

GENERAL NOTES

DESIGN PARAMETERS:

Discrepancies - When discrepancies exist between the Design Drawings (including this sheet) and the Specifications, the more stringent of the two determined by the Engineer shall govern. When discrepancies exist between scale dimensions in the Design Drawings and the figures written in them, the figures shall govern.

- Design Codes** - (All latest editions unless noted):
 - International Building Code (IBC 2012)
 - American Society of Civil Engineers (ASCE 7-10)
 - Minimum Design Loads for Buildings and Other Structures
- Foundation**
 - Refer to Geotechnical report by Ackley Engineering dated February 17, 2016. The net allowable bearing capacity of strip footings and pad footings is 3,500 psf. Some undercutting of building slab and footings may be required. A Geotechnical Engineer shall observe and review site conditions during construction to determine any amount of undercut required.
 - If the soil is of questionable bearing value, the Engineer or Architect shall be notified immediately.
 - After footing excavations are completed and before placing concrete, the excavated areas shall be inspected and approved by the Owner selected independent testing laboratory.
 - The Soils Engineer is the sole judge of suitability of underlying material to support foundations and shall approve bearing material before foundation installation. See specifications.
 - Coefficient of horizontal friction between concrete and soil = 0.35
 - Minimum depth from exterior ground surface to bottom of foundations = 16 inches
 - Construct non-basement floor slabs on the granular fill layer required by the plan notes.
 - Backfill basement and retaining walls with ASTM C-33 No. 57 stone or equivalent approved by the soils Engineer. Extend stone from the base of walls outward at a 45 degree angle to the vertical.

- Roof Load:**
 - Roof Dead Loads See truss notes
 - Roof Live Load See truss notes
 - Collateral Load See truss notes

- Wind Load:**
 - Wind Speed 115 mph
 - Wind Exposure Category C

- Snow Load:**
 - Ground Snow Load 10 psf
 - Exposure Coefficient Ce 0.9
 - Thermal Factor Ct 1.0
 - Importance Factor for Snow I 1.0
 - Roof Slope Factor Cs 1.0
 - Roof Snow Load Pf = 10 psf

- Seismic Loads:**
 - 0.2 Sec Spectral Acceleration Ss = 0.411
 - 0.2 Sec Site Coefficient Fa = 1.000
 - 0.2 Sec Design Acceleration Sds = 0.274
 - 1.0 Sec Spectral Acceleration S1 = 0.165
 - 1.0 Sec Site Coefficient Fv = 1.000
 - 1.0 Sec Design Acceleration Sd1 = 0.110
- Risk Category** IV
- Seismic Importance Factor** I = 1.5
- Seismic Design Category** C
- Basic Structural System** Bearing Wall System
- Seismic Force Resisting System** Light Framed Walls w/ wood shear panels
- Response Modification Factor** R = 6.5
- Deflection Amplification Factor** Cd = 4.0
- Analysis Procedure** Equivalent Lateral Force Procedure

I hereby certify that the structural plans submitted herewith are designed with the structural load carrying elements to resist the anticipated forces of the designated seismic zone in which the structure is located in accordance with Arkansas Code Annotated 12-80-101 et. seq.

Date: July 1, 2016

Casey Daniel

Casey Daniel, P.E.
Arkansas Registration No. 12371

GENERAL INFORMATION:

- All columns shall be centered on grid lines unless noted otherwise.
- All column footings shall be centered on columns unless noted otherwise.
- All wall footings shall be centered on walls unless noted otherwise.
- Unless otherwise noted or detailed, concrete pads for mechanical equipment shall be 4" thick (minimum) and reinforced with #3 @ 12" OC each way centered.
- Substitution of expansion anchors for embedded anchors shall not be permitted, Unless Approved by Engineer.
- Contractor is responsible for coordinating weights, size, and location of actual mechanical units ordered.
- Unless Directed Otherwise By Geotechnical Engineer all fill material under structure shall be sandy clay or clayey sand exhibiting a liquid limit less than 35. Fill material shall be placed in loose lifts not to exceed 8" and compacted to a density of not less than 95% of Modified Proctor Maximum Dry Density (ASTM D-1557) at or slightly wet of optimum moisture content. In place moisture and density of each lift shall be determined by in-situ field tests prior to placing additional fill.
- Permanent stability of the building and components is not provided until the erection is completed as shown on the contract drawings. Erection stability and temporary supports required for construction including guys, braces, and shoring are the responsibility of the contractor.
- Testing:
 - Refer to specifications for specific requirements regarding sampling and testing.
 - Where sampling and testing requirements are omitted from the specifications sample and test concrete as follows:
 - Contractor shall engage a testing laboratory acceptable to the owner and Architect. Test conducted shall be paid for by the contractor.
 - Prepare field samples of 4 compressive test cylinders in accordance with ASTM C31 and one slump test for each class of concrete placed each day. Samples shall be taken not less than once per day for each 50 cubic yards of concrete. Test for cylinders shall be conducted one at 7 days and 2 at 28 days, with remaining cylinders retained for future testing in case of low test results.

EXPANSION JOINT FILLER:

- Non-setting preformed material composed of fiberboard impregnated with asphalt conforming to the requirements of ASTM D1751.

CAST-IN-PLACE CONCRETE:

- Minimum Concrete Compressive Strengths:
 - Footings f'c = 3,000 psi at 28 days. Max w/c=0.58
 - Interior Slabs-On-Grade f'c = 4,000 psi at 28 days. Max w/c=0.45
 - Ext Exposed Conc (Air Entrained) f'c = 3,500 psi at 28 days. Max w/c=0.48
- Before concrete is placed reinforcement shall be secured against displacement within tolerances permitted in section 7.5.2 of ACI code.
- Where lap splices are required of deformed bars and not specifically indicated on drawings, splices shall be class B splice.
- When bars of different size are lap spliced, the splice length shall be based upon larger bar.
- Concrete protective covering for reinforcement at surfaces not exposed directly to the ground shall be 3/4" for slabs, joists, and walls and 1 1/2" for beam stirrups and column ties or spirals. Do not "wet stick" dowels.
- The following minimum concrete cover shall be provided:
 - Concrete cast against and permanently exposed to earth 3"
 - Concrete exposed to earth or weather - No. 6 thru No. 18: 2"
 - Concrete exposed to earth or weather - No. 5 and smaller: 1 1/2"
 - Concrete not exposed to earth or weather:
 - slabs, walls, joists No.14 and No. 18: 1 1/2"
 - slabs, walls, joists No.11 and smaller: 3/4"
- Location and sizes of openings, sleeves, etc. required for other trades must be verified by these trades before placing concrete.
- Contractor is responsible for "means and methods" of construction and shall provide adequate shoring to prevent collapse or damage to structural elements during construction.

CONCRETE SLAB ON GRADE:

- Provide a 4-inch clean medium-to-coarse gravel compacted drainage fill below all interior slabs-on-grade unless noted or detailed otherwise.
- A 15-mil minimum polyethylene film vapor retarder shall be placed below all interior slabs-on-grade.
- Cut 75% of welded wire fabric or deformed rebar 3 inches on either side of a sawcut or construction control joint.
- Provide bolsters or supports as needed to maintain reinforcement at proper location in slab.
- Maximum water cement ratio shall not exceed the amount specified.
- Saw cutting control joints shall proceed as soon as possible without chipping or spalling concrete. Lapsed time between casting and sawcutting shall not exceed 8 hours.

WOOD FRAMING:

- Provide 15lb roofing felt or other approved moisture barrier under all wood plates bearing on masonry or concrete.
- All joists and rafters unless noted otherwise on drawings shall be secured to bearing plate with one Simpson H3 tie or approved equal.
- Where connections for wood members are not specifically shown on drawings provide fasteners as indicated in table 2304.9.1 of the International Building Code.
- Where headers are not specifically shown on drawings, provide header sizes as indicated in tables 2308.9.5 and 2308.9.6 of the International Building Code.
- Unless noted otherwise on drawings, wood framing shall comply with the following species & grade:

ITEM	SPECIES	GRADE
Headers	SYP	No. 2
Floor Joists	SYP	No. 2
Rafters	SYP	No. 2
Built-up Beams	SYP	No. 2
Built-up Columns	SYP	No. 2
Load bearing Walls	SPF	Stud
Columns	SYP	No. 2
- Fasteners in preservative treated wood and fire-treated wood shall be hot dipped galvanized, stainless steel or other approved specifically designed for attachment in corrosive environments.

WOOD TRUSSES:

- GENERAL-**
 - Wood trusses shall be designed in accordance with the requirements of chapter 23 of the International Building Code and accepted engineering practices. Members are permitted to be joined by nails, bolts and approved timber connectors, metal connector plates or other approved framing devices. The truss fabricator shall submit detailed shop drawings and calculations for all trusses to Architect for review before fabricating is begun. Calculations and shop drawings shall be stamped and signed by a structural engineer licensed to practice within the state or province where the trusses are being installed.
 - All permanent bracing shall be clearly detailed on the shop drawings. The contractor is responsible for installing permanent bracing before the application of any loads.
 - The contractor is responsible for means and methods of construction and providing any temporary bracing as needed to prevent collapse during construction.
 - Each truss shall be permanently marked with the name and address of the truss fabricator.
- Wood Roof Trusses-
 - Loading - design trusses to comply with the International Building Code but not less than the following:
 - A.1 - Top chord live load - 20 psf
 - A.2 - Top chord net wind uplift - Per diagram
 - A.3 - Top chord dead load - 10 psf
 - A.4 - Truss self weight - Per truss mfr.
 - A.5 - Bottom chord dead load - 10 psf
 - The truss fabricator shall include as part of design requirements and shop drawings metal bearing clips or connectors capable of resisting uplift or horizontal forces for all trusses.
 - Truss members and components shall not be cut, notched, drilled, spliced or otherwise altered without written approval from the registered design professional responsible for the design of the trusses.

WOOD ROOF SHEATHING:

- Provide continuous support along all ridgelines, valleys and hips. Provide 2x blocking where solid framing members do not occur at these locations. Cover sheathing as soon as practical with roofing felt.
- All roof deck shall be APA rated structural grade I exterior sheathing.
- Stagger all joints of panels with long dimensions perpendicular to supports. Provide aluminum panel "lf" clips at midspan of panels between each truss or rafter. Leave 1/8" space at all panel edges and end joints unless otherwise recommended by manufacturer.

CONCRETE MASONRY:

- Material specifications:

Concrete Masonry Units	f'm = 1500 psi
Grout	f'c = 3000 psi
Mortar	Type S (ASTM C478)
Reinforcing Bars	Grade 60 (ASTM A615)
Reinforcing Wire	ASTM A62
- Load bearing CMU shall be light weight type 1 and conform to ASTM C90.
- Grout shall conform to ASTM C476 and be tested in accordance with ASTM C1019.
- Mortar shall comply with Table 1, Proportion specification requirements of ASTM C270.
- Masonry joint reinforcement shall be welded wire units in lengths not less than 10 feet, with matching corner and tie units. Reinforcement shall be w2.8 (9 gage) ladder or truss type with deformed continuous side rods and plain cross rods and shall have a width of 1 1/2" to 2" less than thickness of wall or partition. Reinforcement shall be placed at first bed joint above and below concrete slabs and spaced no more than 16" oc unless noted otherwise in contract documents.
- Refer to Architectural elevation drawings for location of wall control joints. If wall control joints are not shown on contract drawings place interior and exterior wall control joints at spacings not to exceed 30 feet on center.
- Vertical CMU cells scheduled for filling with grout shall be kept clean of mortar droppings and debris. The unobstructed opening shall not be less than 2' x 3' on plan dimension.
- Provide vertical reinforcing, same size as adjacent bar, at: Corners, ends, jamps, each side of control and expansion joints.
- Continue vertical reinforcing floor to floor (or roof) and extend to top of parapet.
- Provide standard hooks on bars terminating into a masonry face:
 - in walls at openings, heads, jamps, expansion joints, ends;
 - in beams at top, bottom, and ends.
- Coordinate blockouts, reveals, holes, openings and built in items with all contract documents and trades.
- Coordinate with architect the masonry block type required at firewalls.
- Unless otherwise noted on drawings, top of CMU walls shall have masonry bond bm filled w/ grout and reinforced with 2-#5. Vert reinf shall extend into bond bm w/ std hook.
- Corrosion protection for carbon steel accessories used in exterior wall construction or interior walls exposed to a mean relative humidity exceeding 75 percent shall comply with IBC Section 2103.13.7.2 (Hot dipped Galv) or Section 2103.13.7.3 (Epoxy coated).

EPOXY ANCHORS:

- Where epoxy anchorage of threaded rods and rebar is approved by Engineer of record in concrete filled cells of cmu use HILTI HY150 epoxy.
- Where epoxy anchorage of threaded rods and rebar is approved by Engineer of record in concrete filled cells of cmu use HILTI HY 70 epoxy w/ HILTI HAS-E threaded rods or rebar.
- Where epoxy anchorage of threaded rods or rebar is approved by Engineer of record in cast-in-place concrete use HILTI HY 200 SAFASET w/ HILTI HIT-Z rods, HILTI HAS-E threaded rods, or rebar.
- For slow-cure applications where epoxy anchorage of threaded rods or rebar is approved by Engineer of record in cast-in-place concrete use HILTI RE 500-SD w/ HILTI HAS-E threaded rods or rebar.
- Where anchorage is required into hollow or multi-wythe masonry contractor shall use HILTI HY 70 w/ HILTI HAS-E threaded rods or rebar & appropriate size screen tube per manufacturer's recommendation.
- Unless depth of embedment is shown on contract drawings contact Engineer of record for depth of embedment. As a minimum depth of embedment shall be indicated by manufacturer to develop full tensile strength of anchorage.
- Install anchors per the manufacturer's installation instructions.
- Contractor shall arrange for an anchor manufacturer's representative to provide onsite installation training for all of their anchoring products specified. The structural Engineer of record must receive documented confirmation that all of the contractor's personnel who install anchors are trained prior to the commencement of anchor installation.

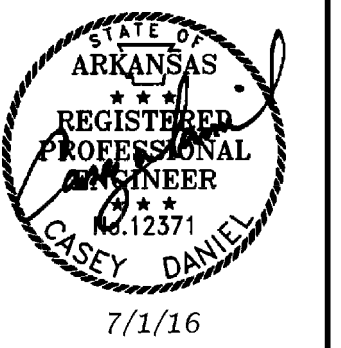
STRUCTURAL ABBREVIATIONS

ADD	ADDENDUM	LW	LONG WAY
ADDL	ADDITIONAL	LP	LOW POINT
ALT	ALTERNATE	MFR	MANUFACTURER
AB	ANCHOR BOLT	MARK	MARK
&	AND	MSRY	MASONRY
ANG	ANGLE	MBA	MECHANICAL BAR ANCHOR
ARCH	ARCHITECT	MBM	METAL BUILDING MANUFACTURER
@	AT	MBS	MECHANICAL BAR SPLICE
BP	BASE PLATE	MO	MASONRY OPENINGS
BM	BEAM	MATL	MATERIAL
BMS	BEAMS	MIN	MINIMUM
BRG	BEARING	MISC	MISCELLANEOUS
BOT	BOTTOM	NF	NEAR FACE
B/	BOTTOM OF/BACK OF	NS	NEAR SIDE
BRDG	BRIDGING	NML WT	NOMINAL WEIGHT
BLDG	BUILDING	NIC	NOT IN CONTRACT
CIP	CAST IN PLACE	NTS	NOT TO SCALE
CLG	CEILING	ON CENTER	ON CENTER
C or CL	CENTER/CENTERLINE	OPNG	OPENING
C/C	CENTER TO CENTER	OPP	OPPOSITE
CLR	CLEAR	OPP H	OPPOSITE HAND
COL	COLUMN	OF	OUTSIDE FACE
CP	COMPLETE PENETRATION	PL	PLATE
CONC	CONCRETE	PLBG	PLUMBING
CMU	CONCRETE MASONRY UNIT	PJF	PRE MOLDED JOINT FILLER
CONN	CONNECTION	PP	PARTIAL PENETRATION
CONST	CONSTRUCTION	RAD	RADIUS
CJ	CONTROL JOINT	RECT	RECTANGULAR
CONT	CONTINUOUS	REF	REFERENCE
CONTR	CONTRACTOR	RE	REFER TO
CWA	COORDINATE WITH ARCHITECT	REINF	REINFORCING
DBA	DEFORMED BAR ANCHOR	REQD	REQUIRED
DBE	DECK BEARING ELEVATION	REV	REVISION
DL	DEAD LOAD	SCHED	SCHEDULE
DK	DECK	SECT	SECTION
DEP	DEPRESSED	SW	SHORT WAY
DET	DETAIL	SIM	SIMILAR
DIAG	DIAGONAL	SLAB	SLAB
DA or Ø	DIAMETER	SOG	SLAB ON GRADE
DIM	DIMENSION	SPA	SPACE, SPACING, SPACES
DWLS	DOWELS	SPECS	SPECIFICATIONS
DN	DOWN	SQ	SQUARE
DWGS	DRAWINGS	STD	STANDARD
DP	DRILLED PIER	STL	STEEL
EA	EACH	SDI	STEEL DECK INSTITUTE
EE	EACH END	SJI	STEEL JOIST INSTITUTE
EF	EACH FACE	STRUC	STRUCTURE or STRUCTURAL
ES	EACH SIDE	SUPPT	SUPPORT
EW	EACH WAY	SYMM	SYMMETRICAL
ELECT	ELECTRICAL	SYP	SOUTHERN YELLOW PINE
EL	ELEVATION	THK	THICKNESS
EQ	EQUAL	TOP	TOP
EJ	EXPANSION JOINT	T/	TOP OF
EXT	EXTERIOR	T/C	TOP OF CONCRETE
FF	FAR FACE	T/F	TOP OF FOOTING
FIN	FINISH	T/J	TOP OF JOIST
FS	FAR SIDE	T/L	TOP OF LEDGE
FLR	FLOOR	T/P	TOP OF PILASTER
FTG	FOOTING	T/SL	TOP OF SLAB
FDN	FOUNDATION	T/SOG	TOP OF SLAB ON GRADE
FRMG	FRAMING	T/S	TOP OF STRUCTURAL STEEL
GALV	GALVANIZED	TYP	TYPICAL
GA	GAUGE	UNO	UNLESS NOTED OTHERWISE
HT	HEIGHT	VB	VAPOR BARRIER
HP	HIGH POINT	VERT	VERTICAL
HORIZ	HORIZONTAL	VEF	VERTICAL EACH FACE
HEF	HORIZONTAL EACH FACE	WB	WIND BRACE
IF	INSIDE FACE	WWF	WELDED WIRE FABRIC
INT	INTERIOR	WF	WIDE FLANGE
JBE	JOIST BEARING ELEVATION	W/	WITH
JT	JOINT	W/O	WITHOUT
JST	JOIST	WP	WORKING POINT
K or k	KIP=100lbs	WS	WATER STOP
LB	POUND	WT	WEIGHT
LT WT	LIGHT WEIGHT	WT	MOMENT CONNECTION
LTL	LINTEL		
LL	LIVE LOAD		INDICATES SPAN DIRECTION
LONG	LONGITUDINAL		OF METAL DECK
LLH	LONG LEG HORIZONTAL		
LLV	LONG LEG VERTICAL		

Stocks
Mann
Architects, PLC
401 W. CAPITOL, SUITE 402
LITTLE ROCK, AR 72201
501-370-6207 501-370-6208 (FAX)

CONSULTANTS

DCI, INC.
Civil Engineer
ROBBINS ENGINEERING
Structural Engineer
TME, LLC
MEPF Engineer



7/1/16

Fire Station Renovation and
Police Station Addition
Building 7200 - Camp Joseph T. Robinson
North Little Rock, Arkansas

REVISIONS

ISSUE DATE

07-01-16

PROJECT NO.

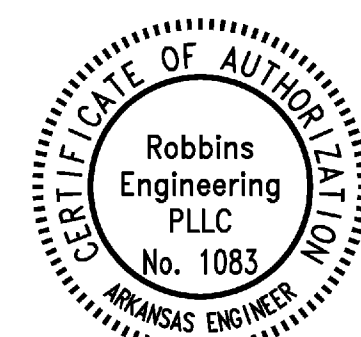
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REC
ROBBINS ENGINEERING CONSULTANTS
10018 W. MARSHALL J. / LITTLE ROCK, AR 72209
P 501.564.7475 / F 501.664.7474
WWW.ROBBINS-ENGINEERING.COM