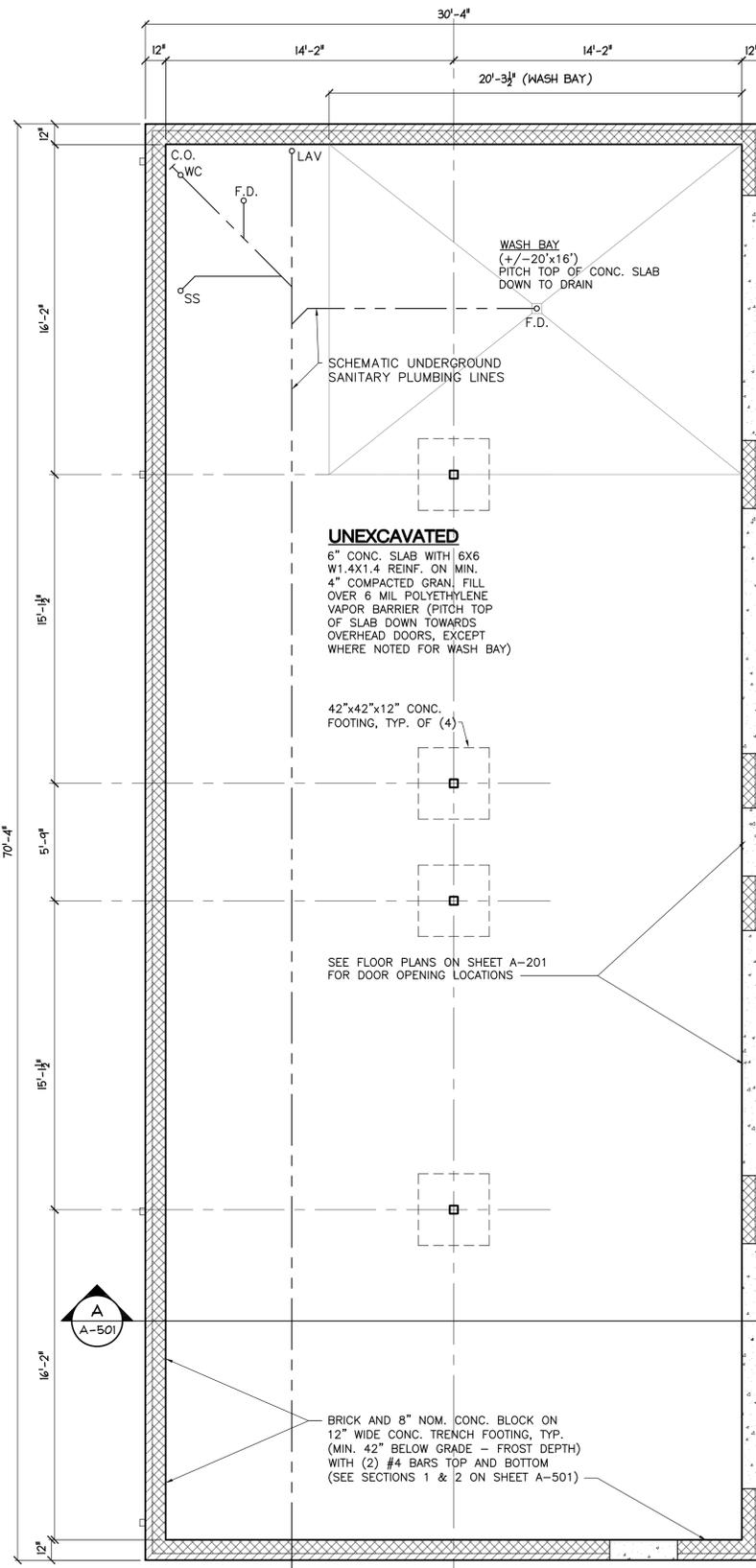


ROOF PLAN
SCALE: 1/4"=1'-0"

GENERAL NOTES

- DO NOT SCALE DRAWINGS. USE DIMENSIONS GIVEN OR FIELD VERIFY IF NECESSARY.
- ONLY DOCUMENTS INDICATED AS "BIDDING" OR "CONSTRUCTION" ARE TO BE USED FOR BIDDING OR CONSTRUCTION.
- THE REQUIREMENTS OF ICC/ANSI A117.1 AND THE AMERICANS WITH DISABILITIES ACT (ADA) ARE TO BE FULLY SATISFIED. ALL WORK SHALL MEET THE MOST STRINGENT REQUIREMENTS OF BOTH INCLUDING, BUT NOT LIMITED TO CLEARANCES, LIMITATIONS, ACCESSORIES, ETC. THESE DRAWINGS ARE PREPARED IN ACCORDANCE WITH THE LIMITED SERVICES FOR WHICH THE ARCHITECT WAS CONTRACTED. THE ARCHITECT MAKES NO REPRESENTATION THAT THE INTERPRETATION OF THESE DOCUMENTS WILL RESULT IN COMPLETE COMPLIANCE WITH THE ADA.
- ALL GLASS SHALL CONFORM TO FS DD-G-451. SAFETY GLASS SHALL CONFORM TO U.S. CONSUMERS PRODUCT SAFETY COMMISSION STANDARD 16 CFR 1201.
- ALL DOORS REQUIRED TO BE LABELED SHALL BE SET IN LABELED FRAMES AND IDENTIFIED WITH UL LABEL AND PROVIDED WITH APPROVED SELF-CLOSING DEVICES AND POSITIVE LATCHING HARDWARE.
- CONTRACTOR TO VERIFY MECHANICAL EQUIPMENT UNIT LOADS AND LOCATIONS, IF NOT INDICATED ON PLAN, AND REPORT TO ARCHITECT PRIOR TO ERECTION.
- ALL DESIGNATED EXIT DOORS SHALL BE EQUIPPED WITH NON-LOCKING AGAINST EGRESS HARDWARE.
- PLASTIC PIPING, INSULATION AND OTHER COMBUSTIBLE MATERIALS SHALL BE RESTRICTED TO USE WHERE PERMITTED BY CODE AND IN NON-COMBUSTIBLE WALLS AND CEILING SPACES THAT DO NOT CONNECT DIRECTLY TO OCCUPIED ROOMS OR VENTILATING AIR DUCTS OR SPACES, IN ACCORDANCE WITH THE MICHIGAN STATE FIRE MARSHAL REGULATIONS. PROVIDE STEEL PIPING FOR ALL PLASTIC PIPING PASSING THROUGH FIREWALLS. RATED SHAFT WALLS SHALL BE DESIGNATED AS SUCH IN ACCORDANCE WITH 2015 MICHIGAN BUILDING CODE SECTION 703.7.
- ALL SIGNAGE THAT PROVIDES EMERGENCY INFORMATION OR GENERAL CIRCULATION DIRECTIONS OR SPACE IDENTIFICATION SHALL COMPLY WITH THE MOST STRINGENT OF ANSI A117.1 AND THE AMERICANS WITH DISABILITIES ACT.
- WHEN REQUIRED, PORTABLE FIRE EXTINGUISHERS SHALL BE FURNISHED BY THE OWNER AND INSTALLED IN ACCORDANCE WITH NFPA 10.
- ALL FINISH LUMBER SHALL HAVE A MOISTURE CONTENT OF 9% OR LESS.
- PROVIDE FIRE RETARDANT TREATED (FRT) WOOD BLOCKING WHERE REQUIRED TO SUPPORT ITEMS MOUNTED TO PARTITIONS AND AROUND ALL DOOR OPENINGS, ETC. ALL LUMBER REQUIRED TO BE FIRE TREATED SHALL BEAR THE UL FR-S LABEL.
- ALL INTERIOR FINISHES SHALL MEET THE FLAME SPREAD AND SMOKE DEVELOPED REQUIREMENTS OF MBC 2015, CHAPTER 8 "INTERIOR FINISHES".
- ALL INTERIOR METAL STUD PARTITIONS ARE TO BE DESIGNED TO WITHSTAND A UNIFORM LATERAL LOAD OF 5 P.S.F. BRACE WALLS TO THE STRUCTURE AS REQUIRED. SUBMIT SHOP DRAWINGS TO THE ARCHITECT FOR APPROVAL PRIOR TO CONSTRUCTION.
- UNLESS NOTED OTHERWISE, PRODUCTS SHALL BE INSTALLED PER MANUFACTURERS SPECIFICATIONS. CONTRACTOR TO PROVIDE ALL PRODUCT WARRANTIES AND INFORMATION TO PROPERTY MANAGER UPON COMPLETION OF CONSTRUCTION.
- ALL MECHANICAL/ELECTRICAL ENGINEERING SHALL BE PERFORMED ON A "DESIGN-BUILD" BASIS BY THE OWNER'S RESPECTIVE CONTRACTORS. ANY M/E ITEMS SHOWN HERE ARE FOR GENERAL REFERENCE ONLY.
- EXISTING EXIT AND EMERGENCY LIGHTING SHALL REMAIN AS-IS.
- ALL STUD WALLS ARE TO BE FIRE-STOPPED AT CEILINGS.



FOUNDATION PLAN
SCALE: 1/4"=1'-0"

SHEET INDEX

- A-101 FOUNDATION AND ROOF PLANS
- A-201 FLOOR PLANS
- A-301 REFLECTED CEILING PLANS
- A-401 BUILDING ELEVATIONS
- A-501 BUILDING SECTIONS & DETAILS

BUILDING CODE COMPLIANCE:

INTERPRETIVE CODES:

BUILDING = MICHIGAN BUILDING CODE (MBC) 2015

PLUMBING = MICHIGAN PLUMBING CODE 2018

MECHANICAL = MICHIGAN MECHANICAL CODE 2015

ELECTRICAL = MICHIGAN ELECTRICAL CODE (NEC 2017 W/ PART 8 AMENDMENTS)

BUILDING CODE ANALYSIS:

USE GROUP: B/S-1/U (NON-SEPARATED OCCUPANCIES PER 2015 MBC 508.3)

CONSTRUCTION TYPE: VA (COMBUSTIBLE, ONE-HOUR PROTECTED STRUCTURE), UNSPRINKLERED (NS)

STORIES: TWO (2) PROPOSED, TWO ALLOWABLE PER 2015 MBC TABLE 504.4

HEIGHT: +/-30 FEET FROM CHASE ROAD GRADE, ALLOWABLE=50FT PER 2015 MBC 504.3

TOTAL AREA: 2,100 GROSS S.F. PER FLOOR (TOTAL 4,200 S.F.), 9,000 S.F. ALLOWABLE PER 2015 MBC TABLE 506.2

EGRESS DESIGN OCCUPANT LOAD

(per 2015 MBC Table 1004.1.2)

1st Floor

Garage Parking = 1,642 S.F. / 200 S.F. = 9 OCCUPANTS

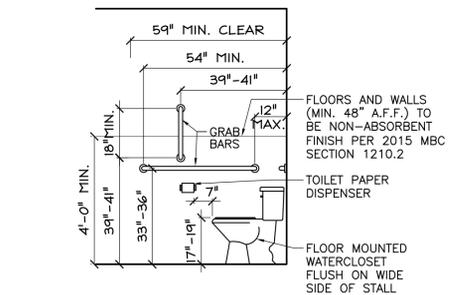
Storage/Mech. = 458 S.F./300 S.F. = 2 OCCUPANTS

2nd Floor

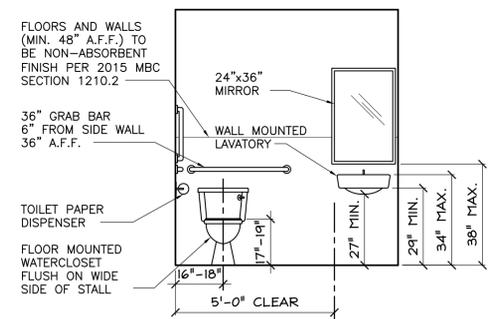
Storage/Mech. = 2,034 S.F./300 S.F. = 7 OCCUPANTS

Totals: 4,134 S.F. 18 OCCUPANTS

NOTE THAT MAX. OCCUPANCY DURING OPERATION WILL BE 15 OR FEWER PERSONS PER TENANT'S AFFADAVIT



2 ACCESSIBLE WATER CLOS.
A-101 SCALE: 3/8" = 1'-0"



1 ACCESSIBLE WATER CLOS.
A-101 SCALE: 3/8" = 1'-0"



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FOUNDATION AND ROOF PLANS

NEW STORAGE/OFFICE BUILDING FOR:
SPECIAL TREE
39165 CHASE ROAD
ROMULUS, MICHIGAN 48174

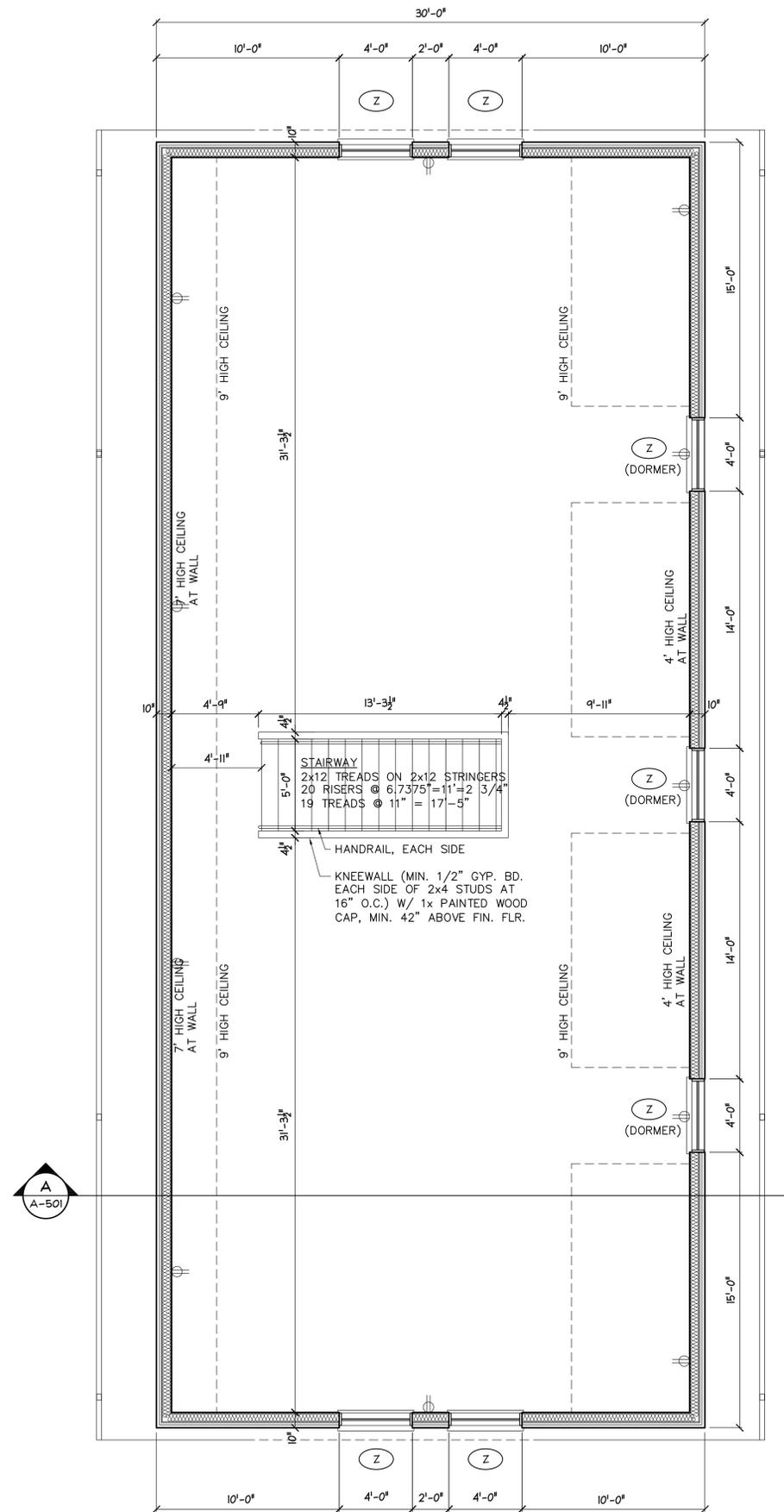
NOT FOR CONSTRUCTION

ISSUE	DATE
SCHEME	May 19, 2023
REVISED	May 23, 2023
REVISED	June 20, 2023
REVISED	July 18, 2023
REVIEW	Dec. 18, 2023

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A-101



2nd FLOOR PLAN
SCALE: 1/4"=1'-0"

WALL LEGEND

VINYL LAP SIDING ON 2" RIGID INSULATION, MOISTURE BARRIER OVER 5/8" WD. SHEATHING ON 2x6 WOOD STUDS AT 16" O.C. W/ BATT INSUL. BETWEEN (MIN. R-13 BATT) INTERIOR TO BE 5/8" GYPSUM BD. (PAINTED) UNLESS NOTED OTHERWISE. BRICK AND AIR SPACE AT EXTERIOR WALL BASE UP TO 48" A.F.F. (SEE SECTIONS 1 & 2 SHEET A-501)

(INTERIOR) 1/2" GYPSUM BOARD (PAINTED UNLESS NOTED OTHERWISE) EACH SIDE OF 2x4 WOOD STUDS AT 16" O.C.. 2nd FLOOR SHALL BE A KNEEWALL MIN. 42" A.F.F. WITH PAINTED 1x WOOD CAP

OPENING SCHEDULE

DOORS

- (A) 12'-0" WIDE X 8'-0" HIGH INSULATED SECTIONAL OVERHEAD DOOR. INSTALL THREE (3) MURPHY 2.0E-3100F LVL HEADER BEAM WITH MIN. THREE (3) JACK STUDS BEARING ON EACH END.
- (B) 3'-0" WIDE X 7'-0" HIGH INSULATED HOLLOW METAL DOOR WITH ALUM. THRESH AND WEATHER STRIPPING

WINDOWS

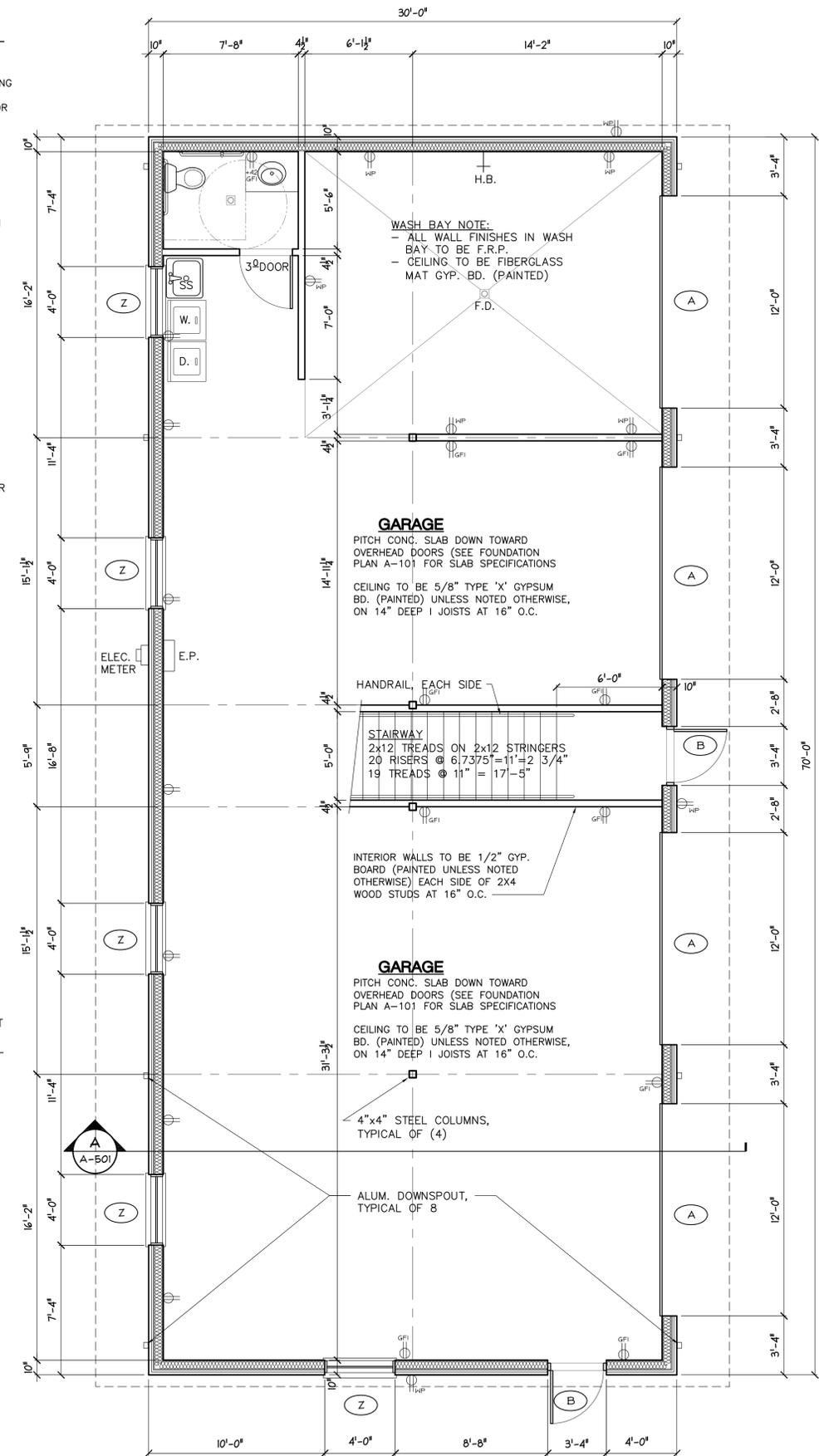
- (Z) 4'-0" WIDE X 3'-0" WIDE OPERABLE DOUBLE HUNG WINDOW. TOP OF HEADER SHALL BE AT 7'-0" A.F.F. EXCEPT DORMER WINDOWS TO BE AT 8'-8" A.F.F.

SYMBOL LEGEND

- ⊕ 110 VOLT DUPLEX RECEPTACLE (18" A.F.F. UNLESS NOTED OTHERWISE)
- ⊕ 110 VOLT DUPLEX RECEPTACLE W/ GROUND FAULT INTERRUPTION
- ⊕ 110 VOLT DUPLEX RECEPTACLE IN WEATHER-PROOF HOUSING W/ GROUND FAULT INTERRUPTION

GENERAL ELECTRICAL NOTES

1. ALL OUTLETS WITHIN 72" OF PLUMBING FIXTURES SHALL HAVE GROUND FAULT INTERRUPTOR CIRCUIT (GFI) AS REQUIRED BY NEC. ALL EXTERIOR OUTLETS AND OUTLETS IN WASH BAY AREA SHALL BE WATERPROOF WITH GFI.
2. LOCATE EMERGENCY EGRESS LIGHTING AND EXIT SIGNAGE, IF REQUIRED, TO MEET 2015 MBC SECTIONS 1008 AND 1013.



GROUND FLOOR PLAN
SCALE: 1/4"=1'-0"



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FLOOR PLANS

NEW STORAGE/OFFICE BUILDING FOR:
SPECIAL TREE
39165 CHASE ROAD
ROMULUS, MICHIGAN 48174

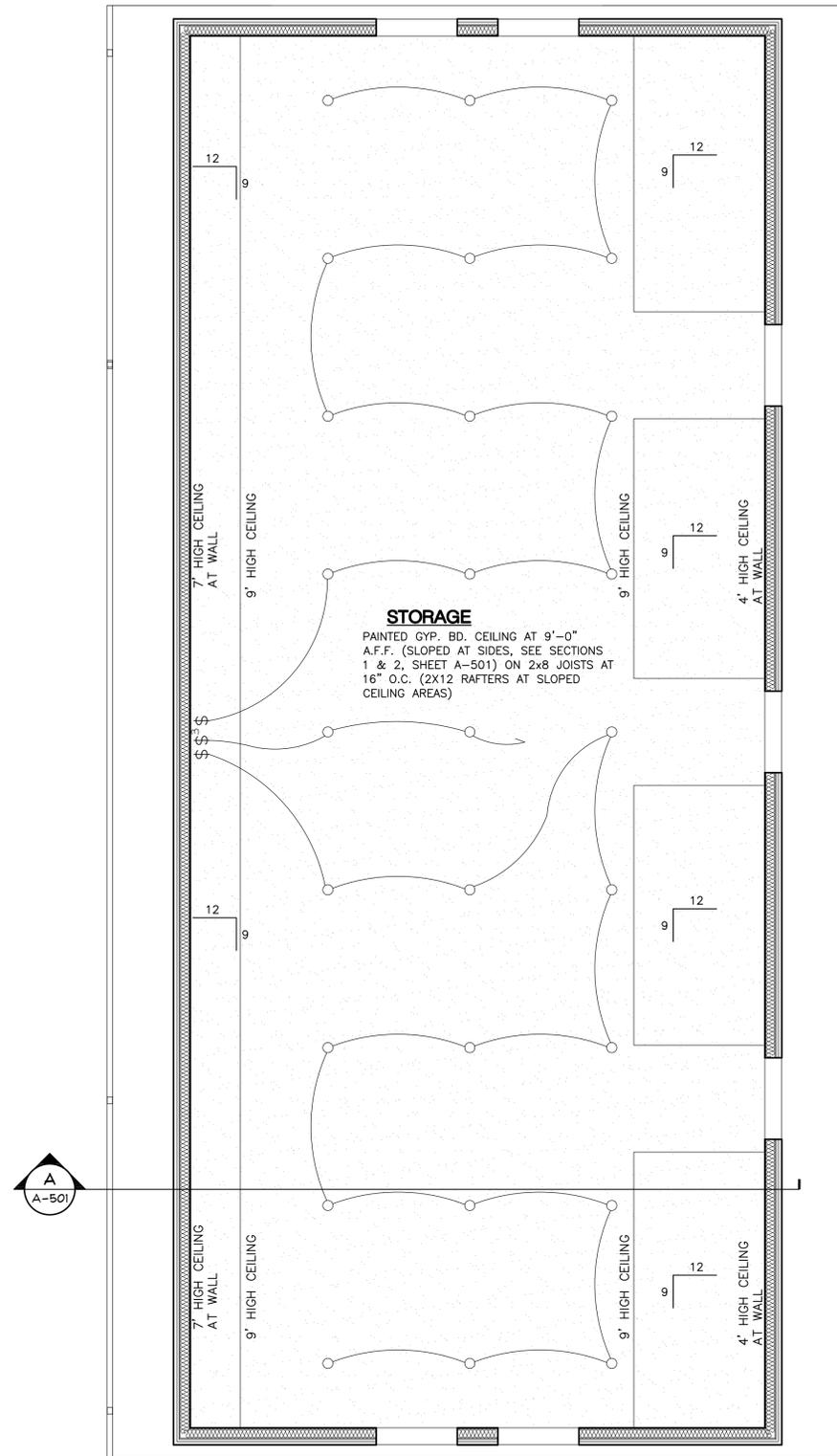
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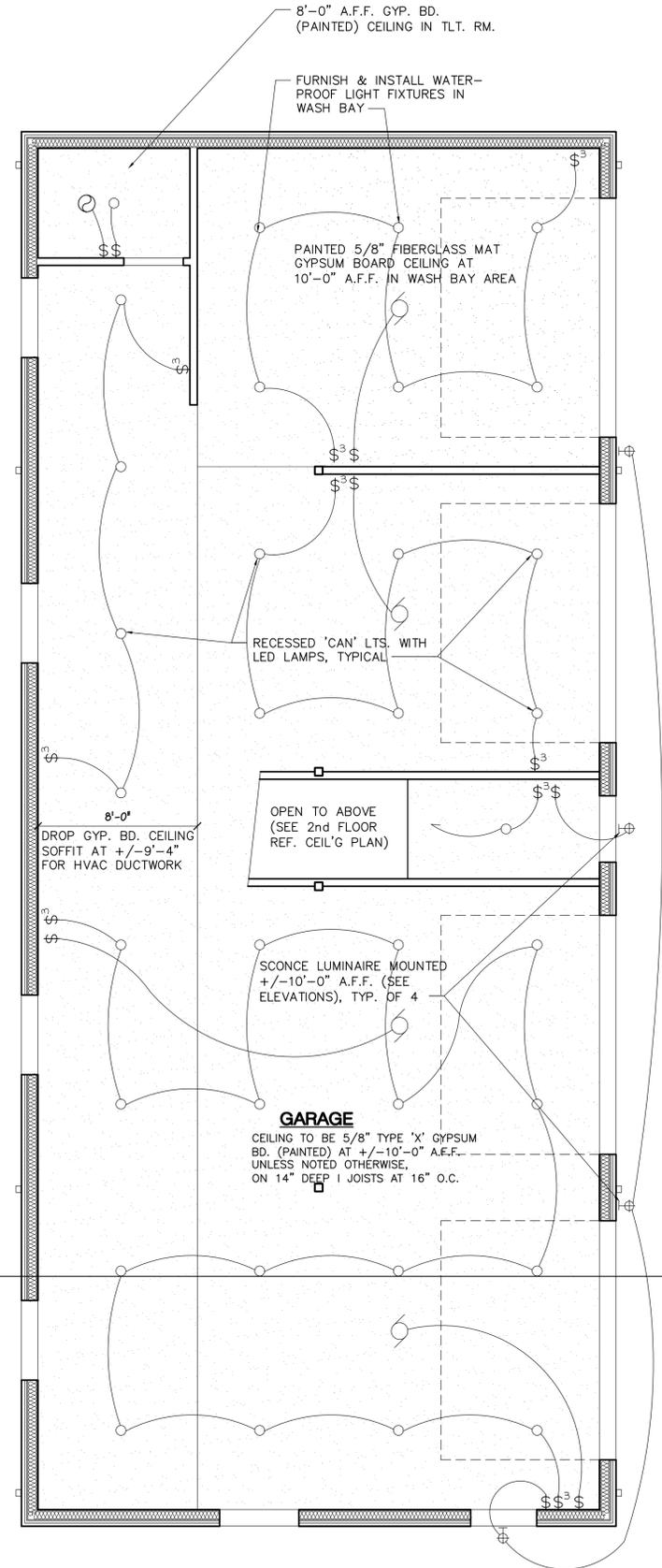
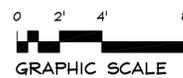
A-201



2nd FLOOR PLAN
SCALE: 1/4"=1'-0"

SYMBOL LEGEND

- NEW GYPSUM BOARD CEILING (UNLESS NOTED OTHERWISE) AT +/-10'-0" A.F.F. IN GARAGE AREAS AND 9'-0" A.F.F. ON 2nd FLOOR (UNLESS NOTED OTHERWISE)
- 6" DIA. RECESSED 'CAN' LIGHT WITH LED LAMP. INSTALL WATERPROOF FIXTURES IN WASH BAY
- WALL MOUNTED SCONCE LUMINAIRE
- MOTOR (CEILING MOUNTED GARAGE DOOR OPENER)
- EXHAUST FAN
- SINGLE POLE SWITCH, LIGHT SWITCHES SHALL BE 0-10V DIMMING CONTROLS AND HAVE OCCUPANCY/VACANCY SENSOR SET TO AUTOMATICALLY TURN ON AT 70% (WITH MANUAL ADJUSTMENT CONTROLS)
- DOUBLE POLE (3-WAY) LIGHT SWITCH AS NOTED FOR LIGHT SWITCHES ABOVE



GROUND FLOOR PLAN
SCALE: 1/4"=1'-0"

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A-301

REFLECTED CEILING PLANS

NEW STORAGE/OFFICE BUILDING FOR:
SPECIAL TREE
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ROMULUS, MICHIGAN 48174

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BUILDING ELEVATIONS

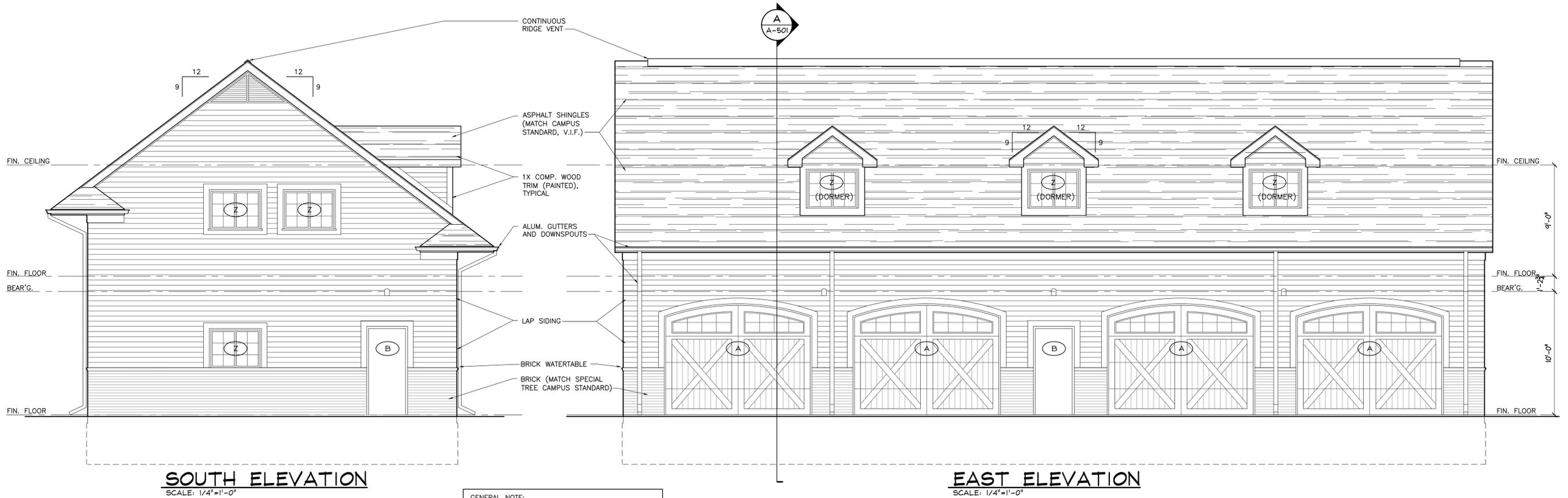
NEW STORAGE/OFFICE BUILDING FOR:
 SPECIAL TREE
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 ROMULUS, MICHIGAN 48174

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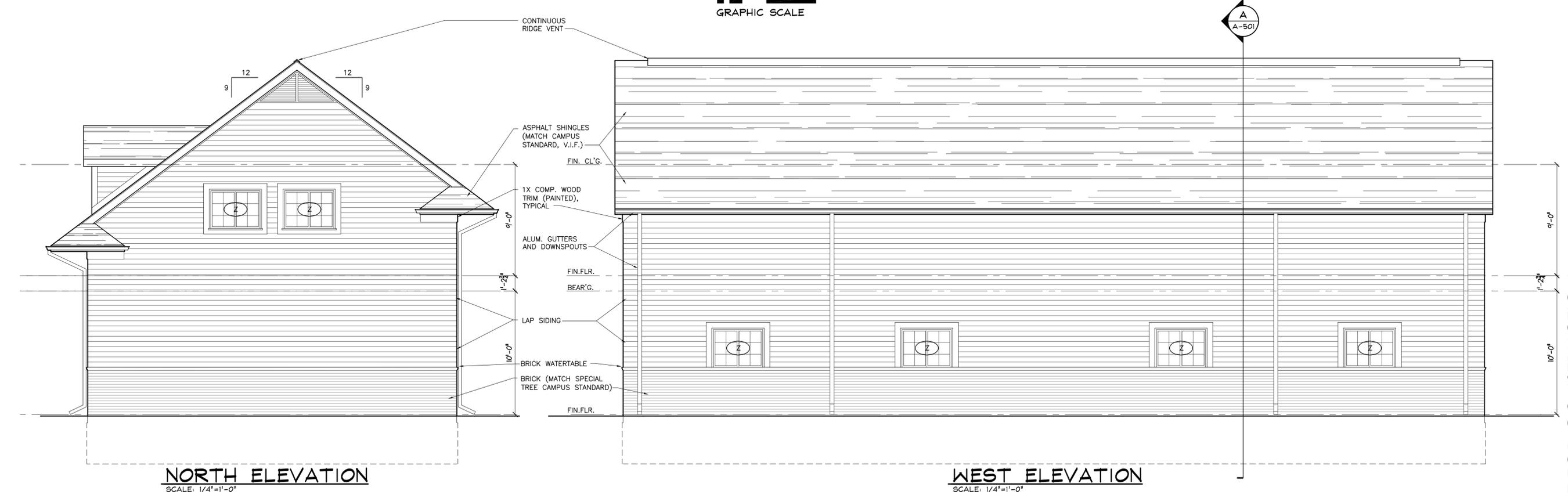
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DRAWN BY: JUN
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A-401



GENERAL NOTE:
 -PROVIDE HIGH TEMP. ICE & WATER SHIELD AT ALL EAVES & VALLEYS. ICE SHIELD AT EAVES SHALL EXTEND A MINIMUM OF 24" HORIZONTAL FROM INSIDE FACE OF EXTERIOR WALLS (SEE WALL SECTIONS)



SOUTH ELEVATION
 SCALE: 1/4"=1'-0"

EAST ELEVATION
 SCALE: 1/4"=1'-0"

NORTH ELEVATION
 SCALE: 1/4"=1'-0"

WEST ELEVATION
 SCALE: 1/4"=1'-0"



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BUILDING SECTIONS & DETAILS

NEW STORAGE/OFFICE BUILDING FOR:
SPECIAL TREE
39165 CHASE ROAD
ROMULUS, MICHIGAN 48174

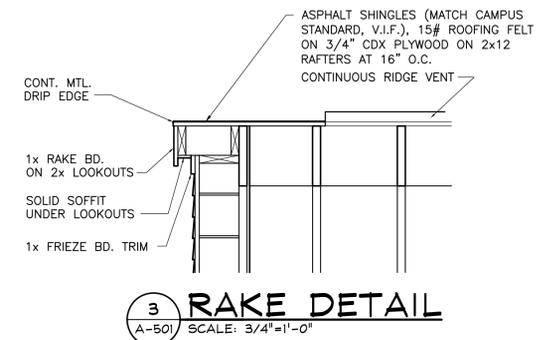
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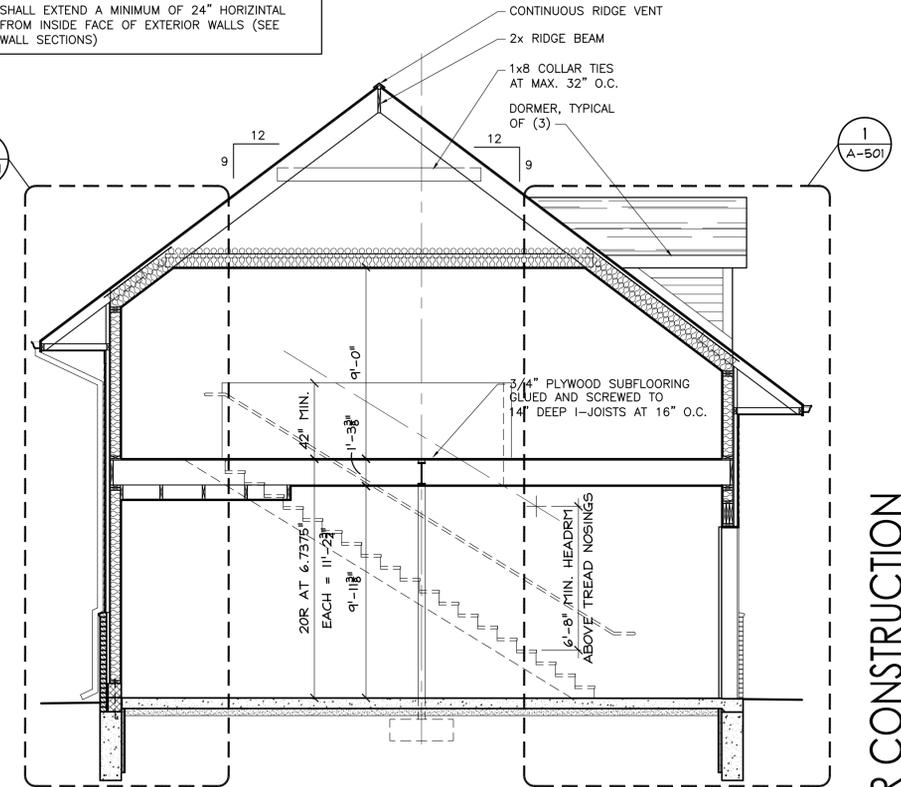
A-501

NOT FOR CONSTRUCTION

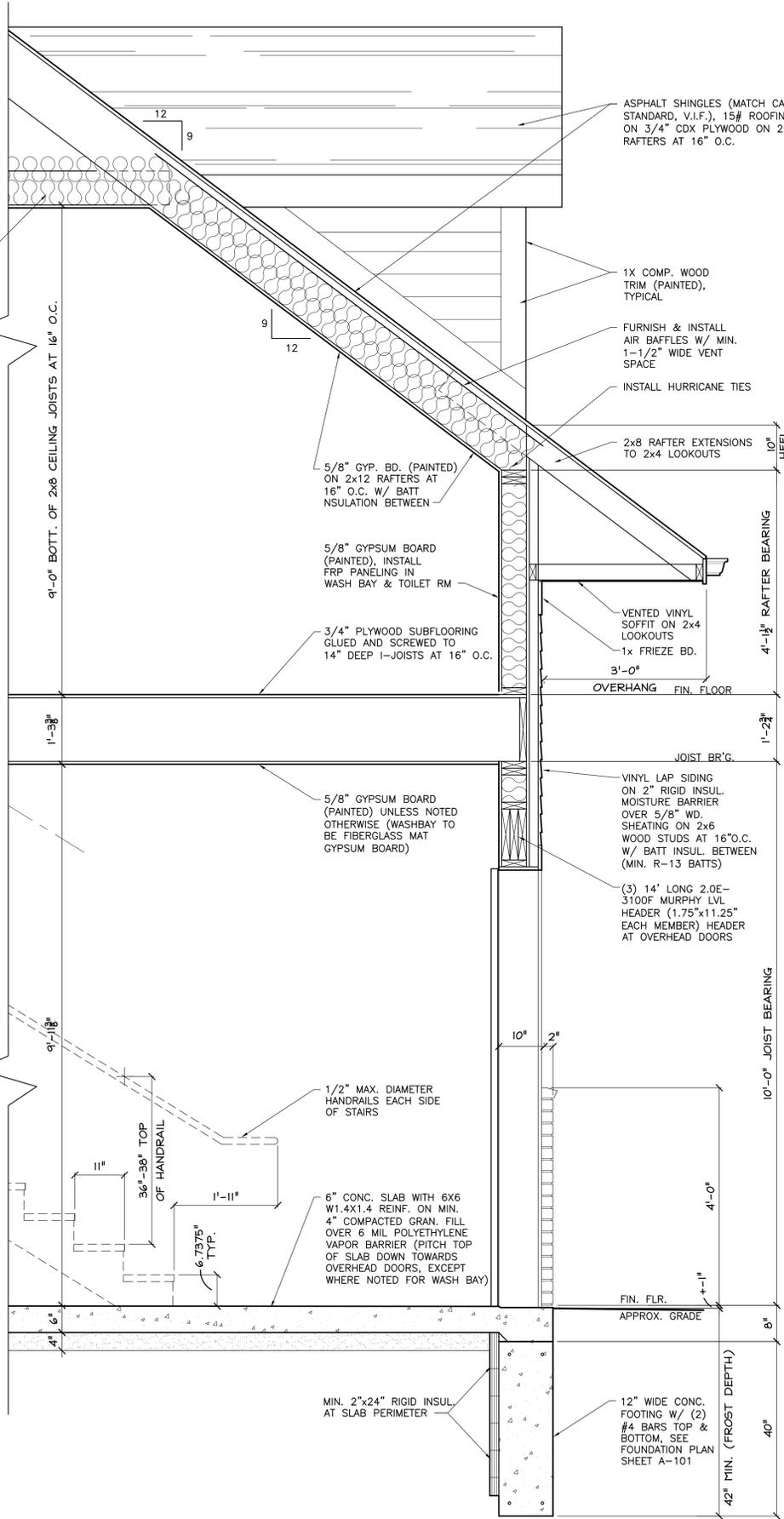


3 RAKE DETAIL
SCALE: 3/4"=1'-0"

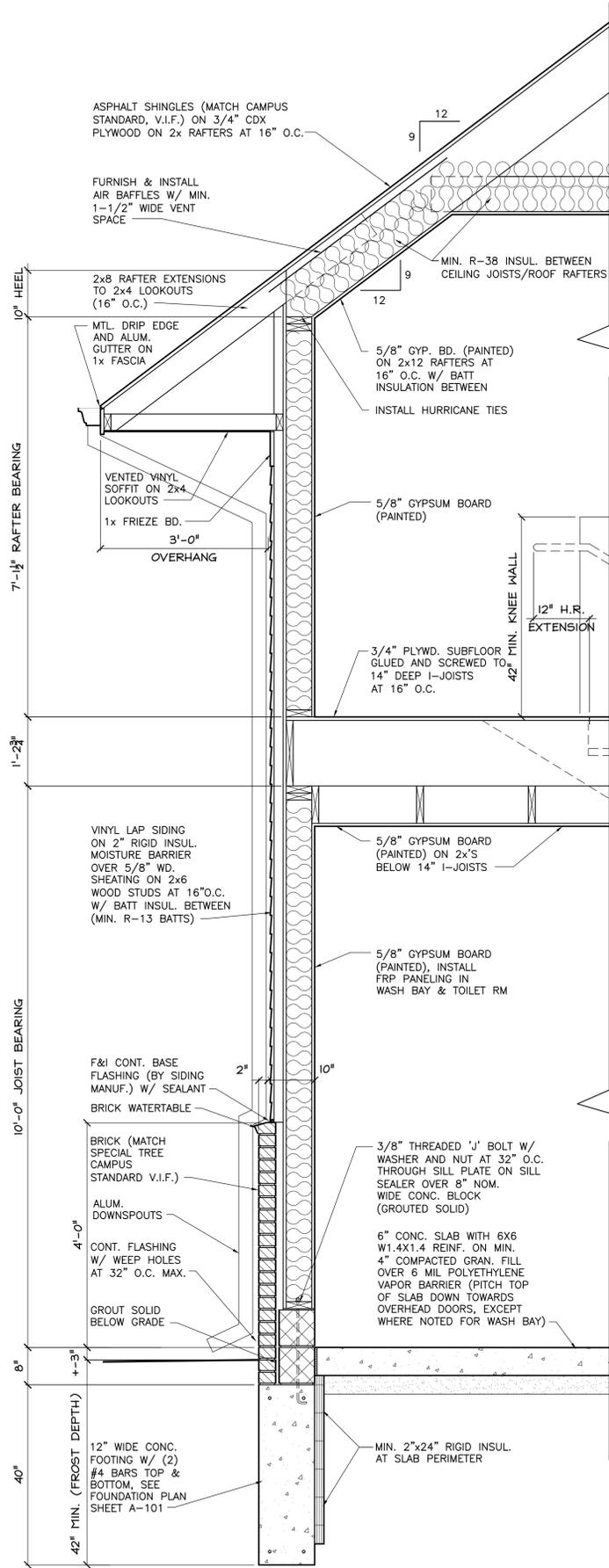
GENERAL NOTE:
-PROVIDE HIGH TEMP. ICE & WATER SHIELD AT ALL EAVES & VALLEYS. ICE SHIELD AT EAVES SHALL EXTEND A MINIMUM OF 24" HORIZONTAL FROM INSIDE FACE OF EXTERIOR WALLS (SEE WALL SECTIONS)



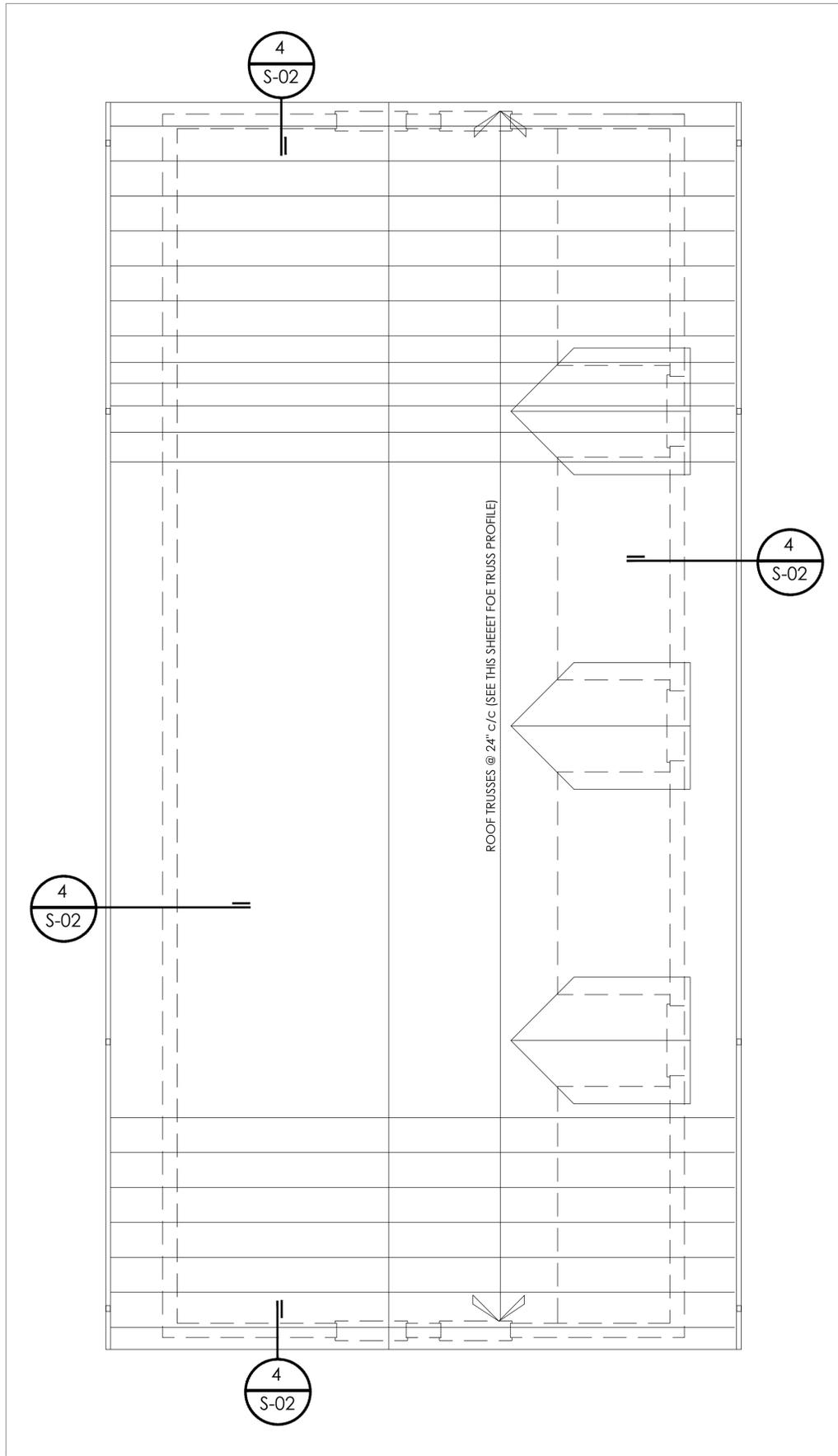
A BUILDING SECTION
SCALE: 1/4"=1'-0"



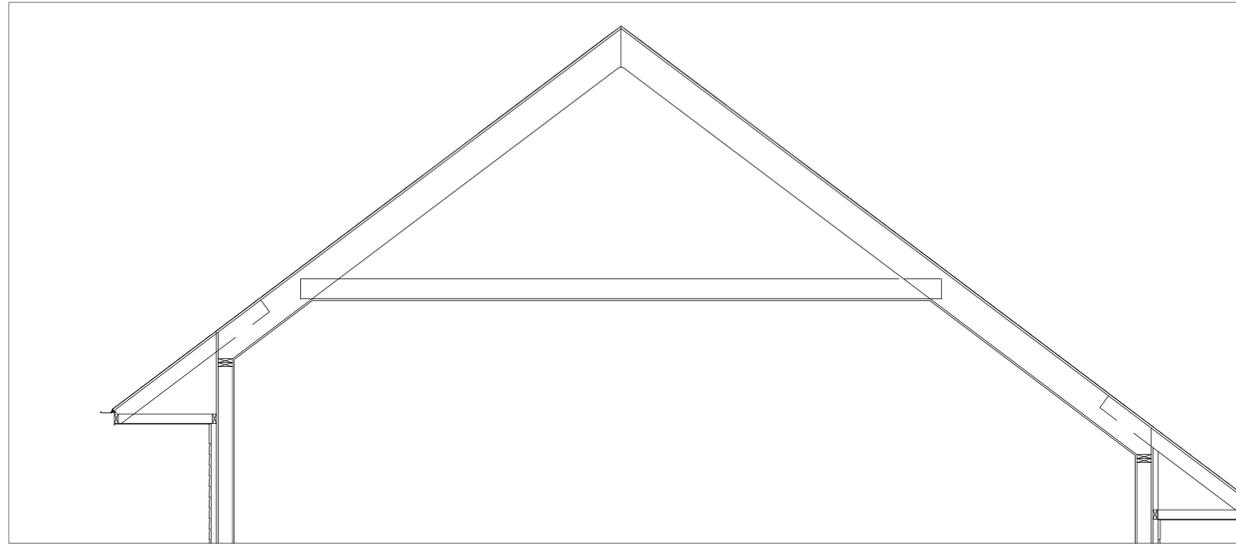
1 WALL SECTION
SCALE: 3/4"=1'-0"



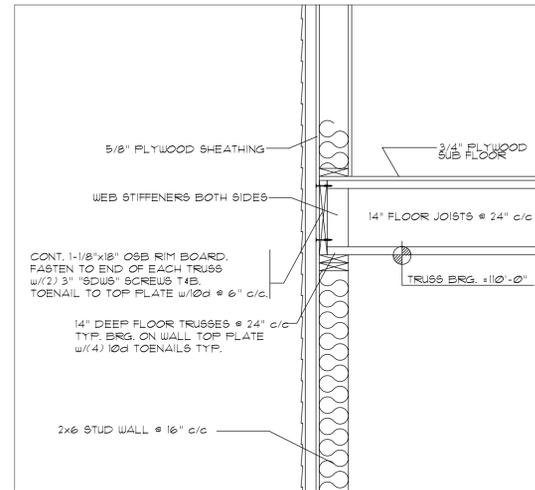
2 WALL SECTION
SCALE: 3/4"=1'-0"



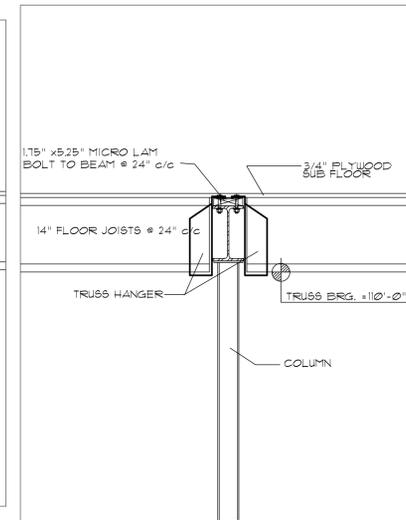
ROOF FRAMING PLAN



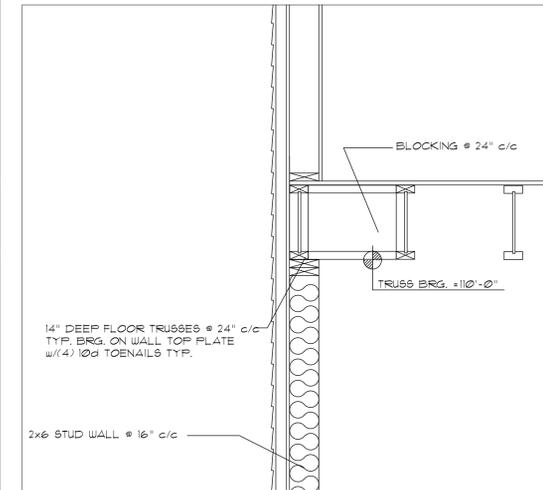
ROOF TRUSS PROFILE



**SECTION 6
S-01**



**SECTION 5
S-01**



**SECTION 4
S-01**

PARADIS and ASSOCIATES, INC.
 CONSULTING ENGINEERS
 STRUCTURAL ENGINEERS
 1000 WOODWARD AVE. SUITE 1110 BIRMINGHAM, MI 48009
 ROCHESTER, MI 48307
 Email: email@paradisae.com



smith + schurman associates, inc.
 architects • planners • interior designers
 280 N. OLD WOODWARD AVE. SUITE 1110 BIRMINGHAM, MI 48009
 telephone: 248/332-3140 fax: 248/332-3277

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ISSUE	DATE
REVIEW	02-06-24

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DRAWN BY: GOP
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 JOB NO: 23-9271
 SHEET NUMBER:
S-02

STRUCTURAL
 NEW STORAGE/OFFICE BUILDING FOR:
 SPECIAL TREE
 39165 CHASE ROAD
 ROMULUS, MICHIGAN 48174

MASONRY NOTES:

Contractor & all sub-trades are responsible for reviewing & complying with all applicable specifications contained herein. Where discrepancies occur between design drawings and these notes, design drawing specifications are to supersede.

GENERAL WORKMANSHIP:

A: All work shall be in compliance with the latest building code requirements for masonry structures, Michigan Building Code 2003, ACI 530/ASCE 5/TMS402 and specifications for masonry structures ACI 530.1/ASCE 6/TMS 602 and N.C.M.A. specifications.

B: The masonry contractor is responsible for the design and placement of all temporary shoring necessary for the stability of masonry structures during construction and prior to the completion of the project as shown in it's entirety in the construction documents.

C: All masonry below grade or fin. slab on grade shall be solid or have cores grouted solid.

D: Interior walls to be tied to the buildings structural steel at the top of the wall @ 48" c/c max. with a connection capable of min. 1" vert. deflection. Verify connection detail with Engineer.

MATERIALS:

A: All mortar shall be type "M" or "S".

B: All concrete masonry units shall conform to the latest version of the following:
ASTM C 90 for load bearing or reinforced concrete units.
ASTM C 744 for prefaced concrete and calcium silicate units.
ASTM C 55 Grade N for concrete brick, i.e. split face.
ASTM C 73 for calcium silicate face brick.

C: All clay or shale facing brick shall conform to ASTM C 216. All clay or shale hollow brick shall conform to ASTM C 652.

D: All masonry shall develop a 28 day minimum prism strength $f_m = 1500$ psi.

E: All reinforcing bars dowels, and ties shall conform to A.S.T.M. A615 grade 60. Reinforcing steel shall be continuous and have a minimum 50 bar diameter lap and be placed in accordance with ACI 530/ASCE 5/TMS402.

VERT. REINFORCEMENT:

A: All reinforcement to be #5 bars U.N.O. All bars to be placed in middle of fully grouted cell. Bars to be cont. & lapped spliced min. 31". Wire bars in place to maintain position during grouting.

B: All masonry vert. steel shall be lapped cont. & doweled into footings.

C: All interior C.M.U. and all exterior above grade C.M.U. walls up to 14'-0" in height shall have vertical reinforcing of @ 48" c/c. All masonry walls exceeding 14'-0" in height are to be reinforced. See structural details for specifics.

D: All C.M.U. walls are to have additional reinforced cells adjacent to all interruptions in the continuity of the wall, (i.e. door openings, control joints, ends of walls, etc.). Such additional reinforcement is to be of the same size vert. steel typical to that wall. Locate min. (1) reinforced cell located within 8" of all wall ends & corners & within 8" each side of control joints. For all openings provide one reinforced cell not obstructed by lintel within 16" of edge of opening plus one additional reinforced cell per side for each 4'-0" of opening width (round up to nearest number).

HORZ. REINFORCEMENT:

A: Provide Dur-O-Wall 9 gauge "Ladur" type horz. C.M.U. wall reinforcement w/16" c/c cross-rod spacing. All horz. reinforcement to be lap spliced continuous btwn. control joints. Splices to share one cross rod + min. 8" of side rods each side. Typical placement to be 16" c/c vert. Above all C.M.U. openings over 7'-4" wide place additional horz. reinforcement @ 8" c/c vert. Additional reinforcement to be continuous from control joint on one side to min. 32" past edge of opening on other side.

B: All masonry bond beams are to have (2) #5 bars cont. Bars are to be lap spliced 32" min., be placed @ mid-height in course & have 1/2" grout cover to face shell. Wire bars in place to maintain position during grouting. Bond beams are to be continuous through control joints U.N.O.

C: All control joints are to be typ. "Michigan" shear type with strecher block head joint grouted solid. All control joints are to have min. (1) reinforced cell located within 8" each side of joint.

OPENINGS:

B: For all openings provide one reinforced cell not obstructed by lintel within 16" of edge of opening plus one additional reinforced cell per side for each 4'-0" of opening width (round up to nearest number).

C: For masonry openings up to 4'-0" wide provide (1) L4x3-1/2x1/4 for 4" masonry, (2) L4x3-1/2x1/4 for 8" C.M.U. & (2) L5x5x5/16 for 12" C.M.U. Provide 4" length of bearing each end on min. & grout solid min. 8" below.

D: For masonry openings up to 7'-4" wide provide (1) L6x3-1/2x3/8 for 4" masonry, (2) L6x3-1/2x3/8 for 8" C.M.U. & (2) L5x5x3/8 for 12" C.M.U. Provide 4" length of bearing each end on min. & grout solid min. 24" below.

STEEL BEARING:

A: All steel beams bearing on masonry other than loose angles shall have 8" of bearing past edge of masonry on 1/2" thk. bearing plate. Plate width to be 1-1/2" less than nominal width of C.M.U. Plate to be embedded w/(2) 3/4"x6" headed shear studs. Grout solid below brg. plate to foundation below. Provide min. (2) reinforced cells directly adjacent to brg. plate continuous from foundation to top of masonry. Beam to be fastened to brg. plate w/(2) 3/4" threaded shear studs welded to plate through long slotted holes in bottom flange of lintel. Lintel shelf plates are to be sttich welded to beam w/1/4" x 2" fillet @ 12" c/c - both sides.

B: Where joists bear on masonry provide steel bearing plates w/(2) 1/2"x6" headed shear stud anchors embedded btwn. horz. steel in cont. bond beam. For "K" series use 4"x6"x3/8" plates & for "LH" series use 6"x9"x3/8". Plate edge to be located within 1/2" of face of wall. Weld joists to bearing plates as follows, K-Series min. (2) 1/8"x1" long fillet welds. LH-Series min. (2) 1/4"x2" long fillet welds.

C: Where joist girders bear on masonry provide steel bearing plates w/(2) 3/4"x6" headed shear studs embedded btwn. horz. steel in cont. bond beam. Use 6"x12"x3/4" plate. Plate edge to be located within 1/2" of face of wall. Weld girder to bearing plates w/min. (2) 1/4"x3" fillet welds. Provide min. (2) reinforced cells directly below girder brg. plate cont. to foundation.

MASONRY GROUTING GUIDE:

Slump: 8" - 11".
Compressive strength: 2000 psi min.

Preparations for grouting:

Cleanouts:	Required if pour height exceeds 5'-0", 3" x 3".
Cleanouts Size:	In bottom course at each vertical bar or 32" c/c max. if wall grouted solid.
Cleanouts Spacing:	

Grout Consolidation:

Pour height 12" or less:	Mechanical vibration or puddling.
Pour height greater than 12":	Mechanical vibration and reconsolidate after water loss and settlement.

PREFABRICATED WOOD TRUSS NOTES:

Contractor & all sub-trades are responsible for reviewing & complying with all applicable specifications contained herein. Where discrepancies occur between design drawings and these notes, design drawing specifications are to supersede.

LOADING CRITERIA: (Not including truss self weight)

A: Roof Trusses shall be designed for the following loading:
Top chord live load: 25 psf
Top chord dead load: 5 psf
Bottom chord dead load: 7 psf
Wind uplift: Per A.S.C.E. 7-10
Roof equipment: As shown on plans
Live Load Deflection: L/360

B: FloorTrusses shall be designed for the following loading:

C: Truss manufacturer shall design and provide all truss to truss connections, including valley framing hold downs.

B: Total load deflections shall be limited to l/240. Truss top and bottom chords and web members requiring permanent lateral bracing to be fabricated of wood having a min. specific gravity of 0.42.

C: Truss manufacturer shall design and provide all headers and special trusses required to support roof top equipment and to frame roof openings. Connections between headers and trusses shall be designed by the manufacturer.

D: Truss manufacturer shall design and provide all headers and special trusses required to support roof top equipment and to frame roof openings. Connections between headers and trusses shall be designed by the manufacturer.

WORK INCLUDED:

A: Manufacture, supply and erect wood trusses as shown on the drawings and as specified. Work to include anchorage, blocking, curbing, miscellaneous framing, temporary & permanent bracing.

DESIGN:

A: Trusses shall be designed in accordance with these specifications and where any applicable design feature is not specified herein, design shall be in accordance with applicable provisions of latest edition of National Design Specifications for Wood Construction (NDS), American Forest and Paper Association (AFPA), and Design Specifications for Metal Plate Connected Wood Trusses (ANSI/TPI 1), Truss Plate Institute (TPI), and code of jurisdiction.

B: Manufacturer shall furnish truss design drawings bearing the seal and registration number of registered engineer licensed in the state where trusses are to be installed.

C: Truss Manufacturer shall furnish a Truss Placement Plan which shall provide at a minimum the location assumed for each truss based on the Truss Manufacturer's interpretation of the Building Structural System Design Documents.

D: Truss drawings shall be approved by Architect and/or Engineer-of-Record prior to manufacture.

E: The Truss Design Drawings shall include as minimum information:

- Slope or depth, span, and spacing.
- Location of all joints.
- Required bearing widths.
- Design loads as applicable:
 - Top chord live load (including snow loads).
 - Top chord dead load.
 - Bottom chord live load.
 - Bottom chord dead load.
 - Concentrated loads and their points of application; and
 - Controlling wind and earthquake loads expressed in units of force per unit area.
- Adjustments to lumber and metal connector plate design values for conditions of use.
- Each reaction force and direction.
- Metal connector plate type, size, thickness or gauge, and the dimensioned location of each metal connector plate except where symmetrically located relative to the joint interface.
- Lumber size, species, and grade for each member.
- Connection requirements for: (a) truss to truss girder; (b) truss ply to ply; and (c) field assembly of trusses.
- Calculated deflection ratio or maximum deflection for live and total load.
- Maximum axial compression forces in the truss members to enable the building designer to design the size, connections, and anchorage of the permanent continuous lateral bracing.
- The approximate location for continuous lateral permanent bracing of truss members subject to buckling due to compression forces.

MATERIALS & HANDLING:

A: Handle & brace during installation in accordance with Building Component Safety Information (BCSI 1-03), TPI, and ANSI/TPI 1-2002, and all applicable state and federal regulations. Installation shall be consistent with good workmanship and good building practices and shall be responsible of Truss Installer.

B: Lumber used shall be identified by grade mark of a lumber inspection bureau or agency approved by board of review of American Lumber Standards Committee, and shall be the size, species and grade in accordance with the truss design drawings.

C: Moisture content of lumber shall be no less than 7 percent nor greater than 19 percent at time of fabrication.

D: Connector plates shall be manufactured by a WTCA member plate supplier and shall meet or exceed ASTM A653/A653M requirements for structural steel.

E: Concentrated loads shall not be placed on top of trusses until all specified bracing has been installed and decking is permanently nailed in place. Specifically avoid stacking full bundles of plywood or other concentrated loads on top of trusses.

F: Trusses shall be set and secured level and plumb, and in locations indicated on manufacturer's Truss Placement Plan. All required permanent truss member bracing and blocking shall be installed as indicated on the truss design drawings and the building design drawings.

G: Cutting and altering of trusses is not permitted. If any truss should become broken, damaged, or altered, written concurrence and approval by a licensed design professional is required.

FASTENING:

H: Connect trusses to bearing wall top plate or steel beam nailer at each end with a Simpson type H3 hurricane tie. Toenail truss to plate w/(4) nails.

I: Provide solid 2x blocking btwn. top plate & roof sheathing in every truss space over shear walls & every 2nd truss space elsewhere. Nail each block to truss studs w/(3) each end & toenail to plate w/(6). Nail roof sheathing to top of blocking w/(5) nails each block.

J: Trusses occurring over header openings to bear directly on cripple studs.

STRUCTURAL WOOD NOTES:

Contractor & all sub-trades are responsible for reviewing & complying with all applicable specifications contained herein. Where discrepancies occur between design drawings and these notes, design drawing specifications are to supersede.

STRUCTURAL LUMBER:

A: All dimensional lumber framing members shall be stress grade rated No. 2 or better & identified by grade mark of a lumber inspection bureau or agency approved by board of review of American Lumber Standards Committee.

B: All structural lumber framing members are to be of the following species groups only: Southern Pine, Mixed Southern Pine, Douglas Fir-Larch, Douglas Fir, Hem-Fir & Spruce-Pine-Fir (North). Do not use Spruce-Pine-Fir (South or mixed grade). Sill plates bearing on concrete or masonry shall be Southern Pine No. 2 grade preservative-treated wood rated for "Above Ground" use only.

C: All lumber for exterior above grade use shall be preservative-treated wood for rated for "Above Ground" use only. All lumber for use in direct contact with or below grade shall be preservative-treated wood for rated for "Ground Contact" only.

FASTENERS:

A: All nails referred to in structural notes and plans are to be full round head nails with a min. shank diameter of 0.131" and a length sufficient for a min. of 1-3/8" penetration into base material. All nail heads are to be driven flush with surface.

B: All fasteners in contact with "Above Ground" preservative-treated wood (i.e. sill plates) and fire-retardant-treated wood shall be hot-dipped galvanized steel, & shall meet or exceed A.S.T.M. A-153 class D specifications.

EXT. WALL SHEATHING:

A: Wall panels to be APA span rated sheathing, exposure 1. Install in a min. 2-span condition. Use min. 40/20 span rating. Panels may be installed in vertical position.

B: Nail edges @ 6" c/c & 12" c/c field. Nail to upper top plate & sill plate @ 6" c/c. Nails to be installed 3/8" from panel edge.

ROOF SHEATHING:

A: Roof panels to be APA span rated sheathing, exposure 1. Use min. 40/20 span rating for 24" spans.

B: All roof members to be fully sheathed, including beneath valley trusses. Roof to be fully blocked to support all panels panel edges.

C: Roof panels to be placed in a staggered pattern w/panel strength axis perpendicular to supports & in a min. 2-span condition. Adjacent panel edges are to be nailed to a single common member, i.e. do not center panel edges btwn. double trusses.

D: Nail all panel edges @ 6" c/c, including blocking, and field nail @ 12" c/c over all intermediate supports, i.e. nail both top chords of double trusses. Nail to top plate, perimeter blocking over top plate, and/or gable end truss top chords @ 4" c/c.

E: Roof panels to be installed with a 1/8" gap btwn. adjacent panels all (4) sides.

EXTERIOR WALLS & INT. LOAD BEARING WALLS:

A: Bearing walls are assumed to fully sheathed & braced top & bottom before load is in place. If load is placed upon wall prior to this contractor is responsible for design and installation of lateral bracing of individual studs and wall as a whole. Studs to be end nailed to top plate w/(3). End nail to sole plate w/(3) or toenail w/(4).

B: Face nail all jack studs to king studs, king studs to king studs & built-up headers together @ 8" c/c.

C: BEARING WALL HEADERS:
Verify w/structural drawings.

SHEAR WALLS, INT. OR EXT.:

A: Stud spacing to be same as typical exterior wall. Walls to be fully sheathed (1 side) with min. 23/32" APA rated wood sheathing panels.

B: Panels to be same type as typical exterior wall.

C: Wall to be fully blocked at all horz. panel joints for edge nailing. Strength axis either direction, min. 2 - span condition. Adjacent panel edges are to be nailed to a single common member, i.e. do not center edges btwn. adjacent studs. Sheathing to be continuous to within 1/8" of top of top plate and bott. of sill plate.

D: Nail all panel edges @ 4" c/c and field nail @ 12" c/c over all intermediate supports. Nail to upper top plate & sill plate @ 4" c/c. Nail to hold-down end posts @ 4" c/c. If built-up end post is used, stagger nails evenly between plies.

E: Shear walls shall have end post at each end consisting of (2)-2x(typ. wall width), stitch nail together w/(2) rows @ 6" c/c. Each end post shall have 1 Simpson HDU5 hold-down installed per manufacturer's specs. Hold-downs to be set flush with sill plate with tar paper barrier between sill & bottom of hold down. Secure hold down to foundation w/5/8" dia. fully threaded anchor rod w/min. 8" embedment into concrete footing & set in place with Simpson SET epoxy-tie system. Prep hole per manuf. spec.

SILL PLATES, TOP PLATES & NAILERS:

A: All sill plates bearing on concrete or masonry shall be Southern Pine or Mixed Southern Pine No. 2 grade preservative-treated wood rated for "Above Ground" use only. Fasten to base material with post installed 1/2"x6" Screw Anchors screw anchors. Do not over drill holes. Anchors to be installed in center of plate. If fastening to cmui install in solid grouted cells only. Space anchors @ 24" c/c in all shear walls. @ 32" c/c in typical ext. walls, & @ 48" c/c in all non-shear interior bearing walls. Place anchors within 12" each end of all individual sill plate member ends. Place anchors within 4" each side of every doubled king stud (2 total) .

B: Top plates to be continuous and consist of 2-2x(typ. wall width). Fasten plate together @ 4" c/c staggered. Stagger lap splices min. 5'-0" & fasten together w/min. (15) nails each splice. All splice joints to bear directly over wall stud. All interior bearing wall intersections with exterior walls are to be tied with min. 20 ga. splice plate w/(6) nails each side of splice, do not interrupt exterior top plate. Corners may be tied with plate or lap spliced w/(6) nails.

C: All wood nailers indicated on top of steel supports are to be fastened to steel w/3/8" thru bolts @ 24" c/c in pre drilled holes staggered side-to-side.

CONCRETE NOTES:

Contractor & all sub-trades are responsible for reviewing & complying with all applicable specifications contained herein. Where discrepancies occur between design drawings and these notes, design drawing specifications are to supersede.

A: Measuring, mixing and placing of concrete shall be in accordance with ACI 304.

B: Protection and curing of concrete shall be in accordance with ACI 305, 306 and 308.

C: All pertinent sections of ACI 318 shall apply.

D: Reinforcing steel shall be fabricated and placed in accordance with the ACI 315.

E: All reinforcing steel shall be ASTM A615 Grade 60, deformed in accordance with ASTM 305, unless otherwise noted.

F: Step all footings at a ratio of (2) horizontal to (1) vertical.

G: All footings to rest on undisturbed soil.

H: In concrete piers provide (8) #7 vert. bars [(3) each face] w/#4 ties @ 12" c/c max. Ties to be 2" from top & bott. of pier.

I: All columns & baseplates are to be fully encased in concrete from fin. floor to top of footing. Provide isolation joint encompassing entirety of base plate btwn. column pour & fin. floor slab.

CONCRETE MIX GUIDE

CLASS OF CONCRETE	MIN. 28 DAY STRENGTH (PSI)	MAX. W/C RATIO	NOM. AGGR. SIZE	MIN. CEMENTITIOUS MATERIAL CONTENT PER CUBIC YARDS	S L U M P	AIR CONT. %
STANDARD EXPOSED CONCRETE	4500	0.45	3/4" 1-1/2"	6-1/4 5-3/4	611 541	3" 4" 6 5-1/2
STANDARD FLOOR CONCRETE**	4000	0.55	3/4" 1-1/2"	6 5-1/2	564 517	3" 4-1/2 4-1/2
STANDARD FOUNDATION CONCRETE	3000	0.60	3/4" 1-1/2"	5-1/2 5-1/4	517 494	3" 2 1
STANDARD CONCRETE TOPPING	3500	0.60	3/8" PEA GRAVEL	6	564	4" 1 2

* INDIVIDUAL CEMENTITIOUS MATERIAL CONTENT TO BE LIMITED TO LEVELS GIVEN IN TABLE 1904.2.3 OF MICHIGAN BUILDING CODE.

CEMENTITIOUS MATERIAL CONTENT MAY BE REDUCED BY 1/2 BAG PER CU. YD. FOR UNREINFORCED MASS CONCRETE.

** OMIT AIR ENTRAINING AGENT IN HARDENED SLABS.

STEEL NOTES:

Contractor & all sub-trades are responsible for reviewing & complying with all applicable specifications contained herein. Where discrepancies occur between design drawings and these notes, design drawing specifications are to supersede.

STRUCTURAL STEEL:

A: All structural steel work shall be in accordance with the latest A.I.S.C. specifications for the design, fabrication and erection of structural steel for buildings.

B: Material Specifications:

- All W-shape structural steel shall conform to ASTM A992.
- All miscellaneous structural steel such as C-shapes, Angles and those not specifically listed shall conform to ASTM A36 or ASTM A572 Grade 50.
- HSS shapes shall conform to ASTM A500 grade B or C.
- Headed Steel Shear Studs shall conform to ASTM A108.

C: Temporary guying and bracing of the structure during erection shall be the responsibility of the ERECTOR. The ARCHITECT and ENGINEER assume no responsibility for the absence, presence or adequacy of any temporary bracing.

D: The design of all structural steel connections shall be the responsibility of the STRUCTURAL STEEL FABRICATOR. Approval of the shop drawings by the ENGINEER shall not constitute approval of the adequacy of any structural steel connections.

E: All columns shall have 1" thick base plates w/(4) 1" dia. headed anchor rods conforming to ASTM F1554 grade 36 specifications w/(1) heavy hex nut tack welded in place to embedded end of each anchor rod. Anchors rods to have 16" embedment in ftg. & 3" projection above base plate.

F: Connections for non-composite beams to be designed for end reactions noted on drawing or 1/2 of total allowable uniform load per A.I.S.C. beam tables if no reaction is given.

G: Connections for composite beams to be designed for end reactions noted on drawing or 2/3 of total allowable uniform load per A.I.S.C. beam tables if no reaction is given.

H: All beams indicated with wood nailers are to have 3/8" threaded shear studs @ 24" c/c staggered for fastening of nailer to beam.

J: Temporary erection seats shall be furnished per the recommendations of the A.I.S.C. publication "Engineering for Steel Construction".

K: The Fabricator shall neither use nor reproduce any part of the Design Drawings as part of the Shop or Erection Drawings without the written permission of this office.

SHORING:

A: All shoring, underpinning, and related activities shall be performed by contractors experienced with commonly accepted safe and effective practices in such matters.

B: Before removal of existing structural supports, shore underpin, etc., all questionable areas in order to maintain structural integrity, and maintain until new structure is in place and all components are fully secured.

DESIGN CRITERIA	
2015 MICHIGAN BUILDING CODE	
(2015 International Building Code & State Amendments)	
ROOF LOAD CRITERIA	
GROUND SNOW LOAD (Pg)	= 25.0 PSF
SNOW EXPOSURE FACTOR (Ce)	= 1.0
SNOW LOAD IMPORTANCE FACTOR (Is)	= 1.0
THERMAL FACTOR (Ct)	= 1.0
FLAT ROOF DESIGN LOAD (Ps)	= 25.0 psf LL
SNOW DRIFT SURCHARGE LOADS	
ROOF LENGTH	LEEWARD PEAKLEEWARD DRIFT SURCHARGE (H)LENGTH (W)
30 ft	23.1 psf 5'-4"
50 ft	40.6 psf 9'-5"
100 ft	51.9 psf 13'-3"
150 ft	10.0 psf 16'-3"
200 ft	19.6 psf 18'-6"
300 ft	34.9 psf 22'-0"
400 ft	107.0 psf 24'-10"
500 ft	117.3 psf 27'-3"
600 ft	126.3 psf 29'-3"
WINDWARD DRIFT VALUES x 0.15	
SEISMIC DESIGN CRITERIA	
SEISMIC IMPORTANCE FACTOR (Ie)	= 1.0
SEISMIC RISK CATEGORY	= II
MAPPED SPECTRAL RESPONSE ACCELERATIONS (Sa)	= 0.084 g
SITE CLASS	= D
SPECTRAL RESPONSE COEFFICIENTS (Sds) (Sd1)	= 0.089 g (0.213 g)
SEISMIC DESIGN CATAGORY	= B
BASIC SEISMIC FORCE RESISTING SYSTEM	LIGHT FRAMED WALLS w/SHEAR PANELS OF OTHER MAT.
DESIGN BASE SHEAR (V)	= 52.5 kips
SEISMIC RESPONSE COEFFICIENT (Ca)	= 0.045
RESPONSE MODIFICATION FACTOR (R)	= 2.0
ANALYSIS PROCEDURE UTILIZED	= EQUIVALENT LATERAL FORCE PROCEDURE
FLOOR LOAD CRITERIA	
UPPER LEVEL	(LIVE LOAD) = 80.0 PSF
WIND LOAD CRITERIA	
ULTIMATE DESIGN WIND SPEED (Vult)	= 115 MPH
NOMINAL DESIGN WIND SPEED (Vascd)	= 90 MPH
WIND IMPORTANCE FACTOR (Iw)	= 1.0
RISK CATEGORY	= II
WIND EXPOSURE	= B
INTERNAL PRESSURE COEFFICIENT (Gcpi)	= 0.18
COMPONENT 4 CLADDING	
ULTIMATE DESIGN WIND PRESSURE VALUES	
WALL ZONES COMPONENT AREAULT. WIND PRESSURE (psf)	
4	10 sq. Ft. = + 23.8 / - 25.8
4	50 sq. Ft. = + 21.3 / - 23.3
5	10 sq. Ft. = + 23.8 / - 31.9
5	50 sq. Ft. = + 21.3 / - 26.9
ROOF ZONES COMPONENT AREAULT. WIND PRESSURE (psf)	
1	10 sq. Ft. = + 16.0 / - 23.8
1	50 sq. Ft. = + 16.0 / - 22.4
2	10 sq. Ft. = + 16.0 / - 33.9
2	50 sq. Ft. = + 16.0 / - 30.1
2	100 sq. Ft. = + 16.0 / - 25.8
3	10 sq. Ft. = + 16.0 / - 60.1
3	20 sq. Ft. = + 16.0 / - 49.8
ROOF OVERHANGS	
2	10 sq. Ft. = + 16.0 / - 34.3
2	50 sq. Ft. = + 16.0 / - 32.9
3	10 sq. Ft. = + 16.0 / - 56.5
3	20 sq. Ft. = + 16.0 / - 44.3

