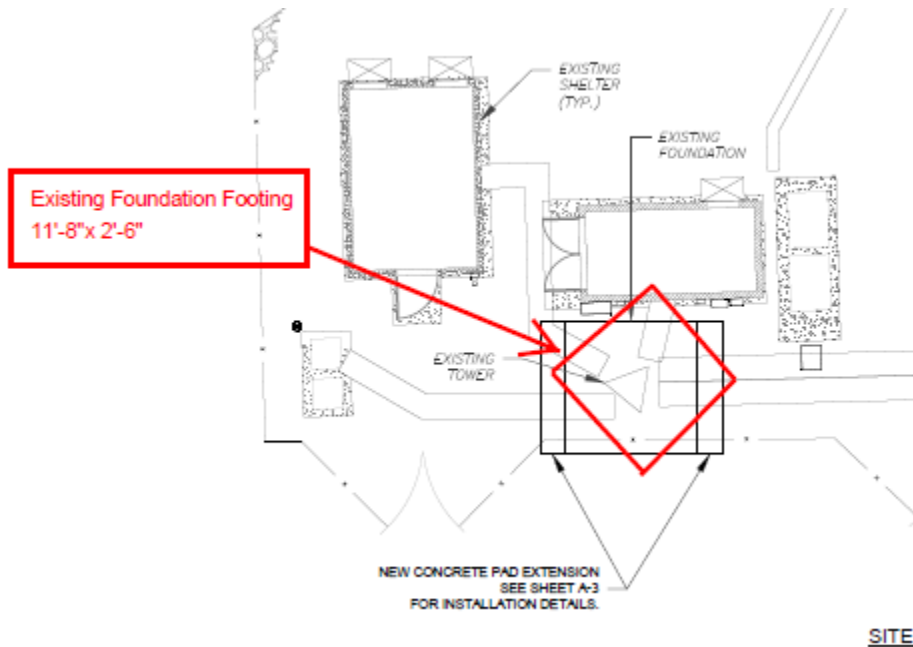
See below from EOR.

Jon Rodgers
Construction Manager
American Tower Corporation
10 Presidential Way
Woburn, MA. 01801
(781)-926-7855 (Office)
(617)-839-5143 (Mobile)
jon.rodgers@americantower.com

From: PMI
Sent: Friday, January 26, 2018 10:38 AM
To: Jon Rodgers; PMI
Cc: Billy Gore
Subject: RE: Crew on site - Mod NTP: T-Mobile @ Portland, ME - 10047 - Part 2

Jon,

They can mod the East & West sides or the South & North sides. The East or South side will have full length x 2-ft wide and the North or West side they will have partial length, up to the edge of the building x 2-ft. They have to provide the measurement of the partial length on the North & West side so this can be reflected in the as-built.



Aldin

Aldin Tan, PE

Structural Engineer IV

American Tower Corporation

3500 Regency Parkway, Suite 100

Cary, NC 27518

919.466.5140 office

aldin.tan@americantower.com

From: Jon Rodgers

Sent: Thursday, January 25, 2018 1:11 PM

To: PMI

Cc: Billy Gore; Aldin Tan

Subject: RE: Crew on site - Mod NTP: T-Mobile @ Portland, ME - 10047 - Part 2

Attached 2nd file with the rest of the pictures.

Thanks,

Jon Rodgers

Construction Manager

American Tower Corporation

10 Presidential Way

Woburn, MA. 01801

(781)-926-7855 (Office)

(617)-839-5143 (Mobile)

jon.rodgers@americantower.com

From: Jon Rodgers

Sent: Thursday, January 25, 2018 1:03 PM

To: PMI

Cc: Billy Gore; Aldin Tan (aldin.tan@americantower.com)

Subject: Crew on site - Mod NTP: T-Mobile @ Portland, ME - 10047 - Part 1

Hi Aldin,

Attached are the pictures and redlines you requested for Portland.

The original file size was too big so I will be sending you another email with the rest of the pictures.

Let me know if you have any questions.

Thanks,

Jon Rodgers

Construction Manager

American Tower Corporation

10 Presidential Way

Woburn, MA. 01801

(781)-926-7855 (Office)

(617)-839-5143 (Mobile)

jon.rodgers@americantower.com

From: PMI

Sent: Monday, January 22, 2018 5:31 PM

To: PMI; Jon Rodgers

Cc: Billy Gore

Subject: RE: Crew on site - Mod NTP: T-Mobile @ Portland, ME - 10047

Jon,

Bill will get the dimensions by Wednesday this week.

Aldin

Aldin Tan, PE

Structural Engineer IV

American Tower Corporation

3500 Regency Parkway, Suite 100

Cary, NC 27518

919.466.5140 office

aldin.tan@americantower.com

From: PMI

Sent: Monday, January 22, 2018 5:17 PM

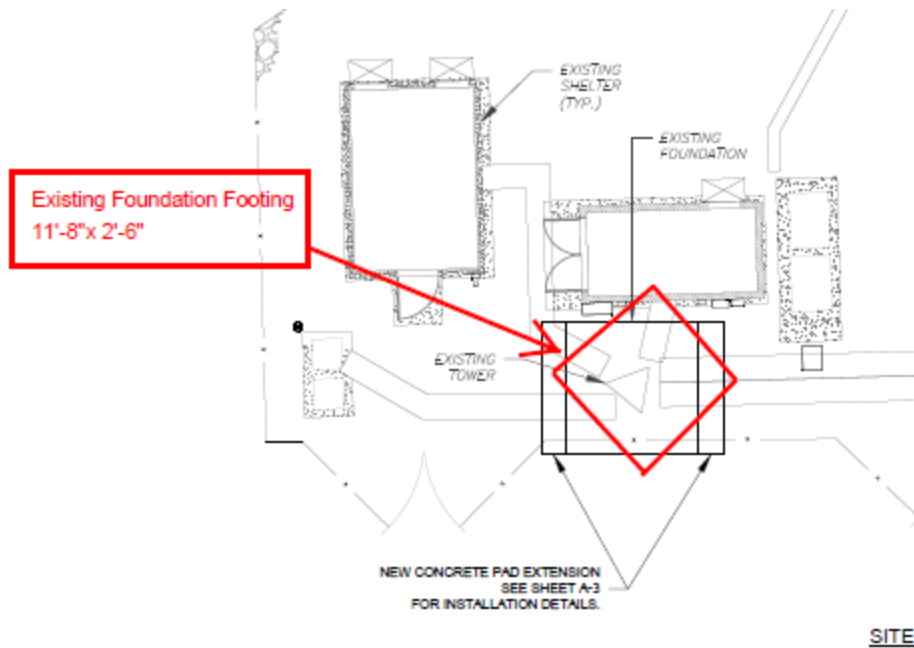
To: Jon Rodgers; PMI

Cc: Billy Gore

Subject: RE: Crew on site - Mod NTP: T-Mobile @ Portland, ME - 10047

Jon,

They can install 2' to one side with the full length. How long can they install on the other side up to the edge of the existing foundation? Is the existing foundation 11'8" x 11'8" x 2'6"?



Aldin

Aldin Tan, PE

Structural Engineer IV

American Tower Corporation

3500 Regency Parkway, Suite 100

Cary, NC 27518

919.466.5140 office

aldin.tan@americantower.com

From: Jon Rodgers

Sent: Monday, January 22, 2018 4:34 PM

To: PMI

Cc: Billy Gore

Subject: Crew on site - Mod NTP: T-Mobile @ Portland, ME - 10047

Importance: High

Hi PMI,

Please see attached redline and pictures for the existing foundation .

Please advise on how you would like our contractor to proceed.

Thanks,

Jon Rodgers

Construction Manager

American Tower Corporation

10 Presidential Way

Woburn, MA. 01801

(781)-926-7855 (Office)

(617)-839-5143 (Mobile)

jon.rodgers@americantower.com

From: bill jackson [<mailto:bjackson@eastcoastcommunications.net>]

Sent: Monday, January 22, 2018 4:12 PM

To: Jon Rodgers

Cc: jason kennedy; doug howe; kelly baughan

Subject: RE: Mod NTP: T-Mobile @ Portland, ME - 10047

Jon, could you please pass along the attached Redline and photos showing actual Existing foundation layout and size and how they would like us to proceed and if they are wanting us to proceed with opposite sides we would be under the existing Building foundation almost 4'-5'.

Thanks,

Bill Jackson

VP Operations/East Coast Communications/29 Cyr Drive/Gorham, ME 04038

Office: 207-839-3488/Fax: 207-839-3489/Cell: 207-650-5873





CLIENT:	<u>American Tower Corporation</u>	DATE AT SITE:	<u>Wednesday, February 21, 2018</u>
SITE NAME:	<u>PORTLAND ME</u>	ATC PROJECT#:	<u>OAA706994_C6_03</u>
SITE NUMBER:	<u>10047</u>	TOWER TYPE:	<u>GUYED TOWER</u>
ADDRESS:	<u>225 Riverside Industrial Pkwy</u>	TOWER HEIGHT:	<u>275'</u>
	<u>Portland, ME 04106</u>	WEATHER:	<u>Partly Cloudy, 68°F, Wind 8-21 MPH</u>
LEAD:	<u>Doug Kosiba, P.E.</u>	SUPPORT:	<u>Wes Williams</u>

APPENDIX D
CONCRETE TEST REPORT

SEE FOLLOWING PAGES

Report of Concrete Compressive Strength

ASTM C-31 & C-39

Project Name: Portland ME - ATC Tower 10047 - Construction Material Testing Services

Project Number: 18-0084

Client: East Coast Communications

Client Contract Number:
General Contractor:
Concrete Supplier: AUBURN CONCRETE

PLACEMENT INFORMATION

Date Cast: 2/12/2018 **Time Cast:** 1:30 **Date Received:** 2/13/2018

Placement Location: FOOTING EXTENSIONS

Placement Method: DIRECT DISCHARGE

Placement Vol. (yd³): 2

Cylinders Made By: PETER PHELAN

Aggregate Size (in): 3/4

INITIAL CURING CONDITIONS

Temperatures

Minimum (°F) 55 **Maximum (°F)** 78

DELIVERY INFORMATION

Admixtures: AIR / MRWR

TEST RESULTS

Slump (in) (C-143): 6

Load Number: 1 **Batch** 12:08

Air Content (%) (C-231) 6.2

Mixer Number 156

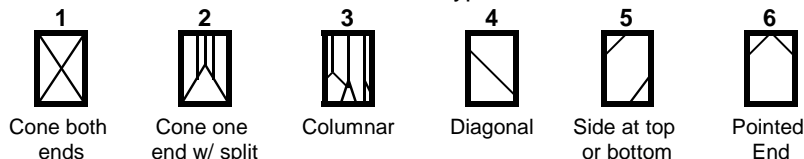
Air Temp (°F): 37

Ticket Number 221176 **Arrive**
Conc. Temp (°F) (C-1064): 60

Cubic Yards: 3 **Depart**
Design (psi): 4500

Cylinder Designation	Cylinder Weight (lbs)	Cylinder Diameter (in)	Cross Sectional Area(In) ²	Date Of Test	Cure Type	Age (days)	Fracture Type	Load (kips)	Strength (psi)
107-1A	8.40	4.00	12.57	2/19/2018	Lab	7	4	48.4	3850
107-1B	8.40	4.02	12.67	2/26/2018	Lab	14	4	54.4	4290
107-1C	8.40			3/12/2018	Lab	28			
107-1D	8.40			3/12/2018	Lab	28			
107-1E	8.40			Hold	Lab				

Fracture Types




Remarks:

From: Billy Gore [<mailto:Billy.Gore@AmericanTower.com>]
Sent: Tuesday, February 27, 2018 10:53 AM
To: Jon Rodgers <jon.rodgers@americantower.com>; Victoria McKee <victoria.mckee@ets-pllc.com>
Subject: FW: Mod NTP: T-Mobile @ Portland, ME - 10047 - OAA706994 - PMI Punch List

Hi Guys,

EOR approved current break. Let's close out the PMI and add the 28 day to GC close outs once rcvd

Thank you,

Billy Gore
Sr. Project Manager – Northeast Redevelopment
American Tower Corporation
900 Circle 75 Parkway Suite 300
Atlanta, GA 30339
770 308 1999 (Direct)
941 993 3099 (Mobile)
TEXTING and DRIVING... It Can Wait. **Take the pledge** today and pass it on.
www.americantower.com

From: PMI
Sent: Tuesday, February 27, 2018 10:49 AM
To: Billy Gore <Billy.Gore@AmericanTower.com>; PMI <PMI@americantower.com>
Subject: RE: Mod NTP: T-Mobile @ Portland, ME - 10047 - OAA706994 - PMI Punch List

Billy,

We're OK with 4290 psi at 14 days. The 28 day result can be submitted later.

Cylinder Designation	Cylinder Weight (lbs)	Cylinder Diameter (in)	Cross Sectional Area(In) ²	Date Of Test	Cure Type	Age (days)	Fracture Type	Load (kips)	Strength (psi)
107-1A	8.40	4.00	12.57	2/19/2018	Lab	7	4	48.4	3850
107-1B	8.40	4.02	12.67	2/26/2018	Lab	14	4	54.4	4290
107-1C	8.40			3/12/2018	Lab	28			

Aldin

Aldin Tan, PE
Structural Engineer IV
American Tower Corporation
3500 Regency Parkway, Suite 100
Cary, NC 27518
919.466.5140 office
aldin.tan@americantower.com

From: Billy Gore
Sent: Monday, February 26, 2018 5:52 PM
To: PMI
Subject: FW: Mod NTP: T-Mobile @ Portland, ME - 10047 - OAA706994 - PMI Punch List

PMI – Please see attached. Break test is just under the required 4500psi. We’re going to proceed with the 28 but are we good to release passing PMI or need wait? Thoughts?

Thank you,

Billy Gore
Sr. Project Manager – Northeast Redevelopment
American Tower Corporation
900 Circle 75 Parkway Suite 300
Atlanta, GA 30339
770 308 1999 (Direct)
941 993 3099 (Mobile)
TEXTING and DRIVING... It Can Wait. **Take the pledge** today and pass it on.
www.american tower.com

From: Victoria McKee [<mailto:victoria.mckee@ets-pllc.com>]
Sent: Monday, February 26, 2018 2:07 PM
To: bill jackson <bjackson@eastcoastcommunications.net>; doug howe <dhowe@eastcoastcommunications.net>; Billy Gore <Billy.Gore@AmericanTower.com>
Cc: Jon Rodgers <jon.rodgers@americantower.com>; Rick Tufts <Rick.Tufts@americantower.com>
Subject: RE: Crew on site - Mod NTP: T-Mobile @ Portland, ME - 10047 - Part 2

Bill,

The 14 day is slightly below the required 4500 psi. We will need approval from the EOR to accept this as is or wait for the 28 day.

Thanks,



Victoria McKee
Project Coordinator
Engineered Tower Solutions, PLLC
2624 Leighton Ridge Dr., Suite 100 | Wake Forest, NC 27587
Office: (919) 782-2710, Ext.: 307 | Mobile: (919) 619-9209 | Fax: (919) 435-0631
Email: Victoria.McKee@ets-pllc.com



CLIENT:	<u>American Tower Corporation</u>	DATE AT SITE:	<u>Wednesday, February 21, 2018</u>
SITE NAME:	<u>PORTLAND ME</u>	ATC PROJECT#:	<u>OAA706994_C6_03</u>
SITE NUMBER:	<u>10047</u>	TOWER TYPE:	<u>GUYED TOWER</u>
ADDRESS:	<u>225 Riverside Industrial Pkwy</u>	TOWER HEIGHT:	<u>275'</u>
	<u>Portland, ME 04106</u>	WEATHER:	<u>Partly Cloudy, 68°F, Wind 8-21 MPH</u>
LEAD:	<u>Doug Kosiba, P.E.</u>	SUPPORT:	<u>Wes Williams</u>

APPENDIX E

FOUNDATION INSTALLATION REPORT

SEE FOLLOWING PAGES



Concrete Construction Observation Report

Project Name: ATC Tower 10047 **Project No. :** 18-0084
Location: Portland, ME **Date:** 2/12/18
Client / Client's Rep: East Coast Communications/Jason Kennedy **S.W.COLE Rep. :** P. Phelan
Weather: Clear 30's **Arrived on Site:** 12:30pm
Placement Type: Footing Wall Column Slab Other **Left Site:** 2:00pm
Placement Location: Extensions to existing footing

<u>Pre-Placement Observations</u>	<u>In Compliance</u>		
Bar size and location (diameter, length, bend and coverage)	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	See Notes
Splicing (type, overlap)	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Per Plan
Stability (wiring, chairs, spacers)	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Wires and chairs as needed
Reinforcement conditions (cleanliness, temperature, etc.)	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Cleaned prior to placement/Ambient Temp
Embedments and anchor bolts installed	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	#8 Hooks embedded in existing footing
Soil subgrade prepared in accordance with project specifications	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Crushed stone

<u>Referenced Drawings</u>	<u>Date</u>	<u>Page(s)</u>	<u>Rev.</u>	<u>Bar Reinforcing Grade & Type</u>
Foundation Modification Installation Detail	7-11-17	A-3		ASTM: A615 GRADE: 60

<u>Concrete Placement Observations</u>	<u>In Compliance</u>		<u>Comments</u>
Required mix used	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	4500psi 3/4" air entrained
Concrete properly conveyed to all areas of placement	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Truck chute
Internal vibration / consolidation of concrete	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Mechanical
Even layering around openings and embedments	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Trowel finished
Post placement observations (finishing, curing, etc.)	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not on-site

Field Testing of Concrete Performed Yes No
 *CYLINDER SET NO: 107-1 ←*refer to associated concrete test report

Non-Conformance Items
Person Notified: _____ Yes No

Notes:

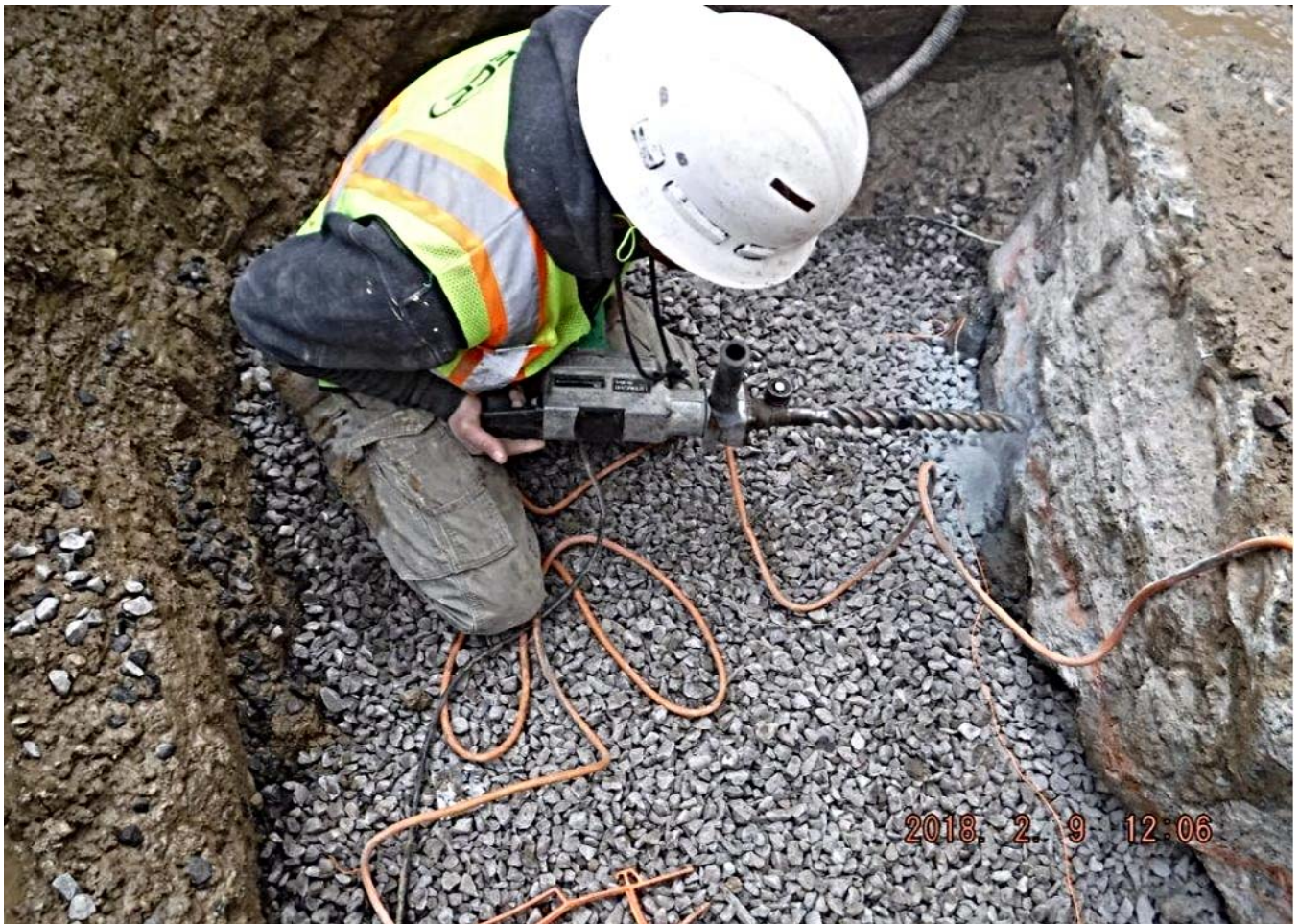
SW Cole was onsite as requested for rebar observations and field testing of concrete. Due to the orientation of the tower footing the planned modifications of the footings were cut short on one side of the existing footing (approximately 5'). The contractor informed the technician that the Engineer had been notified of the changes made in the field. All Rebar placed appeared to meet the requirements listed in the project documents #8 embedded L shape dowels with 3 #8 continuous bars laid perpendicular to the dowels.

Field testing of concrete yielded results within specified project mix design tolerances. All results were verbally reported to general contractor representative on-site and compressive test cylinders were made.

Attachments: Photos Reviewed by: _____



















CLIENT:	<u>American Tower Corporation</u>	DATE AT SITE:	<u>Wednesday, February 21, 2018</u>
SITE NAME:	<u>PORTLAND ME</u>	ATC PROJECT#:	<u>OAA706994_C6_03</u>
SITE NUMBER:	<u>10047</u>	TOWER TYPE:	<u>GUYED TOWER</u>
ADDRESS:	<u>225 Riverside Industrial Pkwy</u>	TOWER HEIGHT:	<u>275'</u>
	<u>Portland, ME 04106</u>	WEATHER:	<u>Partly Cloudy, 68°F, Wind 8-21 MPH</u>
LEAD:	<u>Doug Kosiba, P.E.</u>	SUPPORT:	<u>Wes Williams</u>

APPENDIX F
TENSION, TWIST & PLUMB

SEE FOLLOWING PAGES

SITE NAME: PORTLAND ME

SITE #: 10047

ETS #:180314

DATE: 2/27/2018

TOWER TWIST MEASUREMENTS

	Reference Elevation (above conc.)	Twist with Respect To Base (°)	Allowable Twist with Respect To Base (°)	Relative Twist Between Reference Elevations (°)	Allowable Twist Between Reference Elevations (°)
Tower Twist Measurements	270-ft	2.76	±5.00		
				0.00	±0.05
	269-ft	2.76	±5.00		
				1.58	±2.80
	213-ft	1.18	±5.00		
				0.52	±2.40
	165-ft	0.66	±5.00		
				0.22	±2.75
	110-ft	0.44	±5.00		
				0.22	±2.75
	55-ft.	0.22	±2.75		
			0.22	±2.75	
0-ft.	0.00	±0.00			

LATERAL DEFLECTION MEASUREMENTS

	Reference Elevation (above conc.)	Resultant Deflection (in)	Allowable Resultant Deflection (in) per TIA	Resultant Deflection Between Reference Elevations (in)	Allowable Deflection Between Reference Elevations (in) Per TIA
Total Tower Deflection	270-ft	3.36	8.01		
				0.00	0.03
	269-ft	3.36	8.07		
				1.58	1.68
	213-ft	2.00	6.39		
				1.17	1.44
	165-ft	0.86	4.95		
				0.50	1.65
	110-ft	0.38	3.30		
				0.19	1.65
	55-ft.	0.19	1.65		
			0.19	1.65	
0-ft.	0.00	0.00			

***Twist & plumb provided by ETS.**



CLIENT:	<u>American Tower Corporation</u>	DATE AT SITE:	<u>Wednesday, February 21, 2018</u>
SITE NAME:	<u>PORTLAND ME</u>	ATC PROJECT#:	<u>OAA706994_C6_03</u>
SITE NUMBER:	<u>10047</u>	TOWER TYPE:	<u>GUYED TOWER</u>
ADDRESS:	<u>225 Riverside Industrial Pkwy</u>	TOWER HEIGHT:	<u>275'</u>
	<u>Portland, ME 04106</u>	WEATHER:	<u>Partly Cloudy, 68°F, Wind 8-21 MPH</u>
LEAD:	<u>Doug Kosiba, P.E.</u>	SUPPORT:	<u>Wes Williams</u>

APPENDIX G
FIELD DENSITY & GRADATION REPORT

SEE FOLLOWING PAGES

Report of Moisture-Density

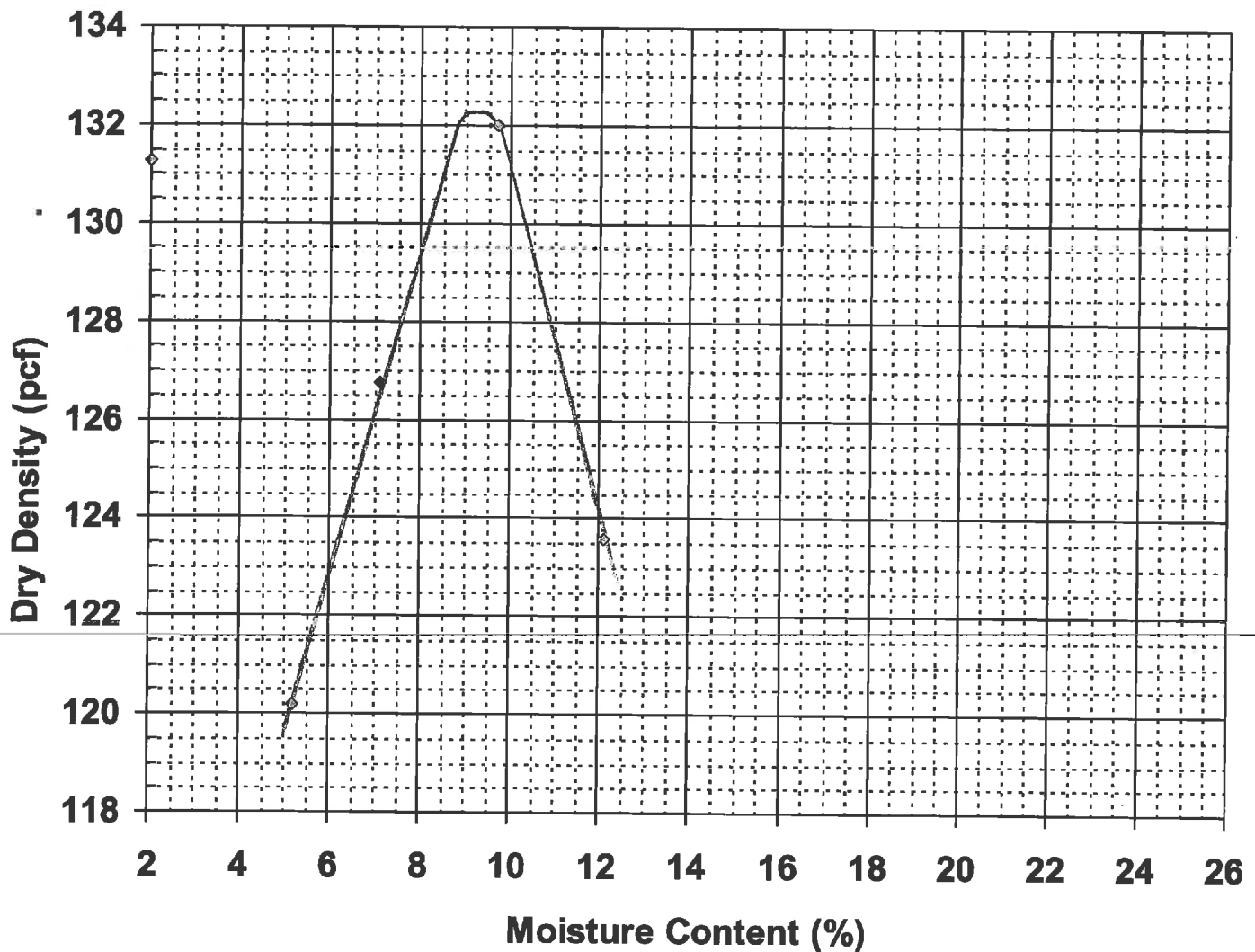
Method ASTM D-1557 MODIFIED

Procedure C

Project Name PORTLAND ME - ATC TOWER 10047 - CONSTRUCTION
MATERIAL TESTING SERVICES
Client S. W. COLE ENGINEERING, INC.
Material Type 4" GRAVEL
Material Source SHAW EARTHWORKS STANDISH

Project Number 18-0084
Lab ID 23422G
Date Received 2/15/2018
Date Completed 2/16/2018
Tested By ADAM CARR

Moisture-Density Relationship Curve




Maximum Dry Density (pcf) 132.3
Optimum Moisture Content (%) 8.9
Percent Oversized 30.0%

Corrected Dry Density (pcf) **138.9**

Corrected Moisture Content (%) **6.8**

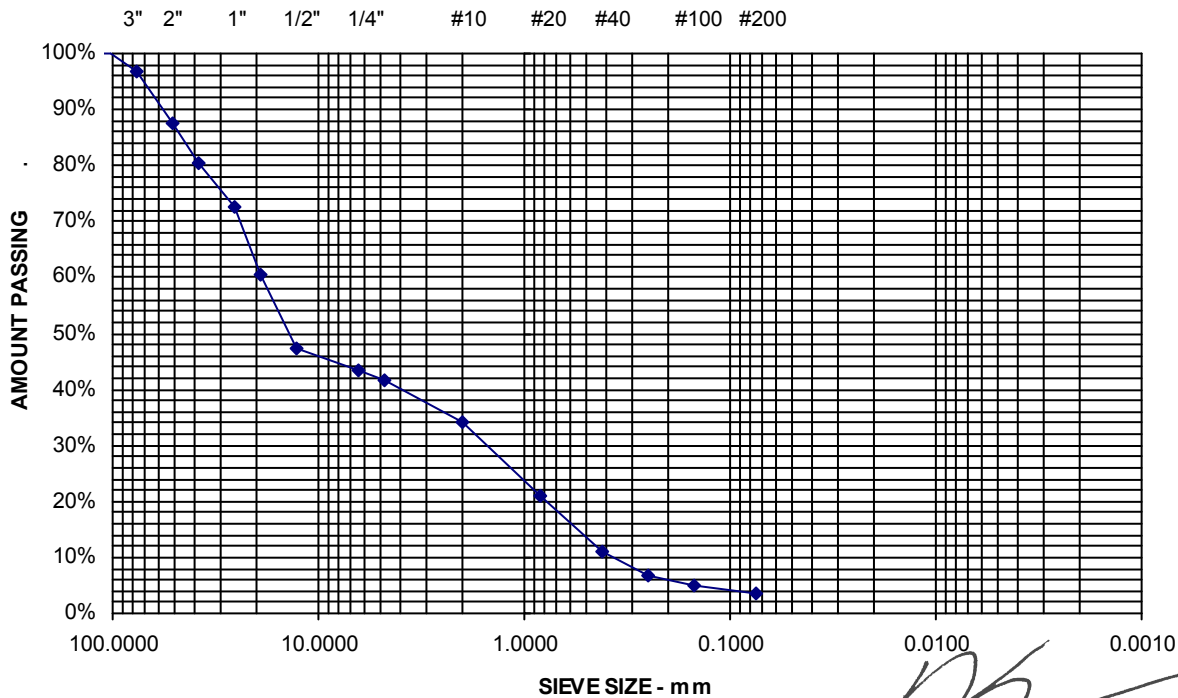
Comments


 Roger E. Domingo

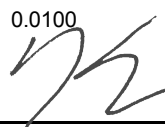
Project Name PORTLAND ME - ATC TOWER 10047 - CONSTRUCTION MATERIAL TESTING SERVICES
 Client EAST COAST COMMUNICATIONS
 Material Type 4" GRAVEL
 Material Source SHAW EARTHWORKS STANDISH

Project Number 18-0084
 Lab ID 23422G
 Date Received 2/15/2018
 Date Completed 2/19/2018
 Tested By PETER PHELAN

<u>STANDARD DESIGNATION (mm/μm)</u>	<u>SIEVE SIZE</u>	<u>AMOUNT PASSING (%)</u>	<u>SPECIFICATIONS (%)</u>
150 mm	6"	100	
125 mm	5"	100	
100 mm	4"	100	
75 mm	3"	97	
50 mm	2"	87	
38.1 mm	1-1/2"	80	
25.0 mm	1"	72	
19.0 mm	3/4"	60	
12.5 mm	1/2"	47	
6.3 mm	1/4"	43	
4.75 mm	No. 4	42	
2.00 mm	No. 10	34	
850 μm	No. 20	21	
425 μm	No. 40	11	
250 μm	No. 60	7	
150 μm	No. 100	5	
75 μm	No. 200	3.6	



Comments


 Roger E. Domingo



Report of Field Density

ASTM D6938

Project: **PORTLAND ME - ATC TOWER 10047 - CONSTRUCTION MATERIAL TESTING SERVICES**

Project Number: **18-0084**

Client: **S. W. COLE ENGINEERING, INC.**

Field Density Test Results

Test #	Test Date	Tech	Test Location	Elev Feet	Test Depth	Lab ID	Dry Density	Moisture Content Percent	Compaction Percent	Required Compaction
1	2/14/2018	CLC	TOWER FOOTING EXPANSION, NORTH SIDE	3' BFG	12	23422G	137.5	4.4	99.0	95
2	2/14/2018	CLC	TOWER FOOTING EXPANSION, SOUTH SIDE	3.5' BFG	12	23422G	135.8	4.7	97.8	95
3	2/14/2018	CLC	TOWER FOOTING EXPANSION, SOUTH SIDE	2.5' BFG	12	23422G	135.8	4.7	97.8	95
4	2/14/2018	CLC	TOWER FOOTING EXPANSION, NORTH SIDE	2' BFG	12	23422G	135.4	5.2	97.5	95

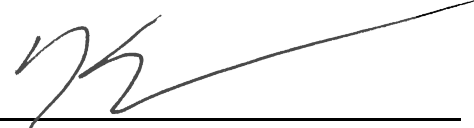
Laboratory Compaction Test Reference

Lab ID	Date Received	Material Source	Material Type	Method	Max Dry Density	Optimum Moisture Content (%)	Comments
23422G	2/15/2018	Shaw Earthworks Standish	4" Gravel	ASTM D-1557 Modified C	138.9	6.8	

Elevation Notes:

BFG = BELOW FINISH GRADE

Comments:



 Reviewed By



CLIENT:	<u>American Tower Corporation</u>	DATE AT SITE:	<u>Wednesday, February 21, 2018</u>
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SITE NUMBER:	<u>10047</u>	TOWER TYPE:	<u>GUYED TOWER</u>
ADDRESS:	<u>225 Riverside Industrial Pkwy</u>	TOWER HEIGHT:	<u>275'</u>
	<u>Portland, ME 04106</u>	WEATHER:	<u>Partly Cloudy, 68°F, Wind 8-21 MPH</u>
LEAD:	<u>Doug Kosiba, P.E.</u>	SUPPORT:	<u>Wes Williams</u>

APPENDIX H

COLD GALV VERIFICATION

SEE FOLLOWING PAGES



**AMERICAN
TOWER**
CORPORATION

SITE: **PORTLAND, ME**
LAT: **43-42-23N** AGL: **275'**
LON: **70-18-36W** AMSL: **355'**

LEASING:
877-ATC-SITE

EMERGENCIES:
800-852-0204

2018. 2.12 13:01