

A Division of PORTERCORP 4240 N 136th AVE HOLLAND MI 49424 (616) 888-3500 Designs and calculations of Poligon buildings are protected under copyright laws and patents and may not be used in the construction or design of a building that is not supplied by Poligon Copyright laws protect the style and visual appearance of the structure while patents may protect other parts of the design.

PROJECT NAME: LOWENSTEIN PARK

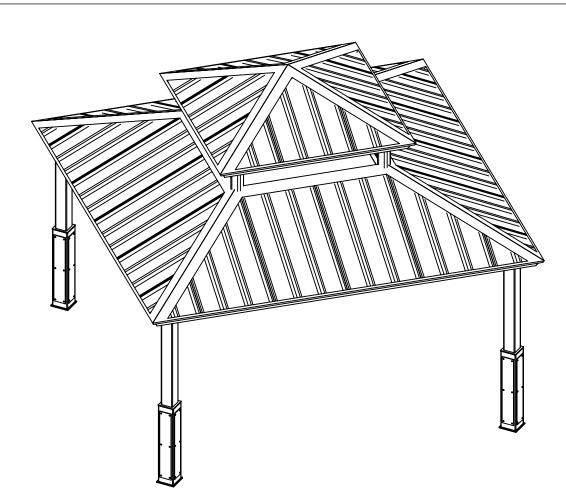
PROJECT LOCATION: LEE'S SUMMIT, MO

**BUILDING TYPE: CAR 16** 

ROOF TYPE: MULTI-RIB OVER STAINED T & G

**BUILDING NUMBER: P12384** 

69259 ORDER NUMBER:



## **DRAWING LIST:**

SHEET NUMBER	DRAWING DESCRIPTION
CS	COVER SHEET
1	ARCHITECTURAL ELEVATIONS
2-2.1	ANCHOR AND FOOTING LAYOUT / DETAILS
3	STRUCTURAL FRAMING PLAN
4-4.1	FRAME CONNECTION DETAILS
5-5.2	ROOF LAYOUT
6-6.3	ROOF CONNECTION DETAILS

## MANUFACTURER NOTES:

### **MATERIALS:**

SCHEDULE PIPE A53 (GRADE B) RMT PIPE LIGHT GAGE COLD FORMED A1003 (GRADE 50) STRUCTURAL STEEL PLATE **ROOF PANELS (STEEL)** SEE SHEET 2.1 ANCHOR BOLTS

GENERAL NOTES:
UNLESS NOTED OTHERWISE, THIS STRUCTURE WAS DESIGNED TO ONLY SUPPORT WHAT IS SHOWN ON THESE DRAWINGS. POLIGON MUST BE CONTACTED IF ANYTHING ELSE IS TO BE ATTACHED TO THIS STRUCTURE (WALLS, COLUMN WRAPS, RAILINGS, ETC.) SO THE DESIGN OF THIS STRUCTURE CAN BE REVIEWED AND POSSIBLY REVISED.

UNLESS NOTED OTHERWISE, THIS STRUCTURE WAS DESIGNED ASSUMING A 20' SEPARATION BETWEEN ANY ADJACENT STRUCTURE WITH AN EAVE HEIGHT EQUAL TO OR GREATER THAN THE EAVE HEIGHT OF THIS STRUCTURE. IF THAT SEPARATION DOES NOT EXIST, POLIGON MUST BE CONTACTED SO THE DESIGN OF THIS STRUCTURE CAN BE REVIEWED AND POSSIBLY REVISED.

STRUCTURAL STEEL SHALL BE DETAILED, FABRICATED, AND ERECTED IN ACCORDANCE WITH THE LATEST EDITION OF THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) SPECIFICATION MANUAL

ALL WELDING IS PERFORMED BY AMERICAN WELDING SOCIETY CERTIFIED WELDERS AND CONFORMS TO THE LATEST EDITION OF AWS D1.1 OR D1.3 AS REQUIRED.

PARTS SHOWN MAY BE UPGRADED DUE TO STANDARDIZED FABRICATION. REFER TO THE SHIPPING BILL OF MATERIALS AND FINAL INSTALLATION INSTRUCTIONS INCLUDED WITH THE STRUCTURE FOR POSSIBLE SUBSTITUTIONS AND IMPROVEMENTS.

FOR PROPER FIELD INSTALLATION OF THE BUILDING IT IS RECOMMENDED THAT THE PRIMARY FRAME INSTALLER AND THE ROOF INSTALLER HAVE A MINIMUM FIVE (5) YEARS DOCUMENTED EXPERIENCE INSTALLING THIS TYPE OF PRODUCT.

FOR PROPER FIELD INSTALLATION OF THE BUILDING IT IS RECOMMENDED THAT ELECTRIC WIRING, IF REQUIRED, BE RUN THROUGH THE STRUCTURAL MEMBERS BEFORE THE BUILDING IS ERECTED.

CERTIFICATES:
MIAMI-DADE COUNTY CERTIFICATE OF COMPETENCY NO. 20-0825.04 PCI (POWDER COATING INSTITUTE) 4000 CERTIFIED

FABRICATOR APPROVALS: CITY OF PHOENIX, AZ APPROVED FABRICATOR #C08-2010 CITY OF LOS ANGELES, CA APPROVED FABRICATOR #FB01596 CITY OF RIVERSIDE, CA APPROVED FABRICATOR #SF 000042 CITY OF HOUSTON, TX APPROVED FABRICATOR #470 CLARK COUNTY, NV APPROVED FABRICATOR #264 STATE OF UTAH APPROVED FABRICATOR 02008-14 AISC APPROVED FABRICATOR 219101051-01RFN



## **DESIGN CRITERIA:**

**GENERAL**:

2018 INTERNATIONAL BUILDING CODE RISK CATEGORY: II

**DEAD LOAD:** 

ROOF DEAD LOAD: 6 PSF FRAME DEAD LOAD: SELF WEIGHT

ROOF LIVE LOAD: 20 PSF

**SNOW DESIGN DATA:** 

GROUND SNOW LOAD (Pg): 20 PSF FLAT ROOF SNOW LOAD (Pf): 20 PSF SNOW EXPOSURE FACTOR (Ce): 1.0 SNOW LOAD IMPORTANCE FACTOR (Is): 1.0 THERMAL FACTOR (Ct): 1.2

**WIND DESIGN DATA:** 

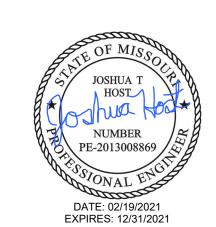
BASIC WIND SPEED (V): 110 MPH GUST EFFECT FACTOR (G): 0.85 WIND IMPORTANCE FACTOR (Iw): 1.0 INTERNAL PRESSURE COEFFICIENT (GCpi): 0 WIND EXPOSURE: C

**SEISMIC DESIGN DATA:** 

STEEL SYSTEMS NOT SPECIFICALLY DETAILED FOR SEISMIC RESISTANCE SEISMIC IMPORTANCE FACTOR (Ie): 1.0 SEISMIC DESIGN CATEGORY: C SEISMIC SITE CLASS: D DEFAULT SEE CALCULATIONS FOR ADDITIONAL DATA

## **ADDITIONAL CRITERIA:**

NONE



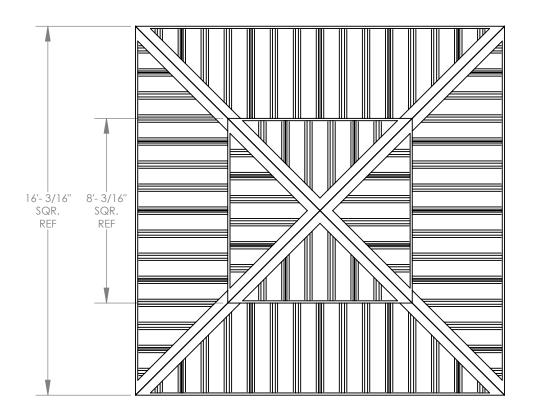
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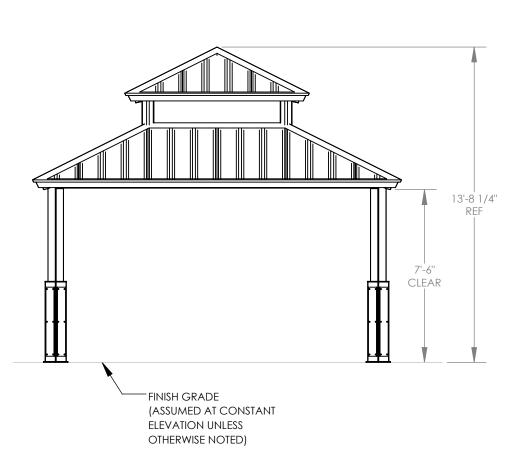
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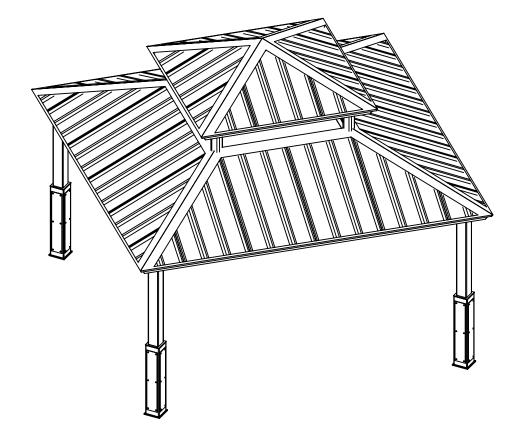
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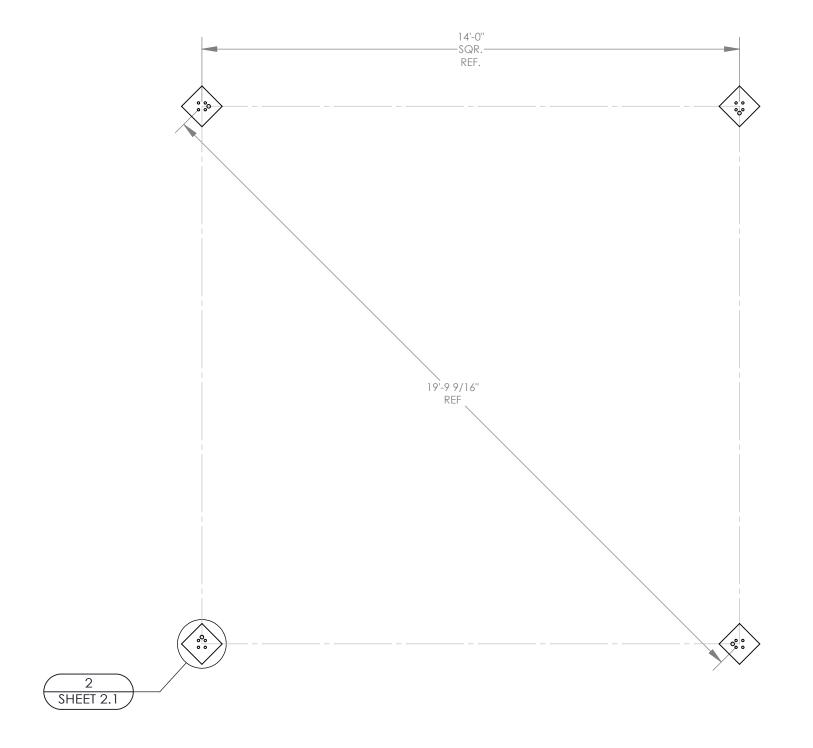
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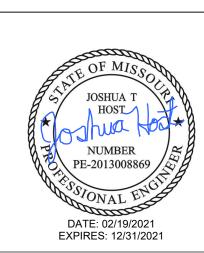
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BUILDING NO: P12384 CAD MODEI: P12384



## **ANCHOR AND FOOTING LAYOUT NOTES:**

- 1. 2.
- ANCHORS MUST BE CENTERED IN FOOTINGS FOOTINGS MUST BE TURNED TO ALIGN WITH COLUMN AND TRUSS CENTERLINE.



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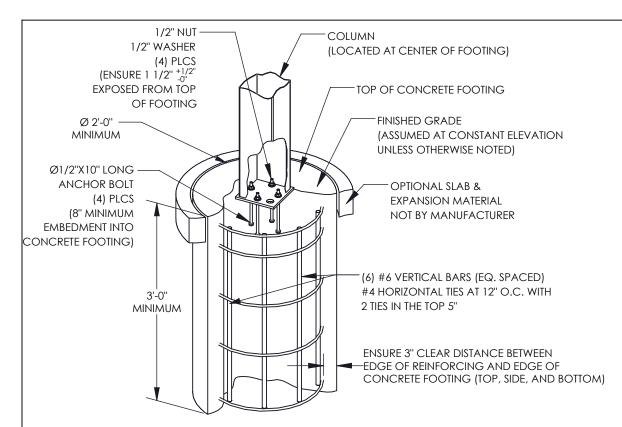
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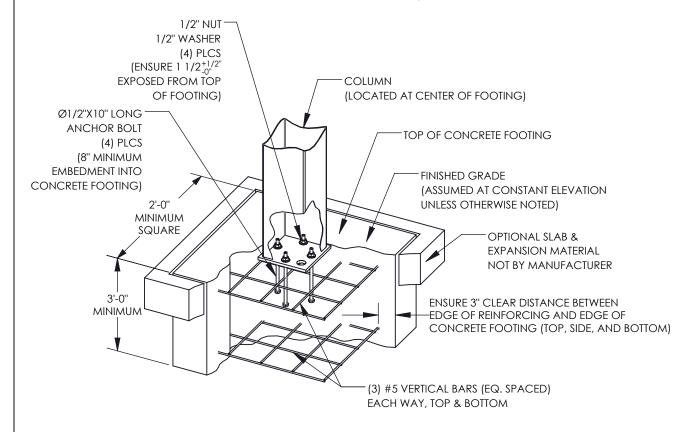
> DRAWING: ANCHOR AND FOOTING LAYOUT LOWENSTEIN PARK PROJECT LOCATION:

SHEET



## PIER FOOTING OPTION (INTERNAL ANCHOR BOLTS)

FOOTING DESIGN BY MANUFACTURER, FOOTING MATERIALS BY OTHERS. (TYPICAL WITH EACH COLUMN, QTY OF REINFORCING AND ANCHOR BOLTS SHOWN IN DRAWINGS MAY NOT REFLECT REQUIREMENTS)

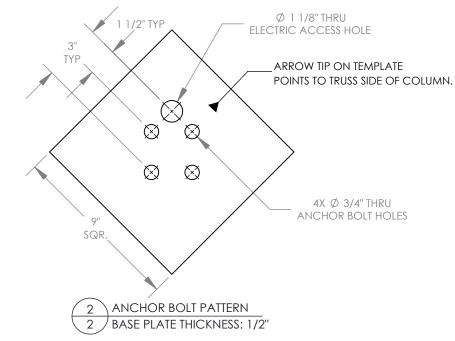


# PAD FOOTING OPTION (INTERNAL ANCHOR BOLTS)

FOOTING DESIGN BY MANUFACTURER, FOOTING MATERIALS BY OTHERS. (TYPICAL WITH EACH COLUMN, QTY OF REINFORCING AND ANCHOR BOLTS SHOWN IN DRAWINGS MAY NOT REFLECT REQUIREMENTS)

#### ANCHOR BOLT NOTES - INTERNAL (ANCHOR BOLTS LOCATED WITHIN COLUMN):

- 1. ANCHOR BOLTS SHALL BE ASTM A307 (GRADE A) MATERIAL UNLESS OTHERWISE NOTED.
- ANCHOR BOLTS SHALL BE EITHER "HEADED" OR "THREADED WITH NUT" AS DEFINED IN THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION MANUAL
- 3. HOOKED ANCHOR BOLTS ARE NOT ACCEPTABLE.
- ACCURATE ANCHOR BOLT PLACEMENT IS CRITICAL. TO ENSURE THE ANCHOR BOLT LAYOUT MEETS THE DIMENSIONS REQUIRED ON THE DRAWINGS, SURVEY (OR MEASURE) THE LOCATION OF ALL ANCHOR BOLTS PRIOR TO POURING THE FOOTINGS. AN ADDITIONAL SURVEY (OR MEASUREMENT) SHOULD BE MADE AFTER THE FOOTINGS ARE POURED TO CONFIRM THE ANCHOR BOLTS DID NOT SHIFT DURING THE CONCRETE POUR.
- 5. THE MANUFACTURER STRONGLY RECOMMENDS USING ANCHOR BOLT TEMPLATES BECAUSE THEY SIGNIFICANTLY IMPROVE THE ACCURACY OF ANCHOR BOLT PLACEMENT. AN ANCHOR BOLT TEMPLATE IS PROVIDED WITH ANY ANCHOR BOLT KIT PURCHASED.
- IF OUTSIDE CONSULTING ENGINEERS ARE DESIGNING THE FOUNDATIONS FOR THIS STRUCTURE, THEY MUST REFER TO THE MANUFACTURER'S CALCULATIONS FOR MINIMUM CONCRETE PROPERTIES (COMPRESSIVE STRENGTH, EDGE DISTANCE, ETC.) REQUIRED FOR THE ANCHOR BOLT DESIGN.
- 7. ELECTRICAL ACCESS HOLE IS ALWAYS LOCATED IN THE COLUMN BASE PLATE AS SHOWN. BE SURE TO KEEP THE ANCHOR BOLT TEMPLATE PROPERLY ORIENTED WHEN ELECTRICAL ACCESS TO THE COLUMN IS REQUIRED. TEMPLATE MUST BE REMOVED BEFORE INSTALLING COLUMNS.
- 8. THE CALCULATIONS FOR THIS STRUCTURE ASSUME A PINNED COLUMN BASE.
- 9. THE FOLLOWING ADHESIVE ANCHORS MAY BE SUBSTITUTED FOR THE CAST-IN-PLACE ANCHOR BOLTS: -HILTI HIT-HY 200 (A OR R) ADHESIVE WITH Ø 1/2" HAS-E ROD WITH MINIMUM 8" EMBEDMENT. CONTRACTOR SHALL FOLLOW ALL INSTALLATION SPECIFICATIONS AND REQUIREMENTS OF ANCHOR MANUFACTURER.



#### FOUNDATION NOTES

- 1. ALL MATERIALS AND WORKMANSHIP SHALL CONFORM TO THE REQUIREMENTS OF THE BUILDING CODE, AMERICAN CONCRETE INSTITUTE, AND ALL APPLICABLE STATE AND LOCAL ORDINANCES AND REQUIREMENTS.
- 2. THE CONCRETE DESIGN IS BASED ON THE FOLLOWING PROPERTIES:

DEPTH BELOW GRADE PRIOR TO CONSTRUCTION.

- 28 DAY STRENGTH OF 4500 psi.
  - SLUMP OF 4" (+/-1").
- THE FOOTING SHALL BEAR ON COMPETENT UNDISTURBED SOIL OR 95% COMPACTED FILL. IF SIGNS OF ORGANIC MATERIAL, UNCONTROLLED FILL, CLAY OR SILT, HIGH WATER TABLE OR OTHER POSSIBLE DETRIMENTAL CONDITIONS ARE FOUND, INSTALLATION OF THE FOUNDATION MUST BE DISCONTINUED AND A SOILS ENGINEER CONTACTED.
- THE REINFORCING STEEL SHALL CONFORM TO THE REQUIREMENTS OF ASTM A615, GRADE 60.

  IF FOOTING DEPTH SHOWN DOES NOT MEET LOCAL FROST REQUIREMENTS, THE DRILLED PIER FOOTING MAY BE EXTENDED. EXTEND VERTICAL BARS AS REQUIRED AND PROVIDE ADDITIONAL TIES TO MEET SPACING REQUIREMENTS AS SHOWN. IF LOCAL FROST DEPTH REQUIREMENTS ARE NOT MET AND NO DRILLED PIER FOOTING OPTION IS GIVEN, CONTACT ENGINEERING. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THE LOCAL FROST LINE

THE FOUNDATION DESIGN SHOWN ON THESE DRAWINGS IS NOT SITE SPECIFIC, BUT BASED ON THE PRESUMPTIVE ALLOWABLE FOUNDATION PRESSURES IN CHAPTER 18 OF THE BUILDING CODE (CLASS 5 SOIL), THE BUILDING OFFICIAL IN THE JURISDICTION IN WHICH THIS STRUCTURE IS LOCATED MAY REQUIRE A SITE SPECIFIC GEOTECHNICAL REPORT OR LETTER FROM A QUALIFIED LOCAL PROFESSIONAL ENGINEER ATTESTING TO WHETHER THE ACTUAL SITE CONDITIONS MEET THE ASSUMPTIONS IDENTIFIED ABOVE.



IF THESE DRAWINGS ARE SEALED, THE SEAL APPLIES ONLY TO BUILDING COMPONENTS (AND FOUNDATION DESIGN IF APPLICABLE) DETAILED WITHIN THESE DRAWINGS.

PROJECT:

LOWENSTEIN PARK
PROJECT LOCATION:

LEE'S SUMMIT, MO
DRAWING:

ANCHOR AND FOOTING DETAILS

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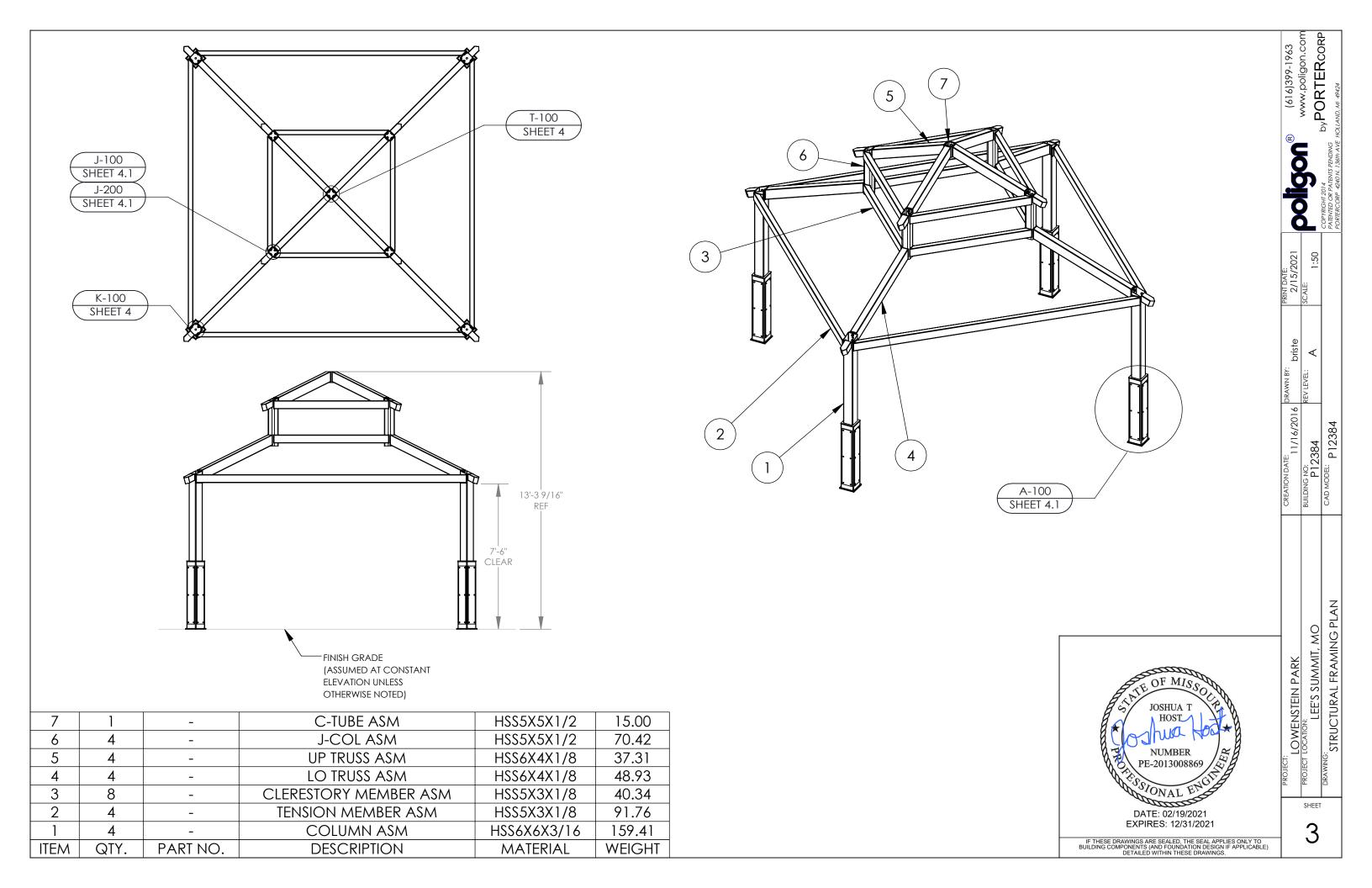
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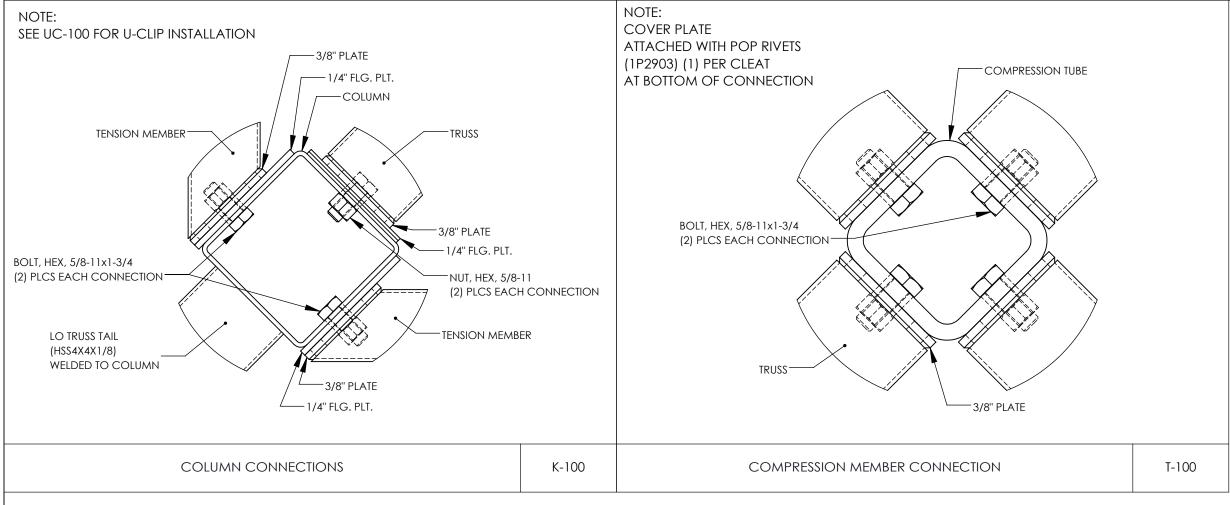
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**CONNECTION NOTES:** 

- HIGH STRENGTH BOLTS SHALL BE ASTM F3125 (A325, TYPE 1) MATERIAL.
- HIGH STRENGTH NUTS SHALL BE ASTM A563 (GRADE DH) MATERIAL.
- HIGH STRENGTH WASHERS SHALL CONFORM TO ASTM F436. 3.
- ALL BOLTS TO BE INSTALLED BY THE "TURN -OF-NUT" PRETENSIONING METHOD AS SPECIFIED IN THE LATEST EDITION OF THE AISC "SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS", (SEE ILLUSTRATION). A325 BOLTS MAY BE INSTALLED WITHOUT WASHERS WHEN TIGHTENED BY THE "TURN-OF-NUT" PRETENSIONING METHOD. IT IS THE RESPONSIBILITY OF THE ERECTOR TO ENSURE PROPER TIGHTNESS. THIS METHOD IS ONLY REQUIRED ON A325 BOLTS. ANCHOR BOLTS ONLY NEED TO BE SNUG TIGHT.
- LOCAL JURISDICTIONS MAY REQUIRE AN INSPECTOR TO BE PRESENT TO WITNESS HARDWARE INSTALLATION AND INDEPENDENT TESTING. INSPECTION REQUIREMENTS SHOULD BE VERIFIED BY INSTALLER PRIOR TO STEEL ERECTION.
- ERECTION OF THE FRAMING MEMBERS WILL REQUIRE THE MAIN COLUMNS TO BE PLUMB SQUARE AND TIGHTENED TO THE TRUSSES AND/OR TENSION MEMBERS BEFORE INSTALLING THE PURLINS. PURLINS, IF REQUIRED, MUST BE PARALLEL TO THE EAVE BEAMS AND TENSION MEMBERS OR AS SHOWN IN FRAMING PLAN.
- 7. PRIOR TO THE ERECTION OF SHELTER COMPONENTS, IT IS RECOMMENDED TO CHASE AND TAP STRUCTURAL HARDWARE.
- ALL BOLTS MUST BE LUBRICATED WITH WAX TO ASSIST IN PROPER 8. TIGHTENING. TO LUBRICATE A BOLT IN THE FIELD, APPLY THE WAX STICK DOWN THE LENGTH OF THE BOLT'S THREADS.
- TO PREVENT RUST STAINING OF FINISH, ALL METAL SHAVINGS MUST BE REMOVED AFTER INSTALLATION. ENSURE NO SHAVING ARE TRAPPED BETWEEN MATING SURFACES.
- TOUCH-UP PAINT MUST BE APPLIED TO ALL EXPOSED FASTENERS. PERIODIC TOUCH-UP AT THESE CONNECTIONS IS REQUIRED.

TURN-OF-NUT PRETENSIONING METHOD: THESE STEPS ILLUSTRATE THE REQUIREMENTS OUTLINED IN THE AISC SPECIFICATION. THE ROTATION INDICATED IS ACCURATE FOR MOST BOLT DIAMETERS AND LENGTHS BUT IT IS THE RESPONSIBILITY OF THE INSTALLER TO MEET AISC REQUIREMENTS.

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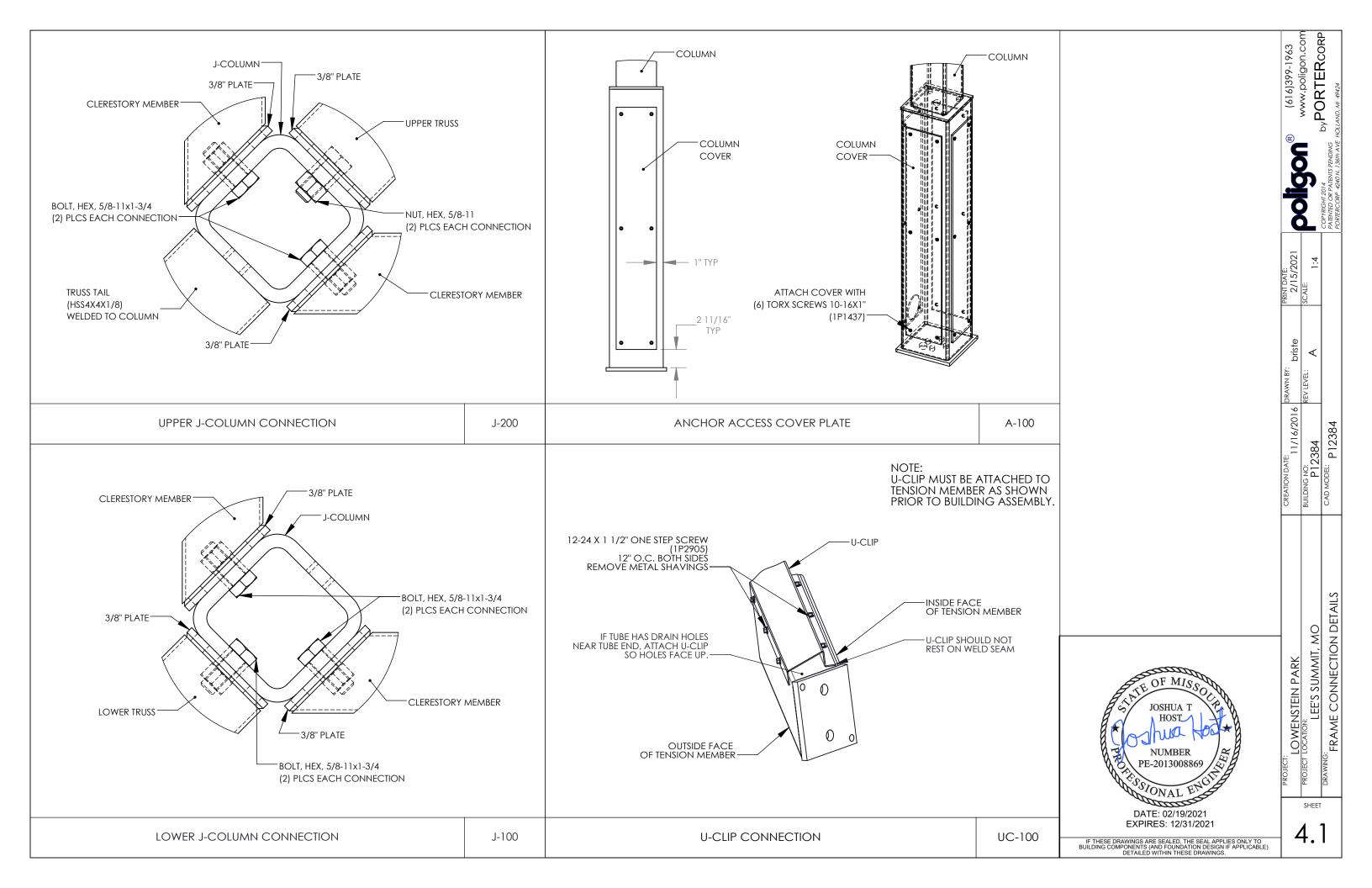
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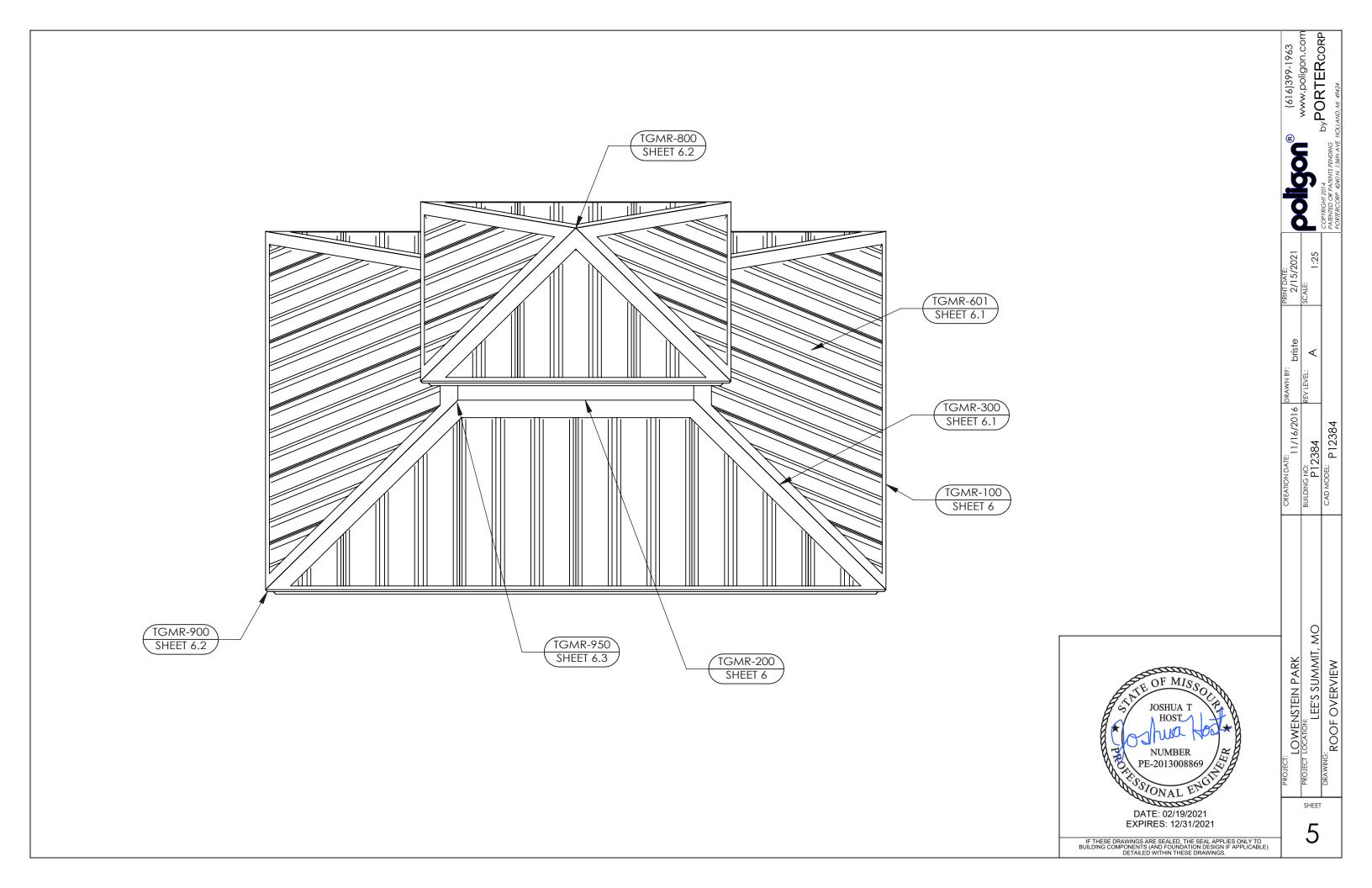
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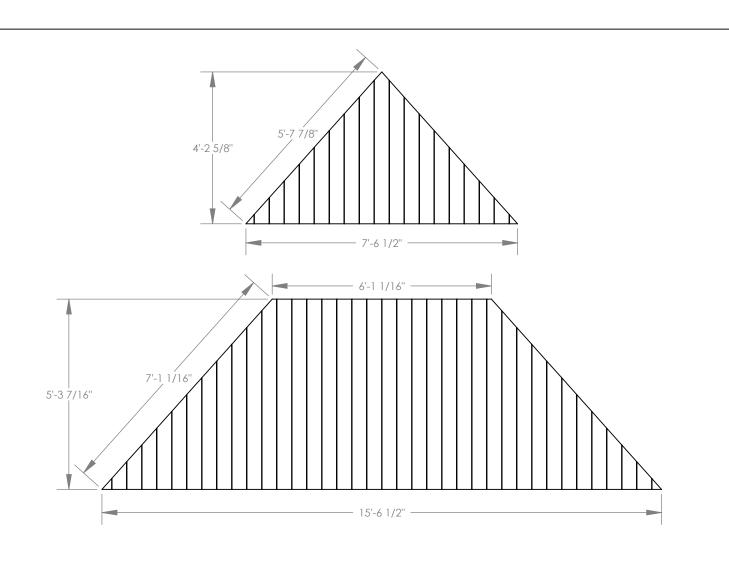
STEP ONE: AFTER SNUG TIGHT, MATCH MARK PLATE STEP TWO: THEN TURN BOLT/NUT PAST SNUG TIGHT 1/3 TURN 120.00°+30°



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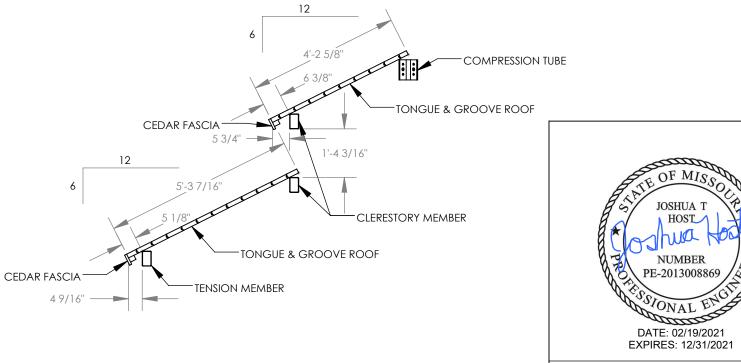




TONGUE & GROOVE NOTES:

- 1. TO BEGIN, SNAP A CHALK LINE TO MARK CENTERS OF COMPRESSION RING AND TENSION MEMBER. LOCATE FIRST TWO PLANKS EACH SIDE OF THE LINE AND WORK OUT TO THE CORNERS. MAKE SURE PLANKS ARE LONG ENOUGH TO COVER EAVE, TRUSSES, AND THE CENTER OF THE PEAK.
- 2. THE T&G PROVIDED MAY CONTAIN SOME MINOR IMPERFECTIONS. REMOVE THESE IMPERFECTIONS AS REQUIRED AND USE REMAINDER OF MATERIAL TO ATTAIN MAXIMUM YIELD.
- 3. NO END JOINTS IN DECKING WITHIN 24" OF TENSION MEMBER.
- 4. A MINIMUM OF 24" SPACING IS REQUIRED BETWEEN ALL ADJACENT END JOINTS. BOARD LAYOUT MAY REQUIRE VISIBLE SPLICES.
- 5. IF PRE-STAINED T&G IS ORDERED, TOUCH-UP AT FIELD CUT EDGES MAY BE NECESSARY.
- 6. POLIGON RECOMMENDS ALL T&G BE STAINED/SEALED TO IMPROVE LONG TERM PERFORMANCE.





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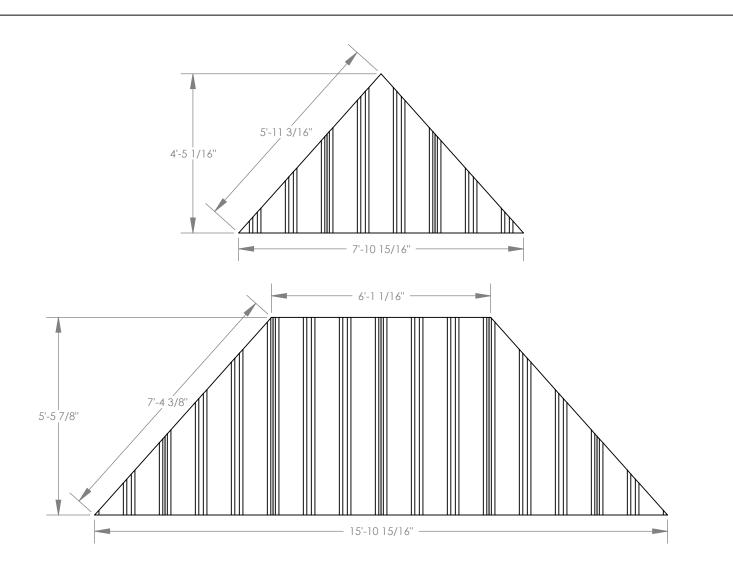
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### MULTI-RIB NOTES:

THE DETAILS SHOWN ARE SUGGESTIONS OR GUIDELINES ON HOW TO ERECT THE SYSTEMS. THE INFORMATION SHOWN IS ACCURATE, BUT IT IS NOT INTENDED TO COVER ALL INSTANCES, BUILDING REQUIREMENTS, DESIGNS OR CODES. THE DETAILS MAY REQUIRE CHANGES OR REVISIONS DUE TO FIELD CONDITIONS.

IT SHALL BE THE RESPONSIBILITY OF THE ERECTOR TO ENSURE THAT THE DETAILS MEET PARTICULAR BUILDING REQUIREMENTS AND TO ASSURE ADEQUATE WATER TIGHTNESS.

THE ERECTOR SHOULD THOROUGHLY FAMILIARIZE HIMSELF/HERSELF WITH ALL ERECTION INSTRUCTIONS BEFORE STARTING WORK.

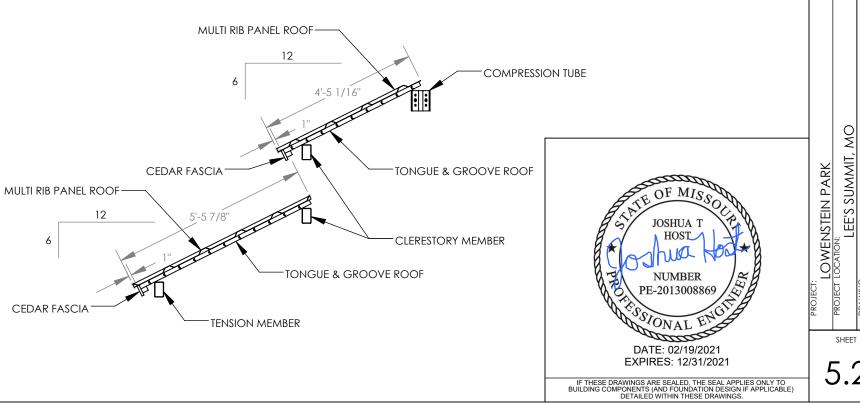
THE PANELS SHOULD BE INSTALLED PLUMB, STRAIGHT, AND ACCURATELY TO THE ADJACENT WORK.

FLASHING AND TRIM SHALL BE INSTALLED TRUE, AND IN PROPER ALIGNMENT, WITH ANY EXPOSED FASTENERS EQUALLY SPACED FOR THE BEST APPEARANCE.

SEALANT SHALL BE FIELD APPLIED ON DRY, CLEAN SURFACES, SOME FIELD CUTTING AND FITTING OF PANELS AND FLASHING IS TO BE EXPECTED BY THE ERECTOR AND MINOR FIELD CORRECTIONS ARE A PART OF NORMAL ERECTION WORK.

WORKMANSHIP SHALL BE OF THE BEST INDUSTRY STANDARDS AND INSTALLATION SHALL BE PERFORMED BY EXPERIENCED METAL CRAFTSMEN.

METAL SHAVINGS FROM DRILLING OR INSTALLATION OF ROOF FASTENERS MUST BE CAREFULLY REMOVED FROM THE ROOF BY BRUSHING OR SWEEPING AT THE END OF EACH DAY DURING INSTALLATION. SHAVINGS LEFT ON THE ROOF WILL QUICKLY RUST AND STAIN THE ROOF FINISH.



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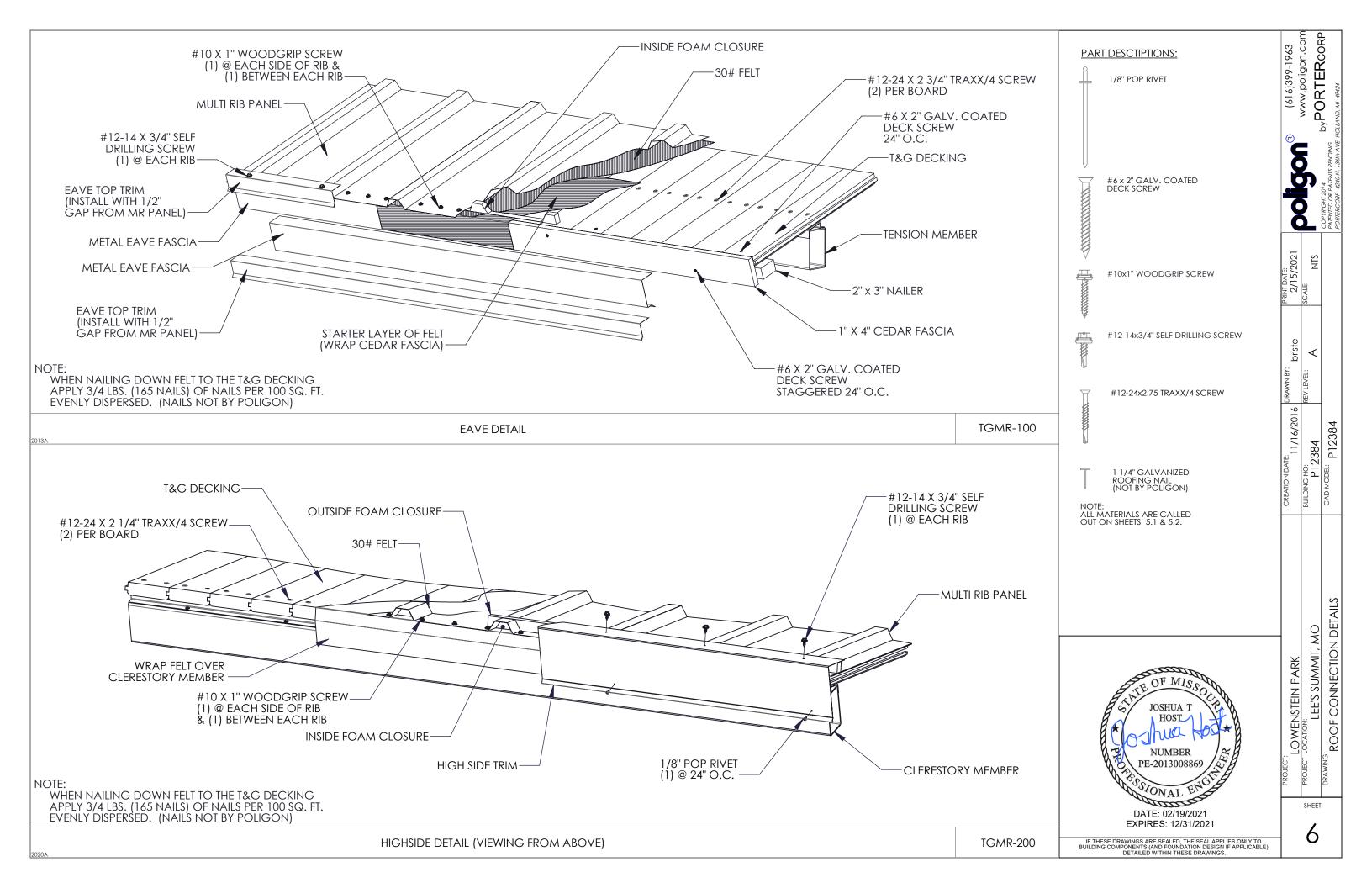
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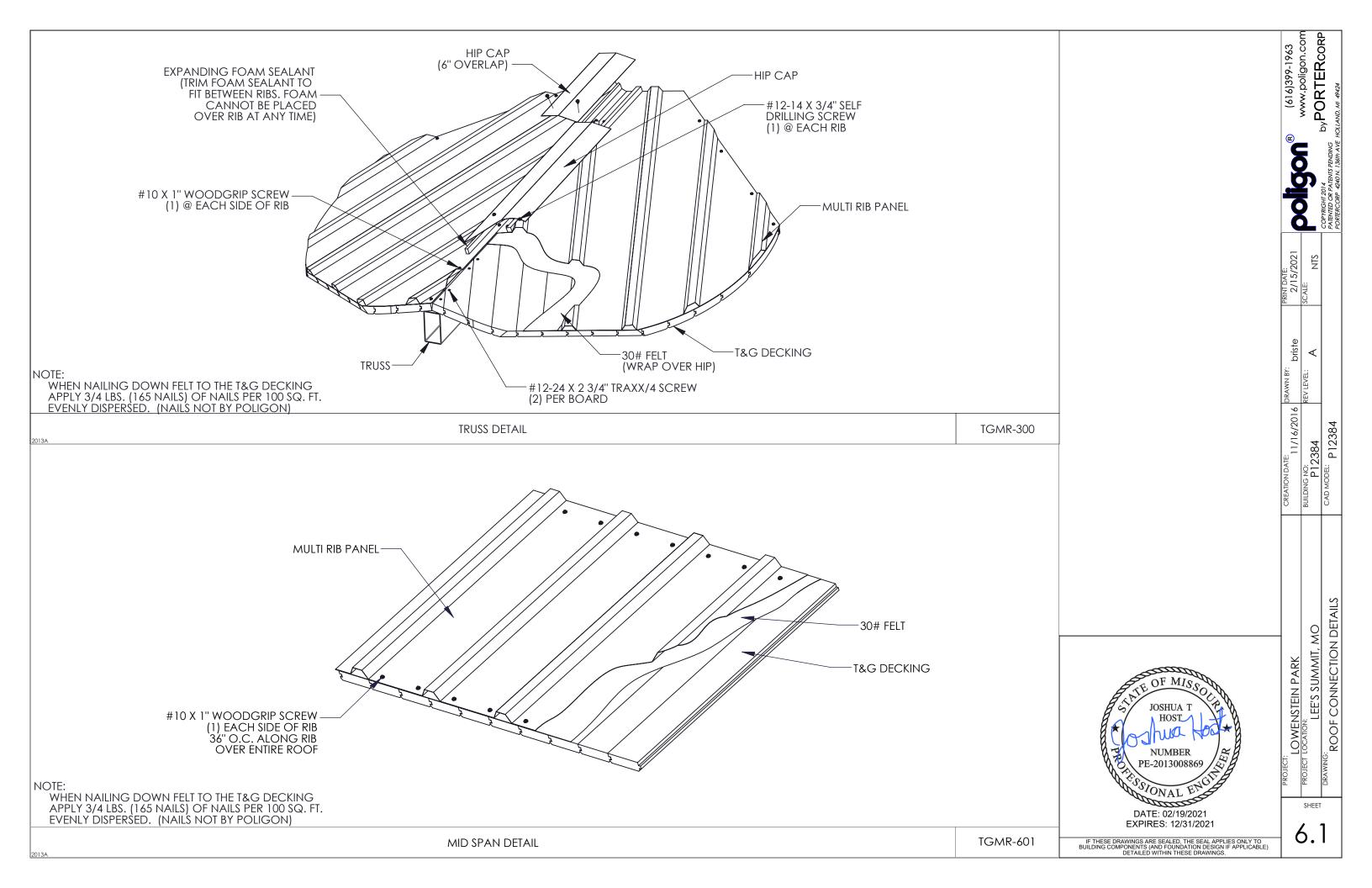
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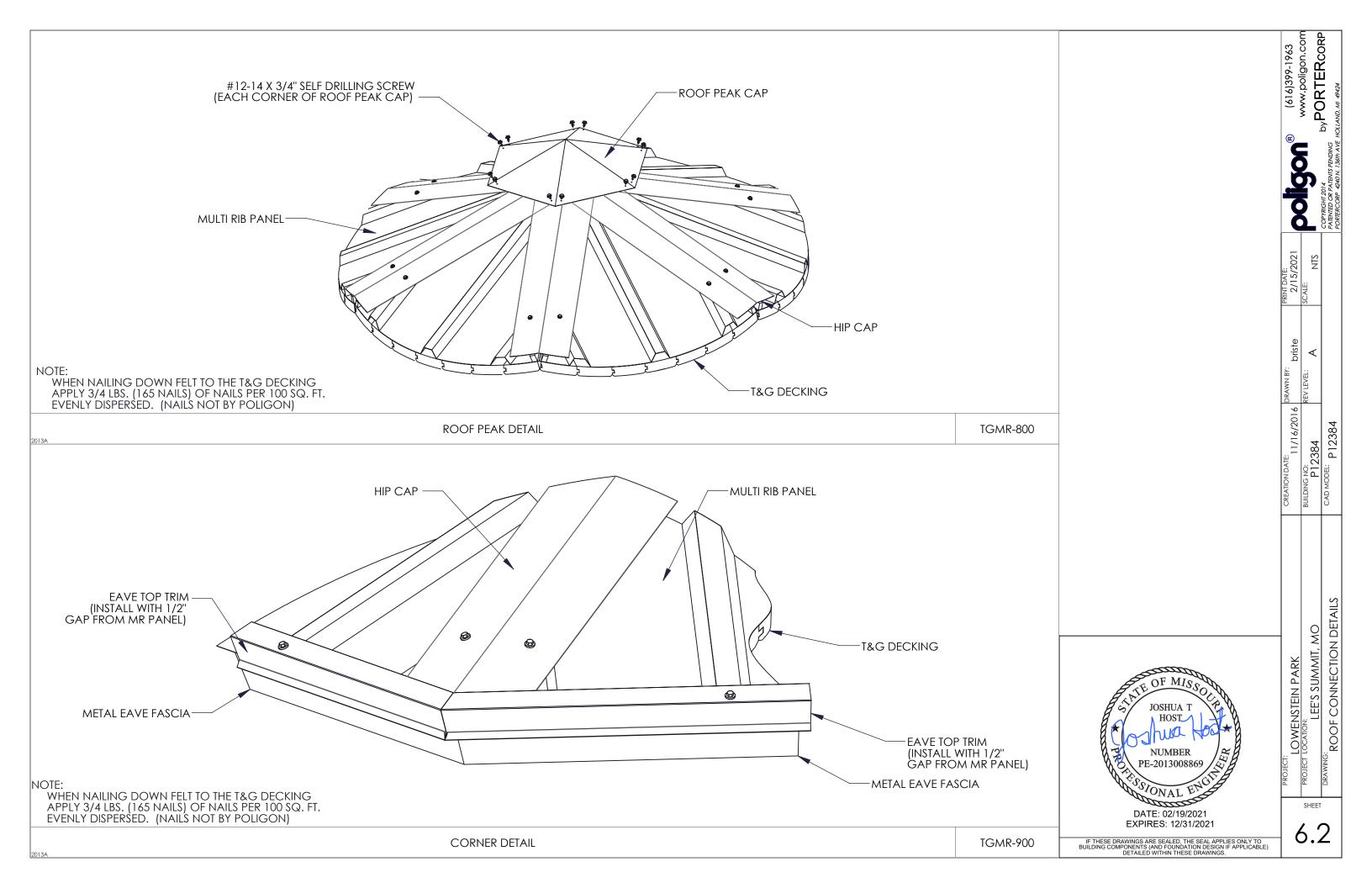
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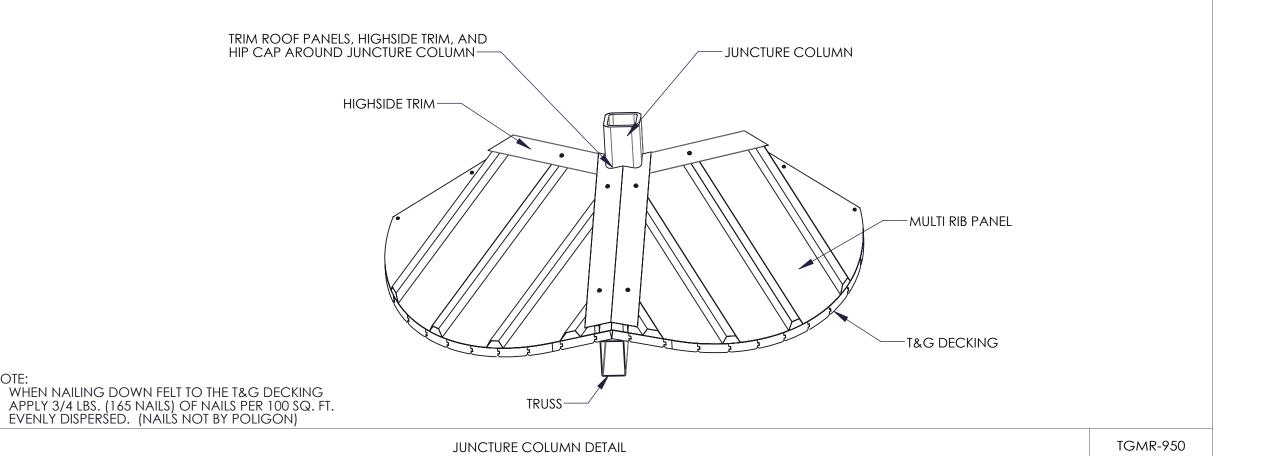
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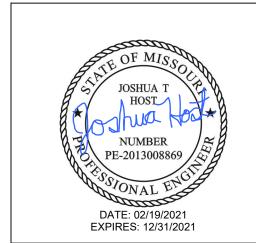








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LOWENSTEIN PARK ROJECT LOCATION:

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11/16/2016

BUILDING NO: P12384 CAD MODEL: P12384

LEE'S SUMMIT, MO
ROOF CONNECTION DETAILS

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