

7/14/2022 12:32:52 PM Autodesk Docs://1730.22001 - Gustavus Fire Department Tower Foundation\NF-STRU\1730.22001_RV22.dwg IF THIS BAR DOES NOT MEASURE EXACTLY ONE INCH, THE SCALE OF THIS DRAWING HAS BEEN ALTERED DURING ITS PRODUCTION, AFFECTING ALL LABELED SCALES 1"

GUSTAVUS FIRE DEPARTMENT TOWER FOUNDATION

100% DESIGN

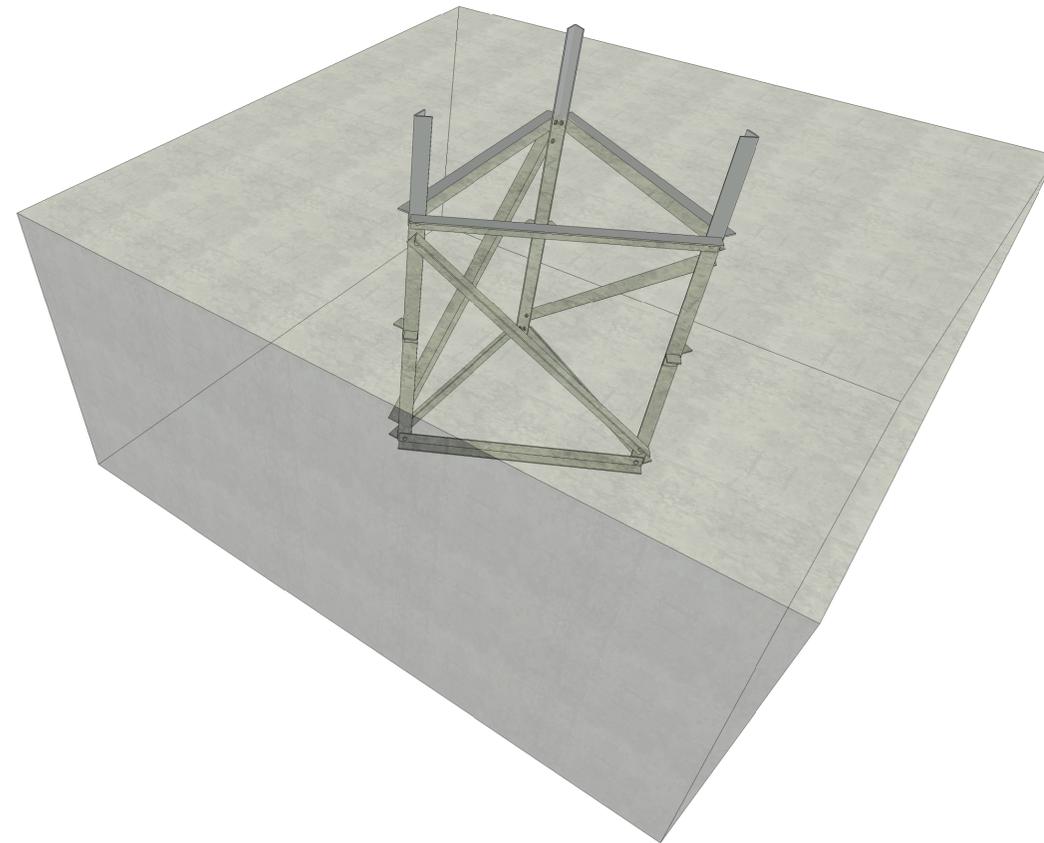
LOCATION:

GUSTAVUS, AK

PREPARED BY:



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SHEET INDEX	
SHEET NUMBER	SHEET TITLE
G-001	PROJECT COVER SHEET
S-101	FOUNDATION DETAILS

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PROJECT :
**GUSTAVUS FIRE DEPARTMENT
TOWER FOUNDATION**
GUSTAVUS, AK

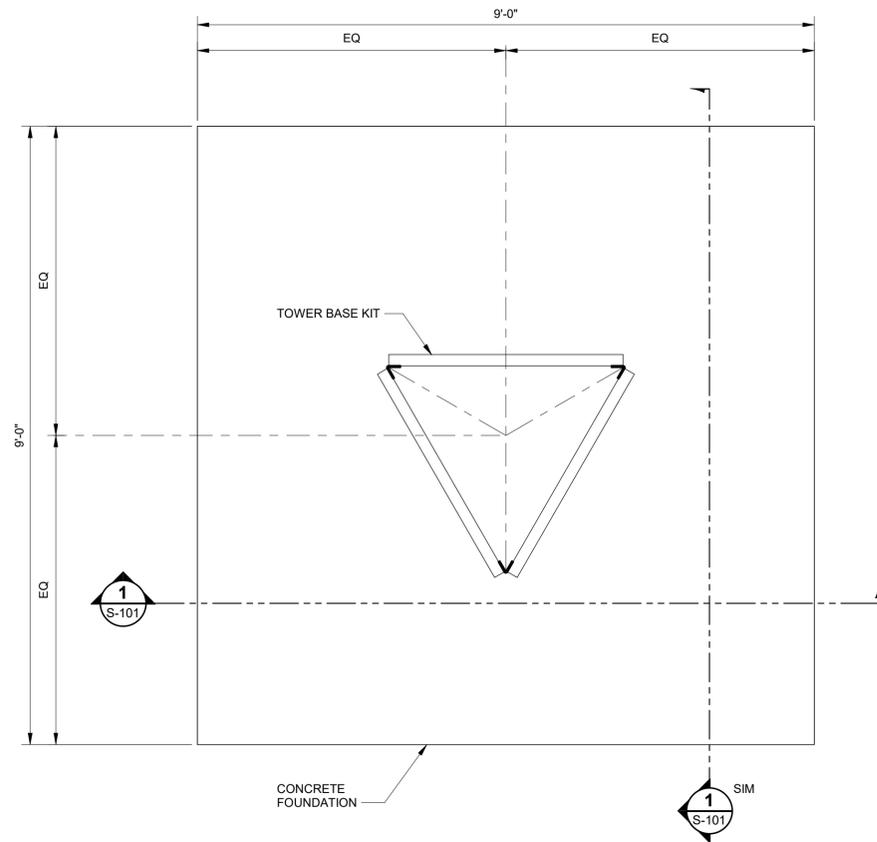
SHEET TITLE :
PROJECT COVER SHEET
100% DESIGN

DESIGN JEH
DRAWN DJM
CHECKED DJK
DATE 06/30/2022

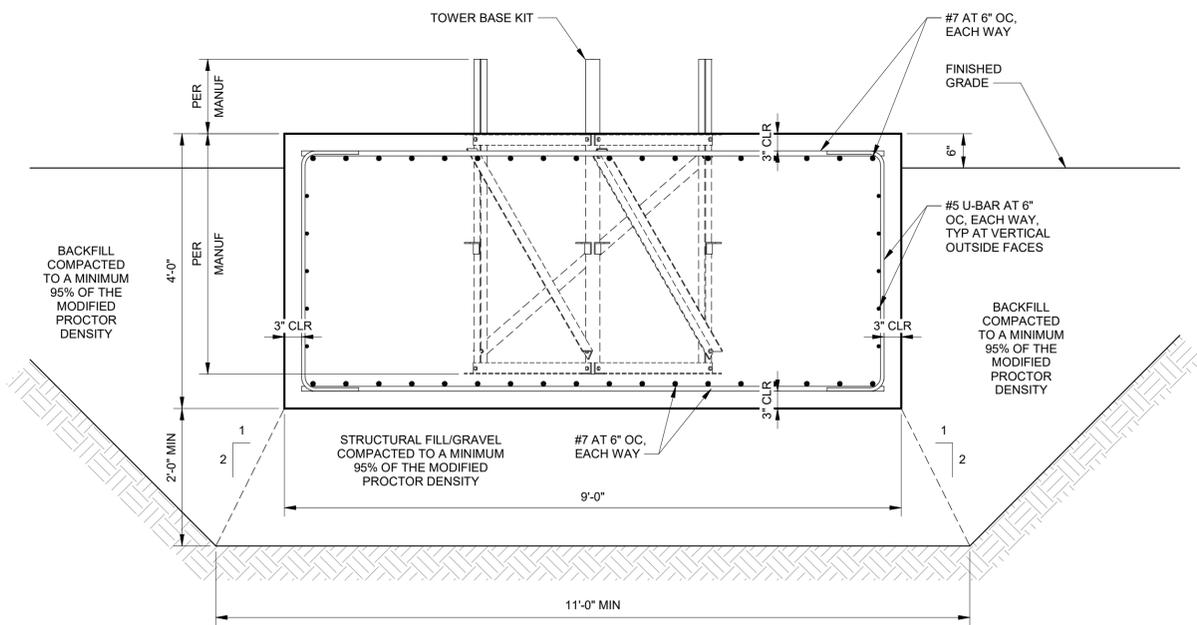
PROJECT No.
1730.22001
SHEET NUMBER

G-001

No.	Date	Item
REVISIONS		



2 FOUNDATION PLAN
S-101 SCALE: 3/4" = 1'-0"



1 FOUNDATION SECTION
S-101 SCALE: 3/4" = 1'-0"

STRUCTURAL GENERAL NOTES

1. ALL WORK SHALL CONFORM TO THE MINIMUM STANDARDS OF THE FOLLOWING CODES:
 - A. THE INTERNATIONAL BUILDING CODE (IBC) 2012 AND ITS REFERENCED STANDARDS, HEREIN REFERRED TO AS "THE CODE", AND OTHER REGULATORY CRITERIA WHICH HAVE AUTHORITY OVER ANY PORTION OF THE WORK.
 - B. PRIOR TO FABRICATION AND CONSTRUCTION, THE CONTRACTOR SHALL VERIFY ANY EXISTING ELEVATIONS AND DIMENSIONS ASSOCIATED WITH THE WORK. ALL OMISSIONS OR CONFLICTS BETWEEN VARIOUS ELEMENTS OF THE CONTRACT DRAWINGS AND/OR SPECIFICATIONS SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE ENGINEER OF RECORD PRIOR TO PROCEEDING WITH THE RELATED WORK.
 - C. CONTRACTOR SHALL INVESTIGATE SITE DURING CLEARING AND EARTHWORK OPERATIONS FOR FILLED EXCAVATIONS OR BURIED STRUCTURES, SUCH AS FOUNDATIONS, ETC. THE ENGINEER OF RECORD SHALL BE NOTIFIED IMMEDIATELY IF ANY SUCH STRUCTURES ARE FOUND.
 - D. THE STRUCTURAL DRAWINGS REPRESENT THE FINISHED STRUCTURE AND DO NOT INDICATE THE METHOD OF CONSTRUCTION. CONSTRUCTION LOADS SHALL NOT EXCEED THE DESIGN LIVE LOADS.
 - E. THESE CONTRACT DRAWINGS WERE PREPARED WITH THE ASSISTANCE OF OWNER PROVIDED INFORMATION. THE CONTRACTOR IS RESPONSIBLE FOR BECOMING COMPLETELY FAMILIAR WITH ALL EXISTING CONDITIONS AND VERIFICATION OF EXISTING CONSTRUCTION, ELEVATIONS, AND DIMENSIONS. IF EXISTING CONDITIONS VARY FROM THE REQUIREMENTS OF THE CONTRACT, THE CONTRACTOR SHALL PROMPTLY NOTIFY THE OWNERS REPRESENTATIVE BEFORE WORK STARTS.

STRUCTURAL FOUNDATION NOTES

1. FOUNDATION DESIGN IS BASED ON THE GEOTECHNICAL RECOMMENDATIONS LETTER, DATED 06/01/2022.
2. THE FOUNDATION WAS DESIGNED FOR A ROHN RSP050M307 TOWER WHICH THE FIRE DEPARTMENT CURRENTLY OWNS. THE FOUNDATION REACTIONS WERE PROVIDED IN THE TOWER MANUFACTURER'S CUT SHEETS.
 - A. ALLOWABLE LOADING
 - a. MAX OVERTURNING MOMENT 114 KIP-FT
 - b. MAX SHEAR 4 KIPS
3. ALL SUPPORTED FOOTINGS SHALL BE FOUNDED UPON STRUCTURAL FILL.
 - A. ALLOWABLE BEARING CAPACITY OF:
 - a. ISOLATED SPREAD FOOTING(S) 2,000 PSF
 - B. PASSIVE EARTH PRESSURE:
 - a. $P_p = 300$ PCF (EFP)
 - b. COEFFICIENT OF FRICTION = 0.40
 - c. PASSIVE PRESSURE AND FRICTION MAY BE COMBINED WITH A REDUCTION OF THE PASSIVE PRESSURE BY 1/2.
4. ALL FOOTING SUBGRADES AS REQUIRED AND ALL SLAB SUBGRADES INCLUDING PIT SLABS SHALL BE COMPACTED TO 95 PERCENT OF MODIFIED PROCTOR DENSITY. ALL BACKFILL AROUND AND ABOVE ALL FOUNDATION ELEMENTS, FOOTINGS, CAPS, MATS, WALLS AND PITS SHALL BE COMPACTED TO 95 PERCENT OF MODIFIED PROCTOR DENSITY.
5. ALL ORGANIC AND/OR OTHER UNSUITABLE MATERIALS SHALL BE REMOVED FROM SUBGRADE AND BACKFILL AREAS AND BACKFILLED WITH ACCEPTABLE GRANULAR FILL, COMPACTED TO 95 PERCENT OF MODIFIED PROCTOR DENSITY.
6. CONTRACTOR SHALL PROVIDE FOR DESIGN AND INSTALLATION OF ALL CRIBBING, SHEATHING AND SHORING REQUIRED AND SHALL BE SOLELY RESPONSIBLE FOR ALL EXCAVATION PROCEDURES INCLUDING LAGGING, SHORING AND PROTECTION OF ADJACENT PROPERTY, STRUCTURES, STREETS AND UTILITIES IN ACCORDANCE WITH ALL NATIONAL, STATE AND LOCAL SAFETY ORDINANCES.
7. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY MEASURES TO PREVENT ANY FROST OR ICE FROM PENETRATING ANY FOOTING OR SLAB SUBGRADES BEFORE AND AFTER PLACING OF CONCRETE UNTIL CONSTRUCTION OF THE FOUNDATION AND BACKFILL IS COMPLETE.
8. THE CONCRETE FOR EACH ISOLATED FOOTING SHALL BE PLACED IN ONE (1) CONTINUOUS PLACEMENT.
9. NO CONSTRUCTION SHALL COMMENCE UNTIL ALL SEASONAL FROST HAS THAWED OR BEEN REMOVED.

STRUCTURAL CONCRETE NOTES

1. ALL CONCRETE CONSTRUCTION SHALL CONFORM TO CHP 19 OF THE CODE AND THE PROVISIONS IN ACI 318.
2. SUITABLE CONCRETE MIXES SHALL BE PREPARED BY A QUALIFIED TESTING LABORATORY AND APPROVED BY THE ENGINEER OF RECORD. CONCRETE SPECIFIED BY COMPRESSIVE STRENGTH SHALL BE PROPORTIONED ON THE BASIS DESCRIBED IN 1905.1.1 OF THE CODE.
3. SCHEDULE OF CAST-IN-PLACE CONCRETE 28 DAY COMPRESSIVE STRENGTHS AND TYPES:

CONDITION	STRENGTH (PSI)	DENSITY (PCF)	W/ C RATIO	AIR ENTRAINMENT
FOUNDATIONS	4,500	150	0.45	4% - 7%

4. PORTLAND CEMENT SHALL CONFORM TO ASTM STANDARD C-150 AND TYPE AS FOLLOWS:
 - A. TYPE I/III - TYPICAL USE IN WARM/COLD SEASON CONCRETE, RESPECTIVELY.
 - B. TYPE II/V - FOR USE IN MODERATE/HIGH SULFATE CORROSIVE SOILS.
5. AGGREGATE FOR NORMAL WEIGHT CONCRETE (150 PCF) SHALL CONFORM TO THE REQUIREMENTS AND TESTS OF ASTM C-33.
6. ALL CONCRETE PERMANENTLY EXPOSED TO THE WEATHER SHALL CONTAIN AN APPROVED AIR-ENTRAINING ADMIXTURE IN CONFORMANCE WITH ASTM C-260.
7. ALL REINFORCING BARS SHALL BE DEFORMED BAR CONFORMING TO THE STANDARDS OF ASTM A615, GRADE 60.
8. ALL CONCRETE REINFORCEMENT SHALL BE DETAILED, FABRICATED, LABELED, SUPPORTED AND SPACED IN FORMS AND SECURED IN PLACE IN ACCORDANCE WITH THE PROCEDURES AND REQUIREMENTS OF THE LATEST EDITION OF CHP 19 OF THE CODE, ACI 318 AND THE "ACI DETAILING MANUAL: DETAILS AND DETAILING CONCRETE REINFORCEMENT", ACI 315.
9. DESIGN, REMOVAL AND RESHORING OF FORMWORK SHALL BE IN ACCORDANCE WITH ACI 318, CHP 6.
10. WHERE REQUIRED, DOWELS SHALL MATCH SIZE AND NUMBER OF MAIN REINFORCING.
11. MAXIMUM SLUMP SHALL BE 4 INCHES, UNLESS NOTED OTHERWISE OR APPROVED BY THE ENGINEER OF RECORD.
12. MINIMUM CONCRETE COVER SHALL BE:
 - A. 3" FOR CONCRETE CAST AGAINST THE EARTH.
 - B. 1 1/2" FOR BARS EXPOSED TO WEATHER AND BEAMS AND COLUMNS.
 - C. 3/4" FOR SLABS.
13. FOR COLD-WEATHER PLACEMENT (WHEN TEMPERATURE IS EXPECTED TO FALL BELOW 40 DEGREES F FOR THREE CONSECUTIVE DAYS), COMPLY WITH ACI 306.1 DO NOT USE FROZEN MATERIALS, MATERIALS CONTAINING ICE OR SNOW, OR CALCIUM CHLORIDE, SALT, OR OTHER MATERIALS CONTAINING ANTIFREEZE AGENTS OR CHEMICAL ACCELERATORS. A TEMPERATURE OF 50 DEGREES F MUST BE MAINTAINED DURING CURING VIA USE OF TENTING OR OTHER ACCEPTABLE ENCLOSURES. CONCRETE (OTHER THEN HIGH-EARLY-STRENGTH) SHALL BE MAINTAINED ABOVE 50 DEGREES F AND IN A MOIST CONDITION FOR FOR AT LEAST THE FIRST 7 DAYS AFTER PLACEMENT. HIGH-EARLY-STRENGTH CONCRETE SHALL BE MAINTAINED ABOVE 50 DEGREES F AND IN A MOIST CONDITION FOR AT LEAST THE FIRST 3 DAYS.

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