GENERAL STRUCTURAL NOTES:

1) Should a discrepancy occur between the construction drawings and the project technical specifications, the specifications will govern.

2) Design Code: IBC 2009, Occupancy Catagory II

3) Design wind speed:

Building 90 mph

Exposure category B

Importance factor, Iw=1.0

Components and Cladding

See Section 6.0 ASCE-7

4) Seismic design:

Seismic Design Category B

Site Class C

Seismic Importance Factor, I_E = 1.0

Spectral Response Accelerations, S_S =0.247, S_1 = 0.0735

Spectral Response Coefficients, S_{DS}=0.263, S_{D1} = 0.118

5) Live Loads:

Floors:

Classification	Load	
Support Building Corridors	100	psf
Support Building Floors	100	psf
Support Building Porch	100	psf
Stage Floor	150	psf
Stairs & Exit Ways	100	psf

6) Snow Loads:

Ground Snow Load, P_g= 30 psf

Flat Roof Snow Load, P_f = 25 psf minimum

Snow Exposure Factor, C_e = 1.0

Thermal Factor, C_t = 1.2 for Stage & 1.0 for Support Building

Snow Load Importance Factor, I_s = 1.0

7) General Contractor shall verify all dimensions and conditions related to existing construction, existing services, and the site.

8) Construction loads shall not exceed design live loads. Shoring and re-shoring is the responsiblity of the General Contractor.

FOUNDATIONS

1) Foundation design is based Geotechnical Engineering Report prepared by Terracon Consultants, Inc. Project No. N2125020 dated April 3, 2012. Maximum allowable soil bearing pressure is 4000 psf assuming that soil is undercut to bedrock and then replaced with lean concrete as per geotech report. Structural engineer is not responsible for subsurface conditions encountered in the field different from those noted in the subject report.

2) Foundation system consists of Wall Footings, Spread Footings, Drilled Piers, and Grade Beams

3) Notify the Architect of any unusual soil conditions that are in variance with the test borings, such as ground water, substandard bearing material, or obstructions.

4) Refer to Foundation Plan for footing elevations. Elevations shown are "top of concrete".

5) Backfilling against foundation or pit walls will not be permitted until supporting floors at the top of these walls are in place and able to provide full support to the imposed loads. Proper temporary bracing may be used in lieu thereof with prior approval of the Architect. The design of the temporary bracing is the responsibility of the General Contractor.

6) The General Contractor shall be responsible for the design, installation, and final clearance of any required shoring or bracing.

7) Remove all unsuitable fill and replace per the recommendations of the Geotechnical Engineer of record.

8) Anchor bolts shall be set in place prior to concrete placement. They shall not be forced into wet concrete.

MASONRY WORK

1) Masonry work shall conform to the references and standards listed in the Project Manual.

2) Maximum lateral deflection is to be limited to L/360.

3) Vertical control joints shall be located at a maximum 15ft. o.c.

4) Mortar shall be ASTM C270, Type S, 2500 PSI minimum.

5) Grout shall conform to ASTM C476. Use fine grout for collar joints 1" wide or less and when grouting cells of hollow masonry units with or without vertical reinforcing. Use coarse grout when grouting bond beams.

6) Wall construction under masonry bearing structural members shall be as follows, unless otherwise noted:

a. Provide solid masonry, 32" long and 16" high centered under each wall bearing open web steel joist supporting roof loads.

b. Provide solid masonry, 32" long and full height of wall to the footing, centered under each wallbearing steel beam or cast-in-place concrete beam.

7) All masonry walls shall have galvanized horizontal reinforcing of one of the following:

a. Truss type 3/16 " side rods and #9 gage cross rods, for all non-reinforced walls, spaced 16" on-center vertically.

b. Ladder type 3/16 " side rods and #9 gage cross rods, for all vertically reinforced or grouted walls, spaced 16" on-center vertically.

8) Conventional reinforcing bars, horizontal and vertical, shall be ASTM A615, Grade 60.

9) All units shall be laid with full mortar coverage on head, bed (face shells), and webs, unless otherwise noted.

10) All new wall construction shall have a bond beam coarse set at the each floor level and at the top row with 2-#5's continuous U.N.O. Do not exceed 16 ft. vertical wall height without a bond beam.

11) For all air spaces behind veneer below grade, fill space with min. 2500 psi grout, unless noted otherwise on Architectural drawings

12) For all HVAC pentrations through CMU walls General Contractor shall coordinate locations with all trades. Opening locations shall be determined upon coordination with HVAC contractor. Notify Architect and Engineer of Record for review of determination of lintel requirements.

13) All masonry shall have a minimum ultimate compressive strength of 1500 psi.

TRUSS NOTES

1. SEE THIS STRUCTURAL DRAWING FOR MAIN TRUSS CONFIGURATIONS
2. WOOD TRUSSES TO BE ENGINEERED AND BUILT BY A CERTIFIED TRUSS MANUFACTURER WITH DRAWINGS AND CALCULATIONS PREPARED BY A STRUCTURAL ENGINEER REGISTERED IN THE STATE OF WEST VIRGINIA AND SUBMITTED FOR REVIEW PRIOR TO FABRICATION OF WOOD TRUSSES.
3. SIZE AND LOCATION OF ALL BRACING SHALL CONFORM TO THE COMMENTAY AND RECOMMENDATIONS FOR HANDLING, INSTALLING AND BRACING METAL PLATE CONNECTED WOOD TRUSSES HIB-91 BY THE TRUSS PLATE INSTITUTE.
4. TRUSSES @ 24" O.C. MAX (TYP.)
5. DESIGN LOADS:
   - LIVE LOADS----------TOP CHORD 30 PSF
   - DEAD LOADS----------TOP CHORD 15 PSF
   - LIVE LOADS----------BOTTOM CHORD 5 PSF
   - DEAD LOADS----------BOTTOM CHORD 10 PSF
   - WIND LOADS----------20 PSF
   - MECHANICAL LOADS----------ACTUAL EQUIP. WT.
6. TRUSS MANUFACTURER SHALL ENSURE THE ABILITY OF THE TRUSSES TO RESIST CONCENTRATED LOADS APPLIED BY ROOF MECHANICAL EQUIPMENT. COORDINATE LOCATION AND LOADS WITH MECHANICAL SUPPLIER.
7. TRUSSES ARE BASED ON 2X3 TOP & BOTTOM CHORD NOMINAL SIZES. IF ALTERNATE CHORED SIZES ARE REQUIRED BY DESIGN, OUT-TO-OUT DIMENSIONS SHALL BE HELD CONSTANT AND CENTERLINE DIMENSIONS SHALL BE ADJUSTED. ALL CENTERLINES SHALL INTERSECT AT PANEL POINTS.

STRUCTURAL STEEL

1) All structural steel work shall be in accordance with the "Specifications for the Design, Fabrication, and Erection of Structural Steel Buildings" (13th Edition) of the AISC. Maintain copy of each on job site during construction.

2) Structural steel shall conform to the following:

a. Wide flange shapes and WT's - ASTM A 992 with a minimum yield strength of 50,000 PSI.

b. Channels, angles, plates, and miscellaneous connection material - ASTM A36 with a minimum yield strength of 36,000 PSI unless noted otherwise.

c. Pipes - ASTM A501 with a minimum yield strength of 36,000 PSI or ASTM A53 Type E or S with a minimum yield strength of 35,000 PSI.

d. Tubes - ASTM A500, Grade B with a minimum yield strength of 46,000 PSI.

3) All bolts shall be 3/4 " dia. unless noted otherwise ASTM A325 H.S. bolt of either friction or bearing type. Use slip critical connections for all wind bracing connections. Threads shall be included in the shear plane.

4) All bolted connections shall be made according to AISC Table II or III framed beam connections. The minimum depth of connection must be more than one half the depth of the beam except that beams framing to columns shall have full depth connections using 3/8 " connection angles or plates. Connections shall be designed for one half the uniform load capacity of the beam or a minimum 10k. Contractor shall provide certified design for all shear connections by a West Virginia Professional Engineer.

5) All welding shall be in strict accordance with the standards of the AWS and the AISC. Use E70XX electrodes.

6) Do not paint steel where encased in concrete or at field weld areas.

7) No shop or field holes or cuts are to be placed in structural members unless indicated on the contract or shop drawings.

8) The Structural Steel Fabricator shall field verify all dimensions prior to fabrication. Particularly for stairs, handrail systems, etc.

9) The Structural Steel Fabricator shall provide for vertical and horizontal adjustment of all support assemblies.

10) The Structural Steel Fabricator and/or the General Contractor shall verify all existing dimensions and conditions at the site. All discrepancies found shall be reported to the Architect prior to preparation of shop drawings. Shop drawings shall include all field measurements and conditions.

11) Expansion bolts:Use expansive anchors of the diameter indicated on the drawings as manufactured by HILTI Fastening Systems or approved equal.

a. In concrete, use HSL Heavy Duty Anchors.

b. In brick and CMU, use sleeve and fill CMU cells at all bolt locations.

12) Anchor bolts must meet ASTM A307 specifications and be 3/4 " diameter (unless otherwise indicated) provide with 3" hook unless noted at the end and embedded 1'-0" minimum into concrete or filled masonry.

13) The Structural Steel Fabricator shall provide all supports for any precast concrete panels as indicated on the drawings and as required by the manufacturer. Location of such supports shall be coordinated with the manufacturer.

14) The Structural Steel Fabricator, Precast Concrete Supplier, and the General Contractor shall coordinate all support and tie-back locations and connections, if applicable.

15) All galvanizing shall be per ASTM A123 and A 780. All steel exposed to the elements and masonry support members shall be galvanized.Backup steel supporting masonry veneer and precast support angles shall be zinc primed and painted.

16) Refer to architectural and mechanical drawings for possible miscellaneous steel. This steel shall also conform to the requirements in these General Notes and the Structural Steel specifications.

17) Steel fabricator shall be certified under the AISC quality Certification Program.

18) All shear studs shall be 3/4" diameter x 1 1/2" taller than the metal deck height. (1 1/2" deck + 1 1/2" = 3")

19) Steel fabricator shall review Architectural drawings and include all miscellaneous steel in their bid. If notes on architectural drawings refer to "see structural" and the structural drawings do not address this item notify the E.O.R. at least two weeks prior to bid opening to allow time for issue of addendum.

PERFORMANCE REQUIREMENTS

1) No provision of any referenced standard specification, manual or code (whether or not specifically incorporated by reference in the contract documents) shall be effective to change the duties and responsibilities of owner, contractor, engineer, supplier, or any of their consultants, agents, or employees from those set forth in the contract documnets. Nor shall it be effective to assign to the structural engineer of record or any of the structural engineer of record's consultants, agents, or employees ant duty or authority to supervise or direct the furnishing or performance of the work or any duty or authority to undertake responsibilities contrary to the provisions or the contract documents.

2) Contract documents include, but are not limited to, the structural documents (drawings and specifications), but do not include shop drawing, vendor drawings, or materials prepared and submitted by the contractor.

3) Reference to standard specifications or any technical society, organization, or association or to codes of local or state authorities, shall mean the latest standard, code, specification or tentative specification adopted at the date of taking bids, unless specifically stated otherwise.

4) Contract documents shall govern in the event of a conflict with the code of practice or specifications of ACI, PCI, AISC, SJI, or other standards. Where a conflict occurs within the contract documents, the strictest requirement shall govern.

5) Contractor shall obtain and coordinate edge of slab dimensions, opening locations and dimensions, depressed slab locations and extents, slab slopes, curb locations, and CMU wall location. Architect/Structural engineer shall be notified of any discrepancy or omission.

6) Contractor shall verify existing dimensions, elevations, and site conditions before starting work. Architect/Structural engineer shall be notified of any discrepancy.

7) Contractor shall verify the structurally supported mechanical equipment weights, opening sizes, and locations identified on the structural drawing with architectural and mechanical drawings.

8) Contractor shall verify that miscellaneous framing shown on the structural drawings for mechanical equipment, owner-furnished items, partitions, etc. is consistent with the requirements of such items.

9) Contractor has responsibility for means, methods, safety, techniques, sequences, and procedures of construction.

10) The structure is stable only in its completed form. Temporary supports required for stability during all intermediate stages of construction shall be designed, furnished, and installed by the contractor. Contractor is responsible for constructability analysis, and erection procedures, including design and erection of falsework, temporary bracing, etc.

11) Contractor has sole responsibility to comply with all OSHA regulations.

12) Reproduction of structural drawings for shop drawings is not permitted.

13) Electronic drawing files will not be provided to the contractor.

14) Structural engineer of record is not responsible for the design of steel stairs, handrails, curtain wall/window systems, cold-formed metal framing, or other systems not shown in the structural documents, such systems shall be designed, furnished, and installed by others as required by other portions of the contract documents.

15) Structural Engineer shall not be responsible for specifying all waterproofing details and elements on the superstructure and below grade structures.

16) General Contractor shall review and coordinate elevator rail and hoist requirements with structural drawings. Notify structural engineer immediately if changes are required.

JOIST SIZE (INCHES)	SPACING OF JOISTS CENTER TO CENTER (INCHES)	MAXIMUM ALLOWABLE LENGTHS BETWEEN SUPPORTS (FOR FLOOR LIVE LOADS OF 40 PSF)																
		HAVING DETERMINED FROM THE BUILDING CODE OR OTHER PROPER AUTHORITY THE ALLOWABLE MODULAUS OF ELASTICITY E (IN CASE THE SPAN IS TO BE LIMITED BY DEFLECTION) OR THE ALLOWABLE EXTREME FIBER STRESS IN BENDING F (IN CASE THE SPAN IS TO BE DETERMINED BY BENDING) FOR THE SPECIES AND GRADE OF LUMBER USED, REFER TO THE COLUMN BELOW WITH THE CORRESPONDING VALUE TO DETERMINE THE MAXIMUM SAFE SPAN FOR THE SIZE AND SPACING OF JOIST DESIRED. IN SELECTING THE SPAN FOR DEFLECTION IT SHOULD BE CHECKED WITH THE SPANS FOR BENDING TO SEE IF IT DOES NOT EXCEED THE LENGTH PERMITTED FOR THE BENDING STRESS F OF THE MATERIAL USED.																
		SPAN LIMITED BY DEFLECTION					NOTES:	SPAN LIMITED BY BENDING										
		E=	1,000,000	1,200,000	1,400,000	1,600,000		f=	900	1,000	1,100	1,200	1,300	1,400	1,500	1,600	1,700	1,800
2x6	12	L	9'-1"	9'-8"	10'-2"	10'-8"		L	9'-6"	10'-0"	10'-5"	10'-11"	11'-4"	11'-9"	12'-3"	12'-7"	13'-0"	13'-4"
"	16	L	8'-4"	8'-10"	9'-3"	9'-8"		L	8'-3"	8'-8"	9'-1"	9'-6"	9'-11"	10'-3"	10'-8"	11'-0"	11'-4"	11'-8"
"	24	L	7'-3"	7'-9"	8'-2"	8'-6"		L	6'-9"	7'-2"	7'-6"	7'-10"	8'-1"	8'-5"	8'-9"	9'-0"	9'-3"	9'-7"
2x8	12	L	12'-1"	12'-10"	13'-6"	14'-1"		L	12'-6"	13'-2"	13'-10"	14'-5"	15'-0"	15'-7"	16'-2"	16'-8"	17'-2"	17'-8"
"	16	L	11'-0"	11'-8"	12'-4"	12'-11"		L	10'-11"	11'-6"	12'-1"	12'-7"	13'-1"	13'-7"	14'-1"	14'-7"	15'-0"	15'-5"
"	24	L	9'-8"	10'-3"	10'-10"	11'-4"		L	9'-0"	9'-6"	9'-11"	10'-4"	10'-9"	11'-2"	11'-7"	12'-0"	12'-4"	12'-8"
2x10	12	L	15'-2"	16'-1"	17'-0"	17'-9"		L	15'-9"	16'-7"	17'-5"	18'-2"	18'-11"	19'-7"	20'-4"	21'-0"	21'-7"	22'-3"
"	16	L	13'-11"	14'-9"	15'-6"	16'-3"		L	13'-9"	14'-6"	15'-2"	15'-10"	16'-6"	17'-2"	17'-9"	18'-4"	18'-11"	19'-5"
"	24	L	12'-3"	13'-0"	13'-8"	14'-3"		L	11'-4"	11'-11"	12'-6"	13'-1"	13'-7"	14'-2"	14'-7"	15'-1"	15'-7"	16'-0"
2x12	12	L	18'-4"	19'-5"	20'-5"	21'-4"		L	18'-11"	19'-11"	20'-11"	21'-10"	22'-9"	23'-7"	24'-5"	25'-2"	26'-0"	26'-9"
"	16	L	16'-9"	17'-9"	18'-9"	19'-7"		L	16'-7"	17'-5"	18'-3"	19'-1"	19'-11"	20'-8"	21'-4"	22'-1"	22'-9"	23'-5"
"	24	L	14'-9"	15'-8"	16'-6"	17'-3"		L	13'-8"	14'-5"	15'-1"	15'-9"	16'-5"	17'-0"	17'-8"	18'-3"	18'-9"	19'-4"
2x14	12	L	21'-4"	22'-7"	23'-10"	24'-11"		L	22'-0"	23'-3"	24'-4"	25'-5"	26'-6"	27'-6"	28'-5"	29'-4"	30'-3"	NA
"	16	L	19'-7"	20'-9"	21'-10"	22'-10"		L	19'-4"	20'-4"	21'-4"	22'-4"	23'-3"	24'-1"	24'-11"	25'-9"	26'-6"	27'-4"
"	24	L	17'-3"	18'-4"	19'-4"	20'-2"		L	16'-0"	16'-10"	17'-8"	18'-5"	19'-2"	19'-11"	20'-7"	21'-4"	21'-11"	22'-7"

CAST-IN-PLACE CONCRETE

1) Cast-in-place concrete work shall conform to the American Concrete Institute codes and standards listed in the Project Manual except as modified therein or on the drawings. Maintain copy of each on job site during construction.

2) The minimum ultimate compressive strength of concrete at 28 days shall be:

a. 3000 psi - Stair pan infill

b. 4000 psi - All other unless noted otherwise on drawings.

3) Maximum aggregate size shall be 1 1/2 ", well graded, well shaped (not elongated, flat, or slippery), and free of clay, dirt, and excess fines, U.N.O.

4) Aggregate composition shall consist of quartz, limestone, dolomite, granite, or feldspar.

5) Cement shall be Type 1, U.N.O.

6) Maximum concrete slump 3", U.N.O.

7) Reinforcing bars: ASTM A615, Grade 60.

8) Welded wire fabric: ASTM A185.

9) Provide 6x6-w2.9xw2.9 welded wire fabric in all non-structural slabs on grade, unless otherwise noted.

10) Place reinforcement in slabs, 1-1/2" down from top of slab, unless otherwise noted.

11) Provide control joints in all non-structural slabs on grade. The maximum spacing of control joints shall be 20'-0" O.C. unless otherwise noted. Control joint depth equal to 1/5 slab thickness not less than 1 inch.

12) Reinforcing bar lap splices and anchorage lengths shall conform with ACI 318-95 "Development and Splices of Reinforcement." All splices shall be Type B.

13) Top layer of reinforcing steel in slabs and footings shall be considered top bars regardless of thickness of concrete below the bars.

14) All horizontal wall bars shall be bent lapped around all corners, unless otherwise noted.

15) Provide vertical and horizontal reinforcing bars in concrete walls to conform to the minimum provisions of ACI 318, Section 14.3 unless otherwise noted.

16) Chamfer exposed edges of concrete 1/2" unless otherwise noted.

17) Refer to architectural drawings for location and extent of finishes or other treatments to exposed concrete.

18) Determine size, location and weight of mechanical equipment and make provisions for bolts, sleeves, pads, etc. from manufacturer's certified drawings. This work shall be coordinated with the trades involved.

19) All new concrete shall be bonded to previously placed concrete per specification requirements, U.N.O.

STEEL DECK

1) Design of steel deck shall be the sole responsibility of the Contractor and shall conform to the requirements of the Steel Deck Institute (SDI) and the contract documents. Submit shop drawings with design load data sealed by an engineer licensed in the project state. Review of shop drawings shall be for Contractor's interpretation of design loads and contract document details. Such review shall not relieve the contractor of the full responsibility for the design of the steel deck. Deck shown on design drawings are for estimating purposes only.

2) Composite steel deck shall be capable of supporting the loads described in the specifications, corresponding to the number of spans and the span length.

a. Composite floor deck is designed to be unshored unless noted otherwise.

b. Composite floor slabs are to be finished level. The weight of the wet concrete will cause deflections of the steel framing, thus concrete overruns are to be anticipated and included in the Contractor's base bid.

c. Coordinate embedded items required for architectural, structural and mechanical elements.

SHOP DRAWINGS

1) See Project Manual - Administrative Requirements for submittal procedures.

2) The General Contractor shall review, check, and stamp "Approved" all shop drawings prior to submitting them to the Architect. Shop drawings which have not been stamped "Approved" by the General Contractor do not conform to the requirements of the Contract Documents and will be rejected.

3) The General Contractor shall provide a shop drawing submittal schedule to the Architect at least two weeks prior to submittal of the first set of shop drawings.

4) Shop drawing submittals and approval must precede the start of fabrication. General Contractor proceeds at their own risk without approved shop drawings from the Architect. The maximum approval time for shop drawings will be two weeks (ten working days) from the date of receipt in the Architect's office to the date of return delivery. General Contractor and Architect shall increase coordination efforts when large numbers of shop drawings are invited.

5) Refer to the Project Manual for specific submittal procedures.

6) Shop drawings shall not simply be a copy of the engineer's design drawings with the contractor's title block. Shop drawings shall be completely prepared by the submitting entity.

STEEL JOISTS

1) Detail, fabricate, and erect steel joists in accordance with Steel Joist Institute, AISC, and other codes, standards, and specifications listed in the Project Manual except as modified therein or on the drawings.

2) Provide bridging in accordance with Steel Joist Institute specifications. End of brodging lines shall be anchored to masonry walls, concrete walls, or steel beams. All bridging shall be welded in such a manner as to not impair the structural integrity of the joists.

3) Weld all steel joists to supporting structural steel members as shown on the drawings with Steel Joist Institute requirements as a minimum.

4) No loads shall be hung from the joist bridging.

5) Any loads supported from the joist bottom chord must be attached at a bottom chord panel point. (See details)

6) All bar joists are to have ceiling extensions at bottom chords.

7) Ceiling extensions for LH series to stop 1" from sidewalls.

8) Depths of seats for K series is 2-1/2", for LH series, 5".

9) Bridging for K series to be horizontal at roof level and x at floor level.

10) Joist spacing shall be a multiple of equal spacing between column lines U.N.O.

TIMBER FRAMING

1) Timber shall conform to National Design Specification for Stress Grade lumber and its fastenings.

2) Materials for framing lumber subject to bending stresses such as beams, joists, rafters, headers, and other horizontal members shall be treated southern pine No. 1 Construction Grade minimum, unless a higher grade is shown on the drawings.

3) Materials for stud walls and columns shall be treated pine with strength values equivalent to or higher than Southern Pine No. 1 Construction Grade minimum, unless shown otherwise on the drawings.

4) Materials must be grade marked.

5) Laminated Structural Lumber (LSL), other than glulam members, shall be parallel strand lumber having the following minimum design properties:

Fb=2,900 psi

E= 2,000,000 psi

Fc=2,900 psi

Fv=290 psi

6) Plywood roof decking shall be APA rated CD interior with exterior glue, thickness as shown on the drawings. Install plywood with face grain across supports. Provide plywood sheathing clips at all free edges. Plywood span rating shall be 32/16. Nail plywood to framing with 8d hot-dipped galvanized nails as follows:

Roof Zone-First 5' of gabled end-first- 4' from edge & ridge-others

Panel Edge-	4" o.c.	6" o.c.	6" o.c.
Panel field-	6" o.c.	6" o.c.	6" o.c.

Nail to all supports at 4" o.c. for a 10'-0" square area at corners
(Use 8d ring shank hot-dipped galvanized nails when mean roof height exceeds 25 ft.)

7) Plywood wall sheathing shall be APA rated CD interior with exterior glue. Thickness as shown on the drawings. Span rating shall be 32/16. Nail plywood at 4" o.c. along panel edges and 12" o.c. at intermediate supports and blocking with 10d minimum nails unless shown otherwise on the drawings. Exterior gypsum wall sheathing (see architectural drawings) shall be nailed at 4" o.c. along panel edges and intermediate supports with No. 11, 1 3/4" long, 7/16" head hot-dip galvanized nails minimum.

8) Bridging between joists and rafters shall be 1x4 wood or 16 gage hot-dip galvanized steel cross-bridging or 2X solid bridging at all bearing locations and at 8 ft. maximum intervals.

9) Beams made up of multiple 2X pieces shall not be spliced except over supports. All multi-ply member beamsshall be attached together by glueing and nailing with 10d nails at 6" o.c. top and bottom for each ply. Flitch beams with steel plates shall be bolted together with 1/2" dia. hot-dip galvanized A307 thru bolts at 1'0" o.c. staggered from top to bottom.

10) Provide triple studs at all cornersand at all beam bearings through to foundation unless noted otherwise. Provide studs at beam bearings to match beam width where beam width exceeds 4 1/2".

11) Anchor wood sills (pressure treated) to concrete with 1/2" dia. x 9" long hot-dip galvanized, hooked anchor bolts with 9/16" wide type "B" hot dip galvanized washers embedded 7" minimum at 48" max. o.c. at corners and door openings. Provide one anchor bolt at 8" in each directionfrom corner. Provide two bolts minimum per piece of sill plate.

12) Anchor wood sills (pressure treated) to concrete with 1/2" dia. x 9" long hot-dip galvanized, hooked anchor bolts with 9/16" wide type "B" hot dip galvanized washers embedded 7" minimum at 48" max. o.c. at corners and door openings. Provide one anchor bolt at 8" in each directionfrom corner. Provide two bolts minimum per piece of sill plate.

13) Prefabricated timber trusses shall be fabricated by a certified timber truss manufacturer.

14) Trusses shall be fabricated with wood chords and webs in accordance with the National Design Standards for Metal Plate Connected Wood Truss Construction, ANSI/TPI 1, latest Edition, by the Truss Plate Institute.

15) Contractor shall provide and install all necessary bracing for timber trusses, bracing shall be in accordance with the recommendations for bracing wood trusses, publication HIB, latest edition, by the Truss Plate Institute.

16) Truss manufacturer shall submit drawings for approval showing all member forces, sizes, and connectors. Drawings shall be sealed by a registered engineer in the state where the project is located. Changes in the truss layout shown on the contract drawings by the truss manufacturer will require changes in the locations and quantities of roof truss and roof girder truss uplift anchors and hold-downs and shearwall sizes, locations and hold-downs. General Contractor shall coordinate any changes in the truss layout with the Engineer of Record. Addition design service due to these changes shall be the reapossibility of the General Contractor.

17) Typical truss loading is shown on the drawings. The manufacturer shall examine the drawings for special conditions and/or loads not shown and provide for such in the design. ie snow drift, roof top units, parapets, chimneys, etc.

18) At building ends, special gable-end trusses shall be used. Trusses shall be designed and fabricated with vertical studs no more than 16" o.c. At gable end walls, studs shall be balloon framed to the bottom of the trusses.

19) Plans and details for framing are a schematic representation of the framing at various locations and conditions on this project. The contractor shall not scale or count framing members shown as a substitute for shop drawings and an accurate quantity takeoff. The Contractor is responsible for providing all framing necessary to completely frame the project and provide for all conditions shown on the architectural drawings.

20) Joist and rafter hangers, ties, hold-downs and other preengineered connectors shall be "Simpson Strong-Tie" or approved equal. Size and useage shall be as shown on the drawings, specified in these notes and as recommended by the manufacturer. All connectors shall be post hot-dip galvanized coated after fabrication or stainless steel.

21) Joist and rafter hangers, ties, hold-downs and other preengineered connectors shall be "Simpson Strong-Tie" or approved equal. Size and useage shall be as shown on the drawings, specified in these notes and as recommended by the manufacturer. All connectors shall be post hot-dip galvanized coated after fabrication or stainless steel.

22) Install a Simpson "H2.5A" metal tie at the top and a Simpson "H3" metal tie at the bottom of every exterior stud where the stud joins the top plate and sill plate, where an "H2.5A" metal tie is required at truss ends. Install two (2)- "H3" metal ties at the bottom of every exterior stud where the stud joins the sill plate, where "H10" ties are required at truss ends. Doubled up clips shall be installed diagonally across from each other on opposite sides of the top plate or bottom sill plate.

All timber, including glulams, outside the building envelope shall be pressure treated, see specifications for product information. All connections outside the building envelope shall be made with hot-dip galvanized bolts or nails.

23) All timber and framing connectrors shall be galvanized and painted with epoxy paint in lieu of stainless steel. All references to stainless shall are therefore overrode by this requirement. Submit paint type and finish to architect for approval.

1

DRAWING LIST	
DRAWING NUMBER	DRAWING NAME
S-0.1	GENERAL NOTES
S-1.1	STAGE FOUNDATION PLAN
S-1.2	BUILDING FOUNDATION PLAN
S-2.1	STAGE FLOOR PLAN
S-2.2	BUILDING GROUND FLOOR PLAN
S-2.3	BUILDING SECOND FLOOR PLAN
S-3.1	STAGE LOWER ROOF
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S-4.1	STAGE COLUMN SCHEDULE
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S-7.1	STAGE 3-D VIEW

REINFORCING LAP LENGTH SCHEDULE

Tension lap spice lengths, (bar diameters, db) for grade 60[4] uncoated bars; normal-weight concrete[8]

f'c (psi)	Bar Size	Lap Class[9]	Lap Length per Spacing and Cover Case[3]: Top Horizontal Bars[5] Category 1	2	3	All Other Bars Category 1	2	3
3000	#3-#6	A	86db	58db	36db	66db	44db	28db
		B	112db	74db	46db	86db	58db	36db
	#7-#11	A	107db	72db	43db	83db	55db	33db
		B	139db	93db	56db	107db	72db	43db
4000	#3-#6	A	74db	50db	30db	58db	38db	24db
		B	98db	66db	40db	74db	50db	31db
	#7-#11	A	93db	62db	37db	72db	48db	29db
		B	121db	81db	49db	93db	62db	37db
5000	#3-#6	A	68db	46db	32db	52db	34db	21db
		B	86db	58db	42db	68db	46db	27db
	#7-#11	A	83db	56db	34db	64db	43db	26db
		B	108db	72db	43db	83db	56db	34db
6000	#3-#6	A	62db	42db	26db	48db	32db	19db
		B	80db	54db	32db	62db	42db	26db
	#7-#11	A	76db	51db	31db	59db	39db	24db
		B	99db	66db	40db	76db	51db	31db
7000	#3-#6	A	56db	38db	23db	44db	30db	18db
		B	74db	50db	30db	56db	38db	23db
	#7-#11	A	70db	47db	28db	54db	36db	22db
		B	91db	61db	37db	70db	47db	28db
>= 8000	#3-#6	A	54db	36db	22db	42db	28db	18db
		B	68db	46db	28db	54db	36db	22db
	#7-#11	A	66db	44db	27db	51db	34db	21db
		B	85db	57db	34db	66db	44db	27db

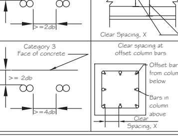
Lap notes:

1. Lap splice lengths are based on ACI318-08 section 12.2 and subsections 12.2.2 and 12.2.3.
2. Category definitions: (see figures below for additional information)

   Category 1 - Code 12.2.2 other cases - does not meet category 2 or 3.

   Category 2 - Code 12.2.2 - clear spacing of bars being developed or spliced not less than 2db and clear cover not less than db.

   Category 3 - Code 12.2.3 - clear cover not less than 2db and clear spacing not less than 4db.
3. Minimum lap splice shall not be less than 12 inches.
4. Multiply above lengths by 1.25 for grade 75 reinforcing steel.
5. Top bars are defined as horizontal reinforcement so placed that more than 12 inches of fresh concrete is cast in the member below the development length or splice.
6. Compression laps for GR. 60 uncoated bars in normal weight concrete with a minimum strength of 3000 psi shall be 30 db. Use 44 db for GR. 75 compression lap.
7. For epoxy-coated bars or wires with cover less than 3db, or clear spacing less than 6db, multiply lap length by 1.5. For all other epoxy coated bars or wires, multiply lap length by 1.2.
8. For lightweight concrete multiply lap length by 1.3.
9. Lap Class is determined in accordance with ACI318-08 section 12.15.2, use class B U.N.O.



LINTEL SCHEDULE (for non-bearing walls only, notify engineer for load bearing situations))

	W	0-4 FT.	4-5 FT.	5-6 FT.	6-8 FT.	8-10 FT.
	4	WT4x6.5	WT5x7.5			
	6	WT4x9	WT5x11			
	4	L31/2x31/2x5/16"	L5x31/2"x5/16"	L6x31/2"x5/16"		
	8	L31/2x31/2x5/16"	L5x31/2"x5/16"	L6x31/2"x5/16"		
	10	L4x4x5/16"	L6x4x2/16"	L7x4x3/8"		
	12	L31/2x31/2x5/16"	L5x31/2"x5/16"	L6x31/2x5/16"		
	8				C6x8.2 / PL 7 1/2"x1/4"	C8x11.5 / PL 7 1/2"x1/4"
	10				C6x8.2 / PL 9 1/2"x1/4"	C8x11.5 / PL 9 1/2"x1/4"
	12				C6x8.2 / PL 11 1/2"x1/4"	C8x11.5 / PL 11 1/2"x1/4"
W *-#3 STIRRUPS 8" O.C.				*GROUT 16" DEEP	* GROUT 16" DEEP	* GROUT 24" DEEP
	4	2 ~ #4 BARS	2 ~ #4 BARS	2 ~ #4 BARS	2 ~ #4 BARS	2 ~ #5 BARS
	8	2 ~ #4 BARS	2 ~ #4 BARS	2 ~ #4 BARS	2 ~ #4 BARS	2 ~ #5 BARS
	10	2 ~ #4 BARS	2 ~ #4 BARS	2 ~ #4 BARS	2 ~ #4 BARS	2 ~ #6 BARS
MASONRY LINTEL	12	2 ~ #4 BARS	2 ~ #4 BARS	2 ~ #4 BARS	2 ~ #5 BARS	2 ~ #6 BARS

NOTES:

1) LINTELS IN THIS SCHEDULE ARE DESIGNED FOR NORMAL WEIGHT CONCRETE MASONRY AND UNIFORM LOADING CONDITIONS. SUPERIMPOSED FLOOR OR ROOF LOADS REQUIRE A SEPARATE DESIGN BY THE ENGINEER.
2) CONNECT 2 ANGLES OF ALL 2 AND 3 ANGLE LINTELS BACK TO BACK AT 24" O.C. MAX.
3) ALL ANGLES HAVE LONG LEG VERTICAL UNLESS OTHERWISE NOTED.
4) BEARING END OF STEEL LINTEL AT CONTROL JOINT SHALL BE WRAPPED WITH BUILDING PAPER.
5) PROVIDE MINIMUM 6" BEARING ON BRICK OR SOLID CONCRETE BLOCK.
6) ALL ANGLES SHALL BE GALVANIZED PER SPECIFICATIONS.
7) PROVIDE MINIMUM 8"x WALL THICKNESS x8" HIGH GROUTED C.M.U. OR BRICK BEARING PAD UNDER ALL LINTELS, UNLESS OTHERWISE NOTED. GROUT JAMBS OF MASONRY OPENINGS 6'-0" AND LARGER FOR FULL HEIGHT AND FOR 8" MINIMUM WIDTH.
8) CONNECT LINTEL TO COLUMN IF MASONRY OPENING IS ADJACENT TO COLUMN AND LINTEL HAS LESS THAN 8" BEARING ON C.M.U. BEYOND COLUMN FLANGES.
9) * DESIGNATES SPANS WHERE STIRRUPS ARE TO BE USED
10) FOR CONDITIONS THAT ARE NOT MET BY THIS CHART THE CONTRATOR SHALL NOTIFY THE E.O.R. FOR CLARIFICATION PRIOR TO BIDDING.

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1 10-17-2012 ADDENDUM #1

CAMP WASHINGTON CARVER PERFORMING ARTS STAGE & SUPPORT BUILDING

Clifftop, WV

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date:5/21/2012

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GENERAL NOTES

sheet number:

S-0.1

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checked by: DRS

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