

STRUCTURAL STEEL NOTES:

- REFERENCE STANDARDS:
EXCEPT AS INDICATED, ALL DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL SHALL BE GOVERNED BY:
AISC MANUAL OF STEEL CONSTRUCTION – 14TH ED, 2011.
AISC CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES, 2005.
AISC FCD QUALITY CERTIFICATION PROGRAM, 1995.
AWS D1.1, STRUCTURAL WELDING CODE – STEEL, 2004.
- PROVIDE STEEL CONSTRUCTION IN ACCORDANCE WITH CM, 2013.
- MATERIALS:
WIDE FLANGE SHAPES: ASTM A992, F_y = 50 KSI
RECTANGULAR HSS: ASTM A500 GRADE B, F_y = 46 KSI
ROUND HSS: ASTM A500 GRADE B, F_y = 42 KSI
PIPE: ASTM A53 GRADE B, F_y = 35 KSI
CHANNELS: ASTM A36, F_y = 36 KSI
ANGLES: ASTM A36, F_y = 36 KSI
HIGH STRENGTH PLATES: ASTM A572, F_y = 50 KSI
PLATES AND MISCELLANEOUS STEEL: ASTM A36, F_y = 36 KSI
WELDING ELECTRODES: AWS A5.1 OR A5.5 SERIES E70
HIGH STRENGTH BOLTS: ASTM A 325
ANCHOR RODS: ASTM F 1554, GRADE 36
- PROVIDE CONNECTIONS FOR MEMBERS PER TYPICAL DETAILS INDICATED ON SHEET S-600.
- WELDING SHALL BE PERFORMED ONLY BY OPERATORS QUALIFIED BY THE AWS STANDARD QUALIFICATION PROCEDURE TO PERFORM THE PARTICULAR TYPE OF WORK REQUIRED.
- MINIMUM SIZE OF ALL FILLET WELDS SHALL CONFORM TO AISC SPECIFICATIONS.
- ALL WELDS ALONG LENGTHS OF MEMBERS INDICATED ON ARCHITECTURAL OR STRUCTURAL DRAWINGS BUT NOT SIZED SHALL BE A MINIMUM OF 3/16"x3" FILLET WELD.
- ALL FASTENERS USED FOR CONNECTIONS BETWEEN STRUCTURAL STEEL MEMBERS SHALL BE DIRECT TENSION INDICATING BOLTS. FASTENERS MAY NOT BE REUSED ONCE INSTALLED.
- PAINT AND PROTECTION:
TOUCH UP PAINT ON FASTENERS, WELDS AND ABRADED AREAS AFTER ERECTION. ALL STEEL MEMBERS IN EXTERIOR APPLICATIONS SHALL BE HOT-DIPPED GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A123. ALL FASTENERS IN EXTERIOR APPLICATIONS SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153.
- REPAIR OF DAMAGED AND UNCOATED AREAS OF GALVANIZED STEEL IN ACCORDANCE WITH ASTM A780. SUBMIT ALL PROPOSED REPAIR WORK FOR REPAIR.
- PREPARE ALL FAYING SURFACES BETWEEN NEW AND EXISTING AND BETWEEN ALL NEW SURFACES IN ACCORDANCE WITH THE SPECIFICATIONS.
- PROVIDE APPROVAL FROM THE ENGINEER OF RECORD FOR ANY OPENINGS IN MEMBERS NOT INDICATED IN THESE DOCUMENTS.
- GROUT UNDER BEARING PLATES SHALL BE OF NON-SHRINK, NON-METALLIC COMPOSITION.
- ANGLE FRAME MEMBERS AROUND OPENINGS SHALL BE MITERED, WELDED AND GROUND SMOOTH.
- FABRICATE STRUCTURAL STEEL MEMBERS WITH NATURAL CAMBER UP EXCEPT AS INDICATED.
- PUNCH, SUB-PUNCH AND REAM OR DRILL ALL BOLT HOLES. DO NOT USE A CUTTING TORCH TO ENLARGE BOLT HOLES, UNLESS APPROVAL IS OBTAINED FROM THE ENGINEER OF RECORD.
- CONNECTIONS FOR BEAMS WITH AXIAL FORCES SHALL BE DESIGNED WITH SLIP-CRITICAL BOLTS.
- SUBMIT CALCULATIONS FOR CONNECTION DESIGNS NOT DETAILED ON THE DRAWINGS. DESIGN CONNECTIONS UNDER SUPERVISION OF LICENSED STRUCTURAL ENGINEER WHO IS LICENSED IN ILLINOIS AND EMPLOYED BY THE STEEL FABRICATOR. DESIGN CALCULATIONS TO BE SEALED BY FABRICATOR'S REGISTERED PROFESSIONAL ENGINEER. SHOP DRAWINGS SUBMITTED WITHOUT COMPLETE DESIGN CALCULATIONS WILL NOT BE REVIEWED.

STEEL GRATING NOTES:

- REFERENCED STANDARDS:
MBG-12; METAL BAR GRATING ENGINEERING DESIGN GUIDE, 2012.
- STEEL GRATING SHALL BE 1"x3/8" GALVANIZED FLAT BEARING BARS AT 1 1/2" MAX SPACING WITH WELDED CROSS BARS AT 4" O.C., MAX SPACING.
- BAR GRATING SHALL BE FASTENED TO SUPPORTING STRUCTURE WITH A 3/8" x 1" FILLET WELD, EACH SIDE AT EVERY FOURTH BEARING BAR OR TYPICAL MANUFACTURE'S CLIPS AT 12" O.C., MAX SPACING.
- PROVIDE 1"x3/8" GALVANIZED FLAT BAR BANDS AT ALL GRATING PANEL ENDS AND AT ALL OPENINGS 6" AND LARGER.
- ALL BOLTS, NUTS AND WASHERS SHALL BE CADMIUM PLATED, ASTM A325 HEAVY HEX, UNLESS SHOWN OR NOTED OTHERWISE.

ARCHITECTURALLY EXPOSED STRUCTURAL STEEL NOTES:

- REFERENCE STANDARD:
WHERE COMPONENTS ARE INDICATED AS PART OF AN ARCHITECTURALLY EXPOSED STRUCTURAL STEEL (AESS) SYSTEM, THE DESIGN, FABRICATION AND ERECTION OF THE COMPONENTS SHALL BE IN ACCORDANCE WITH THE CONTRACT DOCUMENTS AND SECTION 10 OF THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION, CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES, 2010.
- ALL STEEL CONSTRUCTION EXPOSED TO THE PUBLIC VIEW SHALL BE PART OF THE AESS. WELDED CONNECTIONS THAT ARE PART OF THE AESS, SHALL BE GROUND SMOOTH AND UNIFORM IN APPEARANCE. THIS GRINDING SHALL NOT EFFECT THE OVERALL CONNECTION CAPACITIES.
- WELDS SHALL BE CAREFULLY MADE AND BE CLEAR AND UNIFORM IN APPEARANCE. WELD SPLATTER SHALL BE CAREFULLY REMOVED WITHOUT DAMAGING THE METAL SURFACE. THERE SHALL BE NO UNDERCUTS.
- WELD LAPS SHALL BE UNIFORM IN SIZE AND MADE IN A CONTINUOUS PATTERN TO THE MAXIMUM EXTENT POSSIBLE, WHERE A BREAK IS REQUIRED IN A WELD, THE BREAK SHALL OCCUR IN A LOCATION TO BE OBSCURED BY THE ADDITION OF SUBSEQUENT MEMBERS, ON TOP OF MEMBERS LOCATED MORE THAN 5'-6" ABOVE THE NEAREST POINT OF PUBLIC ACCESS AND ON THE BOTTOM OF MEMBERS LOCATED BELOW. A BREAK IN A VERTICAL WELD SHALL BE LOCATED BEHIND THE MEMBER AS SEEN FROM THE NEAREST POINT OF PUBLIC ACCESS.

PRECAST CONCRETE:

- REFERENCE STANDARDS:
EXCEPT AS INDICATED, DESIGN, MANUFACTURE AND ERECTION OF PRECAST CONCRETE SHALL BE GOVERNED BY:
ACI 315, DETAILS AND DETAILING OF CONCRETE REINFORCEMENT, 2004.
ACI 318, BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE, 2011.
PCI MNL 117, MANUAL FOR QUALITY CONTROL FOR PLANTS AND PRODUCTION OF STRUCTURAL CONCRETE PRODUCTS, 4TH EDITION
PCI MNL 120, PCI DESIGN HANDBOOK – PRECAST AND PRESTRESSED CONCRETE.
AWS D1.3, STRUCTURAL WELDING CODE – SHEET STEEL, 1998.
- PROVIDE PRECAST CONCRETE CONSTRUCTION IN ACCORDANCE WITH CTA IDCM, 2013.
- MATERIALS:
CONCRETE, F_c: 4,000 PSI AT STRIPPING
6,000 PSI AT 28 DAYS
WELDING ELECTRODES: AWS A5.1, A5.5, OR A5.18, SERIES E70
REINFORCING: ASTM A-615, GR 60, GALVANIZED.
PRESTRESSING STRAND: GALV, 7-WIRE, ASTM A416, 270K, LOW-LAX
- THE HOLLOW-CORE MANUFACTURER SHALL SUBMIT CALCULATIONS AND SHOP DRAWINGS, BEARING THE SIGNED AND DATED SEAL OF A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF ILLINOIS, FOR ALL H/C PLANKS, INSERTS, PLATES, OPENINGS AND ANCHORS.
- CONCRETE OVERLAY SHALL HAVE A MINIMUM 28 COMPRESSIVE STRENGTH OF 4000 PSI. UNLESS OTHERWISE REQUIRED BY THE HOLLOW-CORE MANUFACTURER CONCRETE OVERLAY SHALL HAVE A MAXIMUM AGGREGATE SIZE OF 1/4".
- THE HOLLOW-CORE MANUFACTURER SHALL PROVIDE MINIMUM CLEAR COVER TO REINFORCING IN ACCORDANCE WITH ACI 318.
- ALL WELD PLATES, INSERTS, ANCHOR BOLTS, WELDING, LIFTING HARDWARE, GROUT SLEEVES, ETC. SHALL BE DESIGNED AND PROVIDED BY THE HOLLOW-CORE MANUFACTURER. UNLESS OTHERWISE NOTED, ALL CONNECTIONS EXPOSED TO WEATHER SHALL BE HOT DIP GALVANIZED IN ACCORDANCE WITH ASTM A 153.
- OPENINGS FOR MECHANICAL AND ELECTRICAL ITEMS SHALL BE CORE DRILLED THROUGH HOLLOW CELLS ONLY IN ACCORDANCE WITH THE HOLLOW-CORE MANUFACTURERS RECOMMENDATIONS. ADDITIONAL REINFORCEMENT SHALL BE PROVIDED AS REQUIRED BY THE HOLLOW-CORE MANUFACTURER.
- THE CONTRACTOR SHALL PROVIDE HOLES OR OTHER PROTECTIVE MEANS TO ALLOW THE HOLLOW CELLS TO DRAIN ANY WATER ACCUMULATION THAT MAY OCCUR DURING CONSTRUCTION.

SYMBOLS		
SYMBOL	DESCRIPTION	REMARKS
	SECTION CUT SHOWN ON PLANS	X= SECTION OR DETAIL NUMBER Y= SHEET REFERENCE
	DETAIL CALLOUT SHOWN ON PLANS	X= SECTION OR DETAIL NUMBER Y= SHEET REFERENCE
	ELEVATION CALLOUT SHOWN ON PLANS	X=ELEVATION NUMBER Y=SHEET REFERENCE
	ROOF TOP MECH EQUIP	SEE PLANS FOR LOCATIONS
	OPENING IN FLOOR, WALLS, OR FRAMING	VERIFY OPENING LOCATIONS W/ ARCH'L AND MECH DRAWINGS
	ARCH'L DOOR SIZE	REFER TO ARCH'L DRAWINGS FOR DOOR SCHEDULE.
	MOMENT CONNX	
	SLIP CONNECTION	
	BEAM CONTINUITY CONNX	
	SAG ROD	
	SPLICE LOCATION	
	BOTTOM FLANGE BRACE TO PARALLEL MEMBER	
	BOTTOM FLANGE BRACE TO PARALLEL MEMBER	
	SLOPES DOWN	
	[XX] SPOT ELEVATION	
	(X) QUANTITY OF WELDED SHEAR STUD CONNECTORS TO BE EVENLY SPACED IN THE SPAN INDICATED	
	INDICATES EXISTING MATERIAL AND/OR COMPONENTS	
	INDICATES EXISTING MATERIAL AND/OR COMPONENTS TO BE REMOVED OR DEMOLISHED	

PERFORMANCE ITEMS:

- THE CONTRACTOR SHALL ENGAGE OR RETAIN A LICENSED STRUCTURAL ENGINEER IN THE STATE OF ILLINOIS TO DESIGN AND DETAIL PERFORMANCE ITEMS AS PART OF THE BASE BUILDING STRUCTURE INDICATED IN THE CONTRACT DOCUMENTS INCLUDING, BUT NOT LIMITED TO:
 - CONCRETE MICROPILE DESIGN
 - PRECAST CONCRETE PANELS

ABBREVIATIONS			
AB	ANCHOR BOLT (ROD)	HCA	HEADED CONCRETE ANCHOR
ABC	AGGREGATE BASE COURSE	HORZ	HORIZONTAL
AC	AIR CONDITIONER	HSS	HOLLOW STRUCTURAL SECTION
AFF	ABOVE FINISHED FLOOR	IFW	INSIDE FACE OF WALL
AL	ALUMINUM	K (KIP)	1,000 POUNDS
ALT	ALTERNATE	L	ANGLE
ARCH	ARCHITECT	LL	LIVE LOAD
ARCH'L	ARCHITECTURAL	LBS (#)	POUNDS
ASD	ALLOWABLE STRESS DESIGN	LLH	LONG LEG HORIZONTAL
@	AT (MEASUREMENT)	LLV	LONG LEG VERTICAL
BM	BEAM	LDH	LONG DIMENSION HORIZONTAL
BFF	BELOW FINISHED FLOOR	LDV	LONG DIMENSION VERTICAL
BOB	BOTTOM OF BEAM	MFR('S)	MANUFACTURER(S)
BOD	BOTTOM OF DECK	MCJ (MAS CJ)	MASONRY CONTROL JOINT
BOF	BOTTOM OF FOOTING	MECH	MECHANICAL
BRG	BEARING	N/A	NOT APPLICABLE
CIP	CAST IN PLACE	NTS	NOT TO SCALE
CL	CENTERLINE	OC	ON CENTER
CL BM	CENTERLINE OF BEAM	OFW	OUTSIDE FACE OF WALL
CL COL	CENTERLINE OF COLUMN	OPP	OPPOSITE
CL FTG	CENTERLINE OF FOOTING	PC	PRECAST CONCRETE
CL WALL	CENTERLINE OF WALL	PLF	POUNDS PER LINEAR FOOT
CLR	CLEAR	PREFAB	PREFABRICATED
CONC	CONCRETE	PSF	POUNDS PER SQUARE FOOT
CONC CJ	CONCRETE CONTROL JOINT	PSI	POUNDS PER SQUARE INCH
CONC SJ	CONCRETE SAWCUT JOINT	RE:	REFERENCE TO
CMU	CONCRETE MASONRY UNIT	REINF	REINFORCING
CONNX	CONNECTION	SLH	SHORT LEG HORIZONTAL
CONT	CONTINUOUS	SLV	SHORT LEG VERTICAL
DL	DEAD LOAD	SIM	SIMILAR
DIA, Ø	DIAMETER	SQ	SQUARE
DN	DOWN	STD	STANDARD
DWG(S)	DRAWING(S)	TL	TOTAL LOAD
EOS	EDGE OF SLAB	TOB (T/ BM)	TOP OF BEAM
EOSS	EDGE OF STRUCTURAL STEEL	TOD	TOP OF DECK
ELEV	ELEVATION	TOF (T/ FTG)	TOP OF FOOTING
EQ	EQUAL	TOL	TOP OF LEDGER
EQUIP	EQUIPMENT	TOM (T/ CMU)	TOP OF MASONRY
EXP BOLT	EXPANSION BOLT	TOP (T/ R)	TOP OF PLATE
EXP JT (Ej)	EXPANSION JOINT	TOS (T/ STL)	TOP OF STEEL
EW	EACH WAY	TOW (T/ WALL)	TOP OF WALL
FF	FINISHED FLOOR	TYP	TYPICAL
FOM	FACE OF MEMBER	UNO	UNLESS NOTED OTHERWISE
FOS	FACE OF STEEL	VERT	VERTICAL
FOW	FACE OF WALL	VIF	VERIFY IN FIELD
GA	GAGE	WF	WIDE FLANGE
GALV	GALVANIZED	WWR	WELDED WIRE REINFORCING
GSN	GENERAL STRUCTURAL NOTES	W/	WITH
GLB	GLUED-LAMINATED BEAM	W/O	WITHOUT

LOCATION OF INFORMATION

- FOR MATERIAL STRENGTHS, SEE GENERAL STRUCTURAL NOTES.
- VERIFY ALL DIMENSIONS WITH ARCHITECTURAL DRAWINGS PRIOR TO START OF CONSTRUCTION.
- FOR CLARITY, ALL EXTERIOR SLABS AND SIDEWALKS MAY NOT BE SHOWN. FOR EXACT DIMENSIONS, LOCATIONS, JOINT AND SCORE LINES, SEE CIVIL DRAWINGS.
- FOR CLARITY, ALL OPENINGS MAY NOT BE SHOWN ON FRAMING PLANS. FOR EXACT SIZE, NUMBER, AND LOCATION OF OPENINGS, SEE ARCHITECTURAL, MECHANICAL, ELECTRICAL AND PLUMBING DRAWINGS. FOR FRAMING AT OPENINGS, SEE TYPICAL STRUCTURAL DETAILS. VERIFY ALL SIZES, WEIGHTS AND LOCATIONS OF MECHANICAL EQUIPMENT WITH MECHANICAL ENGINEER AND MECHANICAL CONTRACTOR THROUGH ARCHITECT.
- DETAILS MARKED "TYPICAL" MAY NOT BE CUT ON PLANS.
- C.J. – AS SHOWN ON PLAN INDICATES LOCATION OF EITHER KEYED OR SAW CUT CONTROL JOINT IN SLAB ON GRADE AT CONTRACTOR'S OPTION, SEE GENERAL STRUCTURAL NOTES AND PLANS.
- FOR CLARITY, DETAILS MAY SHOW ONLY ONE SIDE OF FRAMING CONDITION.
- CONTRACTOR TO VERIFY, AND BE RESPONSIBLE FOR VARIATIONS IN CONCRETE QUANTITY DUE TO CAMBER, CONSTRUCTION DEAD LOAD DEFLECTIONS AND/OR TOLERANCES OF STRUCTURAL STEEL ELEMENTS (i.e. BEAMS, JOISTS, COMPOSITE JOISTS & BEAMS, STEEL DECK, ETC.) AND PRECAST CONCRETE ELEMENTS.
- ALL SCHEDULE MARK DESIGNATIONS MAY NOT NECESSARILY BE FOUND ON THE PLANS WHERE THE SCHEDULES OCCUR. SCHEDULES ARE TYPICAL TO THE PROJECT.