

General

- 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.
- Notify the Engineer about discrepancies between the field conditions and these construction documents.
- 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.
- 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.
- 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

- Building Code: Minnesota State Building Code (most current edition)
- ASCE 7-10
- IBC 2012
- ASCE 14th Edition
- NCMA
- NDS (for wood construction)

Design Loads

- ground pressure $P_g = 50$ psf
 - importance factor = 1.0
 - slo exposure = C
 - roof thermal factor $C_t = 1.0$
 - flat roof snow load = 35 psf
 - roof drift load where applicable
- decks and balconies 60psf

Structural Steel

- 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:
 - AISC Steel Construction Manual (14th edition)
 - AISC 303-10 - "code of standard practice for steel buildings and bridges"
 - AWS D1.1 - "Structural Welding Code"

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	$F_u = 68$ ksi, $F_t = 90$ ksi
	A325X	$F_u = 68$ ksi, $F_t = 90$ ksi
	A490N	$F_u = 68$ ksi, $F_t = 113$ ksi
	A490X	$F_u = 75$ ksi, $F_t = 113$ 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	H810 Kwik bolts or equivalent	

Welding

- Welding shall conform to AWS Structural Welding Code AWS D1.1
 - All welding shall be performed by AWS certified welders.
 - Steel to be field welded shall not be painted until welding is complete
 - Welding of galvanized steel is not permitted.
 - 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.
- Beams and columns shall be erected true and plumb within AISC tolerance. Provide temporary bracing as needed.
 - Column base and cap plates shall be welded around all sides.

Carpentry

- 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.
- All member sizes on the drawings are in nominal dimensions.
- Laminated Veneer Lumber (LVL) LVL shall meet or exceed the following minimum allowable stresses: $F_b = 2600$ psi; $F_t = 1555$; $F_v = 265$ psi; F_c perp = 750 psi; F_c = 2,510 psi; $E = 1,500,000$ psi

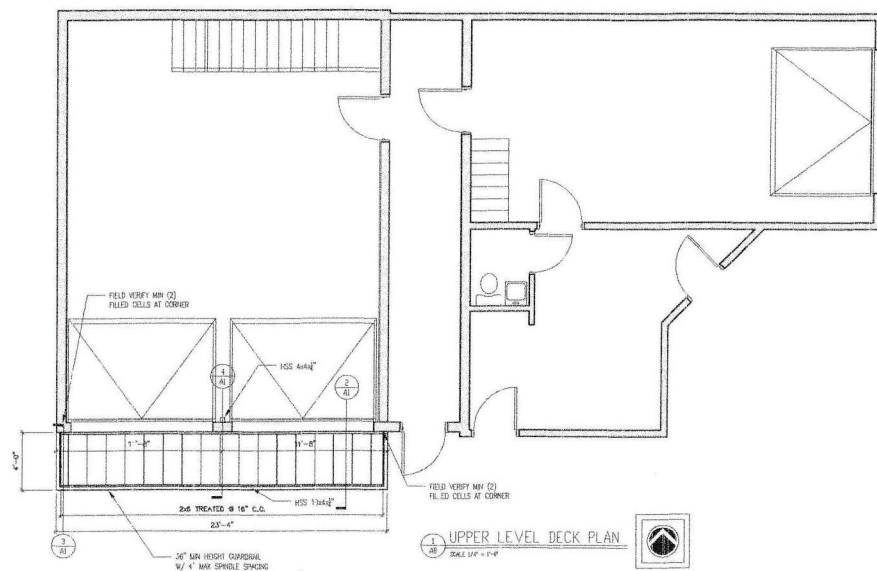
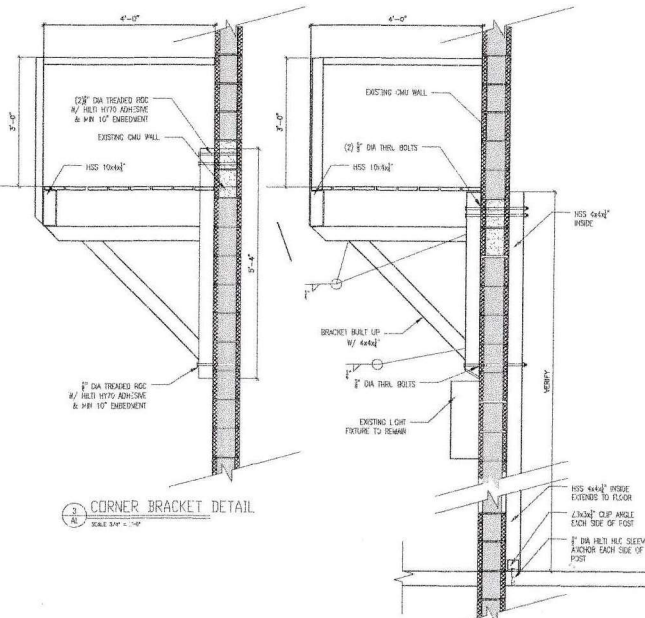
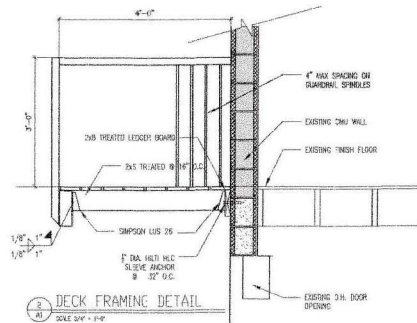
Laminated Strand Lumber (LSL) LVL shall meet or exceed the following minimum allowable stresses: $F_b = 1700$ psi; $F_t = 1,075$; $F_v = 400$ psi; F_c perp = 680 psi; F_c = 1400 psi; $E = 1,300,000$ psi

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 = 625 psi; 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

Plywood or OSB minimums

- 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.
- Nailing: per IRC table 2304.9.1 or as required by drawings. Space nails to avoid splitting.
- 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.
- All R/C 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.
- Double joists shall be provided under all parallel partitions.
- Use treated wood for all plates in contact with masonry or concrete.
- 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**

GP 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 FULLY LICENSED ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA

ENGINEER: Gregory A. Prunty
CERTIFICATION NO: 49847
SIGNATURE: DATE: 6-20-2020

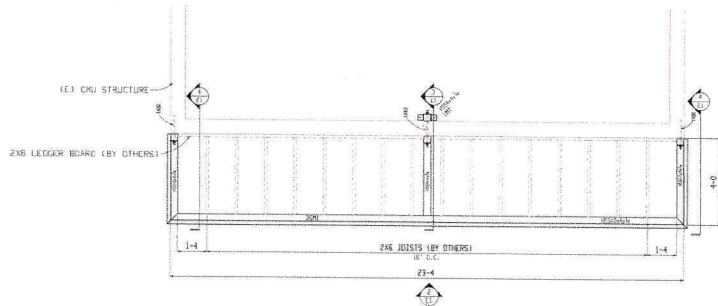
No.	SUBMISSIONS & REVISIONS	Date
1	DESIGN DOCUMENTS	06-18-2020

DESIGNER: Project is ready to build. Due to the fact of "no shop" consultation is appropriate, and used to the actual construction process, and because of the unique local building code requirements. A disclaimer is provided, the contractor shall be responsible for any and all discrepancies. IT IS THE USER'S RESPONSIBILITY TO VERIFY THE ACCURACY OF THE INFORMATION PROVIDED HEREIN. IT IS THE USER'S RESPONSIBILITY TO VERIFY THE ACCURACY OF THE INFORMATION PROVIDED HEREIN. IT IS THE USER'S RESPONSIBILITY TO VERIFY THE ACCURACY OF THE INFORMATION PROVIDED HEREIN.

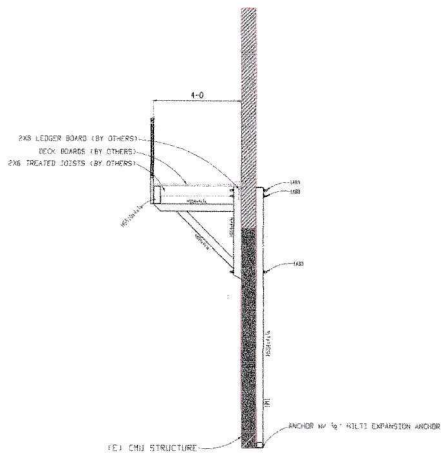
PLAN AND DETAILS

PROJ NO:	C-0028
DATE:	06-18-2020
DRAWN BY:	AMS
CHECKED BY:	

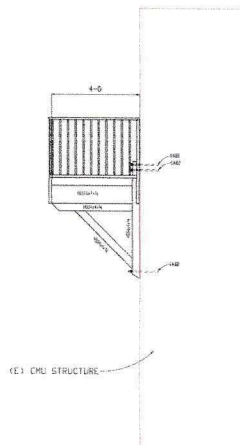
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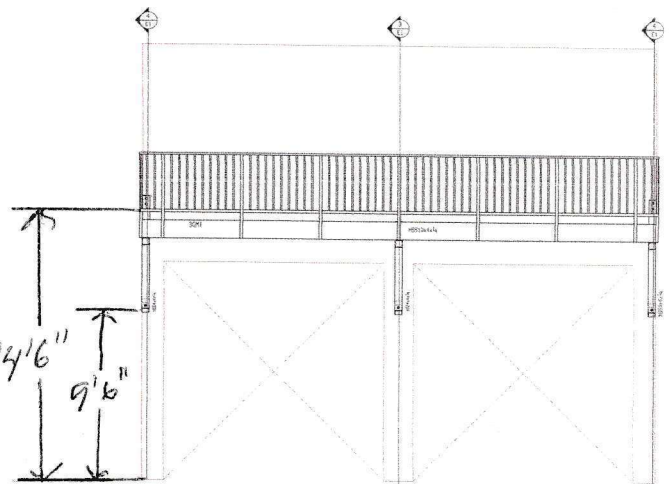
1
E1
DETAIL TITLE
SHEET NOTES:
(1) REF: 1/2A1
(2) DECK BEAMERS NOT SHOWN
FOR CLARITY (BY OTHERS)



3
E1
SECTION 1
SHEET NOTES:
(1) REF: 4/2A1



4
E1
SECTION 2
SHEET NOTES:
(1) REF: 3/2A1



2
E1
ELEVATION 1

KM
KATO MANUFACTURING

CONTRACTOR APPROVAL	PROJECT NUMBER	2156 - Old Town Garage
Approved with Dimensions	DATE	2.9.26
Approved as Noted with Dimensions	DESIGNED BY	96
Revise & Resubmit	CHECKED BY	
	APPROVED BY	
	SCALE	E1

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