ABBREVIATION LEGEND

AB	ANCHOR BOLT
ACI	AMERICAN CONCRETE INSTITUTE
AFF	ABOVE FINISHED FLOOR
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION
AISI	AMERICAN IRON AND STEEL INSTITUTE
ARCH	ARCHITECTURAL
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
AWS	AMERICAN WELDING SOCIETY
BFF	BELOW FINISHED FLOOR
BL	BLOCK LINTEL
BO	BOTTOM OF
BOS	BOTTOM OF STEEL
BRG	BEARING
CJ	CONTROL JOINT
CL	CENTER LINE
CMU	CONCRETE MASONRY UNIT
CONC	CONCRETE
CONN	CONNECTION
CONT	CONTINUOUS
DIA	DIAMETER
EJ	EXPANSION JOINT
EL	ELEVATION
EQ	EQUAL
EW	EACH WAY
FDN	FOUNDATION
FF	FINISHED FLOOR
FTG	FOOTING
GA	GAGE
GC	GENERAL CONTRACTOR
HORIZ	HORIZONTAL
HAS	HEADED STUD ANCHOR
INFO	INFORMATION
JBE	JOIST BEARING ELEVATION
JST	JOIST
KSI	KIPS PER SQUARE INCH
L	LENGTH
LB	POUNDS
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
LONG	LONGITUDINAL
MAX	MAXIMUM
MECH	MECHANICAL
MFR	MANUFACTURER
MIN	MINIMUM
MISC	MISCELLANEOUS
MO	MASONRY OPENING
MTL	METAL
OD	OUTSIDE DIAMETER
PLF	POUNDS PER LINEAR FOOT
NTS	NOT TO SCALE
OC	ON CENTER
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PAF	POWDER ACTUATED FASTENER
RE	REFER TO
PCF	POUNDS PER CUBIC FOOT
REINF	REINFORCING
P/C	PRECAST
RTU	ROOF TOP UNIT
SDI	STEEL DECK INSTITUTE
SIM	SIMILAR
SJI	STEEL JOIST INSTITUTE
T&B	TOP AND BOTTOM
TO	TOP OF
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
WP	WORK POINT
WWR	WELDING WIRE REINFORCING
CIP	CAST IN PLACE
SOG	SLAB ON GRADE

STRUCTURAL DESIGN CRITERIA

1. DESIGN CODE	IBC 2006
2. DEAD LOADS	
a. ROOF DEAD LOAD	55 PSF
b. FLOOR DEAD LOAD	14 PSF
3. COLLATERAL LOADS (NON-REDUCIBLE)	
a. ROOF COLLATERAL LOAD	30 PSF
b. FLOOR COLLATERAL LOAD	28 PSF
4. LIVE LOADS	
a. ROOF LIVE LOAD	40 PSF (NON-REDUCIBLE)
b. FLOOR LIVE LOAD	40 PSF (NON-REDUCIBLE)
c. BALCONY LIVE LOAD	100 PSF (NON-REDUCIBLE)
5. ROOF SNOW LOADS	
FLAT ROOF SNOW LOAD w/ RAIN ON SNOW	30 PSF
SNOW EXPOSURE FACTOR	1.0
SNOW LOAD IMPORTANCE FACTOR	1.0
THERMAL FACTOR	1.0
SNOW DRIFT	PER CODE
6. WIND LOADS	
BASIC WIND SPEED	90 MPH
WIND IMPORTANCE FACTOR	1.0
WIND EXPOSURE CATEGORY	C
INTERNAL PRESSURE COEFFICIENT	±0.18
7. SEISMIC LOADS	
SITE CLASS	C
OCCUPANCY CATEGORY	II
IMPORTANCE FACTOR	1.0
SHORT PERIOD ACCELERATION (SS)	0.201
LONG PERIOD ACCELERATION (S1)	0.090
SEISMIC DESIGN CATEGORY	B
ANALYSIS PROCEDURE	ELF
BASIC SEISMIC FORCE-RESISTING SYSTEM	IPSW
DESIGN BASE SHEAR	PER PRECAST MANUF.

GENERAL NOTES

1. THE CONTRACTOR SHALL COORDINATE THE SIZE AND LOCATION OF ALL PENETRATIONS THROUGH THE STRUCTURAL COMPONENTS FOR ARCHITECTURAL, MECHANICAL, ELECTRICAL AND PLUMBING WORK.
2. THE STRUCTURE SHALL BE TEMPORARILY BRACED UNTIL ALL STEEL BRACING, FLOOR AND ROOF DECKS, AND CONCRETE WALLS HAVE BEEN INSTALLED AND ALL CONNECTIONS BETWEEN THESE ELEMENTS HAVE BEEN MADE.
3. THE STRUCTURE WAS DESIGNED TO BE STABLE AS A COMPLETED WHOLE. TEMPORARY BRACING AND SHORING REQUIRED TO RESIST ALL LOADS DURING CONSTRUCTION IS THE RESPONSIBILITY OF THE CONTRACTOR.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL MEANS AND METHODS OF CONSTRUCTION.
5. STRUCTURAL ANALYSIS AND DESIGN LOADS IS BASED ON CODE PRESCRIBED LOADS FOR THE COMPLETED STRUCTURE.
6. CONTRACT DOCUMENTS SHALL NOT BE REPRODUCED FOR USE AS SHOP DRAWINGS.

SHOP DRAWINGS AND DEFERRED SUBMITTALS

1. AT A MINIMUM SHOP DRAWINGS SHALL INCLUDE:
   a. CLEARLY DEFINED DESIGN LOADS (IF REQUIRED)
   b. LAYOUT PLAN
   c. SIGNED AND SEALED BY A LICENSED ENGINEER IN THE PROJECT STATE (IF NECESSARY)
2. PRIOR TO SHOP DRAWING SUBMITTAL THE CONTRACTOR SHALL:
   a. APPROVE, STAMP, AND SIGN SUBMITTAL.
   b. REVIEW EACH SUBMISSION FOR CONFORMANCE TO THE MEANS, METHODS, SEQUENCES, TECHNIQUES, OPERATIONS OF CONSTRUCTION, AND SAFETY PRECAUTIONS AND PROGRAMS. ALL OF WHICH ARE THE RESPONSIBILITY OF THE CONTRACTOR.
   c. COORDINATE AND VERIFY ALL DIMENSIONS WITH ARCHITECT.
   d. FLAG ALL ITEMS NOT IN CONFORMANCE WITH THE CONTRACT DOCUMENTS. THE STRUCTURAL ENGINEER IS NOT RESPONSIBLE FOR ANY DISCREPANCIES BETWEEN SHOP DRAWINGS AND CONTRACT DOCUMENTS.
3. SHOP DRAWINGS DO NOT REPLACE THE CONTRACT DOCUMENTS. ITEMS OMITTED OR SHOWN INCORRECTLY AND ARE NOT FLAGGED BY THE STRUCTURAL ENGINEER OR ARCHITECT SHALL NOT BE CONSIDERED CHANGES TO THE CONTRACT DOCUMENTS. IT IS THE CONTRACTORS RESPONSIBILITY TO ENSURE ALL ITEMS ARE CONSTRUCTED ACCORDING TO THE CONTRACT DOCUMENTS.
4. CONTRACTOR SHALL SUBMIT (5) SETS OF REVIEWED SHOP DRAWINGS FOR REVIEW BY THE STRUCTURAL ENGINEER.
5. PER IBC SECTION 106.3.4.2, SPECIALTY ITEMS, PRE-ENGINEERED COMPONENTS, AND DESIGN/BUILD COMPONENTS MAY BE SUBMITTED TO THE BUILDING OFFICIAL AND ENGINEER OF RECORD BY DEFERRED SUBMITTAL. SUCH ITEMS ARE THOSE WHICH REQUIRE DESIGN BY THE MANUFACTURER, SUPPLIER, AND INSTALLER. THESE ITEMS ARE SPECIFIED IN THE CONTRACT DOCUMENTS.
6. THE FOLLOWING ARE DEFERRED SUBMITTALS REQUIRED:
   a. STRUCTURAL PRECAST CONCRETE
   b. STEEL JOISTS AND OR JOIST GIRDERS
   c. EXIT FACILITIES INCLUDING LANDINGS, STAIRS, HANDRAILS AND GUARDRAILS, SUPPORT AND ANCHORAGE OF MECHANICAL, ELECTRICAL AND PLUMBING EQUIPMENT AND COMPONENTS.
   d. PRE-ENGINEERED WOOD TRUSSES
7. ALL SUBMITTALS SHALL INCLUDE:
   a. ERECTION OR DESIGN DRAWINGS SIGNED AND SEALED BY AN ENGINEER LICENSED IN THE PROJECT STATE.
   b. ANY CALCULATIONS REQUIRED FOR THE DESIGN OF THE DEFERRED SUBMITTAL. ALL CALCULATIONS SHALL BE SIGNED AND SEALED BY AN ENGINEER LICENSED IN THE PROJECT STATE.
8. REVIEW BY THE STRUCTURAL ENGINEER OF RECORD IS FOR CONFORMANCE TO THE FOLLOWING ONLY:
   a. DRAWINGS AND CALCULATIONS ARE PROPERLY SIGNED AND SEALED.
   b. LOAD CRITERIA IS IN CONFORMANCE WITH THE CONTRACT DOCUMENTS.
   c. THE CONNECTIONS TO THE PRIMARY STRUCTURE ARE CONSISTENT WITH THE PRIMARY DESIGN.
   d. THE MAIN STRUCTURE IS CAPABLE OF SUPPORTING THE REACTIONS IMPOSED.
9. DEFERRED SUBMITTALS SHALL NOT BE FABRICATED OR ERECTED PRIOR TO APPROVAL BY THE BUILDING DEPARTMENT AND STRUCTURAL ENGINEER OF RECORD.

FOUNDATION SUBSURFACE PREPARATION

UNLESS SPECIFICALLY INDICATED OTHERWISE IN THE DRAWINGS AND/OR SPECIFICATIONS, THE LIMITS OF THE SUBSURFACE PREPARATION REQUIREMENTS ARE CONSIDERED TO BE THAT PORTION OF THE SITE DIRECTLY BENEATH AND 10 FEET BEYOND THE BUILDING AND APPURTENANCES. APPURTENANCES ARE THOSE ITEMS ATTACHED TO THE BUILDING PROPER AND TYPICALLY INCLUDE BUT NOT LIMITED TO, THE BUILDING SIDEWALKS, PORCHES, RAMPS, STOOPS, ETC. THE SUB BASE AND THE VAPOR BARRIER, WHERE REQUIRED, DO NOT EXTEND BEYOND THE LIMITS OF THE ACTUAL BUILDING AND THE APPURTENANCES.

THE FINAL SUBGRADE ELEVATION SHALL BE ESTABLISHED AT 8 INCHES BELOW FINISHED FLOOR ELEVATION TO ALLOW FOR A 4-INCH SLAB AND 4 INCHES OF SUB BASE. THE SUB BASE SHALL BE OF COMPACTED OPEN GRADED GRANULAR MATERIALS (KDOT #610 CRUSHED STONE). THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ACCURATE MEASUREMENTS FOR ALL CUT AND FILL DEPTHS REQUIRED.

EXISTING FOUNDATIONS, SLABS, PAVEMENTS AND BELOW GRADE STRUCTURES SHALL BE REMOVED FROM THE CONSTRUCTION AREA. REMOVE TREES, SURFACE VEGETATION, SURFICIAL DEBRIS, TOPSOIL, ROOT SYSTEMS, ORGANIC MATERIAL, EXISTING FILL, AND SOFT OR OTHERWISE UNSUITABLE MATERIAL FROM THE CONSTRUCTION AREA. PROOFROLL EXPOSED SUBGRADE. REMOVE AND REPLACE UNSUITABLE AREAS WITH SUITABLE MATERIAL.

FILL SHALL BE PLACED IN LOOSE LIFTS NOT EXCEEDING 8 INCHES IN THICKNESS AND COMPACTED TO AT LEAST 98 PERCENT OF THE STANDARD PROCTOR MAXIMUM DRY DENSITY (ASTM D698) AT A MOISTURE CONTENT WITHIN 2 PERCENT BELOW TO 2 PERCENT ABOVE THE OPTIMUM. FILL SHALL BE FREE OF TOPSOIL, ORGANIC AND OTHER DELETERIOUS MATERIALS, AND SHALL MEET THE FOLLOWING REQUIREMENTS:

NO ROCKS GREATER THAN 6 INCHES IN DIAMETER SHALL BE ALLOWED IN THE FILL.

THE FILL MATERIAL SHALL HAVE A LIQUID LIMIT NOT EXCEEDING 50 PERCENT, A PLASTICITY INDEX NOT EXCEEDING 25 PERCENT, AND A MAXIMUM DRY DENSITY OF AT LEAST 100 PCF, BASED ON THE STANDARD PROCTOR TEST (ASTM D698)

ANY GROUNDWATER SEEPAGE ENCOUNTERED DURING SITE GRADING MUST BE CONTROLLED USING A SUITABLE, PERMANENT TRENCH DRAIN, FLOWING TO A SUITABLE OUTFALL AREA OR STORM DRAIN.

THE SUBGRADE MUST BE MOISTURE CONDITIONED AS NECESSARY TO ACHIEVE A MOISTURE CONTENT WITHIN 2% OF THE OPTIMUM MOISTURE AS DETERMINED BY THE STANDARD PROCTOR TEST (ASTM D-698) AT THE TIME THE FLOOR SLABS ARE CONSTRUCTED.

THE FOUNDATION SYSTEM SHALL BE ISOLATED SPREAD FOOTINGS AT COLUMNS, AND CONTINUOUS FOOTINGS AT THE WALLS.

THIS FOUNDATION SUBSURFACE PREPARATION DOES NOT CONSTITUTE A COMPLETE SITE WORK SPECIFICATION. INFORMATION COVERED IN THIS PREPARATION GOVERNS OVER THE CONTRACT SPECIFICATIONS. REFER TO THE SITE WORK SPECIFICATIONS AND THE GEOTECHNICAL REPORT BY PALMERTON & PARRISH, INC. DATED SEPTEMBER 14, 2010 FOR INFORMATION NOT COVERED IN THIS PREPARATION. THE GEOTECHNICAL REPORT IS FOR INFORMATION ONLY AND IS NOT CONSIDERED AS A DESIGN SPECIFICATION.

CONCRETE NOTES

1. REINFORCING STEEL SHALL MEET ASTM SPECIFICATION A 615, BARS SHALL BE GRADE 60.
2. REFER TO ACI 318 FOR CONCRETE COVER, ACI 315 FOR DETAILING PRACTICES AND FABRICATION, AND ACI 301 FOR STANDARD PRACTICE FOR MIXING AND PLACING CONCRETE.
3. LEAN CONCRETE - MIN 2 1/2 SACKS PORTLAND CEMENT PER CUBIC YARD.
4. TESTING OF FRESH CONCRETE SHALL BE DONE BY A QUALIFIED TESTING LABORATORY RETAINED BY THE CONTRACTOR AND APPROVED BY THE OWNER. TESTS SHALL INCLUDE SLUMP, AIR CONTENT, CONCRETE TEMP., AND 28 DAY COMPRESSIVE STRENGTH. TESTS SHALL BE PERFORMED FOR EACH SET OF COMPRESSIVE STRENGTH CYLINDERS CAST.
5. CONCRETE FOR FOOTINGS, FOUNDATION WALLS AND INTERIOR SLABS ON GRADE SHALL HAVE A 28-DAY COMPRESSIVE STRENGTH OF 3,000 PSI. THE MAXIMUM WATER TO CEMENT RATIO SHALL BE 0.50 BY WEIGHT. WITH A SLUMP OF 4" ± 1".
6. CONCRETE FOR EXTERIOR USES, SIDEWALKS, EXTERIOR SLABS, ETC SHALL HAVE A 28-DAY COMPRESSIVE STRENGTH OF 4,000 PSI AND SHALL BE AIR ENTRAINED TO 6% +/- 1% WITH AN AIR ENTRAINING ADMIXTURE CONFORMING TO ASTM C260. WITH A SLUMP OF 4" ± 1". THE MAXIMUM WATER-CEMENT RATIO SHALL BE 0.45 BY WEIGHT.
7. FLY ASH MAY BE USED AS A ONE TO ONE REPLACEMENT UP TO 20% FOR THE TOTAL CEMENT CONTENT AS LONG AS THE AMBIENT TEMPERATURE IS ABOVE 50 DEGREES FAHRENHEIT.
8. ALL CONCRETE EXPOSED TO FREEZING SHALL BE AIR ENTRAINED. AIR CONTENT OF FRESH CONCRETE SHALL BE 6% ±1%.
9. CONCRETE CYLINDERS SHALL BE TAKEN PER THE SPECIFICATIONS, OR AT A MINIMUM ONE SET OF CYLINDERS FOR EACH INDIVIDUAL POUR. ONE CYLINDER SHALL BE TESTED AT 7 DAYS AND TWO AT 28 DAYS RESPECTIVELY.
10. NO LIME SAND FINE AGGREGATE MAY BE USED IN CONCRETE EXPOSED TO WEATHER, VIEW, OR IN HORIZONTAL APPLICATIONS.
11. IF ADDITIONAL FLOWABILITY IS REQUIRED FOR PLACEMENT OF ANY CONCRETE MIX, A WATER-REDUCING ADDITIVE CONFORMING TO ASTM C494, TYPE A, D, E OR F SHALL BE USED. NO ADDITIONAL WATER MAY BE ADDED TO THE MIX AT THE SITE. SLUMP FOR CONCRETE CONTAINING WATER-REDUCING OR HIGH-RANGE WATER-REDUCING ADMIXTURE SHALL NOT EXCEED 8" AFTER ADMIXTURE IS ADDED TO CONCRETE WITH A 2"-4" SLUMP.
12. DO NOT AIR ENTRAIN CONCRETE TO BE USED FOR FLOORS WITH A TROWELED FINISH. ENTRAPPED AIR CONTENT SHALL NOT EXCEED 3%.
13. PROVIDE A MINIMUM OF 3" COVER FOR ANCHOR BOLTS AND LOCATE HORIZONTAL REINFORCEMENT TO THE OUTSIDE FOR ANCHOR BOLT CONTAINMENT, U.N.O.
14. PROVIDE TEMPORARY SHORING AND BRACING OF ALL STRUCTURAL AND MISCELLANEOUS ELEMENTS UNTIL CONCRETE HAS OBTAINED 80% OF DESIGN STRENGTH.
15. DETAILING, MATERIALS AND INSTALLATION OF CONCRETE REINFORCING STEEL SHALL MEET REQUIREMENTS AS SET FORTH BY CRSI AND THE AMERICAN CONCRETE INSTITUTE AND THE APPLICABLE BUILDING CODE.
16. SHOP DRAWINGS SHALL BE SUBMITTED INDICATING COMPLETE INFORMATION REQUIRED FOR CONSTRUCTION OF THE REINFORCED CONCRETE ELEMENTS. SHOP DRAWINGS SHALL INCLUDE LAYOUT AND DIMENSIONS OF REINFORCING INCLUDING ANY OPENINGS, CONVENTIONAL REINFORCEMENT DETAILS, CONNECTION DETAILS, PROCEDURES AND SEQUENCES ETC.
17. WHEN PLACING CONCRETE IN HOT WEATHER, REFER TO ACI 305R. WHEN PLACING CONCRETE IN COLD WEATHER, REFER TO ACI 306.1. SEE PROJECT SPECIFICATIONS FOR ADDITIONAL INFORMATION.

FOUNDATION AND SLAB ON GRADE NOTES

1. REFERENCE THE GEOTECHNICAL ENGINEERING REPORT PREPARED BY PALMERTON & PARRISH, INC. DATED SEPTEMBER 14, 2010 FOR ADDITIONAL. SITE DEVELOPMENT REQUIREMENTS NOT INCLUDED IN THESE NOTES.
2. FOOTING DESIGNS ARE BASED ON AN ASSUMED STABLE, NON-EXPANSIVE SOIL BEARING PRESSURE OF 2,500 PSF FOR CONTINUOUS AND 3,000 PSF FOR INDIVIDUAL FOOTINGS. EXTERIOR FOOTINGS SHALL BEAR AT OR BELOW MINIMUM BEARING DEPTH. MINIMUM BEARING DEPTH IS 30" BELOW ADJACENT FINISHED GRADE. THICKENED SLAB EDGES FOR STOOPS, CANOPIES, ETC. SHALL BE 16 INCHES (UNO).
3. STANDARD PROCEDURES OF FROST PROTECTION FOR FOUNDATIONS AND EXCAVATIONS SHALL BE EMPLOYED FOR WINTER CONSTRUCTION. BACKFILLING OF EXCAVATIONS SHALL BE DONE AS SOON AS POSSIBLE TO PROTECT FOUNDATIONS FROM FROST.
4. REINFORCE 4" SLABS ON GRADE WITH WWR 6X6 W2.9 X W2.9 (IN SHEETS). LOCATE WWR IN TOP THIRD OF SLAB. SLABS SHALL BE POURED OVER A 10 MIL IMPERVIOUS MOISTURE BARRIER OVER 4 INCHES OF COMPACTED CLEAN GRAVEL FILL.
5. REINFORCE 6" SLABS ON GRADE WITH #4 BARS @ 18" O.C. EACH WAY AT MID DEPTH OF SLAB. SLAB SHALL BE PLACED OVER 6" OF COMPACTED CLEAN GRAVEL FILL PROVIDE THICKENED SLAB EDGES ALL SIDES.
6. PROVIDE SAW CUT JOINTS AT 12'-0" OC MAXIMUM UNLESS NOTED OTHERWISE.
7. PROVIDE (1) #5 BAR, 4'-0" LONG DIAGONALLY AT MID SLAB AT REENTRANT CORNERS.
8. "CJ" INDICATES SAW CUT CONTROL JOINT IN SLAB-ON-GRADE, "CONST JT" INDICATES DOWELED CONSTRUCTION JOINT IN SLAB-ON-GRADE.
9. HORIZONTAL BARS IN FOOTINGS AND STEM WALLS SHALL BE CONTINUOUS. PROVIDE CORNER BARS AT ALL CORNERS AND INTERSECTIONS UNO. REF CORNER BAR DETAIL.
10. FOUNDATION WALLS SHALL HAVE TEMPORARY BRACING BEFORE BACKFILL IS PLACED AGAINST THEM. TEMPORARY BRACING SHALL NOT BE REMOVED UNTIL WALL IS PERMANENTLY BRACED.
11. FOUNDATION PENETRATIONS SHALL BE SUBJECT TO APPROVAL BY THE ARCHITECT/ENGINEER. PENETRATIONS SHALL BE THROUGH FOUNDATION STEMWALL OR 6" CLEAR BELOW FOOTING.
12. IN AREA OF THE BUILDING, EXISTING ORGANIC MATERIAL, UNSUITABLE SOIL, ABANDONED FOOTINGS AND ANY OTHER EXISTING UNSUITABLE MATERIALS SHALL BE REMOVED. ANY FILL MATERIAL REQUIRED AT THE SITE SHALL BE OF A SIMILAR TYPE SOIL THAT IS PRESENT AT THIS SITE EXHIBITING LIQUID LIMIT VALUES BELOW 45 AND PLASTIC INDEX VALUES BELOW 20. ROCKS GREATER THAN 3 IN. SHALL BE EXCLUDED FROM STRUCTURAL FILL LIFTS. FILL MATERIAL SHALL BE PLACED IN LOOSE LIFTS.
13. AFTER STRIPPING SITE AND PRIOR TO PLACEMENT OF ANY FILL, NOTIFY THE INDEPENDENT TESTING AGENCY FOR INSPECTION OF SOIL CONDITIONS. INSPECTION SHALL INCLUDE PROOF ROLLING SITE WITH HEAVY EQUIPMENT PROVIDED BY THE CONTRACTOR.
14. DRAINAGE FILL SHALL BE A FREE-DRAINING GRANULAR MATERIAL. USE #57 STONE OR APPROVED EQUAL. REFER TO ASTM D448 FOR GRADATION.
15. EXCAVATION FOR FOOTINGS SHALL BE CUT TO ACCURATE SIZE AND DIMENSIONS AS SHOWN ON PLANS. ALL LOOSE MATERIAL BELOW FOOTINGS SHALL BE REMOVED AND BROUGHT TO A REASONABLE TRUE AND LEVEL PLANE BEFORE PLACING CONCRETE.
16. TESTING OF CONTROLLED STRUCTURAL FILL SHALL BE DONE BY A QUALIFIED TESTING LABORATORY RETAINED BY THE CONTRACTOR AND APPROVED BY THE OWNER.
17. AFTER FOOTING EXCAVATIONS HAVE BEEN MADE TO DESIGN ELEVATIONS, THE INDEPENDENT TESTING AGENCY RETAINED BY THE CONTRACTOR SHALL INSPECT AND TEST THE BEARING MATERIAL. WHEN MATERIAL OF INADEQUATE STRENGTH IS NOTED, THE CONTRACTOR SHALL FURTHER DEEPEN EXCAVATIONS UNTIL SUITABLE BEARING CONDITIONS ARE VERIFIED BY TESTING.
18. CONTRACTOR IS RESPONSIBLE TO MAINTAIN EXCAVATIONS AND BACKFILL MATERIALS AT AN APPROPRIATE MOISTURE CONTENT FOR PROPER SOIL BEARING CAPACITY AND COMPACTION OF BACKFILL MATERIALS WITH REGARD TO THE REQUIREMENTS OF THE CONTRACT DOCUMENTS.

PRECAST CONCRETE

1. DESIGN OF PRECAST ELEMENTS AND THEIR CONNECTIONS SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR. SUBMIT SHOP DRAWINGS, DESIGN LOAD DATA, AND SUPPORT REACTIONS OF PRECAST ELEMENTS AND THEIR CONNECTIONS SEALED BY AN ENGINEER LICENSED IN THE PROJECT STATE. THE CONTRACTOR IS RESPONSIBLE FOR THE COMPLETE DESIGN OF PRECAST ELEMENTS. REVIEW SHALL BE FOR CONFORMANCE WITH THE CONTRACT DOCUMENTS REGARDING ARRANGEMENT AND SIZES OF MEMBERS AND THE CONTRACTOR'S INTERPRETATION OF THE DESIGN LOADS AND CONTRACT DOCUMENT DETAILS. SUCH REVIEW SHALL NOT RELIEVE THE CONTRACTOR OF THE FULL RESPONSIBILITY FOR THE DESIGN OF THE PRECAST AND PRECAST CONNECTIONS NOT SPECIFIED IN THE CONTRACT DOCUMENTS.
2. CONNECTIONS:
   a. CONNECTIONS SHOWN IN SECTIONS AND DETAILS OF THE CONTRACT DOCUMENTS ARE FOR REFERENCE ONLY. THE DESIGN AND FREQUENCY OF CONNECTIONS SHALL BE THE RESPONSIBILITY OF THE PRECAST SUPPLIER AND THE PRECAST DESIGN ENGINEER IN COORDINATION WITH THE PANEL DESIGN ITSELF. SHOP DRAWINGS SHALL ADEQUATELY DEPICT THE PRECAST PANEL ATTACHMENT LOCATIONS.
3. ALL OPENINGS IN EXTERIOR PRECAST WALLS SHALL HAVE #4 REBAR PLACED AT 4" ON CENTER IN EACH DIRECTION.
4. PRECAST MANUFACTURER SHALL SUBMIT LETTER TO OWNER STATING THAT THE PRECAST MEMBERS WERE INSTALLED PER THE PRECAST PLANS AND SHOP DRAWINGS.
5. PRECAST MANUFACTURER SHALL SUBMIT AS BUILT DRAWINGS TO THE OWNER AND CONTRACTOR.
6. CONTRACTOR SHALL COORDINATE ALL POST INSTALLED ANCHOR LOCATIONS WITH PRECAST SHOP DRAWINGS TO ENSURE ANCHORS DO NOT INTERFERE WITH PRESTRESSING STRANDS OR PRECAST REINFORCING.

STEEL DECK NOTES

1. REINFORCEMENT FOR TYPICAL SLABS ON METAL DECK SHALL BE 4X4 W2.9XW2.9 WWF UNO. MAINTAIN 1 ½" COVER MINIMUM FROM TOP OF SLAB AT ALL LOCATIONS. PROVIDE CHAIRS, BOLSTERS OR OTHER APPROVED MEANS TO PROPERLY LOCATE REINFORCING.
2. WHERE STEEL DECK IS PART OF A RATED ASSEMBLY SUPPLY ALL DECK AND COMPONENTS WHICH COMPLY WITH REQUIREMENTS OF UNDERWRITES LABORATORY FOR EACH TYPE OF ASSEMBLY SPECIFIED.
3. LAYOUT DECK TO HAVE A MINIMUM OF THREE CONTINUOUS SPANS WHERE POSSIBLE. ATTACH TO JOIST AND BEAMS WITH ⅝" Ø PUDDLE WELDS @ 6" O.C. AT PERIMETER OF BUILDING, AT END LAP SPLICES AND AROUND ALL OPNINGS; AND AT 36-5 PATTERN AT INTERMEDIATE SUPPORTS. PROVIDE (2) #10 TEK SCREW SIDE LAP FASTENERS BETWEEN EACH JOIST. WHERE DECK RIBS ARE CUT AT PENETRATIONS PROVIDE DECK SUPPORT ANGLES OR DECK STIFFENERS AS REQUIRED.
4. PROVIDE L4x4x1/4 EDGE ANGLE AT ALL DECK EDGES AND PENETRATIONS UNO OR DISTANCE FROM EDGE OF FLOOR DECK TO BEAM OR JOIST REQUIRES A LONGER HORIZONTAL LEG. PROVIDE BENT PLATE EDGE ANGLE WITH A 1/4" MINIMUM THICKNESS WHERE LONGER LEGS ARE REQUIRED OR HORIZONTAL AND VERTICAL LEGS OF ANGLE ARE NOT AT 90 DEGREES.
5. PROVIDE FILLERS AS REQUIRED TO SUPPORT DECK WHERE DECK IS NOT SUPPORTED BY FRAMING. SUCH FILLERS ARE REQUIRED AT WALLS WHICH ARE PARALLEL TO JOISTS AND OTHER SIMILAR SITUATIONS.
6. TYPICAL STEEL DECK AND CONCRETE SLAB SHALL BE 4" TOTAL THICKNESS NORMAL WEIGHT CONCRETE OVER .6C 22 GAGE GALVANIZED METAL DECK UNO. FORM DECK SHALL BE DESIGNED, MANUFACTURED, AND INSTALLED IN ACCORDANCE WITH THE NON-COMPOSITE STEEL FLOOR DECK SPECIFICATION OF THE STEEL DECK INSTITUTE. PROPERTIES OF STEEL FLOOR DECK SHALL BE COMPUTED USING THE LATEST EDITION OF THE AMERICAN IRON AND STEEL INSTITUTE SPECIFICATION FOR THE DESIGN OF COLD FORMED STEEL STRUCTURAL MEMBERS. METAL DECK SHALL BE CAPABLE OF SUPPORTING THE LOADINGS AS CALLED FOR ON THE DRAWINGS ON THE SPANS AND SPACING SHOWN FOR THE JOISTS AND STEEL FRAMING.

STEEL JOIST NOTES

1. ALL STEEL JOISTS SHALL BE DESIGNED, FABRICATED, AND ERECTED IN ACCORDANCE WITH "THE STANDARD SPECIFICATIONS FOR OPEN STEEL JOISTS K-SERIES (LATEST EDITION)".
2. ALL STEEL JOISTS SHALL BE DESIGNED BY THE JOIST MANUFACTURER. THE MANUFACTURERS ENGINEER SHALL BE RESPONSIBLE FOR THE DESIGN, ADEQUACY, AND SAFETY OF ALL STEEL JOISTS. ALL SHOP DRAWINGS SHALL BE SIGNED AND SEALED BY THE MANUFACTURERS ENGINEER, WITH THE ENGINEERS SEAL FOR THE STATE WHERE THE STRUCTURE IS LOCATED.
3. EXCEPT WHERE ADDITIONAL AND/OR SPECIFIC DESIGN LOADS ARE SPECIFIED ON THE STRUCTURAL DRAWINGS, STEEL JOISTS SHALL BE DESIGNED AS SIMPLE SUPPORTED UNIFORMLY LOADED TRUSSES WITH THE TOP CHORD BRACED AGAINST LATERAL BUCKLING. THE UNIFORM DESIGN LOAD SHALL BE THE TOTAL SAFE UNIFORMLY DISTRIBUTED LOAD AS SHOWN ON SJI STANDARD LOAD TABLES.
4. ALL JOISTS SHALL BE DESIGNED TO SUPPORT THE LIVE LOAD WITHOUT EXCEEDING A DEFLECTION OF L/360 AND THE TOTAL DESIGN LOAD WITHOUT EXCEEDING A DEFLECTION OF L/240 UNO.
5. BRIDGING SHOWN ON THE PLANS IS FOR REFERENCE ONLY. JOIST MANUFACTURER SHALL DESIGN AND SUPPLY ALL BRIDGING REQUIRED. A NET WIND UPLIFT OF 10 psf AT INTERIOR ZONES AND 20 psf FOR ALL AREAS WITHIN 9'-0" OF ALL ROOF EDGES SHALL BE CONSIDERED. ALL BRIDGING AND BRIDGING ANCHORS SHALL BE INSTALLED, AND STEEL JOIST ENDS FIXED PRIOR TO THE APPLICATION OF ANY LOADS. BRIDGING THAT TERMINATES OR IS INTERRUPTED BY STRUCTURAL STEEL BEAMS OR CONCRETE WALLS SHALL BE ATTACHED THERETO. THE JOIST MANUFACTURER SHALL COORDINATE BRIDGING LOCATIONS TO AVOID INTERFERENCE WITH ALL MECHANICAL, ELECTRICAL, AND FIRE PROTECTION EQUIPMENT.
6. THE MINIMUM BEARING FOR LENGTH REQUIREMENTS FOR K-SERIES JOISTS, UNO, SHALL BE 2-1/2" ON STRUCTURAL STEEL AND 4" ON STEEL BEARING PLATES OVER CONCRETE OR CMU
7. UNLESS NOTED OTHERWISE K-SERIES JOISTS SHALL BE ATTACHED TO SUPPORTING STEEL MEMBERS OR STEEL BEARING PLATES WITH (2)-2" LONG 1/8" FILLET WELDS (ONE EACH SIDE) OR WITH (2) 1/2" DIAMETER BOLTS. WHERE THE DRAWINGS INDICATE THAT THE JOIST SEAT IS TO BE WELDED TO THE SUPPORTING STEEL, THE BOLTS PROVIDED ARE FOR ERECTION ONLY AND MAY BE REMOVED AFTER THE WELDS ARE COMPLETE.
8. HOLES IN STEEL JOIST CHORDS WILL NOT BE PERMITTED, EXCEPT FOR THE BOLTED CONNECTIONS AT THE BEARING END OF THE STEEL JOIST. OR WHERE SPECIFIED ON THE DRAWINGS AND SPECIFICALLY DESIGNED FOR BY THE JOIST MANUFACTURER.
9. ALL ITEMS SUCH AS MECHANICAL EQUIPMENT, DUCT WORK, PIPES, CEILING SUPPORTS, FIXTURES, DISPLAYS, ETC. WHICH ARE TO BE SUPPORTED BY OR HUNG FROM STEEL JOISTS OR JOIST GIRDERS SHALL BE FRAMED WITH AUXILIARY FRAMING TO THE PANEL POINTS OF THE STEEL JOIST OR JOIST GIRDER WHEN THE CONCENTRATED LOAD EXCEEDS 50#. METHODS OF FRAMING THAT INDUCE BENDING IN THE STEEL JOIST CHORDS OR WEB MEMBERS WILL NOT BE PERMITTED.
10. ADDITIONAL DESIGN LOADS FROM ARCHITECTURAL FEATURES, ROOF TOP UNITS, OR ANY OTHER CONCENTRATED LOADS SHOWN ON THE DRAWINGS SHALL BE CONSIDERED AS COLLATERAL LOADS. THESE LOADS SHALL BE CONSIDERED IN THE DESIGN OF THE JOISTS AND JOIST GIRDERS IN ADDITION TO THE SPECIFIED UNIFORM LOADS AND PANEL LOADS. COORDINATE LOCATIONS AND WEIGHTS WITH ARCHITECTURAL AND MEP DRAWINGS. WHERE SUCH LOADS DO NOT OCCUR AT PANEL POINTS OF THE JOIST OR JOIST GIRDERS, AUXILIARY FRAMING SHALL BE ADDED, OR THE TOP CHORD DESIGNED FOR THE EFFECTS OF THE LOAD
11. ALL DAMAGED JOISTS SHALL BE REPAIRED OR REPLACED. THE PROFESSIONAL OF RECORD SHALL BE THE SOLE JUDGE AS TO WHETHER A JOIST OR JOIST GIRDER CAN BE REPAIRED OR NEEDS TO BE REPLACED. ALL REPAIRS TO JOISTS SHALL BE DESIGNED AND SPECIFIED BY THE JOIST SUPPLIERS ENGINEER.

STRUCTURAL STEEL NOTES

1. STRUCTURAL STEEL SHALL MEET THE FOLLOWING MINIMUM YIELD STRENGTHS:
   a. W-SHAPES ASTM A992 GRADE 50
   b. ANGLES AND C-SHAPES ASTM A36
   c. PLATES AND BARS ASTM A36
   d. HSS AND TS ASTM A 500 GRADE B
2. FOR BOLTED CONNECTIONS OF BEAMS AND COLUMNS USE A325 OR A490 BOLTS, SIZE AS REQUIRED. ALL BOLTS FOR SLIP CRITICAL CONNECTIONS SHALL BE LOAD INDICATOR BOLTS OR SHALL BE EQUIPPED WITH LOAD INDICATOR WASHERS WHICH PROVIDE AN EASY MEANS OF VISUALIZING PROPER BOLT TENSION.
3. PERFORM ALL WELDING WITH E70 XX ELECTRODES, UNO OR UNLESS REQUIRED FOR SPECIAL CONNECTIONS. WELDING OF STRUCTURAL MEMBERS SHALL BE PERFORMED BY CERTIFIED WELDERS AND WELDING SHALL BE IN ACCORDANCE WITH "STRUCTURAL WELDING CODE" OF THE AWS.
4. ALL EXPOSED STEEL SHALL BE GALVANIZED UNO, INCLUDING MASONRY SUPPORT LINTELS.
5. DETAILS OUTLINE BASIC CONNECTION TYPES. BEAM TO BEAM AND BEAM TO COLUMN CONNECTIONS NOT DETAILED IN DRAWINGS SHALL BE SIZED BY STEEL DETAILER AS STANDARD AISC TYPE 2 BEARING CONNECTIONS CAPABLE OF SUPPORTING REACTIONS DEVELOPED BY MAXIMUM UNIFORM LOAD CAPACITY ON A SIMPLE SPAN BEAM AND BEAM SPAN GIVEN.
6. STEEL SHALL BE DESIGNED, DETAILED, FABRICATED AND ERECTED ACCORDING TO ALL APPLICABLE SECTIONS OF THE LATEST EDITION OF THE AISC MANUAL, ASD.
7. FOUNDATION ANCHOR BOLTS SHALL BE AS CALLED OUT IN THE COLUMN TABLE AND IN BASE PLATE DETAILS, WITH LEVELING NUTS. IF NOT CALLED OUT, USE ASTM F1554, GRADE 36 3/4" DIA. - 9" EMBEDMENT WITH A HEAVY HEX NUT WELDED AT THE BOTTOM.
8. STRUCTURAL STEEL SHALL BE SHIPPED WITH STANDARD SHOP PRIMER.
9. PROVIDE L4x4x1/4 (VLD) FIELD-FABRICATED FRAME BETWEEN JOISTS AT OPENINGS GREATER THAN 10"x10", UNO.
10. ALL EXPOSED WELDS SHALL BE GROUND SMOOTH AND PAINTED TO MATCH SHOP PAINT.
11. FIELD CUTTING, DRILLING OR OTHER MODIFICATION OF STRUCTURAL STEEL COMPONENTS IS NOT PERMITTED WITHOUT WRITTEN APPROVAL BY THE STRUCTURAL ENGINEER OF RECORD. WHERE BEAM PENETRATIONS CANNOT BE AVOIDED OR WHERE CUTTING IS REQUIRED, CONTRACTOR SHALL SUBMIT ALL PERTINENT INFORMATION INCLUDING PENETRATION SHAPE, SIZE, LOCATION AND METHOD OF CUTTING THE OPENING FOR REVIEW.

PRE-ENGINEERED WOOD TRUSS NOTES

1. ALL TRUSSES CALLED OUT IN THE DRAWINGS SHALL BE PRE-ENGINEERED, MANUFACTURED TRUSSES. TRUSSES SHALL CONFORM TO THE SPACING, DIMENSIONS AND CONFIGURATIONS CALLED OUT IN THESE NOTES AND ON THE PLANS AND SHALL BE DESIGNED FOR THE SPECIFIED LOADINGS.
2. MAXIMUM LIVE LOAD DEFLECTION SHALL NOT EXCEED L/360. MAXIMUM TOTAL LOAD DEFLECTION SHALL NOT EXCEED L/240 OR ¾" WHICHEVER IS LESS.
3. TRUSSES SHALL BE FABRICATED WITH MINIMUM 20 GAGE TRUSS PLATES HAVING A MINIMUM PENETRATION OF 0.37"
4. CEILINGS WERE NOT DESIGNED TO BRACE TRUSS BOTTOM CHORDS. TRUSS MANUFACTURER SHALL DESIGN PERMANENT BOTTOM CHORD BRIDGING TO BE SUPPLIED BY THE CONTRACTOR.
5. SHOP DRAWINGS FOR TRUSSES SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW PRIOR TO FABRICATION. SHOP DRAWINGS SHALL BE SIGNED AND SEALED BY A REGISTERED PROFESSIONAL ENGINEER LICENSED IN THE STATE WHERE THE PROJECT IS LOCATED. SEE DRAWINGS FOR LOADING CRITERIA.
6. REQUIRED BRACING, BLOCKING, BRIDGING, WEB STIFFENERS FOR TRUSSES IS THE RESPONSIBILITY OF THE TRUSS MANUFACTURER AND SHALL BE INCLUDED IN THE SHOP DRAWINGS AND SHALL BE IN PLACE PRIOR TO INSTALLED DECKING.
7. ANCHOR TRUSSES TO BEARING PLATES WITH RAFTER TIE EQUAL TO SIMPSON H1. PLACE ANCHORS AT END BEARING OF EVERY TRUSS.
8. LUMBER USED FOR THE FABRICATION OF TRUSSES SHALL BE FREE OF LARGE KNOTS OR OTHER DEFECTS.
9. GENERAL CONTRACTOR SHALL COORDINATE THE EXACT LOCATION, LOADS, AND SPACE REQUIREMENTS OF ALL TRUSS MOUNTED EQUIPMENT. TRUSS MANUFACTURER SHALL DESIGN, MANUFACTURE, AND IDENTIFY TRUSSES TO CARRY SAID LOADS.
10. THE TRUSS LAYOUT SHOWN IS SCHEMATIC IN NATURE. HOWEVER, THE SUPPORTING SUPERSTRUCTURE HAS BEEN DESIGNED UNDER THE ASSUMPTION THAT THE FRAMING SCHEME WILL CLOSELY PARALLEL THE TRUSS DESIGNERS FINAL LAYOUT. THE FRAMING PLAN (DIRECTION OF TRUSSES, MAJOR GIRDER TRUSS BEARING POINTS, ETC) CAN BE MODIFIED UPON WRITTEN APPROVAL FROM THE STRUCTURAL ENGINEER OF RECORD
11. FINAL SIGNED AND SEALED DRAWINGS AND CALCULATIONS SHALL BE SUBMITTED FOR REVIEW. TRUSS DESIGNER SHALL DESIGN AND DETAIL ALL TRUSS TO TRUSS CONNECTIONS.

GENERAL WOOD FRAMING NOTES

1. WOOD FRAMING INCLUDING MISC BEAM, LINTELS, HEADERS, ETC SHALL BE #2 GRADE OR BETTER SOUTHERN PINE.
2. WOOD FRAMING FOR TIMBER COLUMNS SHALL BE DOUGLAS FIR #1 OR BETTER.
3. ROOF FRAMING CALLED OUT ON THE PLANS TO BE STICK FRAMED SHALL BE SIZED FOR THE LOADS AND SPANS INDICATED ON THE PLANS IN ACCORDANCE WITH STANDARD ENGINEERING PRACTICES.
4. LIGHT FRAMING SUCH AS PLATES, SILLS, CRIPPLES, BLOCKING AND ROOF FRAMING NOT OTHERWISE SPECIFIED SHALL BE #3 GRADE DOUGLAS-FIR-LARCH OR BETTER.
5. STUDS SHALL BE #2 GRADE DOUGLAS FIR-LARCH OR BETTER.
6. ALL WOOD FRAMING SHALL BE FREE OF LARGE KNOTS, WARPS, SPLITS, OR DEFECTS.
7. WHERE CALLED FOR ON THE PLANS TO USE FRAMING ANCHORS USE GALVANIZED STEEL FRAMING ANCHORS EQUAL TO SIMPSON.
8. ALL LUMBER IN CONTACT WITH CONCRETE OR MASONRY SHALL BE TREATED AND SHALL COMPLY WITH APPLICABLE REQUIREMENTS OF AWPA LP-2 STANDARDS C2 AND C9 OR BE OF A SPECIES NATURALLY RESISTANT TO DECAY.
9. WOOD FRAMING, ROUGH CARPENTRY, AND MISC WOOD CARPENTRY WORK SHALL BE GOVERNED BY 2006 IBC REQUIREMENTS. ALL SUCH WORK SHALL COMPLY WITH CONSTRUCTION, CONNECTION AND GENERAL REQUIREMENTS OF CHAPTER 23 OF THE CODE. THE CONTRACTOR SHALL PROVIDE ALL PARTIES WITH A COPY OF THIS CHAPTER.
10. AT OPENINGS OF 5'-0" WIDE PROVIDE DOUBLE 2X TRIMMER STUDS AT EACH SIDE OF OPENING.
11. SILL PLATES SHALL BE CONNECTED TO THE FOUNDATION WALL WITH ½" DIAMETER BY 7" EMBEDMENT ANCHOR BOLTS AT 5'-0" O.C MAX. THERE SHALL BE A MINIMUM OF TWO ANCHOR BOLTS PER SECTION OF PLATE AND ANCHOR BOLTS SHALL BE PLACED 12" FROM THE END OF THE PLATE AND NO CLOSER THAN 3" FROM THE EDGE OF THE PLATE.
12. ALL BEAM BEARING PERPENDICULAR TO WALL FRAMING SHALL BE SUPPORTED BY MULTIPLE STUDS FOR THE FULL WIDTH OF THE BEAM. MULTIPLE STUDS SHALL BE CONTINUOUS TO THE FOUNDATION.
13. ROOF DECKING SHALL BE 19/32" APA RATED 40/20 EXPOSURE 1 TONGUE AND GROOVE PLYWOOD PANELS. FLOOR DECKING SHALL BE 23/32" APA RATED 48/24 EXPOSURE 1 TONGUE AND GROOVE PLYWOOD PANELS. REFER TO IBC CHAPTER 23 FOR ATTACHMENT REQUIREMENTS UNO.
14. EXTERIOR SHEATHING SHALL BE ½" APA RATED PANELS EXPOSURE 1 UNO.

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REGISTERED PROFESSIONAL ENGINEER

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