BERRIDGE SPACEFRAME BUILDING COMPONENTS DESIGN GUIDE

CONTENTS

PROPERTIES & LOADS

TYPICAL INSTALLATION DETAILS

BERRIDGE
Roofs of Distinction

Berridge Manufacturing Company
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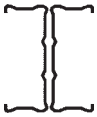
SINGLE 24 GA STUD

MEMBER	PHYSICAL PROPERTIES					GROSS PROPERTIES						
	THICKNESS (in)	DEPTH (in)	FLANGE (in)	LIP (in)	WEIGHT (lb/ft)	Ag (in2)	Ix (in4)	Sx (in3)	Iy (in4)	Sy (in3)	rx (in)	ry (in)
SINGLE STUD	0.024	3.5	1.450	---	0.535	0.157	0.252	0.155	0.043	0.039	1.265	0.526

MEMBER	TORSIONAL PROPERTIES			FULL BRACED PROPERTIES & ALLOWABLE STRENGTH					
	J (in4)	Cw (in6)	Xo (in)	Ae (in2)	Ix (in4)	Sx (in3)	TENSION (lbs)	MOMENT (lbs-ft)	SHEAR (lbs)
SINGLE STUD	0.00003023	0.0715	-1.045	0.105	0.252	0.155	3771	309	1171



DOUBLE 24 GA. STUD

MEMBER	PHYSICAL PROPERTIES					GROSS PROPERTIES						
	THICKNESS (in)	DEPTH (in)	FLANGE (in)	LIP (in)	WEIGHT (lb/ft)	Ag (in2)	Ix (in4)	Sx (in3)	Iy (in4)	Sy (in3)	rx (in)	ry (in)
DOUBLE STUD	0.024	3.5	1.450	---	1.07	0.31491	0.504	0.309	0.149	0.097	1.265	0.689

MEMBER	TORSIONAL PROPERTIES			FULL BRACED PROPERTIES & ALLOWABLE STRENGTH					
	J (in4)	Cw (in6)	Xo (in)	Ae (in2)	Ix (in4)	Sx (in3)	TENSION (lbs)	MOMENT (lbs-ft)	SHEAR (lbs)
DOUBLE STUD	0.00006046	0.14307	0.00	0.21001	0.504	0.309	7542	618	2343

NOTES:

1. STRUCTURAL PROPERTIES HAVE BEEN COMPUTED IN ACCORDANCE WITH THE 2001 NORTH AMERICAN SPECIFICATION (US-ASD).
2. THICKNESS SHOWN IS DESIGN THICKNESS WITHOUT COATING.
3. STEEL IS ASTM 653 GRADE 40 FY=40 KSI, FU=55 KSI.

24 GA. STUD
MAXIMUM ALLOWABLE AXIAL LOADS (LBS)
LATERAL WIND PRESSURE

WALL HEIGHT	STUD SPACING	O (PSF)	10 (PSF)			15 (PSF)			20 (PSF)			25 (PSF)		
ALLOWABLE DEFLECTION		N/A	L/240	L/360	L/600	L/240	L/360	L/600	L/240	L/360	L/600	L/240	L/360	L/600
8'	16"	1700	1150	1150	1150	900	900	---	725	725	---	500	--	---
9'	16"	1570	900	900	---	650	650	---	450	---	---	--	---	---
10'	16"	1440	725	725	---	450	---	---	---	---	---	---	---	---

NOTES:

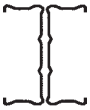
1. THE EXTERIOR WALLS SHALL HAVE PLYWOOD ON THE EXTERIOR SIDE OF THE WALL ALONG WITH THE GYPBOARD ON THE INTERIOR SIDE OF THE WALL. THE PLYWOOD AND GYPBOARD SHALL BRACE THE STUD CONTINUOUSLY. DESIGN ASSUMPTIONS ARE Lx=WALL HEIGHT, Ly & Lt=1'.
2. THE STUD SHALL HAVE FULL END BEARING AT THE TOP AND BOTTOM TRACKS.
3. --- INDICATES THAT THE CAPACITY OF THE STUD HAS BEEN EXCEEDED.
4. N.A. = NOT APPLICABLE.

LOAD TRANSFER MEMBER LOAD TABLES

LENGTH (FT)	ALLOWABLE AXIAL LOADS (LBS)
3	1250
4	950
5	700
6	550
7	300

NOTES:

1. DESIGN ASSUMPTIONS ARE Lx=Ly=Lt=FULL LENGTH OF MEMBER.
3. STEEL IS ASTM A-653 GRADE 50 FY=40 KSI, FU=50 KSI.



ROOF RAFTER (DOUBLE 24 GA. STUD SECTION) LOAD TABLES

SPAN (FT)	MAX. ALLOWABLE UNIFORM ROOF PRESSURE AT 16" O.C. (PSF)
5	128
6	84
7	60
8	42
9	36
10	24

NOTES:

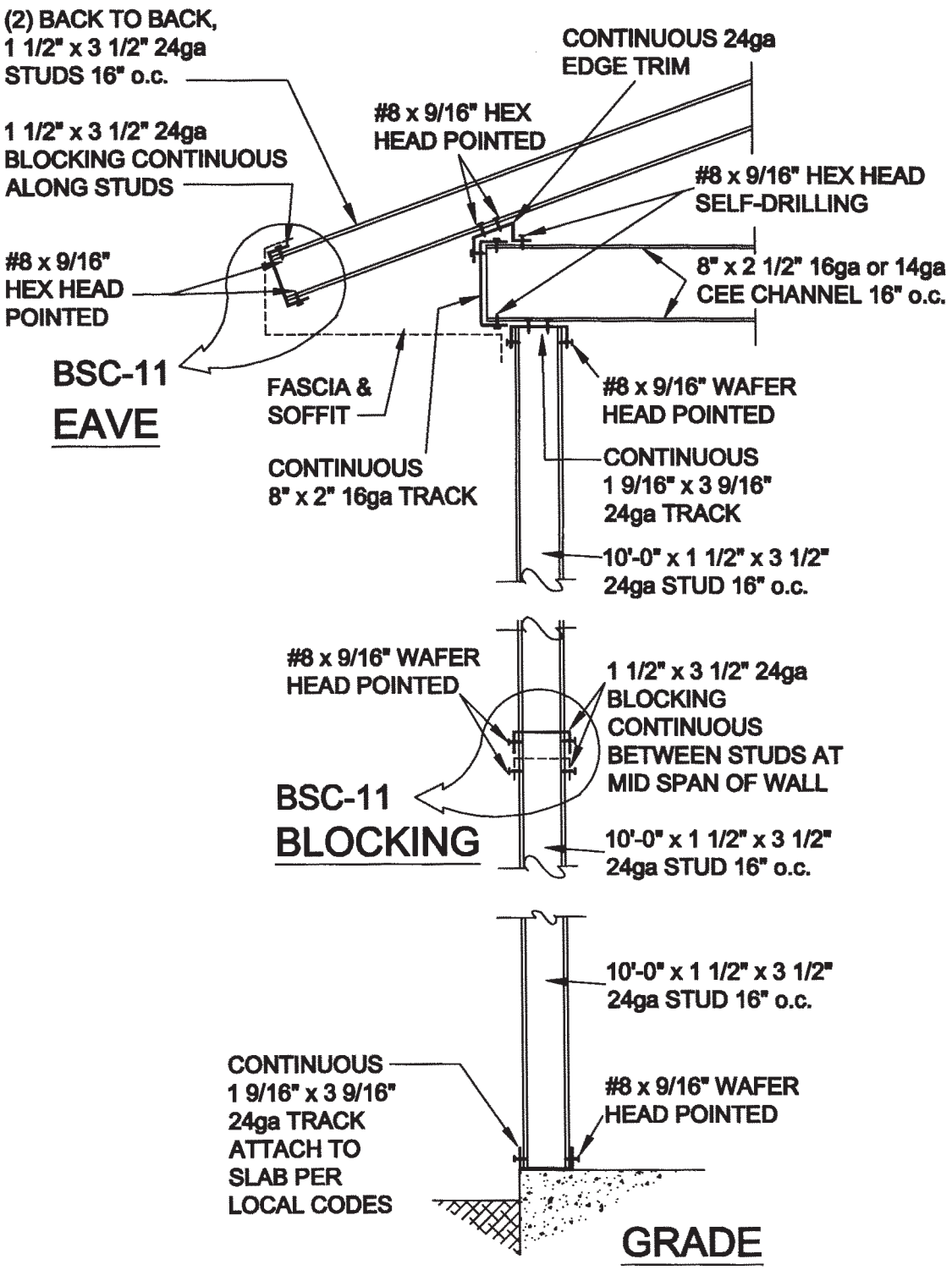
1. EITHER PLYWOOD IS ATTACHED DIRECTLY TO THE TOP OF THE RAFTERS OR METAL DECK IS ATTACHED TO THE TOP (OUTSIDE) FLANGE OF THE ROOF RAFTER (DOUBLE STUD) SECTION. DESIGN ASSUMPTIONS ARE Lx=Lt=SPAN LENGTH &Ly=4'.
2. ALL SPANS ARE FOR DOUBLE SECTION RAFTER MEMBER IN BACK-TO-BACK ORIENTATION. DOUBLE SECTIONS SHALL BE CONNECTED WITH (2) #12 SDS SPACED AT 1"-1 1/2" - 1" VERTICALLY AND 24" O.C. LENGTHWISE.
3. MAXIMUM UNIFORM LOADS ARE THE TOTAL LOADS ON THE LOAD ON THE MEMBER INCLUDING SELF-WEIGHT.
4. ROOF RAFTER SHALL BE LOCATED DIRECTLY ABOVE WALL STUD.

16 GA CEE CHANNEL CEILING JOIST LOAD TABLE

SPAN (FT)	MAX. ALLOWABLE UNIFORM ROOF PRESSURE AT 16" O.C. (PSF)
5	960
6	666
7	490
8	374
9	330
10	235
11	190
12	158
13	133
14	114
15	98
16	85
17	75
18	66
19	58
20	52

NOTES:

1. GYPBOARD IS ATTACHED TO THE BOTTOM FLANGE OF THE CEILING JOISTS.
2. STEEL IS ASTM A 653 GRADE 50 FY=50 KSI, FU=65 KSI.
3. MAXIMUM UNIFORM LOADS ARE THE TOTAL LOADS ON THE LOAD ON THE MEMBER INCLUDING SELF-WEIGHT.
4. CEILING JOIST SHALL BE LOCATED DIRECTLY ABOVE WALL STUDS AT EACH END.



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WALL SECTION

BUILDING SYSTEM COMPONENTS

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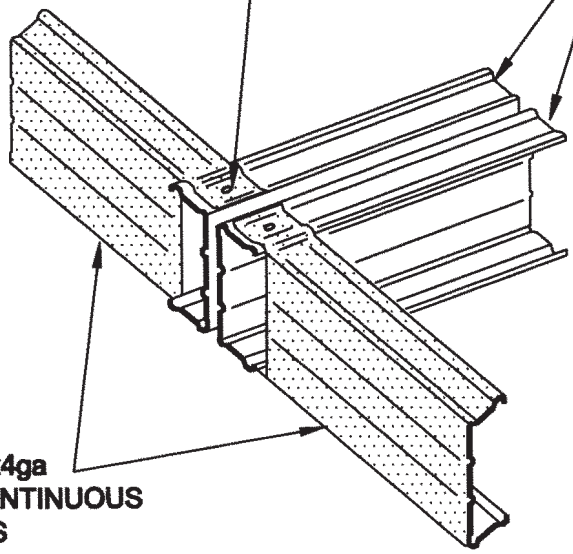
#8 x 9/16" HEX
HEAD POINTED

(2) BACK TO BACK,
1 1/2" x 3 1/2"
24ga STUDS 16" o.c.

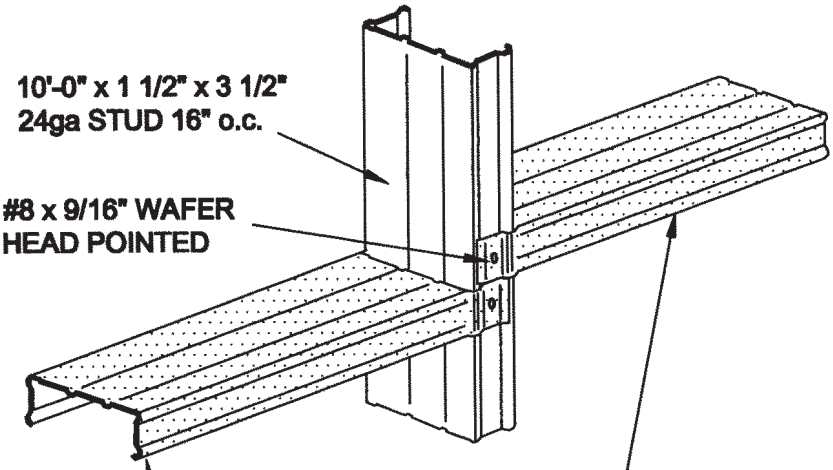


EAVE

1 1/2" x 3 1/2" 24ga
BLOCKING CONTINUOUS
ALONG STUDS

10'-0" x 1 1/2" x 3 1/2"
24ga STUD 16" o.c.

#8 x 9/16" WAFER
HEAD POINTED



1 1/2" x 3 1/2" 24ga
BLOCKING CONTINUOUS
BETWEEN STUDS

BLOCKING
- WALL SPACING UNDER 60"
- ROOF SPACING 24" O.C.

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FRAMING DETAIL

BUILDING SYSTEM COMPONENTS

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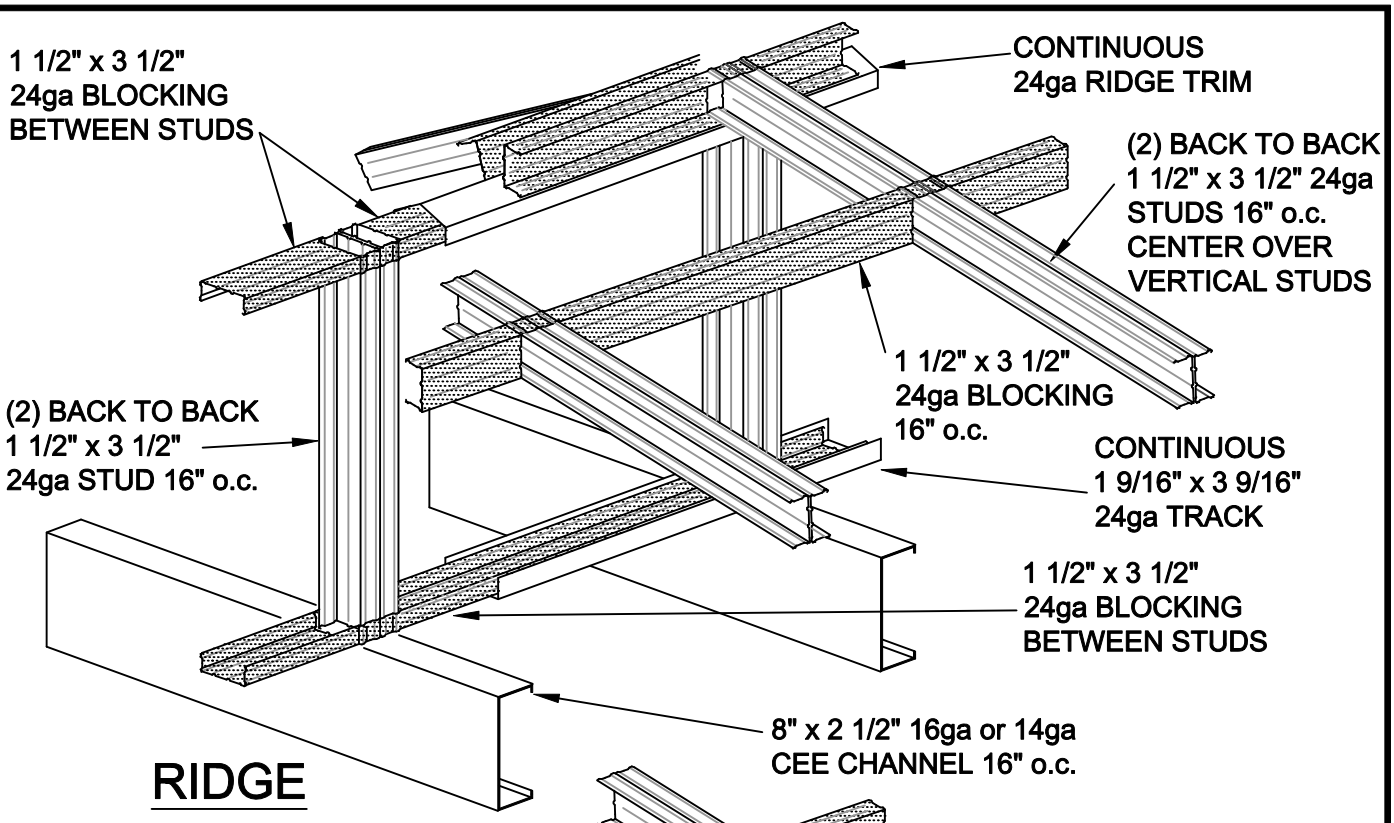

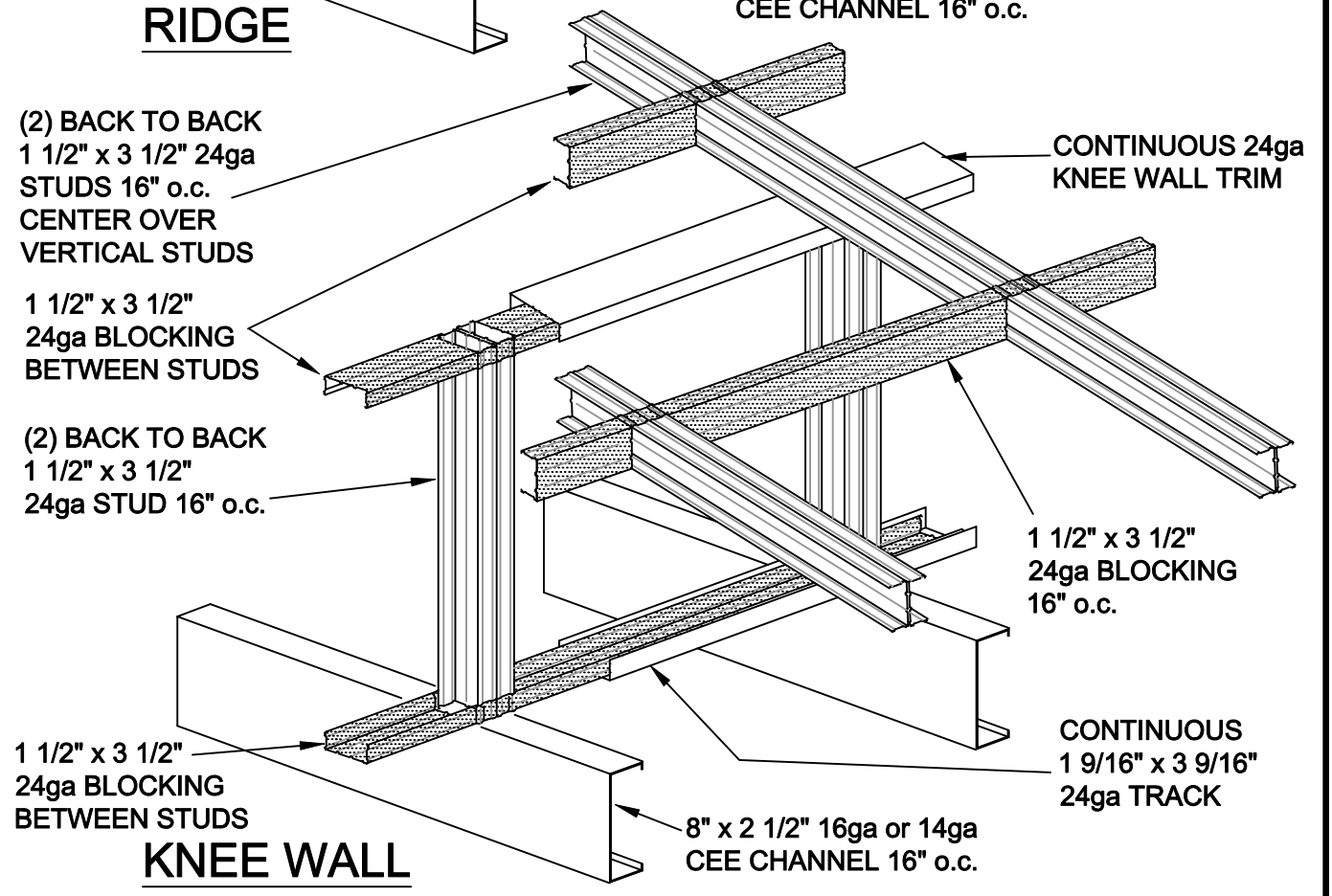

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RIDGE/KNEE WALL

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BUILDING SYSTEM COMPONENTS

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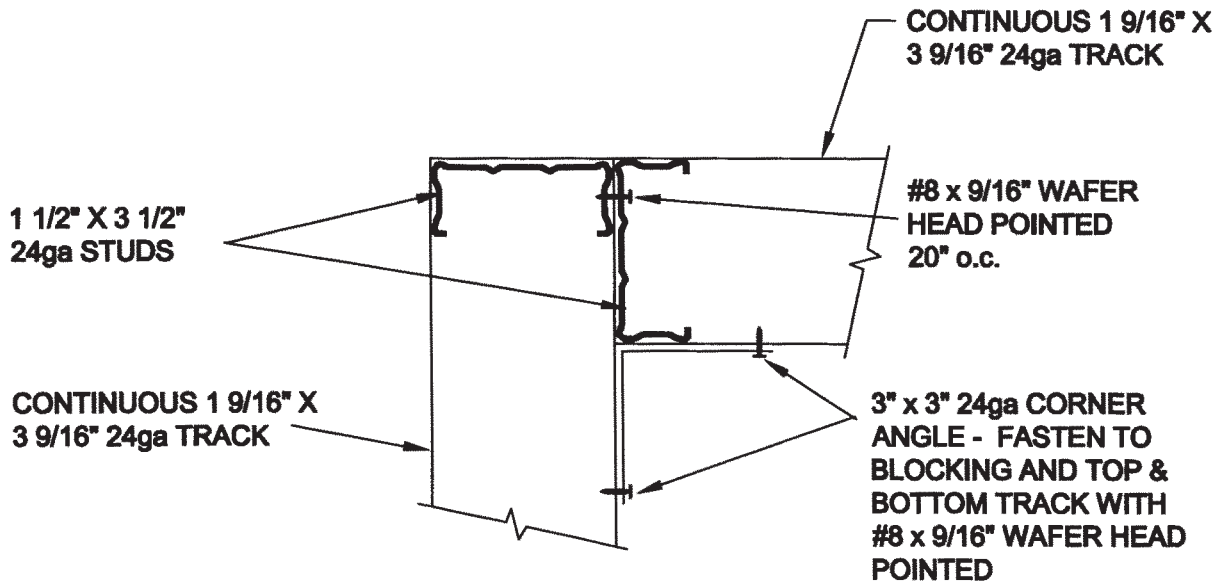
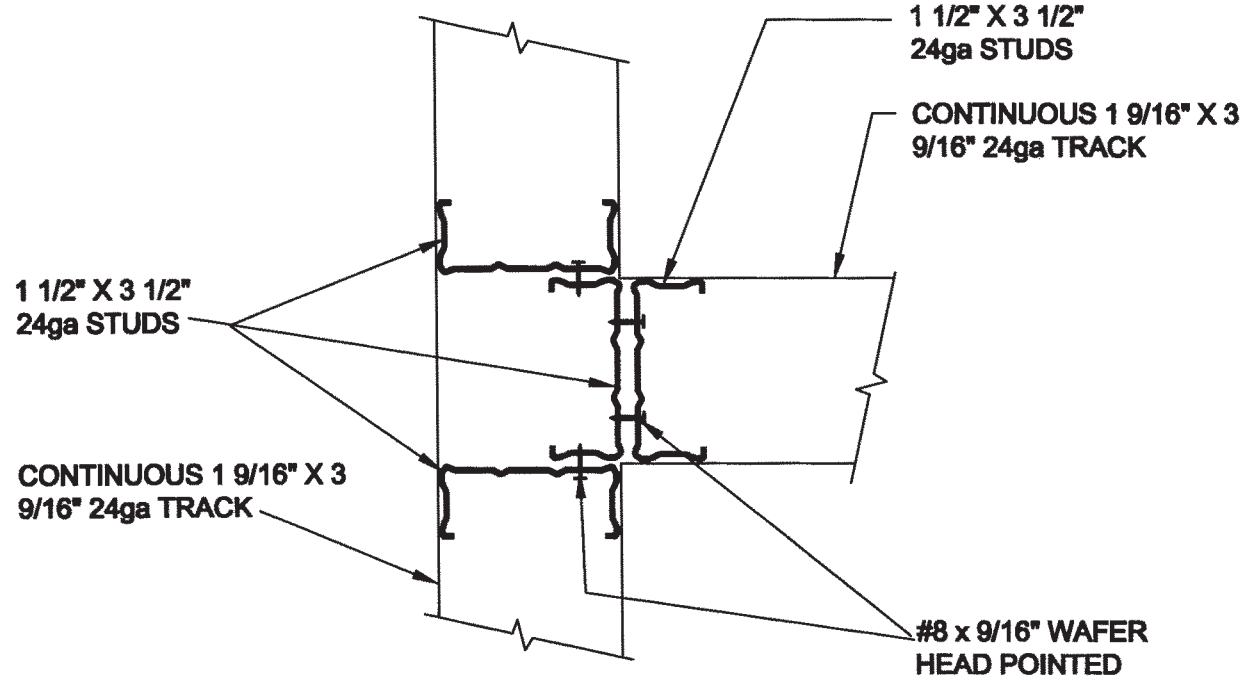
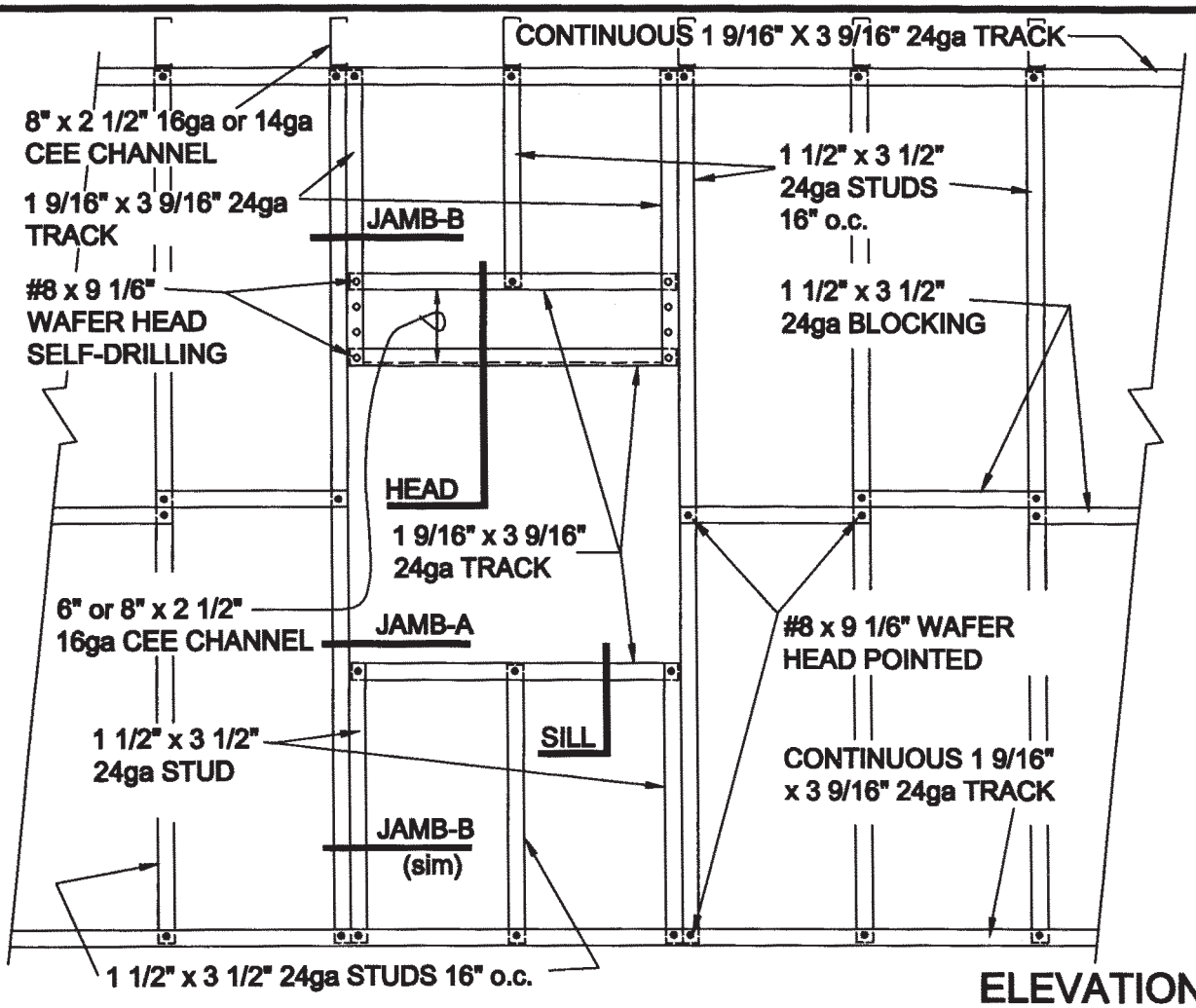


INSIDE / OUTSIDE CORNER

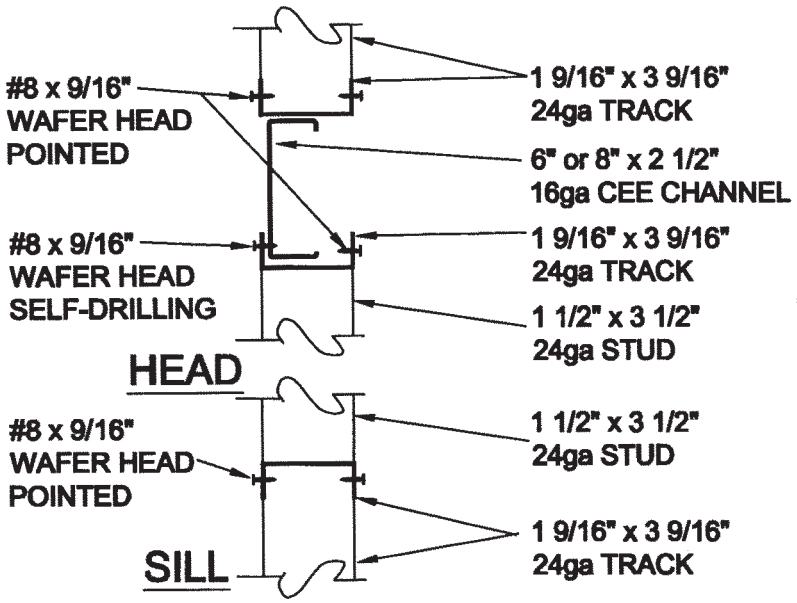


T - CORNER

Berridge Manufacturing Company *Roofs of Distinction*	**WALL CORNER DETAILS** BUILDING SYSTEM COMPONENTS	DATE: 1–10–07 PAGE\FILE **BSC-13**

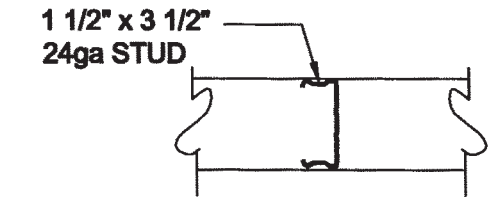


ELEVATION

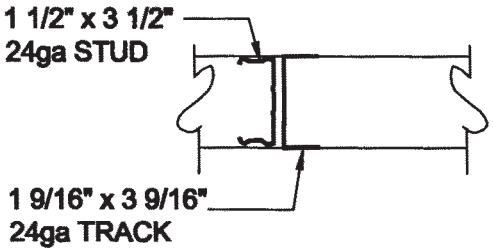


HEAD

SILL



JAMB - A



JAMB - B

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ELEVATION

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