

DESIGN CRITERIA

- DRAWINGS CONFORM TO ALL REQUIREMENTS OF THE FOLLOWING DOCUMENTS IN ADDITION TO OTHER STANDARDS LISTED ON THE DRAWINGS AND IN THE SPECIFICATIONS:
 - COOK COUNTY BUILDING AND ENVIRONMENTAL ORDINANCE OF 1997
 - ILLINOIS ACCESSIBILITY CODE
 - 2009 INTERNATIONAL ENERGY CONSERVATION CODE
 - AMERICAN INSTITUTE OF STEEL CONSTRUCTION, LOAD AND RESISTANCE FACTOR DESIGN, THIRTEENTH EDITION (AISC-LRFD)
 - BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE (ACI 318-05)
- DESIGN LOADS:

LIVE LOADS:

ROOF LIVE LOAD -- 5 psf + SNOW LOAD (IBC SECTION 1607.11.2.4)

WIND LOADS:

BASIC WIND SPEED -- 90 MPH
 IMPORTANCE FACTOR, I_w -- 1.15
 EXPOSURE CATEGORY -- C
 ENCLOSURE CLASSIFICATION -- OPEN

SNOW LOADS:

GROUND SNOW, P_G -- 25 PSF
 IMPORTANCE FACTOR, I_s -- 1.0
 ROOF SNOW LOAD -- 20 PSF

CONTRACTOR RESPONSIBILITIES AND COORDINATION

- ALL FIELD WORK SHALL BE COORDINATED AND CONTINUOUSLY SUPERVISED BY THE CONTRACTOR.
- MATERIALS AND EQUIPMENT SHALL BE STORED AND TRANSPORTED IN A MANNER SO AS NOT TO EXCEED THE ALLOWABLE FLOOR LOADINGS INDICATED IN THE DRAWINGS.
- THE CONTRACTOR SHALL MAKE NO DEVIATION FROM THE DESIGN DRAWINGS WITHOUT WRITTEN APPROVAL FROM THE ARCHITECT AND STRUCTURAL ENGINEER.
- THE CONTRACTOR SHALL NOTIFY THE ARCHITECT AND STRUCTURAL ENGINEER OF ANY DISCREPANCIES BETWEEN THE STRUCTURAL DOCUMENTS AND ANY OTHER DOCUMENTS OR EXISTING CONDITIONS FOR RESOLUTION PRIOR TO PROCEEDING WITH THE WORK.
- THE CONTRACTOR SHALL NOTIFY THE ARCHITECT AND STRUCTURAL ENGINEER OF ANY DISCREPANCIES BETWEEN THE STRUCTURAL DRAWINGS, DETAILS, AND SPECIFICATIONS, FOR RESOLUTION PRIOR TO PROCEEDING WITH THE WORK. DO NOT ASSUME THAT EITHER THE DRAWINGS OR SPECIFICATIONS TAKE PRECEDENCE.
- SEE CIVIL, ARCHITECTURAL, MECHANICAL, AND ELECTRICAL FOR ADDITIONAL INFORMATION RELATING TO THE COORDINATION OF STRUCTURAL COMPONENTS.
- PRINCIPAL OPENING SIZES AND LOCATIONS ARE INDICATED ON THE DRAWINGS. ADDITIONAL SMALLER OPENINGS, BLOCKOUTS AND SLEEVES MAY BE REQUIRED BY OTHER DISCIPLINES AND SHALL BE COORDINATED BY THE CONTRACTOR.

FOUNDATIONS

- FOUNDATIONS HAVE BEEN DESIGNED BASED FOR AN ALLOWABLE BEARING PRESSURE OF 3000 PSF.
- PLACE FOOTINGS ON UNDISTURBED, NATURAL SUBGRADE, AS VERIFIED BY THE GEOTECHNICAL ENGINEER RETAINED BY THE OWNER. IF SUBGRADE IS DEEMED UNSUITABLE, EXTEND EXCAVATION TO SUITABLE, UNDISTURBED, NATURAL SUBGRADE AND RAISE GRADE USING COMPACTED ENGINEERED FILL OR PLAIN CONCRETE.

REINFORCEMENT

- REINFORCEMENT SHALL CONFORM TO THE FOLLOWING STANDARDS AND MATERIAL PROPERTIES:
 - DEFORMED BARS: ASTM A615
 - WELDABLE DEFORMED BARS: ASTM A706
 - EPOXY COATED DEFORMED BARS: ASTM A615/ A775
 - WELDED WIRE FABRIC: ASTM A185
- DETAIL REINFORCEMENT BASED ON THE PROJECT REQUIREMENTS, ACI-318 AND ACI-315.
- WHERE SHEETS OF WELDED WIRE FABRIC ARE GRAPHICALLY INDICATED TO LAP, PROVIDE ACI STANDARD FULL TENSION WELDED WIRE FABRIC LAP SPLICE.
- WHERE DOWELS ARE INDICATED BUT NOT SIZED, PROVIDE DOWELS THAT MATCH SIZE AND LOCATION OF MAIN REINFORCEMENT AND LAP SPLICE WITH THE MAIN REINFORCEMENT.
- REINFORCEMENT SHALL HAVE THE FOLLOWING CONCRETE PROTECTION (CLEAR COVER), UON:
 - SURFACES NOT FORMED: 3"
 - FORMED SURFACES IN CONTACT WITH SOIL OR WATER OR EXPOSED TO WEATHER: 2"

STRUCTURAL STEEL

- STRUCTURAL STEEL SHALL CONFORM TO THE FOLLOWING STANDARDS AND MATERIAL PROPERTIES, UON:
 - PLATES, ANGLES: ASTM A36, F_y = 36 KSI
 - HOLLOW STRUCTURAL SECTION: ASTM A500, GRADE B, F_y = 46 KSI
 - ANCHOR BOLTS: ASTM A325 THREADED RODS
- FIELD MODIFICATION OF STRUCTURAL STEEL IS PROHIBITED WITHOUT PRIOR APPROVAL OF THE ARCHITECT AND STRUCTURAL ENGINEER.
- FABRICATION AND ERECTION OF STRUCTURAL STEEL SHALL BE IN ACCORDANCE WITH AISC "SPECIFICATION FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS", NINTH EDITION.

STRUCTURAL STEEL CONNECTIONS

- STRUCTURAL STEEL CONNECTION MATERIAL SHALL CONFORM TO THE FOLLOWING STANDARDS AND MATERIAL PROPERTIES:
 - ANGLES: ASTM A36
 - WTs: ASTM A36
 - PLATES: ASTM A36
 - BOLTS, NUTS, WASHERS: ASTM A325 UON
 - WELD ELECTRODES: E70XX
- ALL CONNECTIONS, UNLESS INDICATED AS BEING FULLY DESIGNED ON THE STRUCTURAL DRAWINGS, SHALL BE DESIGNED AND DETAILED BY A LICENSED STRUCTURAL ENGINEER.
- ALL SHOP AND FIELD CONNECTIONS SHALL BE BOLTED OR WELDED. SUBMITTAL FROM CONTRACTOR FOR VARIATIONS TO TYPICAL CONNECTION DETAILS WILL BE CONSIDERED.
- FOR CONNECTION DESIGN AND DETAILING, SET CONNECTION WORK POINT AT INTERSECTION OF MEMBER CENTERLINES, UON.
- ALL BOLTS, NUTS AND WASHERS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A325, UNLESS SHOWN OR NOTED OTHERWISE.
- ALL WELDING ELECTRODES SHALL BE E70XX, UNLESS NOTED OTHERWISE. ALL WELDING SHALL BE PERFORMED BY QUALIFIED WELDERS AND SHALL CONFORM TO THE "CODE FOR ARC AND GAS WELDING IN BUILDING CONSTRUCTION", PUBLISHED BY THE AMERICAN WELDING SOCIETY.
- SEE SPECIFICATIONS FOR CONNECTION DESIGN RESPONSIBILITIES AND SUBMITTALS.
- ALL WELDED CONNECTIONS SHALL BE DESIGNED TO BE FULLY EQUIVALENT IN STRENGTH TO BOLTED CONNECTIONS FOR THE SAME SIZE BEAM.
- MINIMUM WELDS, WHERE NOT SHOWN ON DRAWINGS, SHALL BE 1/4" FILLET ALL AROUND. WELDED CONNECTIONS SHALL BE BASED ON E70 ELECTRODES.
- PROVIDE VISUAL INSPECTION AND TESTING OF WELDS PER THE SPECIFICATIONS.
- THE CONTRACTOR SHALL ERECT AND MAINTAIN TEMPORARY BRACING TO INSURE THE ALIGNMENT AND STABILITY OF THE STRUCTURE DURING ERECTION UNTIL PERMANENT CONNECTIONS HAVE BEEN COMPLETED.
- STEEL SHALL BE CLEANED OF RUST, LOOSE MILL SCALE AND OTHER FOREIGN MATERIALS WHERE REQUIRED FOR FABRICATION, FITTING UP OR WELDING.
- THERE SHALL BE NO FIELD CUTTING OF ANY STRUCTURAL STEEL MEMBERS FOR THE WORK OF OTHER TRADES WITHOUT PRIOR WRITTEN APPROVAL OF THE ARCHITECT.
- STRUCTURAL FRAMING PLANS AND DETAILS ARE NOT INTENDED TO COVER ALL THE STEEL REQUIRED FOR A COMPLETE JOB. EXAMINE ALL ARCHITECTURAL DETAILS. ALL ROLLED STEEL ANGLES AND OTHER SHAPES SHOWN ON SUCH DETAILS WHICH ARE NOT SPECIFICALLY NOTED OR SPECIFIED TO BE FURNISHED AS ORNAMENTAL IRON, SHALL BE FURNISHED AS STRUCTURAL STEEL, EVEN THOUGH THEY ARE NOT SHOWN ON THE STRUCTURAL DRAWINGS.

CONCRETE

- ALL CONCRETE WORK SHALL CONFORM TO THE LATEST EDITION OF THE AMERICAN CONCRETE INSTITUTE PUBLICATIONS: ACI 301, ACE 31, ACI 313, ACI 318, ACI 347, ACI 304.
- CONCRETE 28 DAY TEST STRENGTH AND WEIGHT SHALL BE AS FOLLOWS:
 - FOOTINGS AND PIERS -- 4,000 PS NWC (IDOT CLASS S)
 - EXTERIOR SLABS AND CURBS -- 4,000 PSI NWC (IDOT CLASS S)
- FORMWORK FOR ALL CONCRETE WHICH WILL BE EXPOSED IN THE COMPLETED BUILDING SHALL HAVE AN ACCEPTABLY SMOOTH SURFACE. SEE SPECIFICATIONS.
- CONCRETE PROTECTION FOR REINFORCEMENT BARS, UNLESS SHOWN OR NOTED OTHERWISE, SHALL BE AS FOLLOWS:
 - EXTERIOR SLABS -- 1" CLEAR

PERFORMANCE ITEMS

- EMPLOY OR RETAIN A LICENSED PROFESSIONAL ENGINEER REGISTERED IN THE STATE TO DESIGN AND DETAIL THE FOLLOWING STRUCTURAL COMPONENTS:
 - 05120 STRUCTURAL STEEL CONNECTIONS
- TYPICAL DETAILS INDICATE GENERAL CRITERIA FOR DESIGN AND DETAILING OF CONNECTIONS. TYPICAL DETAILS ARE NOT INTENDED TO CONVEY COMPLETE CONNECTOR SIZES, PLATE SIZES, WELD SIZES, NUMBER OF BOLTS, OR ANOTHER SPECIFIC INFORMATION THAT IS OBTAINED THROUGH DESIGNING OF AN INDIVIDUAL CONNECTION FOR A GIVEN SET OF LOADS

FRAMING LUMBER

- ALL WOOD FRAME CONSTRUCTION SHALL CONFORM TO THE STANDARDS OF IBS AND NDS AS A MINIMUM REQUIREMENT. FURNISH TO THE FOLLOWING MINIMUM STANDARDS:
 - ROOF DECKING (2x6): DOUGLAS FIR NO. 1
MINIMUM BASE VALUE: FB=1350 PSI

ENGINEERED LUMBER MEMBERS SHALL BE MANUFACTURED UNDER A PROCESS BY THE NATIONAL RESEARCH BOARD. EACH PIECE SHALL BEAR A STAMP OR STAMPS NOTING THE NAME AND PLANT NUMBER OF THE MANUFACTURER, THE GRADE, THE NATIONAL RESEARCH BOARD NUMBER, AND THE QUALITY CONTROL AGENCY
- GLULAM LAMINATED MEMBERS SHALL BE FABRICATED IN CONFORMANCE WITH ANSI/AITC A190.1 AND ASTM D3737. ALL MEMBERS SHALL BE 24F-V5 SP/SP WITH THE FOLLOWING PROPERTIES:
 - FBX = 2400 PSI E= 1,500,000 PSI
 - FBY = 1750 PSI EMIN = 780,000 PSI
 - FT= 1,150 PSI FC = 1,650 PSI
 - FVX = 300 PSI FVY = 260 PSI
- ALL HANGERS AND OTHER HARDWARE SHALL WITH STAND A MINIMUM UPLIFT LOAD OF 20 PSF.

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S2.0	FOUNDATION PLAN
S3.0	CANOPY FRAMING PLAN
S4.0	SOIL BORING LOGS

TOTAL BILL OF MATERIAL		
ITEM	UNIT	TOTAL
FURNISHING AND ERECTING CANOPY STRUCTURE	L. SUM	1

ABBREVIATIONS

ARCH	ARCHITECT OR ARCHITECTURAL
B/	BOTTOM OF
BOT	BOTTOM
CHP	CAST-IN-PLACE
CL	CENTERLINE
CLR	CLEAR OR CLEARANCE
COL	COLUMN
CONC	CONCRETE
CONN	CONNECTION(S)
CONST	CONSTRUCTION
CONT	CONTINUOUS
DET	DETAIL
DIA	DIAMETER
DIAG	DIAGONAL
DIM(S)	DIMENSION(S)
DL	DEAD LOAD
EA	EACH
EF	EACH FACE
EL	ELEVATION
ENGR	ENGINEER
EQ	EQUAL
EW	EACH WAY
EXP	EXPANSION
EXST	EXISTING
EXT	EXTERIOR
FND	FOUNDATION
FTG	FOOTING
GALV	GALVANIZED
GR	GRADE
HORZ	HORIZONTAL
INT	INTERIOR
JT	JOINT
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
UON	UNLESS OTHERWISE NOTED

\$USER\$ \$DATE\$ \$TIME\$ \$FILE\$



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DRAWN	- M. LANGE	REVISED	-
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CHECKED	- G. HATLESTAD	REVISED	-
DATE	- 10/22/2012	REVISED	-

**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

**BROOKFIELD ZOO CANOPY
 STRUCTURAL GENERAL NOTES**

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3784	06-0019-00-PK	COOK	133	107
CONTRACT NO.				

SHEET NO. S1.0

ILLINOIS FED. AID PROJECT