

GENERAL NOTES

GENERAL

- THIS BUILDING HAS BEEN DESIGNED AND SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE MICHIGAN BUILDING CODE, 2009 EDITION.
- THE CONTRACTOR SHALL VISIT THE SITE TO BECOME FAMILIAR WITH THE EXISTING CONDITIONS, THE OWNERS REQUIREMENTS FOR ACCESS TO THE SITE.
- THE STRUCTURE SHALL BE CONSIDERED TO BE IN AN UNSTABLE CONDITION UNTIL ALL FLOOR, WALL AND ROOF STRUCTURES ARE COMPLETED. CONTRACTOR SHALL PROVIDE TEMPORARY BRACING FOR STABILITY AND TO RESIST LATERAL LOADS DURING ERECTION.
- ALL NON LOAD BEARING WALLS, EXCEPT INDICATED SHEAR WALLS SHALL BE CONSTRUCTED TO ALLOW FOR VERTICAL DEFLECTION OF THE STRUCTURE ABOVE.

FOUNDATIONS/BACKFILL

- FOUNDATIONS ARE DESIGNED FOR A MAXIMUM ALLOWABLE BEARING CAPACITY OF 2000 P.S.F. AND ARE TO BE AROUND UNDISTURBED, NATURAL SOILS OR COMPACTED ENGINEERED FILL.
- THE OWNER WILL RETAIN THE SERVICES OF A GEOTECHNICAL ENGINEER TO MONITOR THE FOUNDATION WORK AND DETERMINE THE QUALITY OF THE SOIL AT ALL FOOTING AND SLAB LOCATIONS. IF UNSUITABLE MATERIALS ARE ENCOUNTERED AT THE FOOTING LOCATIONS, THE UNSUITABLE MATERIAL SHALL BE REMOVED AND REPLACED OR THE FOOTINGS LOWERED AT THE DIRECTION OF THE ENGINEER.
- CONTRACTOR SHALL BE AWARE OF AND VERIFY LOCATION OF ALL UNDERGROUND UTILITIES, TANKS, ETC. DUE CARE SHALL BE EXERCISED DURING EXCAVATION SUCH THAT EXISTING UTILITIES ARE NOT DAMAGED. GROUND PENETRATING RADAR SHALL BE USED FOR THIS VERIFICATION.
- ALL EXCAVATIONS SHALL CONFORM TO M-OSHA REQUIREMENTS. ANY PERCHED GROUNDWATER ENTERING THE EXCAVATION SHALL BE PUMPED PRIOR TO PLACING CONCRETE.
- ALL BACKFILL MATERIALS SHALL CONFORM TO MDOT CLASS II MATERIAL. ALL BACKFILL SHALL BE PLACED IN 12" LOOSE LIFTS AND COMPACTED TO AT LEAST 95% OF THE MAXIMUM DRY DENSITY DETERMINED IN ACCORDANCE WITH ASTM D-1557 (MODIFIED PROCTOR). FIELD DENSITY TESTING SHALL BE PERFORMED IN ACCORDANCE WITH ASTM D-2922 OR D-1556 WITH A MINIMUM OF 1 TEST PER 1500 SQ. FEET OF AREA PER 12" LIFT (MINIMUM OF (3) TESTS PER LIFT).

CONCRETE

- THE LATEST REVISION OF THE FOLLOWING CODES GOVERN THE DESIGN, DETAILING, FABRICATION AND CONSTRUCTION OF ALL REINFORCED CONCRETE:
 - BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE: ACI 318.
 - DETAILS & DETAILING OF CONCRETE REINFORCEMENT: ACI 315.
- ALL DEFORMED BAR REINFORCING SHALL BE ASTM A 615 GRADE 60.
- ALL WELDED WIRE FABRIC SHALL BE ASTM A 185 FLAT SHEETS ONLY.
- ALL CONCRETE SHALL HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH (F'c) OF 4000 PSI, 3" TO 5" SLUMP AND A WATER/CEMENT RATIO OF 0.44 MAXIMUM. ALL EXTERIOR CONCRETE SHALL BE AIR ENTRAINED (5% ± 1%). CONTRACTOR SHALL SUBMIT A CONCRETE MIX DESIGN WITH APPROPRIATE TEST DATA FOR APPROVAL PRIOR TO CONCRETE PLACEMENT.
- SPLICES FOR DEFORMED BARS SHALL BE CLASS B WITH APPLICABLE INCREASES FOR BAR SPACING, COVER, TOP BAR EFFECT ETC. PER LATEST EDITION ACI 318.
- BEFORE PLACING CONCRETE REFER TO ARCHITECTURAL, MECHANICAL AND ELECTRICAL DRAWINGS FOR LOCATIONS OF PIPE SLEEVES, EMBEDDED ITEMS, OPENINGS, EQUIPMENT PADS, ELECTRICAL CONDUITS, RECESSES, DRAINS, ETC. ALL OPENINGS FOR PIPE, CONDUITS, ETC. SHALL BE SLEEVED. MINIMUM SLEEVE SPACING SHALL BE 3 SLEEVE DIAMETERS.
- CONCRETE CONTROL JOINTS SHALL BE CUT AS SOON AS CONCRETE HAS HARDENED SUFFICIENTLY TO PREVENT DISLODGING OF AGGREGATES. SAW A CONTINUOUS SLOT TO A DEPTH OF 1/4 THE THICKNESS OF THE SLAB BUT NOT LESS THAN 1". COMPLETE SAWING WITHIN 12 HOURS AFTER PLACEMENT.
- PROVIDE A RECESS IN THE TOP OF FOUNDATION WALLS AT DOOR OPENINGS FOR SUPPORT OF THICKENED FLOOR SLABS. DEPTH OF RECESS TO BE 2" MINIMUM GREATER THAN THICKNESS OF THE FLOOR SLAB, UNLESS NOTED OTHERWISE IN DETAILS.
- SUGGESTED CONSTRUCTION AND CONTROL JOINT LOCATIONS ARE INDICATED ON THE DRAWINGS. CONTRACTOR MAY DEVIATE FROM SUGGESTED JOINT LOCATIONS WITH PRIOR APPROVAL OF THE CONTRACTING OFFICER TECHNICAL REPRESENTATIVE.
- PROVIDE BENT CORNER BARS IN ALL WALLS AND FOOTINGS OF THE SAME SIZE AND NUMBER AS THE CONTINUOUS REINFORCEMENT.
- CONCRETE SHALL BE TESTED BY AN INDEPENDENT TESTING AGENCY. A SET OF (3) CONCRETE TEST CYLINDERS SHALL BE MADE AND TESTED FOR COMPRESSIVE STRENGTH AT 7 AND 28 DAYS OR EVERY 50 CUBIC YARDS OF CONCRETE CAST (MINIMUM OF (1) SET PER DAY OF CASTING). ALSO SLUMP AND UNIT WEIGHT TESTS SHALL BE PERFORMED EVERY OTHER TRUCK LOAD. CONTRACTOR MADE CONCRETE TEST CYLINDERS ARE NOT ACCEPTABLE.

MASONRY

- THE LATEST REVISION OF THE FOLLOWING CODES GOVERN THE DESIGN, DETAILING AND CONSTRUCTION OF ALL MASONRY:
 - BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES: ACI 530
 - SPECIFICATIONS FOR MASONRY STRUCTURES: ACI 530.1
- ALL MASONRY SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF F'm = 2500 PSI.
- ALL MORTAR SHALL BE TYPE S, PROPORTIONED BY VOLUME ACCORDING TO ASTM C 270.
- ALL GROUT SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 2500 PSI, AND SHALL BE PROPORTIONED BY VOLUME ACCORDING TO ASTM C 476.
- ALL CONCRETE MASONRY UNITS SHALL BE MEDIUM OR HEAVY WEIGHT ASTM C 90, GRADE N, TYPE 1 UNITS UNLESS NOTED OTHERWISE. UNITS SHALL HAVE A MINIMUM NET AREA COMPRESSIVE STRENGTH OF 2800 PSI.
- ALL MASONRY WALLS SHALL HAVE HORIZONTAL JOINT REINFORCEMENT (9 GA., HOT DIPPED GALVANIZED) AT 16" O.C. UNLESS NOTED. PROVIDE PREFABRICATED CORNER PIECES AT ALL CORNERS AND INTERSECTIONS OF WALLS.
- ALL DEFORMED BAR REINFORCING SHALL BE ASTM A 615 GRADE 60. LAP SPLICES IN WALLS SHALL BE DETERMINED IN ACCORDANCE WITH ACI 530, BUT SHALL BE A MINIMUM OF 48 BAR DIAMETERS, UNLESS NOTED OTHERWISE.
- ALL MASONRY REINFORCING SHALL BE SECURED IN PLACE W/ REBAR POSITIONERS AND SPACERS.
- ALL VERTICAL MASONRY WALL REINFORCEMENT SHALL BE CENTERED ON THE WALL, DOWELED INTO THE FOOTINGS, SECURED IN PLACE, AND GROUTED SOLID, UNLESS NOTED OTHERWISE ON DETAILS.
- IN ADDITION TO ALL OTHER REINFORCING IN MASONRY WALLS PROVIDE MINIMUM (1) #5 BAR AT EACH SIDE OF ALL OPENINGS, EACH SIDE OF CONTROL JOINTS, AT CORNERS OR ENDS OF WALLS AND AT BEAM OR LINTEL BEARING. ROD TO BE FULL HEIGHT OF WALL.
- ALL MASONRY WALLS SHALL HAVE A CONTINUOUSLY REINFORCED BOND BEAM NEAR THE TOP OF THE WALL WITH (2) #5 BARS U.L.O. PROVIDE BENT CORNER BARS AT ALL BOND BEAM INTERSECTIONS. REFER TO APPROPRIATE DETAILS FOR LOCATION OF BOND BEAM.
- THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING WALL BRACING ADEQUATE TO RESIST LATERAL LOADS.
- SEE ARCHITECTURAL DRAWINGS FOR LOCATIONS OF WALL CONTROL JOINTS AND EXPANSION JOINTS.
- REFER TO ARCHITECTURAL DRAWINGS AND SPECIFICATIONS FOR TYPE, SIZE, LOCATION AND ATTACHMENT REQUIREMENTS FOR MASONRY FASCIA AND OTHER CLADDING.

STRUCTURAL STEEL

- ALL DETAILING, FABRICATION AND ERECTION SHALL CONFORM TO THE LATEST REVISION OF THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) "SPECIFICATION FOR STRUCTURAL STEEL FOR BUILDING ALLOWABLE STRESS DESIGN" AND AISC "CODE OF STANDARD PRACTICE STEEL BUILDINGS & BRIDGES".
- STRUCTURAL STEEL MATERIAL SPECIFICATIONS:
 - A AND W T SHAPES: A 992, GRADE 50.
 - MISCELLANEOUS SHAPES AND PLATES: ASTM A 36 (Fy=36 KSI).
 - PIPE: ASTM A 53, GRADE B, TYPE E OR S (Fy=35 KSI).
 - STRUCTURAL STEEL TUBES ASTM A 500 GRADE B (Fy=46 KSI).
- ALL BUILDING COLUMN ANCHOR RODS SHALL BE ASTM F 1554 (Fy=36 KSI).
- ALL WELDING SHALL BE PERFORMED USING THE ELECTRIC ARC METHOD IN ACCORDANCE WITH THE LATEST REVISION OF THE AMERICAN WELDING SOCIETY (AWS) D1.1 "STRUCTURAL WELDING CODE". E70XX ELECTRODES CONFORMING TO AWS A5.1 OR A5.5 SHALL BE USED FOR SHIELDED METAL ARC METHOD AND E70XX FLUX - ELECTRODE COMBINATION CONFORMING TO AWS A5.17 FOR SUBMERGED ARC METHOD.
- ALL BOLTS SHALL BE 3/4" ASTM A325 TYPE N BOLTS. ALL BOLTED CONNECTIONS SHALL BE SHUG-TIGHT BEARING TYPE BOLTS UNLESS NOTED OTHERWISE. ALL BOLTED CONNECTIONS TO HSS SHALL BE 1/2" STAINLESS STEEL HMO-BOLTS.
- PROVIDE "SLIP-CRITICAL" CONNECTIONS AT BRACINGS, WHERE BOLTS ARE IN TENSION AND AT MOMENT CONNECTIONS.
- ALL BEAM CONNECTIONS ARE TO CONFORM TO AISC STANDARD TWO ANGLE WEB CONNECTIONS CAPABLE OF SUPPORTING 75% OF THE TOTAL UNIFORM LOAD CAPACITY OF THE BEAM OR FOR LOADS INDICATED ON DRAWING. NO CONNECTION SHALL CONSIST OF LESS THAN (2) 3/4" BOLTS OR A WELD DEVELOPING LESS THAN 10 KIIPS.
- DESIGN HORIZONTAL AND VERTICAL BRACING END CONNECTIONS FOR LOADS INDICATED ON THE DRAWINGS OR 50% OF THE TENSILE CAPACITY OF THE MEMBER WHICHEVER IS GREATER.
- ALL CONNECTIONS NOT SPECIFICALLY DETAILED, SHALL BE DESIGNED AND DETAILED BY THE FABRICATOR. DETAILING SHALL BE PERFORMED USING RATIONAL ENGINEERING DESIGN AND STANDARD PRACTICE IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. THE GENERAL DETAILS SHOWN ON THE DRAWINGS ARE APPROXIMATE ONLY AND DO NOT INDICATE THE REQUIRED NUMBER OF BOLTS OR WELD SIZES, UNLESS SPECIFICALLY NOTED.
- ALL FIELD CONNECTIONS SHALL BE BOLTED UNLESS NOTED OTHERWISE. FIELD WELDING IS NOT ALLOWED EXCEPT WHERE SPECIFICALLY INDICATED OR APPROVED.
- FIELD WELD (WHERE NOTED) SHALL BE APPLIED TO SURFACES FREE OF PAINT, GREASE, DIRT AND OTHER DELETERIOUS MATERIAL.
- ALL SHOP AND FIELD WELDS SHALL BE VISUALLY INSPECTED PER AWS D1.1. ALL DEFICIENT OR NON CONFORMING ITEMS SHALL BE REPORTED TO THE ENGINEER WHO WILL DETERMINE THE CORRECTIVE ACTION REQUIRED.
- GROUT REQUIRED UNDER COLUMN BASE PLATES AS SHOWN IN THE DETAILS SHALL BE A STANDARD NON-SHRINK GROUT SUCH AS "SONOROUT 10K" BY SONOTON INC.
- PROVIDE AND HAVE IN PLACE ADEQUATE LATERAL BRACING AND VERTICAL SUPPORTS FOR THE SAFE ERECTION AND TRUE ALIGNMENT OF THE STRUCTURAL STEEL. THIS CONTRACTOR ASSUMES FULL RESPONSIBILITY FOR THE SAFE ERECTION AND TEMPORARY BRACING OF STRUCTURAL STEEL.
- VERIFY NUMBER AND SIZE OF OPENINGS IN ROOF, WALLS AND FLOOR WITH ARCHITECTURAL, MECHANICAL AND ELECTRICAL DRAWINGS. SEE DETAILS AND SPECIFICATIONS, FOR STRUCTURAL REQUIREMENTS. VERIFY ALL INFORMATION WITH THE APPROPRIATE CONTRACTOR.
- PROVIDE 1x3x1/4 SHELF ANGLES AT TOPS OF COLUMNS AS REQUIRED TO SUPPORT ROOF DECK.
- ALL FREE ENDS OF METAL DECK SHALL BE SUPPORTED WITH AN EDGE ANGLE L4x4x1/4 OR OTHER SUITABLE SUPPORT. THIS SHALL BE PROVIDED WHETHER SHOWN ON DRAWINGS OR NOT.
- ALL BOLTS FOR BOLTED ATTACHMENTS TO HOLLOW STRUCTURAL SHAPES SHALL BE HOLLO-BOLTS BY LINDAPTER. BOLT DETAILING AND INSTALLATION SHALL BE PER THE MANUFACTURERS RECOMMENDATION.

STEEL DECK

- ALL STEEL DECK SHALL BE DESIGNED, MANUFACTURED AND INSTALLED IN ACCORDANCE WITH THE LATEST REVISION OF THE STEEL DECK INSTITUTE (SDI) DESIGN MANUAL.
- ROOF DECK:
 - ALL ROOF DECK SHALL BE 1 1/2" DEEP, 20 GA. WIDE RIB GALVANIZED DECK (1.58 BY VULCRAFT OR APPROVED EQUAL). ALL DECK SHALL SPAN A MINIMUM OF 3 SPANS.
 - FASTEN ROOF DECK TO ALL SUPPORTS AND AT PERIMETER WITH 5/8" RIBBLE WELDS, 6" O.C. AT SUPPORTS AND 8" O.C. AT PERIMETER. FASTEN SIDE JOINTS WITH #10 TEX SCREWS, 2 PER SPAN.
- PROVIDE ADDITIONAL SUPPORT FRAMING AT OPENINGS IN ROOF PER TYPICAL DETAILS.

COLD FORMED METAL

- CONTRACTOR SHALL PROVIDE COMPLETE DESIGN, DRAWINGS AND CALCULATIONS FOR ALL COLD FORMED METAL FRAMING. ALL FRAMING MEMBERS, SPACING AND CONNECTIONS SHALL BE DESIGNED, DETAILED AND SEALED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF MICHIGAN.
- COMPLY WITH ALL LOADING REQUIREMENTS AS ESTABLISHED BY THE MICHIGAN BUILDING CODE FOR EXTERIOR FRAMING.
- LIMIT MAXIMUM LATERAL DEFLECTION TO 1/720 OF SPAN WHERE EXTERIOR FINISH MATERIAL IS MASONRY AND 1/560 FOR SPAN OTHERWISE.
- REFER TO ARCHITECTURAL DRAWINGS FOR DIMENSIONAL REQUIREMENTS, OPENING LOCATIONS, ETC., AND TO SPECIFICATION FOR ADDITIONAL REQUIREMENTS. COLD FORMED METAL FRAMING SHALL BE DETAILED TO ACCOMMODATE MOVEMENT OF THE STRUCTURE THROUGH THE USE OF VERTICAL SLIP CLIPS, SLIP CONNECTIONS, ETC.

DIVISION 6 - WOOD FRAMING

- ALL CONSTRUCTION SHALL CONFORM TO THE LATEST EDITION OF THE AMERICAN FOREST PRODUCTS ASSOCIATION (AFPA) "MANUAL FOR ENGINEERED WOOD CONSTRUCTION" AND FRAMING STANDARD WOOD "DETAILS FOR CONVENTIONAL WOOD FRAME CONSTRUCTION."
- WOOD FRAMING SIZES, VERTICAL FRAMING, HORIZONTAL FRAMING, FIRESTOPS, ANCHORAGE, FURRING AND CONNECTORS NOT SHOWN ON DOCUMENTS SHALL BE PER MBC CHAPTER 23 MINIMUM REQUIREMENTS.
- ROOF SHEATHING SHALL BE 1/2" THICK, APA RATED SHEATHING, EXPOSURE 1, PANEL INDEX 32/16 AND STAMPED WITH DFPA GRADE-TRADEMARK.
 - ROOF SHEATHING PANELS SHALL BE NAILED TO SUPPORTS WITH 8d COMMON NAILS.
 - ROOF SHEATHING NAIL SPACING SHALL BE AS FOLLOWS:
 - GABLE OVERHANGS AND ALL SHEATHING WITHIN 4 FEET OF THE GABLE WALL SHALL HAVE ALL PANEL EDGES NAILED AT 4" O.C. AND INTERMEDIATE SUPPORTS NAILED AT 6" O.C.
 - STANDARD EAVE OVERHANG AND ALL SHEATHING WITHIN 4 FEET OF THE SUPPORTING WALL SHALL HAVE ALL PANEL EDGES NAILED AT 6" O.C. AND INTERMEDIATE SUPPORTS NAILED AT 6" O.C.
 - ALL SHEATHING WITHIN 4 FEET OF THE RIDGE SHALL HAVE ALL PANEL EDGES NAILED AT 6" O.C. AND INTERMEDIATE SUPPORTS NAILED AT 6" O.C.
 - THE REMAINDER OF THE ROOF SHALL HAVE ALL PANEL EDGES NAILED AT 6" O.C. AND INTERMEDIATE SUPPORTS NAILED AT 12" O.C.

DIVISION 6 - WOOD FRAMING - CONTINUED

- ROOF DECKING NOTES
 - ROOF DECKING SHALL BE 3X8 NOMINAL SOUTHERN PINE OR DG. FIR SELECT GRADE, KILN DRIED, TONGUE AND GROOVED, END-MATCHED, EDGE VEE 1 SIDE, SMOOTH TEXTURE, FACTORY STAINED WITH ONE COAT.
 - DECK LAY-UP SHALL BE CONTROLLED RANDOM EXCEPT AT LOCATIONS ON PLAN INDICATING TWO SPAN LAY-UP WITH END JOINTS OVER SUPPORTS.
 - RANDOM LAY-UP DECKING SHALL BE CONTINUOUS OVER THREE OR MORE SPANS. EACH PIECE OF DECK MUST BEAR ON AT LEAST ONE SUPPORT.
 - RANDOM LAY-UP DECKING SHALL BE LAID TO DISPERSE END-JOINTS SUCH THAT:
 - THE DISTANCE BETWEEN END-JOINTS IN ADJACENT ROWS OF DECKING IS AT LEAST TWO FEET.
 - THE DISTANCE BETWEEN END-JOINTS IN ROWS OF DECKING SEPARATED BY ONLY ONE ROW IS AT LEAST ONE FOOT.
 - DECKING AT CANTILEVERED OVERHANGS SHALL BE FREE OF END-JOINTS.
 - DECKING SHALL BE TOE NAILED WITHIN 12" OF ALL ENDS.
 - NAILING SCHEDULE:
 - TOE NAILING ALONG COURSES: 6D #30 O.C. FOR 2" NOM DECKING
 - FACE NAILING TO SUPPORTS: 16D FOR 2" NOM DECKING
- ALL STRUCTURAL LUMBER SHALL BE OF THE FOLLOWING MINIMUM GRADES AND ALLOWABLE STRESSES OR EQUIVALENT AS PER NATIONAL FOREST PRODUCTS ASSOCIATION. MOISTURE CONTENT TO BE 19% MAX.

STUDS	HEN FIR STRUCTURAL GRADE NO. 2 OR BETTER
BEAM 2"-4" THICK	HEN FIR STRUCTURAL GRADE NO. 2 OR BETTER
POSTS	SAME AS STUDS
PLATE STOCK	SAME AS STUDS
- STRUCTURAL GLULAM MEMBERS SHALL COMPLY TO THE FOLLOWING:
 - ALL GLULAM MEMBERS (BEAMS, PURLINS, & TRUSS MEMBERS) SHALL BE DOUGLAS FIR 24F-VS. LAMINATIONS ARE TO BE 1.5" THICK (2" NOMINAL). MEMBERS ARE TO BE ARCHITECTURAL SMOOTH TEXTURE APPEARANCE GRADE (ATC).
 - ALL GLULAM MEMBER FINISHES SHALL COMPLY WITH THE FOLLOWING:
 - FINISH (EXPOSED SURFACES): FACTORY STAIN - ONE COAT, ARCHITECT TO SELECT COLOR.
 - FINISH (UNEXPOSED SURFACES): ONE COAT SEALER.
 - PROTECTION (TRANSIT): WRAP INDIVIDUAL MEMBERS WITH WATER RESISTANT PAPER OR OPAQUE POLYETHYLENE, TAPE SEAMS.
- ALL GLULAM MATERIALS AND WORKMANSHIP SHALL BE IN CONFORMANCE WITH THE LATEST EDITION OF ATC 119, STANDARD SPECIFICATIONS FOR STRUCTURAL GLUED LAMINATED TIMBER OF HARDWOOD SPECIES (ATC - AMERICAN INSTITUTE OF TIMBER CONSTRUCTION). MEMBERS SHALL BE MARKED WITH A QUALITY MARK INDICATING CONFORMANCE TO THE LISTED STANDARDS.
- ALL GLULAM TRUSS AND BEAM CONNECTIONS SHALL BE DESIGNED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF MICHIGAN. THE CONTRACTOR IS TO SUBMIT SEALED CALCULATIONS AND SHOP DRAWINGS FOR THESE CONNECTIONS. ALL BOLTS SHALL BE ASTM A-307 AND SHALL BE A MINIMUM OF 1/2" DIAMETER.
- ALL LUMBER SHALL BE STAMPED WITH THE GRADE MARK OF AN APPROVED TESTING AGENCY.
- ALL WOOD IN CONTACT WITH CONCRETE OR MASONRY OR EXPOSED TO WEATHER SHALL BE TREATED LUMBER.
- FRAMED OPENING: DOUBLE STUD FOR OPENINGS LESS THAN 4' WIDE, TRIPLE STUD FOR OPENINGS 4' WIDE OR MORE.
- THE NUMBER OF WALL STUDS AT BEARING POINTS OF 2X MEMBER BEAMS SHALL EXCEED THE NUMBER OF MEMBERS IN THE BEAM BY ONE. THE CENTERLINE OF THE BEAM SHALL BE THE CENTERLINE OF THE SUPPORTING WALL STUDS (UNLESS NOTED OTHERWISE ON PLAN). ALL MICRO-LAM BEAMS SHALL HAVE 3 STUDS (MINIMUM). CONTINUE THESE STUDS TO THE FOUNDATION WITH INTERMEDIATE SUPPORTS THROUGH FLOOR, BETWEEN LOWER WALL TOP PLATE AND UPPER WALL BOTTOM PLATE.
- ALL FLUSH BEAMS SHALL BE SUPPORTED BY APPROVED HANGER.
- WHERE NOTED ON DETAILS, CONTRACTOR SHALL PROVIDE CONNECTORS FOR WOOD CONSTRUCTION AS MANUFACTURED BY SIMPSON STRONG TIE CONNECTORS. CONTRACTOR SHALL VERIFY TYPE INDICATED ON DRAWINGS. ANY SUBSTITUTION SHALL BE APPROVED BY THE ENGINEER. WHERE A TYPE IS NOT INDICATED OR TO BE PROVIDED BY THE TRUSS MANUFACTURER, THE CONTRACTOR SHALL SUBMIT PROPOSED CONNECTOR FOR APPROVAL.
- ROOF FRAMING LAYOUTS ARE PROVIDED TO ILLUSTRATE CONDITIONS OF CONSTRUCTION AND DO NOT NECESSARILY INDICATE SPECIFIC QUANTITIES OF MATERIALS OR COMPONENTS REQUIRED FOR CONSTRUCTION.
- CONSTRUCTION BRACING SHALL BE PROVIDED BY THE CONTRACTOR TO MAINTAIN THE BUILDING PLUMB AND TRUE. THIS BRACING SHALL REMAIN UNTIL THE SPECIFIED SHEAR WALLS ARE TOTALLY INSTALLED.

DIVISION 6 - PREFABRICATED WOOD TRUSSES

- ALL WOOD TRUSSES SHALL BE DESIGNED FOR THE FOLLOWING LOADS:

TOP CHORD DEAD LOAD	8 PSF
TOP CHORD LIVE LOAD	30 PSF
BOTTOM CHORD DEAD LOAD	13 PSF

 DESIGN ALL ROOF TRUSSES FOR A NET UPLIFT OF 5.5 PSF.
- THE EXTENT OF ROOF TRUSSES SHOWN ON THE PLANS IS FOR REFERENCE ONLY. THE FABRICATOR SHALL VERIFY ALL DIMENSIONS, TRUSS LAYOUT, CONFIGURATION, NUMBER OF EACH TYPE OF TRUSS REQUIRED, LOADING AND DETAILS.
- WOOD TRUSSES SHALL BE DESIGNED, FABRICATED AND INSTALLED PER TRUSS PLATE INSTITUTE, INC. SPECIFICATIONS AND NFPA NATIONAL DESIGN SPECIFICATION FOR WOOD TRUSS CONSTRUCTION.
- ALL TRUSSES SHALL BE ANCHORED TO SUPPORTS AS INDICATED IN THE DRAWINGS. CODE PER MANUFACTURERS RECOMMENDATIONS.

DESIGN ALL ROOF TRUSSES FOR A NET UPLIFT OF 5.5 PSF.
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- DEFLECTION OF TRUSSES SHALL BE LIMITED TO A MAXIMUM TOTAL LOAD DEFLECTION OF SPAN/360.
- SUBMITTALS:
 - SHOP DRAWINGS SHOWING SIZES, DESIGN VALUES, LOADS, MATERIALS, TEMPORARY BRACING AND DIMENSIONAL RELATIONSHIPS OF COMPONENT AS WELL AS BEARING AND ANCHORAGE DETAILS.
 - TO EXTENT ENGINEERING DESIGN CONSIDERATIONS ARE FABRICATOR'S RESPONSIBILITY, SUBMIT DESIGN ANALYSIS AND TEST REPORTS INDICATING TRUSS PERFORMANCE CHARACTERISTICS.
 - PROVIDE SHOP DRAWINGS WHICH HAVE BEEN SIGNED AND SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF MICHIGAN.
 - PROVIDE DESIGN CALCULATIONS WHICH HAVE BEEN SIGNED AND SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF MICHIGAN.
 - ALL TRUSSES MUST BE DESIGNED FOR UPLIFT LOADS. UPLIFT VALUES AT EACH TRUSS BEARING POINT MUST BE SHOWN ON THE TRUSS DRAWINGS.
 - FOR WOOD ROOF TRUSSES: INSTALL (1) SIMPSON H2.57 HURRICANE TIE AND (1) SIMPSON L330 ANGLE AT EACH BEARING LOCATION, IN ADDITION TO (3) 8d COMMON TOE NAILS.

DIVISION 6 - PREFABRICATED WOOD TRUSS BRACING

- ALL TEMPORARY BRACING IS THE RESPONSIBILITY OF AND IS TO BE DESIGNED BY THE TRUSS MANUFACTURER.
- AS A MINIMUM ALL TRUSSES SHALL BE BRACED DURING ERECTION PER "COMMENTARY AND RECOMMENDATIONS FOR HANDLING, INSTALLING AND BRACING METAL PLATE CONNECTED WOOD TRUSSES, HB-91" BY THE TRUSS PLATE INSTITUTE. THIS BRACING SHALL REMAIN AS PERMANENT BRACING.
- FABRICATOR SHALL CLEARLY INDICATE ON TRUSS DRAWINGS AND DIAGRAMS ALL REQUIRED PERMANENT BRACING REQUIRED TO BRACE ANY TRUSS CHORD OR WEB MEMBERS. SUCH BRACING MAY BE INCORPORATED WITH OTHER PERMANENT BRACING BY THE CONTRACTOR. ALL SUCH BRACING SHALL RUN TO AND TERMINATE AT BEARING WALLS. WHERE CONFIGURATION OF TRUSSES CHANGE, EFFECTING SUPPORT OF THIS BRACING, ADDITIONAL FRAMING FASTENED TO THE TRUSSES SHALL BE INSTALLED TO SUPPORT THE BRACING.
- BOTTOM CHORD OF WOOD TRUSSES SHALL BE DESIGNED AS UNBRACED FOR A LENGTH EQUAL TO THE SPACING BETWEEN BOTTOM CHORD BRACES. BOTTOM CHORD BRACES SHALL BE SUPPLIED BY TRUSS MANUFACTURER.
- ALL BRACING SHOWN OR DESCRIBED SHALL BE MINIMUM 2x4 WITH (2) 16d NAILS IN EVERY TRUSS IT CROSSES.
- ALL TRUSS TOP CHORDS SHALL BE CONTINUOUSLY BRACED BY THE ROOF DECKING.
- ALL TRUSS WEB MEMBERS SHALL BE BRACED AT 4'-0" O.C. UNLESS CALCULATIONS SHOW OTHERWISE.
- ALL HORIZONTAL BRACING SHALL BE STIFFENED AT 20'-0" O.C. WITH EITHER:
 - DIAGONAL BRACING EXTENDED TO A SHEAR WALL PARALLEL TO THE ORIGINAL BRACING.
 - A 5/8" PLYWOOD SHEET EXTENDED TO ROOF DECK OR SHEAR WALL.
- ALL TRUSS BOTTOM CHORDS SHALL BE BRACED AT 6'-0" O.C. UNLESS CALCULATIONS SHOW OTHERWISE. CONTINUOUS SHEATHING APPLIED TO BOTTOM CHORD WILL SATISFY THE BRACING REQUIREMENT.

DESIGN CRITERIA

- DROP-OFF CANOPY ROOF DEAD LOADS

A. STANDING SEAM METAL ROOF	2 PSF
B. 5/8" PLYWOOD	2 PSF
C. METAL DECK	2 PSF
D. STEEL FRAMING	5 PSF
E. STEEL GIRDERS	5 PSF
F. SUSPENDED CEILING	3 PSF
G. ELECTRICAL	3 PSF
TOTAL	22 PSF
- CANTILEVERED CANOPY ROOF DEAD LOADS

A. STANDING SEAM METAL ROOF	2 PSF
B. ELECTRICAL	2 PSF
C. STEEL FRAMING	6 PSF
D. STEEL GIRDERS	4 PSF
TOTAL	14 PSF
- PEDESTRIAN CANOPY ROOF DEAD LOADS

A. PRE-ENGINEERED CANOPY SELF WEIGHT	
B. ELECTRICAL	2 PSF + PRE-ENGINEERED CANOPY SELF WEIGHT
TOTAL	2 PSF + PRE-ENGINEERED CANOPY SELF WEIGHT
- EMPLOYEE ENTRANCE ROOF DEAD LOADS

A. ROOFING MEMBRANE	2 PSF
B. RIGID INSULATION	1 PSF
C. METAL DECK	2 PSF
D. STEEL FRAMING	5 PSF
E. STEEL GIRDERS	5 PSF
F. MECHANICAL & ELECTRICAL	3 PSF
G. SUSPENDED CEILING	2 PSF
TOTAL	20 PSF
- PAVILLION ROOF DEAD LOADS

A. STANDING SEAM METAL ROOF	2 PSF
B. INSULATED PANELS	3 PSF
C. 1/2" PLYWOOD SHEATHING	2 PSF
D. 3" WOOD DECKING	8 PSF
E. CEILING	2 PSF
F. MECHANICAL & ELECTRICAL	5 PSF
G. GLULAM FRAMING	5 PSF
TOTAL	27 PSF
- SNOW LOADS

A. GROUND SNOW LOAD	Pg = 35 PSF
B. SNOW EXPOSURE FACTOR	Ce = 1.0
C. IMPORTANCE FACTOR	I = 1.2
D. THERMAL FACTOR	Ct = 1.0
E. DRIFTING AND/OR SLIDING HAS BEEN & SHALL BE INCLUDED IN DESIGN	
- WIND LOADS

A. BASIC WIND SPEED	90 MPH (3 SEC. GUST)
B. EXPOSURE FACTOR	B
C. IMPORTANCE FACTOR	I = 1.15
D. COMPONENTS AND CLADDING PER MBC 2008	
- SEISMIC DESIGN DATA

A. OCCUPANCY CATEGORY	IV
B. SITE CLASS	D
C. RESPONSE COEFFICIENTS	SDS = 0.11
	SDI = 0.064
D. SEISMIC DESIGN CATEGORY	A

QUALITY ASSURANCE

- IT IS THE CONTRACTORS SOLE RESPONSIBILITY TO BE INFORMED, TO PROVIDE FOR, AND TO MAINTAIN SAFETY OF OPERATING EQUIPMENT AND HANDLING OF MATERIALS. THE CONTRACTORS SHALL COMPLY WITH ALL SAFETY STANDARDS OF OSHA, MSHA AND ANY OTHER STANDARD ENFORCEABLE BY LAW.
- THE ARCHITECT AND ANY OF HIS CONSULTANTS ARE NOT RESPONSIBLE FOR METHODS, TECHNIQUES, SEQUENCE OF ERECTION, OR OTHER PROCEDURES OF THE CONSTRUCTION WORK.
- WARNING:** THE ERECTION OF THIS STRUCTURE IS NOT INCORPORATED IN THE DESIGN OR IN ANY DETAILS.

ADDENDUM #1	08-21-14
Revisions	Date

ARCHITECT/ENGINEERS:



Engineers-Architects-Co

William A. Kibbe & Associates
1475 S. Washington Avenue, Saginaw, MI



Department of Veterans Affairs
Aledo E Lutz Medical Center
1500 Weiss Street
Saginaw, MI 48602

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File Name

File Location

Drawing Title
STRUCTURAL GENERAL NOTES

Approved: Project Director

Project Title
RECONSTRUCTION OF FRONT
PARKING AREAS, SITE LIGHTING
AND STORM DRAINAGE

Location
SAGINAW, MI

Date
04/29/13

Checked

Drawn

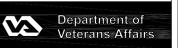
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655-13-111

Building Number
SITE

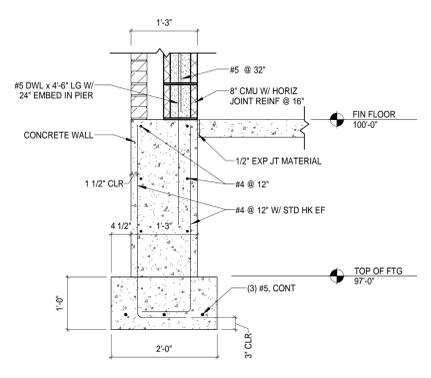
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SS101

Dwg of 14

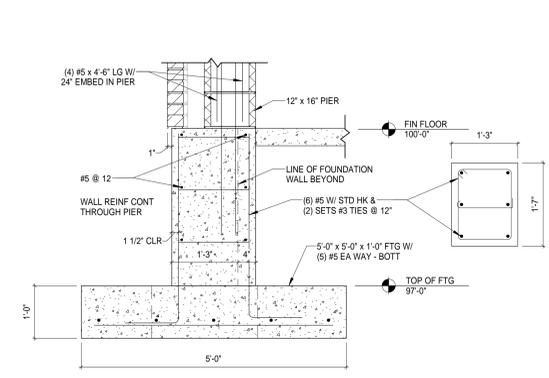
Office of
Construction
and Facilities
Management



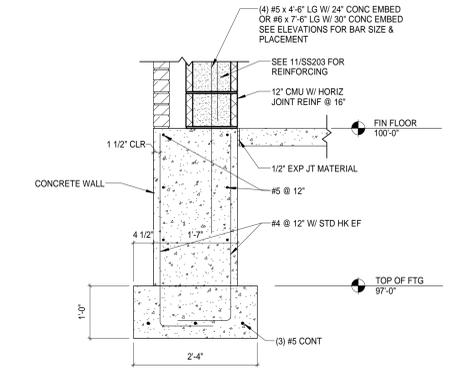
Department of
Veterans Affairs



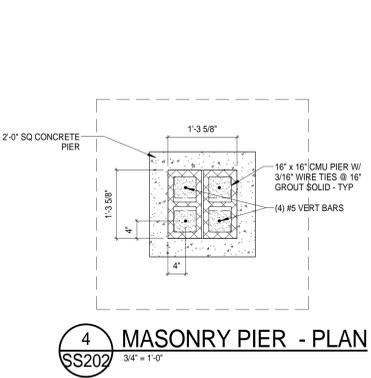
1 TYPICAL FOOTING DETAIL
SS202 3/4" = 1'-0"



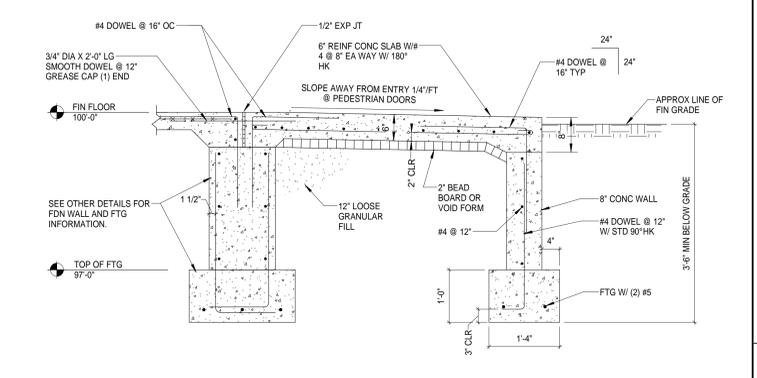
2 TYPICAL PIER DETAIL
SS202 3/4" = 1'-0"



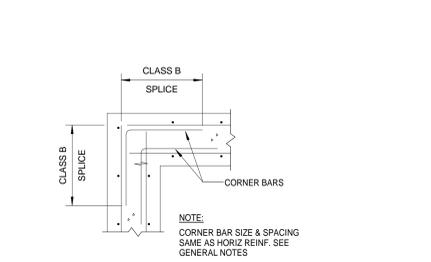
3 FOOTING DETAIL
SS202 3/4" = 1'-0"



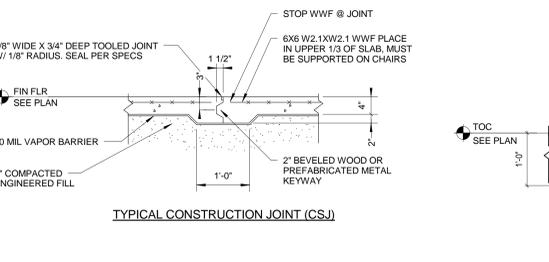
4 MASONRY PIER - PLAN
SS202 3/4" = 1'-0"



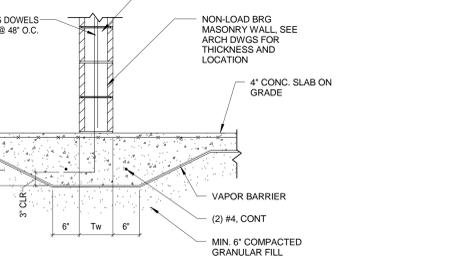
6 TYP FROST PROTECTED SLAB
SS202 3/4" = 1'-0"



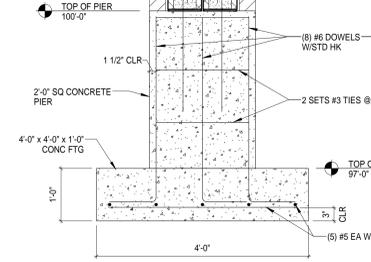
7 TYP WALL & FOOTING CORNER DETAIL
SS202 3/4" = 1'-0"



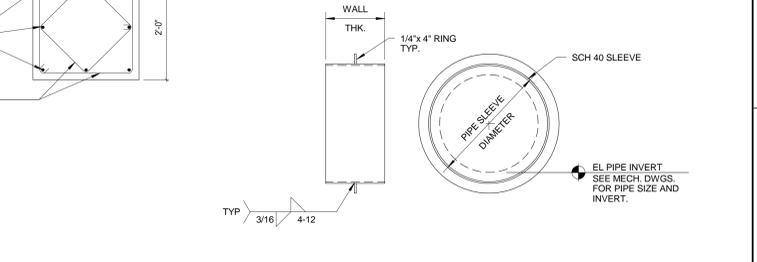
TYPICAL CONSTRUCTION JOINT (C.SJ)



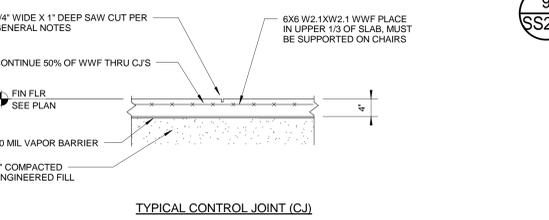
9 THICKENED SLAB DETAIL
SS202 3/4" = 1'-0"



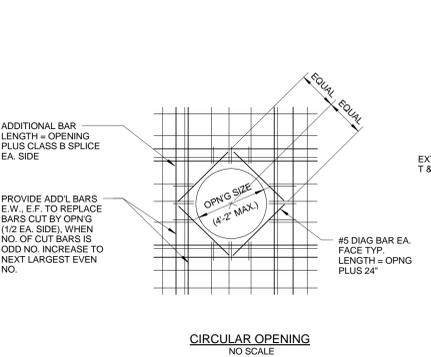
5 MASONRY PIER SECTION
SS202 3/4" = 1'-0"



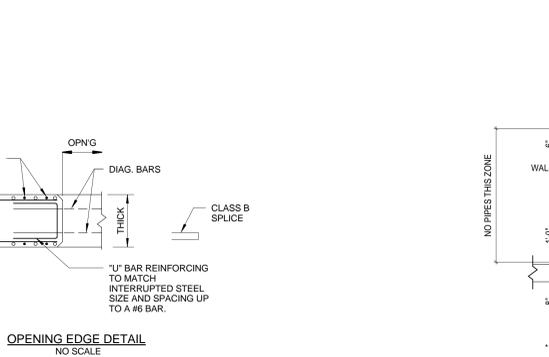
10 WALL SLEEVE DETAIL
SS202 3/4" = 1'-0"



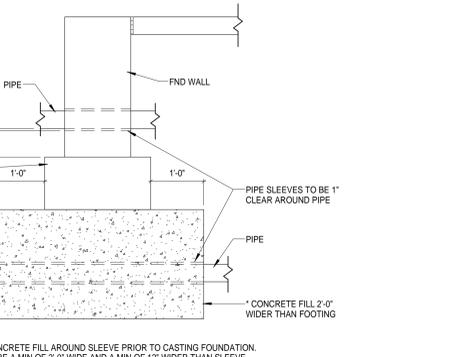
8 TYPICAL SLAB ON GRADE DETAILS
SS202 3/4" = 1'-0"



11 TYPICAL SLAB AND WALL OPENINGS
SS202 3/4" = 1'-0"



12 TYP FOUNDATION DETAIL AT UTILITY
SS202 3/4" = 1'-0"



12 TYP FOUNDATION DETAIL AT UTILITY
SS202 3/4" = 1'-0"

A.B.I. NUMBER 7

ADDENDUM #1	08-21-14
ISSUED FOR BID	
Revisions:	Date

ARCHITECT/ENGINEERS:
WAK Engineers-Architects-Co
William A. Kibbe & Associates
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1500 Weiss Street
Saginaw, MI 48602

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Drawing Title
FOUNDATION DETAILS

File Name
File Location

Approved: Project Director

Project Title
**PAVING OF PARKING LOTS,
STORM DRAINAGE
AND SITE LIGHTING**

Location
SAGINAW, MI

Date
02/21/14

Checked
Drawn

Project Number
655-10-106

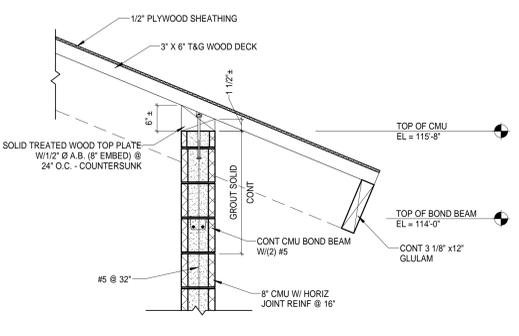
Building Number
SITE

Drawing Number
SS202
Dwg. of 62

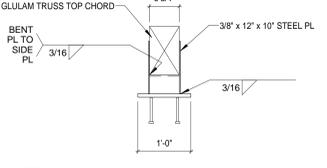
Office of
Construction
and Facilities
Management

Department of
Veterans Affairs

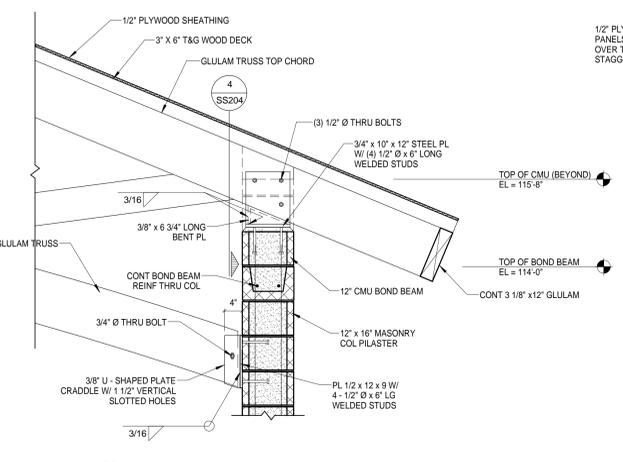
three inches = one foot
 one and one half inches = one foot
 one inch = one foot
 three quarters inch = one foot
 one half inch = one foot
 three eighths inch = one foot
 one quarter inch = one foot
 one eighth inch = one foot



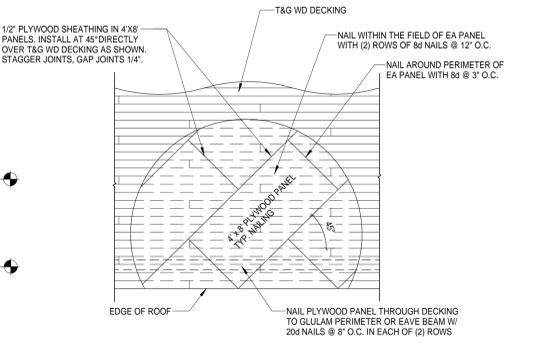
5 DECK BRG WALL SECTION
 SS204 3/4" = 1'-0"



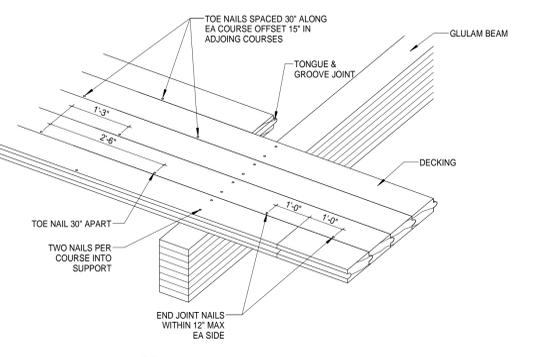
4 TRUSS BRG PL DETAIL
 SS204 3/4" = 1'-0"



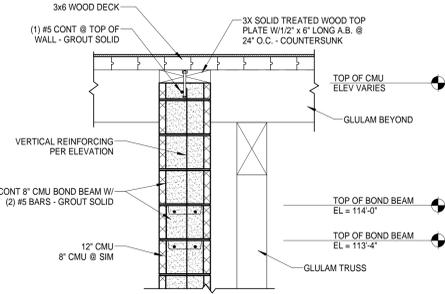
3 TRUSS BRG WALL SECTION
 SS204 3/4" = 1'-0"



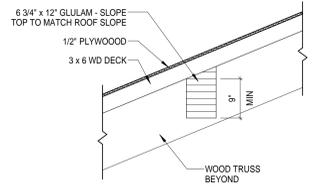
2 ROOF DIAPHRAGM AT GLULAM FRAMING
 SS204 1/4" = 1'-0"



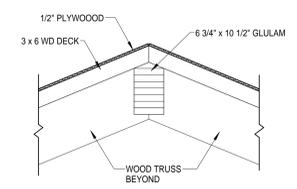
1 DECK NAILING DETAIL
 SS204 3/4" = 1'-0"



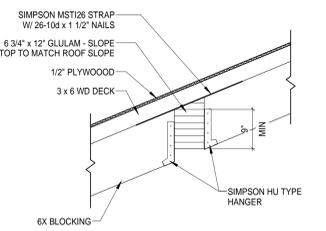
10 GABLE WALL DETAIL
 SS204 3/4" = 1'-0"



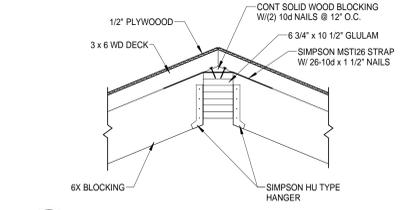
9 TYP GLULAM PURLIN
 SS204 3/4" = 1'-0"



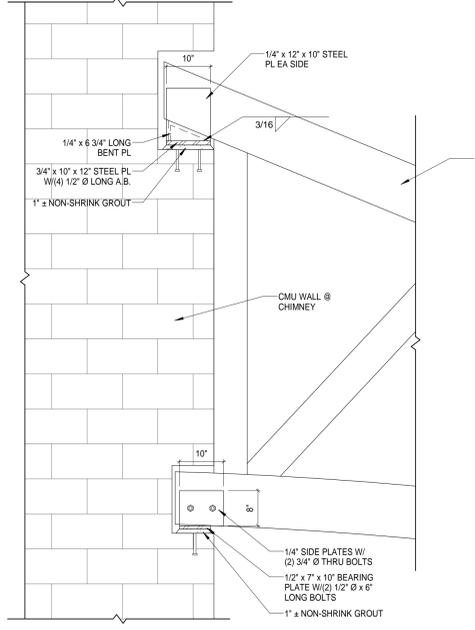
8 GLULAM PURLIN @ PEAK
 SS204 3/4" = 1'-0"



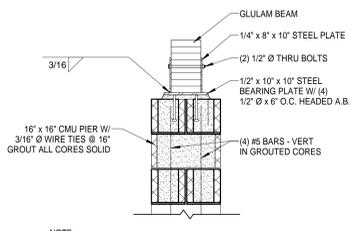
7 TYP GLULAM OUTLOOKER
 SS204 3/4" = 1'-0"



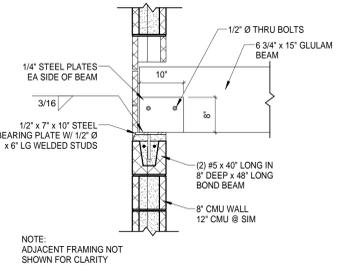
6 GLULAM OUTLOOKER @ PEAK
 SS204 3/4" = 1'-0"



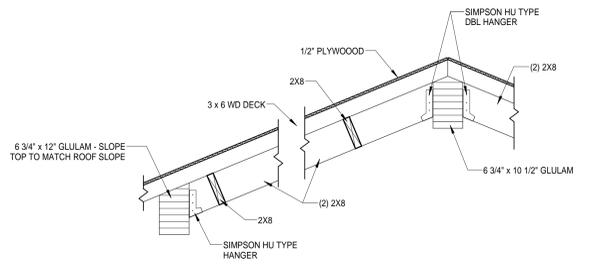
16 TRUSS BEARING @ CHIMNEY
 SS204 3/4" = 1'-0"



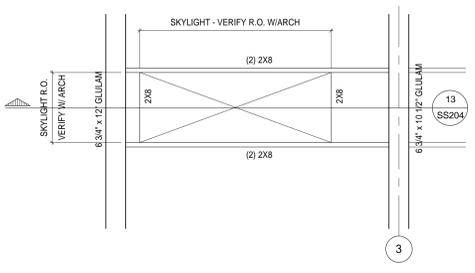
15 GLULAM BRG PLATE DETAIL
 SS204 3/4" = 1'-0"



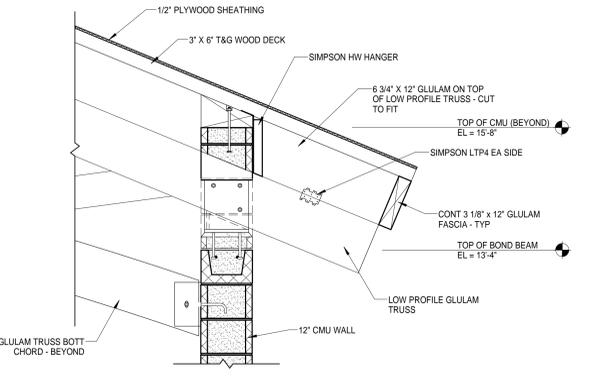
14 GLULAM BEAM BRG DETAIL
 SS204 3/4" = 1'-0"



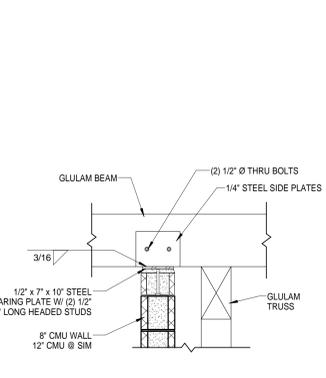
13 SKYLIGHT SECTION
 SS204 3/4" = 1'-0"



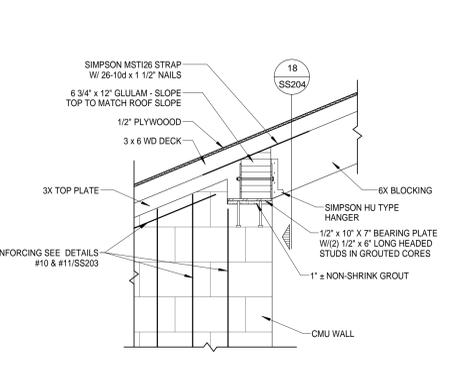
12 ENLARGED SKYLIGHT PLAN
 SS204 1/2" = 1'-0"



19 FASCIA DETAIL @ LOW PROFILE TRUSS
 SS204 3/4" = 1'-0"



18 GLULAM BRG @ CMU WALL
 SS204 3/4" = 1'-0"



17 GLULAM BRG @ CMU WALL
 SS204 3/4" = 1'-0"

A.B.I. NUMBER 7

ADDENDUM #1	08-21-14
ISSUED FOR BID	
Revisions:	Date

ARCHITECT/ENGINEERS:
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 1475 S. Washington Avenue, Saginaw, MI



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 Aleda E. Lutz Medical Center
 1500 Weiss Street
 Saginaw, MI 48602

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Drawing Title
FRAMING DETAILS

Approved: Project Director

Project Title
**PAVING OF PARKING LOTS,
 STORM DRAINAGE
 AND SITE LIGHTING**

Location
SAGINAW, MI

Date
 02/21/14

Checked

Drawn

Project Number
 655-10-106

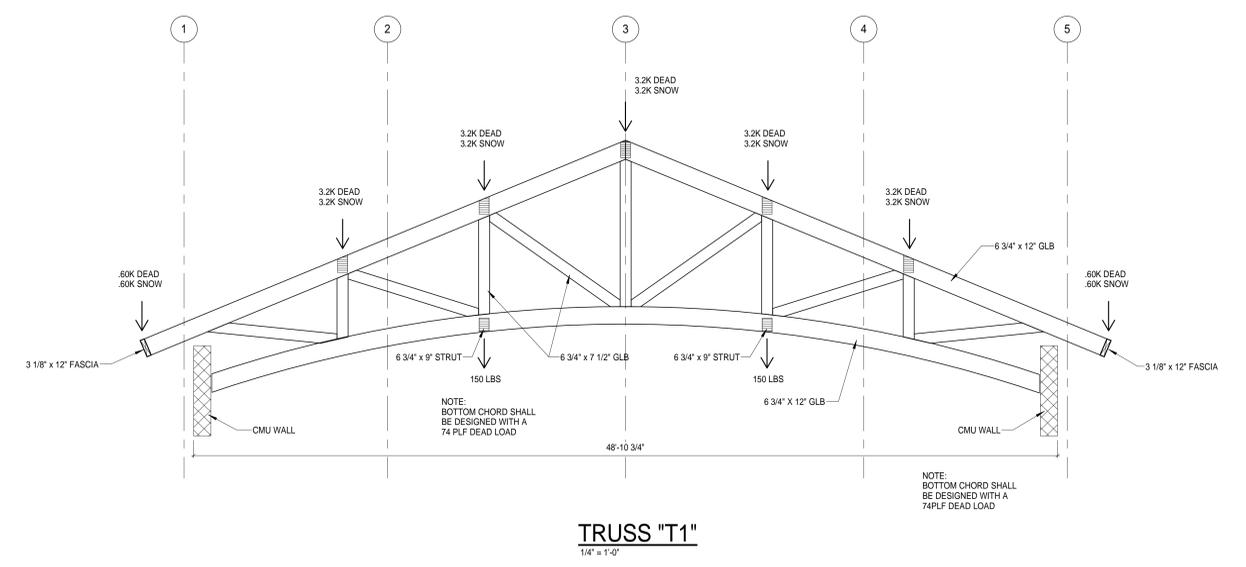
Building Number
 SITE

Drawing Number
SS204
 Dwg. of 62

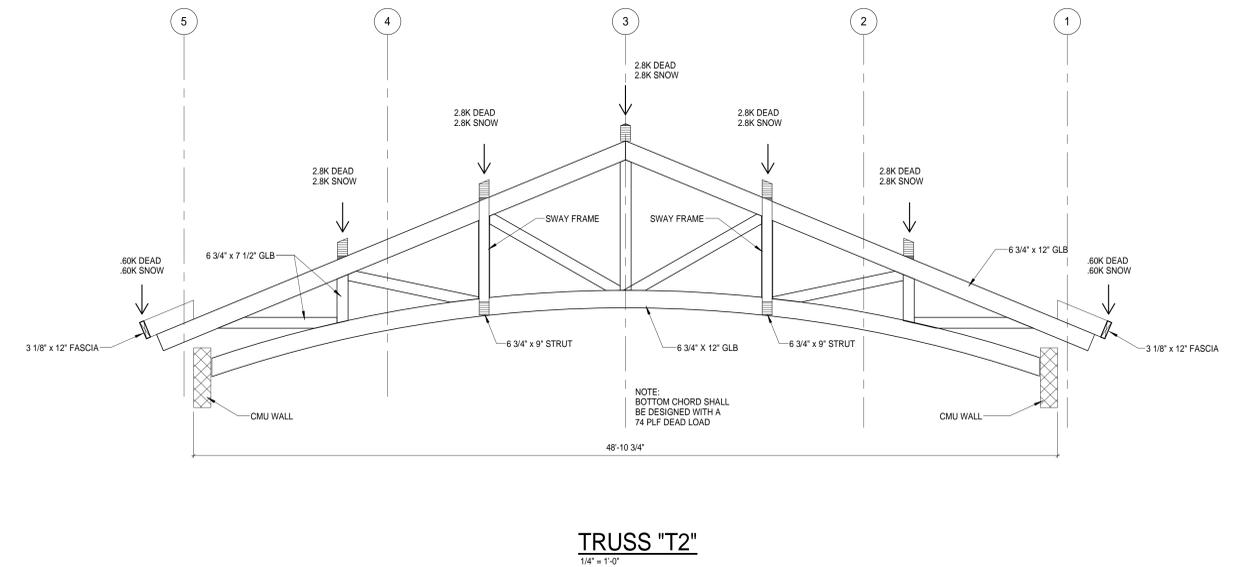
Office of
 Construction
 and Facilities
 Management

Department of
 Veterans Affairs

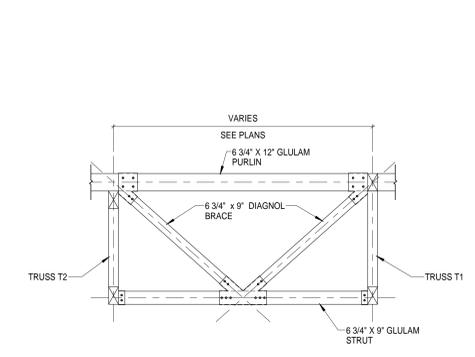
three inches = one foot
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 one quarter inch = one foot
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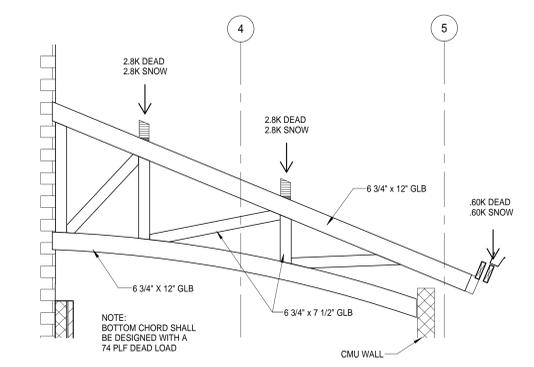
TRUSS "T1"
1/4" = 1'-0"



TRUSS "T2"
1/4" = 1'-0"



2 SWAY FRAME 1
SS205 1/4" = 1'-0"



TRUSS "T3"
1/4" = 1'-0"

A.B.I. NUMBER 7

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ISSUED FOR BID	
Revisions:	Date

ARCHITECT/ENGINEERS:
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 Saginaw, MI 48602

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Drawing Title
TRUSS ELEVATIONS
 Approved: Project Director

Project Title
**PAVING OF PARKING LOTS,
 STORM DRAINAGE
 AND SITE LIGHTING**
Location
SAGINAW, MI
 Date: 02/21/14

Project Number
655-10-106
Building Number
SITE
Drawing Number
SS205
 Dwg. of 62

**Office of
 Construction
 and Facilities
 Management**
 Department of
 Veterans Affairs