DESIGN PARAMETERS

1.	BUILDING CODE	2018 INTERNATIONAL BUILDING CODE (IBC)
	OCCUPANCY CATEGORY	II
2.	LIVE LOADS	
	A. ROOF – NON–REDUCIBLE	20 PSF
	B. SLAB–ON–GRADE	350 PSF
3.	ROOF SNOW LOAD	
	A. GROUND SNOW LOAD, Pg	20 PSF
	B. FLAT ROOF SNOW LOAD, Pf	20 PSF
	C. SNOW EXPOSURE FACTOR, Ce	1.0
	D SNOW LOAD IMPORTANCE FACTOR, I	1.0
	E. THERMAL FACTOR, Ct (BUILDING)	1.0
	F. SNOW DRIFT	PER REFERENCED CODE
4.	WIND DESIGN DATA	
	A. ULTIMATE WIND SPEED (3 SECOND GUST), V	109 MPH
	B. WIND IMPORTANCE FACTOR, I	1.00
	C. WIND EXPOSURE CATEGORY	C
	D. INTERNAL PRESSURE COEFFICIENT, Gcpi	+/– 0.18
	E. DESIGN WIND PRESSURE ON COMPONENTS AND CLADDING (1.0W)	
	1) WALLS (500 SQUARE FEET EFFECTIVE WIND AREA)	
	END ZONES	23.7 PSF
	INTERIOR ZONES	23.7 PSF
	2) ROOF (10 SQUARE FEET EFFECTIVE WIND AREA FOR DECK ATTACHMENT)	
	CORNER ZONES	89.1 PSF
	END ZONES	65.4 PSF
	INTERIOR ZONE 1	49.6 PSF
	INTERIOR ZONE 2	28.5 PSF
	F. WIDTH OF END ZONES, a	18.9 FT
5.	EARTHQUAKE DESIGN DATA	
	A. SEISMIC IMPORTANCE FACTOR, I	1.0
	B. MAPPED SPECTRAL RESPONSE ACCELERATION, Ss	9.9 %
	C. MAPPED SPECTRAL RESPONSE ACCELERATION, S1	6.8 %
	D. SITE CLASS	C
	E. SPECTRAL RESPONSE COEFFICIENT, Sds	0.086
	F. SPECTRAL RESPONSE COEFFICIENT, Sd1	0.068
	G. SEISMIC DESIGN CATEGORY	B
	H. STRUCTURAL SYSTEM	
	1) BASIC SEISMIC FORCE–RESISTING SYSTEM TYPE	A. BEARING WALL SYSTEMS
	2) VERTICAL ELEMENT TYPE	2) ORDINARY PRECAST SHEAR WALLS
	3) DESIGN BASE SHEAR, LRFD	0.029 W
	4) SEISMIC RESPONSE COEFFICIENT, Cs	0.029
	5) CONTROLLING RESPONSE MODIFICATION FACTOR, R	3
	J. ANALYSIS PROCEDURE	EQUIVALENT LATERAL FORCE
6.	DEAD LOAD	
	A. EPDM MEMBRANE	0.3 PSF
	B. RIGID INSULATION	0.7 PSF
	C. ROOF DECK	2.0 PSF
	D. LIGHTS, PLUMBING, & HVAC	3.0 PSF
	E. SPRINKLERS	2.0 PSF
	F. STEEL JOISTS	2.0 PSF
	G. STEEL GIRDERS	2.0 PSF
	H. TOTAL DEAD LOAD ON JOISTS	10.0 PSF
	J. TOTAL DEAD LOAD ON COLUMNS	12.0 PSF

GENERAL NOTES

GENERAL

1. STRUCTURAL ELEMENTS ARE NON–SELF SUPPORTING AND REQUIRE INTERACTION WITH OTHER ELEMENTS FOR STABILITY AND RESISTANCE TO LATERAL FORCES. FRAMING AND WALLS SHALL BE TEMPORARILY BRACED BY THE CONTRACTOR UNTIL PERMANENT BRACING, ROOF DECKS, AND WALLS HAVE BEEN INSTALLED AND CONNECTIONS BETWEEN THESE ELEMENTS HAVE BEEN MADE.
2. THE STRUCTURAL DRAWINGS REPRESENT THE FINISHED STRUCTURE AND DO NOT INDICATE THE METHOD OF CONSTRUCTION, UNLESS NOTED OTHERWISE. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR THE MEANS, METHODS, TECHNIQUES, SEQUENCES, AND OPERATION OF CONSTRUCTION AND SAFETY PRECAUTIONS AND PROGRAMS INCIDENTAL THERETO.
3. THE SIZE AND LOCATION OF EQUIPMENT PADS AND PENETRATIONS THROUGH THE STRUCTURE FOR MECHANICAL, ELECTRICAL, AND PLUMBING WORK SHALL BE VERIFIED BY THE CONTRACTOR. PENETRATIONS SHALL BE SUBJECT TO APPROVAL BY THE STRUCTURAL ENGINEER. REFER TO MECHANICAL, ELECTRICAL, AND PLUMBING DRAWINGS FOR OPENING LOCATIONS NOT SHOWN ON THE STRUCTURAL DRAWINGS.
4. USE ONLY DIMENSIONS INDICATED ON THE DRAWINGS. DO NOT SCALE DRAWINGS OR USE ANY DIMENSIONS TAKEN FROM ELECTRONIC DRAWING FILES. CONTRACTOR SHALL COORDINATE IN–PLACE DIMENSIONS BASED ON TOLERANCES OF THE RESPECTIVE TRADES.
5. ASSUME EQUAL SPACING IF NOT INDICATED ON DRAWINGS.
6. THE GENERAL NOTES ARE AN INTEGRAL PART OF THE CONTRACT DOCUMENTS AND SHALL BE USED IN CONJUCTION WITH THE STRUCTURAL DRAWINGS. WHERE REQUIREMENTS INDICATED ON THE STRUCTURAL DRAWINGS DIFFER FROM THE GENERAL NOTES, NOTIFY THE ARCHITECT AND THE STRUCTURAL ENGINEER.
7. THE STRUCTURAL DRAWINGS ARE NOT INTENDED TO BE AN INDEPENDENT SET OF THE CONSTRUCTION DOCUMENTS. SEE ARCHITECTURAL, MEP, CIVIL AND OTHER DRAWINGS FOR INFORMATION RELATED TO THE STRUCTURAL WORK. CONTRACTOR SHALL VERIFY COORDINATION OF THE DESIRED DETAILS PRIOR TO CONSTRUCTION AND NOTIFY THE ARCHITECT AND THE STRUCTURAL ENGINEER IF ADDITIONAL COORDINATION IS REQUIRED.
8. ARCHITECTURAL, MECHANICAL AND ELECTRICAL COMPONENTS AND SYSTEMS SHALL BE DESIGNED AND CONSTRUCTED TO RESIST SEISMIC FORCES AS DETERMINED IN CHAPTER 13 OF ASCE 7.

STRUCTURAL STEEL

1. STRUCTURAL STEEL SHALL MEET THE FOLLOWING MINIMUM YIELD STRESS (Fy), UNLESS NOTED OTHERWISE:

	YIELD	ASTM SPECIFICATION
A. W, WT SHAPES:	50 KSI	A992
B. BARS, PLATES, CHANNELS, ANGLES:	36 KSI	A36
C. SQUARE, RECTANGULAR HSS:	50 KSI	A500, GRADE C
D. ANCHOR RODS:	36 KSI OR 55 KSI	F1554
E. ALL–THREAD RODS:	36 KSI	A36
F. HEADED STUD ANCHORS:	65 KSI TENSILE STRESS	A108, GRADES 1010–1020

2. ALL STRUCTURAL STEEL SHALL ADHERE TO THE DETAILING, FABRICATION AND ERECTION REQUIREMENTS OF THE LATEST EDITIONS OF THE AISC SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS AND THE AISC CODE OF PRACTICE.
3. BOLTS FOR STEEL BEAM AND COLUMN CONNECTIONS SHALL BE 3/4–INCH DIAMETER ASTM A325–N HIGH–STRENGTH BOLTS UNLESS NOTED OTHERWISE. ALL BOLTED CONNECTIONS ARE BEARING TYPE AND SHALL BE SNUG TIGHTENED UNLESS NOTED OTHERWISE. FOR PRETENSIONED OR SLIP–CRITICAL JOINTS, THE METHOD OF INSTALLATION SHALL BE TURN–OF–NUT WITH MATCH MARKING, TWIST–OFF–TYPE TENSION CONTROL BOLT ASSEMBLIES (ASTM F1852), OR DIRECT TENSION INDICATORS (ASTM F959).
4. WELDING SHALL MEET ANSI / AWS D1.1, STRUCTURAL WELDING CODE LATEST REVISION. ELECTRODES SHALL BE E70XX, LOW HYDROGEN. ALL STRUCTURAL STEEL WELDS SHALL BE PERFORMED BY A AWS CERTIFIED WELDER.
5. WELDS NOT SPECIFICALLY SIZED ON THE STRUCTURAL DRAWINGS SHALL BE THE MINIMUM SIZE PER THE LATEST AWS D1.1.
6. PROVIDE DOUBLE NUTS AND DOUBLE WASHERS FOR STEEL COLUMN ANCHOR BOLTS TO ALLOW FOR ADJUSTMENT IN BASE PLATE ELEVATION. PROVIDE 1 1/2 INCH NON–SHRINK GROUT UNDER BASE PLATE AFTER ERECTION. USE 2 1/2 INCHES NON–SHRINK GROUT WHEN COLUMN ANCHOR BOLTS ARE 1 1/4 INCH DIAMETER OR LARGER. NON–SHRINK GROUT SHALL BE NON–METALLIC WITH A MINIMUM COMPRESSIVE STRENGTH OF 5,000 PSI AT 28 DAYS.
7. SHEAR CONNECTORS SHALL BE A CARBON STEEL HEADED STUD TYPE ASTM A108 GRADES 1010 THRU 1020, AWS D1.1, TYPE B WITH ARC SHIELDS.
8. ALL CONNECTIONS ON THE STRUCTURAL DRAWINGS, UNLESS NOTED OTHERWISE, SHALL BE DESIGNED AND DETAILED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE WHERE THE PROJECT IS LOCATED, EMPLOYED OR RETAINED BY THE STEEL FABRICATOR. THE DESIGN AND DETAILING SHALL COMPLY WITH ALL APPLICABLE CODES AND SPECIFICATION SECTIONS.
9. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR INCLUDING THE COSTS FOR ALL MISCELLANEOUS STEEL IN THEIR BID REGARDLESS OF WHETHER THOSE ITEMS ARE INDICATED ON THE STRUCTURAL DRAWINGS. THESE COSTS SHALL INCLUDE BUT ARE NOT LIMITED TO MISCELLANEOUS STEEL ITEMS SHOWN ON ARCHITECTURAL, CIVIL, MECHANICAL, PLUMBING AND ELECTRICAL DRAWINGS SUCH AS SHELF ANGLES, GLAZING SUPPORTS AND LINTELS.
10. LEDGER ANGLES AND LINTELS IN EXTERIOR WALL SYSTEMS SHALL BE HOT DIPPED GALVANIZED PER ASTM A123.
11. ALL STRUCTURAL STEEL SHALL HAVE A COAT OF LIGHT GRAY PAINT TO PROVIDE PROTECTION AND GOOD APPEARANCE.

STEEL JOISTS

1. STEEL JOISTS SHALL BE AS INDICATED ON THE PLANS AND SHALL BE IN ACCORDANCE WITH THE LATEST SPECIFICATIONS OF THE STEEL JOIST INSTITUTE (SJI) AND MEET THE FOLLOWING:
   A. JOISTS SHALL BE DESIGNED FOR THE UNIFORM LOAD CAPACITY (AS SPECIFIED IN THE SJI STANDARD LOAD TABLES) IN ADDITION TO THE CONCENTRATED LOADS SHOWN ON PLANS AND DETAILS.
   B. JOISTS THAT SUPPORT CONCENTRATED LOADS SHALL HAVE THEIR CHORDS DESIGNED TO WITHSTAND ALL BENDING STRESSES, OR THE LOADS SHALL OCCUR WITHIN 3 INCHES OF JOIST PANEL POINTS, OR THE JOIST SHALL BE REINFORCED PER THE "JOIST REINFORCING DETAIL" SHOWN HEREIN. CONCENTRATED LOADS SHALL BE CENTERED ON JOISTS AND NOT ATTACHED TO THE EDGE OF CHORD ANGLES.
   C. JOISTS SHALL RESIST THE NET UPLIFT PRESSURE AS INDICATED ON THE DETAILS 7 & 8/S4.1. THIS PRESSURE SHALL ACT ALONE. AN ALLOWABLE STRESS INCREASE IS NOT PERMITTED.
   D FOR ALL MEMBERS THAT REQUIRE SPECIFIC ORIENTATION, PROVIDE TAG AT ONE END AND DEFINE LOCATION OF TAGGED END ON ERECTION DRAWINGS.
   E. JOIST MANUFACTURER SHALL DETERMINE THE SEAT DEPTH AND WIDTH OF BEARING AND COORDINATE THE SAME WITH THE STEEL FABRICATOR. THE FOLLOWING SEAT DEPTHS ARE ASSUMED ON THE DRAWINGS: 2 1/2 INCHES FOR K–SERIES JOISTS, 5 INCHES FOR LH SERIES JOISTS).
   F. JOISTS SHALL BE FABRICATED TO PROVIDE OPENINGS FOR DUCTS AS SHOWN IN THE REQUIRED OPENING IN JOIST DETAIL.
2. K–SERIES AMD LH–SERIES JOISTS SHALL BE WELDED TO SUPPORTING STEEL WITH MINIMUM 1/8 INCH FILLET WELDS 2 INCHES LONG EACH SIDE OR WITH TWO 1/2 INCH DIAMETER ASTM A307 BOLTS OR THE EQUIVALENT, UNLESS NOTED OTHERWISE. WHEN NEAR OR AT A COLUMN, BOLT JOIST TO SUPPORTING STEEL IN CONFORMANCE WITH OSHA.
3. JOIST BRIDGING AND ERECTION STABILITY SHALL BE PROVIDED IN ACCORDANCE WITH THE OCCUPATIONAL SAFETY AND HAZARD ADMINISTRATION (OSHA) AND THE SPECIFICATIONS OF THE STEEL JOIST INSTITUTE (SJI).
4. JOIST RTU LOADS ARE PROVIDED ON THE ROOF FRAMING PLAN, REFERENCE PLANS AND DETAILS FOR LOAD LOCATIONS, VALUES AND SUPPORT FRAMING.
5. JOIST MANUFACTURER SHALL DESIGN THE COMPRESSION CHORD OF ALL JOISTS SUPPORTING ROOF TOP UNITS, SKY LIGHTS, AND OTHER STRUCTURES FOR AN UNBRACED LENGTH APPLICABLE TO THE CONDITIONS AT THE PROJECT WHERE THE UNBRACED LENGTH IS GREATER THAN THE SJI MAXIMUM. (REFERENCE ARCHITECTURAL AND MECHANICAL DRAWINGS)
6. DESIGN JOISTS FOR INTERNAL ROOF DRAINLINE AND FIRE SPRINKLER LINE LOCATIONS, IF REQUIRED. ADD 50 PLF FOR 8 INCH DIAMETER AND SMALLER, ADD 75 PLF FOR 10 INCH DIAMETER, ADD 102 PLF FOR 12 INCH DIAMETER, ADD 122 PLF FOR 14 INCH DIAMETER, ADD 200 PLF FOR 18 INCH DIAMETER. REFERENCE MECHANICAL DRAWINGS FOR EXACT LOCATION. CONTRACTOR SHALL OBTAIN FIRE LINE LOCATIONS AND SIZES PRIOR TO SUBMITTAL OF JOIST SHOP DRAWINGS.
7. JOIST DESIGNS SHALL BE PERFORMED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE WHERE THE PROJECT IS LOCATED, EMPLOYED OR RETAINED BY THE JOIST MANUFACTURER.
8. SHOP DRAWING SHALL BE REVIEWED BY THE ARCHITECT AND STUCTURAL ENGINEER OF RECORD PRIOR TO JOIST FABRICATION.
9. PROVIDE JOISTS CAPABLE OF WITH STANDING DESIGN LOADS INDICATED WITH LIVE LOAD DEFLECTIONS NO GREATER THAN L/240 OF THE SPAN.
10. JOISTS SHALL BE CAMBERED ACCORDING TO SJI'S "SPECIFICATIONS". JOIST AND JOIST GIRDERS SHALL BE SHOP PRIMED WITH MANUFACTURER'S STANDARD SHOP PRIMER.

STEEL DECK

1. ROOF DECK
   A. ROOF DECK SHALL BE GALVANIZED TYPE "B". DEPTH SHALL BE AS SHOWN ON DRAWINGS. ROOF DECK SHALL BE BOTTOM PRIMED WHITE
   B. ROOF DECK IS REQUIRED TO ACT AS A DIAPHRAGM. CONNECTIONS SHALL BE IN ACCORDANCE WITH STEEL DECK INSTITUTE SPECIFICATIONS. REFER TO THE ROOF DIAPHRAGM CONNECTION DIAGRAM FOR ATTACHMENT.
   C. DECKING SHALL BE CONTINUOUS OVER A MINIMUM OF (3) SPANS UNLESS NOTED OTHERWISE.
   D. NO HANGING LOADS SHALL BE ATTACHED TO ROOF DECK.

DEFERRED STRUCTURAL SUBMITTALS

1. THE FOLLOWING STRUCTURAL COMPONENTS SHALL BE DESIGNED AND SUBMITTED BY OTHERS FOR APPROVAL IN ACCORDANCE WITH DRAWINGS AND SPECIFICATIONS.
   A. STRUCTURAL STEEL CONNECTIONS OF FRAMING AND BRACING ELEMENTS
   B. STEEL JOISTS AND JOIST GIRDERS (CONTRACTOR SHALL OBTAIN FIRE LINE LOCATIONS AND SIZES PRIOR TO SUBMITTAL OF JOIST SHOP DRAWINGS.)
   C. STEEL, SELF–SUPPORTING STAIRS AND HANDRAIL FRAMING
   D. TEMPORARY BRACING AND SUPPORT
   E. ROOF ACCESS LADDERS AND SAFETY CAGES
   F. SEISMIC ANCHORAGE AND BRACING OF MEP COMPONENTS
2. DOCUMENTS FOR DEFERRED STRUCTURAL SUBMITTAL ITEMS SHALL BE DESIGNED, SEALED AND SIGNED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE WHERE THE PROJECT IS LOCATED. THE DEFERRED SUBMITTAL DOCUMENTS SHALL BE SUBMITTED TO THE ARCHITECT OR ENGINEER OF RECORD WHO SHALL REVIEW THEM AND FORWARD THEM TO THE BUILDING OFFICIAL AS REQUESTED WITH A NOTATION INDICATING THAT THE DEFERRED SUBMITTAL DOCUMENTS HAVE BEEN REVIEWED AND BEEN FOUND TO BE IN GENERAL CONFORMANCE TO THE DESIGN OF THE BUILDING. THE DEFERRED SUBMITTAL ITEMS SHALL NOT BE INSTALLED UNTIL THE DESIGN AND SUBMITTAL DOCUMENTS HAVE BEEN APPROVED BY THE BUILDING OFFICIAL.

SHOP DRAWINGS

1. SHOP DRAWINGS AND SUBMITTALS SHALL BE REVIEWED AND APPROVED BY THE CONTRACTOR PRIOR TO SUBMITTAL FOR THE ENGINEER'S REVIEW. THE STRUCTURAL ENGINEER'S REVIEW IS TO CHECK THE GENERAL CONFORMANCE OF THE SHOP DRAWINGS WITH THE CONTRACT DOCUMENTS. THE CONTRACTOR IS RESPONSIBLE FOR ANY ALTERATIONS FROM THE CONTRACT DOCUMENTS WHICH MAY INCLUDE QUANTITIES, DIMENSIONAL ERRORS OR OTHER ERRORS AND OMISIONS IN THE SHOP DRAWINGS.
2. SHOP DRAWINGS SHALL NOT BE REPRODUCTIONS OF THE CONTRACT DOCUMENTS.
3. THE FOLLOWING STRUCTURAL COMPONENTS SHALL BE SUBMITTED AS A SHOP DRAWING FOR REVIEW:
   A. STRUCTURAL STEEL
   B. STEEL JOISTS
   C. STEEL ROOF DECK AND THEIR ATTACHMENTS.
   D ALL DEFERRED SUBMITTAL ITEMS

SPECIAL INSPECTIONS

1. THE OWNER SHALL EMPLOY ONE OR MORE SPECIAL INSPECTORS TO PROVIDE INSPECTIONS DURING CONSTRUCTION ON THE TYPES OF WORK LISTED IN THE STATEMENT OF SPECIAL INSPECTIONS PER SECTION 1704 OF THE IBC. THE SPECIAL INSPECTOR SHALL BE A QUALIFIED PERSON WHO SHALL DEMONSTRATE COMPETENCE, TO THE SATISFACTION OF THE BUILDING OFFICIAL, FOR INSPECTION OF THE PARTICULAR TYPE OF CONSTRUCTION OR OPERATION REQUIRING SPECIAL INSPECTION. THESE INSPECTIONS ARE IN ADDITION TO THE INSPECTIONS SPECIFIED IN THE PROJECT SPECIFICATIONS.
2. SPECIAL INSPECTORS SHALL KEEP RECORDS OF INSPECTIONS. THE SPECIAL INSPECTOR SHALL FURNISH INSPECTION REPORTS TO THE BUILDING OFFICIAL, AND TO THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE. REPORTS SHALL INDICATE THAT WORK INSPECTED WAS DONE IN CONFORMANCE TO APPROVED CONSTRUCTION DOCUMENTS. DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CONTRACTOR FOR CORRECTION. IF THE DISCREPANCIES ARE NOT CORRECTED, THE DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE BUILDING OFFICIAL AND TO THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE PRIOR TO COMPLETION OF THAT PHASE OF WORK. A FINAL REPORT DOCUMENTING REQUIRED SPECIAL INSPECTIONS AND CORRECTION OF ANY DISCREPANCIES NOTED IN THE INSPECTIONS SHALL BE SUBMITTED AT A POINT IN TIME AGREED UPON BY THE PERMIT APPLICANT AND THE BUILDING OFFICIAL PRIOR TO THE START OF WORK.
3. THE CONTRACTOR IS RESPONSIBLE FOR NOTIFYING THE SPECIAL INSPECTOR REGARDING INDIVIDUAL INSPECTION FOR ITEMS LISTED ON THE STATEMENT OF SPECIAL INSPECTIONS AND AS NOTED ON THE BUILDING DEPARTMENT APPROVED PLANS. ADEQUATE NOTICE AND ACCESS TO APPROVED PLANS SHALL BE PROVIDED SO THAT THE SPECIAL INSPECTOR HAS TIME TO BECOME FAMILIAR WITH THE PROJECT.
4. FABRICATORS OF STRUCTURAL LOAD–BEARING MEMBERS AND ASSEMBLIES SHALL CONFORM TO THE REQUIREMENTS OF SECTION 1704.2 OF THE IBC.
5. THE FOLLOWING ITEMS REQUIRE SPECIAL INSPECTION PER SECTION 1700 OF THE REFERENCED BUILDING CODE.
   A. BOLTS & ANCHORS EMBEDDED IN CONCRETE
   B. PLACEMENT OF REINFORCING STEEL IN CONCRETE
   C. CONCRETE MIX DESIGN
   D. CONCRETE FORMWORK
   E. STRUCTURAL STEEL FABRICATIONS
   F. STRUCTURAL STEEL BOLTING AND WELDING
   G. ON SITE STRUCTURAL FRAMING
   H. INSPECTION OF ROOF DECK ATTACHMENTS
   I. SHEAR WALL ATTACHMENTS AND ANCHORS
   J. POST INSTALLED ANCHORS
   K. ON SITE SOILS, EXCAVATIONS, FILLING AND COMPACTION
   L. ERECTION OF PRECAST CONCRETE MEMBERS

ABBREVIATIONS

A.B.	ANCHOR BOLTS
ACI	AMERICAN CONCRETE INSTITUTE
AESS	ARCHITECTURALLY EXPOSED STRUCTURAL STEEL
A.F.F.	ABOVE FINISHED FLOOR
ARCH.	ARCHITECTURAL
BAL.	BALANCE
B.L.	BLOCK LINTEL
BLDG.	BUILDING
B.O.	BOTTOM OF
B.O.D.	BOTTOM OF DECK
BRG.	BEARING
C.J.	CONTRACTION JOINT
C.L.	CENTER LINE
CLR.	CLEAR
CMU	CONCRETE MASONRY UNIT
COL.	COLUMN
CONC.	CONCRETE
CONST.	CONSTRUCTION
CONT.	CONTINUOUS
D.B.A.	DEFORMED BAR ANCHOR
DIA.	DIAMETER
DWG.	DRAWING
E.F.	EACH FACE
E.J.	EXPANSION JOINT
ELEV.	ELEVATION
E.O.D.	EDGE OF DECK
E.O.S.	EDGE OF SLAB
EQ.	EQUAL
E.W.	EACH WAY
EXIST.	EXISTING
FDN.	FOUNDATION
F.F.E.	FINISHED FLOOR ELEV.
F.S.	FAR SIDE
FTG.	FOOTING
GA.	GAGE
GALV.	GALVANIZED
G.B.	GRADE BEAM
HORIZ.	HORIZONTAL
H.S.A.	HEADED STUD ANCHOR
IBC	INTERNATIONAL BUILDING CODE
INFO.	INFORMATION
J.B.E.	JOIST BEARING ELEVATION
JT.	JOINT
K	UNIT OF 1,000 POUNDS (KIP)
KSI	KIPS PER SQUARE INCH
LBS.	POUNDS
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
LONG.	LONGITUDINAL
MAX.	MAXIMUM
MECH.	MECHANICAL
MFR.	MANUFACTURER
MIN.	MINIMUM
MISC.	MISCELLANEOUS
N.I.C.	NOT IN CONTRACT
NO.	NUMBER
N.T.S.	NOT TO SCALE
N.S.	NEAR SIDE
O.C.	ON CENTER
O.D.	OUTSIDE DIAMETER
O.H.	OPPOSITE HAND
P.A.F.	POWER ACTUATED FASTENER
PCF	POUNDS PER CUBIC FOOT
PLF	POUNDS PER LINEAR FOOT
P.M.E.J.	PREMOLDED EXPANSION JOINT
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
QTY.	QUANTITY
RE:	REFER
REINF.	REINFORCING
REQD.	REQUIRED
R.O.	ROUGH OPENING
RTU	ROOF TOP UNIT
SCHED.	SCHEDULE
S.D.S.	SELF–DRILLING SCREWS
SIM.	SIMILAR
SPECS.	SPECIFICATIONS
STD.	STANDARD
STL.	STEEL
T&B	TOP AND BOTTOM
T.O.	TOP OF
T.O.P.	TOP OF PIER
T.O.W.	TOP OF WALL
TRANS.	TRANSVERSE
TYP.	TYPICAL
U.N.O.	UNLESS NOTED OTHERWISE
VERT.	VERTICAL
W.P.	WORK POINT
WT.	WEIGHT
W.W.R.	WELDED WIRE REINFORCEMENT

STATE OF MISSOURI
JAMES M. GRANICH
NUMBER PE-2014023909
PROFESSIONAL ENGINEER
09/08/2023
Missouri COA #001268

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LSCC BUILDING 2 - FORGE TI
LEE'S SUMMIT, MISSOURI

100% SET
ISSUED
09-08-2023

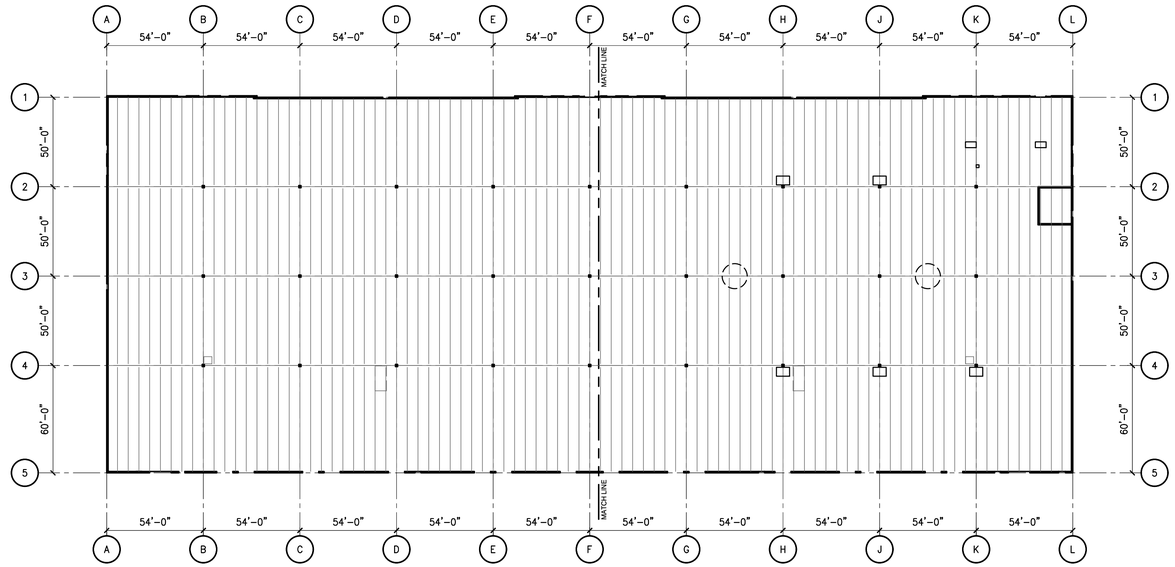
ISSUE LOG

△ #	DATE	FOR

JOB # : 2220003.04
DWN. BY KMF CHK. BY JMG

GENERAL NOTES

SHEET NO.
S0.0



1 OVERALL FRAMING PLAN
SCALE: 1"=40'-0"

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DWN. BY KMF CHK. BY JMG

OVERALL FRAMING PLAN

SHEET NO.

S2.0

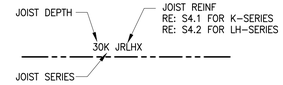
PLAN REFERENCE NOTES:

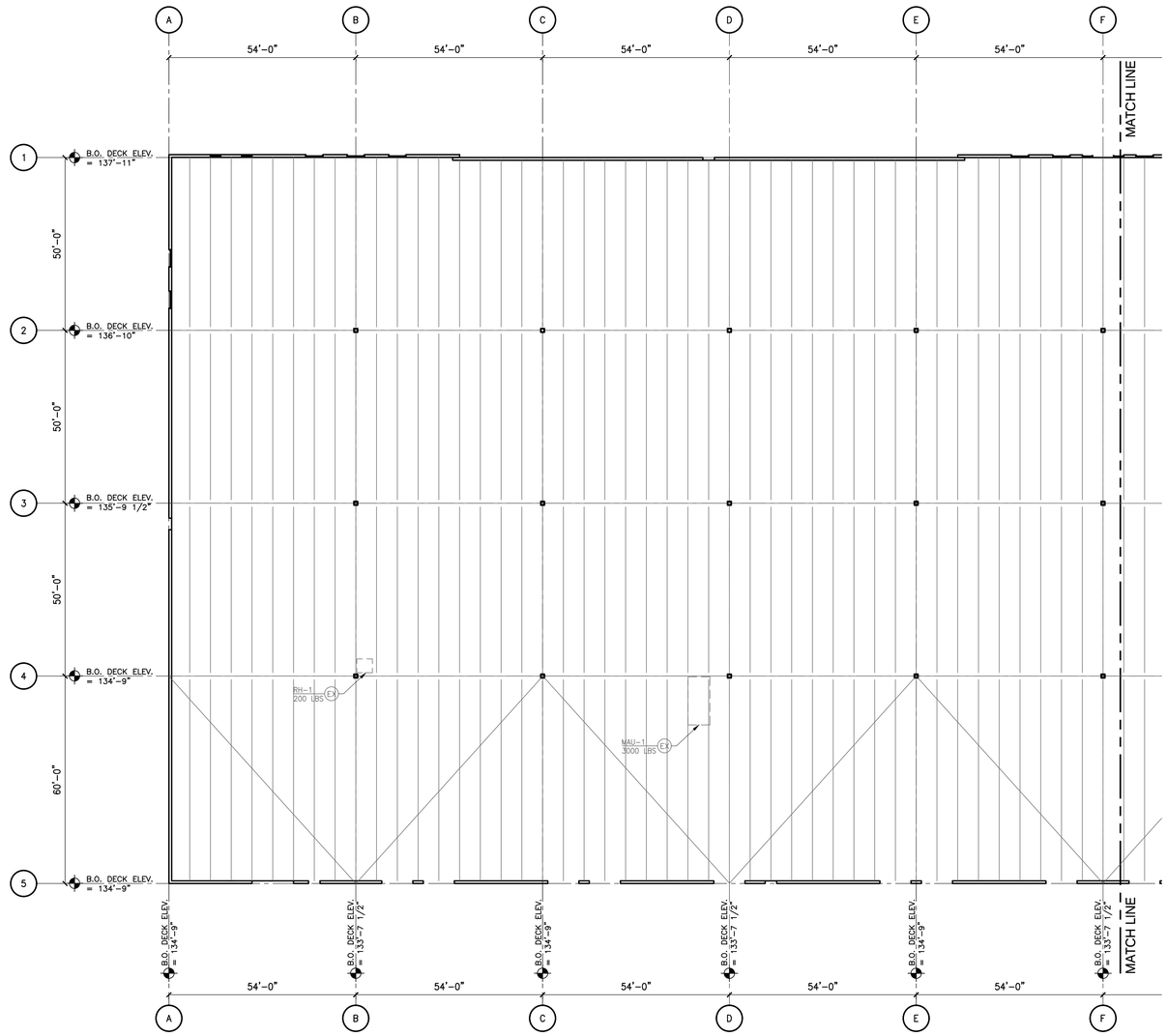
- (A) ROOF TOP EQUIPMENT, RE: ARCH./MEP. PROVIDE ANGLE FRAME AND CURB RE: 1/S4.0
- (EX) EXISTING BASE BUILDING ROOF TOP EQUIPMENT

PLAN NOTES

1. JOISTS SHALL BE REINFORCED PRIOR TO THE PLACEMENT OF THE ROOF TOP UNITS.
2. CONTACT E.O.R. IF MECHANICAL EQUIPMENT LOCATIONS ARE DIFFERENT THAN SHOWN.
3. RE: S4. SERIES FOR ADDITIONAL REINFORCEMENT REQUIRED FOR JOISTS PRIOR TO INSTALLATION

JOIST LEGEND





1 ENLARGED PARTIAL FRAMING PLAN
SCALE: 1"=20'-0"

STATE OF MISSOURI
JAMES M. GRANICH
NUMBER PE-2014023909
PROFESSIONAL ENGINEER
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DWN. BY KMF CHK. BY JMG

ENLARGED PARTIAL FRAMING PLAN

SHEET NO.

S2.1

PLAN REFERENCE NOTES:

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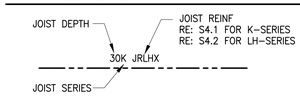
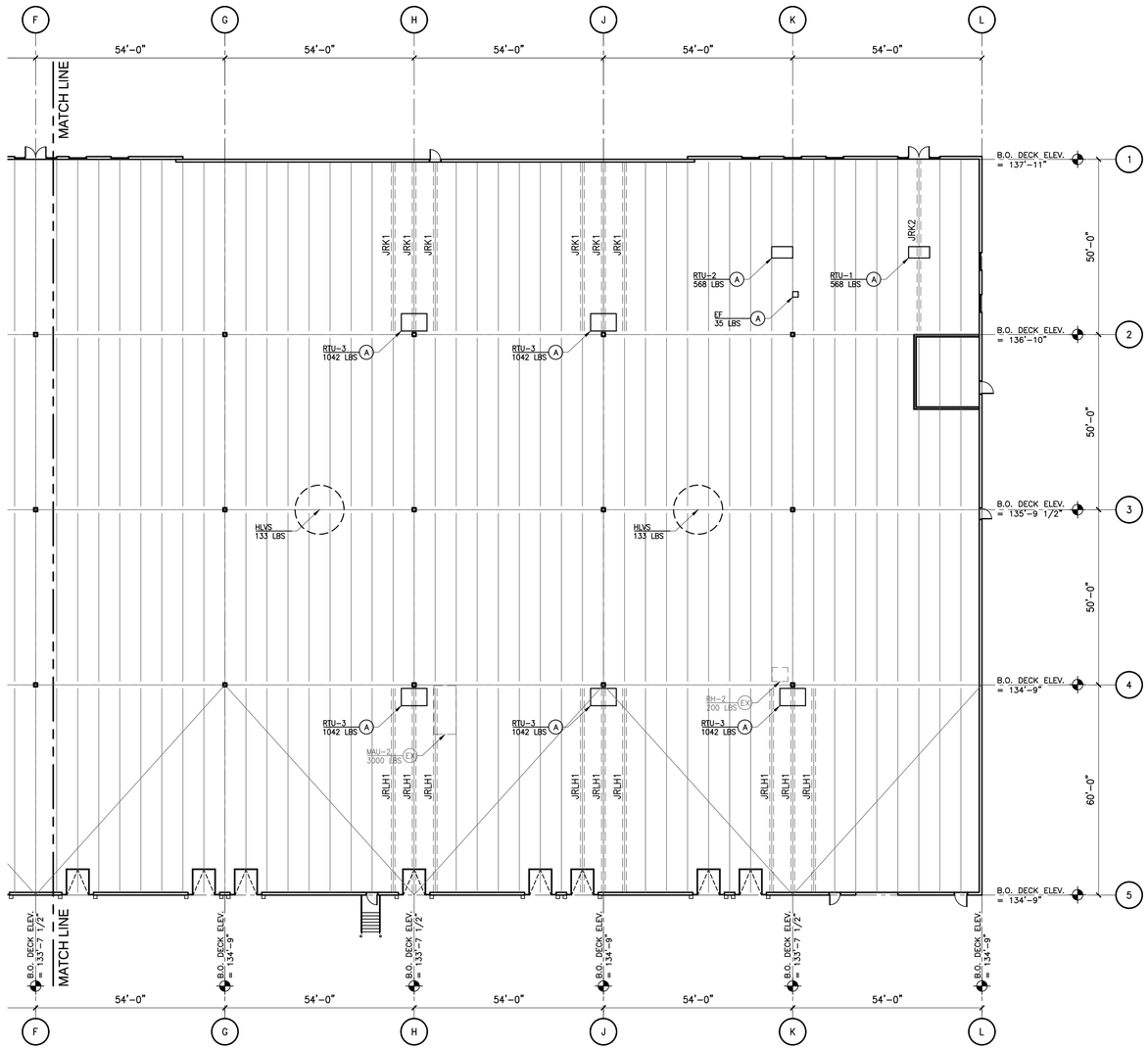
JOIST LEGEND





1 ENLARGED PARTIAL FRAMING PLAN
SCALE: 1"=20'-0"

STATE OF MISSOURI
JAMES M. GRANICH
NUMBER PE-2014023909
PROFESSIONAL ENGINEER
09/08/2023
Missouri COA #001268

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LSCC BUILDING 2 - FORGE TI

LEE'S SUMMIT, MISSOURI

100% SET
ISSUED
09-08-2023

ISSUE LOG

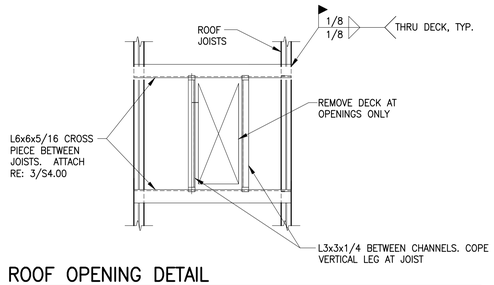
△ #	DATE	FOR

JOB # : 2220003.04
DWN. BY KMF CHK. BY JMG

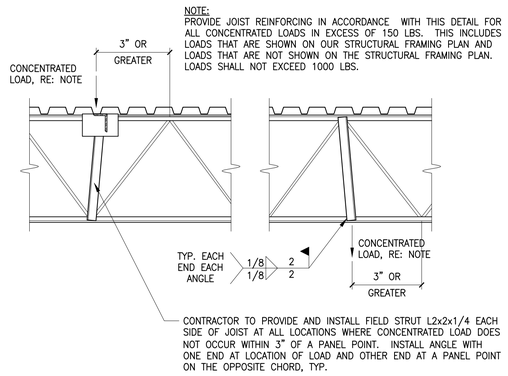
ENLARGED PARTIAL FRAMING PLAN

SHEET NO.

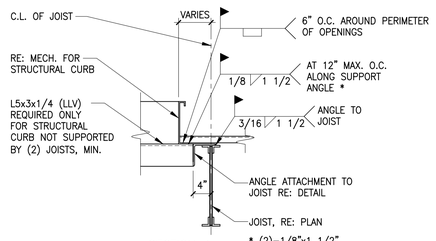
S2.2



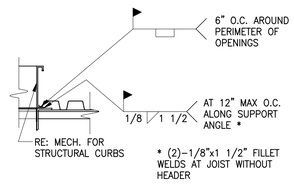
3 ROOF OPENING DETAIL
3/4" = 1'-0"



2 JOIST REINFORCING DETAIL
3/4" = 1'-0"



SECTION 1



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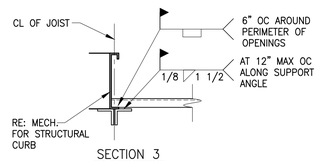
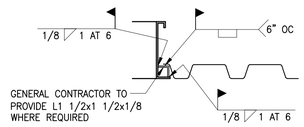
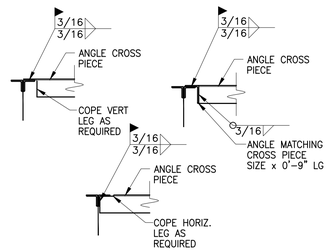


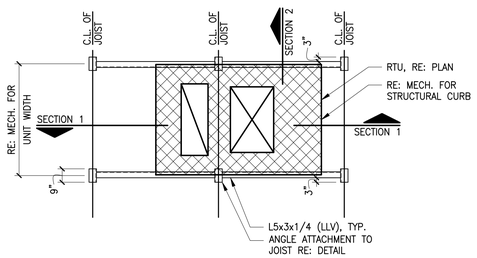
SECTION 3



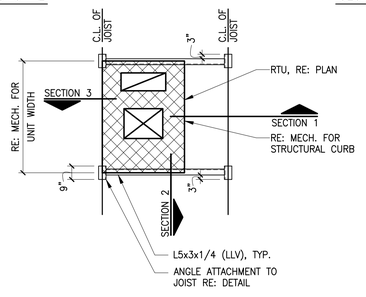
DETAIL 1



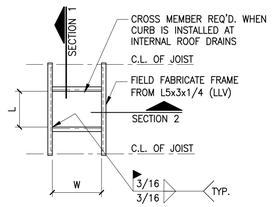
ANGLE ATTACHMENT TO JOIST DETAIL



TYP. AT UNIT SPANNING MULTIPLE JOISTS



TYP. AT UNIT BETWEEN JOISTS



OPENING IN ROOF LARGER THAN 10"x10"

NOTES:
1. INSTALL CURBS, HEADERS, AND FRAMES AND WELD TO SUPPORT STEEL BEFORE DECK IS PLACED.
2. DESIGN JOISTS SUPPORTING RTU'S FOR TWO POINT LOADS. THE LOCATION OF THE LOADS AND THE SPACING BETWEEN THEM VARY. RE: RTU JOIST DIAGRAM THIS DETAIL AND ROOF FRAMING PLAN FOR POINT LOADS AND LOCATIONS.
3. RTU CURBS SHALL BE STRUCTURAL, DESIGNED TO SPAN BETWEEN JOISTS AND SUPPORT EDGES OF DECK. CURBS TO BE FABRICATED WITH LEDGE ANGLES (L2x2x1/4) AT MECHANICAL OPENINGS TO SUPPORT METAL DECK INSIDE OPENING NOT USED BY SUPPLY OR RETURN DUCT WORK. HEADERS ARE NOT REQUIRED FOR STRUCTURAL CURBS EXCEPT WHEN THE CURB DOES NOT SPAN BETWEEN TWO JOISTS OR THE CURB CANTILEVERS MORE THAN TWO FEET PAST JOIST.
4. ATTACH DECK AROUND OPENING PER ROOF DIAPHRAGM CONNECTION DETAIL.
5. IF CURB IS NOT PLACED WITHIN 3" OF A JOIST PANEL POINT, RE: JOIST REINFORCING DETAIL RE: 7/S4.00.
6. GENERAL CONTRACTOR SHALL COORDINATE RTU DIMENSIONS AND FRAMING LOCATIONS WITH THE STEEL FABRICATOR, MECHANICAL, AND ERECTION SUBCONTRACTORS.
7. STEEL SUPPLIER TO FURNISH STOCK ANGLE FOR FIELD FABRICATED SUPPORT FRAMES.
8. RE: DETAIL 1 FOR CONN. OF DECK PARALLEL TO CURB (WHERE REQ'D.).
9. RE: MECH. FOR ROOF TOP UNIT ANCHORAGE TO CURBS.

1 MECHANICAL UNIT SUPPORT DETAIL
3/4" = 1'-0"

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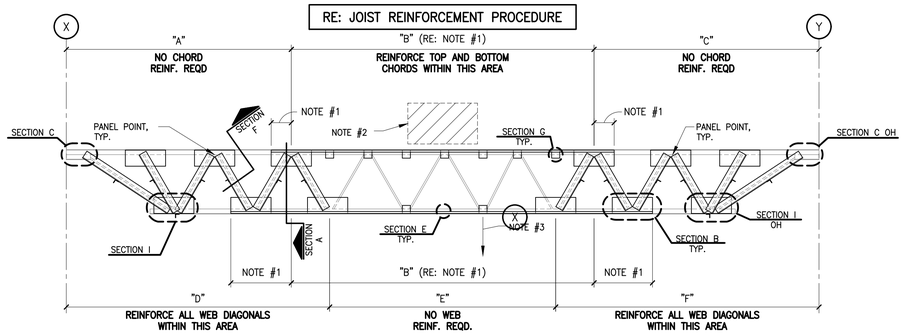
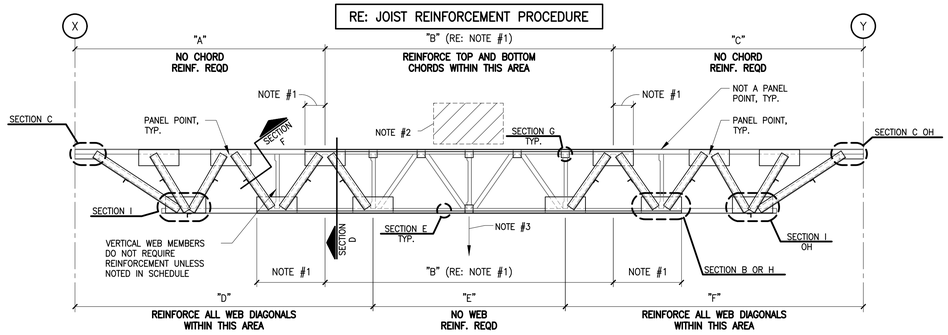
FRAMING DETAILS

SHEET NO.
S4.0



JOIST ELEVATION WITH ROD WEBS

(NOTE: DIAGRAM IS GENERIC AND ACTUAL NUMBER OF WEBS TO BE REINFORCED IS NOT ACCURATELY SHOWN. ACTUAL NUMBER OF WEB MEMBERS TO BE REINFORCED SHALL BE DETERMINED BASED ON THE LENGTHS SHOWN IN THE JOIST REINFORCING SCHEDULE)



JOIST ELEVATION WITH ANGLE WEBS

(NOTE: DIAGRAM IS GENERIC AND ACTUAL NUMBER OF WEBS TO BE REINFORCED IS NOT ACCURATELY SHOWN. ACTUAL NUMBER OF WEB MEMBERS TO BE REINFORCED SHALL BE DETERMINED BASED ON THE LENGTHS SHOWN IN THE JOIST REINFORCEMENT SCHEDULE)

JOIST INSPECTION NOTES
(REQUIRED AT ALL EXISTING JOISTS INDICATED TO BE REINFORCED)

A. EXISTING WEB MEMBER SHOP WELDS:

VISUAL INSPECTION ACCEPTANCE CRITERIA.....
(INSPECTION MAY BE PERFORMED WITH PAINT IN PLACE):

1. CRACK PROHIBITION: ANY CRACK SHALL BE UNACCEPTABLE, REGARDLESS OF SIZE OR LOCATION.
2. WELD/BASE-METAL FUSION: NO EVIDENCE OF LACK OF FUSION BETWEEN ADJACENT LAYERS OF WELD METAL AND BETWEEN WELD METAL AND BASE METAL SHALL EXIST.
3. CRATER CROSS SECTION: UNFILLED WELD CRATERS SHALL NOT BE INCLUDED IN THE EFFECTIVE LENGTH OF THE WELD.
4. POROSITY: THE SUM OF SURFACE (PIPING) POROSITY DIAMETERS SHALL NOT EXCEED 1/16 INCH (2 MILLIMETERS) IN ANY 1 INCH (25 MILLIMETERS) OF EFFECTIVE WELD LENGTH.

B. REPAIR WELDS: (REFERENCE CONTRACTOR NOTES ON JOIST MODIFICATION DETAIL FOR WELD REPAIRS TO BE INCLUDED IN THE BID)

VISUAL INSPECTION ACCEPTANCE CRITERIA.....
(ALL REINFORCING AND REPAIR FIELD WELDS SHALL BE VISUALLY INSPECTED AND SHALL BE ACCEPTABLE IF THE CRITERIA OUTLINED BELOW ARE SATISFIED):

1. CRACK PROHIBITION: ANY CRACK SHALL BE UNACCEPTABLE, REGARDLESS OF SIZE OR LOCATION.
2. WELD/BASE-METAL FUSION: THOROUGH FUSION SHALL EXIST BETWEEN ADJACENT LAYERS OF WELD METAL AND BETWEEN WELD METAL AND BASE METAL.
3. CRATER CROSS SECTION: ALL CRATERS SHALL BE FILLED TO PROVIDE THE SPECIFIED WELD SIZE, EXCEPT FOR THE ENDS OF INTERMITTENT FILLET WELDS OUTSIDE OF THEIR EFFECTIVE LENGTH.
4. WELD PROFILES: WELD PROFILES SHALL BE IN CONFORMANCE WITH ANSI/AWS D1.1 SECTION 5.24.
5. UNDERSIZED WELDS: THE SIZE OF A FILLET WELD IN ANY CONTINUOUS WELD MAY BE LESS THAN THE SPECIFIED NOMINAL SIZE (L) WITHOUT CORRECTION BY THE FOLLOWING AMOUNTS (U):

L, SPECIFIED NOMINAL WELD SIZE, IN. [MM]	U, ALLOWABLE DECREASE FROM L, IN. [MM]
≤ 3/16 [5]	≤ 1/16 [2]
1/4 [6]	≤ 3/32 [2.5]
≥ 5/16 [8]	≤ 1/8 [3]

IN ALL CASES, THE UNDERSIZE PORTION OF THE WELD SHALL NOT EXCEED 10% OF THE WELD LENGTH.

6. POROSITY: THE SUM OF SURFACE (PIPING) POROSITY DIAMETERS SHALL NOT EXCEED 1/16 INCH (2 MILLIMETERS) IN ANY 1 INCH (25 MILLIMETERS) OF DESIGN WELD LENGTH.

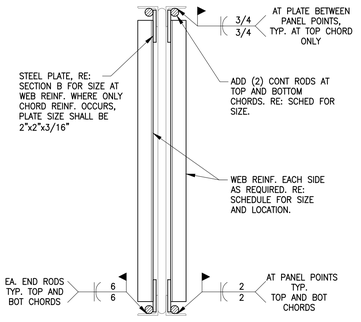
CONTRACTOR NOTES:

A. RE: JOIST AND JOIST GIRDER GENERAL NOTES ON SHEET S0 AND JOIST INSPECTION NOTES ON THIS SHEET FOR REQUIRED INSPECTIONS TO BE PERFORMED PRIOR TO PROCEEDING WITH JOIST MODIFICATIONS.
B. ALL WELDING ON EXISTING JOISTS SHALL BE PERFORMED USING EITHER THE GMAW OR FCAW PROCESS ONLY, SMAW OR "STICK" WELDING IS NOT ALLOWED. WIRE FOR FCAW PROCESS SHALL BE E71T-8 AND WIRE FOR GMAW PROCESS SHALL BE ER70S-6 (-GS WIRE IS NOT ALLOWED). WELDS SHALL BE PERFORMED BY OPERATORS CERTIFIED FOR THE PROCESS AND POSITIONS USED. THE TESTING AGENCY'S CERTIFIED WELDING INSPECTOR SHALL BE QUALIFIED AND EXPERIENCED WITH INSPECTION OF WELDS PERFORMED BY THESE PROCESSES. PRIOR TO COMMENCEMENT OF JOIST REINFORCING, CONTRACTOR SHALL PREPARE A MOCK UP FOR INSPECTION AND APPROVAL BY THE CERTIFIED WELDING INSPECTOR BY JOINING TWO 5"x5"x1/8" PLATES WITH A 1/8" FILLET WELD AND ATTACHING A 5/8" DIA x 5" LONG ROD TO ONE PLATE WITH 2" LONG FLARE BEVEL.
C. IF EXISTING JOIST BRIDGING INTERFERES WITH INSTALLATION OF REINFORCING, REMOVE BRIDGING AND REPLACE IMMEDIATELY UPON COMPLETION OF REINFORCING INSTALLATION. IF BRIDGING TABS FOR BOLTED BRIDGING INTERFERE WITH INSTALLATION OF REINFORCING, REMOVE TABS AND REPLACE IMMEDIATELY UPON COMPLETION OF REINFORCING INSTALLATION. NEW CONNECTIONS SHALL MATCH EXISTING.
D. STEEL ERECTOR SHALL FIELD CUT REINFORCEMENT TO FIT FROM STOCK LENGTHS. WEB REINF SHALL BE INSTALLED AS ONE PIECE AND NOT SPLICED AT ANY POINT ALONG THE LENGTH. REINFORCEMENT SHALL MEET THE STRUCTURAL STEEL REQUIREMENTS IN THE GENERAL NOTES ON SHEET S0.00I
E. CONTRACTOR TO INCLUDE IN BID, AN ADDITIONAL 18" TOTAL LENGTH OF 3/16" FILLET WELDS AT EACH JOIST TO BE REINFORCED FOR REQUIRED REPAIRS THAT RESULT FROM THE JOIST INSPECTIONS. THESE REPAIRS MAY INCLUDE, BUT ARE NOT LIMITED TO WEB TO CHORD WELDS, BRIDGING WELDS, JOIST TO SUPPORT WELDS, OR ANY OTHER REPAIR WELDS REQUIRED BASED ON THE EXISTING JOIST INSPECTIONS.
F. WHERE REQUIRED AREA OF WEB REINFORCING EXTENDS THROUGH THE JOIST SEAT, AND THE JOIST SEAT BEARS WITHIN AN EXISTING WALL, REMOVE CMU AND GROUT AS REQUIRED FOR INSTALLATION OF REINFORCING. ONCE THE REINFORCING HAS BEEN INSTALLED AND INSPECTED, REPLACE/REPAIR THE CMU AND GROUT TO MATCH EXISTING CONDITION PRIOR TO REMOVAL.
G. REMOVE ALL PAINT AND DEBRIS FROM EXISTING JOIST AT LOCATIONS OF NEW WELDS FOR JOIST REINFORCING PRIOR TO INSTALLATION OF JOIST REINFORCING.
H. ALL JOIST REINFORCING SHALL BE INSTALLED AND INSPECTED BEFORE APPLYING NEW LOADS. (I.E. RTU'S, BULKHEADS, FANS AND OTHER ROOF SUPPORTED ITEMS).
I. CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVAL AND REPLACEMENT OF EXISTING BUILDING ELEMENTS THAT PREVENT ACCESS TO INSTALL JOIST REINFORCING, INCLUDING SUSPENDED CEILINGS, DUCTWORK, RTU PLENUMS, LARGE PIPING, ETC.
J. PRIOR TO INSTALLATION OF JOIST REINFORCING, CONTRACTOR SHALL REMOVE ALL LIVE LOADS FROM JOISTS TO BE REINFORCED. THIS INCLUDES BUT IS NOT LIMITED TO PONDED WATER, ICE, SNOW (REMOVE SNOW TO EXPOSE ROOFING MATERIAL), STAGED CONSTRUCTION MATERIALS/EQUIPMENT, ETC.
K. PRIOR TO INSTALLATION OF JOIST REINFORCING, CONTRACTOR SHALL SURVEY EXISTING JOISTS TO BE REINFORCED FOR EXISTING DAMAGE OR REPAIRS. ANY JOIST DAMAGE FOUND SHALL BE CORRECTED BEFORE INSTALLATION OF REINFORCING. CONTACT ENGINEER OF RECORD FOR REQUIRED JOIST REPAIRS AT EXISTING DAMAGE AND/OR FOR DIRECTION REGARDING NEW REINFORCING AT EXISTING REPAIRS.

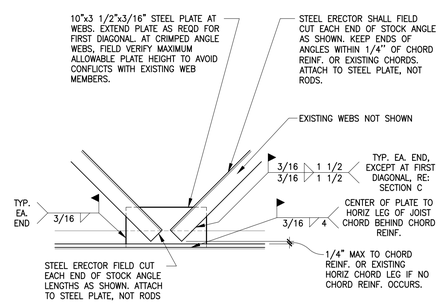
JOIST REINFORCEMENT SCHEDULE

JOIST REINFORCEMENT DESIGNATION, RE: SHEET S2.2	CHORD REINF.	CHORD REINF. "A"	CHORD REINF. "B"	CHORD REINF. "C"	WEB REINF.	WEB REINF. "D"	WEB REINF. "E"	WEB REINF. "F"	SPAN	GRID "X"	GRID "Y"	NOTES
JRK1	N/A	–	–	–	1/2" DIA. ROD OR L1x1x1/4	22'	6'	22'	50'	1	2	2,4
JRK2	5/8" DIA. ROD OR PL1/2"x1"	20'	10'	20'	3/8" DIA. ROD OR L1x1x3/16	20'	10'	20'	50'	1	2	1,2,4

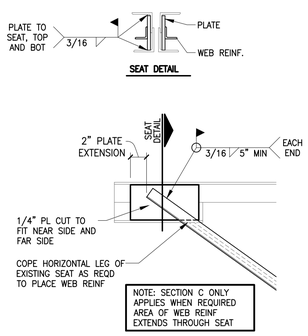
NOTES:
1. DIMENSION "B" IS THE MINIMUM REQUIRED LENGTH OF TOP AND BOTTOM CHORD REINFORCEMENT. FIELD VERIFY PANEL POINT LOCATIONS AND EXTEND TOP AND BOTTOM CHORD REINF. TO OUTER EDGE OF STEEL PLATE AT PANEL POINT.
2. RE: PLAN FOR NEW EQUIPMENT, RE: 1/S4.0 FOR ADDITIONAL REINFORCEMENT. DO NOT SET EQUIPMENT UNTIL ALL REINF. IS IN PLACE AND INSPECTED.
3. RE: ARCH FOR EXACT LOCATION OF SOFFITS AND MECH EQUIPMENT THAT WILL CAUSE CONCENTRATED LOADS IN EXCESS OF 100 LBS. RE: 2/S4.0 FOR ADDITIONAL REINFORCEMENT AT CONCENTRATED LOADS.
4. REINFORCEMENT SHALL BE WELDED AT 12" O.C. ALONG LENGTH, RE: SECTION F



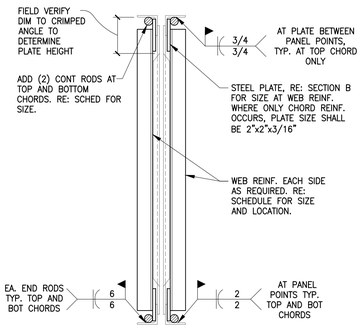
SECTION A – (K-SERIES ROD WEB)



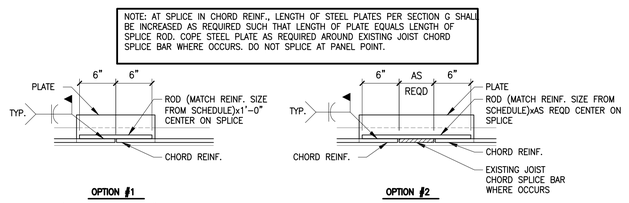
SECTION B – (K-SERIES)



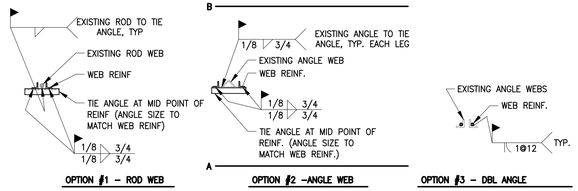
SECTION C – (K-SERIES)



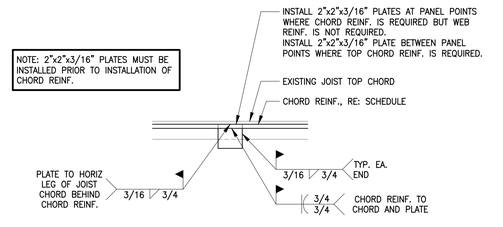
SECTION D – (K-SERIES ANGLE WEB)



SECTION E (CHORD REINF. SPLICE)



SECTION F (WEB REINF.)



SECTION G – SPACER PLATES AT CHORD REINF.

1 JOIST REINFORCEMENT DETAIL – (K-SERIES) (NOTE: DIAGRAM IS GENERIC AND ACTUAL NUMBER OF WEBS TO BE REINFORCED IS NOT ACCURATELY SHOWN. ACTUAL NUMBER OF WEB MEMBERS TO BE REINFORCED SHALL BE DETERMINED BASED ON THE LENGTHS SHOWN IN THE JOIST REINFORCEMENT SCHEDULE)
3/4" = 1'-0"

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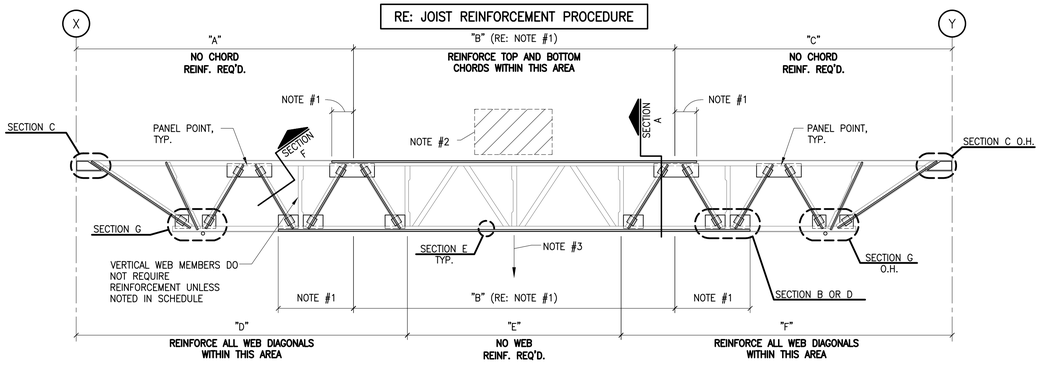
K-SERIES JOIST REINFORCEMENT

SHEET NO.
S4.1

RE: JOIST REINFORCEMENT PROCEDURE



JOIST ELEVATION WITH ANGLE WEBS

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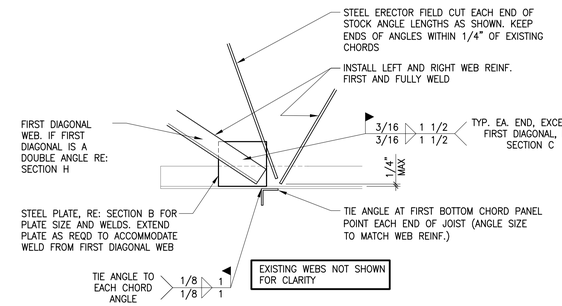
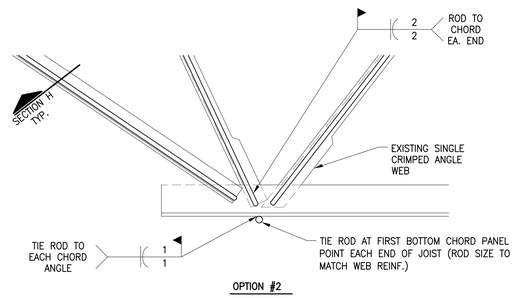
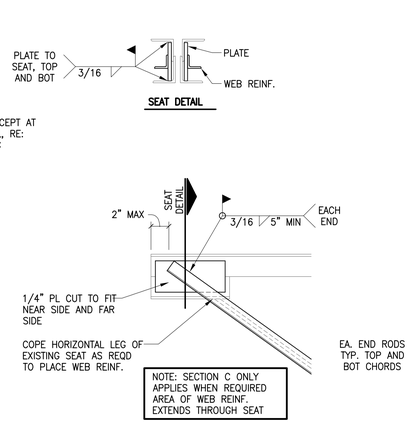


SECTION I (BOTTOM CHORD ATTACHMENT AT FIRST PANEL POINT)

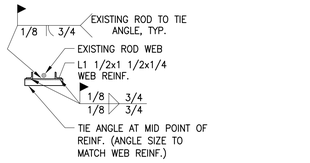


OPTION #2

SECTION G – (BOTTOM CHORD ATTACHMENT AT FIRST PANEL POINT)

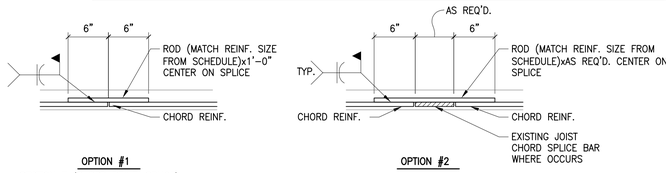


SEAT DETAIL



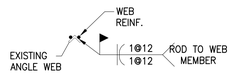
ROD WEB

SECTION H (WEB REINF.)



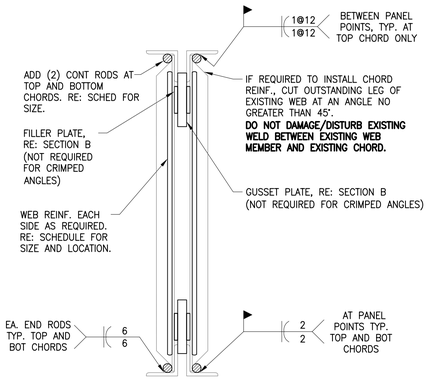
OPTION #1 OPTION #2

SECTION E (CHORD REINF. SPLICE)

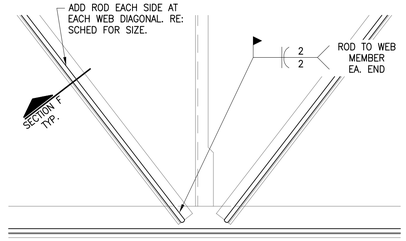


OPTION #1 – (CRIMPED ANGLE)

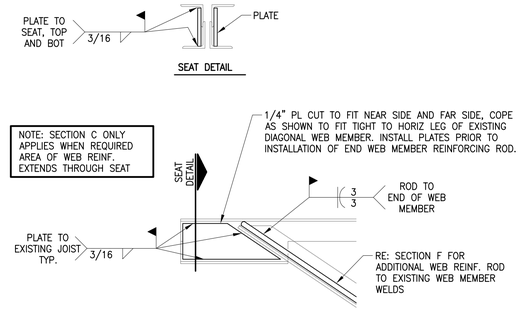
SECTION F (WEB REINF.)



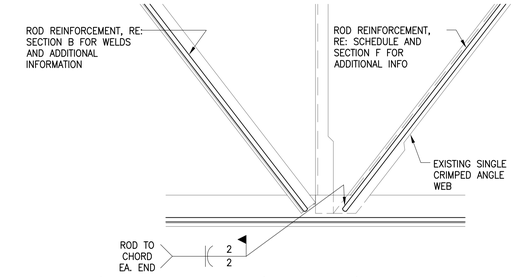
SECTION A – (LH SERIES)



SECTION B – (LH SERIES)



SECTION C – (LH SERIES)



SECTION D – SINGLE/DOUBLE ANGLE WEB COMBINATION (TOP CHORD SIMILAR)

JOIST INSPECTION NOTES
(REQUIRED AT ALL EXISTING JOISTS INDICATED TO BE REINFORCED)

A. EXISTING WEB MEMBER SHOP WELDS:

VISUAL INSPECTION ACCEPTANCE CRITERIA.....
(INSPECTION MAY BE PERFORMED WITH PAINT IN PLACE):

1. CRACK PROHIBITION: ANY CRACK SHALL BE UNACCEPTABLE, REGARDLESS OF SIZE OR LOCATION.
2. WELD/BASE–METAL FUSION: NO EVIDENCE OF LACK OF FUSION BETWEEN ADJACENT LAYERS OF WELD METAL AND BETWEEN WELD METAL AND BASE METAL SHALL EXIST.
3. CRATER CROSS SECTION: UNFILLED WELD CRATERS SHALL NOT BE INCLUDED IN THE EFFECTIVE LENGTH OF THE WELD.
4. POROSITY: THE SUM OF SURFACE (PIPING) POROSITY DIAMETERS SHALL NOT EXCEED 1/16 INCH (2 MILLIMETERS) IN ANY 1 INCH (25 MILLIMETERS) OF EFFECTIVE WELD LENGTH.

B. REPAIR WELDS: (REFERENCE CONTRACTOR NOTES ON JOIST MODIFICATION DETAIL FOR WELD REPAIRS TO BE INCLUDED IN THE BID)

VISUAL INSPECTION ACCEPTANCE CRITERIA.....
(ALL REINFORCING AND REPAIR FIELD WELDS SHALL BE VISUALLY INSPECTED AND SHALL BE ACCEPTABLE IF THE CRITERIA OUTLINED BELOW ARE SATISFIED):

1. CRACK PROHIBITION: ANY CRACK SHALL BE UNACCEPTABLE, REGARDLESS OF SIZE OR LOCATION.
2. WELD/BASE–METAL FUSION: THOROUGH FUSION SHALL EXIST BETWEEN ADJACENT LAYERS OF WELD METAL AND BETWEEN WELD METAL AND BASE METAL.
3. CRATER CROSS SECTION: ALL CRATERS SHALL BE FILLED TO PROVIDE THE SPECIFIED WELD SIZE, EXCEPT FOR THE ENDS OF INTERMITTENT FILLET WELDS OUTSIDE OF THEIR EFFECTIVE LENGTH.
4. WELD PROFILES: WELD PROFILES SHALL BE IN CONFORMANCE WITH ANSI/AWS D1.1 SECTION 5.24.
5. UNDERSIZED WELDS: THE SIZE OF A FILLET WELD IN ANY CONTINUOUS WELD MAY BE LESS THAN THE SPECIFIED NOMINAL SIZE (L) WITHOUT CORRECTION BY THE FOLLOWING AMOUNTS (U):

L, SPECIFIED NOMINAL WELD SIZE, IN. [MM]	U, ALLOWABLE DECREASE FROM L, IN. [MM]
≤ 3/16 [5]	≤ 1/16 [2]
1/4 [6]	≤ 3/32 [2.5]
≥ 5/16 [8]	≤ 1/8 [3]

IN ALL CASES, THE UNDERSIZE PORTION OF THE WELD SHALL NOT EXCEED 10% OF THE WELD LENGTH.

6. POROSITY: THE SUM OF SURFACE (PIPING) POROSITY DIAMETERS SHALL NOT EXCEED 1/16 INCH (2 MILLIMETERS) IN ANY 1 INCH (25 MILLIMETERS) OF DESIGN WELD LENGTH.

CONTRACTOR NOTES:

A. RE: JOIST AND JOIST GIRDER GENERAL NOTES ON SHEET SO AND JOIST INSPECTION NOTES ON THIS SHEET FOR REQUIRED INSPECTIONS TO BE PERFORMED PRIOR TO PROCEEDING WITH JOIST MODIFICATIONS.
B. ALL WELDING ON EXISTING JOISTS SHALL BE PERFORMED USING EITHER THE GMAW OR FCAW PROCESS ONLY, SMAW OR "STICK" WELDING IS NOT ALLOWED. WIRE FOR FCAW PROCESS SHALL BE E71T–8 AND WIRE FOR GMAW PROCESS SHALL BE ER70S–6 (–GS WIRE IS NOT ALLOWED). WELDS SHALL BE PERFORMED BY OPERATORS CERTIFIED FOR THE PROCESS AND POSITIONS USED. THE TESTING AGENCY'S CERTIFIED WELDING INSPECTOR SHALL BE QUALIFIED AND EXPERIENCED WITH INSPECTION OF WELDS PERFORMED BY THESE PROCESSES. PRIOR TO COMMENCEMENT OF JOIST REINFORCING, CONTRACTOR SHALL PREPARE A MOCK UP FOR INSPECTION AND APPROVAL BY THE CERTIFIED WELDING INSPECTOR BY JOINING TWO 5"x5"x1/8" PLATES WITH A 1/8" FILLET WELD AND ATTACHING A 5/8" DIA x 5" LONG ROD TO ONE PLATE WITH 2" LONG FLARE BEVEL.
C. IF EXISTING JOIST BRIDGING INTERFERES WITH INSTALLATION OF REINFORCING, REMOVE BRIDGING AND REPLACE IMMEDIATELY UPON COMPLETION OF REINFORCING INSTALLATION. IF BRIDGING TABS FOR BOLTED BRIDGING INTERFERE WITH INSTALLATION OF REINFORCING, REMOVE TABS AND REPLACE IMMEDIATELY UPON COMPLETION OF REINFORCING INSTALLATION. NEW CONNECTIONS SHALL MATCH EXISTING.
D. STEEL ERECTOR SHALL FIELD CUT REINFORCEMENT TO FIT FROM STOCK LENGTHS. WEB REINF SHALL BE INSTALLED AS ONE PIECE AND NOT SPLICED AT ANY POINT ALONG THE LENGTH. REINFORCEMENT SHALL MEET THE STRUCTURAL STEEL REQUIREMENTS IN THE GENERAL NOTES ON SHEET S0.00I
E. CONTRACTOR TO INCLUDE IN BID, AN ADDITIONAL 18" TOTAL LENGTH OF 3/16" FILLET WELDS AT EACH JOIST TO BE REINFORCED FOR REQUIRED REPAIRS THAT RESULT FROM THE JOIST INSPECTIONS. THESE REPAIRS MAY INCLUDE, BUT ARE NOT LIMITED TO WEB TO CHORD WELDS, BRIDGING WELDS, JOIST TO SUPPORT WELDS, OR ANY OTHER REPAIR WELDS REQUIRED BASED ON THE EXISTING JOIST INSPECTIONS.
F. WHERE REQUIRED AREA OF WEB REINFORCING EXTENDS THROUGH THE JOIST SEAT, AND THE JOIST SEAT BEARS WITHIN AN EXISTING WALL, REMOVE CMU AND GROUT AS REQUIRED FOR INSTALLATION OF REINFORCING. ONCE THE REINFORCING HAS BEEN INSTALLED AND INSPECTED, REPLACE/REPAIR THE CMU AND GROUT TO MATCH EXISTING CONDITION PRIOR TO REMOVAL.
G. REMOVE ALL PAINT AND DEBRIS FROM EXISTING JOIST AT LOCATIONS OF NEW WELDS FOR JOIST REINFORCING PRIOR TO INSTALLATION OF JOIST REINFORCING.
H. ALL JOIST REINFORCING SHALL BE INSTALLED AND INSPECTED BEFORE APPLYING NEW LOADS. (I.E. RTU'S, BULKHEADS, FANS AND OTHER ROOF SUPPORTED ITEMS).
I. CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVAL AND REPLACEMENT OF EXISTING BUILDING ELEMENTS THAT PREVENT ACCESS TO INSTALL JOIST REINFORCING, INCLUDING SUSPENDED CEILINGS, DUCTWORK, RTU PLENUMS, LARGE PIPING, ETC.
J. PRIOR TO INSTALLATION OF JOIST REINFORCING, CONTRACTOR SHALL REMOVE ALL LIVE LOADS FROM JOISTS TO BE REINFORCED. THIS INCLUDES BUT IS NOT LIMITED TO PONDED WATER, ICE, SNOW (REMOVE SNOW TO EXPOSE ROOFING MATERIAL), STAGED CONSTRUCTION MATERIALS/EQUIPMENT, ETC.
K. PRIOR TO INSTALLATION OF JOIST REINFORCING, CONTRACTOR SHALL SURVEY EXISTING JOISTS TO BE REINFORCED FOR EXISTING DAMAGE OR REPAIRS. ANY JOIST DAMAGE FOUND SHALL BE CORRECTED BEFORE INSTALLATION OF REINFORCING. CONTACT ENGINEER OF RECORD FOR REQUIRED JOIST REPAIRS AT EXISTING DAMAGE AND/OR FOR DIRECTION REGARDING NEW REINFORCING AT EXISTING REPAIRS.

JOIST REINFORCEMENT SCHEDULE

JOIST REINFORCEMENT DESIGNATION, RE: SHEET S2.2	CHORD REINF.	CHORD REINF. "A"	CHORD REINF. "B"	CHORD REINF. "C"	WEB REINF.	WEB REINF. "D"	WEB REINF. "E"	WEB REINF. "F"	SPAN	GRID "X"	GRID "Y"	NOTES
JRLH1	N/A	–	–	–	1/2" DIA. ROD OR L1x1x1/4	24"	12"	24"	60"	4	5	2,4

NOTES:
1. DIMENSION "B" IS THE MINIMUM REQUIRED LENGTH OF TOP AND BOTTOM CHORD REINFORCEMENT. FIELD VERIFY PANEL POINT LOCATIONS AND EXTEND TOP AND BOTTOM CHORD REINF. TO OUTER EDGE OF STEEL PLATE AT PANEL POINT.
2. RE: PLAN FOR NEW EQUIPMENT, RE: 1/S4.0 FOR ADDITIONAL REINFORCEMENT. DO NOT SET EQUIPMENT UNTIL ALL REINF. IS IN PLACE AND INSPECTED.
3. RE: ARCH FOR EXACT LOCATION OF SOFFITS AND MECH EQUIPMENT THAT WILL CAUSE CONCENTRATED LOADS IN EXCESS OF 100 LBS. RE: 2/S4.0 FOR ADDITIONAL REINFORCEMENT AT CONCENTRATED LOADS.
4. REINFORCEMENT SHALL BE WELDED AT 12" O.C. ALONG LENGTH, RE: SECTION F.

1 JOIST REINFORCEMENT DETAIL – (LH–SERIES) (NOTE: DIAGRAM IS GENERIC AND ACTUAL NUMBER OF WEBS TO BE REINFORCED IS NOT ACCURATELY SHOWN. ACTUAL NUMBER OF WEB MEMBERS TO BE REINFORCED SHALL BE DETERMINED BASED ON THE LENGTHS SHOWN IN THE JOIST REINFORCEMENT SCHEDULE)
3/4" = 1'–0"

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JAMES M. GRANICH
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09/08/2023
Missouri COA #001268

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LSCC BUILDING 2 - FORGE TI

LEE'S SUMMIT, MISSOURI

100% SET
ISSUED
09-08-2023

ISSUE LOG

△#	DATE	FOR

JOB # : 2220003.04
DWN. BY KMF CHK. BY JMG

LH-SERIES JOIST REINFORCEMENT

SHEET NO.
S4.2