

Job 8008	Truss V16	Truss Type Valley Truss	Qty 1	Ply 1	WADE (JI)
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DECO TRUSS COMPANY INC., Princeton, FL 33032

Job Reference (optional)
7.350 s Sep 27 2012 MITek Industries, Inc. Fri Aug 30 10:42:14 2013 Page 1
ID:oLOA2w_01uhnDEKU8IED91zP95P-dY80a70KSf2tphUxF1hZdsb4NUEN8Chkd4z8l1yil_t

6-3-8
6-3-8

9-8-8
3-5-0

16-0-0
6-3-8

Scale = 1:25.5

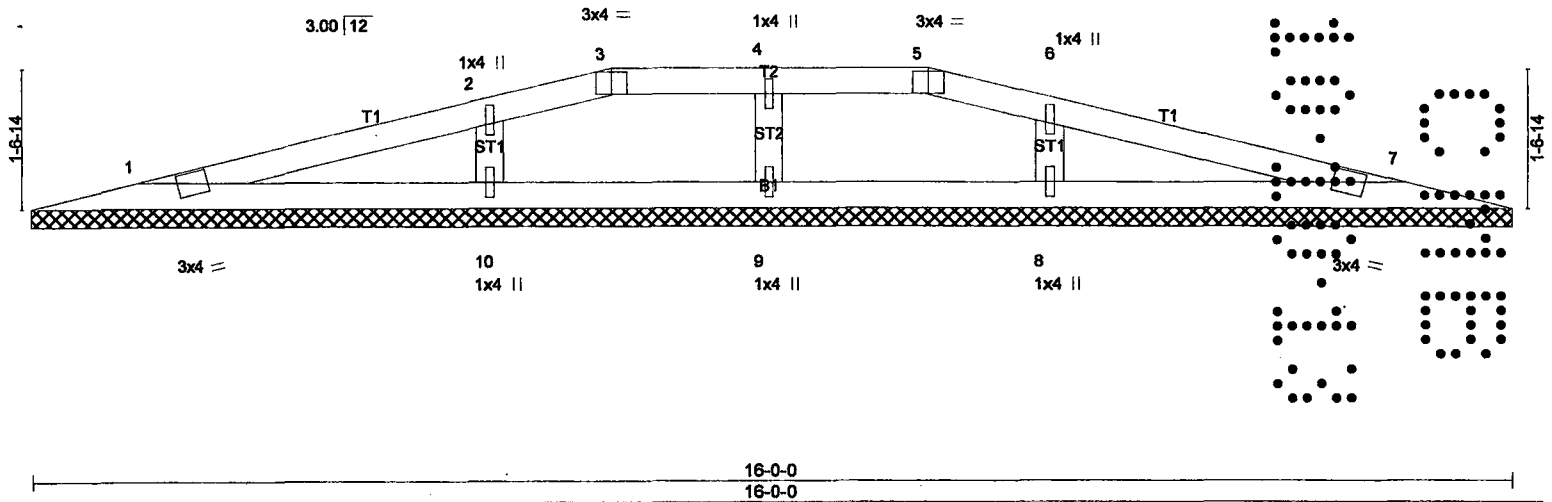


Plate Offsets (X,Y): [2:0-2-8,0-0-8], [6:0-2-8,0-0-8]

LOADING (psf)	SPACING	2-0-0	CSI	DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL 30.0	Plates Increase	1.33	TC 0.24	Vert(LL)	n/a	-	n/a	999	MT20	244/190
TCDL 15.0	Lumber Increase	1.33	BC 0.18	Vert(TL)	n/a	-	n/a	999		
BCLL 0.0	Rep Stress Incr	YES	WB 0.08	Horz(TL)	0.00	7	n/a	n/a		
BCDL 10.0	Code FRC2010/TPI2007		(Matrix)						Weight: 48 lb	FT = 0%

LUMBER
TOP CHORD 2x4 SP No.2
BOT CHORD 2x4 SP No.2
OTHERS 2x4 SP No.2

BRACING
TOP CHORD
BOT CHORD

Structural wood sheathing directly applied or 6-0-0 oc purlins.
Rigid ceiling directly applied or 10-0-0 oc bracing.

MITek recommends that Stabilizers and required cross bracing be installed during truss erection, in accordance with Stabilizer Installation guide.

REACTIONS All bearings 16-0-0.

(lb) - Max Uplift All uplift 100 lb or less at joint(s) except 1=169(LC 3), 7=169(LC 3), 9=196(LC 3), 10=458(LC 3), 8=458(LC 3)
Max Grav All reactions 250 lb or less at joint(s) 1, 7 except 9=267(LC 6), 10=529(LC 6), 8=529(LC 6)

FORCES (lb) - Max. Comp./Max. Ten. - All forces 250 (lb) or less except when shown.
WEBS 2-10=-415/452, 6-8=-415/452

NOTES

- Unbalanced roof live loads have been considered for this design.
- Wind: ASCE 7-10; Vult=175mph (3-second gust) Vasd=136mph; TCDL=5.0psf; BCDL=5.0psf; h=26ft; Cat. II; Exp D; Encl., GCpi=0.18; C-C Exterior(2); Lumber DOL=1.60 plate grip DOL=1.60
- Provide adequate drainage to prevent water ponding.
- Plates checked for a plus or minus 0 degree rotation about its center.
- Gable requires continuous bottom chord bearing.
- Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 169 lb uplift at joint 1, 169 lb uplift at joint 7, 196 lb uplift at joint 9, 458 lb uplift at joint 10 and 458 lb uplift at joint 8.
- "Semi-rigid pitchbreaks with fixed heels" Member end fixity model was used in the analysis and design of this truss.

LOAD CASE(S) Standard

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7-8-0
7-8-0

11-0-0
3-4-0

Scale = 1:17.7

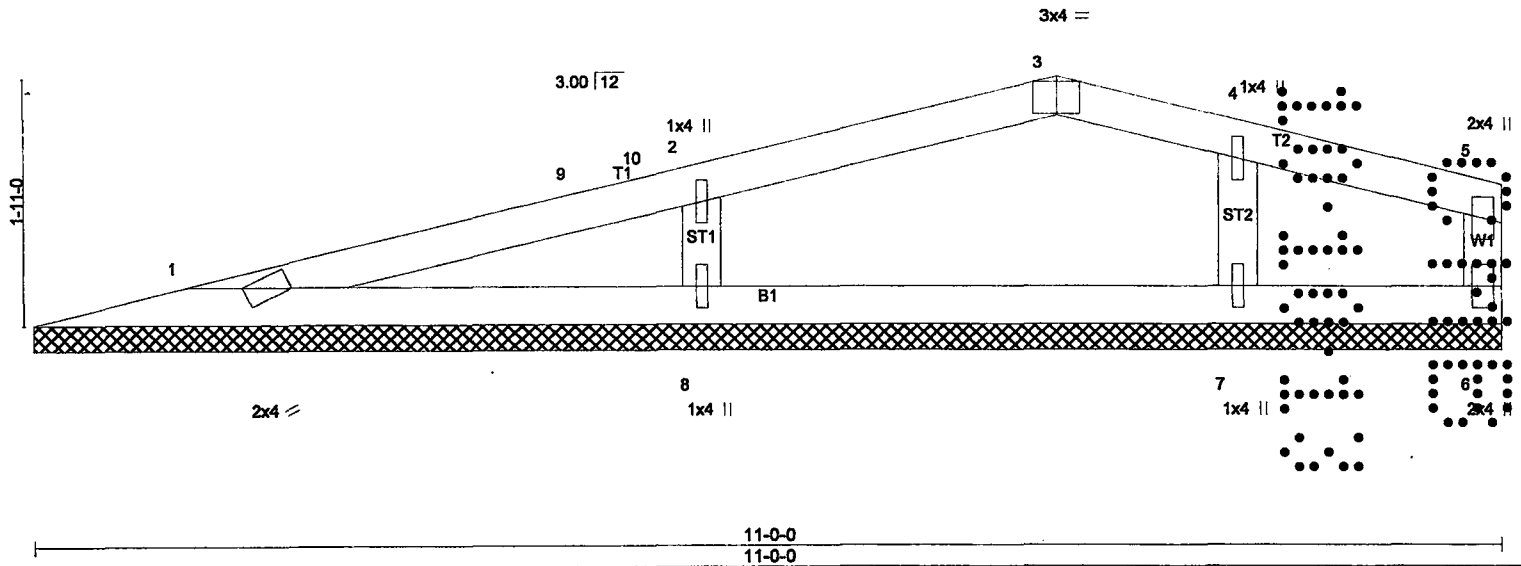


Plate Offsets (X,Y): [3:0-2-0,Edge]

LOADING (psf)	SPACING	2-0-0	CSI	DEFL	In	(loc)	I/defl	L/d	PLATES	GRIP
TCLL 30.0	Plates Increase	1.33	TC 0.31	Vert(LL)	n/a	-	n/a	999	MT20	244/180
TCDL 15.0	Lumber Increase	1.33	BC 0.17	Vert(TL)	n/a	-	n/a	999		
BCLL 0.0	Rep Stress Incr	YES	WB 0.10	Horz(TL)	-0.00	6	n/a	n/a		
BCDL 10.0	Code FRC2010/TPI2007		(Matrix)						Weight: 35 lb	FT = 0%

LUMBER
TOP CHORD 2x4 SP No.2
BOT CHORD 2x4 SP No.2
WEBS 2x4 SP No.2
OTHERS 2x4 SP No.2

BRACING
TOP CHORD
BOT CHORD

Structural wood sheathing directly applied or 6-0-0 oc purlins, except end verticals.
Rigid ceiling directly applied or 10-0-0 oc bracing.

MITek recommends that Stabilizers and required cross bracing be installed during truss erection, in accordance with Stabilizer Installation guide.

REACTIONS All bearings 11-0-0.
(lb) - Max Horz 1=112(LC 3)
Max Uplift All uplift 100 lb or less at joint(s) except 1=186(LC 3), 6=131(LC 3), 8=544(LC 3), 7=304(LC 3)
Max Grav All reactions 250 lb or less at joint(s) 1, 6 except 8=599(LC 6), 7=357(LC 6)

FORCES (lb) - Max. Comp./Max. Ten. - All forces 250 (lb) or less except when shown.
WEBS 2-8=482/549, 4-7=322/370

NOTES
1) Unbalanced roof live loads have been considered for this design.
2) Wind: ASCE 7-10; Vult=175mph (3-second gust) Vasd=136mph; TCCL=5.0psf; BCDL=5.0psf; h=26ft; Cat. II; Exp D; Encl., GCpl=0.18; C-C Exterior(2) 1-2-3 to 4-2-3, Interior(1) 4-2-3 to 4-8-0, Exterior(2) 4-8-0 to 7-8-0; Lumber DOL=1.60 plate grip DOL=1.60
3) Plates checked for a plus or minus 0 degree rotation about its center.
4) Gable requires continuous bottom chord bearing.
5) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 186 lb uplift at joint 1, 131 lb uplift at joint 6, 544 lb uplift at joint 8 and 304 lb uplift at joint 7.
6) "Semi-rigid pitchbreaks with fixed heels" Member end fixity model was used in the analysis and design of this truss.

LOAD CASE(S) Standard

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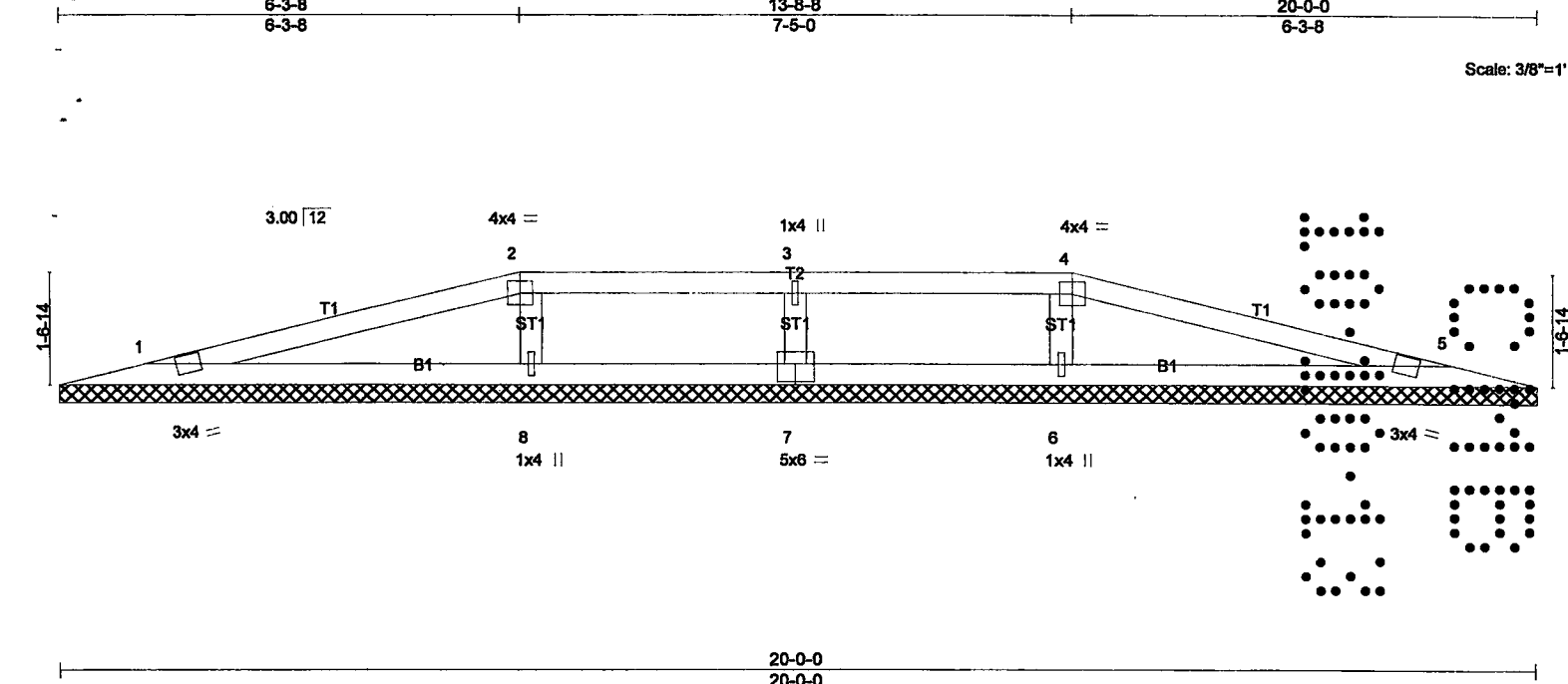


Plate Offsets (X,Y): [7:0-3-0,0-3-0]							
LOADING (psf)	SPACING	2-0-0	CSI	DEFL	in	(loc)	L/d
TCLL 30.0	Plates Increase	1.33	TC 0.46	Vert(LL)	n/a	-	n/a 999
TCDL 15.0	Lumber Increase	1.33	BC 0.39	Vert(TL)	n/a	-	n/a 999
BCLL 0.0	Rep Stress Incr	YES	WB 0.08	Horz(TL)	0.00	5	n/a
BCDL 10.0	Code FRC2010/TP12007		(Matrix)				
				PLATES	GRIP		
				MT20	244/190		
				Weight: 61 lb	FT = 0%		

LUMBER	BRACING
TOP CHORD 2x4 SP No.2	TOP CHORD Structural wood sheathing directly applied or 6-0-0 oc purlins.
BOT CHORD 2x4 SP No.2	BOT CHORD Rigid ceiling directly applied or 6-0-0 oc bracing.
OTHERS 2x4 SP No.2	

REACTIONS All bearings 20-0-0.

(lb) - Max Uplift All uplift 100 lb or less at joint(s) except 1=249(LC 3), 5=249(LC 3), 7=309(LC 3), 8=490(LC 3), 6=490(LC 3)

Max Grav All reactions 250 lb or less at joint(s) except 1=294(LC 6), 5=294(LC 6), 7=381(LC 9), 8=620(LC 6), 6=620(LC 6)

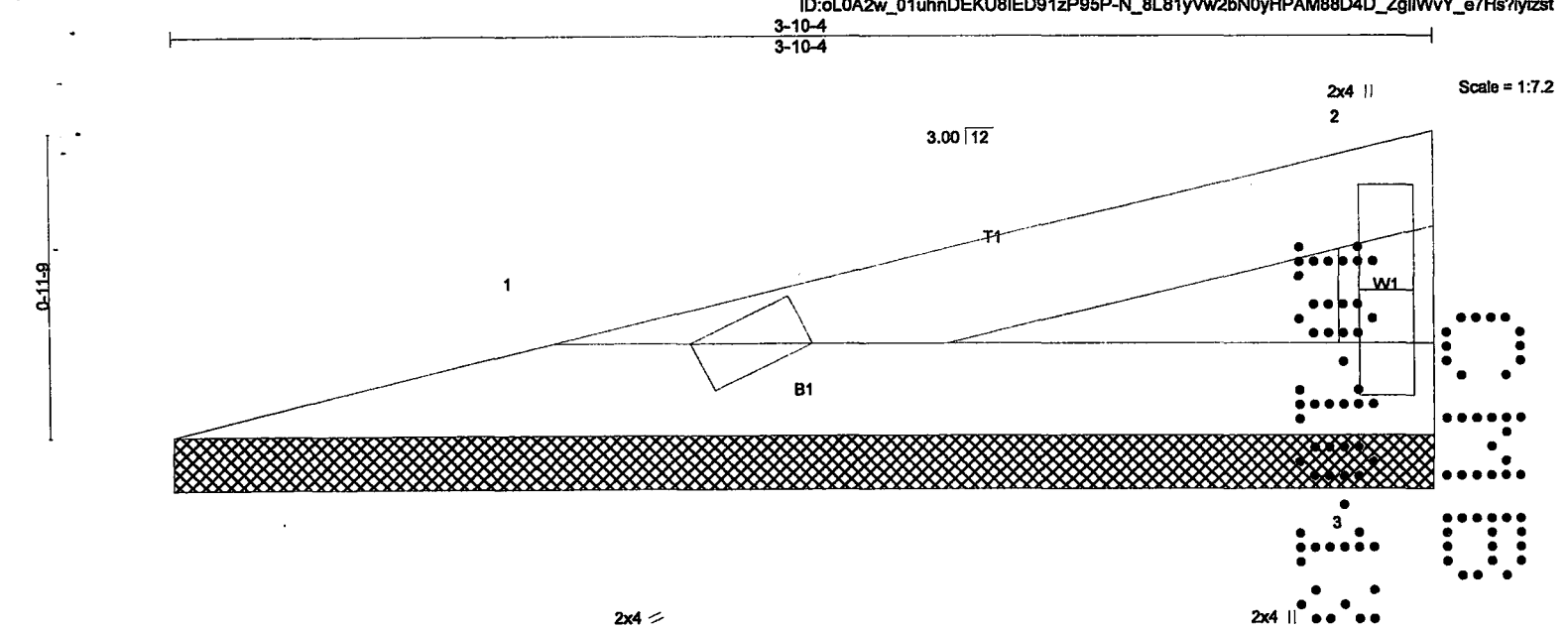
FORCES (lb) - Max. Comp./Max. Ten. - All forces 250 (lb) or less except when shown.

WEBS 3-7=367/386, 2-8=457/472, 4-6=457/472

- NOTES**
- Unbalanced roof live loads have been considered for this design.
 - Wind: ASCE 7-10; Vult=175mph (3-second gust) Vasd=138mph; TCDL=5.0psf; BCDL=5.0psf; h=26ft; Cat. II; Exp D; Encl., GCpl=0.18; C-C Exterior(2); Lumber DOL=1.60 plate grip DOL=1.60
 - Provide adequate drainage to prevent water ponding.
 - Plates checked for a plus or minus 0 degree rotation about its center.
 - Gable requires continuous bottom chord bearing.
 - Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 249 lb uplift at joint 1, 249 lb uplift at joint 5, 309 lb uplift at joint 7, 490 lb uplift at joint 8 and 490 lb uplift at joint 6.
 - "Semi-rigid pitchbreaks with fixed heels" Member end fixity model was used in the analysis and design of this truss.

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LOADING (psf)	SPACING	2-0-0	CSI	DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL 30.0	Plates Increase	1.33	TC 0.23	Vert(LL)	n/a	-	n/a	999	MT20	244/180
TCDL 15.0	Lumber Increase	1.33	BC 0.05	Vert(TL)	n/a	-	n/a	999		
BCLL 0.0	Rep Stress Incr	YES	WB 0.00	Horz(TL)	0.00		n/a	n/a		
BCDL 10.0	Code FRC2010/TP12007		(Matrix)						Weight: 10 lb	FT = 0%

LUMBER	BRACING
TOP CHORD 2x4 SP No.2	TOP CHORD
BOT CHORD 2x4 SP No.2	BOT CHORD
WEBS 2x4 SP No.2	Structural wood sheathing directly applied or 3-10-4 oc purlins, except end verticals.
	Rigid ceiling directly applied or 10-0-0 oc bracing.
	MiTek recommends that Stabilizers and required cross bracing be installed during truss erection, in accordance with Stabilizer Installation guide.

REACTIONS (lb/size) 1=120/3-10-4 (min. 0-1-8), 3=120/3-10-4 (min. 0-1-8)

Max Horz 1=108(LC 3)

Max Uplift 1=176(LC 3), 3=203(LC 3)

Max Grav 1=175(LC 6), 3=182(LC 6)

FORCES (lb) - Max. Comp./Max. Ten. - All forces 250 (lb) or less except when shown.

NOTES

1) Wind: ASCE 7-10; Vult=175mph (3-second gust) Vasd=138mph; TCCL=5.0psf; BCDL=5.0psf; h=26ft; Cat. II; Exp D; End.; GCpl=0.18; C-C Exterior(2); Lumber DOL=1.60 plate grip DOL=1.60

2) Plates checked for a plus or minus 0 degree rotation about its center.

3) Gable requires continuous bottom chord bearing.

4) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 176 lb uplift at joint 1 and 203 lb uplift at joint 3.

5) "Semi-rigid pitchbreaks with fixed heels" Member end fixity model was used in the analysis and design of this truss.

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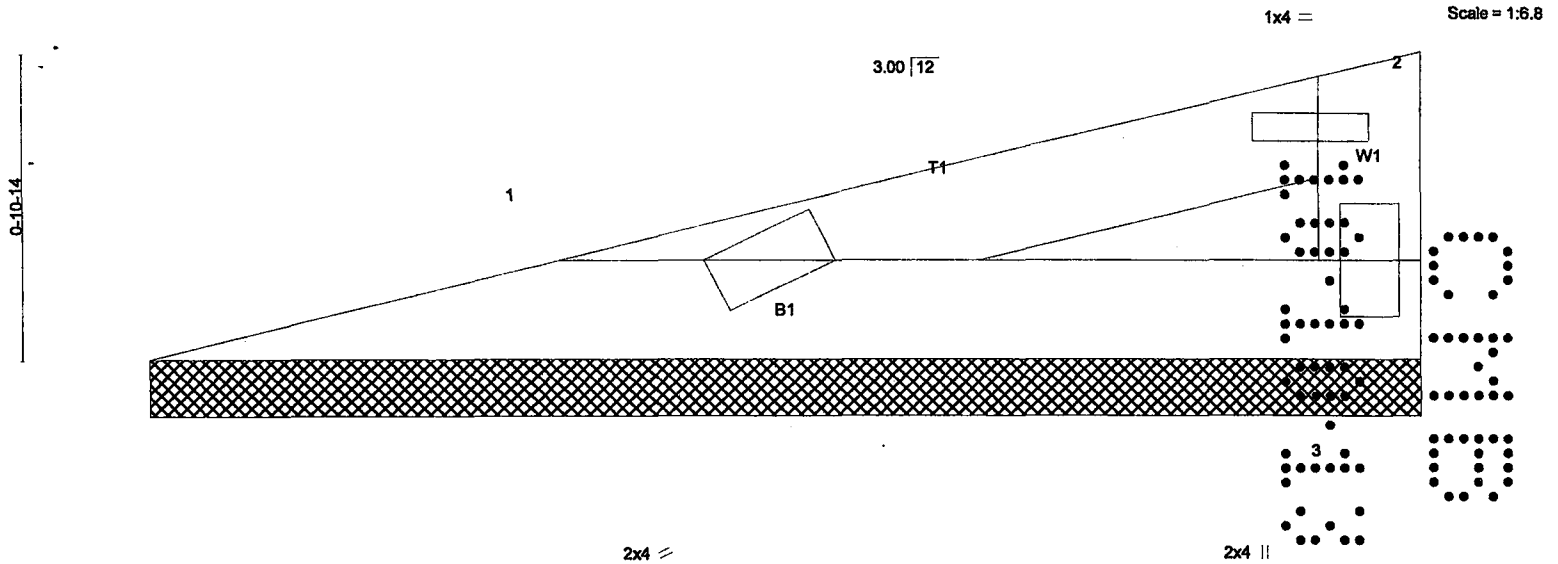


Plate Offsets (X,Y): [2:0-2-4,0-0-8]

LOADING (psf)	SPACING	2-0-0	CSI	DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL 30.0	Plates Increase	1.33	TC 0.19	Vert(LL)	n/a	-	n/a	999	MT20	244/190
TCDL 15.0	Lumber Increase	1.33	BC 0.04	Vert(TL)	n/a	-	n/a	999		
BCLL 0.0	Rep Stress Incr	YES	WB 0.00	Horz(TL)	0.00		n/a	n/a		
BCDL 10.0	Code FRC2010/TP12007		(Matrix)						Weight: 10 lb	FT = 0%

LUMBER
 TOP CHORD 2x4 SP No.2
 BOT CHORD 2x4 SP No.2
 WEBS 2x4 SP No.2

BRACING
 TOP CHORD Structural wood sheathing directly applied or 3-7-8 oc purlins, except end verticals.
 BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.

MITek recommends that Stabilizers and required cross bracing be installed during truss erection, in accordance with Stabilizer Installation guide.

REACTIONS (lb/size) 1=109/3-7-8 (min. 0-1-8), 3=109/3-7-8 (min. 0-1-8)
 Max Horz 1=98(LC 3)
 Max Uplift 1=160(LC 3), 3=185(LC 3)
 Max Grav 1=159(LC 6), 3=165(LC 6)

FORCES (lb) - Max. Comp./Max. Ten. - All forces 250 (lb) or less except when shown.

NOTES
 1) Wind: ASCE 7-10; Vult=175mph (3-second gust) Vasd=136mph; TCDL=5.0psf; BCDL=5.0psf; h=26ft; Cat. II; Exp D; Encl.; GCpt=0.18; C-C Exterior(2); Lumber DOL=1.60 plate grip DOL=1.60
 2) Plates checked for a plus or minus 0 degree rotation about its center.
 3) Gable requires continuous bottom chord bearing.
 4) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 160 lb uplift at joint 1 and 185 lb uplift at joint 3.
 5) "Semi-rigid pitchbreaks with fixed heels" Member end fixity model was used in the analysis and design of this truss.

LOAD CASE(S) Standard

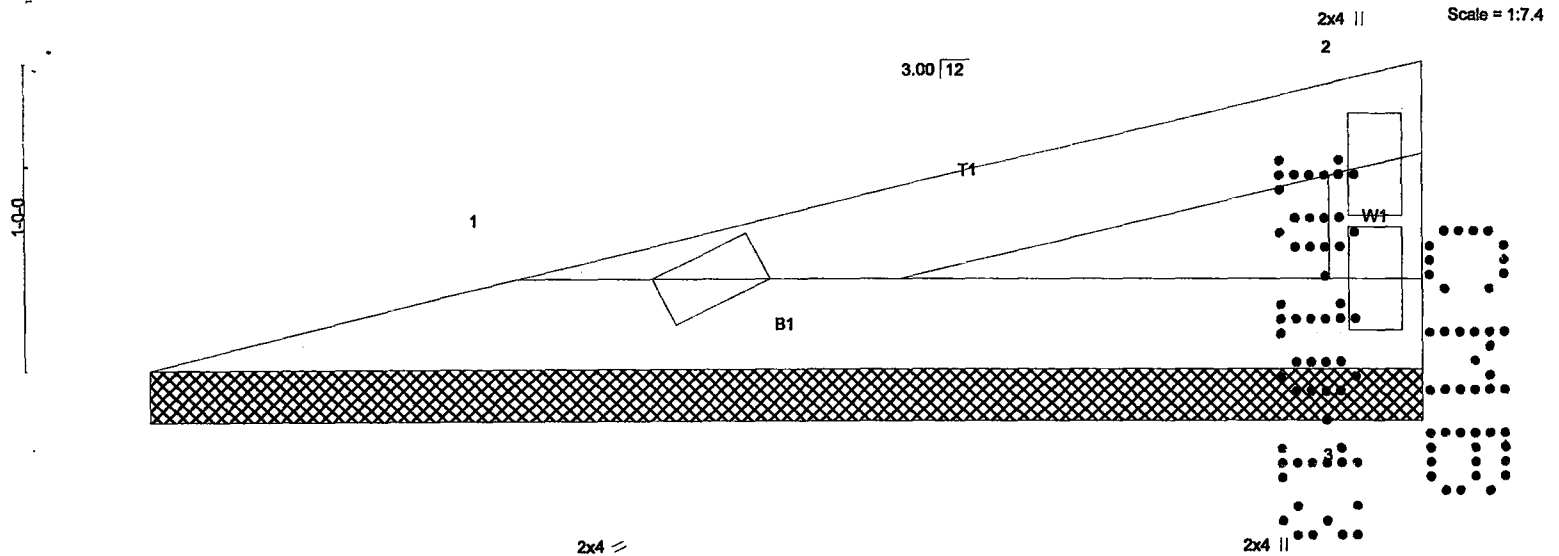
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Job	Truss	Truss Type	Qty	Ply	WADE (JI)
8008	MV4	VALLEY TRUSS	3	1	

DECO TRUSS COMPANY INC., Princeton, FL 33032

ID: oL0A2w_01uhnDEKU8IED91zP95P-PQzPsoUoBCJV7HP_4iixj2OtEqamaqpfN7oy4yiewv

4-0-0
4-0-0



LOADING (psf)	SPACING	2-0-0	CSI	DEFL	in (loc)	I/defl	L/d	PLATES	GRIP
TCLL 30.0	Plates Increase	1.33	TC 0.26	Vert(LL)	n/a	-	n/a	MT20	244/190
TCDL 15.0	Lumber Increase	1.33	BC 0.06	Vert(TL)	n/a	-	n/a		
BCLL 0.0	Rep Stress Incr	YES	WB 0.00	Horz(TL)	0.00		n/a		
BCDL 10.0	Code FRC2010/TP12007		(Matrix)					Weight: 11 lb	FT = 0%

LUMBER

TOP CHORD 2x4 SP No.2
BOT CHORD 2x4 SP No.2
WEBS 2x4 SP No.2

BRACING

TOP CHORD
BOT CHORD

Structural wood sheathing directly applied or 4-0-0 oc purlins, except end verticals.
Rigid ceiling directly applied or 10-0-0 oc bracing.

MITek recommends that Stabilizers and required cross bracing be installed during truss erection, in accordance with Stabilizer Installation guide.

REACTIONS (lb/size) 1=127/4-0-0 (min. 0-1-8), 3=127/4-0-0 (min. 0-1-8)
Max Horz 1=114(LC 3)
Max Uplift 1=187(LC 3), 3=215(LC 3)
Max Grav 1=185(LC 6), 3=192(LC 6)

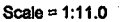
FORCES (lb) - Max. Comp./Max. Ten. - All forces 250 (lb) or less except when shown.

NOTES

- 1) Wind: ASCE 7-10; Vult=175mph (3-second gust) Vasd=138mph; TCDL=5.0psf; BCDL=5.0psf; h=26ft; Cat. II; Exp D; Encl.; GCpl=0.18; C-C Exterior(2); Lumber DOL=1.60 plate grip DOL=1.60
- 2) Plates checked for a plus or minus 0 degree rotation about its center.
- 3) Gable requires continuous bottom chord bearing.
- 4) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 187 lb uplift at joint 1 and 215 lb uplift at joint 3.
- 5) "Semi-rigid pitchbreaks with fixed heels" Member end fixity model was used in the analysis and design of this truss.

LOAD CASE(S) Standard

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Job 8008	Truss MV7	Truss Type Valley Truss	Qty 1	Ply 1	WADE (JI)
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DECO TRUSS COMPANY INC., Princeton, FL 33032

Job Reference (optional)

ID: oL0A2w_01uhnDEKU8IED91zP95P-VhDz7cqsXYIn3d_6WSwafBX9z_meBugJ5rEyKjyilOP
7.350 s Sep 27 2012 MiTek Industries, Inc. Fri Aug 30 10:40:38 2013 Page 1

6-6-0
6-6-0

Scale: 1"=1'

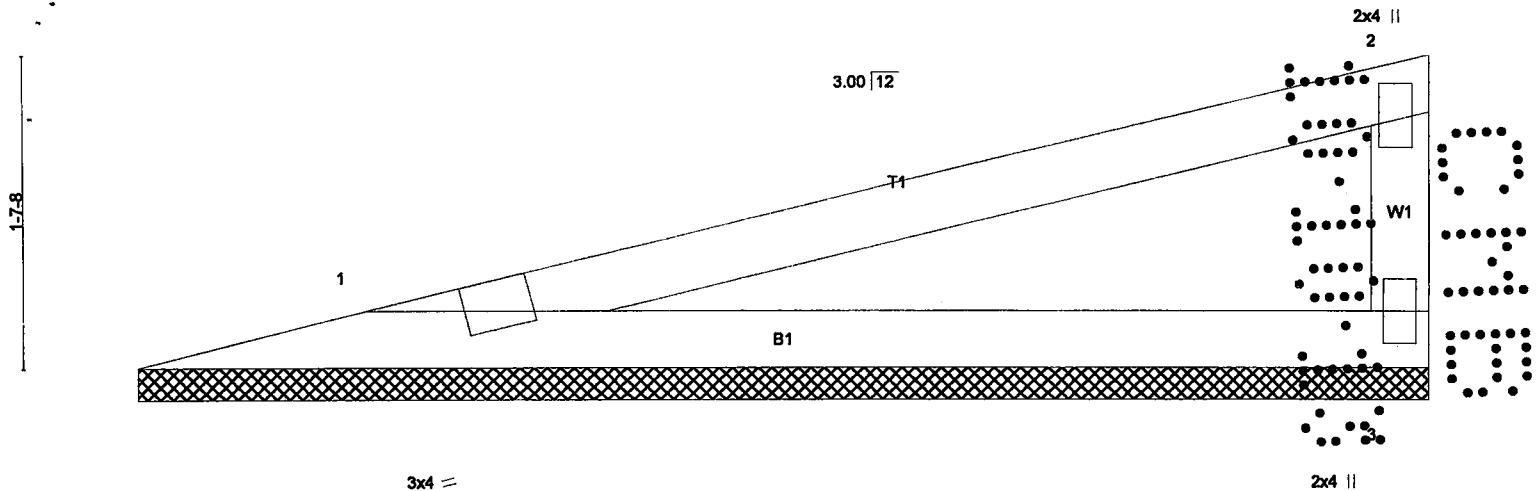


Plate Offsets (X,Y): [1:0-5-12,Edge], [2:0-2-11,0-0-8]

LOADING (psf)	SPACING	2-0-0	CSI	DEFL	In	(loc)	I/defl	L/d	PLATES	GRIP
TCLL 30.0	Plates Increase	1.33	TC 0.85	Vert(LL)	n/a	-	n/a	999	MT20	244/190
TCDL 15.0	Lumber Increase	1.33	BC 0.23	Vert(TL)	n/a	-	n/a	999		
BCLL 0.0	Rep Stress Incr	YES	WB 0.00	Horz(TL)	0.00		n/a	n/a		
BCDL 10.0	Code FRC2010/TPI2007		(Matrix)						Weight: 19 lb	FT = 0%

LUMBER

TOP CHORD 2x4 SP No.2D
BOT CHORD 2x4 SP No.2
WEBS 2x4 SP No.2

BRACING

TOP CHORD
BOT CHORD

Structural wood sheathing directly applied or 2-0-2 oc purlins, except end verticals.
Rigid ceiling directly applied or 10-0-0 oc bracing.

MiTek recommends that Stabilizers and required cross bracing be installed during truss erection, in accordance with Stabilizer Installation guide.

REACTIONS (lb/size) 1=246/6-6-0 (min. 0-1-8), 3=246/6-6-0 (min. 0-1-8)
Max Horz 1=212(LC 3)
Max Uplift 1=345(LC 3), 3=398(LC 3)
Max Grav 1=353(LC 6), 3=367(LC 6)

FORCES (lb) - Max. Comp./Max. Ten. - All forces 250 (lb) or less except when shown.
TOP CHORD 2-3=315/424

NOTES

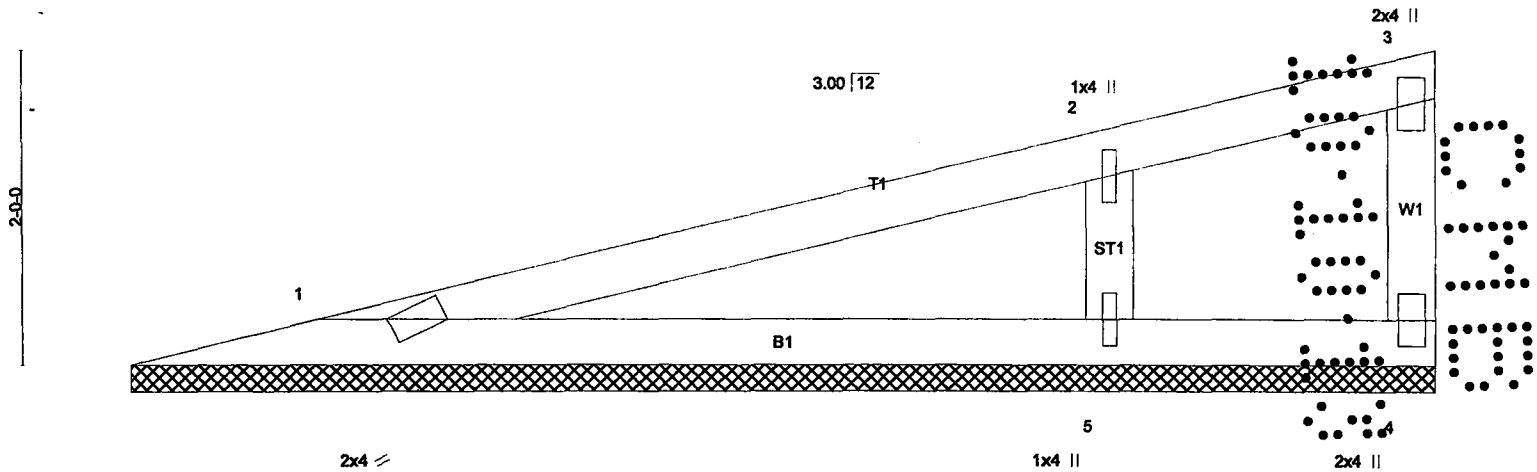
- 1) Wind: ASCE 7-10; Vult=175mph (3-second gust) Vasd=136mph; TCDL=5.0psf; BCDL=5.0psf; h=26ft; Cat. II; Exp D; End.; GCpl=0.18; C-C Exterior(2); Lumber DOL=1.60 plate grip DOL=1.60
- 2) Plates checked for a plus or minus 0 degree rotation about its center.
- 3) Gable requires continuous bottom chord bearing.
- 4) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 100 lb uplift at joint(s) except (It=lb) 1=345, 3=398.
- 5) "Semi-rigid pitchbreaks with fixed heels" Member end fixity model was used in the analysis and design of this truss.

LOAD CASE(S) Standard

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8-0-0
8-0-0

Scale = 1:14.5



LOADING (psf)	SPACING	2-0-0	CSI	DEFL	In (loc)	I/defl	L/d	PLATES	GRIP
TCCL 30.0	Plates Increase	1.33	TC 0.55	Vert(LL)	n/a	n/a	999	MT20	244/190
TCDL 15.0	Lumber Increase	1.33	BC 0.13	Vert(TL)	n/a	n/a	999		
BCLL 0.0	Rep Stress Incr	YES	WB 0.14	Horz(TL)	0.00	n/a	n/a		
BCDL 10.0	Code FRC2010/TPI2007		(Matrix)					Weight: 28 lb	FT = 0%

LUMBER
TOP CHORD 2x4 SP No.2
BOT CHORD 2x4 SP No.2
WEBS 2x4 SP No.2
OTHERS 2x4 SP No.2

BRACING
TOP CHORD
BOT CHORD

Structural wood sheathing directly applied or 6-0-0 oc purlins, except end verticals.
Rigid ceiling directly applied or 10-0-0 oc bracing.

MiTek recommends that Stabilizers and required cross bracing be installed during truss erection, in accordance with Stabilizer installation guide.

REACTIONS (lb/size) 1=185/8-0-0 (min. 0-1-8), 4=-25/8-0-0 (min. 0-1-8), 5=473/8-0-0 (min. 0-1-8)
Max Horz 1=259(LC 3)
Max Uplift 1=-219(LC 3), 4=-38(LC 6), 5=-723(LC 3)
Max Grav 1=255(LC 6), 4=37(LC 3), 5=894(LC 6)

FORCES (lb) - Max. Comp./Max. Ten. - All forces 250 (lb) or less except when shown.
WEBS 2-5=-594/772

NOTES
1) Wind: ASCE 7-10; Vult=175mph (3-second gust) Vasd=136mph; TCDL=5.0psf; BCDL=5.0psf; h=28ft; Cat. II; Exp D; Encl., GCpi=0.18; C-C Exterior(2); Lumber DOL=1.60 plate grip DOL=1.60
2) Plates checked for a plus or minus 0 degree rotation about its center.
3) Gable requires continuous bottom chord bearing.
4) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 219 lb uplift at joint 1, 36 lb uplift at joint 4 and 723 lb uplift at joint 5.
5) "Semi-rigid pitchbreaks with fixed heels" Member end fixity model was used in the analysis and design of this truss.

LOAD CASE(S) Standard

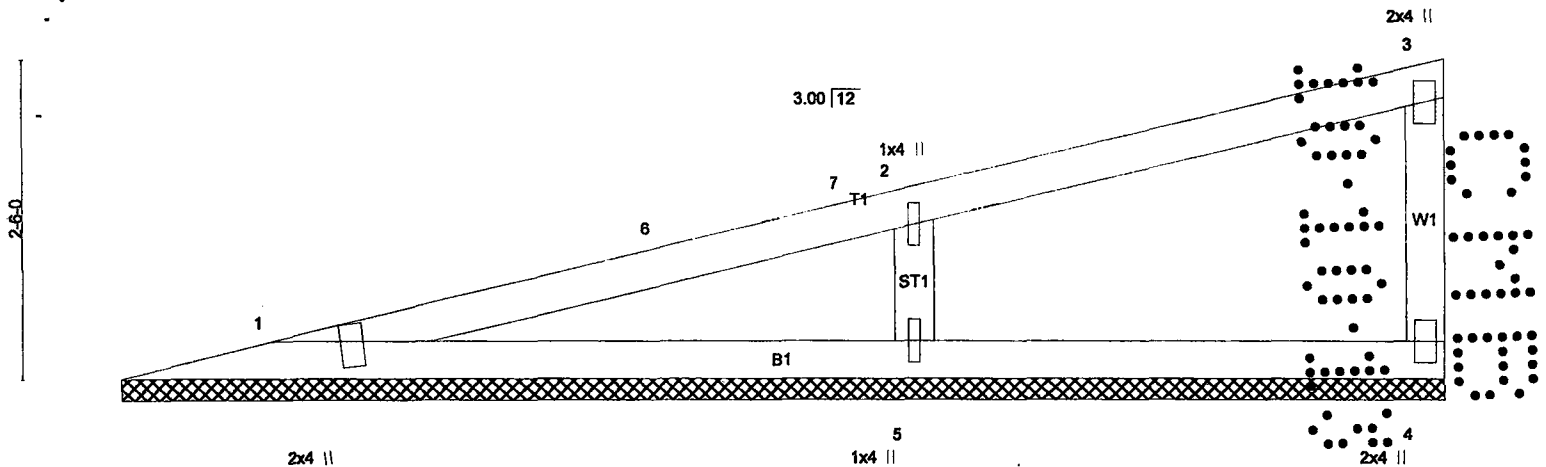
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Job 8008	Truss MV10	Truss Type Valley Truss	Qty 1	Ply 1	WADE (JI)
DECO TRUSS COMPANY INC., Princeton, FL 33032					
Job Reference (optional)					

ID: oL0A2w_01uhnDEKU8IED91zP95P-KKE0VTIbnfPwDnNgeF3Ong5F33NclS_xriqbxdyiero

10-0-0
10-0-0

Scale = 1:17.9



LOADING (psf)	SPACING	2-0-0	CSI	DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL 30.0	Plates Increase	1.33	TC 0.40	Vert(LL)	n/a	-	n/a	999	MT20	244/190
TCDL 15.0	Lumber Increase	1.33	BC 0.28	Vert(TL)	n/a	-	n/a	999		
BCLL 0.0	Rep Stress Incr	YES	WB 0.12	Horz(TL)	-0.00	4	n/a	n/a		
BCDL 10.0	Code FRC2010/TPI2007		(Matrix)						Weight: 33 lb	FT = 0%

LUMBER
TOP CHORD 2x4 SP No.2
BOT CHORD 2x4 SP No.2
WEBS 2x4 SP No.2
OTHERS 2x4 SP No.2

BRACING
TOP CHORD
BOT CHORD

Structural wood sheathing directly applied or 6-0-0 oc purlins, except end verticals.
Rigid ceiling directly applied or 10-0-0 oc bracing.

MITek recommends that Stabilizers and required cross bracing be installed during truss erection, in accordance with Stabilizer Installation guide.

REACTIONS (lb/size) 1=185/10-0-0 (min. 0-1-8), 4=128/10-0-0 (min. 0-1-8), 5=510/10-0-0 (min. 0-1-8)
Max Horz 1=299(LC 3)
Max Uplift 1=180(LC 3), 4=194(LC 3), 5=649(LC 3)
Max Grav 1=245(LC 6), 4=185(LC 6), 5=733(LC 6)

FORCES (lb) - Max. Comp./Max. Ten. - All forces 250 (lb) or less except when shown.
WEBS 2-5=592/654

NOTES

- 1) Wind: ASCE 7-10; Vult=175mph (3-second gust) Vasd=136mph; TCDL=5.0psf; BCDL=5.0psf; h=26ft; Cat. II; Exp D; Encl., GCpi=0.18; C-C Exterior(2) 1-2-3 to 4-2-3, Interior(1) 4-2-3 to 5-7-5, Exterior(2) 5-7-5 to 9-10-4; Lumber DOL=1.60 plate grip DOL=1.60
- 2) Plates checked for a plus or minus 0 degree rotation about its center.
- 3) Gable requires continuous bottom chord bearing.
- 4) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 180 lb uplift at joint 1, 194 lb uplift at joint 4 and 649 lb uplift at joint 5.
- 5) "Semi-rigid pitchbreaks with fixed heels" Member end fixity model was used in the analysis and design of this truss.

LOAD CASE(S) Standard

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Consulting Engineers
13901 S.W. 108 Av.
Miami, Florida 33176
Phone 305-253-2428 Fax 305-235-4248
Florida Professional Engineering License No. 3692
Special Inspector License No. 636

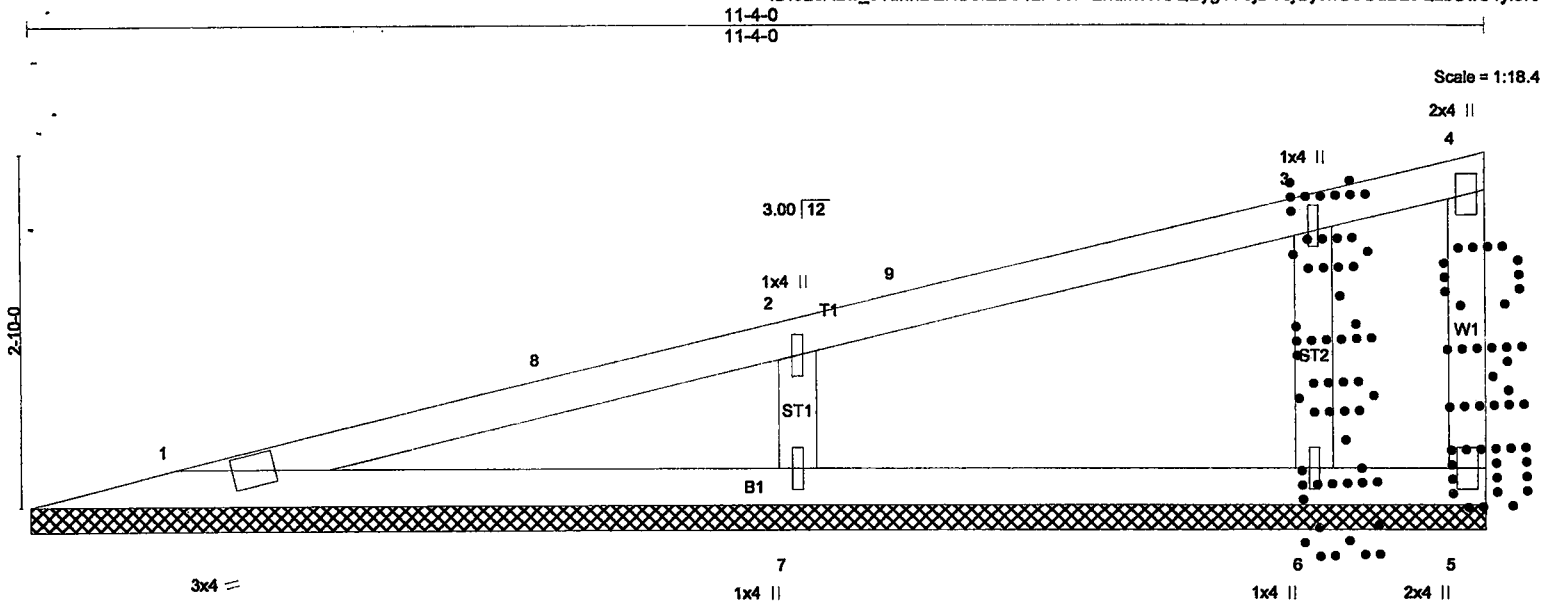


Plate Offsets (X,Y): [3:0-2-8,0-0-8]

LOADING (psf)	SPACING	2-0-0	CSI	DEFL	in	(loc)	I/defl	L/d	PLATES	GRIP
TCLL 30.0	Plates Increase	1.33	TC 0.38	Vert(LL)	n/a	-	n/a	999	MT20	244/190
TCDL 15.0	Lumber Increase	1.33	BC 0.28	Vert(TL)	n/a	-	n/a	999		
BCLL 0.0	Rep Stress Incr	YES	WB 0.10	Horz(TL)	-0.00	5	n/a	n/a		
BCDL 10.0	Code FRC2010/TPI2007		(Matrix)						Weight: 40 lb	FT = 0%

LUMBER
TOP CHORD 2x4 SP No.2
BOT CHORD 2x4 SP No.2
WEBS 2x4 SP No.2
OTHERS 2x4 SP No.2

BRACING
TOP CHORD
BOT CHORD

Structural wood sheathing directly applied or 6-0-0 oc purlins, except end verticals.
Rigid ceiling directly applied or 6-0-0 oc bracing.

MiTek recommends that Stabilizers and required cross bracing be installed during truss erection, in accordance with Stabilizer Installation guide.

REACTIONS All bearings 11'-4'-0.
(lb) - Max Horz 1=320(LC 3)
Max Uplift All uplift 100 lb or less at joint(s) 5 except 1=162(LC 3), 7=553(LC 3), 6=364(LC 3)
Max Grav All reactions 250 lb or less at joint(s) 1, 5 except 7=717(LC 6), 6=369(LC 6)

FORCES (lb) - Max. Comp./Max. Ten. - All forces 250 (lb) or less except when shown.
TOP CHORD 1-8=-256/102
WEBS 2-7=-574/552, 3-6=-335/425

NOTES
1) Wind: ASCE 7-10; Vult=175mph (3-second gust) Vasd=136mph; TCDL=5.0psf; BCDL=5.0psf; h=26ft; Cat. II; Exp D; Encl., GCpi=0.18; C-C Exterior(2) 1-2-3 to 4-2-3, Interior(1) 4-2-3 to 6-11-5, Exterior(2) 6-11-5 to 11-2-4; Lumber DOL=1.60 plate grip DOL=1.60
2) Plates checked for a plus or minus 0 degree rotation about its center.
3) Gable requires continuous bottom chord bearing.
4) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 100 lb uplift at joint(s) 5 except (it=lb) 1=162, 7=553, 6=364.
5) "Semi-rigid pitchbreaks with fixed heels" Member end fixity model was used in the analysis and design of this truss.

LOAD CASE(S) Standard

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Special Inspector License No. 636

Job 8008	Truss MV12	Truss Type Valley Truss	Qty 1	Ply 1	WADE (Ji)
DECO TRUSS COMPANY INC., Princeton, FL 33032			Job Reference (optional) 7.350 s Sep 27 2012 MiTek Industries, Inc. Fri Aug 30 08:28:01 2013 Page 1 ID: oLOA2w_01uhnDEKU8IED91zP95P-wH2eQWZyxNSWB6LD7Gi6keZs4Gmip4uPrikWcIyji		

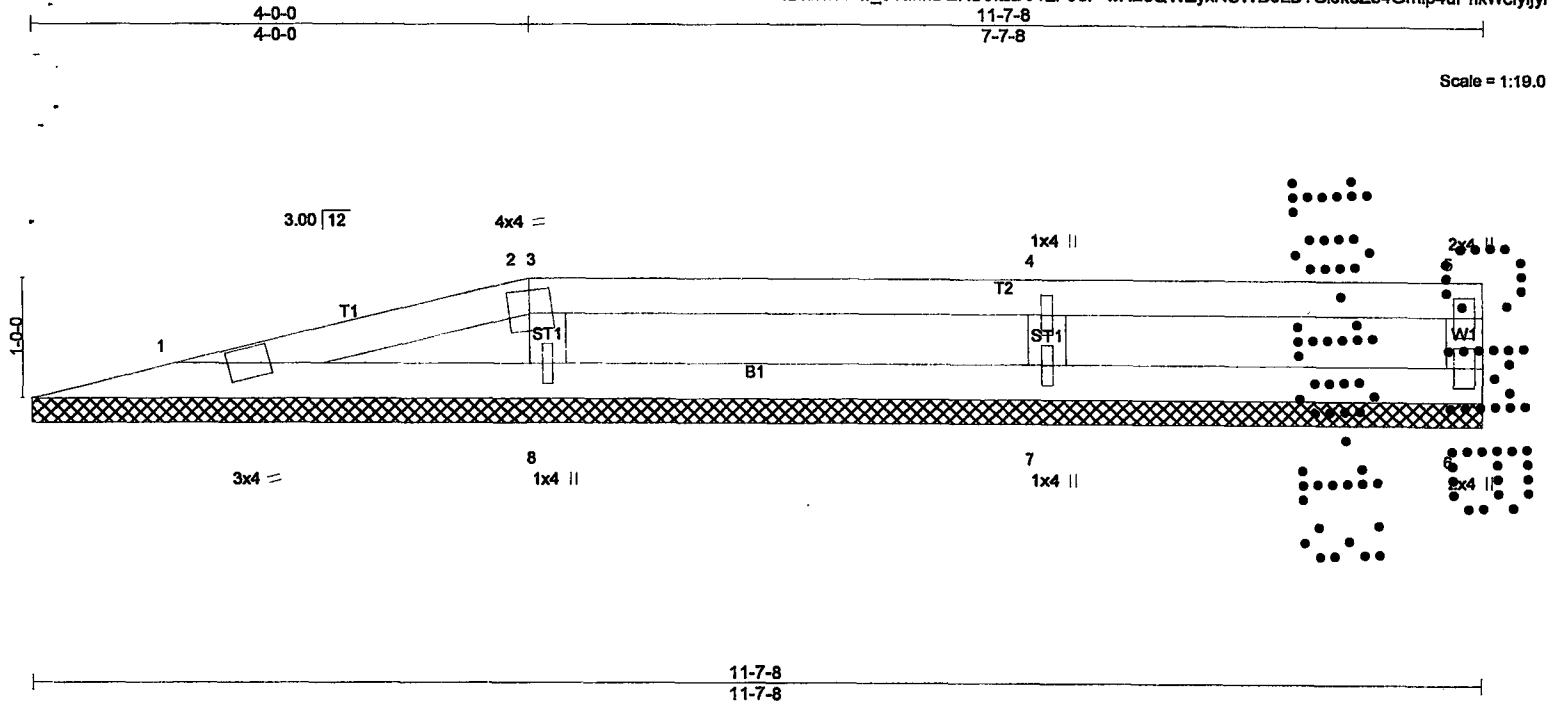


Plate Offsets (X,Y): [2:0-1-12,0-2-4]

LOADING (psf)	SPACING	2-0-0	CSI	DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL 30.0	Plates Increase	1.33	TC 0.27	Vert(LL)	n/a	-	n/a	999	MT20	244/180
TCDL 15.0	Lumber Increase	1.33	BC 0.09	Vert(TL)	n/a	-	n/a	999		
BCLL 0.0	Rep Stress Incr	YES	WB 0.09	Horz(TL)	-0.00	6	n/a	n/a		
BCDL 10.0	Code FRC2010/TPI2007		(Matrix)						Weight: 35 lb	FT = 0%

LUMBER
TOP CHORD 2x4 SP No.2
BOT CHORD 2x4 SP No.2
WEBS 2x4 SP No.2
OTHERS 2x4 SP No.2

BRACING
TOP CHORD
BOT CHORD

Structural wood sheathing directly applied or 6-0-0 oc purlins, except end verticals.
Rigid ceiling directly applied or 10-0-0 oc bracing.

MiTek recommends that Stabilizers and required cross bracing be installed during truss erection, in accordance with Stabilizer Installation guide.

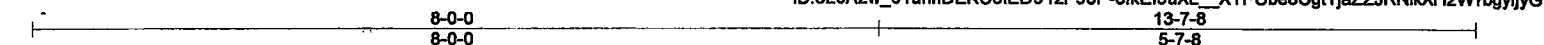
REACTIONS All bearings 11-7-8.
(lb) - Max Horz 1=100(LC 3)
Max Uplift All uplift 100 lb or less at joint(s) except 1=138(LC 3), 6=158(LC 3), 8=448(LC 3), 7=482(LC 3)
Max Grav All reactions 250 lb or less at joint(s) 1, 6 except 8=470(LC 6), 7=500(LC 6)

FORCES (lb) - Max. Comp./Max. Ten. - All forces 250 (lb) or less except when shown.
WEBS 3-8=376/462, 4-7=423/525

NOTES
1) Wind: ASCE 7-10; Vult=175mph (3-second gust) Vasd=136mph; TCDL=5.0psf; BCDL=5.0psf; h=26ft; Cat. II; Exp D; Encl., GCpi=0.18; C-C Exterior(2); Lumber DOL=1.60 plate grip DOL=1.60
2) Provide adequate drainage to prevent water ponding.
3) Plates checked for a plus or minus 0 degree rotation about its center.
4) Gable requires continuous bottom chord bearing.
5) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 138 lb uplift at joint 1, 158 lb uplift at joint 6, 448 lb uplift at joint 8 and 482 lb uplift at joint 7.
6) "Semi-rigid pitchbreaks with fixed heels" Member end fixity model was used in the analysis and design of this truss.

LOAD CASE(S) Standard

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Special Inspector License No. 636



Scale = 1:22.3

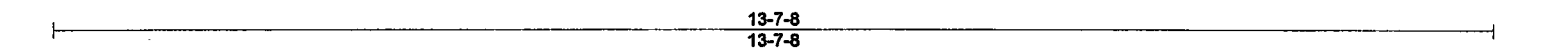
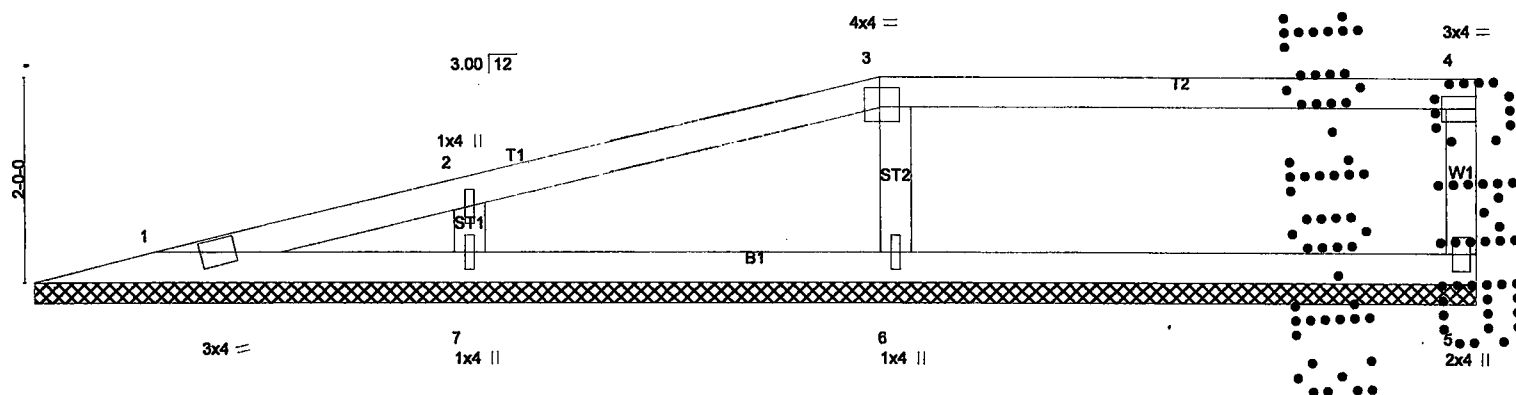


Plate Offsets (X,Y): [3:0-2-4,0-2-4], [4:Edge,0-1-8]

LOADING (psf)	SPACING	2-0-0	CSI	DEFL	in	(loc)	Vdefl	L/d	PLATES	GRIP
TCLL 30.0	Plates Increase	1.33	TC 0.56	Vert(LL)	n/a	-	n/a	999	MT20	244/190
TCDL 15.0	Lumber Increase	1.33	BC 0.15	Vert(TL)	n/a	-	n/a	999		
BCLL 0.0	Rep Stress Incr	YES	WB 0.10	Horz(TL)	-0.00	5	n/a	n/a		
BCDL 10.0	Code FRC2010/TP12007		(Matrix)						Weight: 44 lb	FT = 0%

LUMBER
TOP CHORD 2x4 SP No.2
BOT CHORD 2x4 SP No.2
WEBS 2x4 SP No.2
OTHERS 2x4 SP No.2

BRACING
TOP CHORD Structural wood sheathing directly applied or 6-0-0 oc purlins, except end verticals.
BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.

MITek recommends that Stabilizers and required cross bracing be installed during truss erection, in accordance with Stabilizer Installation guide.

REACTIONS All bearings 13-7-8.
(lb) - Max Horz 1=230(LC 3)
Max Uplift All uplift 100 lb or less at joint(s) except 1=109(LC 3), 5=304(LC 3), 7=472(LC 3), 6=494(LC 3)
Max Grav All reactions 250 lb or less at joint(s) 1 except 5=330(LC 6), 7=497(LC 6), 8=568(LC 6)

FORCES (lb) - Max. Comp./Max. Ten. - All forces 250 (lb) or less except when shown.
TOP CHORD 4-5=280/326
WEBS 2-7=415/484, 3-6=469/555

NOTES
1) Wind: ASCE 7-10; Vult=175mph (3-second gust) Vasd=136mph; TCCL=5.0psf; BCDL=5.0psf; h=26ft; Cat. II; Exp D; Encl., GCpi=0.18; C-C Exterior(2); Lumber DOL=1.60 plate grip DOL=1.60
2) Provide adequate drainage to prevent water ponding.
3) Plates checked for a plus or minus 0 degree rotation about its center.
4) Gable requires continuous bottom chord bearing.
5) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 109 lb uplift at joint 1, 304 lb uplift at joint 5, 472 lb uplift at joint 7 and 494 lb uplift at joint 6.
6) "Semi-rigid pitchbreaks with fixed heels" Member end fixity model was used in the analysis and design of this truss.

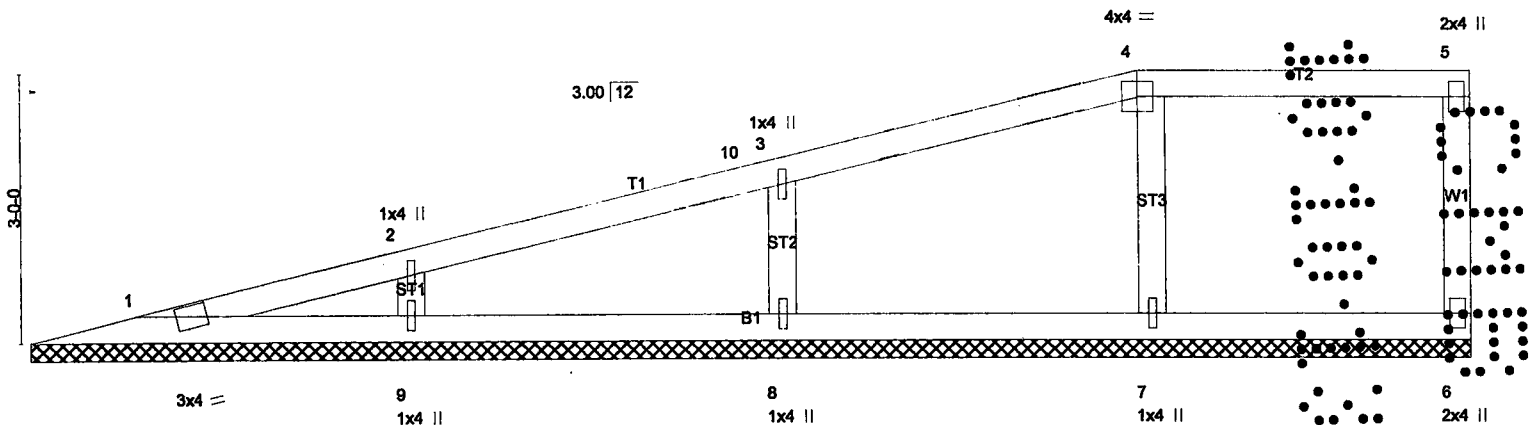
LOAD CASE(S) Standard

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Miami, Florida 33176
Phone 305-253-2428 Fax 305-235-4248
Florida Professional Engineering License No. 36921
Special Inspector License No. 636

12-0-0
12-0-0

15-7-8
3-7-8

Scale = 1:25.6



15-7-8
15-7-8

LOADING (psf)	SPACING	2-0-0	CSI	DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL 30.0	Plates Increase	1.33	TC 0.25	Plates (LL)	n/a	-	n/a	999	MT20	244/190
TCDL 15.0	Lumber Increase	1.33	BC 0.09	Vert(TL)	n/a	-	n/a	999		
BCLL 0.0	Rep Stress Incr	YES	WB 0.08	Horz(TL)	-0.00	6	n/a	n/a		
BCDL 10.0	Code FRC2010/TP12007		(Matrix)						Weight: 55 lb	FT = 0%

LUMBER
TOP CHORD 2x4 SP No.2
BOT CHORD 2x4 SP No.2
WEBS 2x4 SP No.2
OTHERS 2x4 SP No.2

BRACING
TOP CHORD
BOT CHORD

Structural wood sheathing directly applied or 6-0-0 oc purlins, except end verticals.
Rigid ceiling directly applied or 10-0-0 oc bracing.

MITek recommends that Stabilizers and required cross bracing be installed during truss erection, in accordance with Stabilizer Installation guide.

REACTIONS All bearings 15-7-8.
(lb) - Max Horz 1=314(LC 3)
Max Uplift All uplift 100 lb or less at joint(s) 1 except 6=170(LC 3), 8=418(LC 3), 9=350(LC 3), 7=383(LC 3)
Max Grav All reactions 250 lb or less at joint(s) 1, 6 except 8=548(LC 6), 9=501(LC 6), 7=445(LC 6)

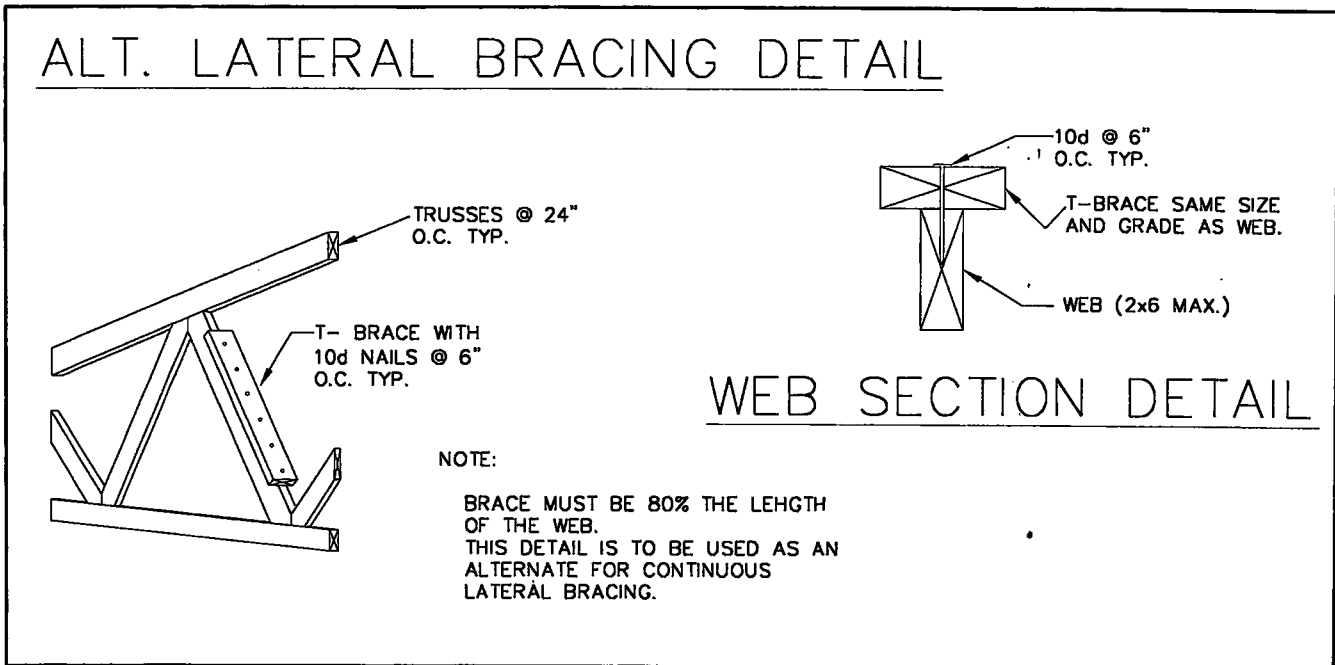
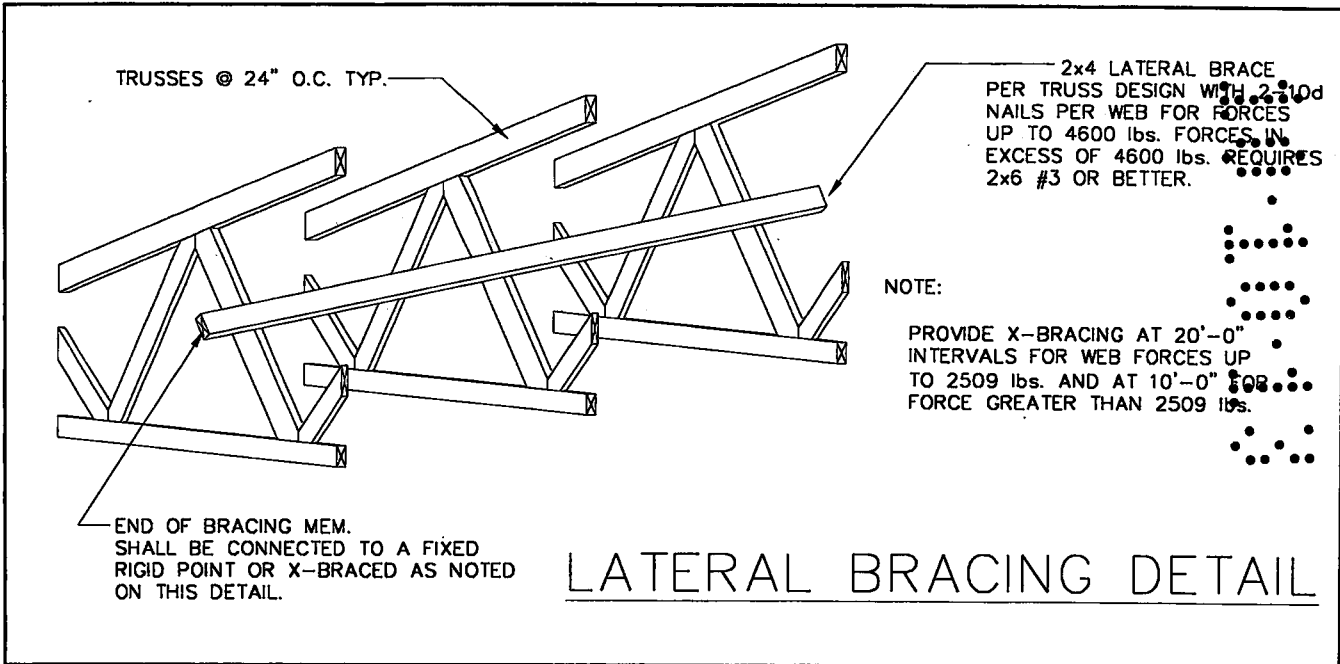
FORCES (lb) - Max. Comp./Max. Ten. - All forces 250 (lb) or less except when shown.
WEBS 3-8=469/463, 2-9=411/364, 4-7=368/425

NOTES
1) Wind: ASCE 7-10; Vult=175mph (3-second gust) Vasd=136mph; TCDL=5.0psf; BCDL=5.0psf; h=26ft; Cat. II; Exp D; Encl., GCpl=0.18; C-C Exterior(2) 1-2-3 to 4-1-12, Interior(1) 4-1-12 to 7-9-1, Exterior(2) 7-9-1 to 12-0-0; Lumber DOL=1.60 plate grip DOL=1.60
2) Provide adequate drainage to prevent water ponding.
3) Plates checked for a plus or minus 0 degree rotation about its center.
4) Gable requires continuous bottom chord bearing.
5) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 100 lb uplift at joint(s) 1 except (it=lb) 6=170, 8=418, 9=350, 7=383.
6) "Semi-rigid pitchbreaks with fixed heels" Member end fixity model was used in the analysis and design of this truss.

LOAD CASE(S) Standard

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Miami, Florida 33176
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Florida Professional Engineering License No. 3692.
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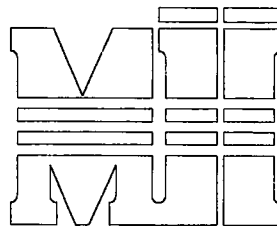
STANDARD LATERAL WEB BRACING



MINIMUM GRADE OF LUMBER
T.C.....SEE STRUCTURAL SHEET.
B.C.....SEE STRUCTURAL SHEET.
WEBS...SEE STRUCTURAL SHEET.

TPI-2007

Revised:
7/7/94
03/2012



MITek Industries Inc.

Mahmoud Zolfaghari
13901 S.W. 108 Ave.
Miami, FL. 33176
305-253-2428
P.E. No. 36921

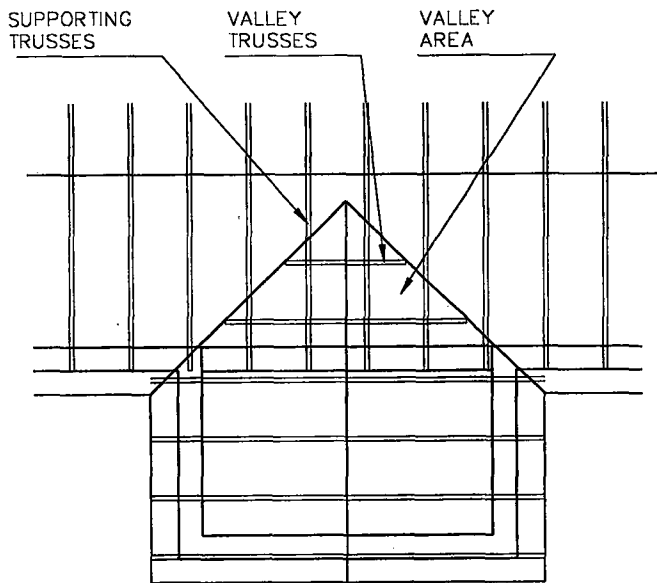
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9/3/13

Approved for MITek Industries Inc.

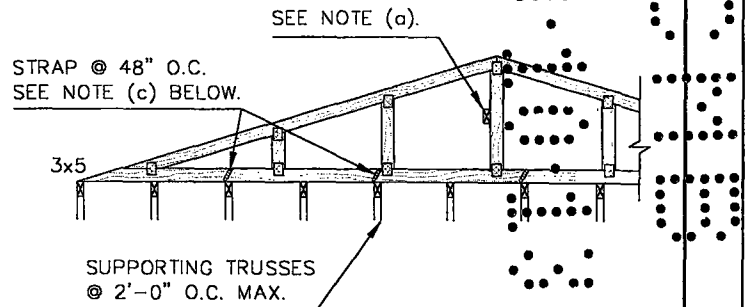
LOADING (PLF)
L. D.
T.C. 30 15
B.C. 0 10
SPACING: 24 INCH O/C.

STR. INCR.: 33%
DRAWN BY: G.L.H.
CHECKED BY: J.A.I.
REP. STRESS: YES

STANDARD ROOF VALLEY DETAIL

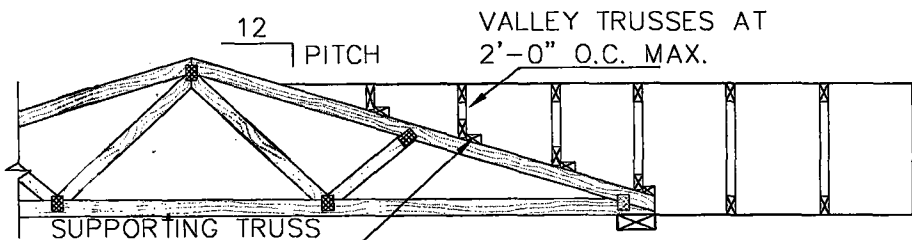


PARTIAL ROOF LAYOUT



NOTES:

- (a) Provide continuous bracing on verticals over 6'-3". Connect bracing to verticals w/2-8d nails and bracing must be tied to a fixed point at each end.
- (b) Max. spacing for verticals studs = 8'-0". On trusses with spans over 24'-0" the verticals should be spaced at 6'-0" o.c. max.
- (c) Conn. for wind uplift w/ min. 1 1/4", 16 ga. twist strap at 4'-0" intervals w/4 10d nails each side of strap.
Max. 175 mph wind speed 20'-0" max. wall height. (ASCE 7-10).



6" WEDGE NAILED TO TRUSS W/2-8d TOE NAILS OR BEVEL CUT BOTTOM CHORD OF VALLEY TRUSS.

Note: Plywood sheathing may be extended below valley trusses. Provide opening for straps to connect to trusses below.

MINIMUM GRADE OF LUMBER

REFER TO ENGINEERING SHEETS.

FBC-2010

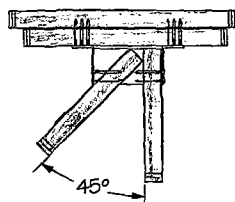
LOADING (PLF)
L. D.
T.C. 30 15
B.C. 0 10
SPACING: 24 INCH O/C.

STR. INCR.: 33%
DRAWN BY:
CHECKED BY:
REP. STRESS: YES

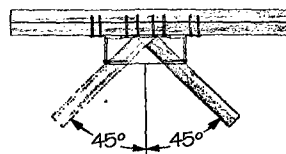
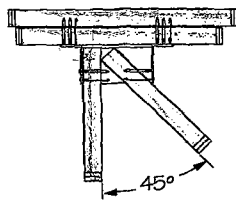
DECO TRUSS COMPANY
13980 S.W. 252 ST.
PRINCETON, FL. 33032

Mahmoud Zolfaghari
13901 S.W. 108 Ave.
Miami, FL. 33176
305-253-2428
P.E. No. 36921

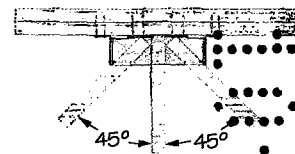
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9/3/13



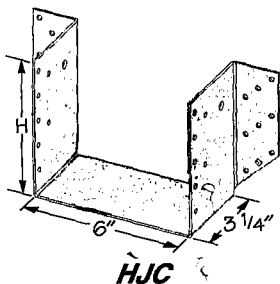
Typical **HJC/HTHJ** installation top view



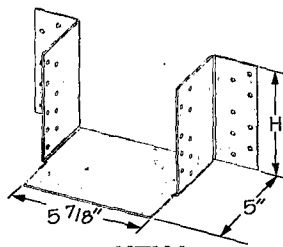
Typical **HHC** installation top view



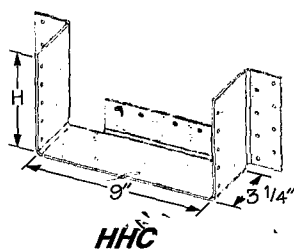
Typical **HJHC** installation top view



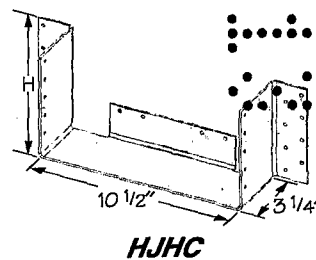
HJC



HTHJ



HHC



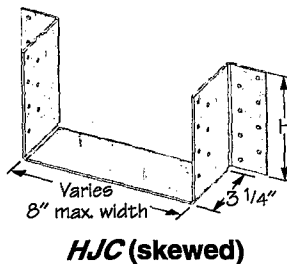
HJHC

Description	USP Stock No.	Ref. No.	Steel Gauge	H	Fastener Schedule					Allowable Loads (Lbs.) ²								Code Ref.
					Carrying Member ³		Carried Member			DF-L / SP				S-P-F				
					Qty	Type	per Hip	per Jack	Type	Floor	Roof	Uplift ¹	Floor	Roof	Uplift ¹			
					Qty	Type	Qty	Qty	Type	100%	115%	125%	160%	100%	115%	125%	160%	
2 x 6 right / left	HJC26	---	12	5-3/8	16	16d	5	7	10d	2385	2740	2980	1840	2065	2375	2580	1545	11, F6, F12, D3
2 x 8 right / left	HJC28	---	12	7-1/8	20	16d	6	8	10d	2980	3425	3505	1840	2580	2945	2945	1545	
2 x 6 terminal	HHC26	---	12	5-7/16	20	16d	5	---	10d	2980	3425	3505	1015	2580	2945	2945	1545	
2 x 8 terminal	HHC28	---	12	7-3/16	24	16d	6	---	10d	3505	3505	3505	1840	2945	2945	2945	1545	130
2 x 6 terminal	HJHC26	MTHM	12	5-7/16	20	16d	5	2	10d	2980	3425	3505	1840	2580	2945	2945	1545	
2 x 8 terminal	HJHC28	---	12	7-3/16	24	16d	6	2	10d	3505	3505	3505	1840	2945	2945	2945	1545	
2 x 6 terminal	HTHJ26-18	---	18	5	16	16d	7	5	16d	2190	2520	2740	1790	1870	2155	2340	1505	11, F12

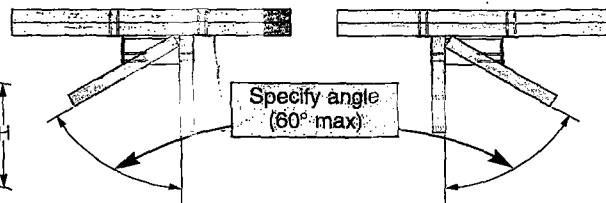
- 1) Uplift loads have been increased 60% for wind or seismic loads; no further increase shall be permitted.
- 2) Loading published for total load of hip / jack connection.
- 3) Minimum nail penetration is 1-5/8" for 16d nails.

HJC Specialty Options Chart

Option	Hip Truss Skew
Range	30° to 60°
Allowable Loads	100% of table load
Ordering	Add SK, angle of hip required, to product number. Ex. HJC26-SK55



HJC (skewed)



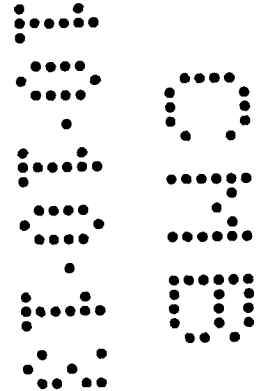
Typical **HJC (skewed)** installation with alternate skew angle top view

DECO

TRUSS COMPANY, INC.

Trusses & Building Materials

13980 SW 252 Street, Princeton, Florida 33032
Telephone: (305) 257-1910 Fax: (305) 257-1911



HIP / JACK HANGER DETAIL SHEET

1. FOR HIP CORNER JACK 5'-0" AND 7'-0" SETBACK, USE USP HJC26 UNIVERSAL HIP HANGER, ON BOTTOM CHORD. TOP CHORDS NAIL WITH THREE (3) -16D NAILS AND USE USP RT7 (L/R) HURRICANE CLIP

FOR HIP CORNER JACK 9'-0" AND 11'-0" SETBACK, USE USP HJC28 UNIVERSAL HIP HANGER ON BOTTOM CHORD. TOP CHORDS NAIL WITH THREE (3) -16D NAILS AND USE USP RT7 (L/R) HURRICANE CLIP
2. FOR 1'-0" TO 9'-0" SIDE JACKS, NAIL TOP & BOTTOM CHORD WITH THREE (3) - 16D NAILS AND USE USP RT7 (L/R) HURRICANE CLIP AT TOP & BOTTOM.
3. FOR COMMON JACKS 5'-0" TO 7'-0", USE USP CLPBF BUTTERFLY HANGER ON BOTTOM CHORD AND NAIL TOP CHORD WITH THREE (3) - 16D NAILS AND USE USP RT7 (L/R) HURRICANE CLIP AT TOP
4. FOR COMMON JACKS 9'-0" TO 11'-0", USE USP THD 26 HANGER ON BOTTOM CHORD AND NAIL TOP CHORD WITH THREE (3) - 16D NAILS AND USE USP RT7 (L/R) HURRICANE CLIP AT TOP

NOTE:

Refer to attached Miami-Dade County Product and/or Florida Approvals for nailing and proper use of hangers.

Hanger / Strap I.D. Number	State of Florida or Miami-Dade County Approval Number
HJC26 & HJC28	Miami-Dade Approval Number 11-0510.01
SKH26 L/R	Miami-Dade Approval Number 11-0510.01
RT7 - Hurricane Clips	Miami-Dade Approval Number 11-0510.01
CLPBF - Butterfly Hanger	Miami-Dade Approval Number 08-0206.07

HJC HIP/JACK ALLOWABLE LOADS

STOCK NUMBER	STEEL GAGE	DIMENSIONS (inches)			FASTENER SCHEDULE ^{1,4}					SP ALLOWABLE LOADS (lbs.) ^{3,4}			
		W	H	D	Carrying Truss		Carried Trusses			Download ²		Uplift ²	
					Qty	Type	Jack Qty	Hip Qty	Type	$C_D = 1.0$	$C_D = 1.15$	$C_D = 1.25$	$C_D = 1.6$
HJC26	12	6	5 3/8	3 1/4	16	16d Common	7	5	10d Common	2080	2090	2090	2005
HJC28	12	6	7 1/8	3 1/4	20	16d Common	8	6	10d Common	3220	3705	3985	2010

FOR SI: 1 inch = 25.4 mm, 1 lbf = 4.45 N, 1 psi = 6.89 kPa

¹A 10d Common Nail is a nail with a diameter of 0.148" and length of 3".

A 16d Common Nail is a nail with a diameter of 0.162" and a length of 3 1/2".

²Loads have been increased as shown in accordance with code.

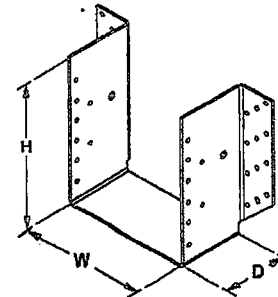
15% and 25% for snow and construction loads. No further increase is permitted.

60% for wind or seismic loading. No further increase is permitted.

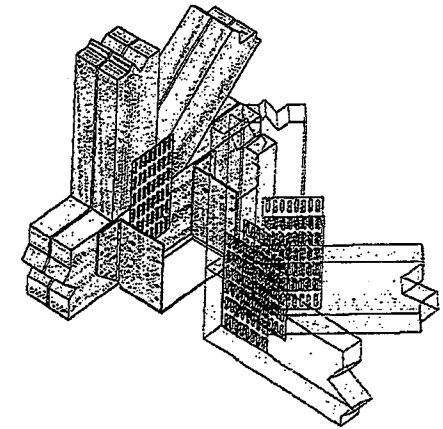
³The lumber species is Southern Pine

⁴The published load is for the total of the hip at 45 degrees and jack at 90 degrees combined.

⁵The minimum header thickness shall be 2 inches for the 16d common nails.



HJC



TYPICAL HJC INSTALLATION

JUS SLANT NAIL JOIST HANGER ALLOWABLE LOADS

STOCK NUMBER	STEEL GAGE	DIMENSIONS (inches)					FASTENER SCHEDULE ^{1,2}				SP ALLOWABLE LOADS (lbs.) ⁴			
		W	H	D	A	Qty	Header		Joist		Download ³		Uplift ^{3,5}	
							Qty	Type	Qty	Type	$C_D = 1.0$	$C_D = 1.15$	$C_D = 1.25$	$C_D = 1.6$
JUS24	18	1 9/16	3 1/8	1 3/4	1	4	10d Common	2	10d Common	710	815	890	N/A	
JUS26	18	1 9/16	4 13/16	1 3/4	1	4	10d Common	4	10d Common	925	1085	1080	1040	
JUS28	18	1 9/16	6 5/8	1 3/4	1	6	10d Common	4	10d Common	1170	1350	1485	1160	
JUS210	18	1 9/16	7 3/4	1 3/4	1	8	10d Common	4	10d Common	1420	1635	1700	1115	

For SI: 1 inch = 25.4 mm, 1 lbf = 4.45 N, 1 psi = 6.89 kPa

¹A 10d Common nails is 3 inches long and 0.148 inches in diameter

²The 10d Common Nails nails driven into the joist shall be installed at 30 to 45 degrees horizontally toward the header.

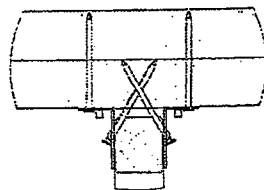
³Loads have been increased as shown in accordance with code.

15% and 25% for snow and construction loads. No further increase is permitted.

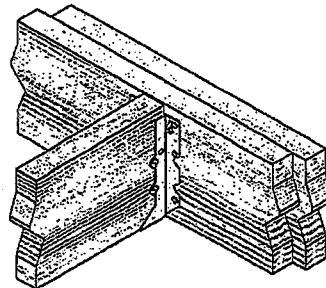
60% for wind or seismic loading. No further increase is permitted.

⁴The lumber species is Southern Pine

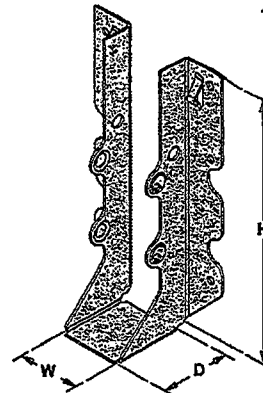
⁵Uplift loads for connectors listed as N/A had an uplift capacity less than the required 700 pounds.



SLANT NAIL DETAIL



TYPICAL JUS INSTALLATION



JUS

NOA No. 11-0510.01
Expiration Date: June 04, 2016
Approval Date: July 21, 2011

PRODUCT RENEWED
as complying with the Florida
Building Code
Acceptance No 11-0510.01
Expiration Date 06/04/2016
By *[Signature]*
Miami Dade Product Control

UNITED STEEL PRODUCTS COMPANY	
14305 SOUTHCROSS DRIVE - SUITE 200 BURNSVILLE, MN 55306 PH: 800-328-5934	
NAME:	FACE MOUNT HANGERS HJC JUS
DATE:	3/28/2011 STEVEN A. BREKKE PROFESSIONAL ENGINEER LICENSE NO. 70432
SHEET:	DRAWING NO. 1 OF 2 MD-HJC-JUS



SKH SKEWED HANGER ALLOWABLE LOADS

STOCK NUMBER	STEEL GAGE	DIMENSIONS (inches)			FASTENER SCHEDULE ¹				SP ALLOWABLE LOADS (lbs) ³			
		W	H	D	Header		Joist		Download ²			Uplift ²
					Face	Type	Qty	Type	C _D = 1.0	C _D = 1.15	C _D = 1.25	C _D = 1.6

For SI: 1 inch = 25.4 mm, 1 psi = 6.89 kPa, 1 lbf = 4.45 N

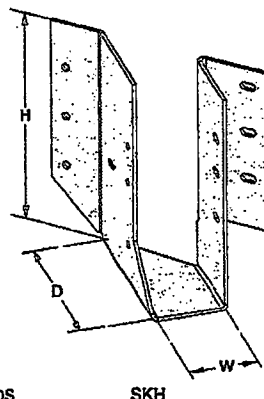
¹A 10dx1-1/2" Common nail is 1 1/2 inches long and 0.148 inches in diameter

The 16d Common nail is 0.162 inches in diameter by 3 1/2 inches long.

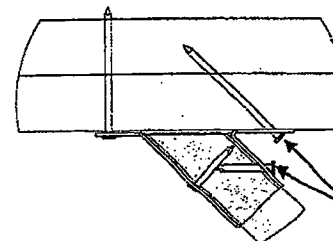
²Loads have been increased as shown in accordance with code.

15% and 25% for snow and construction loads. No further increase is permitted.
60% for wind or seismic loading. No further increase is permitted.

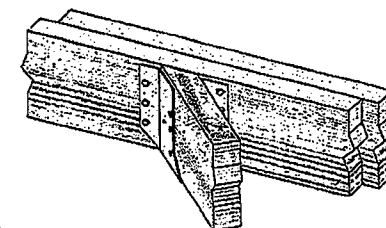
³The lumber species is Southern Pine



SKH



SKH26R INSTALLATION
TOP VIEW



SKH26R INSTALLATION

JL JOIST HANGER ALLOWABLE LOADS

STOCK NUMBER	STEEL GAGE	DIMENSIONS (inches)			FASTENER SCHEDULE ¹				ALLOWABLE LOADS (lbs) ³			
		W	H	D	Header		Joist		Download ²			Uplift ^{2,4}
					Qty	Type	Qty	Type	C _D = 1.0	C _D = 1.15	C _D = 1.25	C _D = 1.6

For SI: 1 inch = 25.4 mm, 1 lbf = 4.45 N, 1 psi = 6.89 kPa.

¹A 10d Common nail is 3 inches long and 0.148 inches in diameter

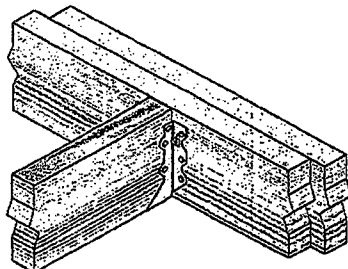
A 10dx1 1/2 nail is 1 1/2 inches long and 0.148 inches in diameter

²Loads have been increased as shown in accordance with code.

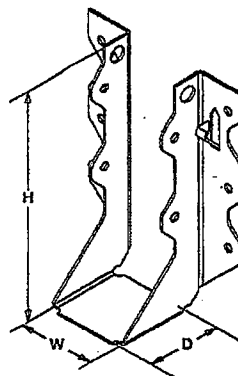
15% and 25% for snow and construction loads. No further increase is permitted.
60% for wind or seismic loading. No further increase is permitted.

³The lumber species is Southern Pine

⁴Uplift loads for connectors listed as N/A had an uplift capacity less than the required 700 pounds.



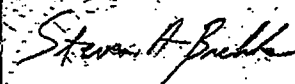
TYPICAL JL INSTALLATION



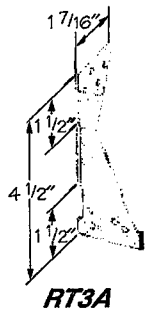
JL

NOA No. 11-0510.01
Expiration Date: June 04, 2016
Approval Date: July 21, 2011

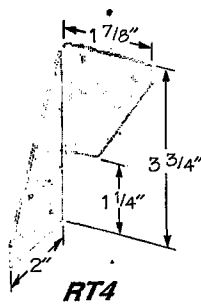
PRODUCT RENEWED
as complying with the Florida
Building Code
Acceptance No. 11-0510.01
Expiration Date 06/04/2016
By *[Signature]*
Master Trade Product Control

 3/28/11		UNITED STEEL PRODUCTS COMPANY	
		14305 SOUTHCROSS DRIVE - SUITE 200 BURNSVILLE, MN 55306 PH: 800-328-5934	
NAME:	FACE MOUNT HANGERS SKH JL		
DATE:	3/28/2011	STEVEN A. BREKKE PROFESSIONAL ENGINEER LICENSE NO. 70432	
SHEET:	2 OF 2	DRAWING NO.: MD-SKH-JL	

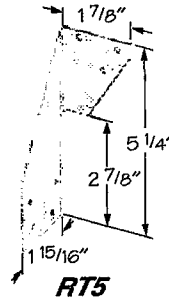
Typical **RT3A**
truss/rafter
to plate installation



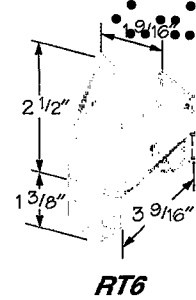
Typical **RT4**
truss/rafter to
plate installation



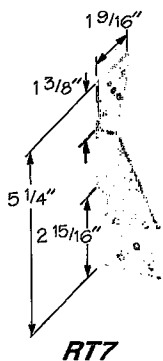
Typical **RT5**
truss/rafter
to double
plate installation



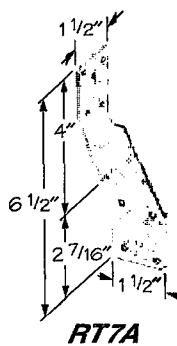
Typical **RT6**
truss/rafter
to double
plate installation



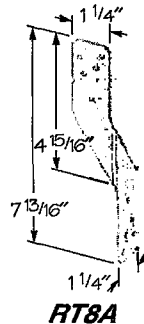
Typical **RT7**
truss/rafter
to double
plate installation



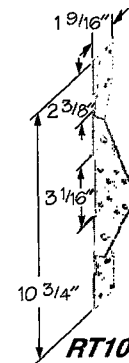
Typical **RT7A**
truss/rafter
to double
plate installation



Typical **RT8A**
stud to double
plate installation



Typical **RT10**
truss/rafter
to double plate to
stud installation



USP Stock No.	Ref. No.	Steel Gauge	Fastener Schedule ^{2,3,4}						Allowable Loads (Lbs.) ¹					Code Ref.
			Truss/Rafter		Top Plate		Masonry Block		Lateral 160%			Uplift		
			Qty	Type	Qty	Type	Qty	Type	F1	F2	F3	DF-L / SP	S-P-F	
												160%	160%	
RT16M	HM9KT	18	9	10d x 1-1/2	--	--	4	1/4" x 1-3/4" Tapcon	630	480	115	1395	1395	F19
			9	10d x 1-1/2	4	16d	2	1/4" x 1-3/4" Tapcon	--	--	--	1360	1360	

- 1) Allowable loads have been increased 60% for wind or seismic loads; no further increase shall be permitted.
- 2) 10d x 1-1/2 nails are 9 gauge (0.148" diameter) by 1-1/2" long.
- 3) Install with 1/4" x 1-3/4" Tapcon® Concrete Screws in accordance to manufacturer's installation specifications.
- 4) Fasteners to be installed to fully grouted and reinforced concrete masonry.

HURRICANE/SEISMIC ANCHORS - HC520, HCPRS, HHCP2, & RT SERIES

These anchors tie trusses and rafters to top plates and may be used to tie wood framing members to resist uplift and lateral forces.

Materials: See chart

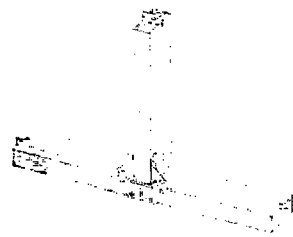
Finish: G90 galvanizing; RT7A-GC & RT15-GC - Gold Coat

Options: HHCP2, RT3A, RT4, RT5, RT7, RT7A, RT10, RT15, RT8A, RT16A, and RT16-2 are available in Triple Zinc. To order, add **7Z** to stock number, as in **RT10-TZ**. RT3A, RT4, RT5, RT7, RT8A, RT10, RT16A, and RT16-2 are available in Stainless Steel. To order, add **SS** to stock number, as in **RT7-SS**.

Codes: ESR-1881, **ESR-1465**, 2031C, FL565, FL821, FL817, FL859, Dade County, FL 07-0306.10, L.A. City RR 25779



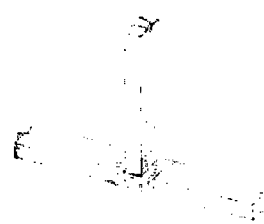
**Typical HC520
gable brace installation**



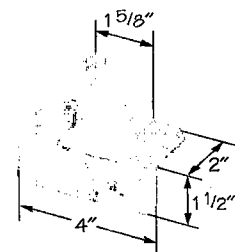
**Typical HCPRS
stud to plate installation**



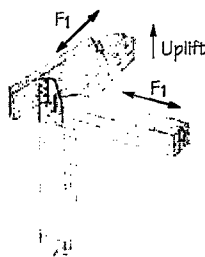
HCPRS



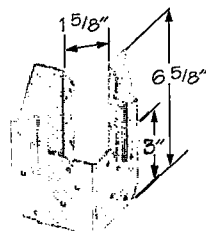
**Typical HC520
stud to plate installation**



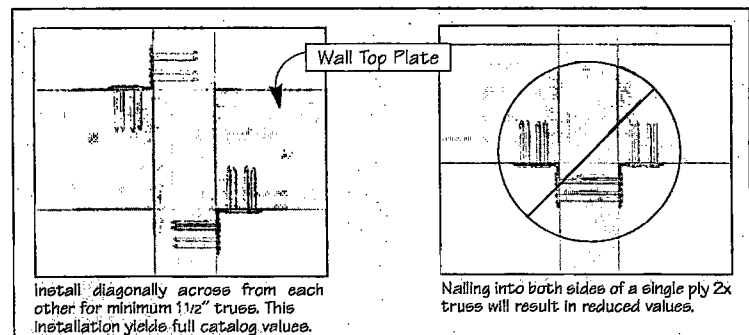
HC520



**Typical HHCP2
truss/rafter to double plate
corner installation**



HHCP2



Install diagonally across from each other for minimum 1 1/2" truss. This installation yields full catalog values.

Nailing into both sides of a single ply 2x truss will result in reduced values.

**Hurricane Anchor installation to achieve twice the load
(Top View)**

Materials: See chart

Finish: G90 galvanizing

Options: See Specialty Options Chart. Rough/Full sizes available.

THD hangers with widths greater than 3" can have one flange inverted with no load reduction.

Specify right (R) or left (L).

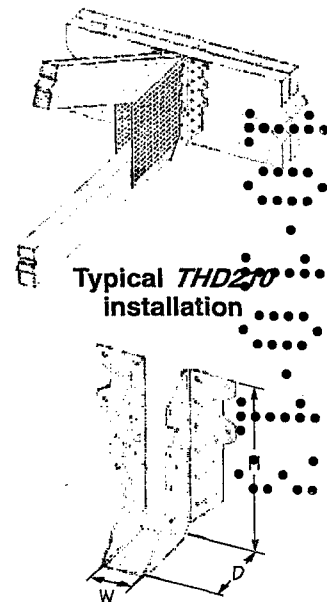
Codes: ESR-1781, FL9835, FL13285,

Dade County, FL 06-0921.05, L.A. City RR 25843

Installation:

- Use all specified fasteners. See Product Notes, page 11.

Some model designs
may vary from
illustration shown



Typical THD210
installation

THD28

See EWP applications pages 121-122.

Joist / Truss Size	USP Stock No.	Ref. No.	Steel Gauge	Dimensions			Fastener Schedule ^{2,3}				Allowable Loads (Lbs.)				Code Ref.
				W	H	D	Header		Truss		DF-L / SP				
							Qty	Type	Qty	Type	Floor	Roof		Uplift ¹	
											100%	115%	125%	160%	
2 x 6 - 8	THD26	HTU26	16	1-5/8	5-1/16	3	18	16d	12	10d x 1-1/2	2485	2855	3060	2170	5, F18, F30, D2, R5
2 x 8 - 10	THD28	HTU28	16	1-5/8	7	3	28	16d	16	10d x 1-1/2	3865	3965	3965	2330	
2 x 10 - 12	THD210	HTU210	16	1-5/8	9	3	38	16d	20	10d x 1-1/2	5075	5115	5115	3095	
(2) 2 x 6 - 8	THD26-2	HHUS26-2, HTU26-2	14	3-7/16	5-3/8	3	18	16d	12	10d	2540	2920	3175	2285	
(2) 2 x 8 - 10	THD28-2	HHUS28-2, HTU28-2	14	3-7/16	7-1/8	3	28	16d	16	10d	3950	4540	4935	2595	
(2) 2 x 10 - 12	THD210-2	HHUS210-2, HTU210-2	14	3-7/16	9-1/8	3	38	16d	20	10d	5360	6160	6700	3810	
4 x 6 - 8	THD46	HHUS46	14	3-5/8	5-5/16	3	18	16d	12	10d	2540	2920	3175	2285	
4 x 8 - 10	THD48	HHUS48	14	3-5/8	7-1/16	3	28	16d	16	10d	3950	4540	4935	2595	
4 x 10 - 12	THD410	HHUS410	14	3-5/8	9-1/16	3	38	16d	20	10d	5360	6160	6700	3810	
4 x 12 - 14	THD412	--	14	3-5/8	11	3	48	16d	20	10d	6770	7045	7045	3810	
4 x 14 - 16	THD414	--	14	3-5/8	12-7/8	3	58	16d	20	10d	7045	7045	7045	3810	5, F30, R5
(3) 2 x 10 - 12	THD210-3	HHUS210-3	12	5-1/8	9	3	38	16d	20	10d	5660	6510	7045	3850	5, F18, F30, D2, R5
6 x 10 - 12	THD610	HHUS5.50/10	12	5-1/2	9	3	38	16d	20	10d	5660	6510	7080	3410	5, F18, F10, F30, D2, R5
6 x 12 - 14	THD612	--	12	5-1/2	11	3	48	16d	20	10d	7150	8225	8415	4065	
6 x 14 - 16	THD614	--	12	5-1/2	12-7/8	3	58	16d	20	10d	8415	8415	8415	4085	5, F30, R5
7 x 9-1/4 - 14	THD7210	HHUS7.25/10	12	7-1/4	9	3	38	16d	20	10d	5660	6510	7080	3410	5, F18, F30, D2, R5

1) Uplift loads have been increased 60% for wind or seismic loads; no further increase shall be permitted.

2) 10d x 1-1/2 nails are 9 gauge (0.148" diameter) by 1-1/2" long.

3) Minimum nail penetration is 1-5/8" for 16d nails.

Specialty Options Chart – refer to Specialty Options pages 194 to 195 for additional details.

Option	Skewed ^{1,3}	Sloped Seat ^{2,3}	Sloped / Skewed ^{1,2,3}	Inverted Flange
Range	1° to 45°	1° to 45°	See Sloped Seat and Skewed	Not available in widths < 3". Widths ≥ 3 can have one flange inverted.
Allowable Loads	85% of table load	65% of table load	65% of table load	100% of table load. 65% of table load when nailing into the support members end grain.
Ordering	Add SK, angle required, and right (R) or left (L), to product number. Ex. THD410-SK45R	Add SL, slope required, and up (U) or down (D), to product number. Ex. THD410-SL30D	See Sloped Seat and Skewed. Ex. THD410-SK45RSL30D	Add 1IF, one flange, right (R) or left (L), to product number. Ex. THD4101IFR

1) Skewed hangers with skews greater than 15° may have all joist nailing on outside flange.

2) Sloped or sloped / skewed hangers with slopes greater than 15° may have additional joist nails.

3) All sloped, skewed, or combinations require bevel cut or square cut on joist in all applications.

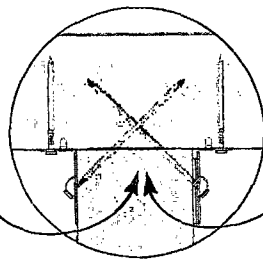
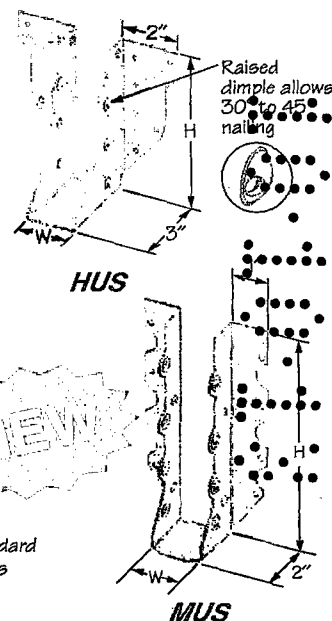
The MUS & HUS hanger series offers double shear nailing. USP's raised dimple allows for 30° to 45° nailing through the joist into header, resulting in higher loads and less nailing.

Materials: See chart
Finish: G90 galvanizing
Codes: ESR-1881, FL9835,
 Dade County, FL 06-0921.05

Installation:

- Use all specified fasteners. See Product Notes, page 11.
 - Joist nails must be driven in at a 30° to 45° angle through the joist or truss into the header to achieve listed loads.
- Standard length "double shear" nails must be used to achieve listed load values.**

Typical **HUS** installation
(**MUS** similar)



Double shear nail design features fewer nails and faster installation.

Uses standard length nails

See EWP applications pages 121-122.

Joist / Truss Size	USP Stock No.	Ref. No.	Steel Gauge	Dimensions		Fastener Schedule ²				Allowable Loads (Lbs.) ⁴								Code Ref.
				W	H	Header		Truss ³		DF-L / SP				S-P-F				
						Qty	Type	Qty	Type	Floor	Roof	Uplift ¹	Floor	Roof	Uplift ¹			
				100%	115%	125%	160%	100%	115%	125%	160%	100%	115%	125%	160%			
2 x 6 - 8	MUS26	MUS26	18	1-9/16	5-1/16	6	10d	6	10d	1285	1475	1605	865	1100	1265	1375	725	110
	HUS26	HUS26	16	1-5/8	5-7/16	14	16d	6	16d	2635	3030	3295	1925	2260	2600	2810	1615	6, F15, F18, D2, R13
2 x 8 - 10	MUS28	MUS28	18	1-9/16	7-1/16	8	10d	8	10d	1710	1970	2140	1230	1465	1685	1830	1035	110
	HUS28	HUS28	16	1-5/8	7-3/16	22	16d	8	16d	3970	4345	4345	2570	3410	3650	3650	2160	6, F15, F18, D2, R13
2 x 10 - 12	HUS210	HUS210	16	1-5/8	9-3/16	30	16d	10	16d	5310	5510	5510	3205	4095	4420	4630	2690	
1-3/4 x 5-1/2 - 7-1/4	HUS175	HU1.81/5	16	1-13/16	5-3/8	14	16d	6	16d	2635	3030	3295	1925	2280	2600	2810	1615	
1-3/4 x 7-1/4 - 11-1/4	HUS177	--	16	1-13/16	7-1/8	22	16d	8	16d	3975	4345	4345	2570	3410	3650	3650	2160	
1-3/4 x 9-1/4 - 14	HUS179	HUS1.81/10	16	1-13/16	9-1/8	30	16d	10	16d	5310	5510	5510	3205	4410	4630	4630	2690	

1) Uplift loads have been increased 60% for wind or seismic loads; no further increase shall be permitted.

2) Minimum nail penetration is 1-5/8" for 16d nails.

3) Nails must be driven at a 30° to 45° angle through joist or truss into header to achieve the table loads.

4) HUS175, HUS177, and HUS179 load values assume the joist is 1-3/4" wide and has a bearing strength of not less than 675 psi.

New products or updated product information are designated in bold font.

BUTTERFLY HANGER - CLPBF

The butterfly hanger's flared header flange design allows for added nailing. Excellent truss-to-truss hanger for 2x4 purlin or truss bottom chords.

Materials: 18 gauge
Finish: G90 galvanizing
Codes: ESR-1881, FL574, Dade County, FL 08-0206.07

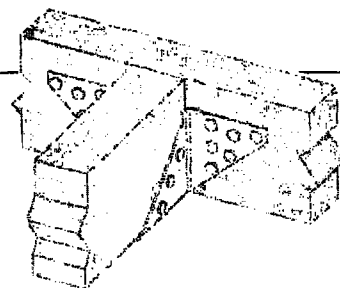
Installation:

- Use all specified fasteners. See Product Notes, page 11.

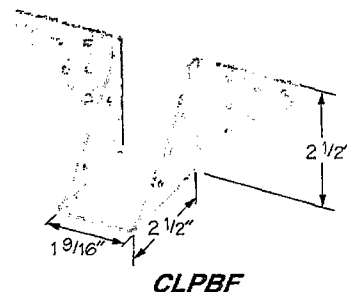
Joist Size	USP Stock No.	Ref. No.	Steel Gauge	Fastener Schedule ²				Allowable Loads (Lbs.)				Code Ref.
				Header		Joist		DF-L / SP				
				Qty	Type	Qty	Type	Floor	Roof		Uplift ¹	
								100%	115%	125%	180%	
2 x 4	CLPBF	--	18	12	10d	6	10d x 1-1/2	815	815	815	215	6, F7, F15, D11, R13

1) Uplift loads have been increased 60% for wind or seismic loads; no further increase shall be permitted.

2) Minimum nail embedment shall be 1-1/2" for 10d nails.



Typical **CLPBF** installation



DECO**TRUSS COMPANY, INC.**

Trusses & Building Materials
13980 SW 252 Street, Princeton, Florida 33032
Telephone: (305) 257-1910 Fax: (305) 257-1911
www.decotruss.com

Hanger Approval
Submittals

Hanger Approvals for Truss to Truss Connections

Attached to this package are the approvals for the following Hangers/Straps.

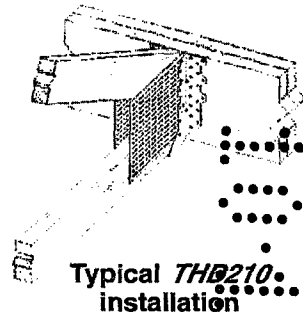
Hanger / Strap I.D. Number	State of Florida or Miami-Dade County Approval Number
THD Series	FL 13285
THDH Series	FL 821
GTWS2T, GTWS3T,GTWS4T	FL 6223
HTW16 Twist Straps	FL 820-R2
SKH26 L/R	Miami-Dade Approval Number 11-0510.01

- Materials:** See chart
Finish: G90 galvanizing
Options: See Specialty Options Chart. Rough/Full sizes available.
 THD hangers with widths greater than 3" can have one flange inverted with no load reduction.
 Specify right (R) or left (L).
Codes: ESR-1781, FL9835, FL13285,
 Dade County, FL 06-0921.05, L.A. City RR 25843

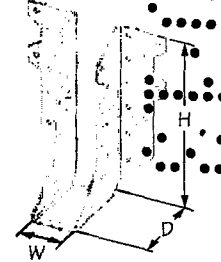
Installation:

- Use all specified fasteners. See Product Notes, page 11.

Some model designs
may vary from
illustration shown



Typical THD210
installation



THD28

See EWP applications pages 121-122.

Joist / Truss Size	USP Stock No.	Ref. No.	Steel Gauge	Dimensions			Fastener Schedule ^{2,3}				Allowable Loads (Lbs.)				Code Ref.
				W	H	D	Header		Truss		DF-L / SP				
							Qty	Type	Qty	Type	Floor	Roof		Uplift ¹	
											100%	115%	125%		
2 x 6 - 8	THD26	HTU26	16	1-5/8	5-1/16	3	18	16d	12	10d x 1-1/2	2485	2855	3060	2170	5, F18, F30, D2, R5
2 x 8 - 10	THD28	HTU28	16	1-5/8	7	3	28	16d	16	10d x 1-1/2	3865	3965	3965	2330	
2 x 10 - 12	THD210	HTU210	16	1-5/8	9	3	38	16d	20	10d x 1-1/2	5075	5115	5115	3095	
(2) 2 x 6 - 8	THD26-2	HHUS26-2, HTU26-2	14	3-7/16	5-3/8	3	18	16d	12	10d	2540	2920	3175	2285	
(2) 2 x 8 - 10	THD28-2	HHUS28-2, HTU28-2	14	3-7/16	7-1/8	3	28	16d	16	10d	3950	4540	4935	2595	
(2) 2 x 10 - 12	THD210-2	HHUS210-2, HTU210-2	14	3-7/16	9-1/8	3	38	16d	20	10d	5360	6160	6700	3810	
4 x 6 - 8	THD46	HHUS46	14	3-5/8	5-5/16	3	18	16d	12	10d	2540	2920	3175	2285	
4 x 8 - 10	THD48	HHUS48	14	3-5/8	7-1/16	3	28	16d	16	10d	3950	4540	4935	2595	
4 x 10 - 12	THD410	HHUS410	14	3-5/8	9-1/16	3	38	16d	20	10d	5360	6160	6700	3810	
4 x 12 - 14	THD412	--	14	3-5/8	11	3	48	16d	20	10d	6770	7045	7045	3810	
4 x 14 - 16	THD414	--	14	3-5/8	12-7/8	3	58	16d	20	10d	7045	7045	7045	3810	5, F30; R5
(3) 2 x 10 - 12	THD210-3	HHUS210-3	12	5-1/8	9	3	38	16d	20	10d	5660	6510	7045	3850	5, F18, F30, D2, R5
6 x 10 - 12	THD610	HHUS5.50/10	12	5-1/2	9	3	38	16d	20	10d	5660	6510	7080	3410	5, F18, F10, F30, D2, R5
6 x 12 - 14	THD612	--	12	5-1/2	11	3	48	16d	20	10d	7150	8225	8415	4065	
6 x 14 - 16	THD614	--	12	5-1/2	12-7/8	3	58	16d	20	10d	8415	8415	8415	4065	5, F30, R5
7 x 9-1/4 - 14	THD7210	HHUS7.25/10	12	7-1/4	9	3	38	16d	20	10d	5660	6510	7080	3410	5, F18, F30, D2, R5

1) Uplift loads have been increased 60% for wind or seismic loads; no further increase shall be permitted.

2) 10d x 1-1/2 nails are 9 gauge (0.148" diameter) by 1-1/2" long.

3) Minimum nail penetration is 1-5/8" for 16d nails.

Specialty Options Chart – refer to Specialty Options pages 194 to 195 for additional details.

Option	Skewed ^{1,3}	Sloped Seat ^{2,3}	Sloped / Skewed ^{1,2,3}	Inverted Flange
Range	1' to 45'	1' to 45'	See Sloped Seat and Skewed	Not available in widths < 3". Widths ≥ 3 can have one flange inverted.
Allowable Loads	85% of table load	65% of table load	65% of table load	100% of table load. 65% of table load when nailing into the support members end grain.
Ordering	Add SK, angle required, and right (R) or left (L), to product number. Ex. THD410-SK45R	Add SL, slope required, and up (U) or down (D), to product number. Ex. THD410-SL30D	See Sloped Seat and Skewed. Ex. THD410-SK45RSL30D	Add 1IF, one flange, right (R) and left (L), to product number. Ex. THD4101IFR

1) Skewed hangers with skews greater than 15° may have all joist nailing on outside flange.

2) Sloped or sloped / skewed hangers with slopes greater than 15° may have additional joist nails.

3) All sloped, skewed, or combinations require bevel cut or square cut on joist in all applications.

HEAVY-DUTY TRUSS HANGERS - THDH SERIES

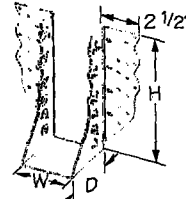
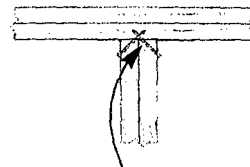


Materials: 12 gauge
Finish: G90 galvanizing
Options: See Specialty Options Chart.
Codes: ESR-1881, FL821, FL9835,
 Dade County, FL 06-0921.05

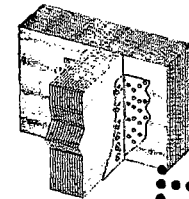
Installation:

- Use all specified fasteners. See Product Notes, page 11.
- Joist nails must be driven in at a 30° to 45° angle through the joist or truss into the header to achieve listed loads. **Standard length "double shear" nails must be used to achieve listed load values.**

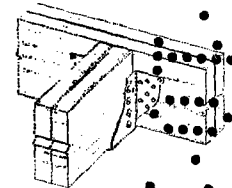
Drive joist nails into header at 30° to 45° to achieve listed loads.



THDH



Typical THDH double shear installation*



Typical THDH26-2 installation

See EWP applications pages 121-122.

Joist / Truss Size	USP Stock No.	Ref. No.	Dimensions			Fastener Schedule ^{2,3}				Allowable Loads (Lbs.)								Code Ref.
			W	H	D	Header		Truss		DF-L / SP				S-P-F				
						Qty	Type	Qty	Type	Floor	Roof	Uplift ¹	Floor	Roof	Uplift ¹			
2 x 6 - 8	THDH26	HGUS26	1-5/8	5-7/16	5	20	16d	8	16d	3915	4505	4895	2340	3370	3880	4200	1965	6, F15, F18, D2, R13
2 x 8 - 10	THDH28	HGUS28	1-5/8	7-3/16	5	36	16d	12	16d	6770	7395	7395	4370	5830	6210	6210	3670	6, F15, F18, D2, R13
2 x 10 - 12	THDH210	---	1-5/8	9-3/16	5	46	16d	16	16d	8725	9580	9600	5400	6835	7385	7750	4535	6, F15, R13
2-11/16 x 9-1/4 - 14	THDH27925	HGUS2.75/10	2-3/4	9-1/8	4	46	16d	12	16d	8260	8260	8260	3490	6935	6935	6935	2930	6, F15, F18, D2, R13
2-11/16 x 11-1/4 - 16	THDH27112	HGUS2.75/12	2-3/4	10-7/8	4	56	16d	14	16d	9845	9845	9845	5225	7655	8135	8270	4390	6, F15, R13
2-11/16 x 14 - 16	THDH2714	HGUS2.75/14	2-3/4	12-1/4	4	66	16d	16	16d	9845	9845	9845	6810	8110	8270	8270	5835	6, F15, R13
3-1/4 x 9-1/2	THDH3210	HGUS3.25/10	3-3/16	9-3/8	4	46	16d	12	16d	8260	8260	8260	3490	6935	6935	6935	2930	6, F15, F18, D2, R13
3-1/4 x 10-5/8	THDH3212	HGUS3.25/12	3-3/16	10-5/8	4	56	16d	14	16d	9845	9845	9845	5880	8270	8270	8270	5105	6, F15, R13
(2) 2 x 6 - 8	THDH26-2	HGUS26-2	3-7/16	5-3/8	4	20	16d	8	16d	3915	4505	4795	2235	3370	3880	4030	1880	6, F18, F15, D2, R13
(2) 2 x 8 - 10	THDH28-2	HGUS28-2	3-7/16	7-1/8	4	36	16d	10	16d	6535	7515	8025	2665	5635	6480	6740	2240	6, F15, R13
(2) 2 x 10 - 12	THDH210-2	HGUS210-2	3-7/16	9-1/8	4	46	16d	12	16d	8260	8260	8260	3490	6935	6935	6935	2930	6, F18, F15, D2, R13
4 x 6 - 8	THDH46	HGUS46	3-9/16	5-3/8	4	20	16d	8	16d	3915	4505	4895	2805	3370	3880	4215	2190	6, F18, F15, D2, R13
4 x 8 - 10	THDH48	HGUS48	3-9/16	7-1/8	4	36	16d	10	16d	6535	7515	7835	3185	5635	6480	6580	2675	6, R13
4 x 10 - 12	THDH410	HGUS410	3-9/16	9-1/8	4	46	16d	12	16d	8260	9010	9010	3970	7120	7570	7570	3335	6, F18, F15, D2, R13
4 x 12 - 14	THDH412	HGUS412	3-9/16	10-1/2	4	56	16d	14	16d	9845	9845	9845	5225	8270	8270	8270	4390	6, F15, R13
4 x 14 - 16	THDH414	HGUS414	3-9/16	13-1/8	4	66	16d	16	16d	9845	9845	9845	6810	8270	8270	8270	5835	6, F15, R13
(3) 2 x 6 - 8	THDH26-3	HGUS26-3	5-1/8	5-7/16	4	20	16d	8	16d	3915	4505	4795	2235	3370	3880	4030	1880	6, F18, F15, D2, R13
(3) 2 x 8 - 10	THDH28-3	HGUS28-3	5-1/8	7-3/16	4	36	16d	12	16d	6770	7785	8025	2665	5830	6705	6740	2240	6, F18, F15, D2, R13
(3) 2 x 10 - 12	THDH210-3	HGUS210-3	5-1/8	9-3/16	4	46	16d	16	16d	8725	9855	9855	4565	7520	8275	8275	3835	6, F15, F18, R13
(3) 2 x 12 - 14	THDH212-3	HGUS212-3	5-1/8	11-3/16	4	56	16d	20	16d	9935	9935	9935	5180	8345	8345	8345	4355	6, F15, R13
(3) 2 x 14 - 16	THDH214-3	HGUS214-3	5-1/8	13-3/16	4	66	16d	22	16d	11645	11645	11645	5795	9780	9780	9780	4865	6, F15, R13
6 x 10 - 12	THDH610	HGUS5.25/10, HGUS5.50/10	5-1/2	9	4	46	16d	16	16d	8725	9855	9855	4565	7520	8275	8275	3835	6, R13
6 x 12 - 14	THDH612	HGUS5.25/12, HGUS5.50/12	5-1/2	11	4	56	16d	20	16d	9935	9935	9935	5180	8345	8345	8345	4355	6, R13
6 x 14 - 16	THDH614	HGUS5.50/14	5-1/2	13	4	66	16d	22	16d	11645	11645	11645	5795	9780	9780	9780	4865	6, R13
6-3/4 x 9 - 14-1/2	THDH6710	HGUS210-4, HGUS6.88/10	6-7/8	8-13/16	4	46	16d	12	16d	8260	8260	8260	3490	6935	6935	6935	2930	6, F18, D2, R13
6-3/4 x 11 - 18	THDH6712	HGUS212-4, HGUS6.88/12	6-7/8	10-13/16	4	56	16d	14	16d	9845	9845	9845	5225	8270	8270	8270	4390	6, R13
6-3/4 x 13 - 20-1/2	THDH6714	HGUS214-4, HGUS6.88/14	6-7/8	12-13/16	4	66	16d	16	16d	9845	9845	9845	6810	8270	8270	8270	5835	6, R13
7-1/4 x 9-1/4 - 14	THDH7210	HGUS7.25/10	7-1/4	9	4	46	16d	12	16d	8260	9010	9010	3970	7120	7570	7570	3335	6, F18, D2, R13
7-1/4 x 11-1/4 - 16	THDH7212	HGUS7.25/12	7-1/4	10-1/2	4	56	16d	14	16d	9845	9845	9845	5225	8270	8270	8270	4390	6, R13
7-1/4 x 14 - 18	THDH7214	HGUS7.25/14	7-1/4	12-1/4	4	66	16d	16	16d	9845	9845	9845	6810	8270	8270	8270	5835	6, R13

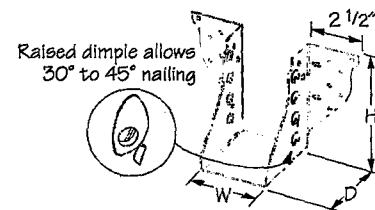
- 1) Uplift loads have been increased 60% for wind or seismic loads; no further increase shall be permitted.
- 2) Joist nails need to be toe nailed at a 30° to 45° angle to achieve allowable loads shown.
- 3) Minimum nail penetration shall be 1-5/8" for 16d nails.

Some model designs may vary from illustration shown

Specialty Options Chart - refer to Specialty Options pages 194 to 195 for additional details.

Option	Skewed ^{1,3}	Sloped Seat ^{2,3}	Sloped / Skewed ^{1,2,3}
Range	1° to 45°	1° to 45°	See Sloped Seat and Skewed
Allowable Loads	85% of table allowable load. 50% of table uplift load.	85% of table allowable load	52% of table allowable load. 50% of table uplift load.
Ordering	Add SK, angle required, and right (R) or left (L), to product number. Ex. THDH410-SK45R	Add SL, slope required, and up (U) or down (D), to product number. Ex. THDH410-SL30D	See Sloped Seat and Skewed. Ex. THDH410-SK45RSL30D

- 1) Skewed THDH hangers with skews greater than 15° always have all joist nailing on one side of the outside flange.
 - 2) Sloped or sloped / skewed hangers with slopes greater than 15° may have additional joist nails.
 - 3) All sloped, skewed, or combinations require bevel cut on joist in all applications.
- Inverted flange option is not available for THDH models.



THDH26-2

HIGH UPLIFT GIRDER TRUSS HANGERS - GTWS SERIES

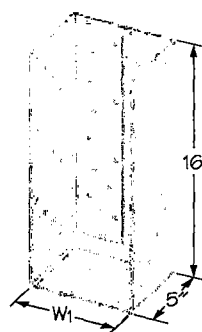


The GTWS series girder-to-girder hangers feature high uplift capacities along with high gravity load ratings.

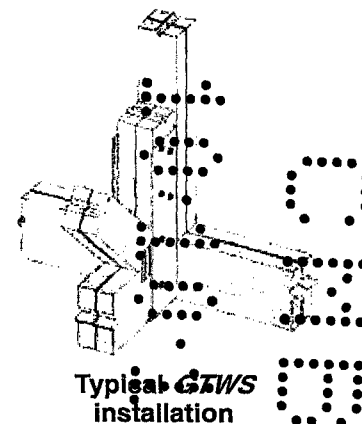
Materials: 10 gauge
Finish: G90 galvanizing
Codes: FL6223

Installation

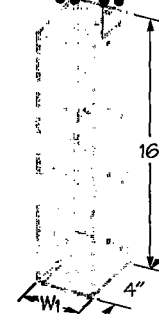
- Use all specified fasteners. See Product Notes, page 11.
- WS Wood Screws are included with hangers where specified.
- GTWS2T shall be installed to a minimum 2x4 vertical member of a girder truss with no restriction on the size of the bottom chord.
- GTWS3T shall be installed to a minimum 2x6 vertical member of a girder truss with no restriction on the size of the bottom chord.
- GTWS4T shall be installed to a minimum 2x8 vertical member of a girder truss with no restriction on the size of the bottom chord.



GTWS3T



Typical GTWS installation



GTWS2T

USP Stock No.	Ref. No.	Steel Gauge	Dimensions			Fastener Schedule ^{2,4}				No. of Plys	Allowable Loads (Lbs.)				Code Ref.
			W	H	D	Supporting Truss		Supported Truss			DF-L / SP				
						Qty	Wood Screws	Qty	Wood Screws		100%	115%	125%	Uplift ¹ 160%	
GTWS2T	--	10	3-1/4	16	4	22	WS3	16	WS3	2 Ply	8720	10030	10900	8435	F26
GTWS3T	--	10	4-7/8	16	5	28	WS3	24	WS3	2 Ply	11100	12470	12470	12490	
GTWS4T	--	10	6-1/2	16	5	28	WS3	24	WS3	2 Ply	11100	12470	12470	12490	

- 1) Uplift loads have been increased 60% for wind or seismic loads; no further increase shall be permitted.
 - 2) WS3 wood screws require a minimum 3" wood penetration.
 - 3) WS3 wood screws are 1/4" x 3" long and are included with the GTWS hangers.
 - 4) WS3 wood screws may be installed in both vertical and horizontal members.
- New products or updated product information are designated in **bold font**.

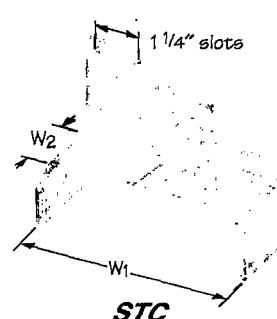
SCISSOR TRUSS CLIPS - STC SERIES

The STC provides uplift resistance by securing trusses to top plates. Slotted nail holes allow for horizontal movement as scissor trusses deflect.

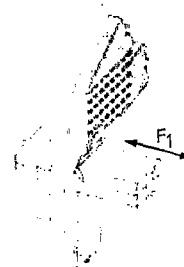
Materials: 12 gauge
Finish: G90 galvanizing
Codes: ESR-1465, FL817

Installation:

- Use all specified fasteners. See Product Notes, page 11.
- When installing, do not fully set nails.
- Locate nails into the center of slots to allow for horizontal movement.



STC



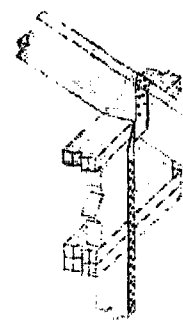
Typical STC installation

USP Stock No.	Ref. No.	Steel Gauge	Description	Dimensions		Fastener Schedule ²				Allowable Loads (Lbs.)				Code Ref.
				W1	W2	Truss		Plate		DF-L / SP		S-P-F		
						Qty	Type	Qty	Type	F1	Uplift ¹	F1	Uplift ¹	
STC24	TC24	12	2 x 4 top plate	3-9/16	1-5/8	5	10d x 1-1/2	6	10d x 1-1/2	330	810	275	680	11, F12
STC26	TC26	12	2 x 6 top plate	5-1/2	1-5/8	5	10d x 1-1/2	6	10d x 1-1/2	330	810	275	680	
STC28	TC28	12	2 x 8 top plate	7-1/4	1-5/8	5	10d x 1-1/2	6	10d x 1-1/2	330	810	275	680	

- 1) Uplift loads have been increased 60% for wind or seismic loads; no further increase shall be permitted.
- 2) 10d x 1-1/2 nails are 9 gauge (0.148" diameter) by 1-1/2" long.

USP Stock No. ⁷	Ref. No.	Steel Gauge	Dimensions				Fastener Schedule ^{2,3,4,5,6}		Allowable Loads (Lbs.) ¹		Code Ref.
			W	L	L1	L2	Qty	Type	DF-L / SP	S-P-F	
									Uplift 160%	Uplift 160%	
LTW12	LTS12	18	1-1/4	12	4-1/2	4-1/2	12	10d x 1-1/2	775	650	8, F14, R9
							12	10d			
LTW16	LTS16	18	1-1/4	16	6-1/2	6-1/2	12	10d x 1-1/2	775	650	8, F14, R9
							12	10d			
LTW18	LTS18	18	1-1/4	18	7-1/2	7-1/2	12	10d x 1-1/2	775	650	8, F14, R9
							12	10d			
LTW20	LTS20	18	1-1/4	20	8-1/2	8-1/2	12	10d x 1-1/2	775	650	8, F14, R9
							12	10d			
MTW12	MTS12, TS12, TS9	16	1-1/4	12	4-1/2	4-1/2	14	10d x 1-1/2	1195	1005	8, F14, R9
							14	10d			
MTW16	MTS16	16	1-1/4	16	6-1/2	6-1/2	14	10d x 1-1/2	1195	1005	8, F14, R9
							14	10d			
MTW18	MTS18, TS18	16	1-1/4	18	7-1/2	7-1/2	14	10d x 1-1/2	1195	1005	8, F14, R9
							14	10d			
LFTA6	H6	16	2-1/4	19-1/8	8-3/8	6-1/2	16	8d	1210	1015	8, F14, R9
							16	8d x 1-1/2			
MTW20	MTS20	16	1-1/4	20	8-1/2	8-1/2	14	10d x 1-1/2	1195	1005	8, F14, R9
							14	10d			
MTW24C	MTS24C	16	1-1/4	24	10-7/16	10-7/16	14	10d x 1-1/2	1195	1005	8, F14, R9
							14	10d			
MTW28C	---	16	1-1/4	28	12-7/16	12-7/16	14	10d x 1-1/2	1195	1005	8, F14, R9
							14	10d			
MTW30	MTS30	16	1-1/4	30	8-5/16	18-9/16	14	10d x 1-1/2	1195	1005	8, F14, R9
							14	10d			
MTW30C	MTS30C	16	1-1/4	30	13-7/16	13-7/16	14	10d x 1-1/2	1195	1005	8, F14, R9
							14	10d			
HTW16	HTS16	14	1-1/4	16	5-1/8	5-1/8	16	10d x 1-1/2	1260	1060	8, F14, R9
							16	10d			
HTW20	HTS20, TS22	14	1-1/4	20	7-1/8	7-1/8	24	10d x 1-1/2	1530	1285	8, F14, R9
							20	10d			
HTW24	HTS24	14	1-1/4	24	9-1/8	9-1/8	24	10d x 1-1/2	1530	1285	8, F14, R9
							20	10d			
HTW28	HTS28	14	1-1/4	28	11-1/8	11-1/8	24	10d x 1-1/2	1530	1285	8, F14, R9
							20	10d			
HTW30	HTS30	14	1-1/4	30	7	17-1/4	24	10d x 1-1/2	1530	1285	8, F14, R9
							20	10d			
HTW30C	HTS30C	14	1-1/4	30	12-1/8	12-1/8	24	10d x 1-1/2	1530	1285	8, F14, R9
							20	10d			

- 1) Allowable loads have been increased 60% for wind or seismic loads; no further increase shall be permitted.
- 2) Minimum nail embedment shall be 1-5/16" for 8d nails and 1-1/2" for 10d nails.
- 3) 16d sinker nails may be substituted for 10d common nails with no reduction in load.
- 4) For 1-1/2" lumber, use 0.84 of table load for 10d nails and 0.77 for 16d nails.
- 5) 10d x 1-1/2 nails are 9 gauge (0.148" diameter) by 1-1/2" long.
8d x 1-1/2 nails are 11 gauge (0.131" diameter) by 1-1/2" long.
- 6) Fasteners shall be distributed equally on each end of the connection.
- 7) C after the model number designates center twist as in MTW30C.
- 8) LFTA6: F1 is 700 lbs and F2 is 90 lbs. To achieve F1 lateral loads, three nails must be installed on each side on the strap located closest to the bend line. Lateral F1 and F2 load directions do not apply to roof truss-to-top plate installations.



Typical MTW30
Installation



MTW30C

SKH SKEWED HANGER ALLOWABLE LOADS

STOCK NUMBER	STEEL GAGE	DIMENSIONS (inches)			FASTENER SCHEDULE ¹				SP ALLOWABLE LOADS (lbs) ³			
		W	H	D	Header		Joist		Download ²		Uplift ²	
					Face	Type	Qty	Type	C _D = 1.0	C _D = 1.15	C _D = 1.25	C _D = 1.6
SKH26L/R	16	1 ⁹ / ₁₆	5 ¹ / ₄	1 ⁷ / ₈	6	16d Common	6	10dx1-1/2	895	1030	1120	870

For SI: 1 inch = 25.4 mm, 1 psi = 6.89 kPa, 1 lbf = 4.45 N

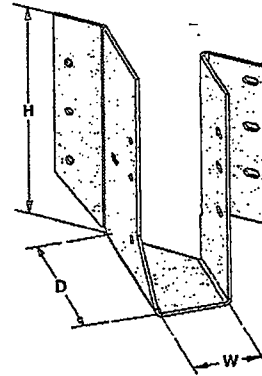
¹A 10dx1-1/2" Common nail is 1 1/2 inches long and 0.148 inches in diameter

The 16d Common nail is 0.162 inches in diameter by 3 1/2 inches long.

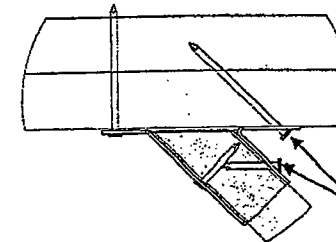
²Loads have been increased as shown in accordance with code.

15% and 25% for snow and construction loads. No further increase is permitted.
60% for wind or seismic loading. No further increase is permitted.

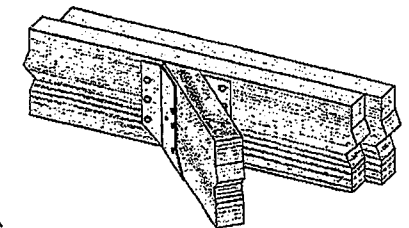
³The lumber species is Southern Pine



SKH



SKH26R INSTALLATION
TOP VIEW



SKH26R INSTALLATION

DRIVE NAILS AT ANGLE

JL JOIST HANGER ALLOWABLE LOADS

STOCK NUMBER	STEEL GAGE	DIMENSIONS (inches)			FASTENER SCHEDULE ¹				ALLOWABLE LOADS (lbs) ³			
		W	H	D	Header		Joist		Download ²		Uplift ^{2,4}	
					Qty	Type	Qty	Type	C _D = 1.0	C _D = 1.15	C _D = 1.25	C _D = 1.6
JL24	20	1 ⁹ / ₁₆	3	1 1/2	4	10d Common	2	10dx1 1/2	490	565	615	N/A
JL26	20	1 ⁹ / ₁₆	4 3/4	1 1/2	6	10d Common	4	10dx1 1/2	740	850	925	700
JL28	20	1 ⁹ / ₁₆	6 3/8	1 1/2	10	10d Common	6	10dx1 1/2	1230	1415	1515	940
JL210	20	1 ⁹ / ₁₆	8 1/4	1 1/2	14	10d Common	8	10dx1 1/2	1720	1980	2070	1170

For SI: 1 inch = 25.4 mm, 1 lbf = 4.45 N, 1 psi = 6.89 kPa.

¹A 10d Common nail is 3 inches long and 0.148 inches in diameter

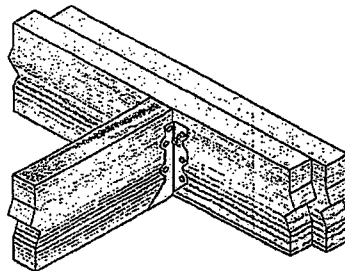
A 10dx1 1/2 nail is 1 1/2 inches long and 0.148 inches in diameter

²Loads have been increased as shown in accordance with code.

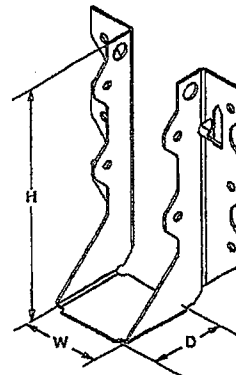
15% and 25% for snow and construction loads. No further increase is permitted.
60% for wind or seismic loading. No further increase is permitted.

³The lumber species is Southern Pine

⁴Uplift loads for connectors listed as N/A had an uplift capacity less than the required 700 pounds.



TYPICAL JL INSTALLATION



JL

NOA No. 11-0510.01
Expiration Date: June 04, 2016
Approval Date: July 21, 2011

PRODUCT RENEWED
in compliance with the Florida
Building Code
Acceptance No. 11-0510.01
Expiration Date 06/04/2016
By *[Signature]*
Miami Trade Product Control

		UNITED STEEL PRODUCTS COMPANY	
		14305 SOUTHCROSS DRIVE - SUITE 200 BURNSVILLE, MN 55306 PH: 800-328-5934	
		NAME:	FACE MOUNT HANGERS SKH JL
		DATE:	3/28/2011
SHEET:		DRAWING NO.: MD-SKH-JL	
2 OF 2			

GENERAL NOTES

Trusses are not marked in any way to identify the frequency or location of temporary lateral restraint and diagonal bracing. Follow the recommendations for handling, installing and temporary restraining and bracing of trusses. Refer to **BCSI - Guide to Good Practice for Handling, Installing, Restraining and Bracing of Metal Plate Connected Wood Trusses** for more detailed information.

Truss Design Drawings may specify locations of permanent lateral restraint or reinforcement for individual truss members. Refer to the **BCSI-B3***** for more information. All other permanent bracing design is the responsibility of the building designer.

NOTAS GENERALES

Las trusses no están marcadas de ningún modo que identifique la frecuencia o localización de restricción lateral y arrioste diagonal temporales. Use las recomendaciones de manejo, instalación, restricción y arrioste temporal de los trusses. Vea el folleto **BCSI - Guía de Buena Práctica para el Manejo, Instalación, Restricción y Arrioste de los Trusses de Madera Conectados con Placas de Metal***** para información más detallada.

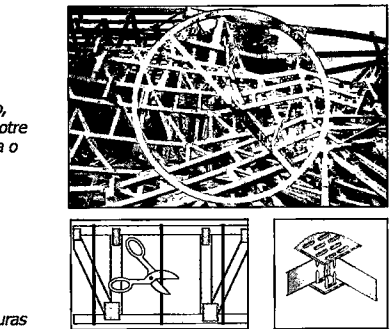
Los dibujos de diseño de los trusses pueden especificar las localizaciones de restricción lateral permanente o refuerzo en los miembros individuales del truss. Vea la hoja resumen **BCSI-B3***** para más información. El resto de los diseños de arriostres permanentes son la responsabilidad del diseñador del edificio.

WARNING The consequences of improper handling, erecting, installing, restraining and bracing can result in a collapse of the structure, or worse, serious personal injury or death.

ADVERTENCIA! El resultado de un manejo, levantamiento, instalación, restricción y arrioste incorrecto puede ser la caída de la estructura o aún peor, heridos o muertos.

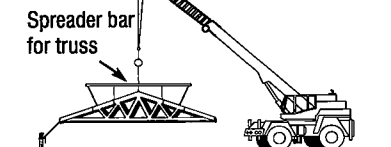
CAUTION Exercise care when removing banding and handling trusses to avoid damaging trusses and prevent injury. Wear personal protective equipment for the eyes, feet, hands and head when working with trusses.

CAUTELA! Utilice cautela al quitar las ataduras o los pedazos de metal de sujetar para evitar daño a los trusses y prevenir la herida personal. Lleve el equipo protector personal para ojos, pies, manos y cabeza cuando trabaja con trusses.



CAUTION Use special care in windy weather or near power lines and airports.

CAUTELA! Utilice cuidado especial en días ventosos o cerca de cables eléctricos o de aeropuertos.



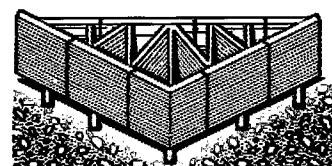
Use proper rigging and hoisting equipment.

Use equipo apropiado para levantar e improvisar.

HANDLING — MANEJO

NOTICE Avoid lateral bending. Evite la flexión lateral.

NOTICE The contractor is responsible for properly receiving, unloading and storing the trusses at the jobsite. Unload trusses to smooth surface to prevent damage. El contratista tiene la responsabilidad de recibir, descargar y almacenar adecuadamente los trusses en la obra. Descargue los trusses en la tierra lisa para prevenir el daño.



Trusses may be unloaded directly on the ground at the time of delivery or stored temporarily in contact with the ground after delivery. If trusses are to be stored for more than one week, place blocking of sufficient height beneath the stack of trusses at 8' (2.4 m) to 10' (3 m) on-center (o.c.).

Los trusses pueden ser descargados directamente en el suelo en aquel momento de entrega o almacenados temporalmente en contacto con el suelo después de entrega. Si los trusses estarán guardados para más de una semana, ponga bloqueando de altura suficiente detrás de la pila de los trusses a 8' hasta 10' pies en centro (o.c.).

For trusses stored for more than one week, cover bundles to protect from the environment.

Para trusses guardados por más de una semana, cubra los paquetes para protegerlos del ambiente.

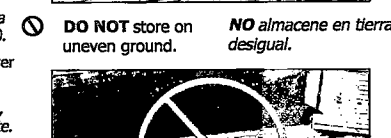
Refer to **BCSI***** for more detailed information pertaining to handling and jobsite storage of trusses.

Vea el folleto **BCSI***** para información más detallada sobre el manejo y almacenamiento de los trusses en área de trabajo.

DO NOT store unbraced bundles upright. **NO** almacene verticalmente los trusses sueltos.



DO NOT store on uneven ground. **NO** almacene en tierra desigual.



HOISTING AND PLACEMENT OF TRUSS BUNDLES

RECOMENDACIONES PARA LEVANTAR PAQUETES DE TRUSSES

DO NOT overload the crane.

NO sobrecargue la grúa.

NEVER use banding to lift a bundle.

NUNCA use las ataduras para levantar un paquete.

A single lift point may be used for bundles of top chord pitch trusses up to 45' (13.7 m) and parallel chord trusses up to 30' (9.1 m). Use at least two lift points for bundles of top chord pitch trusses up to 60' (18.3 m) and parallel chord trusses up to 45' (13.7 m). Use at least three lift points for bundles of top chord pitch trusses >60' (18.3 m) and parallel chord trusses >45' (13.7 m).

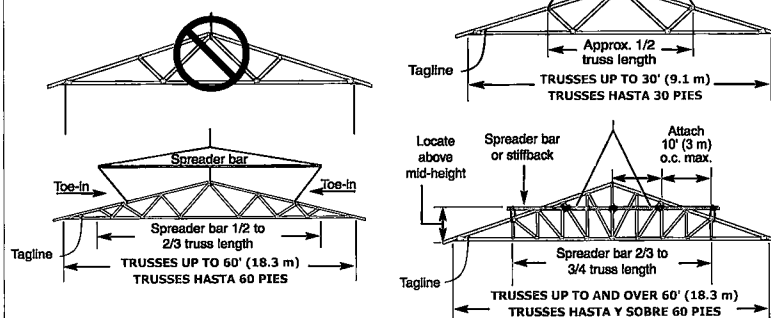
Puede usar un solo lugar de levantar para paquetes de trusses de la cuerda superior hasta 45' y trusses de cuerdas paralelas de 30' o menos. Use por lo menos dos puntos de levantar con grupos de trusses de cuerda superior inclinada hasta 60' y trusses de cuerdas paralelas hasta 45'. Use por lo menos dos puntos de levantar con grupos de trusses de cuerda superior inclinada mas de 60' y trusses de cuerdas paralelas mas de 45'.

MECHANICAL HOISTING RECOMMENDATIONS FOR SINGLE TRUSSES

RECOMENDACIONES PARA LEVANTAR TRUSSES INDIVIDUALES

NOTICE Using a single pick-point at the peak can damage the truss.

El uso de un solo lugar en el pico para levantar puede hacer daño al truss.



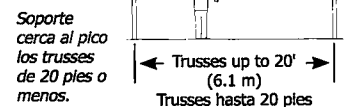
Hold each truss in position with the erection equipment until top chord temporary lateral restraint is installed and the truss is fastened to the bearing points.

Sostenga cada truss en posición con equipo de grúa hasta que la restricción lateral temporal de la cuerda superior esté instalada y el truss está asegurado en los soportes.

INSTALLATION OF SINGLE TRUSSES BY HAND

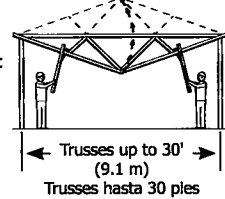
RECOMENDACIONES DE LEVANTAMIENTO DE TRUSSES INDIVIDUALES POR LA MANO

Trusses 20' (6.1 m) or less, support near peak.



Trusses up to 20' (6.1 m) Trusses hasta 20 pies

Trusses 30' (9.1 m) or less, support at quarter points.



Trusses up to 30' (9.1 m) Trusses hasta 30 pies

TEMPORARY RESTRAINT & BRACING

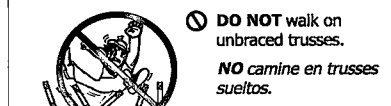
RESTRICCIÓN Y ARRIOSTRE TEMPORAL

NOTICE Refer to **BCSI-B2***** for more information.

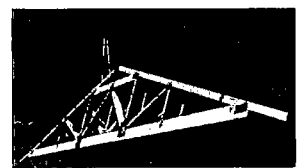
Vea el resumen **BCSI-B2***** para más información.

Locate ground braces for first truss directly in line with all rows of top chord temporary lateral restraint (see table in the next column).

Coloque los arriostres de tierra para el primer truss directamente en línea con cada una de las filas de restricción lateral temporal de la cuerda superior (vea la tabla en la próxima columna).



DO NOT walk on unbraced trusses. **NO** camine en trusses sueltos.



WARNING Do not over load supporting structure with truss bundle.

ADVERTENCIA! No sobrecargue la estructura apoyada con el paquete de trusses.

Place truss bundles in stable position. Coloque paquetes de trusses en una posición estable.



STEPS TO SETTING TRUSSES

LAS MEDIDAS DE LA INSTALACIÓN DE LOS TRUSSES

1) Install ground bracing. 2) Set first truss and attach securely to ground bracing. 3) Set next 4 trusses with short member temporary lateral restraint (see below). 4) Install top chord diagonal bracing (see below). 5) Install web member plane diagonal bracing to stabilize the first five trusses (see below). 6) Install bottom chord temporary lateral restraint and diagonal bracing (see below). 7) Repeat process with groups of four trusses until all trusses are set.

1) Instale los arriostres de tierra. 2) Instale el primero truss y ate seguramente al arrioste de tierra. 3) Instale los próximos 4 trusses con restricción lateral temporal de miembro corto (vea abajo). 4) Instale el arrioste diagonal de la cuerda superior (vea abajo). 5) Instale arrioste diagonal para los planos de los miembros secundarios para estabilice los primeros cinco trusses (vea abajo). 6) Instale la restricción lateral temporal y arrioste diagonal para la cuerda inferior (vea abajo). 7) Repita este procedimiento en grupos de cuatro trusses hasta que todos los trusses estén instalados.

NOTICE Refer to **BCSI-B2***** for more information. Vea el resumen **BCSI-B2***** para más información.

RESTRAINT & BRACING FOR ALL PLANES OF TRUSSES

RESTRICCIÓN Y ARRIOSTRE PARA TODOS PLANOS DE TRUSSES

This restraint and bracing method is for all trusses except 3x2 and 4x2 parallel chord trusses (PCTs). Este método de restricción y arrioste es para todo trusses excepto trusses de cuerdas paralelas (PCTs) 3x2 y 4x2. Vea la parte superior de la columna para la restricción y arrioste temporal de PCTs.

1) TOP CHORD — CUERDA SUPERIOR

Truss Span Longitud de Tramo	Top Chord Temporary Lateral Restraint (TCTLR) Spacing Espaciamiento del Arrioste Temporal de la Cuerda Superior
Up to 30' (9.1 m)	10' (3 m) o.c. max.
30' (9.1 m) – 45' (13.7 m)	8' (2.4 m) o.c. max.
45' (13.7 m) – 60' (18.3 m)	6' (1.8 m) o.c. max.
60' (18.3 m) – 80' (24.4 m)*	4' (1.2 m) o.c. max.

*Consult a Registered Design Professional for trusses longer than 60' (18.3 m). *Consulte a un Profesional Registrado de Diseño para trusses más de 60 pies.

See **BCSI-B2***** for TCTLR options. Vea el **BCSI-B2***** para las opciones de TCTLR.

NOTICE Refer to **BCSI-B3***** for Gable End Frame restraint/bracing/reinforcement information. Para información sobre restricción/arrioste/refuerzo para Armazones Haciales vea el resumen **BCSI-B3*****.

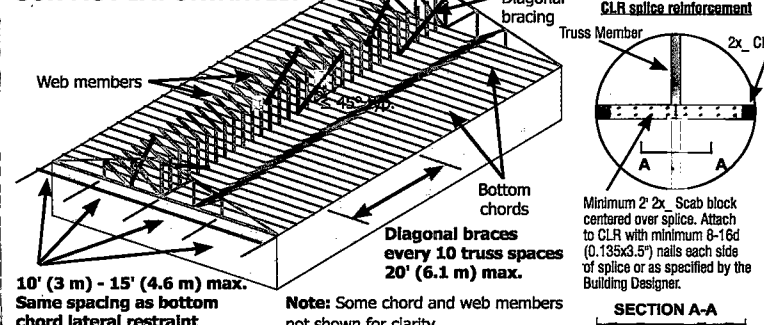
Note: Ground bracing not shown for clarity.

Repeat diagonal braces for each set of 4 trusses. Repita los arriostres diagonales para cada grupo de 4 trusses.

2) WEB MEMBER PLANE — PLANO DE LOS MIEMBROS SECUNDARIOS

NOTICE LATERAL RESTRAINT & DIAGONAL BRACING ARE VERY IMPORTANT

LA RESTRICCIÓN LATERAL Y EL ARRIOSTRE DIAGONAL SON MUY IMPORTANTES!



3) BOTTOM CHORD — CUERDA INFERIOR

Lateral Restraints - 2x4x12' or greater lapped over two trusses or CLR splice reinforcement.

Bottom chords

Diagonal braces every 10 truss spaces 20' (6.1 m) max.

10' (3 m) - 15' (4.6 m) max.

Diagonal braces every 10 truss spaces 20' (6.1 m) max.

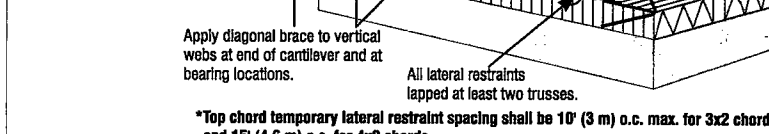
10' (3 m) - 15' (4.6 m) max.

RESTRAINT & BRACING FOR 3x2 AND 4x2 PARALLEL CHORD TRUSSES

RESTRICCIÓN Y ARRIOSTRE PARA TRUSSES DE CUERDAS PARALELAS 3X2 Y 4X2

NOTICE Refer to **BCSI-B7***** for more information.

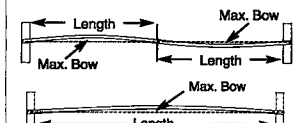
Vea el resumen **BCSI-B7***** para más información.



*Top chord temporary lateral restraint spacing shall be 10' (3 m) o.c. max. for 3x2 chords and 15' (4.6 m) o.c. for 4x2 chords.

INSTALLING — INSTALACIÓN

Tolerances for Out-of-Plane. Tolerancias para Fuera-de-Plano.



Tolerances for Out-of-Plumb. Tolerancias para Fuera-de-Plomada.

CONSTRUCTION LOADING

CARGA DE CONSTRUCCIÓN

DO NOT proceed with construction until all lateral restraint and bracing is securely and properly in place.

NO proceda con la construcción hasta que todas las restricciones laterales y los arriostres estén colocados en forma apropiada y segura.

DO NOT exceed maximum stack heights. Refer to **BCSI-B4***** for more information.

NO exceda las alturas máximas de montón. Vea el resumen **BCSI-B4***** para más información.

NEVER stack materials near a peak or at mid-span. **NUNCA** amontone los materiales cerca de un pico.

DO NOT overload small groups or single trusses. **NO** sobrecargue pequeños grupos o trusses individuales.

Place loads over as many trusses as possible. Coloque las cargas sobre tantos trusses como sea posible.

Position loads over load bearing walls. Coloque las cargas sobre las paredes soportantes.

ALTERATIONS — ALTERACIONES

NOTICE Refer to **BCSI-B5***** for more information.

DO NOT cut, alter, or drill any structural member of a truss unless specifically permitted by the truss design drawing.

NO corte, altere o perforo ningún miembro estructural de un truss, a menos que esté específicamente permitido en el dibujo del diseño del truss.

NOTICE Trusses that have been overloaded during construction or altered without the Truss Manufacturer's prior approval may render the Truss Manufacturer's limited warranty null and void.

Trusses que se han sobrecargado durante la construcción o han sido alterados sin la autorización previa del Fabricante de Trusses, pueden hacer nulo y sin efecto la garantía limitada del Fabricante de Trusses.

***Contact the Component Manufacturer for more information or consult a Registered Design Professional for assistance. To view a non-printing PDF of this document, visit sbcdindustry.com/b1.

NOTE: The truss manufacturer and truss designer rely on the presumption that the contractor and crane operator (if applicable) are professionals with the capability to undertake the work they have agreed to do on any given project. If the contractor believes it needs assistance in some aspect of the construction project, it should seek assistance from a competent party. The methods and procedures outlined in this document are intended to ensure that the overall construction techniques employed will put the trusses into place SAFELY. These recommendations for handling, installing, restraining and bracing trusses are based upon the collective experience of leading personnel involved with truss design, manufacture and installation, but must, due to the nature of responsibilities involved, be presented only as a GUIDE for use by a qualified building designer or contractor. It is not intended that these recommendations be interpreted as superior to the building designer's design specification for handling, installing, restraining and bracing trusses and it does not preclude the use of other equivalent methods for restraining/bracing and providing stability for the walls, columns, floors, roofs and all the interrelated structural building components as determined by the contractor. Thus, SBCA and TPI expressly disclaim any responsibility for damages arising from the use, application, or reliance on the recommendations and information contained herein.

SBC ASSOCIATION

6300 Enterprise Lane • Madison, WI 53719
608/274-4849 • sbcdindustry.com

WOOD TRUSS COUNCIL

218 N. Lee St., Ste. 312 • Alexandria, VA 22314
703/683-1010 • tpins.org

TRUSS PLATE INSTITUTE

218 N. Lee St., Ste. 312 • Alexandria, VA 22314
703/683-1010 • tpins.org

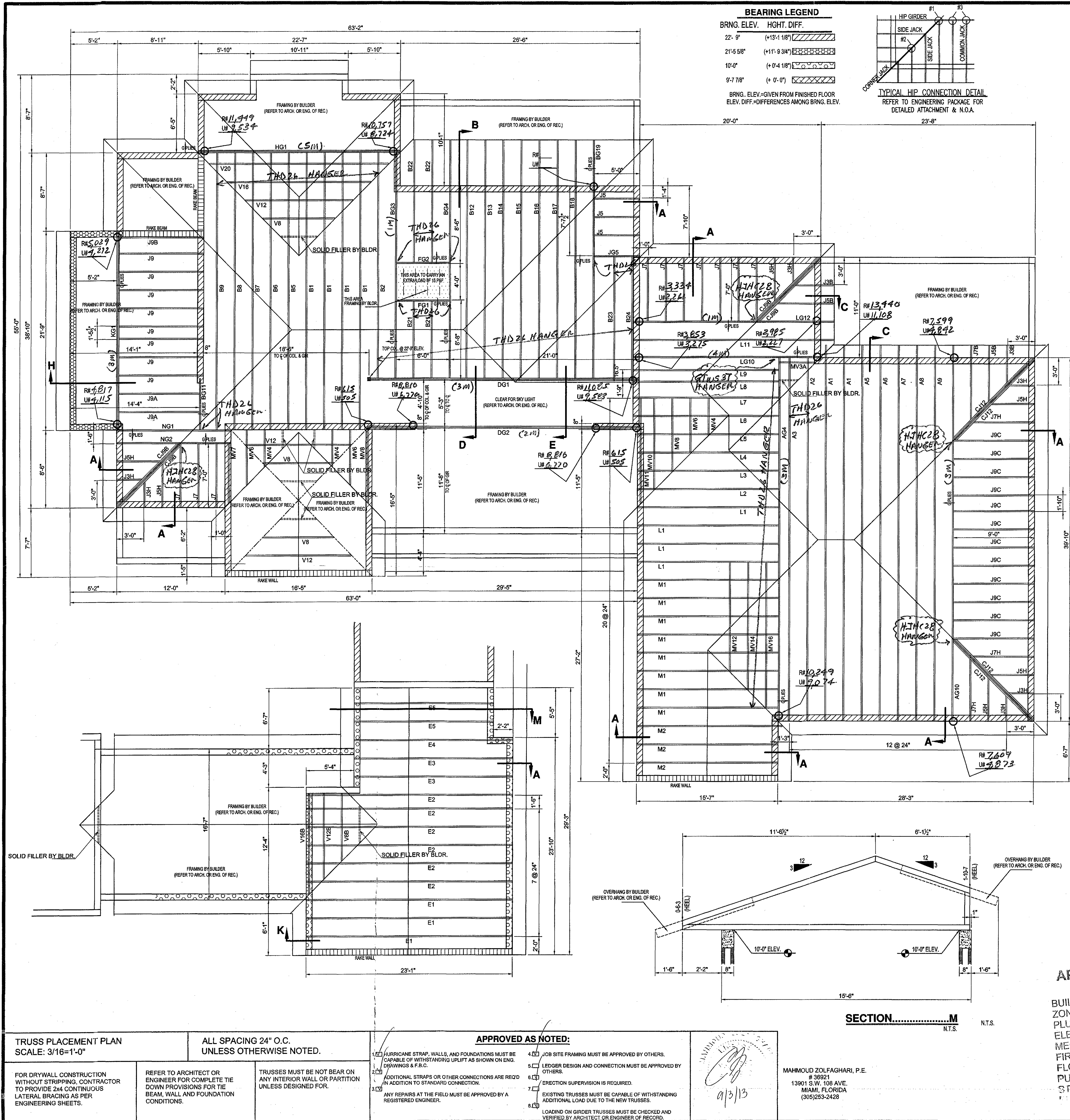
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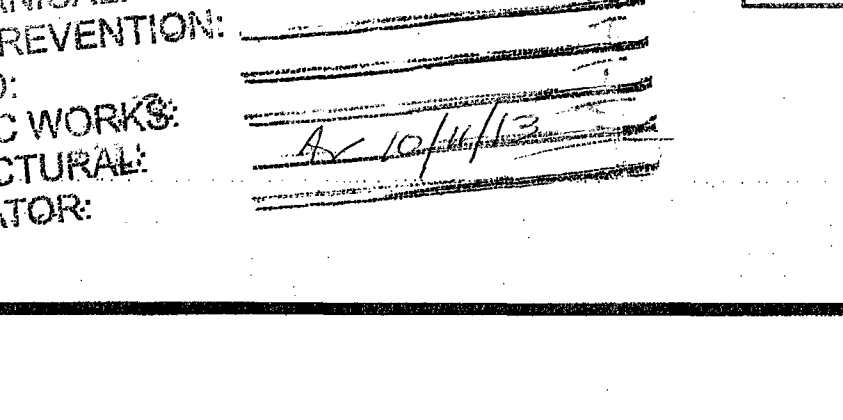
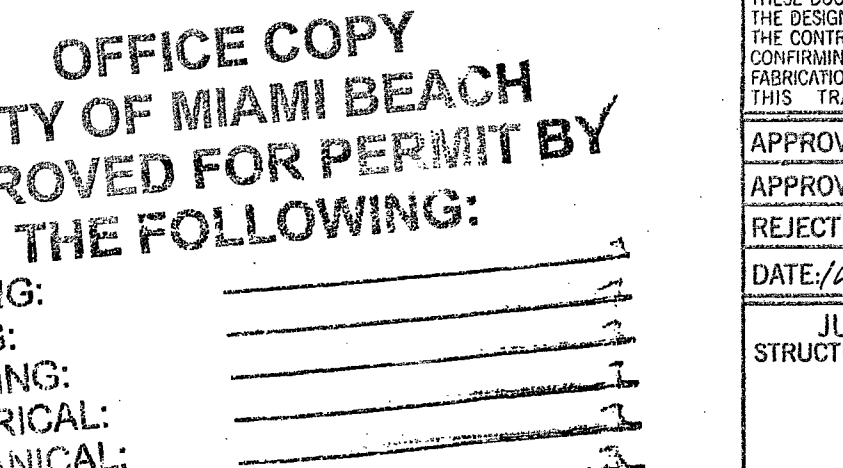
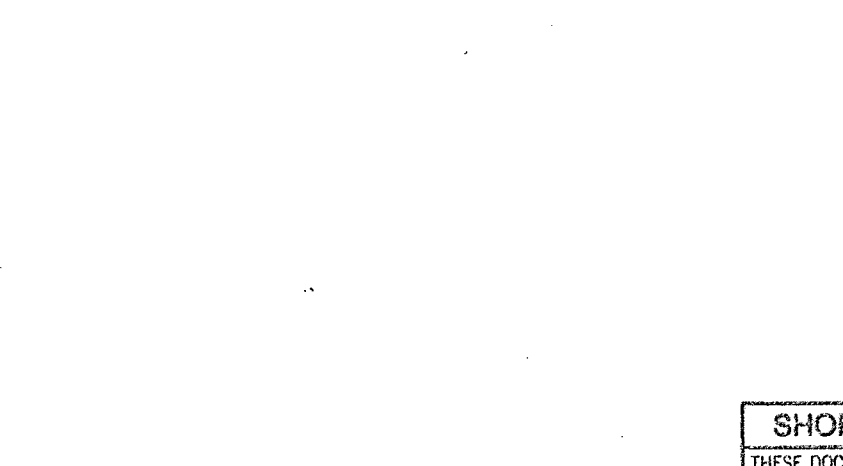
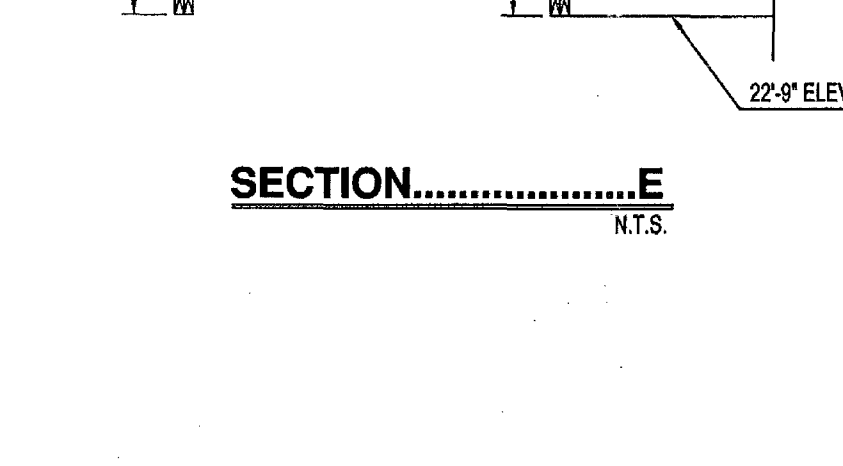
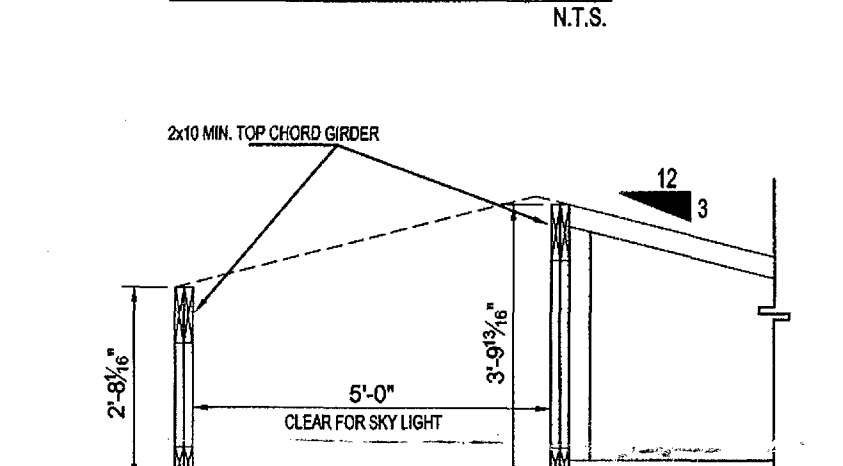
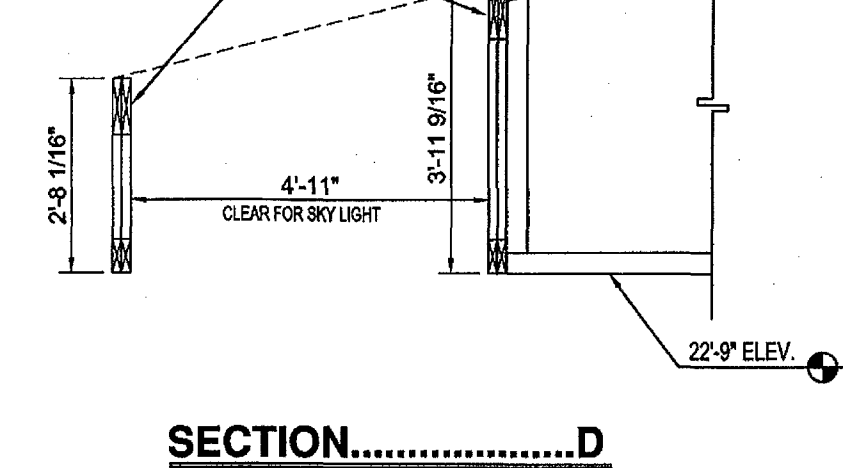
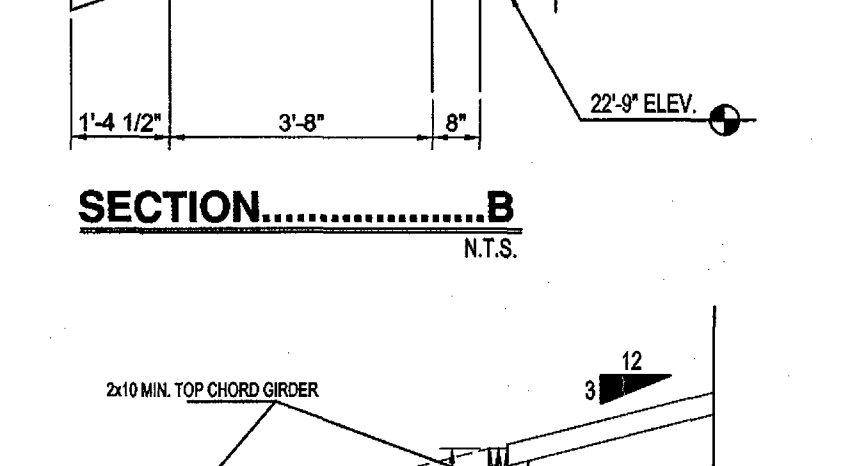
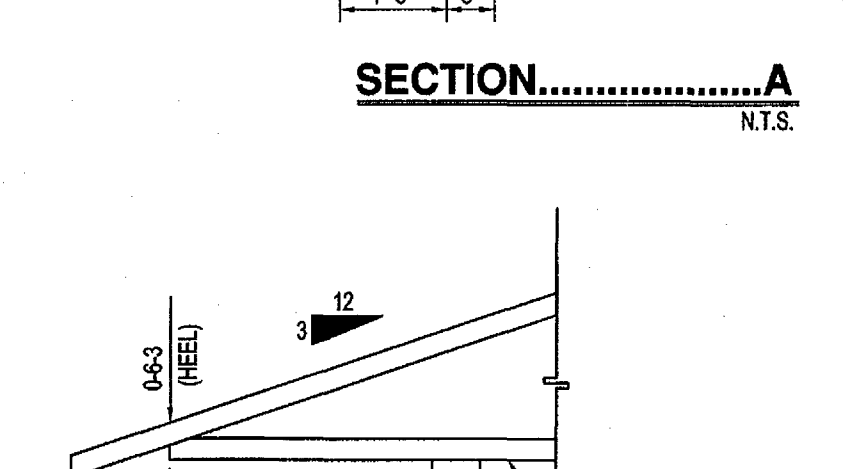
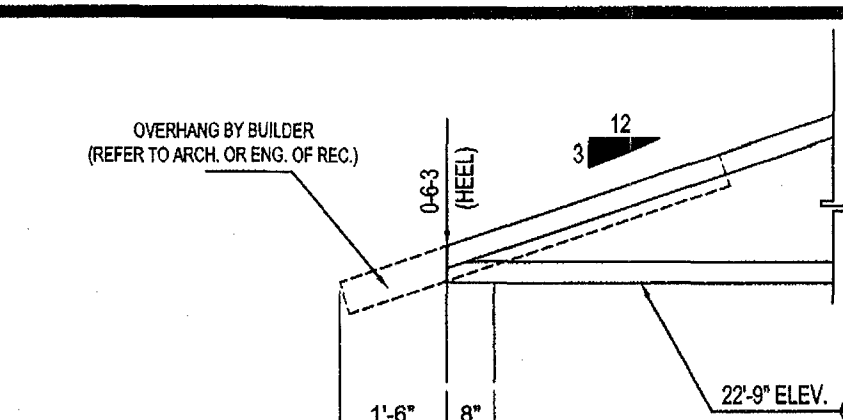
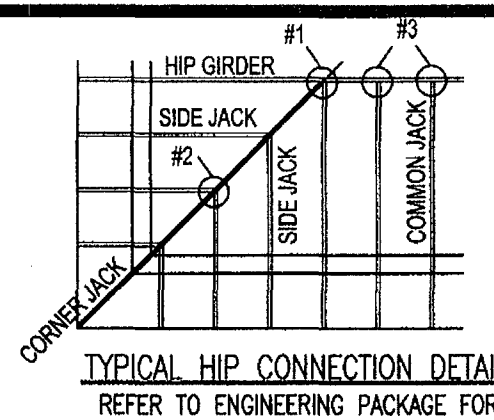
NOV 1977



BEARING LEGEND

BRNG. ELEV.	HGHT. DIFF.
22'-9"	(+13'-1 1/8")
21'-5 5/8"	(+11'-9 3/4")
10'-0"	(+0'-4 1/8")
9'-7 7/8"	(+0'-0")

BRNG. ELEV. - GIVEN FROM FINISHED FLOOR
ELEV. DIFF. - DIFFERENCES AMONG BRNG. ELEV.



WIND LOAD CRITERIA

DIST. FROM OCEANLINE	N/A
EXPOSURE CATEGORY	D
BLDG. CATEGORY	II
WIND SPEED	175 M.P.H.
MEAN HEIGHT	26'-0"
DEAD LOAD	10 P.S.F.
BLDG TYPE	ENCLOSED
WIND DURATION	1.60
ASCE	7-10

- NOTES:**
- FOR HANGER CONNECTION REFER TO HANGER DETAIL SHEETS ATTACHED, IF APPLICABLE.
 - FOR BRACING ON WEBS AND COMPRESSIVE REFER TO ENGINEERING SHEETS.
 - FOR HANGER SHOWN ON ROOF LAYOUT, REFER TO HANGER DETAIL SHEETS ATTACHED IN ENGINEERING PACKAGE.
 - FIELD BRACING IS NOT THE RESPONSIBILITY OF THE TRUSS FABRICATOR. PERSON ERECTING TRUSSES ARE CAUTIONED TO SEEK PROFESSIONAL ADVICE REGARDING ERECTION BRACING WHICH IS ALWAYS REQUIRED TO PREVENT TOPPLING AND DOMING DURING ERECTION, AND PERMANENT BRACING WHICH MAY BE REQUIRED IN SPECIFIC APPLICATIONS. TRUSSES SHALL BE ERECTED AND FASTENED IN A STRAIGHT AND PLUMB POSITION. TRUSSES SHALL BE HANDLED WITH REASONABLE CARE DURING ERECTION TO PREVENT DAMAGE.
 - CONTRACTOR OR OWNER MUST SCAB ANY TRUSSES AS REQUIRED AND SPECIFIED ON ENGINEERING SHEETS.
 - CONTRACTOR OR OWNER IS ADVISED TO SEEK PROFESSIONAL ADVICE BEFORE APPROVING THIS LAYOUT.
 - DO NOT CUT OR ALTER TRUSSES. DECO WILL NOT HONOR BACK CHARGES UNLESS AUTHORIZED BY THIS OFFICE.
 - TRUSSES MAY NOT BE SYMMETRICAL. ALWAYS REFER TO ENG. SHEETS WHEN ERECTING TRUSSES!

O.K. TO FABRICATE - PER TRUSS PLAN

Date: _____

Signature: _____

NOTE:

RETURN THIS APPROVE DRAWING TO DECO TRUSS, FABRICATION WILL NOT START UNTIL PLAN HAS BEEN RECEIVED

NOTE:

CUSTOMER / CONTRACTOR HAS BEEN PROVIDED WITH T.P.I. RECOMMENDATIONS FOR BRACING AND TRUSS ERECTION

ACKNOWLEDGE RECEIPT / DATE

REVISIONS:

REV. NUMBER	REV. DATE
1	06/05/13
2	07/24/13
3	09/03/13

SECTION A

SECTION B

SECTION C

SECTION D

SECTION E

SECTION F

SECTION G

SECTION H

SECTION I

SECTION J

SECTION K

SECTION L

SECTION M

SECTION N

SECTION O

SECTION P

OFFICE COPY
CITY OF MIAMI BEACH
APPROVED FOR PERMIT BY
THE FOLLOWING:

BUILDING:
ZONING:
PLUMBING:
ELECTRICAL:
MECHANICAL:
FIRE PREVENTION:
FLOOD:
PUBLIC WORKS:
STRUCTURAL:
ELEVATOR:

SHOP DRAWING DOCUMENT REVIEW

THESE DOCUMENTS HAVE BEEN REVIEWED FOR CONFORMANCE WITH THE DESIGN CONCEPT AND INTENT AND GENERAL COMPLIANCE WITH THE CONTRACT DOCUMENTS. THE CONTRACTOR IS RESPONSIBLE FOR CONFIRMING AND CORRELATING ALL QUANTITIES AND DIMENSIONS, FABRICATION AND CONSTRUCTION METHODS AND COORDINATION OF THIS TRADE WITH ALL OTHER APPLICABLE TRADES.

APPROVED AS SUBMITTED ☒
APPROVED AS NOTED ☐
REJECTED / RESUBMIT ☐
DATE: 10/03/13 REVIEWED BY: JFB

JUAN FERNANDEZ-BARQUIN, P.E.
STRUCTURAL ENGINEERS / THRESHOLD INSPECTORS
2520 NW 97 Ave., Suite 240
Doral, Florida 33172
Phone: 786-336-0881
Fax: 786-336-0884

DECO
TRUSS COMPANY, INC.
Trusses & Building Materials
13980 S.W. 252nd Street - Miami, FL 33032
Phone: (305) 267-1910
Web: www.decotruss.com

RESIDENCE: WADE
5970 N. BAY ROAD, MIAMI BEACH, FL
(FRAME PRO CONSTRUCTION CORP.)

CC#: 12-0912.02 NAME: MARIO ESPINOSA
PLAN No. 8008 1 OF 2 DRAWN BY: JI DATE: 04/12/13

TRUSS PLACEMENT PLAN
SCALE: 3/16"=1'-0"

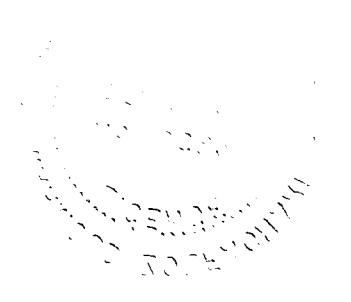
ALL SPACING 24" O.C.
UNLESS OTHERWISE NOTED.

APPROVED AS NOTED:

- HURRICANE STRAP, WALLS, AND FOUNDATIONS MUST BE CAPABLE OF WITHSTANDING UPLIFT AS SHOWN ON ENG. DRAWINGS & F.R.C.
- ADDITIONAL STRAPS OR OTHER CONNECTIONS ARE REQ'D IN ADDITION TO STANDARD CONNECTION.
- ANY REPAIRS AT THE FIELD MUST BE APPROVED BY A REGISTERED ENGINEER.
- JOB SITE FRAMING MUST BE APPROVED BY OTHERS.
- LEDGER DESIGN AND CONNECTION MUST BE APPROVED BY OTHERS.
- ERECTION SUPERVISION IS REQUIRED.
- EXISTING TRUSSES MUST BE CAPABLE OF WITHSTANDING ADDITIONAL LOAD DUE TO THE NEW TRUSSES.
- LOADING ON GIRDER TRUSSES MUST BE CHECKED AND VERIFIED BY ARCHITECT OR ENGINEER OF RECORD.

MAHMOUD ZOLFAGHARI, P.E.
30921
13901 S.W. 108 AVE.
MIAMI, FLORIDA
(305) 253-2428

9/3/13



BRV 140376
5960 N. Bay Rd.
Master
81000278

B1402246
B120 2278

ROOF ASSEMBLIES AND ROOFTOP STRUCTURES

0115
021214

Florida Building Code Edition 2010

High-Velocity Hurricane Zone Uniform Permit Application Form.

Section A (General Information)

Master Permit No. _____ Process No. _____

Contractor's Name BULLOINK ULTIMATE ROOFING & SOLAR

Job Address 5890 N. BAY ROAD

- ROOF CATEGORY
- ☐ ~~Low Slope~~ In addition to the requirement of this permit, there may be additional restrictions applicable to the following categories of roofs found in the Public Records of this County and there may be additional permits required from other government entities such as municipalities, districts, state agencies, or federal agencies.
- ☐ ~~Asphaltic Shingles~~ ☐ Mechanically Fastened Tile ☒ Mortar/Adhesive Set Tile
- ☐ ~~Asphaltic Shingles~~ ☐ Metal Panel/Shingles ☐ Wood Shingles/Shakes
- ☒ New Roof ☐ Repair ☐ Maintenance
- ☐ ~~Asphaltic Shingles~~ ☐ Recovering
- The City of Miami Beach assumes no responsibility for accuracy of or results from these plans which are approved subject to compliance with all Federal, State, and Local Laws, Rules, and Regulations.

ROOF SYSTEM INFORMATION

Low Slope Roof Area (SF)

Steep Sloped Roof Area (SF) 9000 Total (SF)

Section B (Roof Plan)

City of Miami Beach
Building Department

Sketch Roof Plan: Illustrate all levels and sections, roof drains, scuppers, overflow scuppers and overflow drains. Include dimensions of sections and levels, clearly identify dimensions of elevated pressure zones and location of parapets.

OFFICE COPY

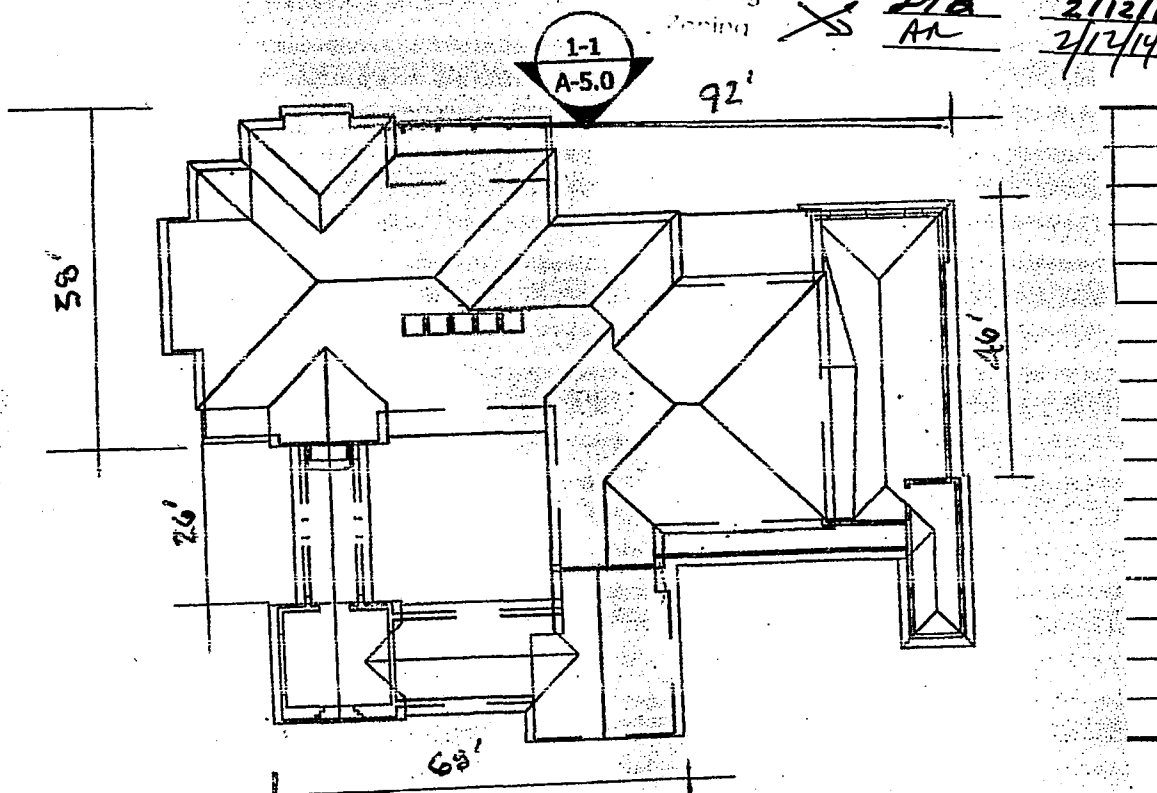
Review Type
Roofing ☒ ~~Other~~

Initials

Date

DPB
AR

2/12/14
2/12/14



01B
001014

Florida Building Code Edition 2010...
High-Velocity Hurricane Zone Uniform Permit Application Form.

Section D (Steep Sloped Roof System)

Roof System Manufacturer: <u>ARTEZANOS INC.</u>
Notice of Acceptance Number: <u>NOA. No 09-0422.05</u>
Minimum Design Wind Pressures, If Applicable (From RAS 127 or Calculations): P1: <u>-5.36</u> P2: <u>-12.96</u> P3: <u>-21.58</u>

Steep Sloped Roof System Description

<div style="border: 1px solid black; padding: 2px; margin-bottom: 10px;">Roof Slope: <u>4</u> : 12</div> <div style="border: 1px solid black; padding: 2px; margin-bottom: 10px;">Ridge Ventilation? <u>N/A</u></div> <div style="border: 1px solid black; padding: 2px; margin-bottom: 10px;">Mean Roof Height: <u>20'</u></div>	<div style="border: 1px solid black; padding: 2px; margin-bottom: 10px;">Deck Type: <u>5/8" Plywood</u></div> <div style="border: 1px solid black; padding: 2px; margin-bottom: 10px;">Type Underlayment: <u>SHARKSKIN ULTRA</u></div> <div style="border: 1px solid black; padding: 2px; margin-bottom: 10px;">Insulation: <u>NONE</u></div> <div style="border: 1px solid black; padding: 2px; margin-bottom: 10px;">Fire Barrier: <u>NONE</u></div> <div style="border: 1px solid black; padding: 2px; margin-bottom: 10px;">Fastener Type & Spacing: <u>1 1/4" RING SHANK 6" O.C</u> <u>2x2 LAPS 10" O.C FIELD</u></div> <div style="border: 1px solid black; padding: 2px; margin-bottom: 10px;">Adhesive Type: <u>Poly Form</u></div> <div style="border: 1px solid black; padding: 2px; margin-bottom: 10px;">Type Cap Sheet: <u>SHARKSKIN SA</u></div> <div style="border: 1px solid black; padding: 2px; margin-bottom: 10px;">Roof Covering: <u>ARTEZANOS Hybrid</u></div> <div style="border: 1px solid black; padding: 2px; margin-bottom: 10px;">Type & Size Drip Edge: <u>2x2 COPPER</u> <u>1607 NAILD WITH</u> <u>1 1/4 COPPER RING SHANK</u> <u>NAILS 4" O.C.</u> <u>STAGGERED.</u></div>
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Florida Building Code Edition 2010

High-Velocity Hurricane Zone Uniform Permit Application Form.

Section E (Tile Calculations)

For Moment based tile systems, choose either Method 1 or 2. Compare the values for M_r with the values from M_f . If the M_f values are greater than or equal to the M_r values, for each area of the roof, then the tile attachment method is acceptable.

Method 1 "Moment Based Tile Calculations Per RAS 127"

$$\begin{aligned} (P_1: 48.4 \times \lambda \cdot 21 = 10.25) - M_g: 4.89 = M_{f1} \quad 5.36 \quad \text{Product Approval } M_f \sim 190.84 \\ (P_2: 85 \times \lambda \cdot 21 = 17.85) - M_g: 4.89 = M_{f2} \quad 12.96 \quad \text{Product Approval } M_f \sim 190.84 \\ (P_3: 125.71 \times \lambda \cdot 21 = 26.40) - M_g: 4.89 = M_{f3} \quad 21.51 \quad \text{Product Approval } M_f \sim 190.84 \end{aligned}$$

Method 2 "Simplified Tile Calculations Per Table Below"

Required Moment of Resistance (M_r) From Table Below _____ Product Approval M_f _____

M _r required Moment Resistance*					
Mean Roof Height → Roof Slope ↓	15'	20'	25'	30'	40'
2:12	34.4	36.5	38.2	39.7	42.2
3:12	32.2	34.4	36.0	37.4	39.8
4:12	30.4	32.2	33.8	35.1	37.3
5:12	28.4	30.1	31.6	32.8	34.9
6:12	26.4	28.0	29.4	30.5	32.4
7:12	24.4	25.9	27.1	28.2	30.0

*Must be used in conjunction with a list of moment based tile systems endorsed by the Broward County Board of Rules and Appeals.

For Uplift based tile systems use Method 3. Compared the values for F' with the values for F_r . If the F' values are greater than or equal to the F_r values, for each area of the roof, then the tile attachment method is acceptable.

Method 3 "Uplift Based Tile Calculations Per RAS 127"

$$\begin{aligned} (P_1: \text{ } \times L \text{ } = \text{ } \times w: \text{ }) - W: \text{ } \times \cos \theta \text{ } = F_{r1} \text{ } \quad \text{Product Approval } F' \text{ } \\ (P_2: \text{ } \times L \text{ } = \text{ } \times w: \text{ }) - W: \text{ } \times \cos \theta \text{ } = F_{r2} \text{ } \quad \text{Product Approval } F' \text{ } \\ (P_3: \text{ } \times L \text{ } = \text{ } \times w: \text{ }) - W: \text{ } \times \cos \theta \text{ } = F_{r3} \text{ } \quad \text{Product Approval } F' \text{ } \end{aligned}$$

Where to Obtain Information		
Description	Symbol	Where to find
Design Pressure	P1 or P2 or P3	RAS 127 Table 1 or by an engineering analysis prepared by PE based on ASCE7
Mean Roof Height	H	Job Site
Roof Slope	θ	Job Site
Aerodynamic Multiplier	λ	Product Approval
Restoring Moment due to Gravity	M_g	Product Approval
Attachment Resistance	M_f	Product Approval
Required Moment Resistance	M_r	Calculated
Minimum Attachment Resistance	F'	Product Approval
Required Uplift Resistance	F_r	Calculated
Average Tile Weight	W	Product Approval
Tile Dimensions	L = length W = width	Product Approval

All calculations must be submitted to the building official at the time of permit application.

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Office
COPY



B1402246

BUILDING CODE COMPLIANCE OFFICE (BCCO)
PRODUCT CONTROL DIVISION

MIAMI-DADE COUNTY, FLORIDA
METRO-DADE FLAGLER BUILDING
140 WEST FLAGLER STREET, SUITE 1603
MIAMI, FLORIDA 33130-1563
(305) 375-2901 FAX (305) 375-2908

NOTICE OF ACCEPTANCE (NOA)

Artezanos, Inc.
9455 SW 78th Street
Miami, FL 33173

SCOPE:

This NOA is being issued under the applicable rules and regulations governing the use of construction materials. The documentation submitted has been reviewed by Miami-Dade County Product Control Division and accepted by the Board of Rules and Appeals (BORA) to be used in Miami Dade County and other areas where allowed by the Authority Having Jurisdiction (AHJ).

This NOA shall not be valid after the expiration date stated below. The Miami-Dade County Product Control Division (In Miami Dade County) and/or the AHJ (in areas other than Miami Dade County) reserve the right to have this product or material tested for quality assurance purposes. If this product or material fails to perform in the accepted manner, the manufacturer will incur the expense of such testing and the AHJ may immediately revoke, modify, or suspend the use of such product or material within their jurisdiction. BORA reserves the right to revoke this acceptance, if it is determined by Miami-Dade County Product Control Division that this product or material fails to meet the requirements of the applicable building code.

This product is approved as described herein, and has been designed to comply with the High Velocity Hurricane Zone of the Florida Building Code.

DESCRIPTION: Artezanos World Class

LABELING: Each unit shall bear a permanent label with the manufacturer's name or logo, city, state and following statement: "Miami-Dade County Product Control Approved", unless otherwise noted herein.

RENEWAL of this NOA shall be considered after a renewal application has been filed and there has been no change in the applicable building code negatively affecting the performance of this product.

TERMINATION of this NOA will occur after the expiration date or if there has been a revision or change in the materials, use, and/or manufacture of the product or process. Misuse of this NOA as an endorsement of any product, for sales, advertising or any other purposes shall automatically terminate this NOA. Failure to comply with any section of this NOA shall be cause for termination and removal of NOA.

ADVERTISEMENT: The NOA number preceded by the words Miami-Dade County, Florida, and followed by the expiration date may be displayed in advertising literature. If any portion of the NOA is displayed, then it shall be done in its entirety.

INSPECTION: A copy of this entire NOA shall be provided to the user by the manufacturer or its distributors and shall be available for inspection at the job site at the request of the Building Official.

This renews NOA # 08-0617.01 and consists of pages 1 through 11.
The submitted documentation was reviewed by Alex Tigera.



NOA No 09-0422.05
Expiration Date: 05/14/14
Approval Date: 06/03/09
Page 1 of 11

ROOFING ASSEMBLY APPROVAL

Category: Roofing
Sub Category: Roofing Tiles
Material: Clay

1. SCOPE

This approves a roofing system using "World Class Two Piece Handmade Tapered Mission Barrel Roofing Tile" Clay Roof Tile, as manufactured by Artezanos, Inc. described in Section 2 of this Notice of Acceptance. For the locations where the pressure requirements, as determined by applicable Building Code, does not exceed the values listed in section 4 herein. The attachment calculations shall be done as a moment based system.

2. PRODUCT DESCRIPTION

<u>Manufactured by Applicant</u>	<u>Dimensions</u>	<u>Test Specifications</u>	<u>Product Description</u>
2 Piece Handmade Tapered Mission Barrel Tile	l = 18" w = 8" ½" thick	ASTM C 1167	High profile, two piece, barrel, clay roof tile. For direct deck adhesive or mortar set applications.
Italian Pan Tile	l = 19.4" w = 10" ½" thick	ASTM C 1167	Flat pan clay tile to be used in conjunction with Handmade Tapered Mission Barrel Tile as the cap. For direct deck adhesive or mortar set applications.
Steel Pan	l = 21"- 84" w = 7.5" .0179" thick (26 ga.)	TAS 110	Kynar or Hylar coated steel pan tile to be used in conjunction with Handmade Tapered Mission Barrel Tile as the cap. For direct deck adhesive set applications.
Aluminum Pan	l = 21"-84" w = 7.5" .025" thick (22 ga.)	TAS 110	Aluminum pan tile (with optional coating of Kynar or Hylar) to be used in conjunction with Handmade Tapered Mission Barrel Tile as the cap. For direct deck adhesive set applications.
Trim Pieces	l = varies w = varies varying thickness	ASTM C 1167	Accessory trim, clay roof pieces for use at hips, rakes, ridges and valley terminations.

2.1. EVIDENCE SUBMITTED

<u>Test Agency</u>	<u>Test Identifier</u>	<u>Test Name/Report</u>	<u>Date</u>
Testwell Craig Laboratories & Consultants, Inc.	Lab #ABM-4	Static Uplift Testing PA 101 (Mortar Set)	Jan 1995
	Lab #ABM-20	Static Uplift Testing PA 101 (Adhesive Set)	Nov 1995
	Lab #ABM-1	Physical Properties ASTM C 1167	2003
IBA Consultants Inc.	2352-39	Physical Properties ASTM C 1167	Nov. 2005
	2352-47	Physical Properties ASTM C 1167	June 2006
	2352-38	Static Uplift Testing TAS 101 (Adhesive Set)	Dec. 2005
	2352-64	Static Uplift Testing TAS 101 (Mortar Set)	May 2008
	2352-53	Static Uplift Testing TAS 101 (Adhesive Set with Steel Pan)	April 2008
	2352-59	Static Uplift Testing TAS 101 (Adhesive Set with Aluminum Pan)	April 2008
Walker Engineering		Thermal Expansion of Steel, Concrete and Clay Components	
Southwest Research Institute	01.13537.01.310	ASTM E-108	April 2008
American Test Lab of South Florida	RT0505.02-09	ASTM C 1167	May 2009
American Test Lab of South Florida	RT0505.01-09	ASTM C 1167	May 2009

3. LIMITATIONS

- 3.1 Fire classification is not part of this acceptance.
- 3.2 For mortar or adhesive set tile applications, a static field uplift test in accordance with RAS 106 may required, refer to applicable building code.
- 3.3 Applicant shall retain the services of a Miami-Dade County Certified Laboratory to perform quarterly test in accordance with TAS 112, appendix 'A'. Such testing shall be submitted to the Building Code Compliance Office for review.
- 3.4 Minimum underlayments shall be in compliance with the applicable Roofing Applications Standards listed section 4.1, 4.3, 4.5 and 4.7 herein.
- 3.5 30/90 hot mopped underlayment applications may be installed perpendicular to the roof slope unless stated otherwise by the underlayment material manufacturers published literature.
- 3.6 This acceptance is for wood deck applications. Minimum deck requirements shall be in compliance with applicable building code.
- 3.7 When using Steel or Aluminum Pan tile, panels must be clean to ensure proper adhesion.

4. INSTALLATION

System A1 – Handmade Barrel Tile (Two-Piece Cap and Pan)

4.1. "World Class Two Piece Handmade Tapered Mission Roofing Tile" and its components shall be installed in strict compliance with Roofing Application Standard RAS 120.

4.2. Data for Attachment Calculations

Table 1: Average Weight (W) and Dimensions (l x w)			
Tile Profile	Weight-W (lbf)	Length - l (feet)	Width - w (feet)
Two Piece Handmade Tapered Mission Tile	5.8	1.42	0.58

Table 2: Aerodynamic Multipliers - λ (ft ³)	
Tile Profile	λ (ft ³) Direct Deck Application
Two Piece Handmade Tapered Mission Tile	0.22

Table 3: Restoring Moments due to Gravity - M_g (ft-lbf)						
Tile Profile	2":12"	3":12"	4":12"	5":12"	6":12"	7":12"
Two Piece Handmade Tapered Mission Tile	3.9	3.8	3.7	3.6	3.5	3.4

Table 4: Attachment Resistance Expressed as a Moment - M_r (ft-lbf) for Mortar or Adhesive Set Systems		
Tile Profile	Tile Application	Attachment Resistance
Two Piece Handmade Tapered Mission Tile	Adhesive Set	111.4 ¹
1. Place 42 grams per pan and 21 grams per cap (on each side) of PolyPro™.		

Table 5: Attachment Resistance Expressed as a Moment - M_r (ft-lbf) for Mortar Set Systems		
Tile Profile	Tile Application	Attachment Resistance
Two Piece Handmade Tapered Mission Tile	Mortar Set	57.4 ²
2. Quickcrete Mortar		

System A2 – Handmade Barrel Tile with Italian Pan Tile

4.3. "World Class Two Piece Handmade Tapered Mission Roofing Tile" and its components shall be installed in strict compliance with Roofing Application Standard RAS 120.

4.4. Data for Attachment Calculations

Table 1: Average Weight (W) and Dimensions (l x w)			
Tile Profile	Weight-W (lbf)	Length - l (feet)	Width - w (feet)
Handmade Tapered Mission Tile with Italian Pan Tile	5.2	1.5	0.667

Table 2: Aerodynamic Multipliers - λ (ft ³)	
Tile Profile	λ (ft ³) Direct Deck Application
Handmade Tapered Mission Tile with Italian Pan Tile	0.22

Table 3: Restoring Moments due to Gravity - M_g (ft-lbf)						
Tile Profile	2":12"	3":12"	4":12"	5":12"	6":12"	7":12"
Handmade Tapered Mission Tile with Italian Pan Tile	4.85	4.77	4.66	4.51	4.30	4.05

Table 4: Attachment Resistance Expressed as a Moment - M_f (ft-lbf) for Mortar or Adhesive Set Systems		
Tile Profile	Tile Application	Attachment Resistance
Handmade Tapered Mission Tile with Italian Pan Tile	Adhesive Set	63.4 ³
3. Place 19.3 grams per pan and 10 grams per cap (on each side) of PolyPro™.		

Table 5: Attachment Resistance Expressed as a Moment - M_f (ft-lbf) for Mortar Set Systems		
Tile Profile	Tile Application	Attachment Resistance
Handmade Tapered Mission Tile with Italian Pan Tile	Mortar Set	77.64 ⁴
4. Quickcrete Mortar		

System A3 – Handmade Barrel Tile with Steel Pan Tile

4.5. “World Class Two Piece Handmade Tapered Mission Roofing Tile” and its components shall be installed in strict compliance with Roofing Application Standard RAS 120.
(See Detail B)

4.6. Data for Attachment Calculations

Table 1: Average Weight (W) and Dimensions (l x w)			
Tile Profile	Weight-W (lbf)	Length - l (feet)	Width - w (feet)
Handmade Tapered Mission Tile/Steel Pan	5.2	1.5	0.667

Table 2: Aerodynamic Multipliers - λ (ft ³)	
Tile Profile	λ (ft ³) Direct Deck Application
Handmade Tapered Mission Tile/Steel Pan	0.22

Table 3: Restoring Moments due to Gravity - M_g (ft-lbf)						
Tile Profile	2":12"	3":12"	4":12"	5":12"	6":12"	7":12"
Handmade Tapered Mission Tile/Steel Pan	5.13	5.05	4.93	4.77	4.56	4.29

Table 4: Attachment Resistance Expressed as a Moment - M_r (ft-lbf) for Mortar or Adhesive Set Systems		
Tile Profile	Tile Application	Attachment Resistance
Handmade Tapered Mission Tile/Steel Pan	Adhesive Set	39.57 ⁵
5. Place 9.3 grams <u>per step</u> of pan and 5 grams on each side of cap of PolyPro™.		

System A4 – Handmade Barrel Tile with Aluminum Pan Tile

4.7. "World Class Two Piece Handmade Tapered Mission Roofing Tile" and its components shall be installed in strict compliance with Roofing Application Standard RAS 120.
(See Detail C)

4.8. Data for Attachment Calculations

Table 1: Average Weight (W) and Dimensions (l x w)			
Tile Profile	Weight-W (lbf)	Length - l (feet)	Width - w (feet)
Handmade Tapered Mission Tile/Aluminum Pan	5.2	1.5	0.667

Table 2: Aerodynamic Multipliers - λ (ft ³)	
Tile Profile	λ (ft ³) Direct Deck Application
Handmade Tapered Mission Tile/Aluminum Pan	0.22

Table 3: Restoring Moments due to Gravity - M_g (ft-lbf)						
Tile Profile	2":12"	3":12"	4":12"	5":12"	6":12"	7":12"
Handmade Tapered Mission Tile/Aluminum Pan	5.08	5.01	4.89	4.74	4.54	4.28

Table 4: Attachment Resistance Expressed as a Moment - M_r (ft-lbf) for Mortar or Adhesive Set Systems		
Tile Profile	Tile Application	Attachment Resistance
Handmade Tapered Mission Tile/Aluminum Pan	Adhesive Set	190.84 ⁶
6. Place 31.9 grams <u>per step</u> of pan and 17.5 grams for each side of the cap of PolyPro™.		

5. LABELING

All tiles shall bear the imprint or identifiable marking of the manufacturer's name or logo (See Detail Below), or following statement: "Miami-Dade County Product Control Approved".



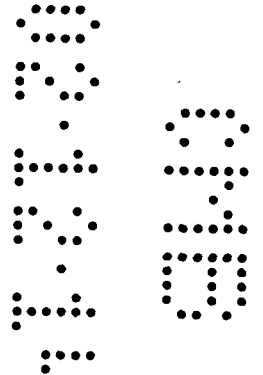
ARTEZANOS WORLD CLASS TILE LABEL
(LOCATED ON EITHER TOPSIDE OR UNDERSIDE OF TILE)

6. BUILDING PERMIT REQUIREMENTS

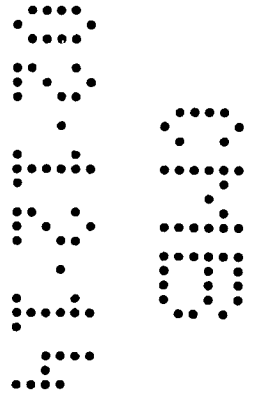
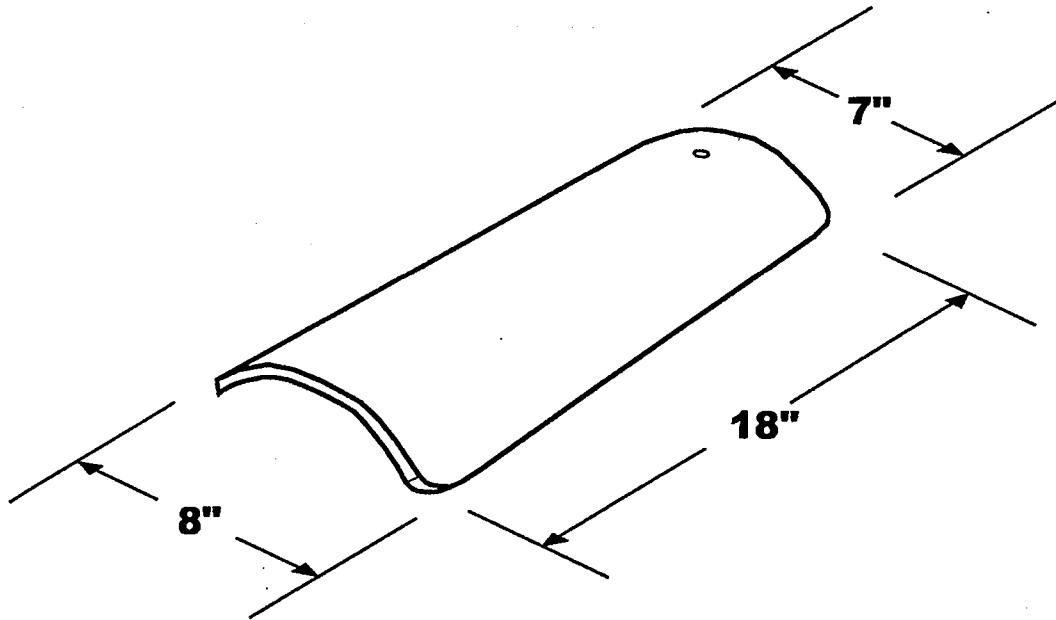
6.1 Application for building permit shall be accompanied by copies of the following:

6.1.1 This Notice of Acceptance.

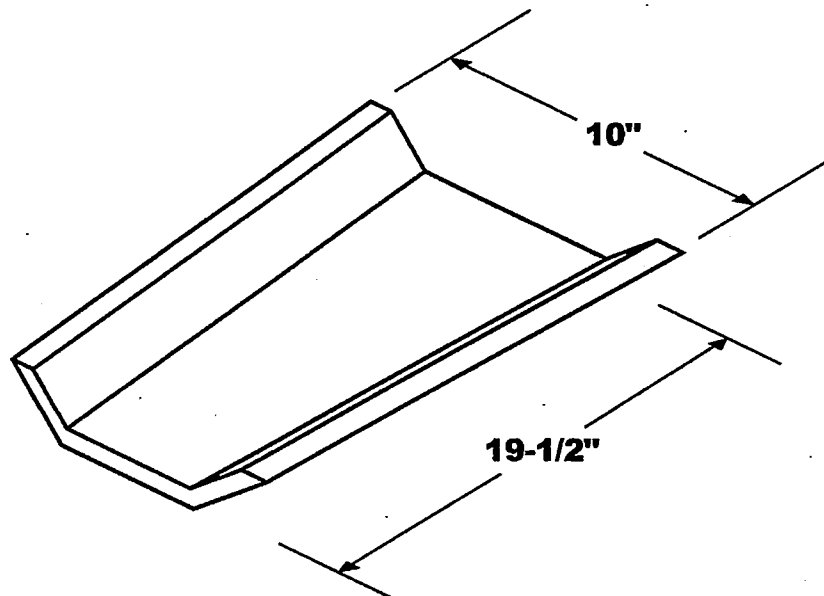
6.1.2 Any other documents as required by the Building Official in order to properly evaluate the installation of this system.



PROFILE DRAWING

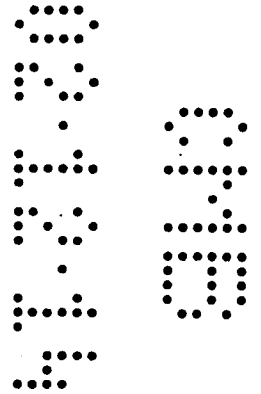
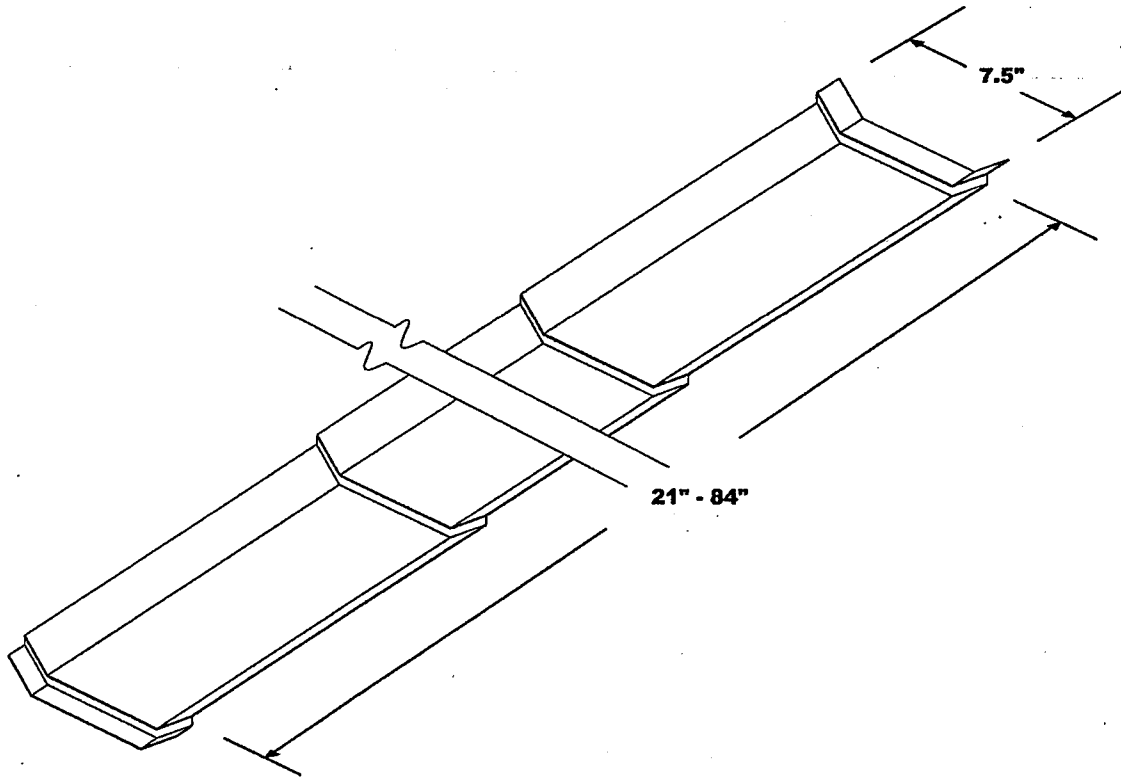


ARTEZANOS, INC. "2 PIECE HANDMADE TAPERED MISSION BARREL TILE
DETAIL A



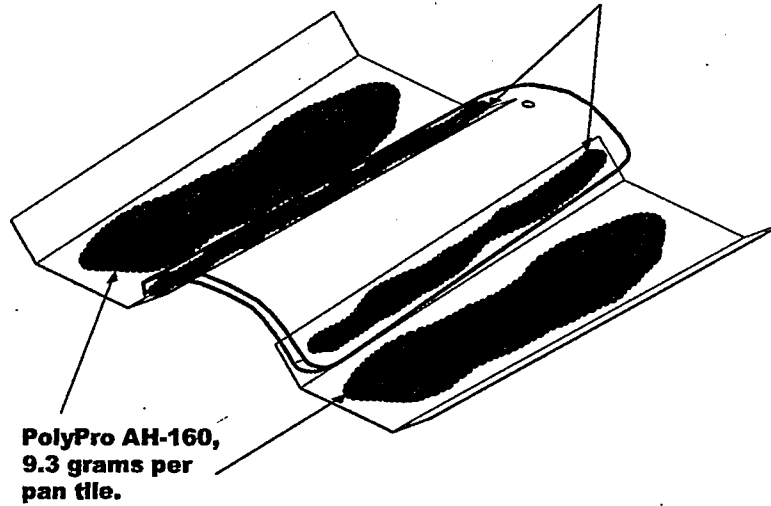
ARTEZANOS, INC. ITALIAN PAN TILE

DETAIL B



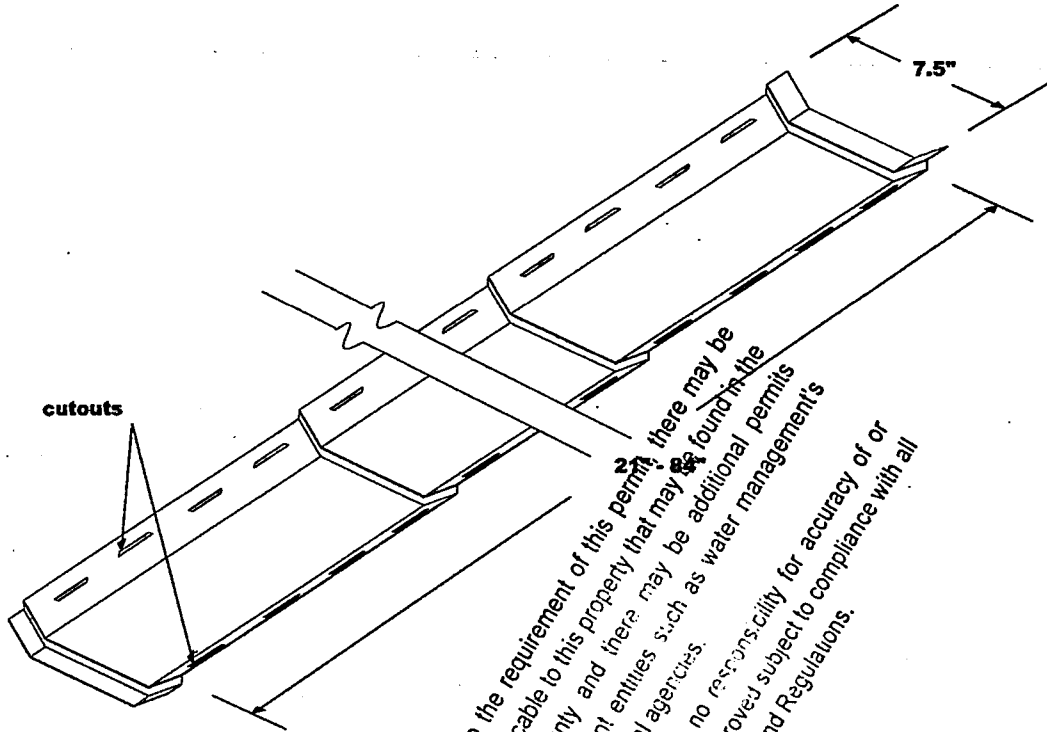
ARTEZANOS, INC. STEEL PAN TILE

**PolyPro AH-160,
5 grams per each side
of cap tile.**



**PolyPro AH-160,
9.3 grams per
pan tile.**

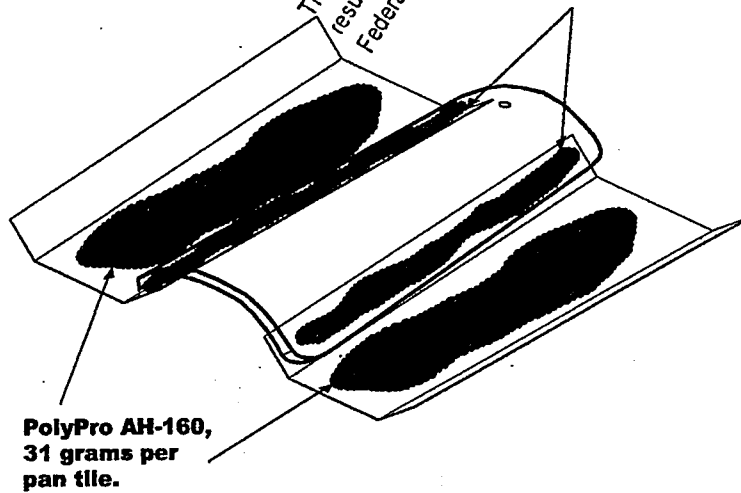
DETAIL C



NOTICE: In addition to the requirement of this permit, there may be additional restrictions applicable to this property that may be found in the Public Records of this County and there may be additional permits required from other government entities such as water management's districts, state agencies, or federal agencies. The City of Miami Beach assumes no responsibility for accuracy of or results from these permits which are approved subject to compliance with all Federal, State, and Local Laws, Rules, and Regulations.

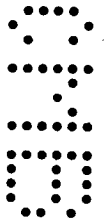
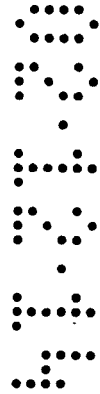
ACCEPTANCE OF ALUMINUM PAN TILE

PolyPro AH-160,
17 grams per each side
of cap tile.



PolyPro AH-160,
31 grams per
pan tile.

END OF THIS ACCEPTANCE





B1407246

MIAMI-DADE COUNTY
PRODUCT CONTROL SECTION
11805 SW 26 Street, Room 208
Miami, Florida 33175-2474
T (786)315-2590 F (786) 315-2599
www.miamidadecounty.gov/economy

DEPARTMENT OF REGULATORY AND ECONOMIC RESOURCES (RER)
BOARD AND CODE ADMINISTRATION DIVISION
NOTICE OF ACCEPTANCE (NOA)

3M Company
3M Center Building 0220-05-E-06
St. Paul, MN. 55144-1000

SCOPE:

This NOA is being issued under the applicable rules and regulations governing the use of construction materials. The documentation submitted has been reviewed and accepted by Miami-Dade County RER -Product Control Section to be used in Miami Dade County and other areas where allowed by the Authority Having Jurisdiction (AHJ).

This NOA shall not be valid after the expiration date stated below. The Miami-Dade County Product Control Section (In Miami Dade County) and/or the AHJ (in areas other than Miami Dade County) reserve the right to have this product or material tested for quality assurance purposes. If this product or material fails to perform in the accepted manner, the manufacturer will incur the expense of such testing and the AHJ may immediately revoke, modify, or suspend the use of such product or material within their jurisdiction. RER reserves the right to revoke this acceptance, if it is determined by Miami-Dade County Product Control Section that this product or material fails to meet the requirements of the applicable building code.

This product is approved as described herein, and has been designed to comply with the Florida Building Code including the High Velocity Hurricane Zone of the Florida Building Code.

DESCRIPTION: 3M™ 2-Component Foam Roof Tile Adhesive H-160

LABELING: Each unit shall bear a permanent label with the manufacturer's name or logo, city, state and following statement: "Miami-Dade County Product Control Approved" unless otherwise noted herein.

RENEWAL of this NOA shall be considered after a renewal application has been filed and there has been no change in the applicable building code negatively affecting the performance of this product.

TERMINATION of this NOA will occur after the expiration date if there has been a revision or change in the materials, use, and/or manufacture of the product or process. No use of this NOA as an endorsement of any product, for sales, advertising or any other purposes shall automatically terminate this NOA. Failure to comply with any section of this NOA shall be cause for termination and removal of NOA.

ADVERTISEMENT: The NOA number preceded by the words Miami-Dade County, Florida, and followed by the expiration date may be displayed in advertising literature. If any portion of the NOA is displayed, then it shall be done in its entirety.

INSPECTION: A copy of this entire NOA shall be provided to the user by the manufacturer or its distributors and shall be available for inspection at the job site at the request of the Building Official.

This NOA revises NOA 12-0228.18 and consists of pages 1 through 11.
The submitted documentation was reviewed by Juan E. Collao, R.A.



Juan E. Collao

NOA No.: 13-0502.02
Expiration Date: 05/10/17
Approval Date: 12/12/13
Page 1 of 11

AM

ROOFING COMPONENT APPROVAL:

Category: Roofing
Sub Category: Roof tile adhesive
Materials: Polyurethane

SCOPE:

This approves 3M™ 2-Component Foam Roof Tile Adhesive AH-160 as manufactured by 3M Company as described in Section 2 of this Notice of Acceptance. For the locations where the design pressure requirements, as determined by applicable building code, does not exceed the design pressure values obtained by calculations in compliance with Roofing Application Standard RAS 127, for use with approved flat, low, and high profile roof tiles system using 2-Component Foam Roof Tile Adhesive AH-160. Where the attachment calculations are done as a moment based system for single patty placement, and as an uplift based system for double patty systems

PRODUCTS MANUFACTURED BY APPLICANT:

<u>Product</u>	<u>Dimensions</u>	<u>Test Specifications</u>	<u>Product Description</u>
3M™ 2-Component Foam Roof Tile Adhesive AH-160	N/A	TAS 101	Two component polyurethane foam adhesive
Foam Dispenser RTF1000	N/A		Dispensing Equipment
ProPack® 30 & 100	N/A		Dispensing Equipment

PRODUCTS MANUFACTURED BY OTHERS:

Any Miami-Dade County Product Control Accepted Roof Tile Assembly having a current NOA which list moment resistance values with the use of 2-Component Foam Roof Tile Adhesive AH-160 roof tile adhesive.

MANUFACTURING LOCATION:

1. Tomball, TX.

PHYSICAL PROPERTIES:

<u>Property</u>	<u>Test</u>	<u>Results</u>
Density	ASTM D 1622	1.6 lbs./ft. ³
Compressive Strength	ASTM D 1621	18 PSI Parallel to rise 12 PSI Perpendicular to rise
Tensile Strength	ASTM D 1623	28 PSI Parallel to rise
Water Absorption	ASTM D 2127	0.08 Lbs./Ft ²
Moisture Vapor Transmission	ASTM E 96	3.1 Perm / Inch
Dimensional Stability	ASTM D 2126	+0.07% Volume Change @ -40° F., 2 weeks +6.0% Volume Change @ 158°F., 100% Humidity, 2 weeks
Closed Cell Content	ASTM D 2856	86%

Note: The physical properties listed above are presented as typical average values as determined by accepted ASTM test methods and are subject to normal manufacturing variation.



NOA No.: 13-0502.02
Expiration Date: 05/10/17
Approval Date: 12/12/13
Page 2 of 11

EVIDENCE SUBMITTED:

<u>Test Agency</u>	<u>Test Identifier</u>	<u>Test Name/Report</u>	<u>Date</u>
Center for Applied Engineering	#94-060	TAS 101	04/08/94
	257818-1PA	TAS 101	12/16/96
	25-7438-3	SSTD 11-93	10/25/95
	25-7438-4		
	25-7438-7	SSTD 11-93	11/02/95
Miles Laboratories Polymers Division	25-7492	SSTD 11-93	12/12/95
	NB-589-631	ASTM D 1623	02/01/94
Ramtech Laboratories, Inc.	9637-92	ASTM E 108	04/30/93
Southwest Research Institute	01-6743-011	ASTM E 108	11/16/94
	01-6739-062b[1]	ASTM E 84	01/16/95
Trinity Engineering	7050.02.96-1	TAS 114	03/14/96
	P36700.04.12	ASTM D 1623	04/18/12
	P39740.02.12	TAS 101	02/21/12
		TAS 123	
Celotex Corp. Testing Services	528454-2-1	TAS 101	10/23/98
	528454-9-1		
	528454-10-1		
	520109-1	TAS 101	12/28/98
	520109-2		
	520109-3		
	520109-6		
	520109-7		
	520191-1	TAS 101	03/02/99
	520109-2-1		

LIMITATIONS:

1. Fire classification is not part of this acceptance. Refer to the Prepared Roof Tile Assembly for fire rating.
 2. All approved products listed herein shall be labeled and shall bear the imprint or identifiable marking of the manufacturer's name or logo and following statement: "Miami-Dade County Product Control Approved" or the Miami-Dade County Product Control Seal as shown below.
- A black rectangular seal with rounded corners. The top half contains the text "MIAMI-DADE COUNTY" in white, all-caps, sans-serif font. The bottom half contains the word "APPROVED" in white, all-caps, sans-serif font, centered within a white rectangular border.
3. 3M™ 2-Component Foam Roof Tile Adhesive AH-160 shall solely be used with flat, low, & high tile profiles.
 4. Minimum underlayment shall be in compliance with the Roofing Application Standard RAS 120.
 5. Roof Tile manufactures acquiring acceptance for the use of 3M™ 2-Component Foam Roof Tile Adhesive AH-160 roof tile adhesive with their tile assemblies shall test in accordance with TAS 101.
 6. All products listed herein shall have a quality assurance audit in accordance with the Florida Building Code and Rule 9N-3 of the Florida Administrative Code.



NOA No.: 13-0502.02
Expiration Date: 05/10/17
Approval Date: 12/12/13
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INSTALLATION:

1. 3M™ 2-Component Foam Roof Tile Adhesive AH-160 may be used with any roof tile assembly having a current NOA that lists uplift resistance values with the use of 3M™ 2-Component Foam Roof Tile Adhesive AH-160.
2. 3M™ 2-Component Foam Roof Tile Adhesive AH-160 shall be applied in compliance with the Component Application section and the corresponding Placement Details noted herein. The roof tile assembly's adhesive attachment with the use of 3M™ 2-Component Foam Roof Tile Adhesive AH-160 shall provide sufficient attachment resistance, expressed as an uplift based system, to meet or exceed the uplift resistance determined in compliance with Miami-Dade County Roofing Application Standards RAS 127. The adhesive attachment data is noted in the roof tile assembly NOA.
3. 3M™ 2-Component Foam Roof Tile Adhesive AH-160 and its components shall be installed in accordance with Roofing Application Standard RAS 120, and 3M Company's 3M™ 2-Component Foam Roof Tile Adhesive AH-160 Operating Instruction and Maintenance Booklet.
4. Installation must be by a Factory Trained 'Qualified Applicator' approved and licensed by 3M Company. 3M Company shall supply a list of approved applicators to the authority having jurisdiction.
5. Calibration of the Foam Dispenser RTF1000 dispensing equipment is required before application of any adhesive. The mix ratio between the "A" component and the "B" component shall be maintained between 1.0-1.15 (A): 1.0 (B).
6. 3M™ 2-Component Foam Roof Tile Adhesive AH-160 shall be applied with Foam Dispenser RTF1000 or ProPack® 30 & 100 dispensing equipment only.
7. 3M™ 2-Component Foam Roof Tile Adhesive AH-160 shall not be exposed permanently to sunlight.
8. Tiles must be adhered in freshly applied adhesive. Tile must be set within 1 to 2 minutes after 3M™ 2-Component Foam Roof Tile Adhesive AH-160 has been dispensed.
9. 3M™ 2-Component Foam Roof Tile Adhesive AH-160 placement and minimum patty weight shall be in accordance with the 'Placement Details' herein. Each generic tile profile requires the specific placement noted herein.

Table 1: Adhesive Placement For Each Generic Tile Profile

Tile Profile	Placement Detail	Minimum Paddy Contact Area	Minimum Paddy Gram Weight
Eave Course - Flat, Low, High Profiles	All Eave Course	17-23 sq. inches	45-65
Flat, Low, High Profiles	#1	17-23 sq. inches	45-65
Flat Profile	#2	10-12 sq. inches	30
Low Profile	#2	12-14 sq. inches	30
High Profile	#2	17-19 sq. inches	30
Flat, Low, High Profiles	#3	Two Paddys: 8-9 sq. inches at head of tile 9-11 sq. inches at overlap	12 grams per paddy
Two-Piece Barrel (Cap Tile)	Two Piece	2 Beads (1 each longitudinal edge) 20-25 sq. inches each bead	17 grams per bead
Two Piece Barrel (Pan Tile)	Two Piece	65-70 sq. inches	34 grams under pan

LABELING:

All 3M™ 2-Component Foam Roof Tile Adhesive AH-160 containers shall comply with the Standard Conditions listed herein.

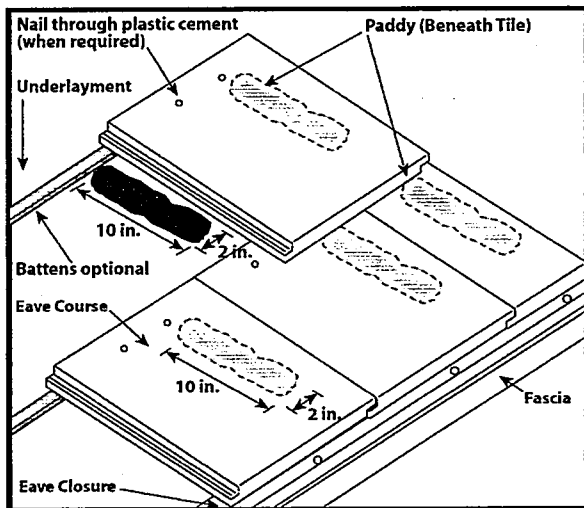
BUILDING PERMIT REQUIREMENTS:

As required by the Building Official or applicable building code in order to properly evaluate the installation of this system.



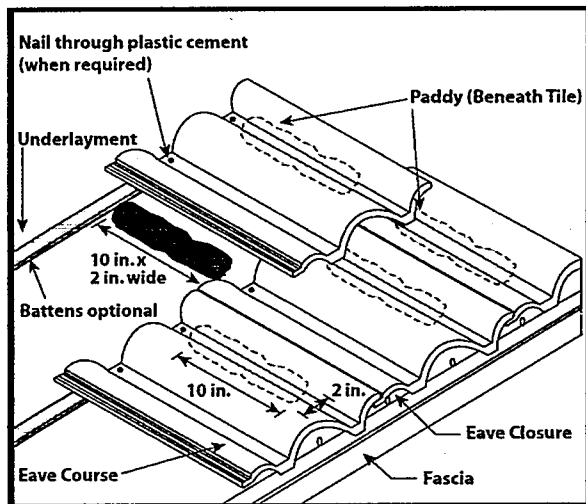
NOA No.: 13-0502.02
 Expiration Date: 05/10/17
 Approval Date: 12/12/13
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ADHESIVE PLACEMENT DETAIL # 1



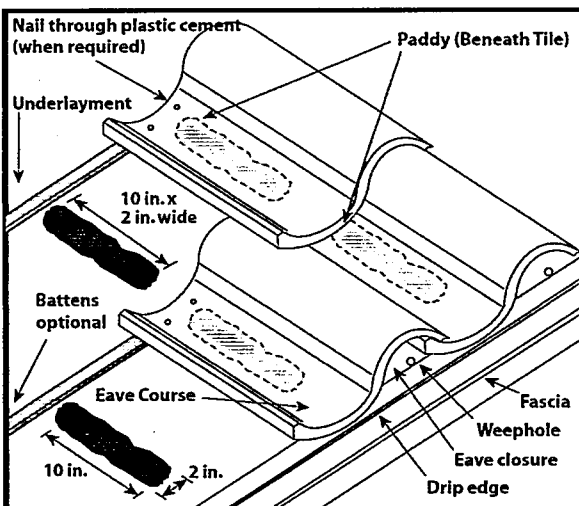
Flat/Low Profile Tile

1. Starting at the eave course, apply a minimum 2" (50.8 mm) x 10" (254 mm) x 1" (25.4 mm) foam paddy onto the underlayment positioned as shown, under the strengthening rib closest to the overlock of the tile being set.
2. Continue in same manner. Insure approximately 17 (109.7 cm²) – 23 (148.4 cm²) square inch adhesive contact with the underside of the tile.



Medium Profile / Double Pan Tile

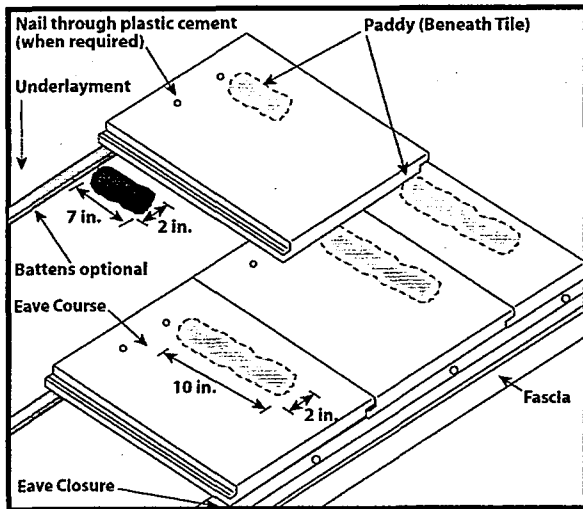
1. Starting at the eave course, apply a minimum 2" (50.8 mm) x 10" (254 mm) x 1" (25.4 mm) foam paddy onto the underlayment positioned as shown, under the pan portion of the tile closest to the overlock of the tile being set.
2. Continue in same manner. Insure approximately 17 (109.7 cm²) – 23 (148.4 cm²) square inch adhesive contact with the underside of the tile.



High Profile / Single Pan Tile

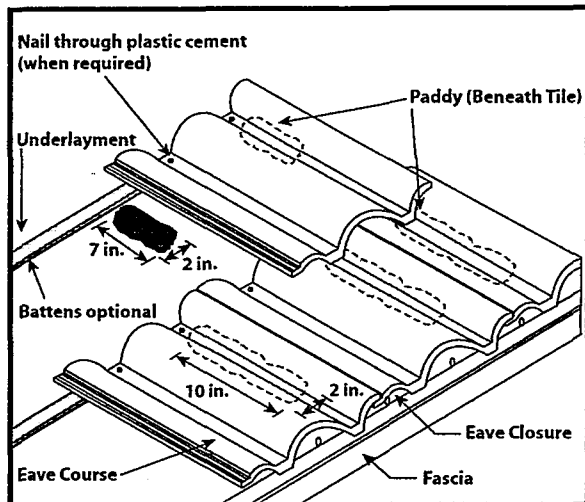
1. Starting at the eave course, apply a minimum 2" (50.8 mm) x 10" (254 mm) x 1" (25.4 mm) foam paddy onto the underlayment positioned as shown under the pan portion of the tile closest to the overlock of the tile being set.
2. Continue in same manner. Insure approximately 17 (109.7 cm²) – 23 (148.4 cm²) square inch adhesive contact with the underside of the tile.

ADHESIVE PLACEMENT DETAIL # 2



Flat/Low Profile Tile

1. Starting at the eave course, apply a minimum 2" (50.8 mm) x 10" (254 mm) x 1" (25.4 mm) foam paddy onto the underlayment positioned as shown under the strengthening rib of the tile closest to the overlock of the tile being set. Insure approximately 17 (109.7 cm²) – 23 (148.4 cm²) square inch adhesive contact with the underside of the tile.
2. At the second course, apply a minimum 2" (50.8mm) x 7" (177.8 mm) x 1" (25.4 mm) foam paddy onto the underlayment positioned as shown under the strengthening rib closest to the overlock of the tile being set.
3. Continue in same manner. Insure approximately 10" (64.5 cm²) - 12 (77.4 cm²) square inch adhesive contact with the underside of the tile.

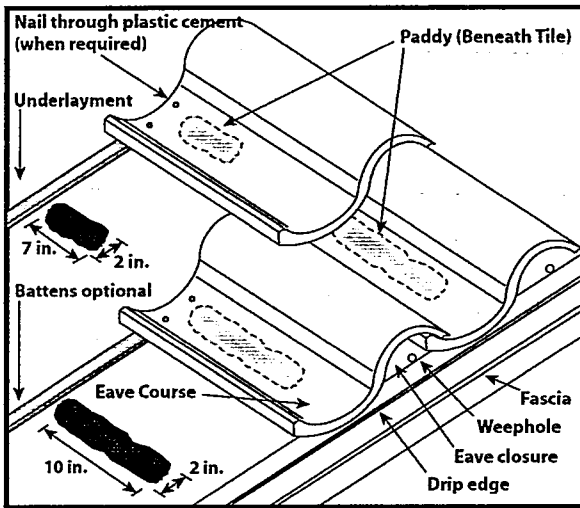


Medium Profile / Double Pan Tile

1. Starting at the eave course, apply a minimum 2" (50.8 mm) x 10" (254 mm) x 1" (25.4 mm) foam paddy onto the underlayment positioned as shown under the pan portion of the tile closest to the overlock of the tile being set. Insure approximately 17 (109.7 cm²) – 23 (148.4 cm²) square inch adhesive contact with the underside of the tile.
2. At the second course, apply a minimum 2" (50.8mm) x 7" (177.8 mm) x 1" (25.4 mm) foam paddy onto the underlayment positioned as shown under the pan portion of the tile closest to the overlock of the tile being set.
3. Continue in same manner. Insure approximately 12" (77.4 cm²) - 14 (90.3 cm²) square inch adhesive contact with the underside of the tile.

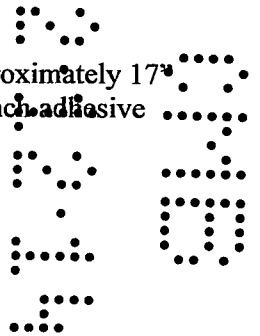
(Instructions continued on next page)

ADHESIVE PLACEMENT DETAIL # 2 (CONTINUED)

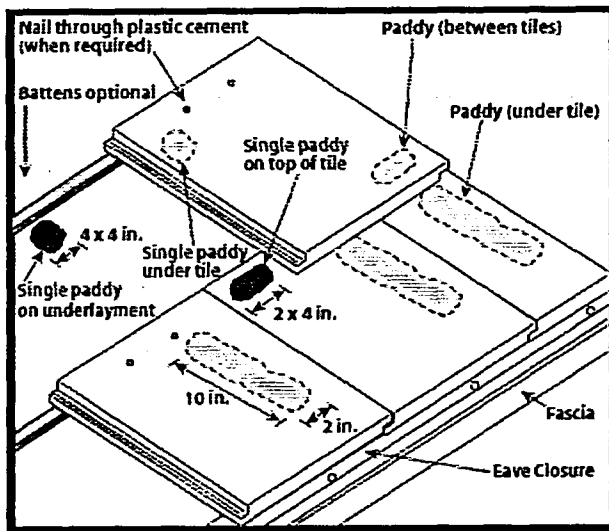


High Profile / Single Pan Tile

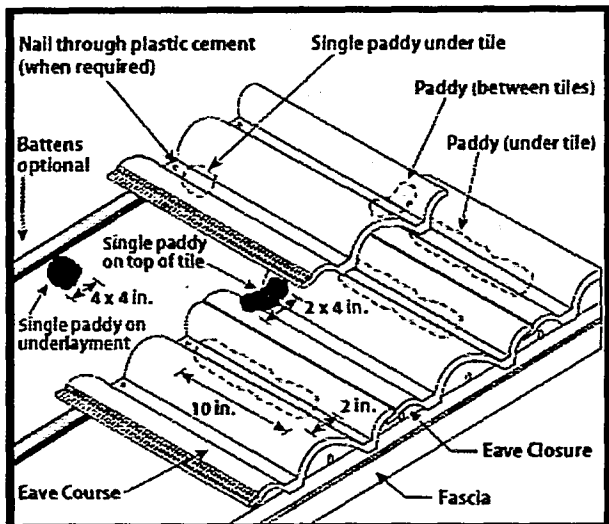
1. Starting at the eave course, apply a minimum 2" (50.8 mm) x 10" (254 mm) x 1" (25.4 mm) foam paddy onto the underlayment positioned as shown under the pan portion of the tile closest to the overlock of the tile being set. Insure approximately 17 (109.7 cm²) – 23 (148.4 cm²) square inch adhesive contact with the underside of the tile.
2. At the second course, apply a minimum 2" (50.8mm) x 7" (177.8 mm) x 1" (25.4 mm) foam paddy onto the underlayment positioned as shown under the pan portion of the tile closest to the overlock of the tile being set.
3. Continue in same manner. Insure approximately 17 (109.7 cm²) - 19 (122.6 cm²) square inch adhesive contact with the underside of the tile.



ADHESIVE PLACEMENT DETAIL # 3



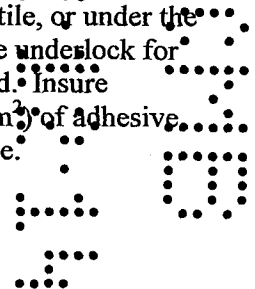
Flat/Low Profile Tile



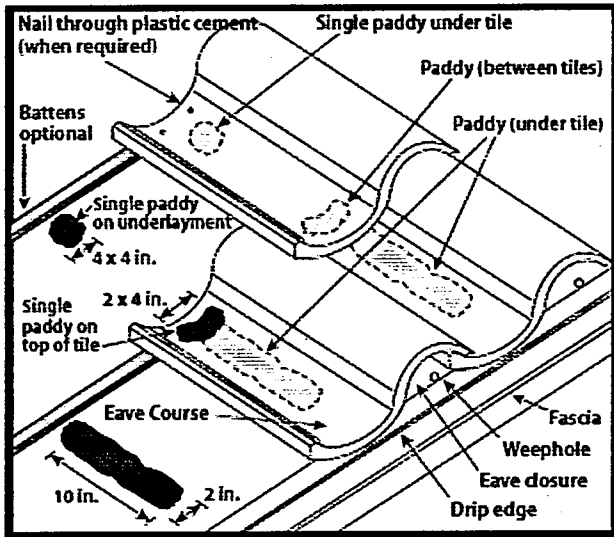
Medium Profile Tile

1. On the eave course only, apply a minimum 2" (50.8 mm) x 10" (254 mm) x 1" (25.4 mm) foam paddy onto the underlayment positioned as shown, under the strengthening rib for flat tile or under the pan portion of the tile for low or high profile tile closest to the overlock of the tile being set. Leave approximately 4" (101.6 mm) up from the eave edge free of foam to prevent the expanded adhesive from blocking the weep holes. Insure approximately 17-23 in² (109.7-148.4 cm²) of adhesive contact with the underside of the tile
2. Apply a 4" (101.6 mm) x 4" (101.6 mm) x 1" (25.4 mm) foam paddy onto the underlayment just below the second course line positioned foam paddy under the strengthening rib for flat tile, or under the pan portion of the tile, closest to the underlock for the second course tile to be installed. Insure approximately 8-9 in² (51.6-58.1 cm²) of adhesive contact with the underside of the tile.

(Instructions continued on next page)

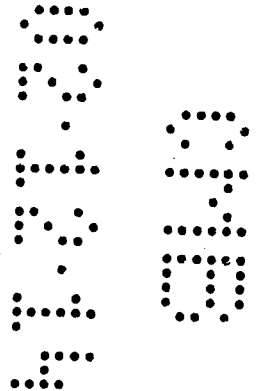


ADHESIVE PLACEMENT DETAIL # 3 (CONTINUED)

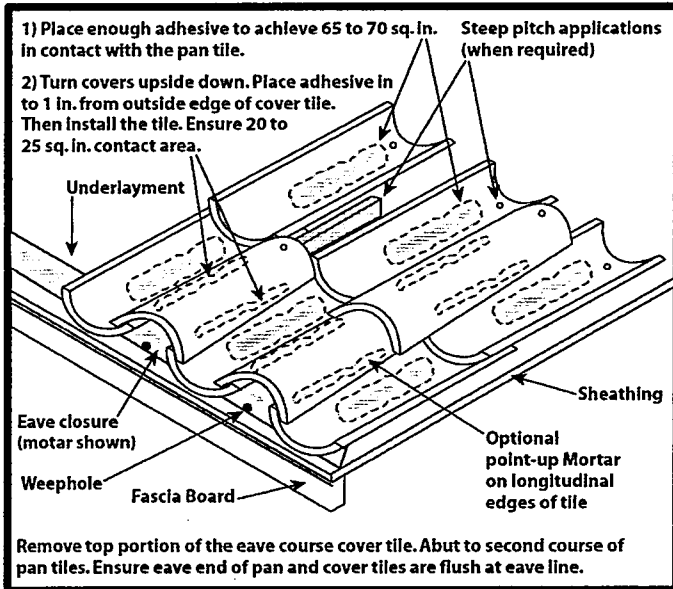


High Profile Tile

- Also apply a 2" (50.8 mm) x 4" (101.6 mm) x $\frac{3}{4}$ " (19 mm) paddy on top of the eave course tile surface as shown, on top of the strengthening rib for flat tile or on top of the pan portion of the tile, closest to the underlock of the first course of tile. Install second course of tile. Insure approximately 9 (58.1 cm²) - 11 (71 cm²) square inch adhesive contact with the underside of the tile at the overlap and 7 (45.2 cm²) - 9 (58.1 cm²) square inch adhesive contact with the underside of the tile at the head of the tile. Continue in same manner.



ADHESIVE PLACEMENT DETAIL TWO PIECE BARREL



Two Piece Barrel - High Profile Tile

Two Piece Barrel (Cap and Pan) Tile

1. Starting at the eave course, apply a minimum 2" (50.8 mm) x 10" (254 mm) x 1" (25.4 mm) foam paddy onto the underlayment positioned as shown under two adjacent pan tiles. Support eave tiles from rocking until adhesive has a chance to cure.
2. Continue in same manner bringing two pan courses up toward the ridge. Insure approximately 65 (419.4 cm²) – 70 (451.6 cm²) square inch adhesive contact with the underside of the pan tile.
3. Turn covers upside down exposing the underside of the tile. Apply a minimum 1" (25.4 mm) x 10" (254 mm) bead of adhesive directly on the inner edge of each side of the cover tile. Leave approximately 3/4" (19 mm) to 1" (25.4 mm) from the outside edge of the tile, inward, free of foam to allow for expansion.
4. Turn cover tile over after foam is applied and place onto pan tile course. Insure a minimum of 20 (129 cm²) - 25 (161.3 cm²) square inch contact area on each side of the cover tile to the pan tile. Continue in same manner. Trim away any cured exposed foam adhesive. Pointing of longitudinal edges of the cover tiles are considered optional.
5. When additional nailing is required, 2" (50.8 mm) x 4" (101.6 mm) nailers or the tie wire system using galvanized, stainless steel, or copper wire and compatible nails may be used.

END OF THIS ACCEPTANCE



B1402246

MIAMI-DADE COUNTY, FLORIDA
METRO-DADE FLAGLER BUILDING

BUILDING CODE COMPLIANCE OFFICE (BCCO)
PRODUCT CONTROL DIVISION

140 WEST FLAGLER STREET, SUITE 1603
MIAMI, FLORIDA 33130-1563
(305) 375-2901 FAX (305) 375-2908

NOTICE OF ACCEPTANCE (NOA)

Kirsch Building Products, LLC.
1464 Madera St. #387
Simi Valley, CA 93065

SCOPE:

This NOA is being issued under the applicable rules and regulations governing the use of construction materials. The documentation submitted has been reviewed by Miami-Dade County Product Control Division and accepted by the Board of Rules and Appeals (BORA) to be used in Miami Dade County and other areas where allowed by the Authority Having Jurisdiction (AHJ).

This NOA shall not be valid after the expiration date stated below. The Miami-Dade County Product Control Division (In Miami Dade County) and/or the AHJ (in areas other than Miami Dade County) reserve the right to have this product or material tested for quality assurance purposes. If this product or material fails to perform in the accepted manner, the manufacturer will incur the expense of such testing and the AHJ may immediately revoke, modify, or suspend the use of such product or material within their jurisdiction. BORA reserves the right to revoke this acceptance, if it is determined by Miami-Dade County Product Control Division that this product or material fails to meet the requirements of the applicable building code.

This product is approved as described herein and has been designed to comply with the Florida Building Code and the High Velocity Hurricane Zone of the Florida Building Code.

DESCRIPTION: Sharkskin Roof Underlayment

LABELING: Each unit shall bear a permanent label with the manufacturer's name or logo, city, state and following statement: "Miami-Dade County Product Control Approved", unless otherwise noted herein.

RENEWAL of this NOA shall be considered after a renewal application has been filed and there has been no change in the applicable building code negatively affecting the performance of this product.

TERMINATION of this NOA will occur after the expiration date or if there has been a revision or change in the materials, use, and/or manufacture of the product or process. Misuse of this NOA as an endorsement of any product, for sales, advertising or any other purposes shall automatically terminate this NOA. Failure to comply with any section of this NOA shall be cause for termination and removal of NOA.

ADVERTISEMENT: The NOA number preceded by the words Miami-Dade County, Florida, and followed by the expiration date may be displayed in advertising literature. If any portion of the NOA is displayed, then it shall be done in its entirety.

INSPECTION: A copy of this entire NOA shall be provided to the user by the manufacturer or its distributors and shall be available for inspection at the job site at the request of the Building Official.

This new NOA consists of pages 1 through 6.

The submitted documentation was reviewed by Jorge L. Acebo.



NOA No.: 09-1123.02
Expiration Date: 07/14/15
Approval Date: 07/14/10
Page 1 of 6

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[Handwritten initials]

ROOFING COMPONENT APPROVAL

Category: Roofing
Sub-Category: Underlayment
Material: Polypropylene

TRADE NAMES OF PRODUCTS MANUFACTURED OR LABELED BY APPLICANT:

<u>Product</u>	<u>Dimensions</u>	<u>Test Specification</u>	<u>Product Description</u>
Sharkskin Comp™	48" x 250'	ASTM D226, Type I or II	A multi-layer laminated roof underlayment comprised of a high-strength woven polypropylene base with a UV & antioxidant protection bond layer and a slip-resistant top layer.
Sharkskin Ultra™	48" x 250'	ASTM D226, Type I or II TAS 104	A multi-layer laminated roof underlayment comprised of a high-strength woven polypropylene core with a UV & antioxidant protection bond layer to both sides and a slip-resistant top layer.
Sharkskin Ultra Radiant™	48" x 250'	ASTM D226, Type I or II	A multi-layer laminated roof underlayment comprised of a high-strength woven polypropylene core with a reflective barrier on the underside and a UV & antioxidant protection bond layer on both sides and a slip-resistant top layer.
Sharkskin Ultra SA™	48" x 125'	TAS 103	A multi-layer laminated roof underlayment comprised of a high-strength woven polypropylene core between two layers of UV & antioxidant protection bond and a self-adhering underside and a slip-resistant top layer.

EVIDENCE SUBMITTED:

<u>Test Agency</u>	<u>Test Identifier</u>	<u>Test Name/Report</u>	<u>Date</u>
Trinity ERD	K6550.08.07	TAS 114-C	08/20/07
	K0810.12.05-R1	ASTM D 1623 (AC152)	10/06/09
	K3140.05.10	ASTM D-1623	05/18/10
	K6540.07.07-R2	ASTM D 226	10/08/09
	K6540.03.08-1	TAS 103/ TAS 117-B	03/10/2008
	K6540.03.08-2	TAS 104/ TAS 117-B	03/10/2008
	K9210.05.08-R1	TAS 103/ TAS 104	11/13/09
		ASTM D 5147/ASTM D 4798	



NOA No.: 09-1123.02
 Expiration Date: 07/14/15
 Approval Date: 07/14/10
 Page 2 of 6

APPROVED SHARKSKIN SYSTEM ASSEMBLIES:

Deck Type 1: Wood

Deck Description: $1\frac{9}{32}$ " or greater plywood or wood plank

System E(1): Base sheet mechanically fastened to deck, subsequent cap membrane self-adhered.

All General and System Limitations shall apply.

Base sheet: One or more plies Sharkskin Ultra applied in single coverage method with minimum 4" horizontal laps and minimum 6" vertical laps applied as specified below.

Fastening: Mechanically fastened with approved nails & tin caps spaced 6" o.c. at the 4" horizontal overlaps and 10" o.c. in a grid pattern having three, equally spaced, staggered rows in the field of the sheet.

Ply Sheet: (Optional) Sharkskin Ultra SA, self-adhered with minimum 2" horizontal overlaps and minimum 6" vertical overlaps. Place the first course of membrane parallel to the eave, rolling the membrane to obtain maximum contact. Remove the release liner as the membrane is applied.

Membrane: Sharkskin Ultra SA, self-adhered with minimum 2" horizontal laps and minimum 6" vertical laps. Place the first course of membrane parallel to the eave, rolling the membrane to obtain maximum contact. Remove the release liner as the membrane is applied.

When used in Tile roof systems the cap sheet shall be back nailed to deck with approved annular ring shank nails and tin caps at a maximum 12" o.c. at the side laps and 6" o.c. at the end laps. No nails or tin caps shall be exposed

Surfacing: Approved for asphalt shingle, mechanically fastened roof tile, foam-adhered roof tile, non-structural metal roofing, wood shakes & shingles or slate roof assemblies as specified within the Roof System NOA.

Note: For tile roof assemblies, refer to RAS 118, 119 or 120 and the tile manufacturer's NOA. For foam-adhered tile roof assemblies, approved use is limited to Polyfoam tile foam adhesive.



Deck Type 1: Wood
Deck Description: $\frac{19}{32}$ " or greater plywood or wood plank
System E(2): Base sheet mechanically fastened to deck.

All General and System Limitations shall apply.

Base sheet: One or more plies Sharkskin Comp® or Sharkskin Ultra® applied as specified below:

Fastening: For slopes 3.5 : 12 (16.2°) or greater:
Shall be applied in single coverage method, overlapping each course with a minimum 4" horizontal lap. Mechanically fastened with approved nails & tin caps spaced 6" o.c. at the horizontal laps and 10" o.c. in a grid pattern having three, equally spaced, staggered rows in the field of the sheet.

For slopes 2.5:12 (11.8°) to 3.5:12 (16.2°):

Shall be applied in a double coverage method, overlapping each course with a minimum 24" horizontal lap. Mechanically fastened with approved nails & tin caps spaced 6" o.c. within 4" of the bottom edge of the horizontal laps and 10" o.c. in one staggered row in the field of the sheet.

Surfacing: Approved for asphalt shingle, non-structural metal roofing, wood shakes & shingles or slate roof assemblies as specified within the Roof System NOA.

Deck Type 2: Wood
Deck Description: $\frac{19}{32}$ " or greater plywood or wood plank
System E(3): Base sheet mechanically fastened to deck.

All General and System Limitations shall apply.

Base sheet: One or more plies Sharkskin Ultra® applied as specified below:

Horizontal Battens: Fastening: For slopes 3 : 12 (14°) or greater:

Sharkskin Ultra shall be applied in single coverage method, overlapping each course with a minimum 4" horizontal lap. Mechanically fasten Sharkskin Ultra with approved nails & tin caps spaced 6" o.c. at the horizontal laps and 10" o.c. in a grid pattern having three, equally spaced, staggered rows in the field of the sheet. Install battens over Sharkskin Ultra in accordance with RAS 119.

Counter Battens: Fastening: For slopes 3 : 12 (14°) or greater:

Install vertical battens in accordance with RAS 118. Sharkskin Ultra shall be laid horizontally in single coverage method, parallel to the eave with minimum 4-inch horizontal laps and minimum 6-inch vertical laps over the vertical battens. Mechanically fasten Sharkskin Ultra with approved nails & tin caps spaced 6" o.c. at the horizontal laps and 10" o.c. in a grid pattern having three, equally spaced, staggered rows in the field of the sheet. Horizontal laps shall be sealed with butyl-based tape or other material specifically approved by Miami-Dade Product Control & Kirsch Building Products. Vertical laps shall be minimum 6-inch wide and shall break over a vertical batten to allow water to run away from the center point of the vertical batten.

Surfacing: Approved for non-structural metal roofing, wood shakes & shingles or slate roof assemblies as specified within the Roof System NOA.

Deck Type 1: Wood
Deck Description: $\frac{19}{32}$ " or greater plywood or wood plank
System E(4): Base sheet mechanically fastened to deck.

All General and System Limitations shall apply.

Base sheet: One or more plies Sharkskin Ultra Radiant® applied as specified below:

Horizontal Battens: Fastening: For slopes 3 : 12 (14°) or greater:

Sharkskin Ultra Radiant® shall be applied with the reflective side up in single coverage method, overlapping each course with a minimum 4" horizontal lap. Mechanically fasten Sharkskin Ultra with approved nails & tin caps spaced 6" o.c. at the horizontal laps and 10" o.c. in a grid pattern having three, equally spaced, staggered rows in the field of the sheet. Install battens over Sharkskin Ultra in accordance with RAS 119.

Counter Battens: Fastening: For slopes 3 : 12 (14°) or greater:

Install vertical battens in accordance with RAS 118. Sharkskin Ultra Radiant® shall be laid horizontally with the reflective side up in single coverage method, parallel to the eave with minimum 4-inch horizontal laps and minimum 6-inch vertical laps over the vertical battens. Mechanically fasten Sharkskin Ultra Radiant® with approved nails & tin caps spaced 6" o.c. at the horizontal laps and 10" o.c. in a grid pattern having three, equally spaced, staggered rows in the field of the sheet. Horizontal laps shall be sealed with butyl-based tape or other material specifically approved by Miami-Dade Product Control & Kirsch Building Products. Vertical laps shall be minimum 6-inch wide and shall break over a vertical batten to allow water to run away from the center point of the vertical batten.

Surfacing: Approved for non-structural metal roofing, wood shakes & shingles or slate roof assemblies as specified within the Roof System NOA.

Deck Type 2: Steel
Deck Description: Minimum 18-22ga., Type-B, 33ksi steel deck
System E(5): Base sheet mechanically fastened to deck.

All General and System Limitations shall apply.

Base sheet: One or more plies Sharkskin Ultra applied in single coverage method with minimum 4" horizontal laps and minimum 6" vertical laps applied as specified below.

Fastening: Sharkskin Ultra is attached to the roof deck with Miami-Dade listed corrosion resistant #10, #12 or #14 screws and metal stress plates. Screws shall engage the top flute of the steel deck and be of sufficient length for minimum $\frac{3}{4}$ -inch penetration. Screws & plates spaced 6" o.c. at all laps and three staggered rows 10" o.c. in the field of the roll or as specified within the roof system approval.

Surfacing: Approved for non-structural metal roofing assemblies as specified within the Roof System NOA.



GENERAL LIMITATIONS:

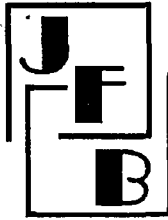
1. Fire classification is not part of this acceptance.
2. This acceptance is for prepared roofing applications. Minimum deck requirements shall be in compliance with applicable building code. Sharkskin Roof Underlayments shall be installed in strict compliance with applicable Building Code.
3. All Sharkskin Underlayments shall be applied to a smooth, clean and dry surface with deck free of irregularities. Deck shall be fastened in strict compliance with applicable Building Codes. All nails in the deck shall be carefully checked for protruding heads. Re-fasten any loose decking panels. Sweep the deck thoroughly to remove any dust and debris prior to application
4. Sharkskin Ultra may be used in asphaltic shingle, direct-deck/batten wood shake & shingle, direct-deck/batten quarry slate or direct-deck/batten non-structural metal roof applications.
5. Sharkskin Comp may be used in asphaltic shingle, direct-deck wood shake & shingle, direct-deck quarry slate or direct-deck non-structural metal roof applications.
6. Sharkskin Ultra Radiant may be used in battened non-structural metal roof, battened wood shakes & shingles or battened slate roof applications. Sharkskin Ultra Radiant shall not be used as a tile, asphalt shingle, direct-deck wood shakes & shingle, direct-deck non-structural metal or direct-deck slate underlayment.
7. Sharkskin Comp or Sharkskin Radiant shall not be used as a roof tile underlayment or as part of a roof tile underlayment system.
8. The Sharkskin Ultra and Sharkskin Ultra SA two-ply underlayment system may be used in asphalt shingle, mechanically fastened tile, foam-adhered tile, wood shake & shingle, quarry slate or non-structural metal roof applications.
9. The standard maximum roof pitch for The Sharkskin Ultra and Sharkskin Ultra SA two-ply underlayment system shall be 5:12 for flat tile and profiled tiles with lugs. A maximum of 10 tiles per stack are allowed when loading tile on the underlayment.
10. Sharkskin Roof Underlayments shall not be applied over an existing roof system as a recover application but may be applied as specified herein as part of an approved underlayment system.
11. Sharkskin Roof Underlayments shall not be left exposed as a temporary roof for longer than 180 days of application.
12. Sharkskin Roof Underlayments are components used in roof systems assemblies. Roof system assemblies are approved under specific Notice of Acceptance. Refer to Prepared Roofing System Product Control Notice of Acceptance for listed approval of this product with the specific prepared roofing assembly.
13. Sharkskin Roof Underlayments may be used with any approved roof covering Notice of Acceptance listings the Sharkskin product(s) as a component part of an assembly in the Notice of Acceptance. If Sharkskin Roof Underlayments are not listed, a request may be made to the Authority Having Jurisdiction (AHJ) or the Miami-Dade County Product Control Department provided that appropriate documentation is provided to detail compatibility of the products, wind uplift resistance and fire testing results.
14. Flash vent pipes, stacks, chimneys and penetrations in compliance with Roof Assembly current Product Control Notice of Acceptance and applicable Building Code.
15. All membranes or packaging shall bear the imprint or identifiable marking of the manufacturer's name or logo, or following statement: "Miami-Dade County Product Control Approved" or the Miami-Dade County Product Control Seal as shown below.



END OF THIS ACCEPTANCE



B1500213



Juan Fernandez-Barquin, P.E.

Structural Engineers 40114 2520 N.W. 97th Avenue, Suite #240
Threshold Inspectors 0947 Doral, Florida 33173
State Plans Examiner PX 1305 PH: 786-336-0881 Fax: 786-336-0884
State Building Inspector BN 3318 Email: jfbeng@bcsouth.net
www.juanfernandezbarquinpe.com

OCTOBER 22, 2014

CITY OF MIAMI BEACH BUILDING DEPARTMENT
1700 CONVENTION CENTER DRIVE
SECOND FLOOR
MIAMI BEACH, FLORIDA 33139
PH: 305-673-7000
FAX: 305-535-7513

ATTN: BUILDING OFFICIAL

RE: 5980 N BAY ROAD TRS
5980 N. BAY ROAD, MIAMI BEACH, FLORIDA 33140
ROOFING PERMIT NUMBER B1500213

Dear Building Official:

I, **Juan Fernandez-Barquin, P.E.**, certify that I have improved the roof to wall connections of the referenced property as required by the Manual of Hurricane Mitigation Retrofits for Existing Site-build Single Family Residential Structures as adopted by the Florida Building Commission by Rule 9b-3.047 F.A.C.

Respectfully,


Juan Fernandez-Barquin, P.E.

OCT 29 2014
Structural Registration No. . 40114
Threshold Inspector No. . . 0947
State Building Inspector No. . BN3318
Plans Examiner No. . . PX1305

STATE OF FLORIDA, COUNTY OF MIAMI-DADE

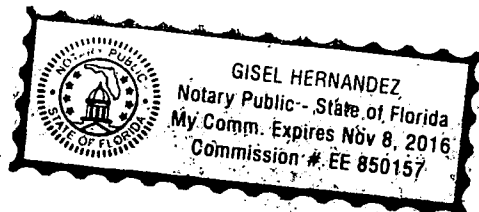
Sworn to and subscribe before me this 29 day of October 2014.

☒ Personally Known
☐ Or Produced Identification

Seal:

Gisel Hernandez
Print Name

Juan Fernandez-Barquin
Signature





Delivering Excellence Every Day

SECTION 1524

B1500213

HIGH VELOCITY HURRICANE ZONES-- REQUIRED OWNERS NOTIFICATION FOR ROOFING CONSIDERATIONS

1524.1 Scope. As it pertains to this section, it is the responsibility of the roofing contractor to provide the owner with the required roofing permit, and to explain to the owner the content of this section. The provisions of Chapter 15 of the *Florida Building Code, Building* govern the minimum requirements and standards of the industry for roofing system installations. Additionally, the following items should be addressed as part of the agreement between the owner and the contractor. The owner's initial in the designated space indicates that the item has been explained.

AR **1. Aesthetics-workmanship:** The workmanship provisions of Chapter 15 (High Velocity Hurricane Zone) are for the purpose of providing that the roofing system meets the wind resistance and water intrusion performance standards. Aesthetics (appearance) are not a consideration with respect to workmanship provisions. Aesthetic issues such as color or architectural appearance, that are not part of a zoning code, should be addressed as part of the agreement between the owner and the contractor.

AR **2. Renailing wood decks:** When replacing roofing, the existing wood roof deck may have to be renailed in accordance with the current provisions of Chapter 16 (High Velocity Hurricane Zones) of the Florida Building Code. (The roof deck is usually concealed prior to removing the existing roof system).

AR **3. Common roofs:** Common roofs are those which have a visible delineation between neighboring units (i.e. townhouses, condominiums, etc.). In buildings with common roofs, the roofing contractor and/or owner should notify the occupants of adjacent units of roofing work to be performed.

AR **4. Exposed ceilings:** Exposed, open beam ceilings where the underside of the roof decking can be viewed from below. The owner may wish to maintain the aesthetic appearance; therefore, roofing nail penetrations of the underside of the decking may not be acceptable to the owner. The owner provides the option of maintaining this appearance.

AR **5. Ponding water:** The current roof system and/or deck of the building may not drain well and may cause water to pond (accumulate) in low-lying areas of the roof. Ponding can be an indication of structural distress and may require the review of a professional structural engineer. Ponding may shorten the life expectancy and performance of the new roofing system. Ponding conditions may not be evident until the original roofing system is removed. Ponding conditions should be corrected.

AR **6. Overflow scuppers (wall outlets):** It is required that rainwater flow off so that the roof is not overloaded from a build up of water. Perimeter/edge walls or other roof extensions may block this discharge if overflow scuppers (wall outlets) are not provided. It may be necessary to install overflow scuppers in accordance with the requirements of: Chapter 15 and 16 herein and the *Florida Building Code, Plumbing*.

AR **7. Ventilation:** Most roof structures should have some ability to vent natural airflow through the interior of the structural assembly (the building itself). The existing amount of attic ventilation shall not be reduced. **Exception:** Attic spaces, designed by a Florida-licensed engineer or registered architect to eliminate the attic venting, venting shall not be required.

Owner's/Agent's Signature: _____

Contractor's Signature: _____

Property Address: _____

Review Type _____

Roofing _____

Permit Number _____

OFFICE COPY

Initials _____

Date _____

10/15/14

5980 N. Bay Rd Miami Beach

Florida Building Code 2010 Edition
High Velocity Hurricane Zone Uniform Permit Application Form

INSTRUCTION PAGE

COMPLETE THE NECESSARY SECTIONS OF
THE UNIFORM ROOFING PERMIT
APPLICATION FORM AND ATTACH THE
REQUIRED DOCUMENTS AS NOTED BELOW:

Roof System	Required Sections of the Permit Application Form	Attachments Required. See List Below
Low Slope Application	A,B,C	1,2,3,4,5,6,7
Prescriptive BUR-RAS 150	A,B,C	4,5,6,7
Asphaltic Shingles	A,B,D	1,2,4,5,6,7
Concrete or Clay Tile	A,B,D,E	1,2,3,4,5,6,7
Metal Roofs	A,B,D	1,2,3,4,5,6,7
Wood Shingles and Shakes	A,B,D	1,2,4,5,6,7
Other	As Applicable	1,2,3,4,5,6,7

ATTACHMENTS REQUIRED:

1.	Fire Directory Listing Page
2.	From Notice of Acceptance: Front Page Specific System Description Specific System Limitations General Limitations Applicable Detail Drawings
3.	Design Calculations per Chapter 16, or If Applicable, RAS 127 or RAS 128
4.	Other Component Notice of Acceptances
5.	Municipal Permit Application
6.	Owners Notification for Roofing Considerations (Re-Roofing Only)
7.	Any Required Roof Testing/Calculation Documentation

SECTION A (General Information)

Master Permit Number: B1202278

Process Number: _____

Contractor's Name: Florida Quality Roofing, Inc

Job Address: 5980 N. Bay Road, Miami Beach FL 33140

ROOF CATEGORY

- | | | |
|--|---|--|
| <input type="checkbox"/> Low Slope | <input type="checkbox"/> Mechanically Fastened Tile | <input checked="" type="checkbox"/> Mortar/Adhesive Set Tile |
| <input type="checkbox"/> Asphalt Shingle | <input type="checkbox"/> Metal Panel/Shingles | <input type="checkbox"/> Wood Shingles/Shakes |
| | <input type="checkbox"/> Prescriptive BUR-RAS 150 | |

ROOF TYPE

- | | | | | |
|-----------------------------------|--|-------------------------------------|---------------------------------|--------------------------------------|
| <input type="checkbox"/> New Roof | <input checked="" type="checkbox"/> Re-Roofing | <input type="checkbox"/> Recovering | <input type="checkbox"/> Repair | <input type="checkbox"/> Maintenance |
|-----------------------------------|--|-------------------------------------|---------------------------------|--------------------------------------|

ROOF SYSTEM INFORMATION

Low Slope Roof Area (S/F) _____

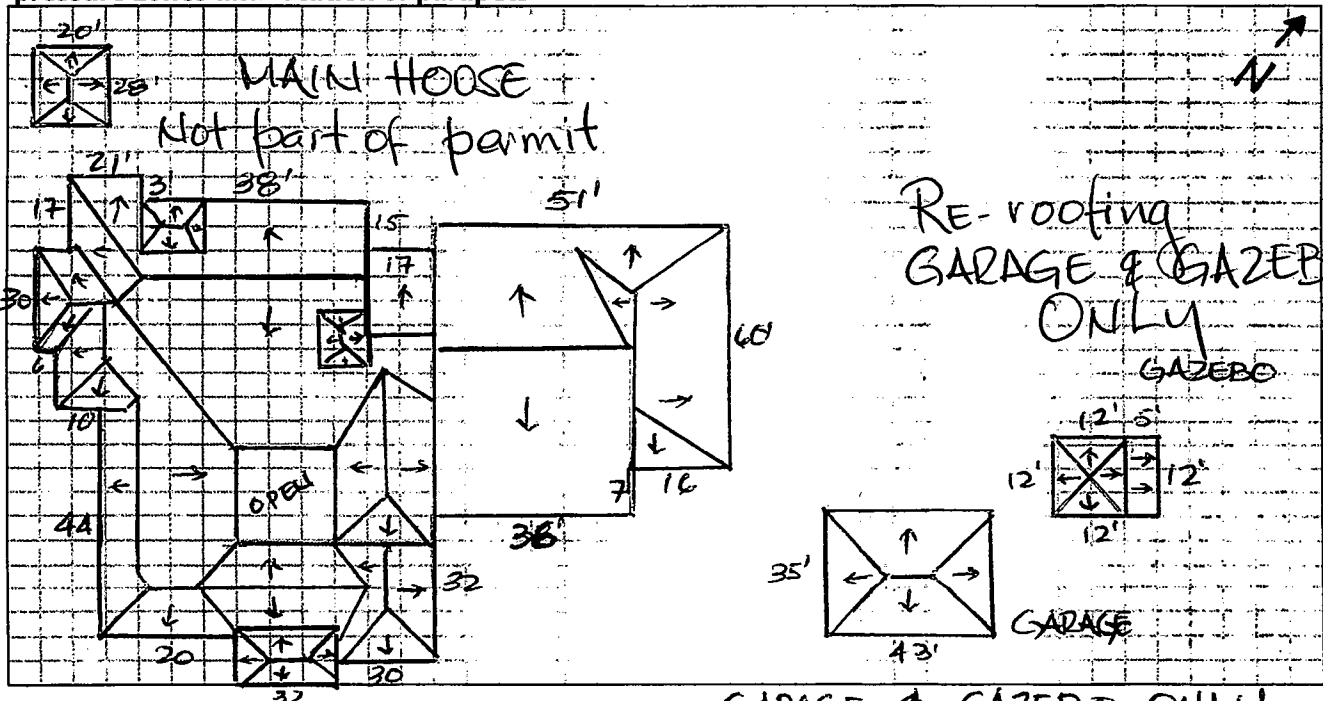
Steep Slope Roof Area (S/F) 1,975 sqft

Total (S/F) 1,975 sqft

ROOF SYSTEM INFORMATION

GARAGE & GAZEBO ONLY

Sketch Roof Plan: Illustrate all levels and sections, roof drains, scuppers, overflow scuppers, and overflow drains. Include dimensions of sections and levels, clearly identify dimensions of elevated pressure zones and location of parapets.



GARAGE & GAZEBO ONLY

Florida Building Code Edition 2010
High-Velocity Hurricane Zone Uniform Permit Application Form.

Section A (General Information)

Master Permit No. _____ Process No. _____
Contractor's Name Florida Quality Roofing, Inc.
Job Address 5980 North Bay Road, Miami Beach FL 33140

ROOF CATEGORY

- | | | |
|---|---|---|
| <input type="checkbox"/> Low Slope | <input type="checkbox"/> Mechanically Fastened Tile | <input checked="" type="checkbox"/> Mortar / Adhesive Set Tiles |
| <input type="checkbox"/> Asphaltic Shingles | <input type="checkbox"/> Metal Panel/Shingles | <input type="checkbox"/> Wood Shingles/Shakes |
| <input type="checkbox"/> | <input type="checkbox"/> Prescriptive BUR-RAS 150 | Gas Vent <input type="checkbox"/> Yes <input type="checkbox"/> No |

ROOF TYPE

- | | | | | |
|-----------------------------------|---|-------------------------------------|---------------------------------|--------------------------------------|
| <input type="checkbox"/> New Roof | <input checked="" type="checkbox"/> Reroofing | <input type="checkbox"/> Recovering | <input type="checkbox"/> Repair | <input type="checkbox"/> Maintenance |
|-----------------------------------|---|-------------------------------------|---------------------------------|--------------------------------------|

**ROOF SYSTEM
INFORMATION**

Low Slope Roof Area (SF)

N/A

Steep Sloped Roof Area (SF)

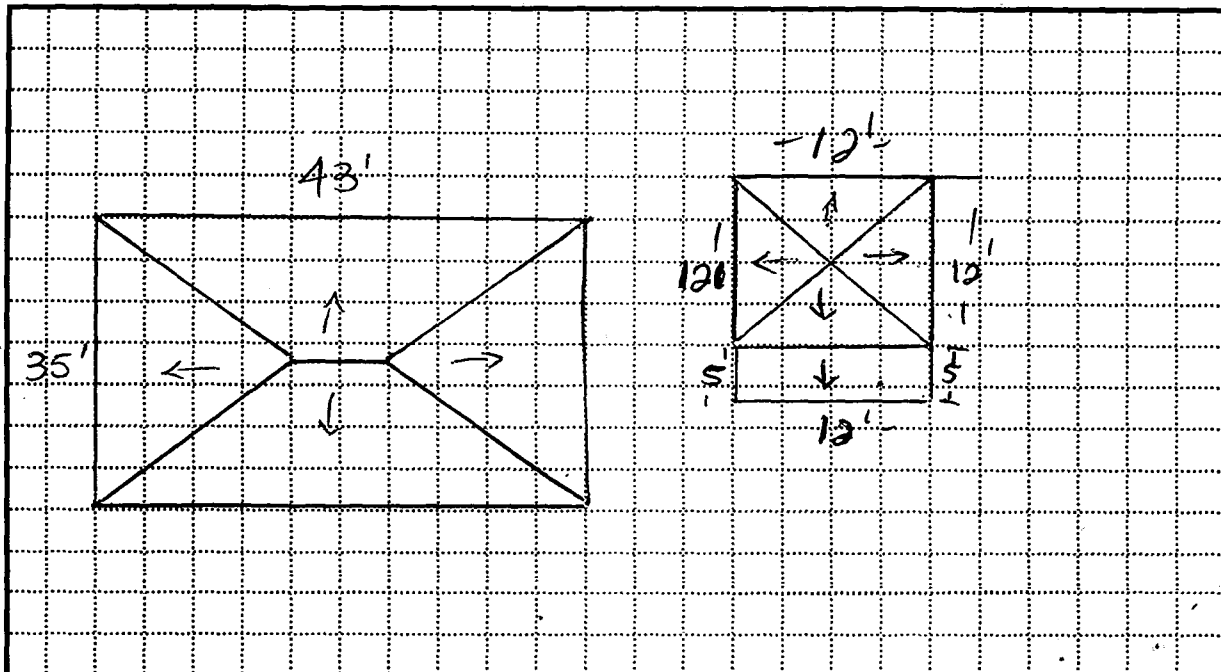
1,975 sq. ft.

Total (SF)

1,975 sq. ft.

Section B (Roof Plan)

Sketch Roof Plan: Illustrate all levels and sections, roof drains, scupper, overflow scuppers and overflow drains. Include dimensions of section and levels, clearly identify dimensions of elevated pressure zones and locations of parapets.



GARAGE & GAZEBO ONLY

Florida Building Code Edition 2010
High Velocity Hurricane Zone Uniform Permit Application Form

Section D (Steep Sloped Roof System)

Roof System Manufacturer:	Artezano World Class
Product Approval Number:	14-0220-12
Minimum Design Wind Pressures, If Applicable (From RAS 127 or Calculations):	P1: -47.6 P2: -100.6 P3: -100.6
Maximum Design Pressure	
Product Approval Specific System:	111.4
Method of Tile Attachment:	Foam Adhesive AH-160 single patty 42 grams per pan & 21 grams per each side

Steep Sloped System Description

Deck Type:	19/32" CDX Plywood
Type Underlayment:	Sharkskin Ultra
Insulation:	N/A
Fire Barrier:	N/A
Fastener Type & Spacing:	1 1/4" RS Nails & TC 6" o.c.
Adhesive Type:	Self-adhered
Type Cap Sheet:	Sharkskin Ultra SA
Roof Covering:	Artezano World Class tile
Type & Size Drips	
Edge:	3"x3" 16 oz Copper edge Metal
Mean Roof Height:	12'
Ridge Ventilation?	NA
Roof Slope:	3 : 12

Florida Building Code 2010 Edition
High Velocity Hurricane Zone Uniform Permit Application Form

Section E (Tile Calculations)

For Moment based tile systems, choose either Method 1 or 2. Compared the values for M_r with the values from M_r . If the M_r values are greater than or equal to the M_r values, for each area of the roof, then the tile attachment method is acceptable.

Method 1 "Moment Based Tile Calculations Per RAS 127"

$$\begin{aligned} (P_1: -47.6 \times \lambda \ 0.22 = -10.47) - Mg: 3.8 \quad M_{r1} - 6.67 \quad NOA \ M_r \ 111.4 \\ (P_2: -100.6 \times \lambda \ 0.22 = -22.13) - Mg: 3.8 \quad M_{r2} - 18.33 \quad NOA \ M_r \ 111.4 \\ (P_3: -100.6 \times \lambda \ 0.22 = -22.13) - Mg: 3.8 \quad M_{r3} - 10.33 \quad NOA \ M_r \ 111.4 \end{aligned}$$

Method 2 "Simplified Tile Calculation Per Table Below"

Required Moment of Resistance (M_r) From Table Below _____ NOA M_r _____

M _r Required Moment Resistance*						
Mean Roof Height Roof Slope	15'	20'	25'	30'	40'	
2:12	34.4	36.5	38.2	39.7	42.2	
3:12	32.2	34.4	36.0	37.4	39.8	
4:12	30.4	32.2	33.8	35.1	37.3	
5:12	28.4	30.1	31.6	32.8	34.9	
6:12	26.4	28.0	29.4	30.5	32.4	
7:12	24.4	25.9	27.1	28.2	30.0	

*Must be used in conjunction with a list of moment based tile systems endorsed by the Broward County Board of Rules and Appeals.

For Uplift based tile systems use Method 3. Compared the values for F' with the values for F_r . If the F' values are greater than or equal to the F_r values, for each area of the roof, then the tile attachment method is acceptable.

Method 3 "Uplift Based Tile Calculations Per RAS 127"

$$\begin{aligned} (P_1: \text{ } \times l: \text{ } = \text{ } \times w: \text{ } = \text{ }) - W \quad \times \cos \theta: \text{ } = F_{r1}: \text{ } \quad NOA \ F' \text{ } \\ (P_2: \text{ } \times l: \text{ } = \text{ } \times w: \text{ } = \text{ }) - W \quad \times \cos \theta: \text{ } = F_{r2}: \text{ } \quad NOA \ F' \text{ } \\ (P_3: \text{ } \times l: \text{ } = \text{ } \times w: \text{ } = \text{ }) - W \quad \times \cos \theta: \text{ } = F_{r3}: \text{ } \quad NOA \ F' \text{ } \end{aligned}$$

Where to Obtain Information		
Description	Symbol	Where to find
Design Pressure	P1 or P2 or P3	RAS 127 Table 1 or by an engineering analysis prepared by PE based on ASCE
Mean Roof Height	H	Job Site
Roof Slope	θ	Job Site
Aerodynamic Multiplier	λ	NOA
Restoring Moment due to Gravity	M_g	NOA
Attachment Resistance	M_r	NOA
Required Moment Resistance	M_r	Calculated
Minimum Attachment Resistance	F'	NOA
Required Uplift Resistance	F_r	Calculated
Average Tile Weight	W	NOA
Tile Dimensions	l= length w= width	NOA
All calculations must be submitted to the Building Official at the time of permit application.		

B15070213



MIAMI-DADE COUNTY, FLORIDA
METRO-DADE FLAGLER BUILDING

BUILDING CODE COMPLIANCE OFFICE (BCCO)
PRODUCT CONTROL DIVISION

140 WEST FLAGLER STREET, SUITE 1503
MIAMI, FLORIDA 33130-1563
(305) 375-2901 FAX (305) 375-2908

NOTICE OF ACCEPTANCE (NOA)

Kirsch Building Products, LLC.
1464 Madera St. #387
Simi Valley, CA 93065

SCOPE:

This NOA is being issued under the applicable rules and regulations governing the use of construction materials. The documentation submitted has been reviewed by Miami-Dade County Product Control Division and accepted by the Board of Rules and Appeals (BORA) to be used in Miami Dade County and other areas where allowed by the Authority Having Jurisdiction (AHJ).

This NOA shall not be valid after the expiration date stated below. The Miami-Dade County Product Control Division (In Miami Dade County) and/or the AHJ (in areas other than Miami Dade County) reserve the right to have this product or material tested for quality assurance purposes. If this product or material fails to perform in the accepted manner, the manufacturer will incur the expense of such testing and the AHJ may immediately revoke, modify, or suspend the use of such product or material within their jurisdiction. BORA reserves the right to revoke this acceptance, if it is determined by Miami-Dade County Product Control Division that this product or material fails to meet the requirements of the applicable building code.

This product is approved as described herein, and has been designed to comply with the Florida Building Code and the High Velocity Hurricane Zone of the Florida Building Code.

DESCRIPTION: Sharkskin Roof Underlayments

LABELING: Each unit shall bear a permanent label with the manufacturer's name or logo, city, state and following statement: "Miami-Dade County Product Control Approved", unless otherwise noted herein.

RENEWAL of this NOA shall be considered after a renewal application has been filed and there has been no change in the applicable building code negatively affecting the performance of this product.

TERMINATION of this NOA will occur after the expiration date or if there has been a revision or change in the materials, use, and/or manufacture of the product or process. Misuse of this NOA as an endorsement of any product, for sales, advertising or any other purposes shall automatically terminate this NOA. Failure to comply with any section of this NOA shall be cause for termination and removal of NOA.

ADVERTISEMENT: The NOA number preceded by the words Miami-Dade County, Florida, and followed by the expiration date may be displayed in advertising literature. If any portion of the NOA is displayed, then it shall be done in its entirety.

INSPECTION: A copy of this entire NOA shall be provided to the user by the manufacturer or its distributors and shall be available for inspection at the job site at the request of the Building Official.

This new NOA consists of pages 1 through 6.

The submitted documentation was reviewed by Jorge L. Acebo.



[Signature]

NOA No.: 09-1123.02
Expiration Date: 07/14/15
Approval Date: 07/14/10
Page 1 of 6

ROOFING COMPONENT APPROVAL

Category: Roofing
Sub-Category: Underlayment
Material: Polypropylene

TRADE NAMES OF PRODUCTS MANUFACTURED OR LABELED BY APPLICANT:

<u>Product</u>	<u>Dimensions</u>	<u>Test Specification</u>	<u>Product Description</u>
Sharkskin Comp™	48" x 250'	ASTM D226, Type I or II	A multi-layer laminated roof underlayment comprised of a high-strength woven polypropylene base with a UV & antioxidant protection bond layer and a slip-resistant top layer.
Sharkskin Ultra™	48" x 250'	ASTM D226, Type I or II TAS 104	A multi-layer laminated roof underlayment comprised of a high-strength woven polypropylene core with a UV & antioxidant protection bond layer to both sides and a slip-resistant top layer.
Sharkskin Ultra Radiant™	48" x 250'	ASTM D226, Type I or II	A multi-layer laminated roof underlayment comprised of a high-strength woven polypropylene core with a reflective barrier on the underside and a UV & antioxidant protection bond layer on both sides and a slip-resistant top layer.
Sharkskin Ultra SA™	48" x 125'	TAS 103	A multi-layer laminated roof underlayment comprised of a high-strength woven polypropylene core between two layers of UV & antioxidant protection bond and a self-adhering underside and a slip-resistant top layer.

EVIDENCE SUBMITTED:

<u>Test Agency</u>	<u>Test Identifier</u>	<u>Test Name/Report</u>	<u>Date</u>
Trinity ERD	K6550.08.07	TAS 114-C	08/20/07
	K0810.12.05-R1	ASTM D 1623 (AC152)	10/06/09
	K3140.05.10	ASTM D 1623	05/18/10
	K6540.07.07-R2	ASTM D 226	10/08/09
	K6540.03.08-1	TAS 103/ TAS 117-B	03/10/2008
	K6540.03.08-2	TAS 104/ TAS 117-B	03/10/2008
	K9210.05.08-R1	TAS 103/ TAS 104	11/13/09
		ASTM D 5147/ASTM D 4798	

APPROVED SHARKSKIN SYSTEM ASSEMBLIES:

Deck Type 1: Wood

Deck Description: $\frac{19}{32}$ " or greater plywood or wood plank

System E(1): Base sheet mechanically fastened to deck, subsequent cap membrane self-adhered.

All General and System Limitations shall apply.

Base sheet: One or more plies Sharkskin Ultra applied in single coverage method with minimum 4" horizontal laps and minimum 6" vertical laps applied as specified below.

Fastening: Mechanically fastened with approved nails & tin caps spaced 6" o.c. at the 4" horizontal overlaps and 10" o.c. in a grid pattern having three, equally spaced, staggered rows in the field of the sheet.

Ply Sheet: (Optional) Sharkskin Ultra SA, self-adhered with minimum 2" horizontal overlaps and minimum 6" vertical overlaps. Place the first course of membrane parallel to the eave, rolling the membrane to obtain maximum contact. Remove the release liner as the membrane is applied.

Membrane: Sharkskin Ultra SA, self-adhered with minimum 2" horizontal laps and minimum 6" vertical laps. Place the first course of membrane parallel to the eave, rolling the membrane to obtain maximum contact. Remove the release liner as the membrane is applied.

When used in Tile roof systems the cap sheet shall be back nailed to deck with approved annular ring shank nails and tin caps at a maximum 12" o.c. at the side laps and 6" o.c. at the end laps. No nails or tin caps shall be exposed

Surfacing: Approved for asphalt shingle, mechanically fastened roof tile, foam-adhered roof tile, non-structural metal roofing, wood shakes & shingles or slate roof assemblies as specified within the Roof System NOA.

Note: For tile roof assemblies, refer to RAS 118, 119 or 120 and the tile manufacturer's NOA. For foam-adhered tile roof assemblies, approved use is limited to Polyfoam tile foam adhesive.



Deck Type 1: Wood
Deck Description: $\frac{19}{32}$ " or greater plywood or wood plank
System E(2): Base sheet mechanically fastened to deck.

All General and System Limitations shall apply.

Base sheet: One or more plies Sharkskin Comp® or Sharkskin Ultra® applied as specified below:

Fastening: For slopes 3.5 : 12 (16.2°) or greater:
Shall be applied in single coverage method, overlapping each course with a minimum 4" horizontal lap. Mechanically fastened with approved nails & tin caps spaced 6" o.c. at the horizontal laps and 10" o.c. in a grid pattern having three, equally spaced, staggered rows in the field of the sheet.

For slopes 2.5:12 (11.8°) to 3.5:12 (16.2°):

Shall be applied in a double coverage method, overlapping each course with a minimum 24" horizontal lap. Mechanically fastened with approved nails & tin caps spaced 6" o.c. within 4" of the bottom edge of the horizontal laps and 10" o.c. in one staggered row in the field of the sheet.

Surfacing: Approved for asphalt shingle, non-structural metal roofing, wood shakes & shingles or slate roof assemblies as specified within the Roof System NOA.

Deck Type 2: Wood
Deck Description: $\frac{19}{32}$ " or greater plywood or wood plank
System E(3): Base sheet mechanically fastened to deck.

All General and System Limitations shall apply.

Base sheet: One or more plies Sharkskin Ultra® applied as specified below:

Horizontal Battens: Fastening: For slopes 3 : 12 (14°) or greater:

Sharkskin Ultra shall be applied in single coverage method, overlapping each course with a minimum 4" horizontal lap. Mechanically fasten Sharkskin Ultra with approved nails & tin caps spaced 6" o.c. at the horizontal laps and 10" o.c. in a grid pattern having three, equally spaced, staggered rows in the field of the sheet. Install battens over Sharkskin Ultra in accordance with RAS 119.

Counter Battens: Fastening: For slopes 3 : 12 (14°) or greater:

Install vertical battens in accordance with RAS 118. Sharkskin Ultra shall be laid horizontally in single coverage method, parallel to the eave with minimum 4-inch horizontal laps and minimum 6-inch vertical laps over the vertical battens. Mechanically fasten Sharkskin Ultra with approved nails & tin caps spaced 6" o.c. at the horizontal laps and 10" o.c. in a grid pattern having three, equally spaced, staggered rows in the field of the sheet. Horizontal laps shall be sealed with butyl-based tape or other material specifically approved by Miami-Dade Product Control & Kirsch Building Products. Vertical laps shall be minimum 6-inch wide and shall break over a vertical batten to allow water to run away from the center point of the vertical batten.

Surfacing: Approved for non-structural metal roofing, wood shakes & shingles or slate roof assemblies as specified within the Roof System NOA.

Deck Type 1: Wood
Deck Description: 1 9/32" or greater plywood or wood plank
System E(4): Base sheet mechanically fastened to deck.

All General and System Limitations shall apply.

Base sheet: One or more plies Sharkskin Ultra Radiant® applied as specified below:

Horizontal Battens: Fastening: For slopes 3 : 12 (14°) or greater:

Sharkskin Ultra Radiant® shall be applied with the reflective side up in single coverage method, overlapping each course with a minimum 4" horizontal lap. Mechanically fasten Sharkskin Ultra with approved nails & tin caps spaced 6" o.c. at the horizontal laps and 10" o.c. in a grid pattern having three, equally spaced, staggered rows in the field of the sheet. Install battens over Sharkskin Ultra in accordance with RAS 119.

Counter Battens: Fastening: For slopes 3 : 12 (14°) or greater:

Install vertical battens in accordance with RAS 118. Sharkskin Ultra Radiant® shall be laid horizontally with the reflective side up in single coverage method, parallel to the eave with minimum 4-inch horizontal laps and minimum 6-inch vertical laps over the vertical battens. Mechanically fasten Sharkskin Ultra Radiant® with approved nails & tin caps spaced 6" o.c. at the horizontal laps and 10" o.c. in a grid pattern having three, equally spaced, staggered rows in the field of the sheet. Horizontal laps shall be sealed with butyl-based tape or other material specifically approved by Miami-Dade Product Control & Kirsch Building Products. Vertical laps shall be minimum 6-inch wide and shall break over a vertical batten to allow water to run away from the center point of the vertical batten.

Surfacing: Approved for non-structural metal roofing, wood shakes & shingles or slate roof assemblies as specified within the Roof System NOA.

Deck Type 2: Steel
Deck Description: Minimum 18-22ga., Type-B, 33ksi steel deck
System E(5): Base sheet mechanically fastened to deck.

All General and System Limitations shall apply.

Base sheet: One or more plies Sharkskin Ultra applied in single coverage method with minimum 4" horizontal laps and minimum 6" vertical laps applied as specified below.

Fastening: Sharkskin Ultra is attached to the roof deck with Miami-Dade listed corrosion resistant #10, #12 or #14 screws and metal stress plates. Screws shall engage the top flute of the steel deck and be of sufficient length for minimum 3/4-inch penetration. Screws & plates spaced 6" o.c. at all laps and three staggered rows 10" o.c. in the field of the roll or as specified within the roof system approval.

Surfacing: Approved for non-structural metal roofing assemblies as specified within the Roof System NOA.

GENERAL LIMITATIONS:

1. Fire classification is not part of this acceptance.
2. This acceptance is for prepared roofing applications. Minimum deck requirements shall be in compliance with applicable building code. Sharkskin Roof Underlayments shall be installed in strict compliance with applicable Building Code.
3. All Sharkskin Underlayments shall be applied to a smooth, clean and dry surface with deck free of irregularities. Deck shall be fastened in strict compliance with applicable Building Codes. All nails in the deck shall be carefully checked for protruding heads. Re-fasten any loose decking panels. Sweep the deck thoroughly to remove any dust and debris prior to application.
4. Sharkskin Ultra may be used in asphaltic shingle, direct-deck/batten wood shake & shingle, direct-deck/batten quarry slate or direct-deck/batten non-structural metal roof applications.
5. Sharkskin Comp may be used in asphaltic shingle, direct-deck wood shake & shingle, direct-deck quarry slate or direct-deck non-structural metal roof applications.
6. Sharkskin Ultra Radiant may be used in battened non-structural metal roof, battened wood shakes & shingles or battened slate roof applications. Sharkskin Ultra Radiant shall not be used as tile, asphalt shingle, direct-deck wood shakes & shingle, direct-deck non-structural metal or direct-deck slate underlayment.
7. Sharkskin Comp or Sharkskin Radiant shall not be used as a roof tile underlayment or as part of a roof tile underlayment system.
8. The Sharkskin Ultra and Sharkskin Ultra SA two-ply underlayment system may be used in asphalt shingle, mechanically fastened tile, foam-adhered tile, wood shake & shingle, quarry slate or non-structural metal roof applications.
9. The standard maximum roof pitch for The Sharkskin Ultra and Sharkskin Ultra SA two-ply underlayment system shall be 5:12 for flat tile and profiled tiles with lugs. A maximum of 10 tiles per stack are allowed when loading tile on the underlayment.
10. Sharkskin Roof Underlayments shall not be applied over an existing roof system as a recover application but may be applied as specified herein as part of an approved underlayment system.
11. Sharkskin Roof Underlayments shall not be left exposed as a temporary roof for longer than 180 days of application.
12. Sharkskin Roof Underlayments are components used in roof systems assemblies. Roof system assemblies are approved under specific Notice of Acceptance. Refer to Prepared Roofing System Product Control Notice of Acceptance for listed approval of this product with the specific prepared roofing assembly.
13. Sharkskin Roof Underlayments may be used with any approved roof covering Notice of Acceptance listings the Sharkskin product(s) as a component part of an assembly in the Notice of Acceptance. If Sharkskin Roof Underlayments are not listed, a request may be made to the Authority Having Jurisdiction (AHJ) or the Miami-Dade County Product Control Department provided that appropriate documentation is provided to detail compatibility of the products, wind uplift resistance and fire testing results.
14. Flash vent pipes, stacks, chimneys and penetrations in compliance with Roof Assembly current Product Control Notice of Acceptance and applicable Building Code.
15. All membranes or packaging shall bear the imprint or identifiable marking of the manufacturer's name or logo, or following statement: "Miami-Dade County Product Control Approved" or the Miami-Dade County Product Control Seal as shown below.

MIAMI-DADE COUNTY
APPROVED

END OF THIS ACCEPTANCE

MIAMI-DADE COUNTY
APPROVED

NOA No.: 09-1123.02
Expiration Date: 07/14/15
Approval Date: 07/14/10
Page 6 of 6

B1500213



DEPARTMENT OF REGULATORY AND ECONOMIC RESOURCES (RER)
BOARD AND CODE ADMINISTRATION DIVISION

MIAMI-DADE COUNTY
PRODUCT CONTROL SECTION
11805 SW 26 Street, Room 208
Miami, Florida 33175-2474
T (786) 315-2590 F (786) 315-2599
www.miamidade.gov/pera

NOTICE OF ACCEPTANCE (NOA)

Artezanos, Inc.
9455 SW 78th Street
Miami, FL 33173

SCOPE:

This NOA is being issued under the applicable rules and regulations governing the use of construction materials. The documentation submitted has been reviewed and accepted by Miami-Dade County RER - Product Control Section to be used in Miami Dade County and other areas where allowed by the Authority Having Jurisdiction (AHJ).

This NOA shall not be valid after the expiration date stated below. The Miami-Dade County Product Control Section (In Miami Dade County) and/or the AHJ (in areas other than Miami Dade County) reserve the right to have this product or material tested for quality assurance purposes. If this product or material fails to perform in the accepted manner, the manufacturer will incur the expense of such testing and the AHJ may immediately revoke, modify, or suspend the use of such product or material within their jurisdiction. RER reserves the right to revoke this acceptance, if it is determined by Miami-Dade County Product Control Section that this product or material fails to meet the requirements of the applicable building code.

This product is approved as described herein, and has been designed to comply with the Florida Building Code including the High Velocity Hurricane Zone of the Florida Building Code.

DESCRIPTION: Artezanos World Class

LABELING: Each unit shall bear a permanent label with the manufacturer's name or logo, city, state and following statement: "Miami-Dade County Product Control Approved", unless otherwise noted herein.

RENEWAL of this NOA shall be considered after a renewal application has been filed and there has been no change in the applicable building code negatively affecting the performance of this product.

TERMINATION of this NOA will occur after the expiration date or if there has been a revision or change in the materials, use, and/or manufacture of the product or process. Misuse of this NOA as an endorsement of any product, for sales, advertising or any other purposes shall automatically terminate this NOA. Failure to comply with any section of this NOA shall be cause for termination and removal of NOA.

ADVERTISEMENT: The NOA number preceded by the words Miami-Dade County, Florida, and followed by the expiration date may be displayed in advertising literature. If any portion of the NOA is displayed, then it shall be done in its entirety.

INSPECTION: A copy of this entire NOA shall be provided to the user by the manufacturer or its distributors and shall be available for inspection at the job site at the request of the Building Official.

This NOA renews NOA# 09-0422.05 and consists of pages 1 through 7.
The submitted documentation was reviewed by Alex Tigera.



NOA No.: 14-0220.12
Expiration Date: 05/14/19
Approval Date: 04/24/14
Page 1 of 7

ROOFING ASSEMBLY APPROVAL

Category: Roofing
Sub-Category: Roofing Tiles
Material: Clay

1. SCOPE

This approves a roofing system using "World Class Two Piece Handmade Tapered Mission Barrel Roofing Tile" Clay Roof Tile, as manufactured by Artezanos, Inc. described in Section 2 of this Notice of Acceptance. For the locations where the pressure requirements, as determined by applicable Building Code, does not exceed the values listed in section 4 herein. The attachment calculations shall be done as a moment based system.

2. PRODUCT DESCRIPTION

<u>Manufactured by</u> <u>Applicant</u>	<u>Dimensions</u>	<u>Test</u> <u>Specifications</u>	<u>Product</u> <u>Description</u>
2 Piece Handmade Tapered Mission Barrel Tile	l = 18" w = 8" ½" thick	ASTM C 1167	High profile, two piece, barrel, clay roof tile. For direct deck adhesive or mortar set applications.
Italian Pan Tile	l = 19.4" w = 10" ½" thick	ASTM C 1167	Flat pan clay tile to be used in conjunction with Handmade Tapered Mission Barrel Tile as the cap. For direct deck adhesive or mortar set applications.

2.1 MANUFACTURING LOCATION

1. Cucuta, Colombia

2.2 SUBMITTED EVIDENCE:

<u>Test Agency</u>	<u>Test Identifier</u>	<u>Test Name/Report</u>	<u>Date</u>
Testwell Craig Laboratories & Consultants, Inc.	Lab #ABM-4	PA 101 (Mortar Set)	Jan 1995
	Lab #ABM-20	PA 101 (Adhesive Set)	Nov 1995
	Lab #ABM-1	ASTM C 1167	2003
IBA Consultants Inc.	2352-39	ASTM C 1167	Nov. 2005
	2352-47	ASTM C 1167	June 2006
	2352-38	Static Uplift Testing	Dec. 2005
		TAS 101 (Adhesive Set)	
	2352-64	TAS 101 (Mortar Set)	May 2008
	2352-53	TAS 101 (Adhesive Set with Steel Pan)	April 2008
	2352-59	TAS 101 (Adhesive Set with Aluminum Pan)	April 2008
Walker Engineering		Thermal Expansion of Steel, Concrete and Clay Components	
Southwest Research Institute	01.13537.01.310	ASTM E-108	April 2008
American Test Lab of South Florida	RT0505.02-09	ASTM C 1167	May 2009
	RT0505.01-09	ASTM C 1167	May 2009

3. LIMITATIONS

- 3.1 Fire classification is not part of this acceptance.
- 3.2 For mortar or adhesive set tile applications, a static field uplift test shall be performed in accordance with TAS 106.
- 3.3 Applicant shall retain the services of a Miami-Dade County Certified Laboratory to perform quarterly test in accordance with TAS 112, appendix 'A'. Such testing shall be submitted to the Building Code Compliance Office for review.
- 3.4 Minimum underlayment shall be in compliance with the applicable Roofing Applications Standards listed section 4.1 herein.
- 3.5 30/90 hot mopped underlayment applications may be installed perpendicular to the roof slope unless stated otherwise by the underlayment material manufacturers published literature.
- 3.6 This acceptance is for wood deck applications. Minimum deck requirements shall be in compliance with applicable building code.



NOA No.: 14-0220.12
 Expiration Date: 05/14/19
 Approval Date: 04/24/14
 Page 3 of 7

4. INSTALLATION

System A – Handmade Barrel Tile (Two-Piece Cap and Pan)

- 4.1 “World Class Two Piece Handmade Tapered Mission Roofing Tile” and its components shall be installed in strict compliance with Roofing Application Standard RAS 120.
- 4.2 Data For Attachment Calculations

Table A-1: Average Weight (W) and Dimensions (l x w)			
Tile Profile	Weight-W (lbf)	Length-l (ft)	Width-w (ft)
Two Piece Handmade Tapered Mission Tile	5.8	1.42	0.58

Table A-2: Aerodynamic Multipliers - λ (ft ³)	
Tile Profile	λ (ft ³) Direct Deck Application
Two Piece Handmade Tapered Mission Tile	0.22

Table A-3: Restoring Moments due to Gravity - M_g (ft-lbf)						
Tile Profile	2":12"	3":12"	4":12"	5":12"	6":12"	7":12"
Two Piece Handmade Tapered Mission Tile	Direct Deck	Direct Deck	Direct Deck	Direct Deck	Direct Deck	Direct Deck
	3.9	3.8	3.7	3.6	3.5	3.4

Table A-6: Attachment Resistance Expressed as Uplift – F' (ft-lbf) for Single Patty Adhesive Set Systems		
Tile Profile	Tile Application	Minimum Attachment Resistance
Two Piece Handmade Tapered Mission Tile	3M™ 2-Component Foam Roof Tile Adhesive AH-160	111.4 ¹
1 Place 42 grams per pan and 21 grams per cap (on each side) of AH 160.		

Table A-8: Attachment Resistance Expressed as Uplift – F' (ft-lbf) for Mortar Set Systems		
Tile Profile	Tile Application	Minimum Attachment Resistance
Two Piece Handmade Tapered Mission Tile	Mortar Set	57.4 ²
2 Quikrete Mortar		



System B – Handmade Barrel Tile with Italian Pan Tile

4.3 “World Class Two Piece Handmade Tapered Mission Roofing Tile” and its components shall be installed in strict compliance with Roofing Application Standard RAS 120.

4.4 Data For Attachment Calculations

Table B-1: Average Weight (W) and Dimensions (l x w)

Tile Profile	Weight-W (lbf)	Length-l (ft)	Width-w (ft)
Handmade Tapered Mission Tile with Italian Pan Tile	5.2	1.5	0.667

Table B-2: Aerodynamic Multipliers - λ (ft³)

Tile Profile	λ (ft ³) Direct Deck Application
Handmade Tapered Mission Tile with Italian Pan Tile	0.22

Table B-3: Restoring Moments due to Gravity - M_g (ft-lbf)

Tile Profile	2":12"	3":12"	4":12"	5":12"	6":12"	7":12"
Handmade Tapered Mission Tile with Italian Pan Tile	Direct Deck 4.85	Direct Deck 4.77	Direct Deck 4.66	Direct Deck 4.51	Direct Deck 4.30	Direct Deck 4.05

**Table B-6: Attachment Resistance Expressed as Uplift – F' (ft-lbf)
for Single Patty Adhesive Set Systems**

Tile Profile	Tile Application	Minimum Attachment Resistance
Handmade Tapered Mission Tile with Italian Pan Tile	3M™ 2-Component Foam Roof Tile Adhesive AH-160	63.4 ³

3 Place 19.3 grams per pan and 10 grams per cap (on each side) of AH 160.

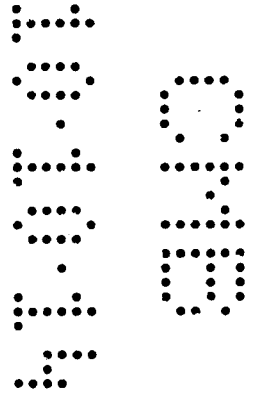
**Table B-8: Attachment Resistance Expressed as Uplift – F' (ft-lbf)
for Mortar Set Systems**

Tile Profile	Tile Application	Minimum Attachment Resistance
Handmade Tapered Mission Tile with Italian Pan Tile	Mortar Set	77.64 ⁴

4 Quikrete Mortar

5. LABELING

All tiles shall bear the imprint or identifiable marking of the manufacturer's name or logo (See Detail Below), or following statement: "Miami-Dade County Product Control Approved".



ARTEZANOS WORLD CLASS TILE LABEL
(LOCATED ON EITHER TOPSIDE OR UNDERSIDE OF TILE)

6. BUILDING PERMIT REQUIREMENTS

6.1 Application for building permit shall be accompanied by copies of the following:

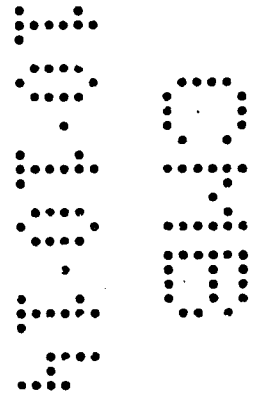
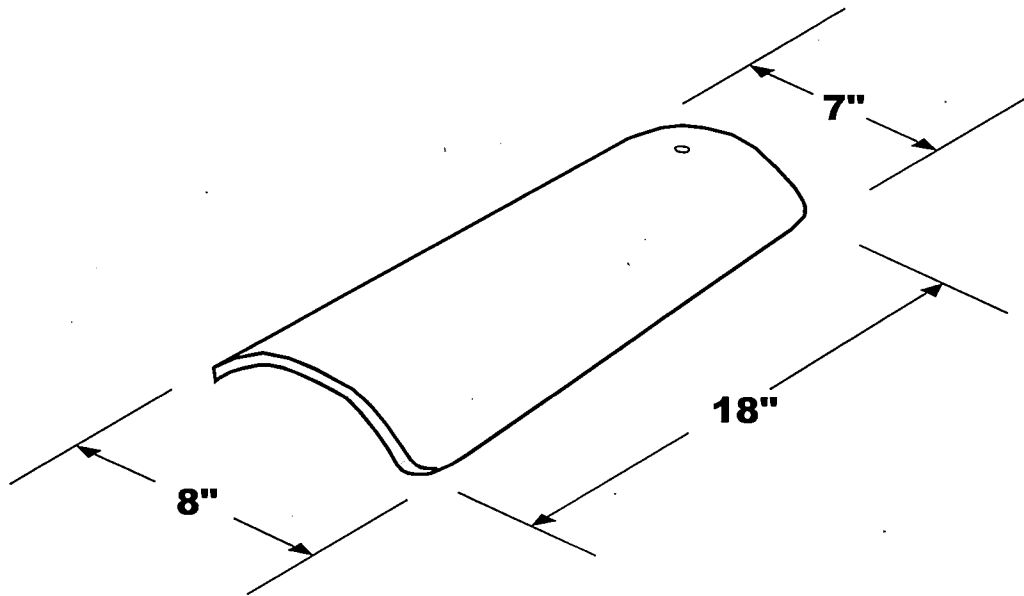
6.1.1 This Notice of Acceptance.

6.1.2 Any other documents required by the Building Official or applicable building code in order to properly evaluate the installation of this system.

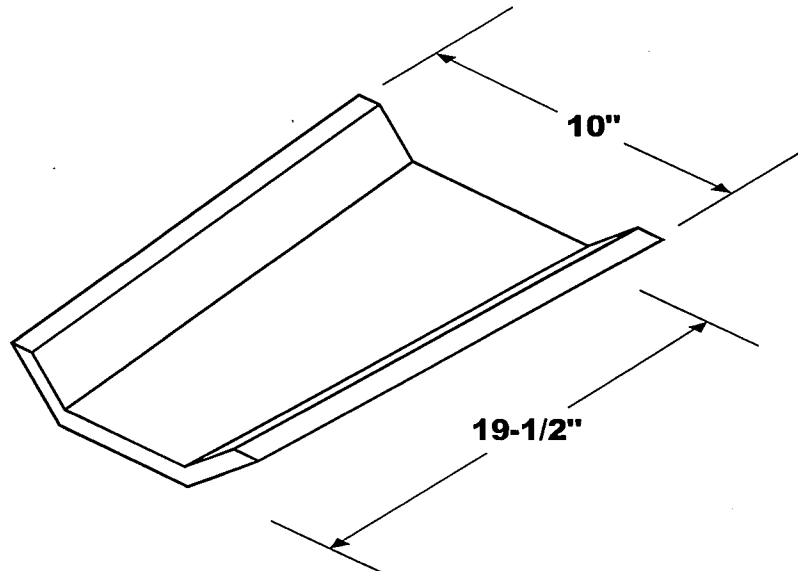


NOA No.: 14-0220.12
Expiration Date: 05/14/19
Approval Date: 04/24/14
Page 6 of 7

PROFILE DRAWINGS



ARTEZANOS, INC. "2 PIECE HANDMADE TAPERED MISSION BARREL TILE



ARTEZANOS, INC. ITALIAN PAN TILE

END OF THIS ACCEPTANCE



B1500213



DEPARTMENT OF REGULATORY AND ECONOMIC RESOURCES (RER)
BOARD AND CODE ADMINISTRATION DIVISION
NOTICE OF ACCEPTANCE (NOA)

MIAMI-DADE COUNTY
PRODUCT CONTROL SECTION
11805 SW 26 Street, Room 208
Miami, Florida 33175-2474
T (786)315-2590 F (786) 315-2599
www.miamidade.gov/economy

3M Company
3M Center Building 0220-05-E-06
St. Paul, MN. 55144-1000

SCOPE:

This NOA is being issued under the applicable rules and regulations governing the use of construction materials. The documentation submitted has been reviewed and accepted by Miami-Dade County RER -Product Control Section to be used in Miami Dade County and other areas where allowed by the Authority Having Jurisdiction (AHJ).

This NOA shall not be valid after the expiration date stated below. The Miami-Dade County Product Control Section (In Miami Dade County) and/or the AHJ (in areas other than Miami Dade County) reserve the right to have this product or material tested for quality assurance purposes. If this product or material fails to perform in the accepted manner, the manufacturer will incur the expense of such testing and the AHJ may immediately revoke, modify, or suspend the use of such product or material within their jurisdiction. RER reserves the right to revoke this acceptance, if it is determined by Miami-Dade County Product Control Section that this product or material fails to meet the requirements of the applicable building code.

This product is approved as described herein, and has been designed to comply with the Florida Building Code including the High Velocity Hurricane Zone of the Florida Building Code.

DESCRIPTION: 3M™ 2-Component Foam Roof Tile Adhesive AH-160

LABELING: Each unit shall bear a permanent label with the manufacturer's name or logo, city, state and following statement: "Miami-Dade County Product Control Approved", unless otherwise noted herein.

RENEWAL of this NOA shall be considered after a renewal application has been filed and there has been no change in the applicable building code negatively affecting the performance of this product.

TERMINATION of this NOA will occur after the expiration date or if there has been a revision or change in the materials, use, and/or manufacture of the product or process. Misuse of this NOA as an endorsement of any product, for sales, advertising or any other purposes shall automatically terminate this NOA. Failure to comply with any section of this NOA shall be cause for termination and removal of NOA.

ADVERTISEMENT: The NOA number preceded by the words Miami-Dade County, Florida, and followed by the expiration date may be displayed in advertising literature. If any portion of the NOA is displayed, then it shall be done in its entirety.

INSPECTION: A copy of this entire NOA shall be provided to the user by the manufacturer or its distributors and shall be available for inspection at the job site at the request of the Building Official.

This NOA revises NOA 13-0502.02 and consists of pages 1 through 11.
The submitted documentation was reviewed by Alex Tigera.



NOA No.: 14-0805.01
Expiration Date: 05/10/17
Approval Date: 09/04/14
Page 1 of 11

ROOFING COMPONENT APPROVAL:

Category: Roofing
Sub Category: Roof tile adhesive
Materials: Polyurethane

SCOPE:

This approves 3M™ 2-Component Foam Roof Tile Adhesive AH-160 as manufactured by 3M Company as described in this Notice of Acceptance. For the locations where the design pressure requirements, as determined by applicable building code, do not exceed the design pressure values obtained by calculations in compliance with Roofing Application Standard RAS 127. For use with approved flat, low, and high profile roof tile systems using 2-Component Foam Roof Tile Adhesive AH-160.

PRODUCTS MANUFACTURED BY APPLICANT:

<u>Product</u>	<u>Dimensions</u>	<u>Test Specifications</u>	<u>Product Description</u>
3M™ 2-Component Foam Roof Tile Adhesive AH-160	N/A	TAS 101	Two component polyurethane foam adhesive
Foam Dispenser RTF1000	N/A		Dispensing Equipment
ProPack® 30 & 100	N/A		Dispensing Equipment

PRODUCTS MANUFACTURED BY OTHERS:

Any Miami-Dade County Product Control Accepted Roof Tile Assembly having a current NOA which list attachment resistance values with the use of 2-Component Foam Roof Tile Adhesive AH-160 roof tile adhesive.

MANUFACTURING LOCATION:

1. Tomball, TX.

PHYSICAL PROPERTIES:

<u>Property</u>	<u>Test</u>	<u>Results</u>
Density	ASTM D 1622	1.6 lbs./ft. ³
Compressive Strength	ASTM D 1621	18 PSI Parallel to rise 12 PSI Perpendicular to rise
Tensile Strength	ASTM D 1623	28 PSI Parallel to rise
Water Absorption	ASTM D 2127	0.08 Lbs./Ft ²
Moisture Vapor Transmission	ASTM E 96	3.1 Perm / Inch
Dimensional Stability	ASTM D 2126	+0.07% Volume Change @ -40° F., 2 weeks +6.0% Volume Change @158°F., 100% Humidity, 2 weeks
Closed Cell Content	ASTM D 2856	86%

Note: The physical properties listed above are presented as typical average values as determined by accepted ASTM test methods and are subject to normal manufacturing variation.

MIAMI-DADE COUNTY
APPROVED

NOA No.: 14-0805.01
Expiration Date: 05/10/17
Approval Date: 09/04/14
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EVIDENCE SUBMITTED:

<u>Test Agency</u>	<u>Test Identifier</u>	<u>Test Name/Report</u>	<u>Date</u>
Center for Applied Engineering	#94-060	TAS 101	04/08/94
	257818-1PA	TAS 101	12/16/96
	25-7438-3	SSTD 11-93	10/25/95
	25-7438-4		
	25-7438-7	SSTD 11-93	11/02/95
	25-7492	SSTD 11-93	12/12/95
Miles Laboratories Polymers Division	NB-589-631	ASTM D 1623	02/01/94
Ramtech Laboratories, Inc.	9637-92	ASTM E 108	04/30/93
Southwest Research Institute	01-6743-011	ASTM E 108	11/16/94
	01-6739-062b[1]	ASTM E 84	01/16/95
Trinity Engineering	7050.02.96-1	TAS 114	03/14/96
	P36700.04.12	ASTM D 1623	04/18/12
	P39740.02.12	TAS 101	02/21/12
		TAS 123	
Celotex Corp. Testing Services	528454-2-1	TAS 101	10/23/98
	528454-9-1		
	528454-10-1		
	520109-1	TAS 101	12/28/98
	520109-2		
	520109-3		
	520109-6		
	520109-7		
	520191-1	TAS 101	03/02/99
	520109-2-1		

LIMITATIONS:

1. Fire classification is not part of this acceptance. Refer to the Prepared Roof Tile Assembly for fire rating.
2. 3M™ 2-Component Foam Roof Tile Adhesive AH-160 shall solely be used with flat, low, & high tile profiles.
3. Minimum underlayment shall be in compliance with the Roofing Application Standard RAS 120.
4. Roof Tile manufactures acquiring acceptance for the use of 3M™ 2-Component Foam Roof Tile Adhesive AH-160 roof tile adhesive with their tile assemblies shall test in accordance with TAS 101.
5. All products listed herein shall have a quality assurance audit in accordance with the Florida Building Code and Rule 61G20-3 of the Florida Administrative Code.



NOA No.: 14-0805.01
 Expiration Date: 05/10/17
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INSTALLATION:

1. 3M™ 2-Component Foam Roof Tile Adhesive AH-160 may be used with any roof tile assembly having a current NOA that lists attachment resistance values with the use of 3M™ 2-Component Foam Roof Tile Adhesive AH-160.
2. 3M™ 2-Component Foam Roof Tile Adhesive AH-160 shall be applied in compliance with the Component Application section and the corresponding Placement Details noted herein. The roof tile assembly's adhesive attachment with the use of 3M™ 2-Component Foam Roof Tile Adhesive AH-160 shall provide sufficient attachment resistance to meet or exceed the resistance value determined in compliance with Miami-Dade County Roofing Application Standards RAS 127. The adhesive attachment data is noted in the roof tile assembly NOA.
3. 3M™ 2-Component Foam Roof Tile Adhesive AH-160 and its components shall be installed in accordance with Roofing Application Standard RAS 120, and 3M Company's 3M™ 2-Component Foam Roof Tile Adhesive AH-160 Operating Instruction and Maintenance Booklet.
4. Installation must be by a Factory Trained 'Qualified Applicator' approved and licensed by 3M Company. 3M Company shall supply a list of approved applicators to the authority having jurisdiction.
5. Calibration of the Foam Dispenser RTF1000 dispensing equipment is required before application of any adhesive. The mix ratio between the "A" component and the "B" component shall be maintained between 1.0-1.15 (A): 1.0 (B).
6. 3M™ 2-Component Foam Roof Tile Adhesive AH-160 shall be applied with Foam Dispenser RTF1000 or ProPack® 30 & 100 dispensing equipment only.
7. 3M™ 2-Component Foam Roof Tile Adhesive AH-160 shall not be exposed permanently to sunlight.
8. Tiles must be adhered in freshly applied adhesive. Tile must be set within 1 to 2 minutes after 3M™ 2-Component Foam Roof Tile Adhesive AH-160 has been dispensed.
9. 3M™ 2-Component Foam Roof Tile Adhesive AH-160 placement and minimum patty weight shall be in accordance with the 'Placement Details' herein. Each generic tile profile requires the specific placement noted herein.



Table 1: Adhesive Placement For Each Generic Tile Profile

Tile Profile	Placement Detail	Minimum Paddy Contact Area	Minimum Paddy Gram Weight
Eave Course - Flat, Low, High Profiles	All Eave Course	17-23 sq. inches	45-65
Flat, Low, High Profiles	#1	17-23 sq. inches	45-65
Flat Profile	#2	10-12 sq. inches	30
Low Profile	#2	12-14 sq. inches	30
High Profile	#2	17-19 sq. inches	30
Flat, Low, High Profiles	#3	Two Paddys: 8-9 sq. inches at head of tile 9-11 sq. inches at overlap	12 grams per paddy
Two-Piece Barrel (Cap Tile)	Two Piece	2 Beads (1 each longitudinal edge) 20-25 sq. inches each bead	17 grams per bead
Two Piece Barrel (Pan Tile)	Two Piece	65-70 sq. inches	34 grams under pan

LABELING:

All approved products listed herein shall be labeled and shall bear the imprint or identifiable marking of the manufacturer's name or logo and following statement: "Miami-Dade County Product Control Approved" or the Miami-Dade County Product Control Seal as shown below.



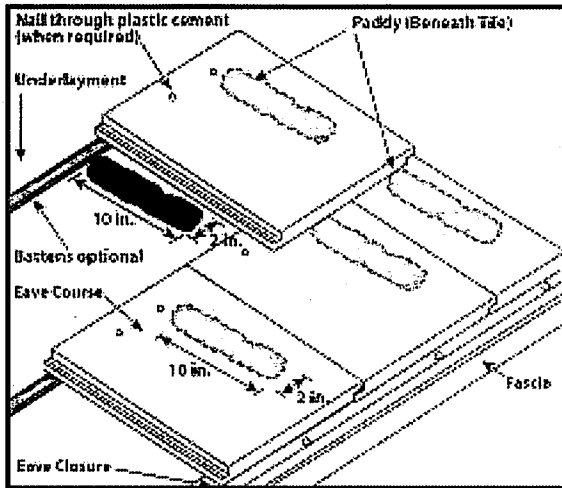
BUILDING PERMIT REQUIREMENTS:

As required by the Building Official or applicable building code in order to properly evaluate the installation of this system.



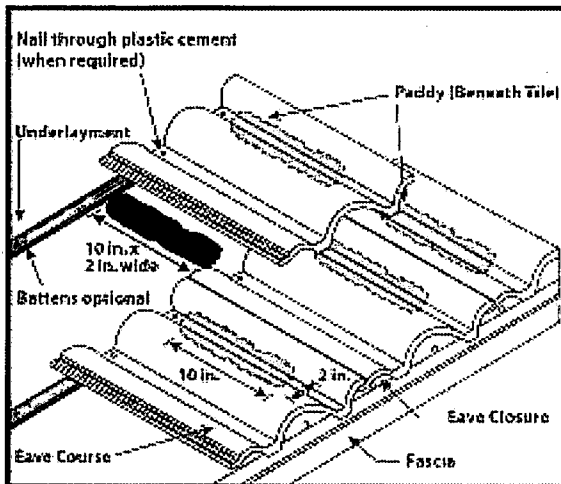
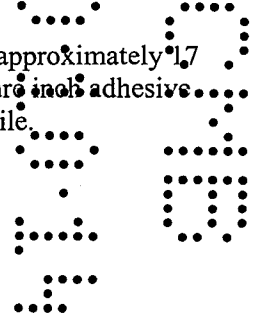
NOA No.: 14-0805.01
 Expiration Date: 05/10/17
 Approval Date: 09/04/14
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ADHESIVE PLACEMENT DETAIL # 1



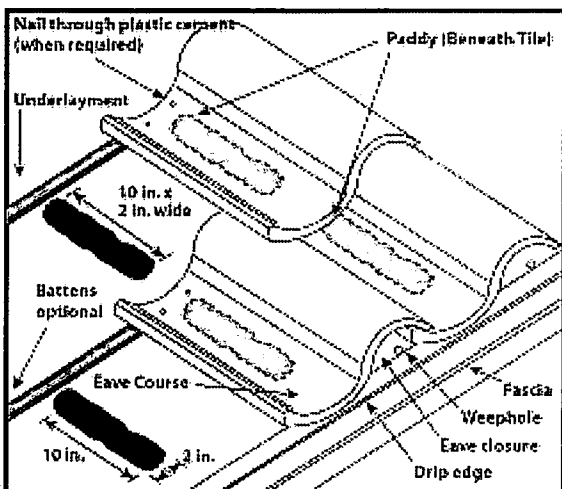
Flat/Low Profile Tile

1. Starting at the eave course, apply a minimum 2" (50.8 mm) x 10" (254 mm) x 1" (25.4 mm) foam paddy onto the underlayment positioned as shown, under the strengthening rib closest to the overlock of the tile being set.
2. Continue in same manner. Insure approximately 17 (109.7 cm²) – 23 (148.4 cm²) square inch adhesive contact with the underside of the tile.



Medium Profile / Double Pan Tile

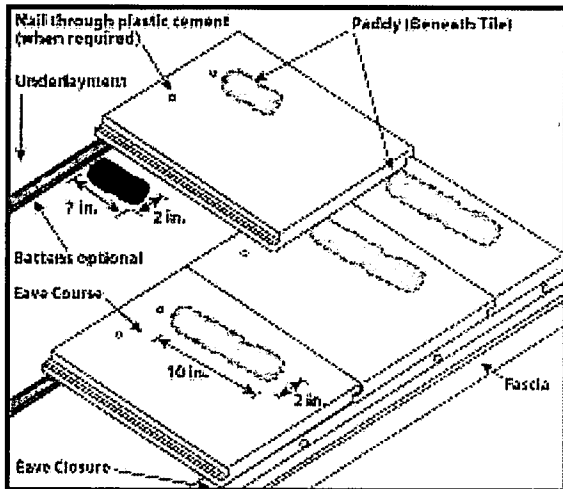
1. Starting at the eave course, apply a minimum 2" (50.8 mm) x 10" (254 mm) x 1" (25.4 mm) foam paddy onto the underlayment positioned as shown under the pan portion of the tile closest to the overlock of the tile being set.
2. Continue in same manner. Insure approximately 17 (109.7 cm²) – 23 (148.4 cm²) square inch adhesive contact with the underside of the tile.



High Profile / Single Pan Tile

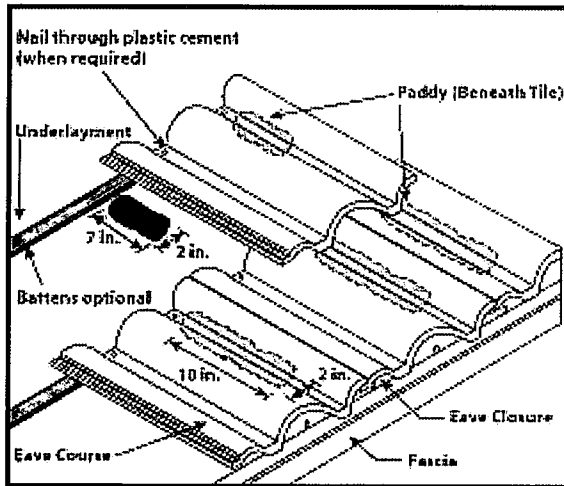
1. Starting at the eave course, apply a minimum 2" (50.8 mm) x 10" (254 mm) x 1" (25.4 mm) foam paddy onto the underlayment positioned as shown under the pan portion of the tile closest to the overlock of the tile being set.
2. Continue in same manner. Insure approximately 17 (109.7 cm²) – 23 (148.4 cm²) square inch adhesive contact with the underside of the tile.

ADHESIVE PLACEMENT DETAIL # 2



Flat/Low Profile Tile

1. Starting at the eave course, apply a minimum 2" (50.8 mm) x 10" (254 mm) x 1" (25.4 mm) foam paddy onto the underlayment positioned as shown under the strengthening rib of the tile closest to the overlock of the tile being set. Insure approximately 17 (109.7 cm²) – 23 (148.4 cm²) square inch adhesive contact with the underside of the tile.
2. At the second course, apply a minimum 2" (50.8 mm) x 7" (177.8 mm) x 1" (25.4 mm) foam paddy onto the underlayment positioned as shown under the strengthening rib closest to the overlock of the tile being set.
3. Continue in same manner. Insure approximately 10" (64.5 cm²) – 12 (77.4 cm²) square inch adhesive contact with the underside of the tile.

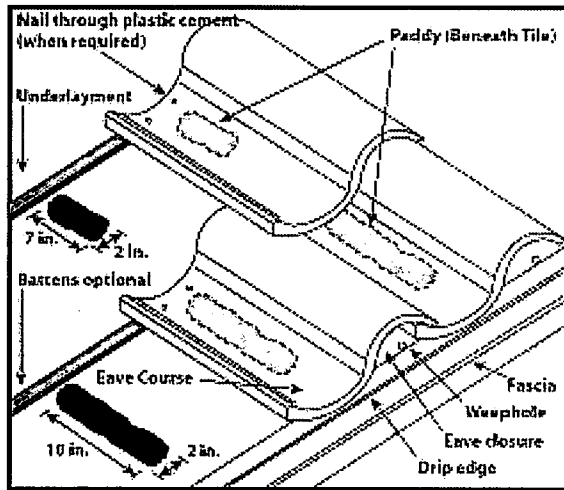


Medium Profile / Double Pan Tile

1. Starting at the eave course, apply a minimum 2" (50.8 mm) x 10" (254 mm) x 1" (25.4 mm) foam paddy onto the underlayment positioned as shown under the pan portion of the tile closest to the overlock of the tile being set. Insure approximately 17 (109.7 cm²) – 23 (148.4 cm²) square inch adhesive contact with the underside of the tile.
2. At the second course, apply a minimum 2" (50.8 mm) x 7" (177.8 mm) x 1" (25.4 mm) foam paddy onto the underlayment positioned as shown under the pan portion of the tile closest to the overlock of the tile being set.
3. Continue in same manner. Insure approximately 12" (77.4 cm²) – 14 (90.3 cm²) square inch adhesive contact with the underside of the tile.

(Instructions continued on next page)

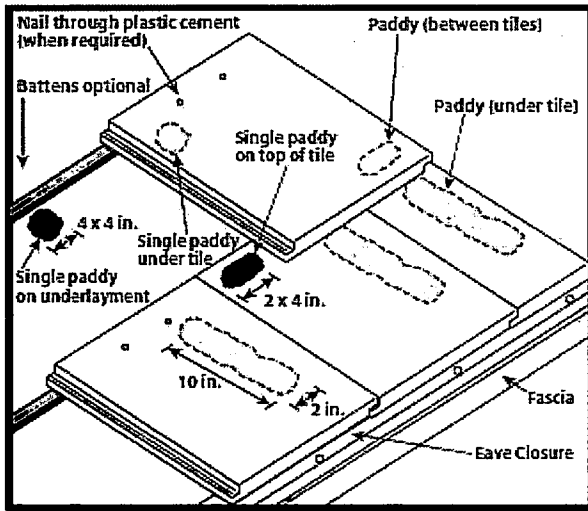
ADHESIVE PLACEMENT DETAIL # 2 (CONTINUED)



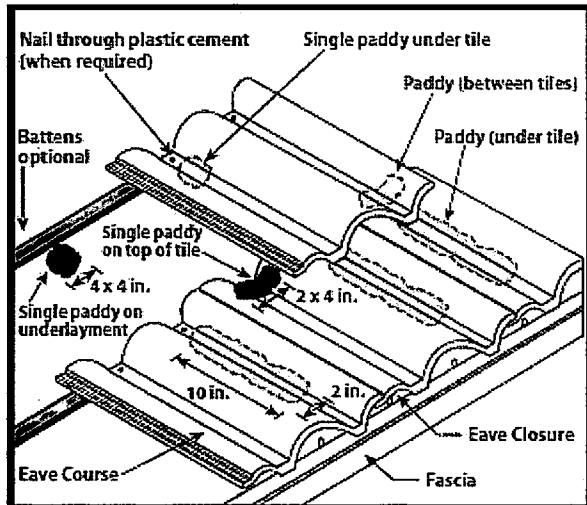
High Profile / Single Pan Tile

1. Starting at the eave course, apply a minimum 2" (50.8 mm) x 10" (254 mm) x 1" (25.4 mm) foam paddy onto the underlayment positioned as shown under the pan portion of the tile closest to the overlock of the tile being set. Insure approximately 17 (109.7 cm²) - 23 (148.4 cm²) square inch adhesive contact with the underside of the tile.
2. At the second course, apply a minimum 2" (50.8 mm) x 7" (177.8 mm) x 1" (25.4 mm) foam paddy onto the underlayment positioned as shown under the pan portion of the tile closest to the overlock of the tile being set.
3. Continue in same manner. Insure approximately 17" (109.7 cm²) - 19 (122.6 cm²) square inch adhesive contact with the underside of the tile.

ADHESIVE PLACEMENT DETAIL # 3



Flat/Low Profile Tile

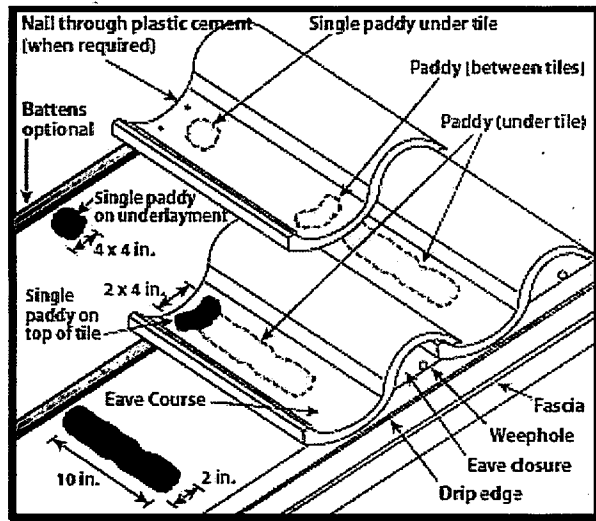


Medium Profile Tile

1. On the eave course only, apply a minimum 2" (50.8 mm) x 10" (254 mm) x 1" (25.4 mm) foam paddy onto the underlayment positioned as shown, under the strengthening rib for flat tile or under the pan portion of the tile for low or high profile tile closest to the overlock of the tile being set. Leave approximately 4" (101.6 mm) up from the eave edge free of foam to prevent the expanded adhesive from blocking the weep holes. Insure approximately 17-23 in² (109.7-148.4 cm²) of adhesive contact with the underside of the tile.
2. Apply a 4" (101.6 mm) x 4" (101.6 mm) x 1" (25.4 mm) foam paddy onto the underlayment just below the second course line positioned foam paddy under the strengthening rib for flat tile, or under the pan portion of the tile, closest to the underlock for the second course tile to be installed. Insure approximately 8-9 in² (51.6-58.1 cm²) of adhesive contact with the underside of the tile.

(Instructions continued on next page)

ADHESIVE PLACEMENT DETAIL # 3 (CONTINUED)

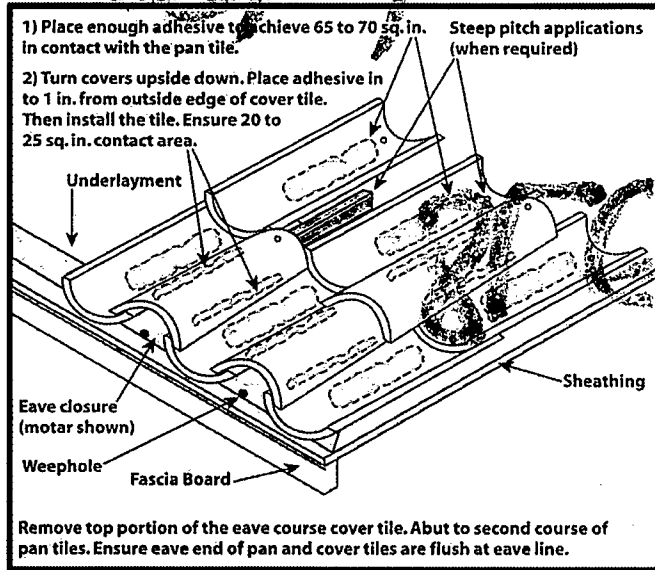


High Profile Tile

3. Also apply a 2" (50.8 mm) x 4" (101.6 mm) x 3/4" (19 mm) paddy on top of the eave course tile surface as shown, on top of the strengthening rib for flat tile or on top of the pan portion of the tile, closest to the underlock of the first course of tile. Install second course of tile. Insure approximately 9 (58.1 cm²) - 11 (71 cm²) square inch adhesive contact with the underside of the tile at the overlap and 7 (45.2 cm²) - 9 (58.1 cm²) square inch adhesive contact with the underside of the tile at the head of the tile. Continue in same manner.

ADHESIVE PLACEMENT DETAIL TWO PIECE BARREL

Two Piece Barrel (Cap and Pan) Tile



Two Piece Barrel - High Profile Tile

1. Starting at the eave course, apply a minimum 2" (50.8 mm) x 10" (254 mm) x 1" (25.4 mm) foam paddy onto the underlayment positioned as shown under two adjacent pan tiles. Support eave tiles from rocking until adhesive has a chance to cure.
2. Continue in same manner bringing two pan courses up toward the ridge. Ensure approximately 65 (419.4 cm²) - 70 (451.6 cm²) square inch adhesive contact with the underside of the pan tile.
3. Turn covers upside down exposing the underside of the tile. Apply a minimum 1" (25.4 mm) x 10" (254 mm) bead of adhesive directly on the inner edge of each side of the cover tile. Leave approximately 3/4" (19 mm) to 1" (25.4 mm) from the outside edge of the tile, inward, free of foam to allow for expansion.
4. Turn cover tile over after foam is applied and place onto pan tile course. Ensure a minimum of 20 (129 cm²) - 25 (161.3 cm²) square inch contact area on each side of the cover tile to the pan tile. Continue in same manner. Trim away any cured exposed foam adhesive. Pointing of longitudinal edges of the cover tiles are considered optional.
5. When additional nailing is required, 2" (50.8 mm) x 4" (101.6 mm) nailers or the tie wire system using galvanized, stainless steel, or copper wire and compatible nails may be used.

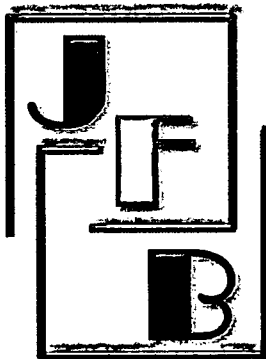
END OF THIS ACCEPTANCE

B1500213

5980 N Bay Rd

0
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8
8

B1202278



Juan Fernandez-Barquin, P.E.

Structural Engineers 40114
Threshold Inspectors 0947
State Plans Examiner PX 1305
State Building Inspector BN 3318

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Doral, Florida 33172
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Email: jfbeng@bellsouth.net

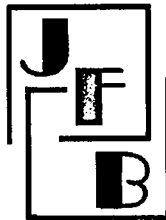
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NOTICE: In addition to the requirement of this permit, there may be additional restrictions applicable to this property that may be found in the Public Records of this County and there may be additional permits required from other government entities such as water management districts, state agencies, or federal agencies. The City of Miami Beach assumes no responsibility for accuracy of or results from these plans which are approved subject to compliance with all Federal, State, and Local Laws, Rules, and Regulations.

8
2
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B/5/6/08

PROJECT: 5980 N. Bay Rd



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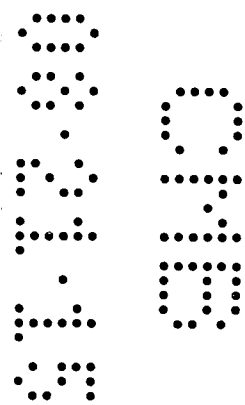
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**5980 NORTH BAY ROAD
MIAMI BEACH, FLORIDA 33139**

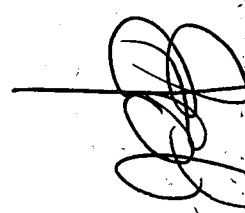
STRUCTURAL CALCULATIONS

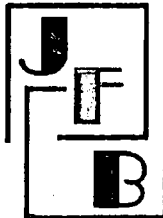
RAILINGS FOR STAIR

8/14/2015



\\DOCS\\3DESIGN (TONY LEON)\\TABLE OF CONTENTS\\5980 N. BAY ROAD-SPIRAL STAIR-POST.DOC


AUG 14 2015



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PROJECT NAME 5980 North Bay Rd.

ENGINEER E.

DATE 08/06/15

PAGE 1

Rating check.

Length to distribute loads: L

Formula:

$$L = \sqrt{\frac{2 F_y S}{W}}$$

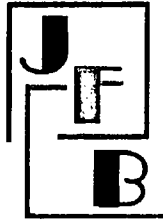
$$F_y = 0.6 \times 36 \text{ KSI} = 21.6 \text{ KSI}$$

$$S = 0.1667 \text{ in}^3$$

$$W = 0.0042 \text{ K/ft}$$

$$L = \sqrt{\frac{2 \times 21.6 \times 0.1667}{0.0042}} = 41.4 \text{ in}$$

$$\# \text{ of pickets} = \frac{41.4 \text{ in}}{4 \text{ in}} = 10.25 \text{ pickets}$$



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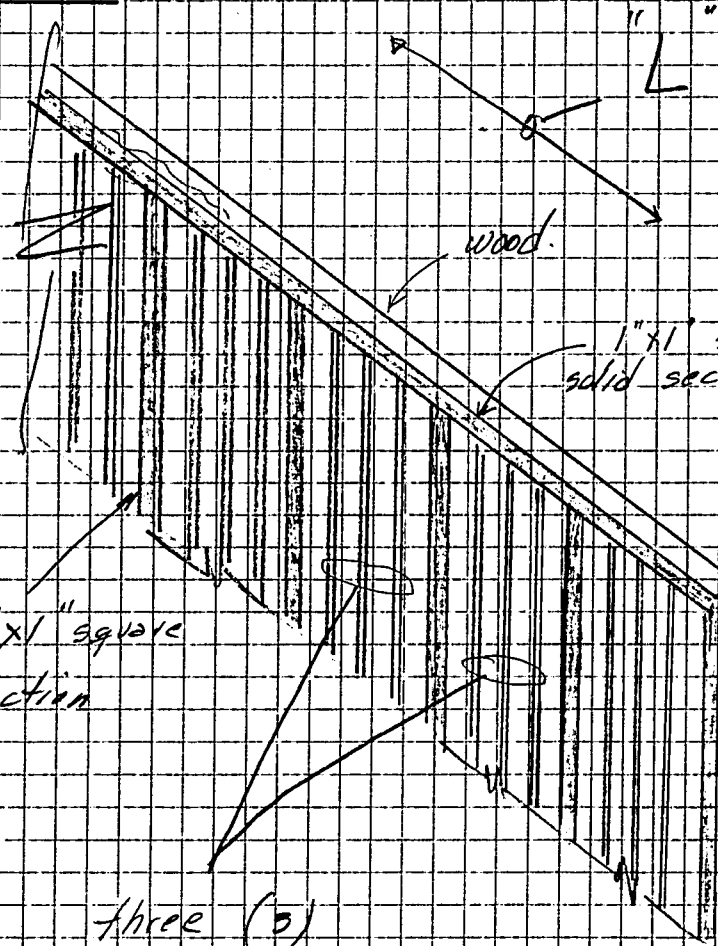
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PROJECT NAME 5980 North Bay Rd.

ENGINEER E. DATE 08/06/15 PAGE 2.

Steel Railing

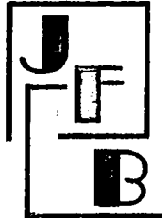


three (3)

0.5" x 0.5" square solid section

typical between 1" square solid section

sh for main stairs



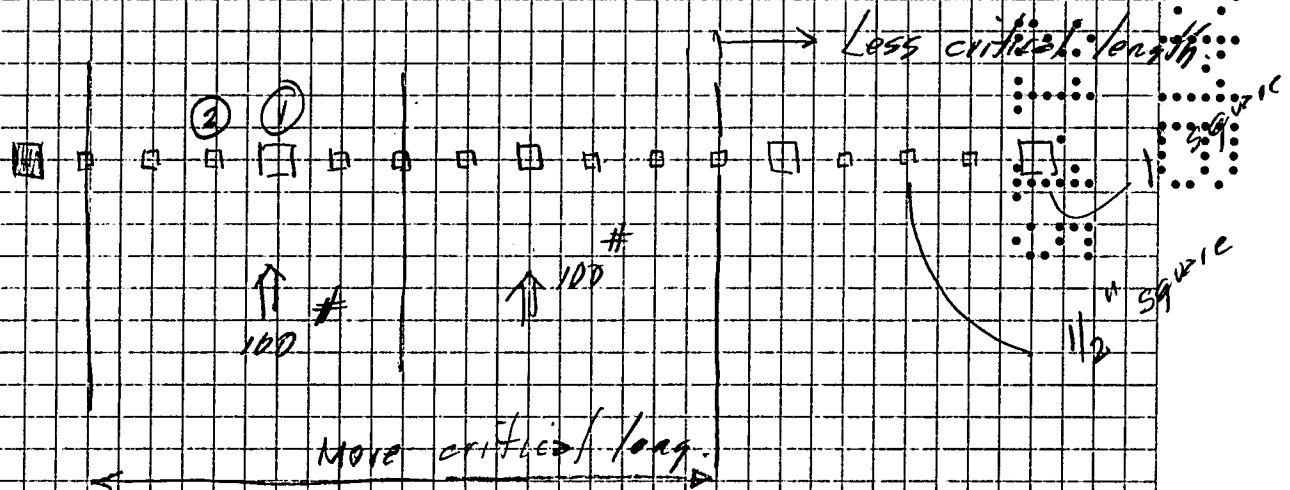
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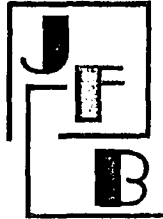
ENGINEER E DATE 08/06/15 PAGE 3.

Distribution of pickets



$$F_1 = 100 \frac{I_1}{\sum I} = \frac{0.0833}{0.0833 + 4(0.0052)} = 80 \text{ lbs.}$$

$$F_2 = 100 \frac{I_2}{\sum I} = \frac{0.0052}{0.0833 + 4(0.0052)} = 5 \text{ lbs.}$$



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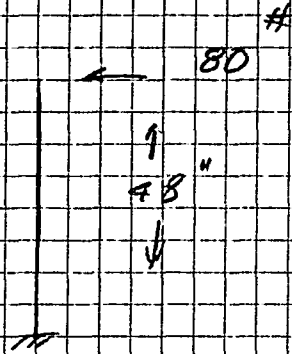
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PROJECT NAME 5980 North Bay Rd.

ENGINEER E. DATE 08/06/15 PAGE 4

check flexure at 1" x 1"



$$M_{ACT} = 3.84 \text{ ft-k}$$

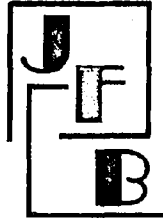
$$f_b = \frac{M_{ACT}}{S_x} = \frac{3.84}{0.1667} = 23 \text{ ksi}$$

Allowable stress:

$$F_A = 0.66 F_y = 0.66 \times 36 \text{ ksi} = 23.6 \text{ ksi}$$

$$F_A > f_b$$

SAY OK



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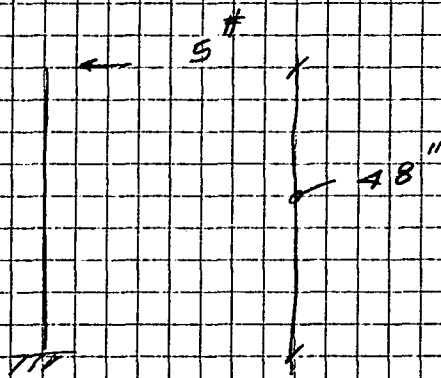
PROJECT NAME 5980 North Bry Rd.

ENGINEER E.

DATE 08/06/15.

PAGE 5

check flange at 0.5" x 0.5"



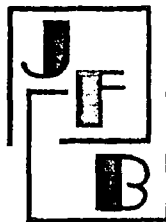
MACT = 0.24 in - K.

$$f_b = \frac{0.24}{0.0208} = 11.5 \text{ KSI}$$

Allowable stress: $f_a = 23.6 \text{ KSI}$

$$f_a < f_b$$

SAY OK



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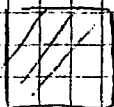
ENGINEER E.

DATE 08/06/15

PAGE 6.

☐ section modulus & Moment of Inertia

1" x 1"



1"

$$I = \frac{1}{12} b h^3 = \frac{1}{12} \times 1^4 = 0.0833 \text{ in}^4$$

$$S = \frac{I}{c} = \frac{0.0833 \text{ in}^4}{0.5 \text{ in}} = 0.1667 \text{ in}^3$$

0.5" x 0.5"

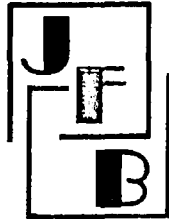
0.5



0.5

$$I = \frac{1}{12} b h^3 = \frac{1}{12} \times 0.5^4 = 0.0052 \text{ in}^4$$

$$S = \frac{I}{c} = 0.0208 \text{ in}^3$$



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PROJECT NAME 5980 North Bay Rd.

ENGINEER E. DATE 08/04/15 PAGE 7.

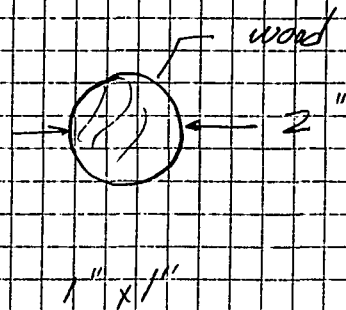
□ Railing check.

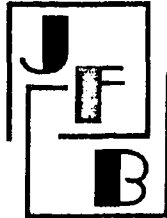
Length to distribute loads: L



$$L = \sqrt{\frac{2 F_a S}{w}}$$

where.





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ENGINEER E.

DATE 08/04/15

PAGE 0.

$$S = \frac{FD^3}{32} = \frac{\pi \times 2^3}{32} = 0.285 \text{ in}^3 \quad \frac{1}{6} = 0.1667$$

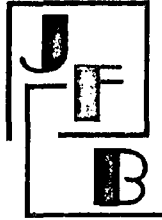
$F_a = 1 \text{ KSI}$ (Allowable stress)

Distributed load 50 PLF (0.0042 K/L)

Replacing:

$$L = \sqrt{\frac{2 \times 1 \times 0.285}{0.0042}} = 19.3 \text{ inches (1.61')}$$

$L = 19.3 \text{ inches}$



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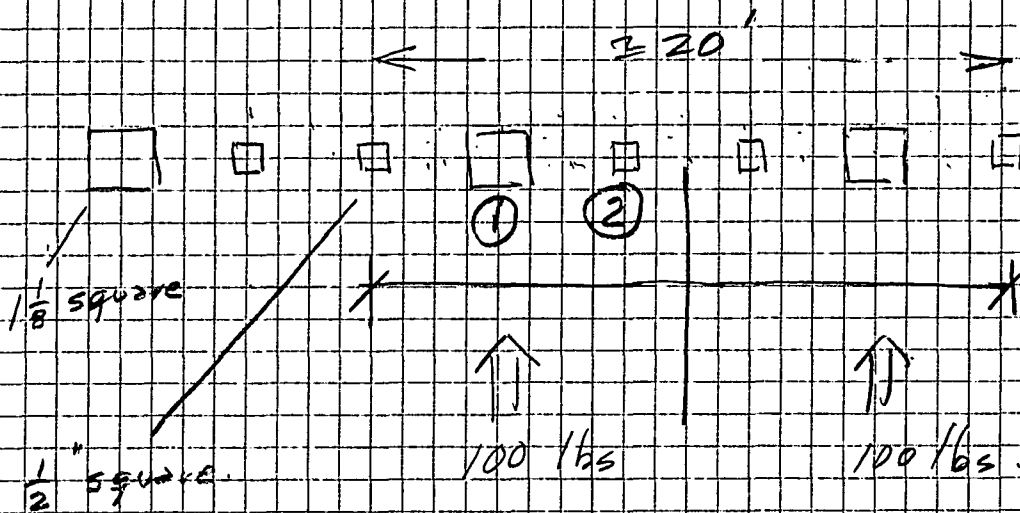
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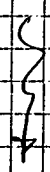
PROJECT NAME 5980 North Bay Rd.

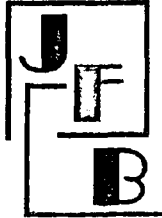
ENGINEER E. DATE 08/04/15 PAGE 9.



pickets = 6 at 20' long

Load according to the stiffness of each Pickets





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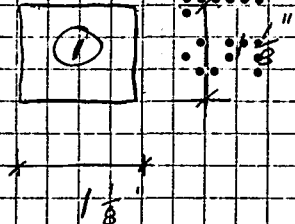
PAGE 10.

$$F_i = \frac{I_i}{\sum I} (100 \text{ lbs.})$$



$$I_2 = \frac{0.5^4}{12}$$

$$I_2 = 0.00521 \text{ in}^4$$



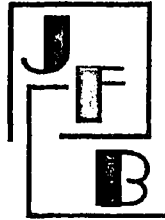
$$I_1 = \frac{1.125^4}{12}$$

$$I_1 = 0.1335 \text{ in}^4$$

$$\Sigma = I_1 + I_2$$

$$\Sigma I = 0.1387 \text{ in}^4$$

$$F_i = \frac{0.1335}{0.1387} (100) = 97 \text{ lbs.}$$



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PROJECT NAME 5980 North Bay Rd.

ENGINEER E. DATE 08/09/15. PAGE 11.

$$MACT = 97 \text{ lbs} \times 48 \text{ inches}$$

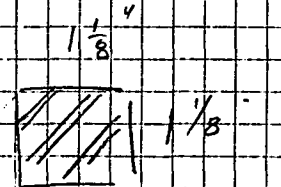
$$MACT = 4.66 \text{ in-K}$$

Bending

$$F_b = 0.6 F_y = 0.60 \times 36 \text{ KSI}$$

$$F_b = 21.6 \text{ KSI}$$

$$f_b = \frac{MACT}{S} \leq F_b$$


$$S = \frac{1.125^3}{6}$$

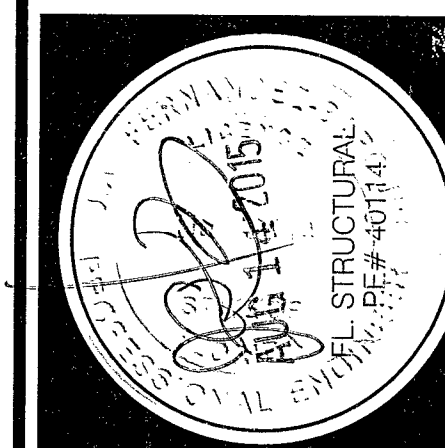
$$S = 0.237 \text{ in}^3$$

$$f_b = \frac{4.66}{0.237} = 19.7 \text{ KSI} < F_b = 21.6 \text{ KSI}$$

SAY OK

SHOP DRAWINGS FOR
RAILINGS FOR MAIN STAIRS
AND BALCONIES.

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FL 33140.

Drawn By: _____

Approved By: _____
JUAN FERNANDEZ-BARQUIN, P.

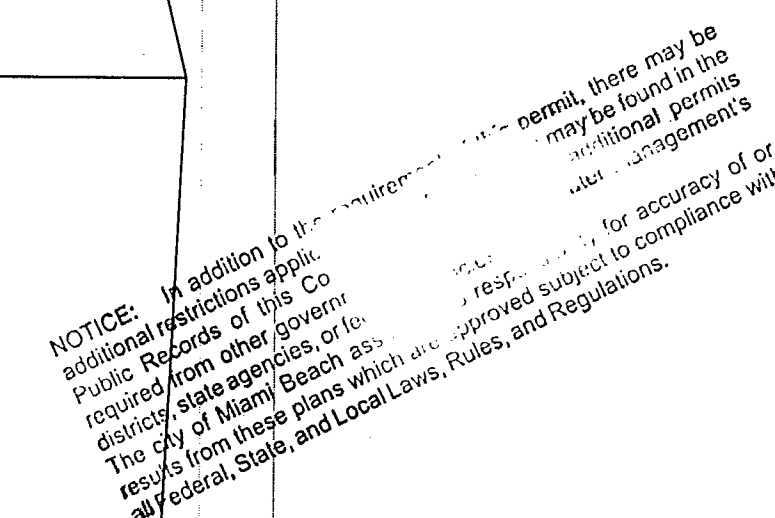
Issue Date: 04/01/2015

Scale: AS SHOWN.

Drawing

S-1

Sheet of _____



OFFICE COPY
CITY OF MIAMI BEACH
APPROVED FOR PERMIT BY
THE FOLLOWING:

BUILDING: ✓ 8/21/15 082115
ZONING: _____
PLUMBING: _____
ELECTRICAL: _____
MECHANICAL: _____
FIRE PREVENTION: _____
FLOOD: _____
PUBLIC WORKS: _____
STRUCTURAL: ✓ 8/21/15
ELEVATOR: _____
ROOFING: _____

SCOPE OF WORK:

SHOP DRAWINGS FOR RAILINGS
FOR MAIN STAIRS AND BALCONIES

ALUMINUM RAILINGS NOTES:

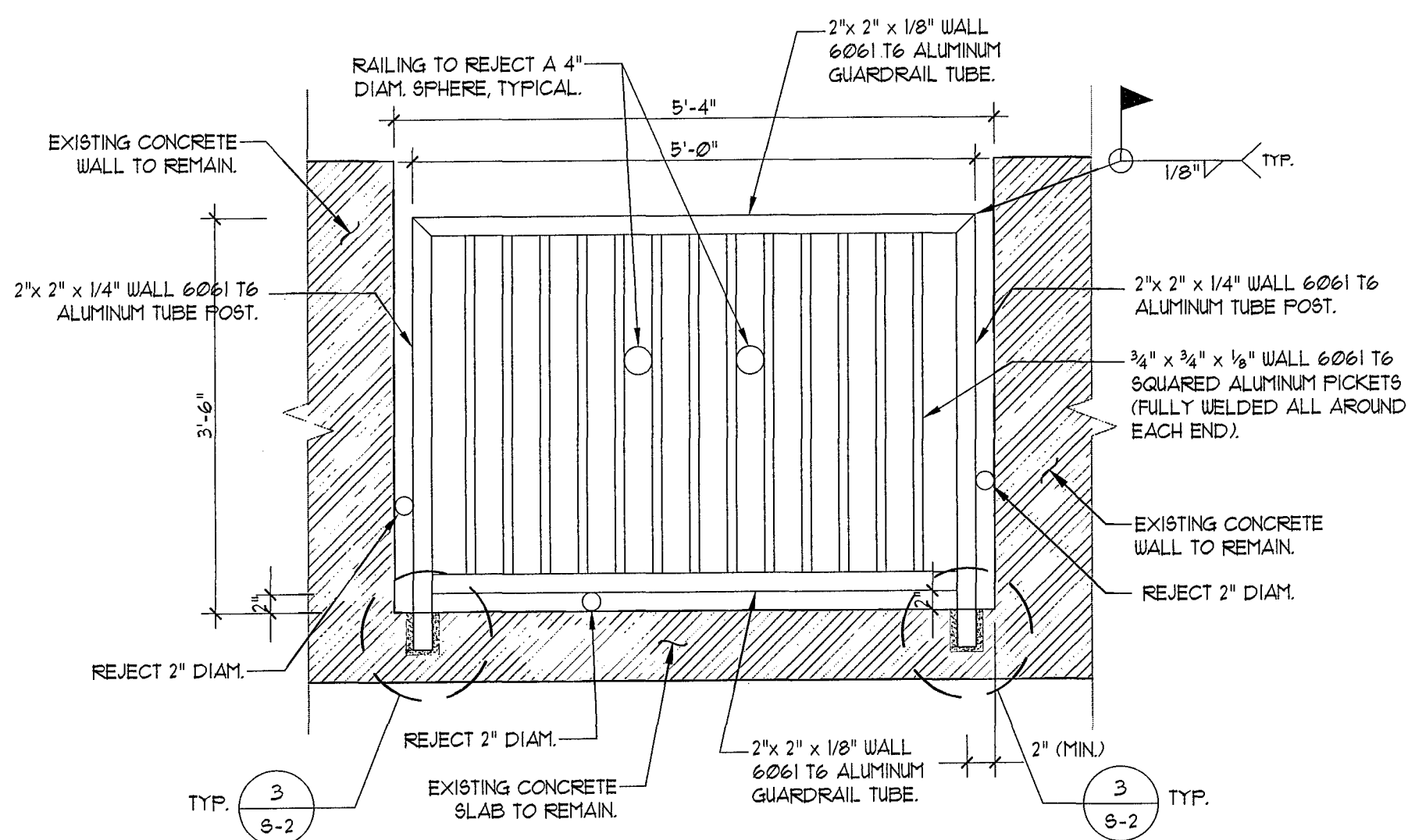
1. ALL ALUMINUM SHALL BE TYPE 6061-T6; UNLESS NOTED OTHERWISE (UNO.)
2. G.C. TO FIELD VERIFY ALL DIMENSIONS.
3. ALUMINUM PARTS SHALL BE WELDED WITH AN INERT-GAS SHIELDED ARC OR RESISTANCE WELDING PROCESS. FLUX WELDING IS NOT ALLOWED FILLER ALLOYS SHALL BE AS AMERICAN WELDING SOCIETY SPECIFICATIONS A510-63, ALL WELDING SHALL BE PERFORMED BY CERTIFIED WELDERS.
4. DURING ERECTION, ALUMINUM STRUCTURES SHALL BE ADEQUATELY BRACED AND FASTENED TO RESIST DEAD, WIND AND ERECTION LOADS.
5. ALUMINUM IN CONTACT WITH NON-COMPATIBLE METALS SUCH AS STEEL SHALL BE PROTECTED AS PER FED 2020.8.4.2.
6. ALUMINUM IN CONTACT WITH CONCRETE SHALL BE PROTECTED WITH AN ALKALI RESISTANT COATING.

SECOND FLOOR PLAN

3
DESIGN
ARCHITECTURE
LA 00003859

☒ ACCEPTED
☐ ACCEPTED AS NOTED
☐ REJECTED SEE WORKS
☐ RESUBMIT
 BY W DATE 8-17-15
By Structural Engineer of Record

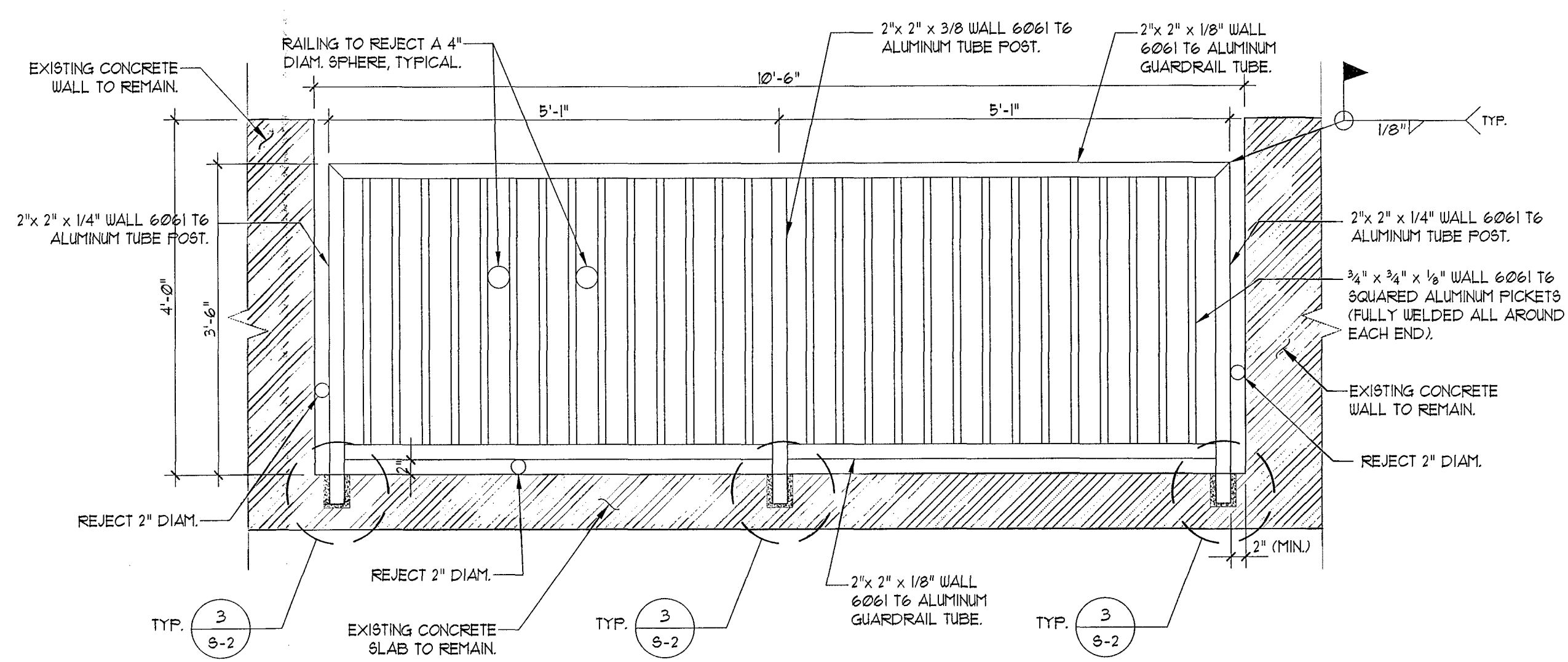
04-06-2015: BUILDING DEPARTMENT COMMENTS



BALCONY RAILING ELEVATION

SCALE: 1/4"=1'-0"

1
S-2



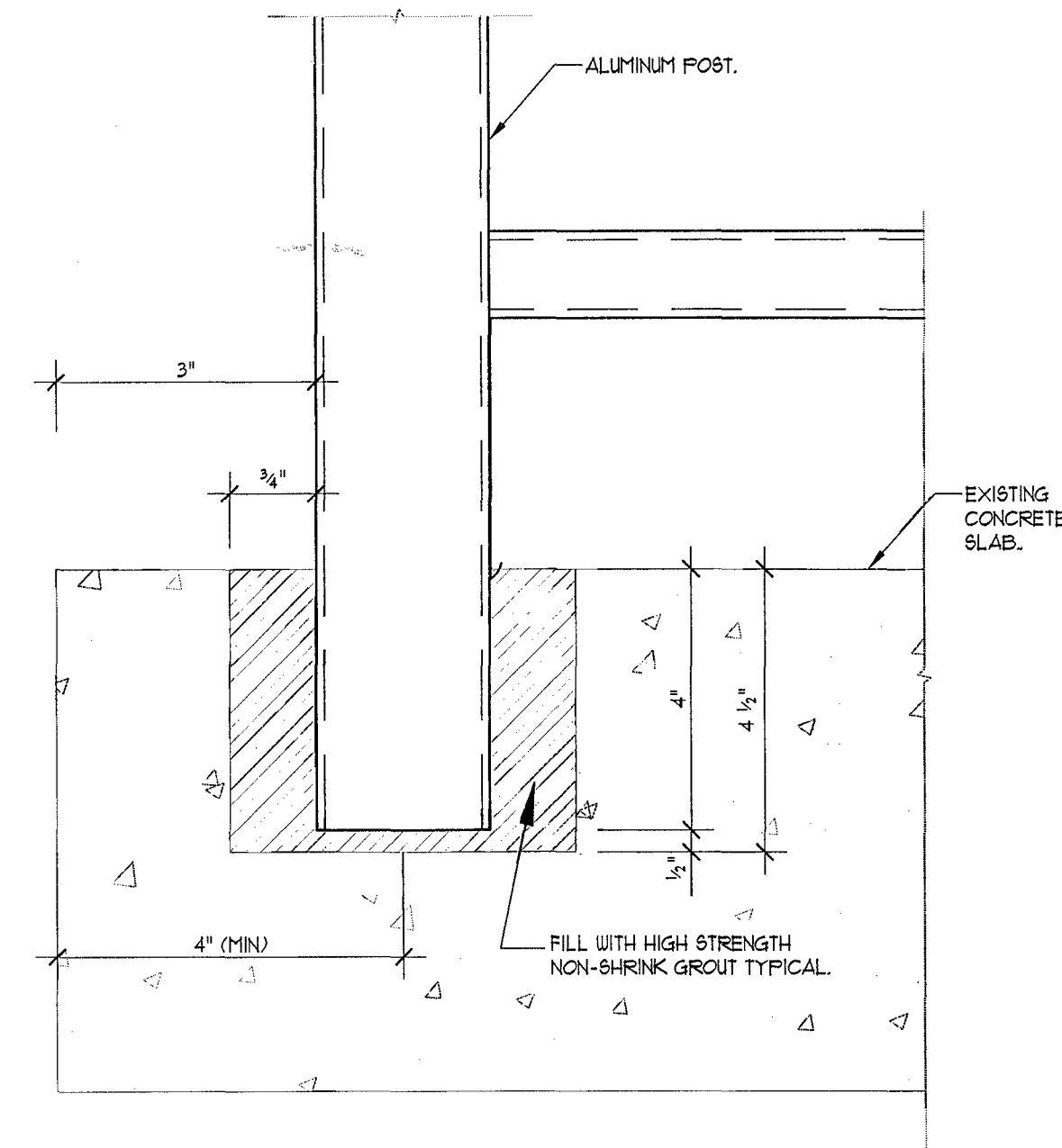
BALCONY RAILING ELEVATION

SCALE: 1/4"=1'-0"

2
S-2

ALUMINUM RAILINGS NOTES:

1. ALL ALUMINUM SHALL BE TYPE 6061-T6, UNLESS NOTED OTHERWISE (UNO.)
2. G.C. TO FIELD VERIFY ALL DIMENSIONS.
3. ALUMINUM PARTS SHALL BE WELDED WITH AN INERT-GAS SHIELDED ARC OR RESISTANCE WELDING PROCESS. FLUX WELDING IS NOT ALLOWED. FILLER ALLOYS SHALL BE AS AMERICAN WELDING SOCIETY SPECIFICATIONS A5.10-69. ALL WELDING SHALL BE PERFORMED BY CERTIFIED WELDERS.
4. DURING ERECTION, ALUMINUM STRUCTURES SHALL BE ADEQUATELY BRACED AND FASTENED TO RESIST DEAD, WIND AND ERECTION LOADS.
5. ALUMINUM IN CONTACT WITH NON-COMPATIBLE METALS SUCH AS STEEL SHALL BE PROTECTED AS PER FBC 2003.8.4.2.
6. ALUMINUM IN CONTACT WITH CONCRETE SHALL BE PROTECTED WITH AN ALKALI RESISTANT COATING.



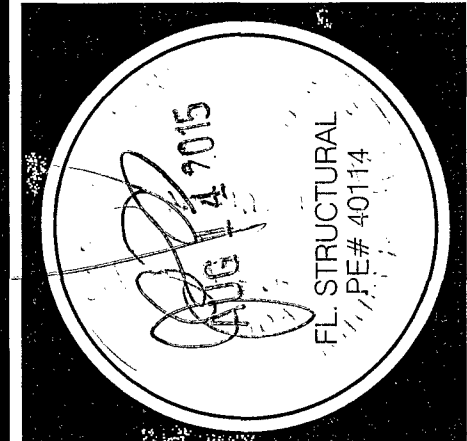
RAILING POST EMBEDMENT DETAIL

SCALE: 6" = 1'-0"

3
S-2

SHOP DRAWINGS FOR
RAILINGS FOR MAIN STAIRS
AND BALCONIES.

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FL 33140.

Drawn By:

Approved By:

JUAN FERNANDEZ-BARQUIN, PE

Issue Date: 04/01/2015

Scale: AS SHOWN.

Drawing

Sht.

of

S-2



ACCEPTED
ACCEPTED AS NOTED
REJECTED SEE NOTES
RESUBMIT

1/12/2015

By: [Signature]

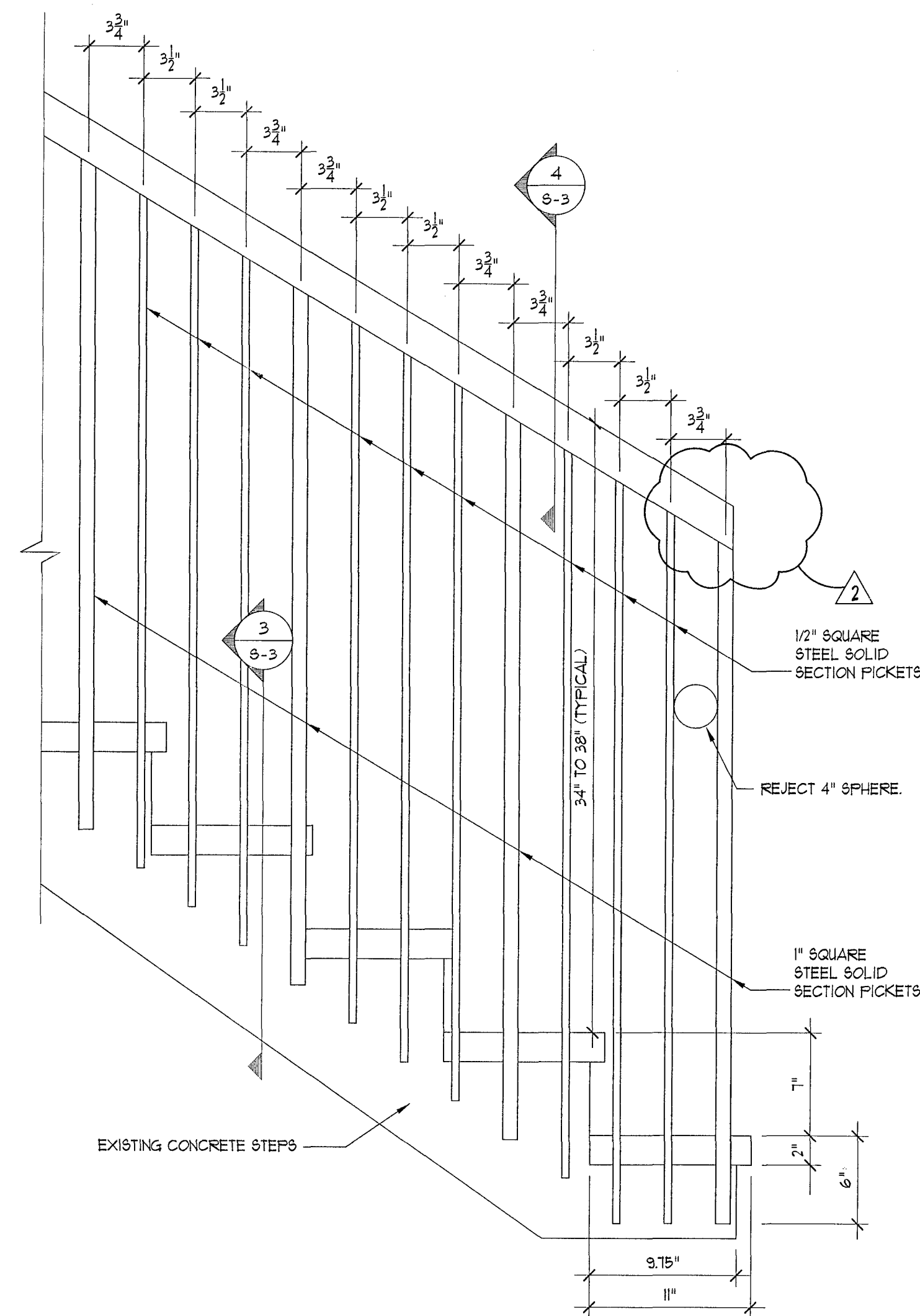
Engineer of

Road

C:\HANDCRAFT\5980 NORTH BAY ROAD (WADE RESIDENCE)\RAILINGS\RAILING & SPIRAL STAIRS\RAILINGS\S-1 SECOND FLOOR PLAN.dwg

STEEL RAILING NOTES:

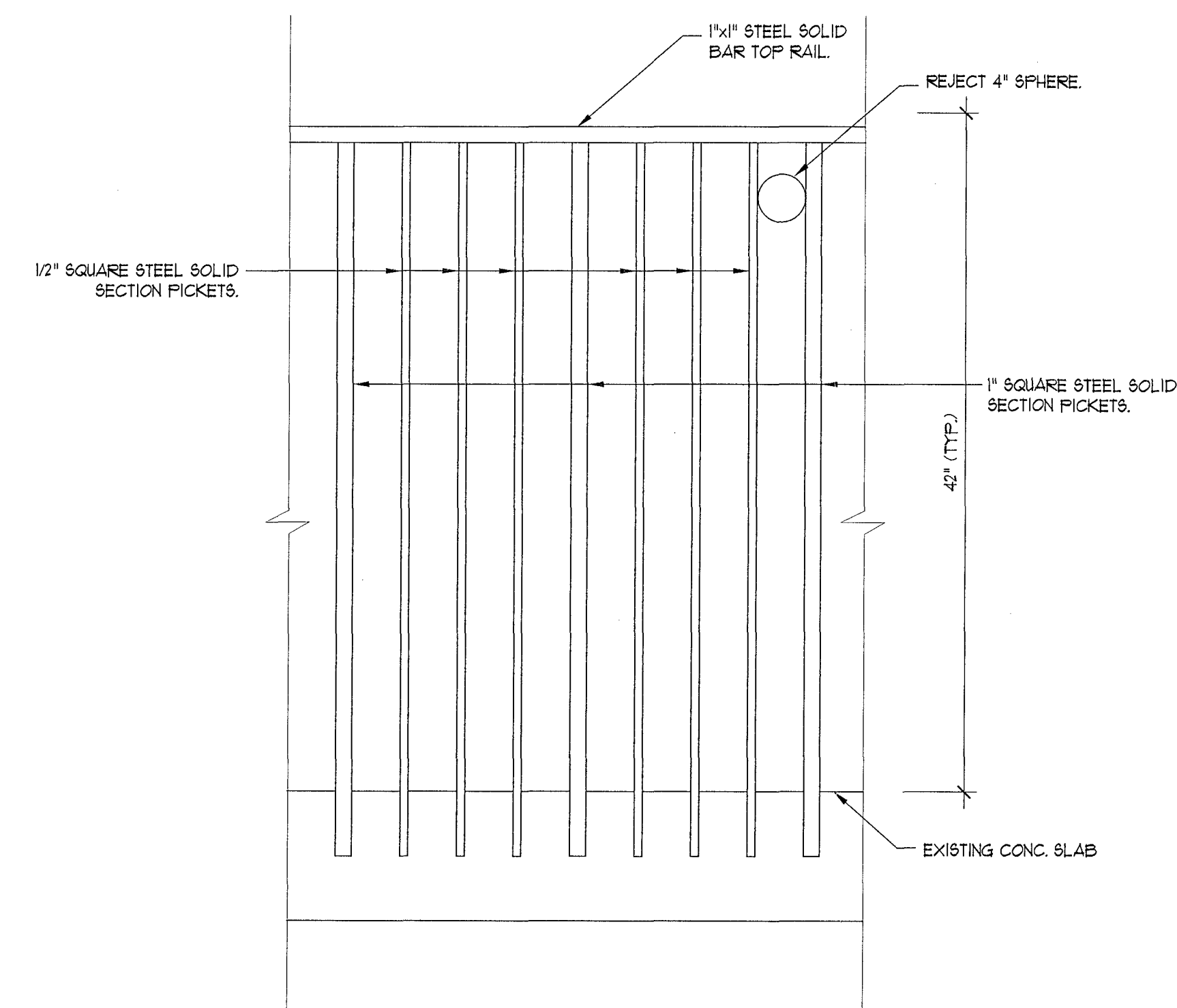
- ALL STRUCTURAL ELEMENTS MUST BE A36 STEEL.
- WELDING:
ALL WELDING TO BE DONE BY COUNTY CERTIFIED WELDERS HOLDING CURRENT WELDING CERTIFICATES, AND MUST PRESENT SAME AT JOB SITE AT ALL TIMES. ALL WELDING PER PLANS AND PER GUIDELINES OF THE AMERICAN WELDING SOCIETY.
- WOOD MEMBERS:
ALL WOOD MEMBERS TO BE SOUTHERN PINE NO. 2 OR BETTER. ALL WOOD IN CONTACT WITH CONCRETE MUST BE PRESSURE TREATED WOOD. ALL BOLTED CONNECTIONS TO BE COMPLETED WITH A307 GALVANIZED STEEL BOLTS WITH WASHERS AT EACH END. FABRICATION, ERECTION, AND CONNECTIONS TO BE AS PER RECOMMENDATIONS OF THE A.I.T.C. (AMERICAN INSTITUTE OF TIMBER CONSTRUCTION), LATEST EDITION. ALL WOOD MEMBERS TO BE FREE OF ALL IMPERFECTIONS AS: SPLITS, CHECKS, OR EXCESSIVE KNOTS. UNSATISFACTORY MATERIALS TO BE REPLACED AT NO COST TO OWNER. ALL WOOD TO WOOD CONNECTIONS TO BE COMPLETED WITH SIMPSON TYPE HANGERS, AS NOTED IN PLANS, OR AS REQUIRED.
- ANCHORING EPOXY:
FOR ANCHORING REINFORCING STEEL IN EXISTING CONCRETE USE HIT-HY 80 MAX.-50 OR HIT-RE 5000-50 EPOXY. OTHER AVAILABLE EPOXIES ARE MADE BY ULTRA BOND OR RAUL. DRILL HOLES 1/8" BIGGER THAN THE DIAMETER OF THE REINFORCING STEEL (STEEL ROD). THE DEPTH OF THE HOLES ARE TO BE A MINIMUM OF 5", UNLESS OTHERWISE NOTED IN THESE PLANS, OR UNLESS OTHERWISE INSTRUCTED BY THE MANUFACTURER'S RECOMMENDATIONS.
- ALL WORK SHALL CONFORM TO FLORIDA BUILDING CODE 2010.
- CODES AND STANDARDS:
ALL STRUCTURAL ELEMENTS FOR THIS PROJECT HAVE BEEN DESIGNED PER FLORIDA BUILDING CODE, 2010. THE PROJECT WAS DESIGNED IN ACCORDANCE WITH THE BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE (ACI 318-11 EDITION), (AMERICAN INSTITUTE OF STEEL CONSTRUCTION) AISC ASD 9TH EDITION, BUILDING CODE REQUIREMENTS AND SPECIFICATIONS FOR MASONRY STRUCTURES (ACI 530-10/ASCE 5-10/TTIS 402-10), BUILDING CODE REQUIREMENTS AND NATIONAL DESIGN SPECIFICATIONS FOR WOOD CONSTRUCTION (ANSI/APA NDS-2009), FLORIDA BUILDING CODE 2010 ACCESSIBILITY REQUIREMENTS.
- SECTION AND DETAILS:
ALL DETAILS, SECTIONS AND NOTES SHOWN ON THE DRAWINGS ARE INTENDED TO BE TYPICAL AND SHALL APPLY TO SIMILAR SITUATIONS ELSEWHERE UNLESS OTHERWISE NOTED.
- DESIGN LOADS:
LOADS AT THE TOP RAILINGS AND HANDRAILS: UNIFORM LOAD OF 150 PLF ACTING IN AND OUT IN THE HORIZONTAL DIRECTION, AND UP AND DOWN IN THE VERTICAL DIRECTION ALONG THE TOP RAILING AND HANDRAIL, OR A CONCENTRATED LOAD OF A P EQUAL TO 200 LBS AT THE MIDSPAN OF THE TOP RAILING AND HANDRAIL ACTING IN AND OUT IN THE HORIZONTAL DIRECTION AND UP AND DOWN IN THE VERTICAL DIRECTION, WHICHEVER IS MOST CRITICAL. THE UNIFORM LOAD AND CONCENTRATED LOAD SHALL BE ASSUMED TO NOT ACT AT THE SAME TIME.



MAIN STAIRS

SCALE: 1/2"=1'-0"

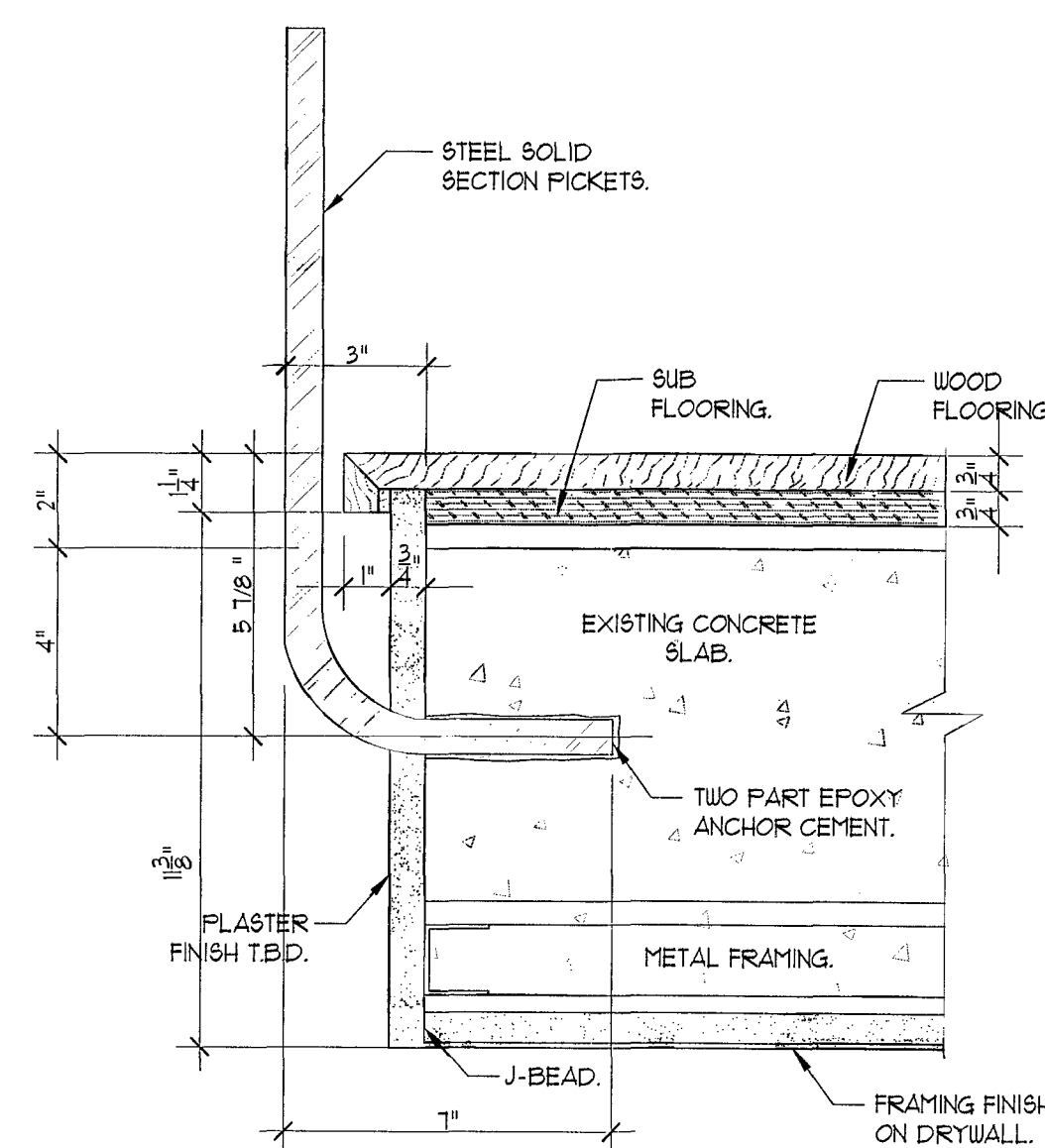
1
S-3



AT SECOND FLOOR INTERIOR

SCALE: 3/4"=1'-0"

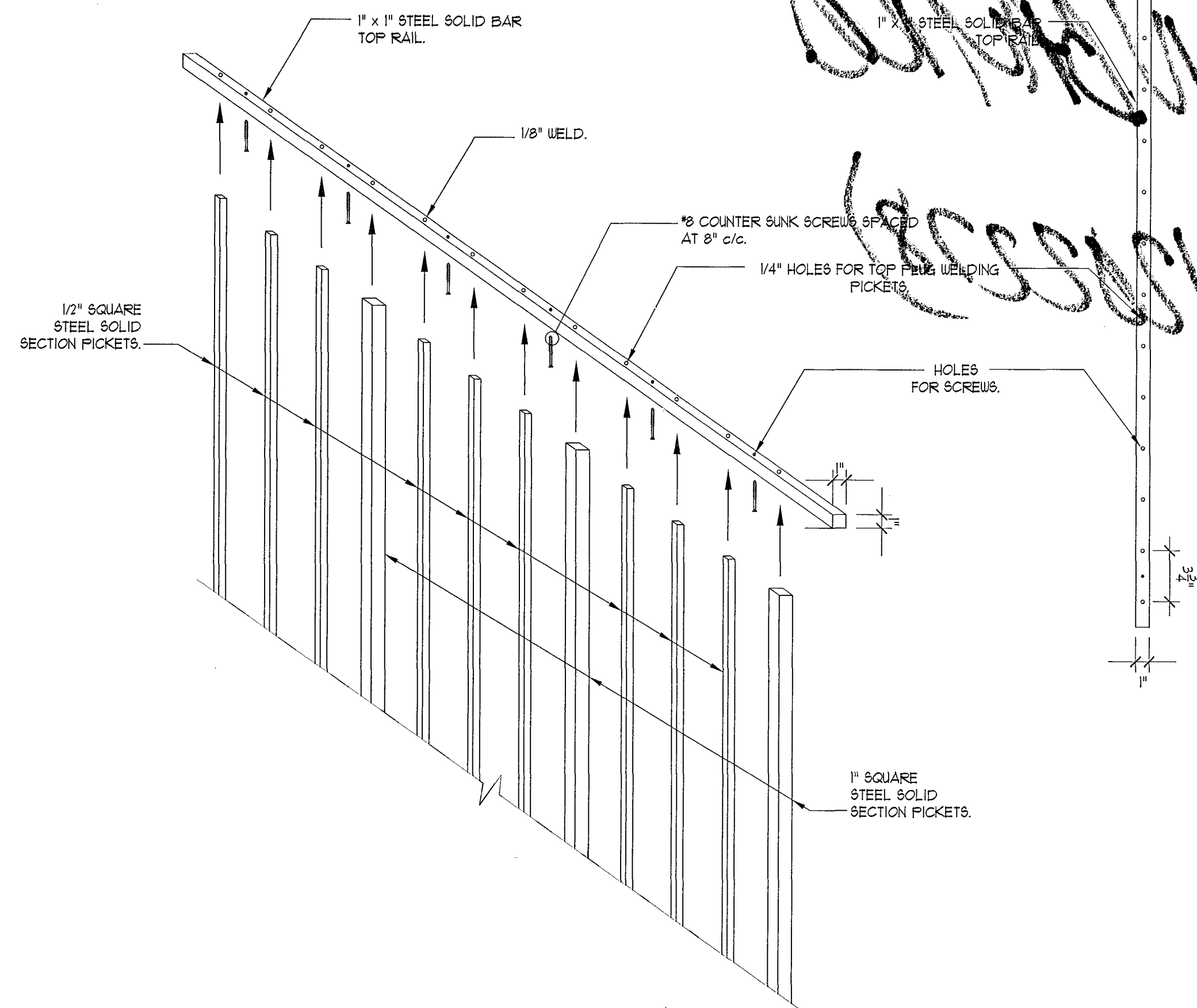
5
S-3



CONNECTION DETAIL

SCALE: 3/4"=1'-0"

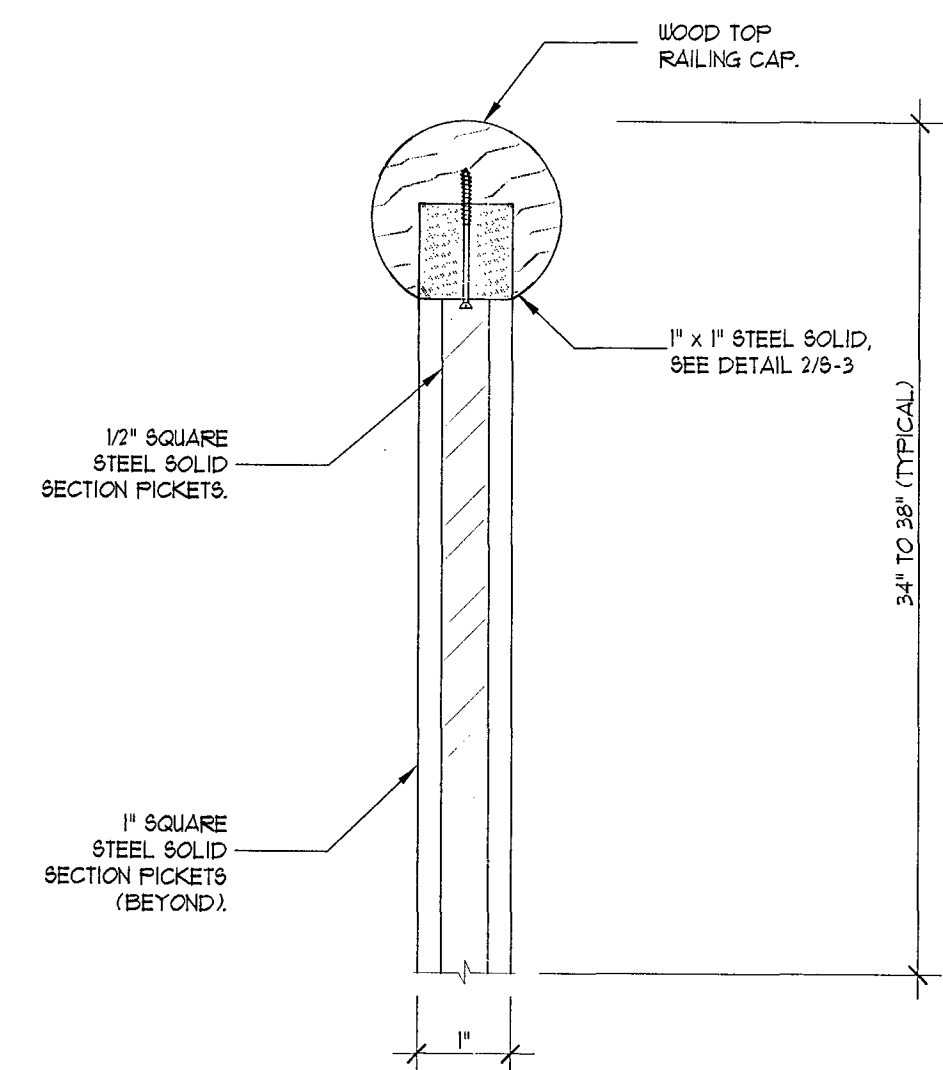
3
S-3



MAIN STAIRS TOP CONNECTION DETAIL

SCALE: 1/2"=1'-0"

2
S-3



TOP OF GUARD RAIL AND HANDRAIL DETAIL

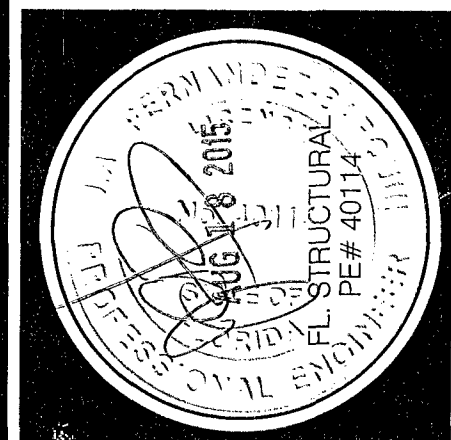
SCALE: 6"=1'-0"

4
S-3

- 2 08-14-2015: BUILDING DEPARTMENT COMMENTS
1 04-06-2015: BUILDING DEPARTMENT COMMENTS

SHOP DRAWINGS FOR
RAILINGS FOR MAIN STAIRS
AND BALCONIES.

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FL 33140.

Drawn By:
Approved By:
JUAN FERNANDEZ-BARQUIN, PE
Issue Date: 04/01/2015
Scale: AS SHOWN.
Drawing

S-3

Sh. of

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B150608
5980 NBRMS

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