

General

- a. Examine site and all drawings to determine locations and dimensions of chases, inserts, openings, sleeves and other project requirements not shown on the structural drawings.
- b. Notify the Engineer about discrepancies between the field conditions and these construction documents.
- c. Contractor shall provide all temporary bracing, shoring, guying or other means necessary to avoid excessive stresses and to hold structural elements in place during construction. Shoring design shall be provided by the contractor. Structural members are designed for "in place" loads.
- d. The Contractor shall verify by field check, all dimensions, elevations, sizes, locations, etc. of elements of the existing structure that are necessary for the proper fitting up to new construction.
- e. When discrepancies exist between the design drawings (including this sheet) and the specifications, the more stringent of the two determined by the engineer shall govern. When discrepancies exist between scaled dimensions in the design drawings and the figures written in them, the figures shall govern.

Design Codes:

- a. Building Code: Minnesota State Building Code (most current edition)
- b. ASCE 7-10
- c. IBC 2012
- d. AISC 14th Edition
- e. NCMA
- f. NDS (for wood construction)

Design Loads:

- a. snow load
1. ground pressure P_g = 50 psf
 2. importance factor = 1.0
 3. site exposure C
 4. roof thermal factor C_t = 1.0
 5. flat roof snow load = 35 psf
 6. roof drift load where applicable
- c. live load
1. decks and balconies 60psf

Structural Steel

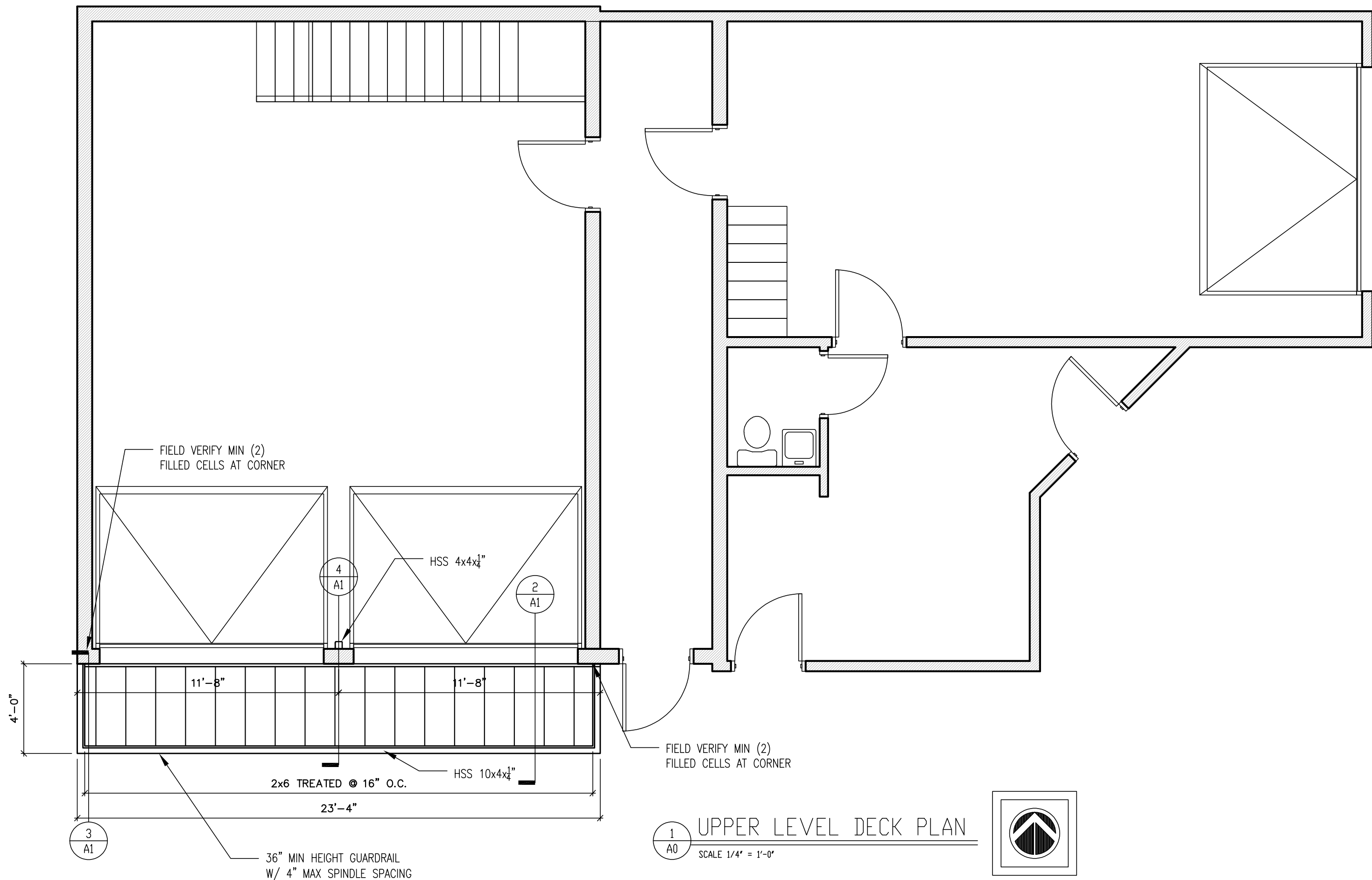
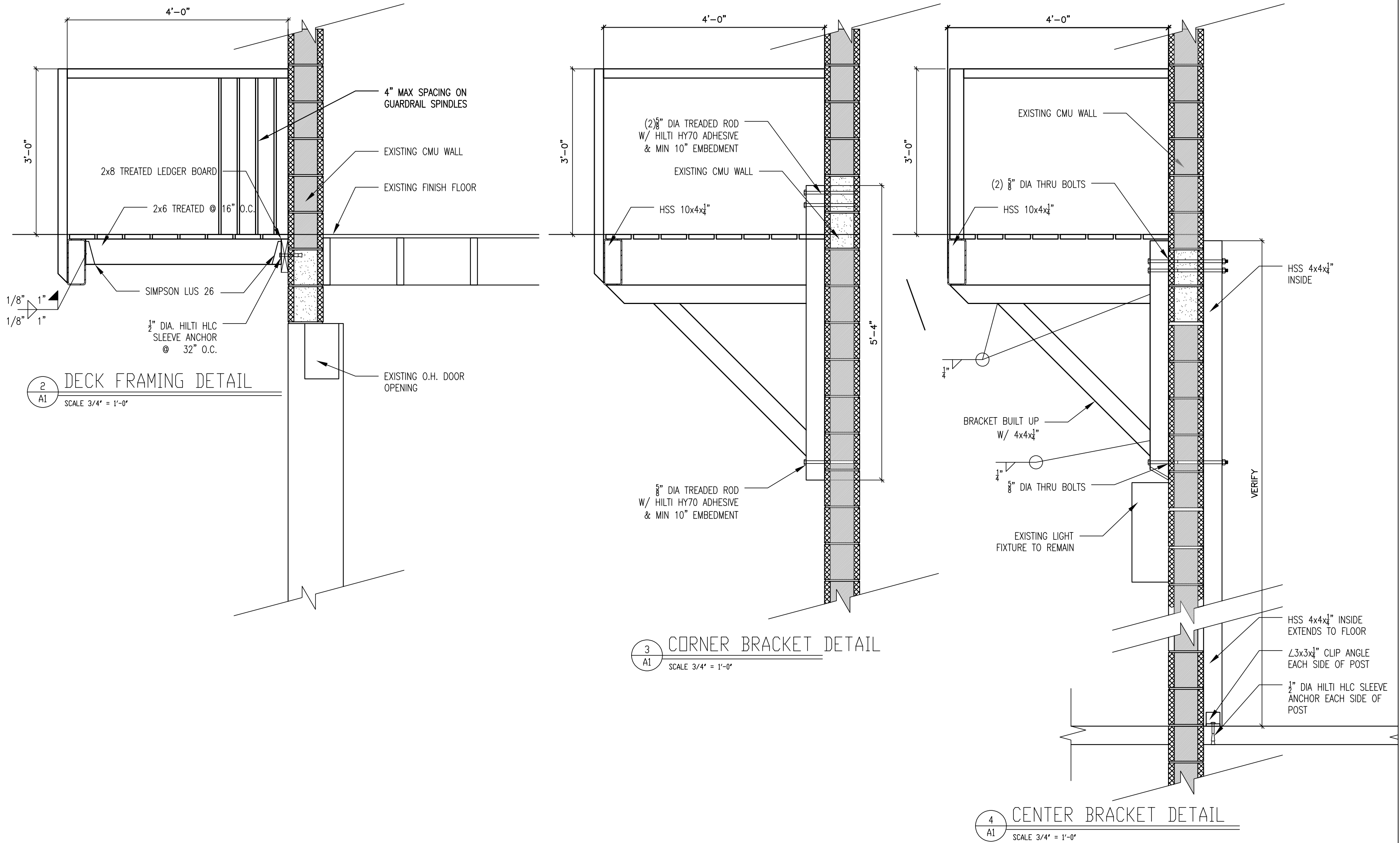
- a. All fabrications, erection, and detailing of structural steel construction shall conform to the latest edition and addendum of the following American Institute of Steel Construction (AISC), American Welding Society (AWS), and ASTM codes and specifications:
1. AISC Steel Constructions Manual (14th edition)
 2. AISC 303-10- "code of standard practice for steel buildings and bridges"
 3. AWS D1.1 - "Structural Welding Code"
- b. Material Strengths

Structural type/shape	ASTM designation	Material strength
W-shape	A992	F_y = 50 ksi
M, S, C, MC, and L-shapes, plates and bars	A36	F_y = 36 ksi
HSS rectangular	A500 Gr. B	F_y = 46 ksi
Fasteners	A325N	F_{nv} = 48 ksi, F_{nt} = 90 ksi
	A325X	F_{nv} = 60 ksi, F_{nt} = 90 ksi
	A490N	F_{nv} = 60 ksi, F_{nt} = 113 ksi
	A490X	F_{nv} = 75 ksi, F_{nt} = 113 ksi
Connection nuts	A563	
Washers	F436	
Welds		
E70xx electrodes	A233	F_u = 70 ksi
Cold rolled E60xx electrodes	A233	F_u = 60 ksi
Expansion anchors	Hilti Kwik bolts or equivalent	

- g. Welding
1. Welding shall conform to AWS Structural Welding Code AWS D1.1
 2. All welding shall be performed by AWS certified welders.
 3. Steel to be field welded shall not be painted until welding is complete
 4. Welding of galvanized steel is not permitted.
 5. Unless specified otherwise, welds shall be a fillet weld, continuous and/or all around with minimum throat dimensions as required for material thickness per AISC or AWS.
- h. Beams and columns shall be erected true and plumb within AISC tolerance. Provide temporary bracing as needed.
- i. Column base and cap plates shall be welded around all sides.

Carpentry

- a. The IBC 2012 Chapter 23 and the National Design Specifications(NDS) for Wood Construction, 2011 edition, shall govern the design and installation of all dimension lumber.
- b. All member sizes on the drawings are in nominal dimensions.
- c. Laminated Veneer Lumber (LVL) LVL shall meet or exceed the following minimum allowable stresses: F_b = 2600psi
 F_t = 1555; F_v 285 psi; F_c perp = 750 psi; E = 1,900,000 psi
- Laminated Strand Lumber (LSL) LVL shall meet or exceed the following minimum allowable stresses: F_b = 1700psi
 F_t = 1,075; F_v 400 psi; F_c perp = 680 psi; F_c = 1400 psi; E = 1,300,000 psi
- Studs, plates and other dimensional lumber shall be Spruce-Pine-Fir No.2 or better with the minimum allowable stresses as follows: F_b =850 psi; F_t =450 psi; F_v =135 psi; F_c perp=425psi; F_c =1150 psi; E = 1,400,000 psi
- Header Lumber, must be either Hem-Fir No. 1 or better or Douglas Fir Larch No.1 or better with minimum allowable stresses as follows: F_b =1150 psi; F_t =750 psi; F_v =180 psi; F_c perp = 625 psi; F_c = 1800 psi; E = 1,800,000 psi
- d. Plywood or OSB minimums: All plywood and OSB shall be APA rated.
- Roof: APA Rated Exposure 1, see drawings for thickness and span ratings.
- Exterior walls: APA Rated Sheathing, Exposure 1, see drawings for schedule.
- Install all plywood products according to APA recommendations.
- e. Nailing" per IBC table 2304.9.1 or as required by drawings. Space Nails to avoid splitting.
- f. Nailed Built-up Columns: shall be laterally supported by solid blocking except where end joists are nailed to a header, band or rim joist, or to an adjoining stud. Blocking shall be not less than 2 inches in thickness and the full depth of the joist.
- g. All floor joist ends shall be laterally supported by solid blocking except where end joists are nailed to a header, band or rim joist, or to an adjoining stud. Blocking shall be not less than 2 inches in thickness and the full depth of the joist.
- h. Double joists shall be provided under all parallel partitions.
- i. Use treated wood for sill plates in contact with masonry or concrete.
- j. All wood connectors, joist hangers, hold downs, post caps, bases etc. shall be manufactured by Simpson Strong-Tie co. Inc., USP Kant Sag or an Engineer approved equal. Install per manufacturers instructions u.n.o.



CONSULTANTS:
ARCHITECTURAL



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PROJECT TITLE:

**OLD TOWN
GARAGE
DECK ADDITION**

502 N. 2ND ST

**MANKATO
MINNESOTA**



Engineering
Structural & Investigative

I HEREBY CERTIFY THAT THE PLAN, SPECIFICATION OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA

ENGINEER: Gregory A. Prunty

CERTIFICATION NO: 49847

SIGNATURE:

Gregory A. Prunty
GENERAL CONTRACTOR

DATE:

8-20-2020

No.	SUBMISSIONS & REVISIONS	Date
1	DESIGN DOCUMENTS	08-18-2020

DISCLAIMER - Project is design build. Due to the lack of "on site" consultation & supervision, and control over the actual construction process, and because of the various local building code requirements & weather conditions, the drafter/designer/architect ASSUMES NO RESPONSIBILITY in the use of these plans for any damages. This includes structural failures due to any deficiencies, omissions, or errors in the design or blueprints. It is recommended you consult with a local building official and/or inspector prior to the start of construction. General Contractor shall verify all existing dimensions and field conditions prior to ordering or fabricating any materials. Notify designer/architect if conditions, materials, sizes or dimensions are different from what is shown on documents. Cross reference plans with all other consultant sets. All construction materials shall be installed in accordance with manufacturers current specifications and industry standards. All construction components shall meet adopted code requirements.

PLAN AND DETAILS

PROJ. NO.: C2028

DATE: 08-18-2020

DRAWN BY: AMS

CHECKED BY:

A1