

## PROJECT INFORMATION

GENERAL CONTRACTOR  
TENANT PLANNING SERVICES  
MR. CHUCK NICHOLS  
1660 LINCOLN STREET, SUITE 100  
DENVER, CO 80264

SUBJECT SITE  
SUNDANCE PLAZA SUBDIVISION  
255 ANGLERS DRIVE  
PARCEL NUMBER 164900001  
ROUTT COUNTY, CO

PROPERTY OWNER  
ALPENGLOW VENTURES, LLC  
P.O. BOX 880729  
STEAMBOAT SPRINGS, CO 80488



PROJECT DESIGNER AND ENGINEER  
JOHN J. LITTLEHORN, P.E.  
LITTLEHORN ENGINEERING & SURVEYING, LLC  
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**DIG SAFELY**  
**811**  
GAS/ELECTRIC  
TELEPHONE/CABLE

## SHEET INDEX FOR PROJECT

| SHEET # | SHEET DESCRIPTION                      |
|---------|--|
|         | <b>STRUCTURAL DESIGN SHEETS</b>        |
| S0      | COVER PAGE                             |
| S1      | STRUCTURAL PLAN CHANGES                |
| S2      | STRUCTURAL WALL DETAILS FOR NEW WINDOW |
| S3      | STRUCTURAL DETAILS FOR RTU             |

### CODES GOVERNING MATERIALS AND WORKMANSHIP:

2015 CODES: INTERNATIONAL RESIDENTIAL CODE, PLUMBING CODE, MECHANICAL CODE, PLUMBING CODE, FUEL GAS, AND ENERGY CODE

HOA: ALWAYS FOLLOW ALL APPLICABLE HOME OWNERS ASSOCIATION GUIDELINES, RULES, AND REQUIREMENTS.

MFG: MANUFACTURER GUIDELINES AND SPECIFICATIONS SHALL GOVERN ALL WORKMANSHIP, CONSTRUCTION, AND OTHER NOTES, DRAWINGS, AND DETAILS WITHIN THESE DRAWINGS.

MSDS: MATERIAL SAFETY DATA SHEETS

NATIONAL ELECTRIC CODE (2017)

NDS ANSI/AF&PA NDS-2012: NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION

RCBD: ROUTT COUNTY BUILDING DEPARTMENT (BUILDING ADMINISTRATION FOR CITY OF STEAMBOAT)

### DESIGN CRITERIA

- CONSTRUCTION MATERIALS PLACED ON THE STRUCTURE SHALL BE PLACED IN A MANNER NOT EXCEEDING THE DESIGN LOAD SPECIFIED. IT IS THE PROPERTY OWNERS RESPONSIBILITY TO ENSURE THAT THE DESIGN LOADS ARE NOT EXCEEDED AFTER CONSTRUCTION. THE EXISTING BUILDING DESIGN LOADS APPEAR TO BE:
 

|                          |  |
|--------------------------|--|
| ALLOWABLE ROOF SNOW LOAD | ~40 PSF (BASED UPON EXISTING CONSTRUCTION) |
| ROOF DEAD LOAD           | ~15 PSF (BASED UPON EXISTING CONSTRUCTION) |
| ALLOWABLE WIND           | UNKNOWN                                    |
- THE PROPOSED BUILDING DESIGN LOADS USED ARE:
 

|                          |  |
|--------------------------|--|
| ALLOWABLE ROOF SNOW LOAD | 100 PSF (NEW ROOF AREA ONLY IN ZIGZAG AREA)            |
| ROOF DEAD LOAD           | 15 PSF + NEW RTU UNIT OF 2,134 POUNDS (IN ZIGZAG AREA) |
| SEISMIC CATEGORY         | SEISMIC NOT ANALYZED.                                  |
| FLOOD HAZARDS            | NOT ANALYZED   |
| TOPOGRAPHIC EFFECTS      | NOT ACCOUNTED FOR                                      |
| ALLOWABLE WIND           | NOT VERIFIED (Vult=115 MPH; Vasd=89 MPH)               |
| RISK CATEGORY II ASSUMED |  |

### PROJECT NOTES

- LITTLEHORN HAS BEEN CONTRACTED TO PROVIDE DRAWINGS FOR A NEW RTU UNIT TO BE INSTALLED ON THE BUILDING. THE EXISTING SWAMP COOLER IS TO BE REMOVED. ADDITIONALLY, A NEW WINDOW IS TO BE INSTALLED IN THE SOUTHEAST CORNER OF THE BUILDING. THESE DRAWINGS DETAIL THE REQUIREMENTS FOR THESE TWO CHANGES.

### GENERAL NOTES

- GREAT CARE AND PROFICIENCY HAVE GONE INTO THE PREPARATION OF THESE PLANS AND BLUE PRINTS. HOWEVER DUE TO THE IMPOSSIBILITY OF PROVIDING "ON-SITE" SUPERVISORY CONTROL OVER ACTUAL CONSTRUCTION AND BECAUSE OF GREAT VARIATIONS IN LOCAL BUILDING CODES, BUILDING CONDITIONS, AND WEATHER CONDITIONS, THE ENGINEER ASSUMES NO LIABILITY EXCEPT AS DESCRIBED IN THE CLIENT CONTRACT FOR ANY DAMAGES DUE TO DEFICIENCIES, OMISSIONS, OR ERRORS IN THE DESIGN OR BLUE PRINTS. THE ENGINEER HAS DESIGNED THE STRUCTURAL SHELL PORTION OF THIS BUILDING PER COMPANY STANDARDS DERIVED FROM GENERALLY ACCEPTED ENGINEERING PRACTICES TO ASSURE THAT IT IS STRUCTURALLY SOUND. HOWEVER DISCREPANCIES IN BUILDING PLANS OFTEN EXIST, THEREFORE THE HOME OWNER AND THE CONTRACTOR MUST INTERPRET THE BLUE PRINTS AND VERIFY ALL STRUCTURAL COMPONENTS, DIMENSIONS AND NOTES PRIOR TO CONSTRUCTION COMMENCEMENT. ANY CHANGES SHALL BE REPORTED TO THE ENGINEER AND ARCHITECT FOR APPROVAL.
- THE OWNER AND BUILDER SHALL BE RESPONSIBLE FOR AND VERIFY, PRIOR TO CONSTRUCTION COMMENCEMENT, SITE CONDITIONS AND SETBACKS, BUILDING LOCATION, DIMENSIONS, MATERIALS, COLORS, QUANTITIES, ELEVATIONS, AND FINISHES. ALL WORK SHALL COMPLY WITH APPLICABLE GOVERNING CODES, BUILDING DEPARTMENT ORDINANCES, LAWS, AND MANUFACTURERS' SPECIFICATIONS.
- JOB-SITE SAFETY IS BEYOND THE SCOPE OF THESE DRAWINGS AND THE ABILITY OF THE ENGINEER TO MANAGE. THE OWNER AND CONTRACTORS BEAR ALL RESPONSIBILITY FOR THEIR OWN SAFETY AND THE SAFETY OF EMPLOYEES, WORKERS, AND PASSERSBY.
- CONTRACTORS SHALL NOT CUT BEAMS, JOISTS, OR OTHER FRAMING MEMBERS, EXCEPT IN ACCORDANCE WITH THESE NOTES AND PLANS, WITHOUT CONSULTING THE ENGINEER. ALL OPENINGS THRU THE STRUCTURE SHALL BE VERIFIED BY THE STRUCTURAL ENGINEER.
- DO NOT SCALE DRAWINGS. VERIFY LINES & DIMENSIONS ON STRUCTURAL DRAWINGS W/ ARCHITECTURAL DRAWINGS PRIOR TO ANY WORK.
- SUBMIT ALL SHOP DRAWINGS TO ENGINEER. ENGINEER'S REVIEW OF SHOP DRAWINGS IS PROVIDED AS AN AID TO THE CONTRACTOR. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REVIEW AND CORRECTNESS OF SHOP DRAWINGS. SHOP DRAWINGS DO NOT REPLACE CONTRACT DOCUMENTS.
- OTHERS SUBMITTING ENGINEERED DESIGN AND LAYOUT SHALL BEAR RESPONSIBILITY FOR SUCH WORK AND BE RECOGNIZED AS THE ENGINEER OF RECORD (BEARING THE SIGNATURE AND SEAL OF COLO. P.E.).
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL METHODS OF CONSTRUCTION, INCLUDING TEMPORARY BRACING OR SHORING REQUIRED TO PROTECT THE STRUCTURE AND CONSTRUCTION SEQUENCING. CONTRACTOR SHALL PROVIDE MATERIALS AND WORKMANSHIP IN ACCORDANCE WITH THE LINES AND DIMENSIONS OF THE CONTRACT DOCUMENTS AND SHALL PROVIDE FOR THE SAFETY OF THE WORKERS. SITE VISITS BY THE STRUCTURAL ENGINEER SHALL NOT INCLUDE INSPECTION OF THE ABOVE.
- THE CONTRACTOR SHALL NOTIFY ENGINEER OF DETAILS NOT SHOWN ON PLANS THAT ARE NECESSARY FOR THE WORK TO PROCEED.
- INSPECTION OF FRAMING CONSTRUCTION, BY THE ENGINEER, SHALL BE MADE AFTER THE ROOF, FIRESTOPPING, DRAFTSTOPPING AND BRACING ARE IN PLACE AND AFTER THE PLUMBING, MECHANICAL AND ELECTRICAL ROUGH INSPECTIONS HAS BEEN APPROVED. THIS INSPECTION SHALL BE DONE PRIOR TO COVERING OR CONCEALMENT, BEFORE FIXTURES OR APPLIANCES ARE SET OR INSTALLED, AND PRIOR TO FRAMING INSPECTION BY GOVERNMENT ENTITY.

### STRUCTURAL STEEL

- STRUCTURAL STEEL SHALL BE DETAILED, FABRICATED, AND ERECTED IN CONFORMANCE WITH AISC (MANUAL OF STEEL CONSTRUCTION" 14TH EDITION, AISC "CODE OF STANDARD PRACTICE" AND AISC "DETAILING MANUAL".
- WELDING SHALL BE IN CONFORMANCE WITH AWS D1.1 STRUCTURAL WELDING CODE. USE E70XX ELECTRODES, WELDERS SHALL SATISFY AWS QUALIFICATION PROCEDURE.
- STEEL BEAMS, PLATES AND CUSTOM HANGERS SHALL BE ASTM A36 FY = 36 KSI, STRUCTURAL TUBING SHALL BE ASTM A500 GRADE B FY = 46 KSI, PIPE COLUMNS SHALL BE ASTM A501 FY = 36 KSI OR ASTM A53, TYPES E OR S, GRADE B FY = 35 KSI UNLESS NOTED OTHERWISE IN PLANS.
- BOLTS SHALL BE ASTM A325. ANCHOR BOLTS SHALL BE A307. USE 3/4"  $\phi$  MIN. U.N.O.
- ALL EXPOSED STEEL SUCH AS EXPOSED BOLTS, WELDS AND ABRASIONS SHALL BE PAINTED W/ APPROVED PRIMER. PRIME ALL FABRICATED STEEL WITH APPROVED PRIMER.
- PROVIDE 1 1/2 IN. MIN. GROUT BENEATH ALL COLUMN BASE PLATES. USE NON-SHRINK GROUT (EMBEKO 153 OR EQUAL), DRY-PACKED.
- EMBEDDED ANCHOR BOLTS SHALL BE PLACED WITH SETTING TEMPLATE. STEEL FABRICATOR SHALL PROVIDE ANCHOR BOLT SETTING PLAN.

### FOUNDATION

- FOR CONSTRUCTION, IT IS THE RESPONSIBILITY OF THE OWNER/CONTRACTOR TO VERIFY ALL GRADES. MAKE SURE THE FOUNDATION DRAWINGS WILL WORK WITH THE EXISTING ELEVATIONS AND GRADES. IF CHANGES TO THE DESIGN ARE REQUIRED, NOTIFY THE ENGINEER PRIOR TO PLACING ANY CONCRETE. CONTRACTOR IS RESPONSIBLE FOR MAN DOOR REQUIREMENTS, AND BLOCK OUTS REQUIRED FOR PLUMBING, ELECTRICAL, ETC. THE CONTRACTOR SHALL ALSO ADEQUATELY BRACE ALL FORMS.
- ALL FOOTINGS SHALL BE PLACED ON UNDISTURBED SOILS AND IN ACCORDANCE WITH THE GEOTECHNICAL REPORT AND THE BUILDING DEPARTMENT REQUIREMENTS. ALL SOILS BELOW THE FOOTINGS AND SLABS SHALL BE PROPERLY COMPACTED AND FREE OF EXPANSIVE CLAY, SNOW, ICE, AND DEBRIS.

### CONCRETE

- ALL CONCRETE SHALL USE WASHED STONE AGGREGATE, TYPE I PORTLAND CEMENT WITH A MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI AT 28 DAYS UNLESS NOTED OTHERWISE. THE WATER/CEMENT RATIO SHALL BE LESS THAN 0.60. THE MAXIMUM AGGREGATE SIZE SHALL BE 5/8". ALL CONCRETE SHALL HAVE A MINIMUM SLUMP OF 2 INCHES AND A MAXIMUM SLUMP OF 4 INCHES WHEN PLACED, AS DESCRIBED IN ASTM C143 (STD. METHOD OF TEST FOR SLUMP OF PORTLAND CEMENT CONCRETE). OTHER ADMIXTURES (CALCIUM CHLORIDE, FLY ASH, ETC.) SHALL NOT BE PERMITTED WITHOUT PRIOR APPROVAL. CONTRACTOR SHALL SUBMIT MIX DESIGN FOR ENGINEERS APPROVAL A MINIMUM OF 7 DAYS BEFORE PLACEMENT. PLACE THE WET CONCRETE CORRECTLY. USE A TREMIE PIPE. VIBRATE (CONSOLIDATE) THE WET CONCRETE THE RIGHT AMOUNT. TOO MUCH CONSOLIDATION CAN CAUSE SEPARATION OF AGGREGATE AND PASTE; TOO LITTLE CAN RESULT IN ROCK POCKETS AND VOIDS. BANGING ON THE FORMS DOES NOT CONSTITUTE PROPER CONSOLIDATION - USE A STINGER. DON'T USE TOO MUCH WATER! ALL CONCRETE SHALL CONTAIN AIR ENTRAINMENT OF 4% - 6%. THIS HELPS FLOWABILITY DURING PLACEMENT AND PROTECTS AGAINST FREEZE-THAW.
- WHEN PLACED, CONCRETE SHALL HAVE A TEMPERATURE BETWEEN 50 DEGREES F AND 70 DEGREES F. TEMPERATURE DURING MIXING AND TRANSPORTATION SHALL NEVER BE LOWER THAN 40 DEGREES F NOR HIGHER THE 90 DEGREES F. DURING COLD WEATHER, CONTRACTOR SHALL MAINTAIN CONCRETE AT A MINIMUM TEMPERATURE OF 50 DEGREES F FOR 3 DAYS AND ABOVE 32 DEGREES F FOR 7 DAYS FOLLOWING ITS PLACEMENT (ACI 306), UNLESS A MORE STRINGENT REQUIREMENT IS ENFORCED BY THE LOCAL BUILDING OFFICIAL. DURING HOT WEATHER, CONTRACTOR SHALL BE CAREFUL TO MINIMIZE TEMPERATURE AND SHRINKAGE CRACKING.
- CHLORIDES ARE SIGNIFICANT CONTRIBUTORS TO CORROSION OF STEEL IN CONCRETE. CORROSION CAN CAUSE EXPANSION, CRACKING, AND SPALLING. CORROSIVE ACCELERATORS SHOULD NOT BE USED.

### REINFORCING

- MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES ACI 315 SHALL GOVERN DETAILING, FABRICATION AND ERECTION OF REINFORCING STEEL. REINFORCING STEEL SHALL BE ASTM A 615, A 706, OR A 996.
- ALL CONCRETE REINFORCING STEEL SHALL BE GRADE 60 (FY = 60 KSI). SHEAR STIRRUPS AND COLUMN TIES MAY BE GRADE 40 (FY = 40 KSI) WITH PRIOR APPROVAL OF THE STRUCTURAL ENGINEER.
- ALL STEEL SHALL BE FREE OF RUST, DIRT, AND OIL.
- CONCRETE COVER OF REINFORCING STEEL SHALL BE AS FOLLOWS:
 

|                                 |                 |          |
|---------------------------------|-----------------|----------|
| CAST AGAINST EARTH              |                 | 3 IN     |
| EXPOSED TO EARTH OR WEATHER     | #6-#18          | 2 IN     |
|                                 | #3-#5           | 1 1/2 IN |
| NOT EXPOSED TO EARTH OR WEATHER | SLABS & WALLS   | 3/4 IN   |
|                                 | BEAMS & COLUMNS | 1 1/2 IN |
- PROVIDE ACCESSORIES NECESSARY TO HOLD REINFORCING AS INDICATED ON PLANS.
- LAP SPLICE REINFORCING 36 BAR DIAMETERS MIN. U.N.O.
- LAP SPLICE WIRE MESH 1 1/2 FULL MESH AND WIRE TOGETHER. LAP SPLICES IN HORIZONTAL STRUCTURAL ELEMENTS SHALL BE AT MIDSPAN FOR TOP REINFORCING AND OVER SUPPORTS FOR BOTTOM REINFORCING. PROVIDE 2-#5 BARS W/ 2'-0" PROJECTION MIN. BEYOND ALL OPENINGS IN WALLS AND SLABS.
- PROVIDE #5 x 4'-0" DIAGONAL TO REENTRANT CORNERS OF SLABS.



### STRUCTURAL

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CONSTRUCTION NOTES AND COVER  
SUNDANCE PLAZA SUBDIVISION  
255 ANGLERS DRIVE  
STEAMBOAT SPRINGS, CO 80487

LITTLEHORN ENGINEERING & SURVEYING, LLC  
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PHONE 719.836.7120 / 970.879.5112

PROJECT NO.  
2017-470

CLIENT  
TENANT PLANNING SERVICES

DATE  
DEC. 22, 2017

REVISION:  
△ N/A  
△ N/A  
△ N/A

S0





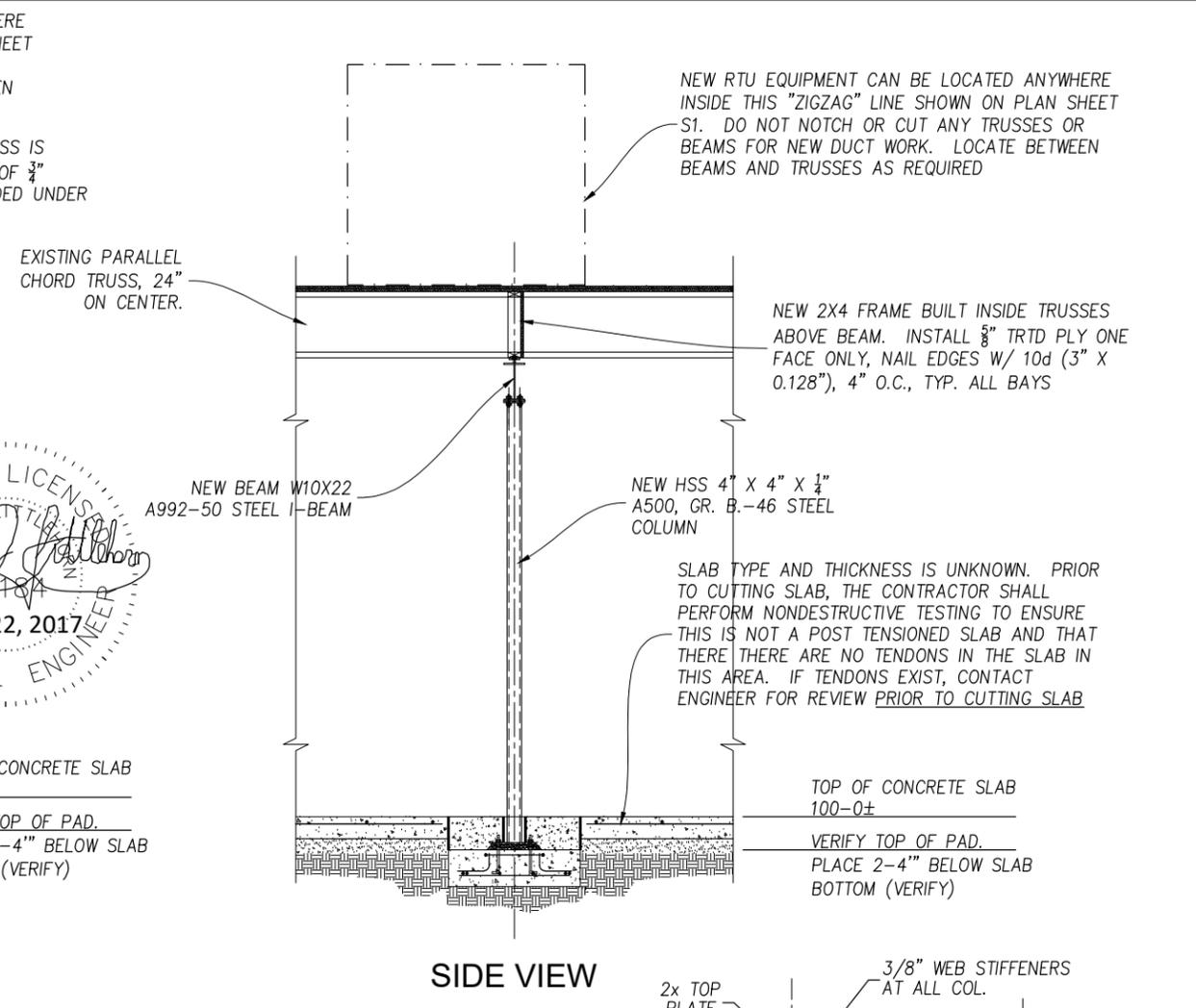
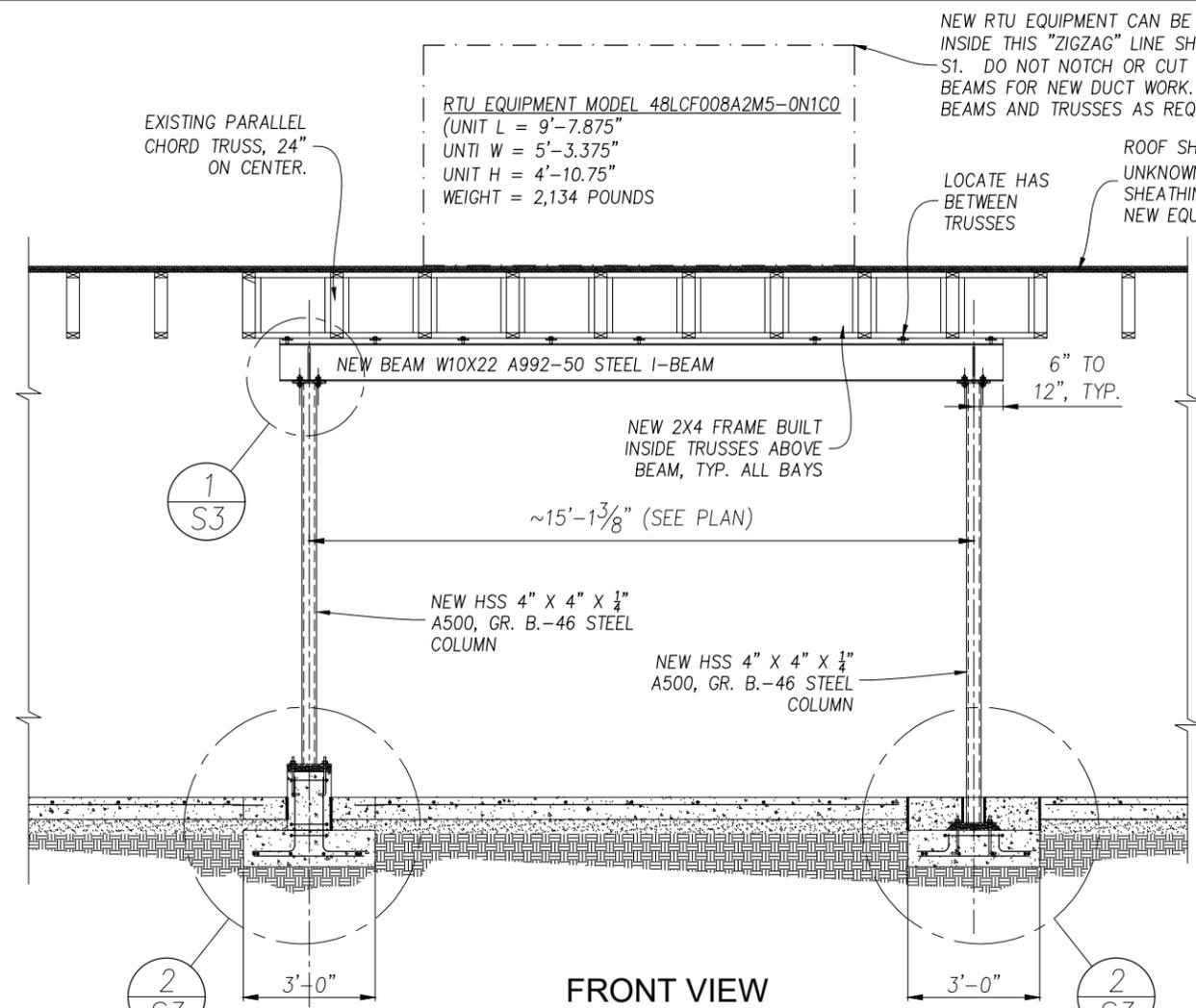
**STRUCTURAL**  
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**STRUCTURAL DETAILS FOR NEW RTU**  
 SUNDANCE PLAZA SUBDIVISION  
 255 ANGLERS DRIVE  
 STEAMBOAT SPRINGS, CO 80487

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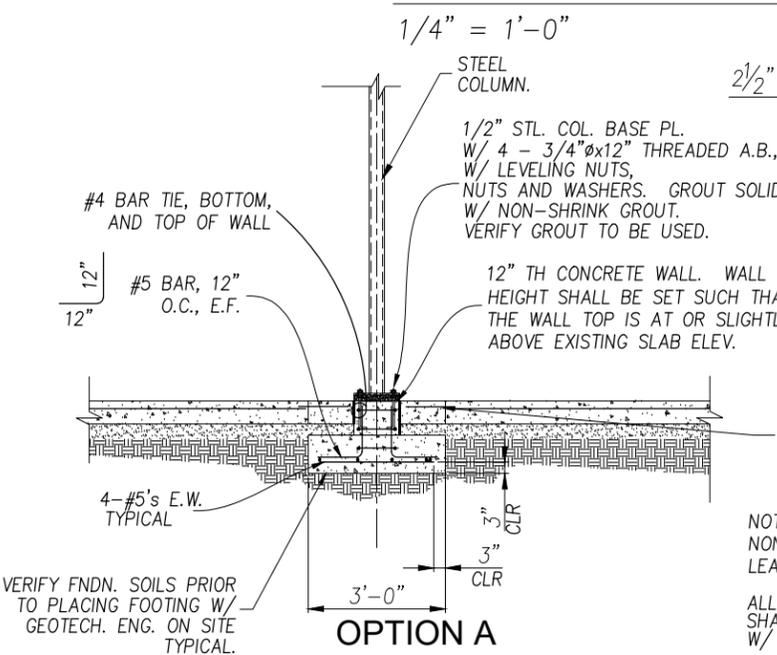


**PROJECT NO.**  
2017-470  
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**DATE**  
DEC. 22, 2017  
**REVISION:**  
 △ N/A  
 △ N/A  
 △ N/A  
**S3**



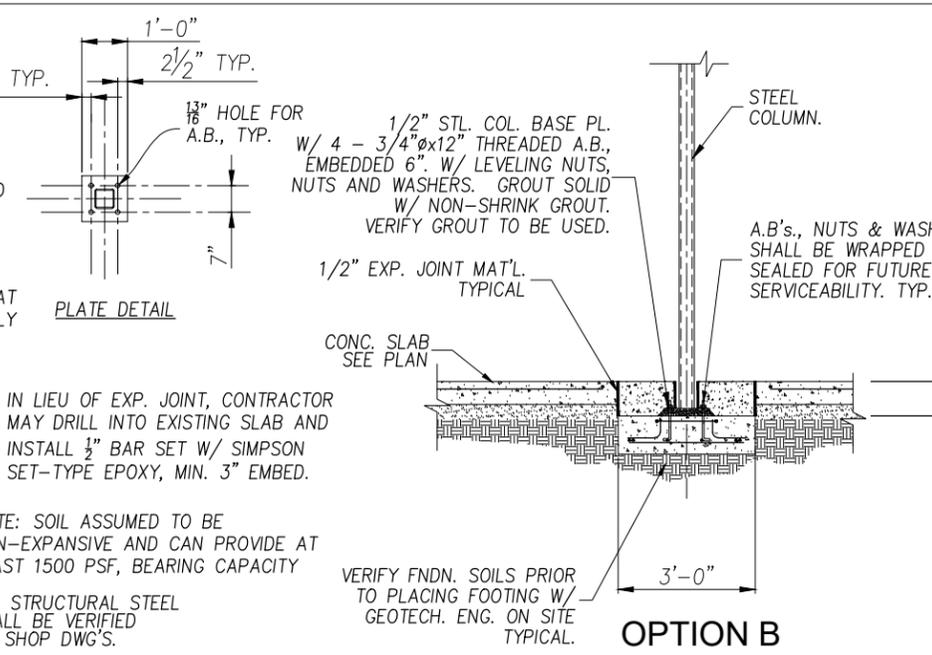
**NEW RTU SUPPORT LAYOUT**

1/4" = 1'-0"

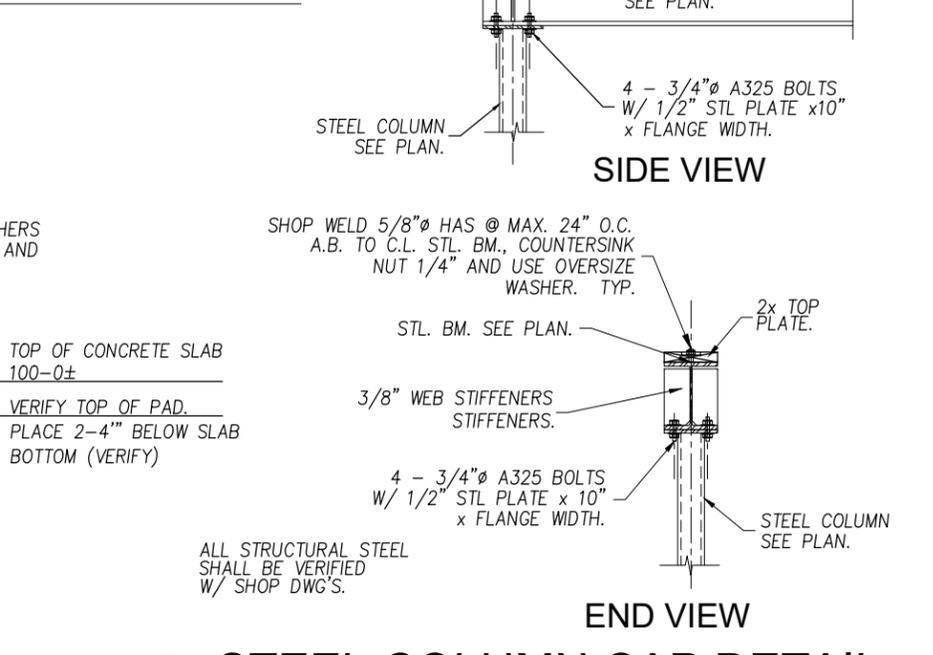


**OPTION A FOOTING DETAIL**

1/4" = 1'-0"



**OPTION B FOOTING DETAIL**



**STEEL COLUMN CAP DETAIL**

1/4" = 1'-0"