

DIVISION 1 - GENERAL REQUIREMENTS

- 1.1 QUALITY REQUIREMENTS
A. All dimensions and conflicts within the Contract Documents shall be brought to the attention of Architect prior to proceeding with the Work.
B. Verify existing dimensions and conditions at the job site. Any discrepancies between the conditions found and those indicated in the Contract Documents shall be brought to the attention of Architect prior to proceeding with the Work.
C. See Documents by other disciplines for floor, wall, and roof openings, trenches, pits, pipe sleeves, equipment pads, metal pan stairs, miscellaneou iron, etc.
D. All pipes, conduits, etc. shall be placed in structural beam openings. Members or shall any structural member be cut for pipes, ducts, etc. unless noted otherwise. Notify Architect when Documents by other disciplines show openings, pockets, etc. not indicated in the Structural Drawings, but are located in structural members. Contractor shall obtain prior approval from Architect for installation of such pipes, ducts, chases, etc.
E. Details labeled "Typical" on the Structural Drawings apply to all situations occurring on Project that are the same or similar to those locations specifically indicated. Where a detail is not indicated, the detail shall be the same as for other similar conditions.
1.1 SPECIAL INSPECTIONS
A. Special inspections shall be in accordance with the Building Code.
B. Special inspection reports shall be furnished to Building Official, Engineer, and Structural Engineer.
C. The Special Inspector shall submit a final report stating that the structural work was, to the best of the Special Inspector's knowledge, performed in accordance with the Contract Documents. (Refer to the following types of work require Special Inspections: (Refer to the Building Code and Specifications for detailed inspection requirements.)
1. Prepared Fill
2. Pipe Foundations
3. Concrete Construction
4. Steel Construction
5. Wood Construction
1.1 DESIGN CRITERIA:
A. The structure is designed in accordance with the EBCA National Building Code, 1999 Edition.
B. No provisions have been made for future horizontal or vertical expansion.
C. Gravity Loads:
1. Uniform Roof Live Loads (Maximum of the following):
a. Live Load: 50 psf
1) Ground Snow Load, Pg: 50 psf
2. Uniform Floor Live Loads (reduced as allowed by the Building Code, unless otherwise noted):
a. Live Load: 80 psf
b. Wind Loads
1. Basic Wind Speed: 90 MPH
2. Importance Factor: I=1.10
3. Exposure: C
4. Earthquake Load:
a. Peak Velocity-Related Acceleration, Av: 0.1
b. Peak Acceleration, Aa: 0.1
1.1 FOUNDATIONS
GENERAL
A. Foundation design is based upon recommendations in the geotechnical reports prepared by Summit Geotechnical Services PN 7728 dated: December 9, 2003; December 9, 2003; January 9, 2004.
B. Owner's Geotechnical Representative shall certify the bearing medium prior to concrete placement.
C. Excavations shall be kept free of loose material and standing water.
1.2 DRIVEN PILES
A. Driven end bearing piles shall have 80 tons vertical capacity and 850 psf horizontal capacity.

DIVISION 3 - CONCRETE

- 3.1 REINFORCING
A. Reinforcing steel shall be ASTM A615, Grade 60, deformed bars, unless noted otherwise. Welding of ASTM A615, Grade 60 reinforcing bars shall be in accordance with AWS D1.1, Type B.
2. Reinforcing steel to be welded shall be ASTM A185 and shall be contact lap welded with full wire splices.
3. All reinforcing bars shall be detailed, fabricated, supported, and placed in accordance with ACI 318, Details and Detailing of Concrete Reinforcement and CRSI's Manual of Standard Practice.
4. Reinforcing bars shall be placed in concrete as required, tied and lapped.
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10. Reinforcing bars shall be placed in concrete as required, tied and lapped.
11. Reinforcing bars shall be placed in concrete as required, tied and lapped.
B. SLABS
1. Provide slab bolsters, high chairs, and J's support bars as necessary to maintain proper placement of all reinforcing, including rebar wire fabric.
2. Provide #5 60 x 6-0" diagonals at corners of openings and rebar wire fabric.
3. CAST-IN-PLACE CONCRETE
A. Reinforced concrete shall be placed in a minimum 28-day curing period.
B. All concrete shall be placed in a minimum 28-day curing period.
C. All concrete shall be placed in a minimum 28-day curing period.
D. All concrete shall be placed in a minimum 28-day curing period.
E. All concrete shall be placed in a minimum 28-day curing period.
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G. All concrete shall be placed in a minimum 28-day curing period.
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J. All concrete shall be placed in a minimum 28-day curing period.
K. All concrete shall be placed in a minimum 28-day curing period.
L. All concrete shall be placed in a minimum 28-day curing period.
M. All concrete shall be placed in a minimum 28-day curing period.
N. All concrete shall be placed in a minimum 28-day curing period.

DIVISION 5 - METALS

- 5.1 STRUCTURAL STEEL
GENERAL
1. Structural steel shall be fabricated and erected in accordance with the AISC "Load and Resistance Factor Design Specification for Structural Steel Buildings," 1989 with Supplement No. 1, and be S45 and grade marked unless otherwise noted.
a. W's, WT's and HP's ASTM A992
b. Plates & other shapes ASTM A36
c. HSS ASTM A500, Grade B
d. Pipe ASTM A53, Grade B
e. Bolts ASTM A325, 3/4" diameter (min.), hex head
f. Anchor Rods ASTM F1554, Grade 36 with washers and heavy hex nuts
g. Threaded Rod ASTM A36
h. Electrodes AWS D1.1, Type B
i. Headed Studs Matching strength, 70 ksi min.
j. Detail steel beam connections as simple span beams, unless noted otherwise.
2. Beam connections shall be as indicated on the Structural Drawings.
a. Minimum beam shear reaction is 10 kips.
3. Bolted connections at the following locations shall be designed as fully tensioned bearing connections with threads included in the shear plane:
a. Drag Beams
b. Hangers
c. Bolted connections designated as fully tensioned shall be installed with tension-control bolts (ASTM F1852)
d. Where items are to be anchored to concrete or masonry, except at column bases, use standard sized holes in steel member, unless noted otherwise.
e. Use galvanized anchors where specified.
f. Use galvanized anchors where specified.
g. Use galvanized anchors where specified.
h. Use galvanized anchors where specified.
i. Use galvanized anchors where specified.
j. Use galvanized anchors where specified.
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s. Use galvanized anchors where specified.
t. Use galvanized anchors where specified.
u. Use galvanized anchors where specified.
v. Use galvanized anchors where specified.
w. Use galvanized anchors where specified.
x. Use galvanized anchors where specified.
y. Use galvanized anchors where specified.
z. Use galvanized anchors where specified.
4. ANCHORS TO CONCRETE AND MASONRY
a. Anchors shall be adhesive anchors, unless noted otherwise.
b. Adhesive anchors shall be Hilti HIT HY adhesive anchors or approved equal. Use HY 150 adhesive when anchoring into solid base material. Use HY 20 adhesive plus a screen tube when anchoring to or through hollow base material. Anchors shall be plain, uncoated except provide galvanized anchors where specified.
c. When installing anchors, do not cut existing reinforcing. Install anchors to accommodate the standard hole size in steel.
d. Anchors to be embedded in concrete shall be as follows, unless noted otherwise:
1/2" diam. : 3-1/2" embedment
3/8" diam. : 4-1/4" embedment
5/8" diam. : 5-3/8" embedment
3/4" diam. : 6-5/8" embedment
1" diam. : 8-1/4" embedment
5.2 STEEL JOISTS
GENERAL
1. Steel joists shall be designed, fabricated, and erected in accordance with SJI "Standard Specifications for Open Web Steel Joists," 1994 and OSHA Subpart R, Steel Erection.
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5.3 METAL DECK
GENERAL
1. Deck shall be continuous over 3 spans, unless noted otherwise.
2. All deck shall be designed, fabricated, and installed in accordance with SJI "Standard Specifications for Metal Deck," 1996.
3. At supports parallel to the deck span, raise steel supports or provide shims at fastening points if the deck valley does not engage the support.
4. Where deck is welded to supports, provide welding washers for deck with design thickness less than 0.028".
5. At Contractor's option, Hilti X-EDN and ENP fastening systems or approved equal may be used in lieu of welds to supports.
6. Elements of metal deck shall be as follows:
a. Elements of metal deck shall be as follows:
1) Weld Pattern: 30/4
2) Typical installation, unless noted otherwise:
a. Cold-formed metal framing shall be designed, fabricated, and erected in accordance with AISI's "Specification for the Design of Cold-Formed Steel Structural Members," 1996.
b. Complete, uniform, and level bearing support shall be provided for the top and bottom tracks of stud walls, or full size shims shall be installed to provide such bearing.
c. Stud walls shall be installed with their bearing ends positioned flush against the inside track web.
d. Full-height double studs shall be provided at the ends of partitions and at wall openings unless noted otherwise on drawings.
e. Full-height double studs shall be provided beneath bar joists, beneath trusses, and at other locations indicated in the Structural Drawings.
f. Stud walls shall be installed with their bearing ends positioned flush against the inside track web.
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w. Stud walls shall be installed with their bearing ends positioned flush against the inside track web.
x. Stud walls shall be installed with their bearing ends positioned flush against the inside track web.
y. Stud walls shall be installed with their bearing ends positioned flush against the inside track web.
z. Stud walls shall be installed with their bearing ends positioned flush against the inside track web.
7. Provide stud wall bridging according to manufacturer's recommendations.
8. Splices in studs shall not be permitted. Do not cut studs.
9. Steel clips shall be capable of resisting a lateral force of 500 lbs.
10. Exterior wall studs and kickers shall have the following minimum effective properties: in the designation below, 400 is the member depth in 1/100 inches, S is the member style, 162 is the flange width in 1/100 inches, and 43 is the material thickness in mils.
Designation Design Effective Properties
Thick. Ix, in4 Sx, in3 A, in2 Fy, ksi
600S162-43 0.0451 2.316 0.767 33
400S162-43 0.0451 0.892 0.443 0.357 33
At locations requiring welding of or to metal studs, minimum stud thickness shall be 43 mil.
11. Provide track at top and bottom of stud walls and at headers for stud walls, thickness of track to match thickness of stud.
12. Provide mockup for exterior wall studs per specification. Do not proceed until mockup has been approved.

DIVISION 6 - WOOD FRAMING

- 6.1 WOOD FRAMING
GENERAL
1. All structural lumber: Equivalent to Southern Pine K.D. No. 2 with moisture content less than or equal to 19%.
2. Lumber: Per "National Design Specification for Wood Construction" and be S45 and grade marked unless otherwise noted.
3. Bolt holes through wood: Drilled 1/16" maximum larger than the diameter of the bolt to be installed.
4. Bolts through wood: Install with standard washers.
5. The number and size of nails connecting wood members together shall be per the nailing schedule on this sheet, unless otherwise noted or detailed.
6. Nails, caps, bases, etc. for connecting wood members are indicated by S, C, or B. Substitution of equivalent material is permitted when approved by the Architect.
WOOD TRUSSES AND JOISTS
A. Wood truss design and construction shall comply with the following standards:
1. ANSI/TPI 1-2002 "National Design Standard for Metal-Plate-Connected Wood Truss Construction."
2. TPI HB "Commentary and Recommendations for Handling, Erecting and Bracing Metal Plates Connected Wood Trusses."
3. TPI DSB "Recommended Design Specification for Temporary Bracing of Metal Plate Connected Wood Trusses."
B. Wood roof trusses: Design for a total dead load (including the truss weight) of 15 psf on the top chord and 15 psf on the bottom chord, a live load of 50 psf on the top chord, and lateral wind load per BOCA 1999. Live load deflection shall not exceed L/240 and the trusses shall be cambered to offset design dead load. Design and fabrication of the wood trusses is subject to review by the engineer.
C. Submit a complete set of truss drawings and calculations signed and sealed by a professional structural engineer registered in the state of Maine.
D. Temporary construction loads on wood trusses/joists beyond limits indicated thereon is not permitted. Erection bracing in addition to specified bridging shall be provided to keep the trusses straight and plumb as required and to assure adequate lateral support for the bracing trusses and entire system until the erecting material has been installed.
E. Machine nailing: Subject to a satisfactory job site demonstration for each project and the approval by the project architect or structural engineer. The approval is subject to continued satisfactory performance. If nail heads penetrate the outer ply more than would be normal for a hand hammer or if a minimum allowable edge distance are not maintained the performance will be deemed unsatisfactory.
F. Multiple ply trusses and multiple ply wood members shall be assembled on the ground prior to erection.
6.3 SHEATHING
A. Meet the requirements of U.S. Product Standard #S-1. Each panel shall be identified with the grade-trademark of the American Plywood Association (APA) panel thickness and identification index.
B. Roof sheathing: Blocked 15/32", APA rated plywood, grade C-C or C-D, exposure 1, and span rated 40/20. Nail with 10d common nails at 4-cc along diaphragm boundaries, 4-cc along supported panel edges and blocked continuously and at 6-cc along intermediate supports. Install sheathing continuously over two or more spans with face grain across supports. Stagger panel joints as shown on drawings. Allow 1/8" spacing at panel ends and edges. Use ply clips at mid-span.
6.4 NAILING SCHEDULE
A. Use minimum nailing unless otherwise noted. Nails indicate on these drawings are to be full length common wire nails except as indicated.
B. STUDS AND PLATES
1. Studs to bearing plates: 3-8d toe nailed each side or 3-16d end nails
2. Multiple Studs: 16d @ 24" cc staggered
3. Double Top Plates:
a. Lower to studs: 2-16d end nails
b. Upper to lower: 16d @ 16" cc staggered
4. Sole Plate (unless noted otherwise: 16-16d
5. Sole Plate to Blocking: 16d @ 8" cc
C. BLOCKING AND BRIDGING
1. To Trusses: 2-8d Toe Nailed each side
2. To Beams: 2-8d Toe Nailed each side
3. Blocking to Blocking: 2-16d each block
4. Solid Bridging to Trusses: 3-16d

DIVISION 7 - PORTLAND MAINE

EVERGREEN CREDIT UNION
A New Building for
Portland, Maine
Construction By
HBE Financial Facilities
1930 Olive Boulevard, St. Louis, Missouri 63141 (314) 657-9000
Frederick S. Scott, Architect
Ronald L. Hollander, Architect

Professional Engineer Seal: EVERGREEN CREDIT UNION, PORTLAND, MAINE, REGISTERED ARCHITECT, RONALD L. HOLLANDER, No. 101, EXPIRES 12/31/04.
Professional Engineer Seal: EVERGREEN CREDIT UNION, PORTLAND, MAINE, REGISTERED ARCHITECT, FREDERICK S. SCOTT, No. 101, EXPIRES 12/31/04.
Professional Engineer Seal: EVERGREEN CREDIT UNION, PORTLAND, MAINE, REGISTERED ARCHITECT, RONALD L. HOLLANDER, No. 101, EXPIRES 12/31/04.
Professional Engineer Seal: EVERGREEN CREDIT UNION, PORTLAND, MAINE, REGISTERED ARCHITECT, FREDERICK S. SCOTT, No. 101, EXPIRES 12/31/04.
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