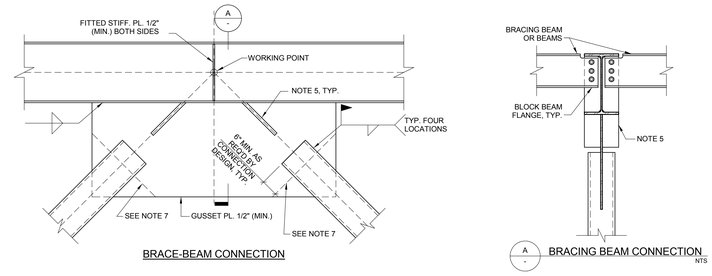
BEAM SHEAR REACTION TABLE (UON)			
BEAM SIZE	VERTICAL FACTORED (LOAD) REACTION (KIPS) (SEE NOTE 1)	MINIMUM NUMBER OF BOLTS (SEE NOTE 6)	HORIZONTAL FACTORED TENSILE FORCE (KIPS) (SEE NOTE 7)
HSS 8x4	8	2	10
HSS 8x6 & HSS 8x8	15	2	10
HSS 14x6 & HSS 14x10	20	3	14

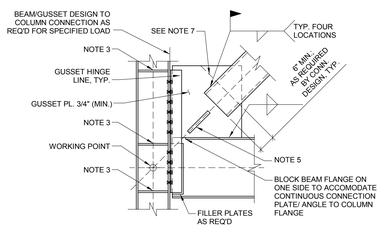
NOTES:
1. LOADS IN THIS TABLE HAVE BEEN FACTORED IN ACCORDANCE WITH SECTION 2.3 OF ASCE 7-10.
2. SEE GENERAL NOTES FOR ADDITIONAL INFORMATION.
3. BEAM REACTIONS SHOWN ON PLAN TAKE PRECEDENT OVER THOSE SHOWN IN THIS TABLE. FOR THOSE SHOWN ON PLAN, PROVIDE A HORIZONTAL FACTORED TENSILE FORCE EQUAL TO 2/3 THE VERTICAL FACTORED LOAD UON. VERTICAL AND HORIZONTAL LOADS NEED NOT BE ASSUMED TO ACT CONCURRENTLY.
4. SEE DETAILS AND SECTIONS FOR BEAMS REQUIRING FULL DEPTH SHEAR CONNECTIONS.
5. FIELD WELDED CONNECTIONS MAY BE USED IN LIEU OF BOLTED CONNECTIONS AT CONTRACTOR'S OPTION. HOWEVER, SHOP DRAWINGS FOR ALL FIELD WELDED CONNECTIONS MUST BE SUBMITTED AND APPROVED BY THE EOR PRIOR TO BEGINNING FABRICATION.
6. USE 3/4" Ø A325N BOLTS (MIN).
7. FOR COMPLIANCE WITH STRUCTURAL INTEGRITY REQUIREMENTS OF 2015 IBC 1615.3.2.2, CONNECTIONS SHALL HAVE MINIMUM HORIZONTAL AXIAL TENSILE STRENGTH INDICATED. VERTICAL REACTION AND HORIZONTAL TENSILE FORCE NEED NOT ACT CONCURRENTLY.
8. DRAG FORCES (P_u) SHOWN ON PLAN ARE CONCURRENT WITH THE LARGER OF THE VERTICAL FACTORED LOAD SHOWN IN TABLE OR ON PLAN (V_u).

13 BEAM SHEAR REACTION TABLE
3/4" = 1'-0"

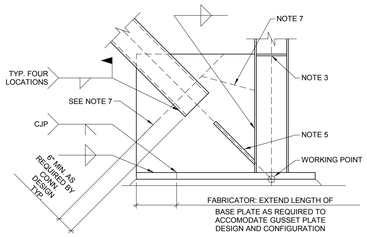


BRACE-BEAM CONNECTION

DETAIL NOTES:
1. THE DETAILS SHOW THE DESIRED CONFIGURATION TO BE INCORPORATED IN THE FABRICATOR'S DESIGN. FABRICATOR'S DESIGN AND DETAILING TO FOLLOW PROJECT PLANS, SPECIFICATIONS, AND DESIGN FORCES INDICATED ON THE DRAWINGS.
2. PROVIDE DECK SUPPORT ANGLES, SHIM PLATES, AND FILLER PLATES AS REQUIRED. THESE ITEMS ARE NOT SHOWN FOR CLARITY.
3. ADD FITTED STIFFENERS (1/2" THICK MIN.) BOTH SIDES OF COLUMN WHERE THERE ARE BRACES ON BOTH SIDES OF COLUMN AND THERE IS A TRANSFER FORCE BETWEEN THEM INDICATED ON THE DRAWINGS.
4. BOLTS AT CONNECTION TO COLUMN: A325, MINIMUM DIAMETER = 1", SLIP CRITICAL ON OVERSIZE HOLES, UON.
5. ADD STIFFENERS ON EACH SIDE OF GUSSET IF AND AS REQUIRED BY WHITMORE SECTION CALCULATIONS. RECONFIGURE CONNECTIONS TO COLUMN AS REQUIRED BY STIFFENERS.
6. CONNECTIONS TO COLUMN WEBS HAVE SIMILAR CONFIGURATIONS. REINFORCE COLUMN WEB AS REQUIRED BY THE CONNECTION FORCES.
7. GUSSET PLATES ARE SHOWN WITH VERTICAL AND HORIZONTAL EDGES. ANGLED CUTS MAY BE PROVIDED AT FABRICATOR'S DISCRETION OR IF REQUIRED BY THE GENERAL CONTRACTORS COORDINATION WITH OTHER TRADES.
8. SLAB CONSTRUCTION NOT SHOWN FOR CLARITY.
9. BEAMS AND COLUMNS COULD ALSO BE HSS MEMBERS.

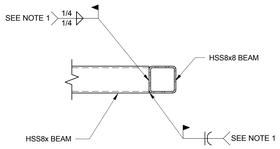


BRACE-BEAM COLUMN CONNECTION



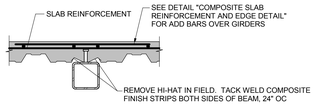
BRACE-COLUMN BASE CONNECTION

12 BRACED FRAME CONNECTION DETAILS
3/4" = 1'-0"



NOTES:
1. SHOP WELD AT CONTRACTOR'S OPTION

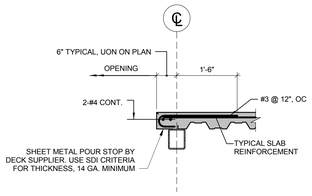
11 TYP. HSS BEAM TO BEAM SHEAR CONN.
3/4" = 1'-0"



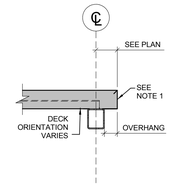
GAP	FINISH STRIP GAUGE
0 TO 4"	20
4" TO 7"	16
7" TO 9"	14

NOTES:
1. DETAIL APPLIES ONLY TO BEAMS WITH STUDS, AND TO ALL GIRDERS.
2. DETAIL APPLIES TO SKEW BEAMS AS REQUIRED FOR STUD PLACEMENT

10 STEEL DECK PARALLEL TO STEEL SUPPORT
3/4" = 1'-0"



9 SLAB EDGE AT FLOOR OPENINGS

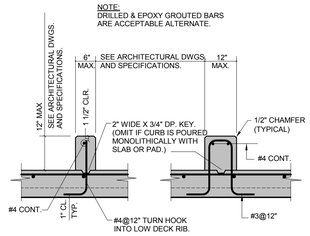


OVERHANG LESS THAN 0'-10"

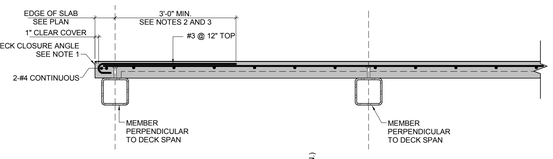
NOTES:
1. UON, PLACE GALVANIZED SHEET METAL POUR STOPS. USE SDI CRITERIA (SDI PUBLICATION #29) FOR THICKNESS, USE 14 GA. MIN.

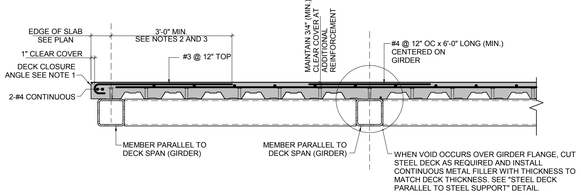
8 TYPICAL SLAB EDGE SUPPORT DETAIL

NOTE:
DRILLED & EPOXY GROUTED BARS ARE ACCEPTABLE ALTERNATE.



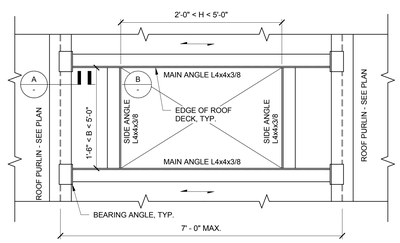
7 CONCRETE CURB ON COMPOSITE SLAB

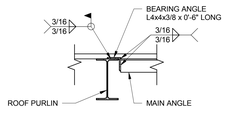




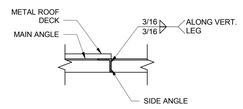
NOTES:
1. COORDINATE EDGE CONDITION WITH "TYPICAL SLAB EDGE SUPPORT DETAIL" AND BUILDING SECTIONS.
2. #3 BAR SIZE AND LAP LENGTH SHOWN ARE A MINIMUM. INCREASE BAR SIZE TO MATCH REINFORCEMENT ON PLAN AND ADJUST LAP LENGTH PER TYPICAL DETAILS.
3. TYPICAL SLAB BARS MAY BE HOOKED. IN THIS CASE ADDITIONAL #3 AT EDGE OF SLAB ARE NOT REQUIRED.
4. GIRDERS ARE DEFINED AS BEAMS FRAMING TO COLUMNS AND/OR SUPPORTING BEAMS LARGER THAN W8.

6 COMPOSITE SLAB REINFORCEMENT AND EDGE CONDITION DETAIL





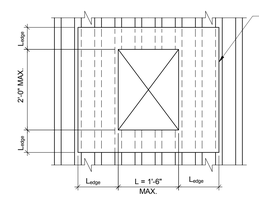
SECTION A



SECTION B

NOTES:
1. ADVISE SER IF OPENING EXCEEDS DIMENSION LIMITS SHOWN.
2. ROOF DECK MUST BE FASTENED TO SUBFRAMING ANGLES AS SHOWN IN TYPICAL ROOF DECK FASTENING DETAIL.
3. TOPS OF MAIN AND SIDE ANGLES ARE FLUSH WITH TOP OF ROOF STEEL.
4. SUBFRAMING IS DESIGNED FOR EQUIVALENT 100 PSF LIVE LOAD AND NET 30 PSF WIND SUCTION.
5. CONTRACTOR MAY ELECT TO OMIT BEARING ANGLES AND COPE VERTICAL LEG OF MAIN ANGLES SUCH THAT THEY BEAR AT LEAST 4" ON TOP FLANGE OF ROOF PURLINS.
6. CONTRACTOR MAY ELECT TO FABRICATE ANGLE FRAMES IN FIELD.

5 SUBFRAMING FOR ROOF OPENING LARGER THAN 1'-0" x 1'-6"



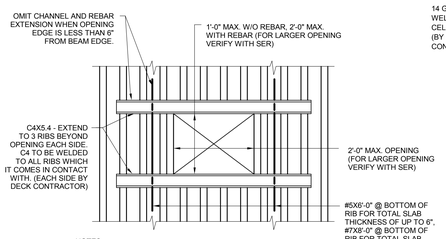
NOTE: NO REINFORCEMENT NEEDED WHERE "L" IS 6 INCHES OR LESS.

FOR OPENINGS UP TO 1'-6" PERPENDICULAR TO DECK

PARAMETERS FOR DECK CUT			
DEPTH OF DECK	DECK GAUGE	REINFORCEMENT SHEET THICKNESS	MAX. CLEAR SPAN OF DECK
1 1/2 "	20	13 GA.	5'-0"
	18	12 GA.	6'-0"
	16	12 GA.	7'-0"
3"	20	12 GA.	7'-0"
	18	1/8" OR 10 GA.	8'-0"
	16	18" OR 10 GA.	9'-0"

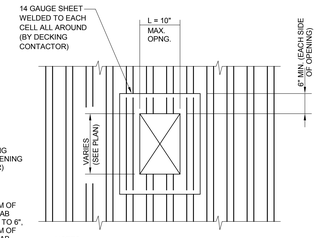
NOTES:
1. L_{edge} = 1'-0" MIN.
2. DETAIL DOES NOT APPLY TO OPENINGS SHOWN ON PLAN WITH STEEL SUBFRAMING.
3. FOR OPENINGS CUT IN THE FIELD, NOT SHOWN ON PLAN, AND EXCEEDING THE MAXIMUM SPAN LIMITS, ADD SUBFRAMING PER TYPICAL DETAILS.
4. DETAIL APPLIES TO OPENINGS SPACED NO CLOSER THAN 5'-0" CLEAR IN DIRECTION TRANSVERSE TO DECK RIBS AND NO CLOSER THAN 10'-0" CLEAR IN DIRECTION PARALLEL TO RIBS.
5. REVIEW SPECIFIC CONDITIONS WITH SER THAT MIGHT ALLOW MODIFICATIONS TO THE SPECIFIED PARAMETERS OF THE DETAIL.

4 ROOF DECK OPENING REINFORCEMENT



NOTES:
1. NO REINFORCEMENT REQUIRED FOR HOLES 6" Ø OR LESS.
2. PROVIDE POUR STOP AT ALL OPENINGS.
3. SHORING OF DECK IS AN ACCEPTABLE ALTERNATIVE TO REINFORCEMENT CHANNELS AND SHEET METAL SHOWN FOR DECK CUT BEFORE CONCRETE IS POURED.
4. DETAIL DOES NOT APPLY FOR SINGLE SPAN FRAMING. FOR THESE CONDITIONS ADD SUB FRAMING, INCREASE GAUGE OF DECK, OR SUBMIT PREFERRED SCHEME TO SER FOR REVIEW AND APPROVAL.

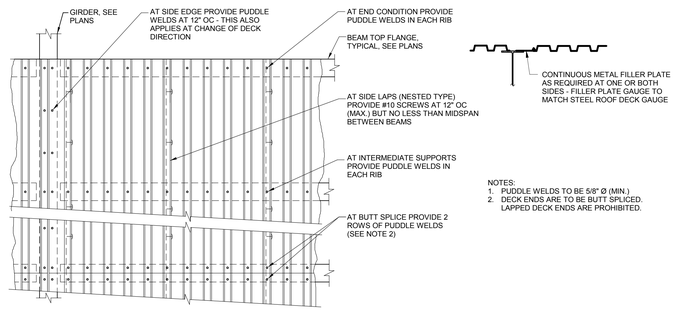
FOR OPENINGS 10" TO 2'-0" PERPENDICULAR TO DECK



NOTES:
1. NO REINFORCEMENT WHERE "L" IS 6" OR LESS.
2. SPACE OPENINGS NO CLOSER TOGETHER THAN LARGER OF 2L OR 12".

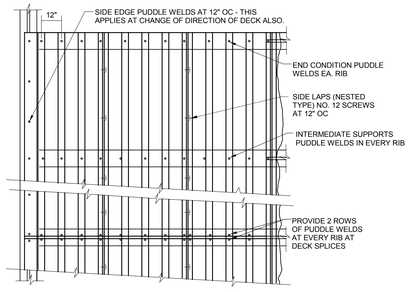
FOR OPENINGS UP TO 10" PERPENDICULAR TO DECK

3 COMPOSITE FLOOR DECK REINFORCING AT OPENINGS



NOTES:
1. PUDDLE WELDS TO BE 5/8" Ø (MIN.)
2. DECK ENDS ARE TO BE BUTT SPLICED. LAPPED DECK ENDS ARE PROHIBITED.

2 FASTENING PATTERN FOR 1 1/2" STEEL ROOF DECK



NOTES:
1. USE NESTED SIDE LAPS.
2. PUDDLE WELDS 5/8" Ø MIN.

1 FASTENING PATTERN FOR COMPOSITE METAL FLOOR DECK

PERKINS + WILL
225 Franklin Street, Suite 1100
Boston, MA 02110
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1.617.478.0321
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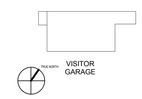
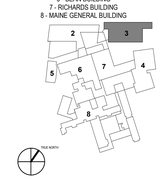
CLIENT
Maine Medical Center
MaineHealth
22 Bramhall Street
Portland, ME 04102

CONSULTANTS
CIVIL/ LANDSCAPE ARCHITECT
Sebago Technics
75 John Roberts Road, Suite 1A, South Portland ME 04106
STRUCTURAL ENG/ BUILDING ENVELOPE CONSULTANT
Simpson Gumpertz & Heger Inc.
41 Seyon Street, Building 1, Suite 500, Waltham MA 02453
MEP/P ENGINEER/ CODE
AKF Group LLC
99 Bedford Street, 2nd Floor, Boston MA 02111
CONSTRUCTION MANAGER
Turner Construction
2 Seaport Lane, Suite 200, Boston MA 02210
ELEVATOR CONSULTANT
VDA (Van Deusen & Associates)
101 Summer Street, 4th Floor, Boston MA 02110
COST ESTIMATOR
D. G. Jones International
3 Baldwin Green Common, Suite 202, Woburn MA 01801

PROJECT TITLE
Visitor Garage Expansion
22 Bramhall Street
Portland, ME 04102

STATE OF MAINE JOHN H. THOMSEN IV No. 11120 LICENSED PROFESSIONAL ENGINEER
3-7-2018

KEY PLANS
PROJECT KEY PLAN


OVERALL KEY PLAN
1 - NOT USED
2 - CONGRESS STREET
3 - VISITOR GARAGE
4 - EAST TOWER
5 - CENTRAL UTILITY PLANT
6 - BEAN BUILDING
7 - RICHARDS BUILDING
8 - MAINE GENERAL BUILDING


CONSTRUCTION DOCUMENT SET
SEPTEMBER 29, 2017

NO	ISSUE	DATE
	PERMIT SET	03.09.18

Job Number	152182.000
Drawn	KAK
Checked	BMT
Approved	JHT

TITLE
TYPICAL STEEL DETAILS

SHEET NUMBER
S00-20

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3/9/2018 2:34:20 PM
I:\BDS\Projects\3015\150092.00.MMC\Drawings\Working_Sets_Revit\LOCAL USERS\NWSchumacher\152182.MMC-VISITOR GARAGE-v2017 - STRUCT_NWSchumacher.rvt