



**BMC TRUSS & COMPONENTS**  
 8401 PLANER MILL ROAD  
 MIDDLESEX, NC 27557  
 (252)235-4530

Quote # : 19-033682T

Date : 04/17/19

Ordered by Date : / /

(JOB WILL NEED TO BE RE-QUOTED BEYOND THIS DATE)

Delivery Taken By: / /

Quoted To: **Valued Customer**

Project Name: JOHNSON BUILDING COMPANY ROOF - BIRCH B # 1140

Ship To:

DUNN, NC 28334

**SALES TAX NOT INCLUDED IN TOTAL PRICE**

**Total Price: \$ 3,025.00**

**Price Includes:**

Purchaser shall purchase truss(es) it orders from BMC upon manufacture. BMC will fabricate the trusses for Purchaser in accordance with dimensions shown on quotation and/or truss engineering and layout documents unless otherwise notified by Purchaser. If Purchaser notifies BMC of any changes to the trusses after BMC has commenced manufacturing, Purchaser shall be liable for any resulting increase in price. Engineering or shop drawings supplied by BMC do not constitute a roof system design supplied or approved by BMC. This responsibility remains with the Purchaser. The presence of an engineering stamp on such drawings or layout diagram does not constitute engineering approval of the roof or floor system by BMC. BMC EXPRESSLY DISCLAIMS ALL WARRANTIES, EITHER EXPRESSED OR IMPLIED, OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE concerning the fitness of the materials delivered other than the trusses will be manufactured in accordance with the terms of this quote and as otherwise expressly provided herein. Wood products have naturally occurring latent defects that are not ascertainable by inspection, including insects and similar natural conditions. Any items not manufactured by BMC are warranted only as warranted by the manufacturers of such items, otherwise all such items are sold on an "AS IS" basis. If any defect in materials delivered is discovered within one (1) year after delivery, BMC will repair or replace such defective materials. BMC shall have no liability for any defects discovered more than one (1) year after delivery. BMC assumes no liability, whether in contract, tort, or negligence, under any warranty, or otherwise, for any special, indirect, incidental, consequential or other damages. Any recommendation or advice made by a BMC salesperson is strictly for purpose of assisting the Purchaser and in no way constitutes a representation of warranty. BMC shall deliver the manufactured trusses at a time and place as agreed upon by the parties. Purchaser shall provide a safe and clear access to the delivery location and to all the BMC delivery persons ("driver") in unloading the trusses. The driver may refuse to unload the trusses if the driver determines any condition is unsatisfactory for delivery. BMC will deliver the trusses to building sites when accessible and safe and shall not be liable for any damage to sidewalk, curbs, driveways, or other improvements. Purchaser shall pay the cost of towing any BMC or other delivery vehicle delivering the trusses if towing becomes necessary due to delivery site conditions. Site conditions shall consist of dry level ground, 100' of driveway or ability to not impede traffic, minimum 20' wide passage, minimum 15' either side clearance for outriggers, minimum 20' from power lines and all materials removed from ingress to building. If any of these conditions cannot be met, a site inspection by a qualified representative from BMC must be made prior to delivery to assess the site conditions as satisfactory. Purchaser shall pay the cost of delivery if the job site or installation conditions are deemed unsatisfactory. Immediately upon delivery to the specified delivery location, all risks of loss and responsibility for the trusses shall pass to Purchaser. Purchaser shall be responsible for handling, storing, and bundling the trusses and connections to the supporting structure. The bracing material is not supplied unless otherwise specified. BMC shall provide Purchaser with a publication detailing suggested industry standard procedures for handling, storing, installing, and bracing the trusses. BMC shall have no responsibility to inspect the trusses after installation or to verify dimensions or adequacy of work done by other trades that may relate to the trusses. Use of the trusses by the Purchaser constitutes an acceptance of such materials. Any claims Purchaser may have for defective trusses must be made within five (5) days of delivery. If no claim is made within such five (5) day period, the trusses delivered will be deemed to be accepted by Purchaser. The credit terms for trusses manufactured pursuant to this agreement shall be as specified and controlled by the Credit Application of Purchaser. Should BMC be required to hold an order for ten (10) days or more beyond the agreed upon delivery date for any reason not caused by BMC, the Purchaser shall pay the purchase price. The provisions of this Agreement shall not be modified or waived with the express written consent of BMC. All discussions or documents regarding the trusses are merged into and superseded by the terms of this Agreement. Additional terms shall become part of this Agreement only with the express written consent of BMC. This Truss Manufacturing Agreement may be completed and returned to BMC by electronic transmission, including but not limited to facsimile or e-mail. Electronic submission of this Agreement to BMC shall constitute a "signed" or "executed" agreement by the submitting party or parties.

**WARNING: TRUSS TOP CHORDS, BOTTOM CHORDS AND WEBS MUST BE Laterally AND Diagonally Braced During Erection to prevent Personal Injury or Property Damage. See Bracing Instruction Delivered with Trusses.**

**DO NOT CUT TRUSSES.**

**BMC IS NOT RESPONSIBLE FOR ANY ALTERATION TO THE TRUSSES MADE AT THE JOBSITE WITHOUT SPECIFIC WRITTEN APPROVAL FROM BMC.**

**BMC SHALL NOT BE RESPONSIBLE FOR ANY ADDITIONAL COST INCURRED FOR EQUIPMENT NECESSARY TO INSTALL TRUSSES.**

BMC is not the structural engineer of record for this project. Wood trusses shall be designed in accordance with approved engineering practice. The design and manufacture of metal-plate-connected wood trusses shall comply with ANSI/TPI 1. The truss design drawings shall be prepared by a registered professional where required by the statutes of the jurisdiction in which the project is to be constructed in accordance with Section R106.1. We strongly encourage you to engage a structural engineer. If there is no engineer of record, owner/builder assumes that responsibility.

Accepted by: \_\_\_\_\_ Date of Acceptance: \_\_\_\_\_

Title: \_\_\_\_\_ Requested Del Date: \_\_\_\_\_

**We appreciate the opportunity to quote this project.**

Designer: JASON WARD \_\_\_\_\_ Sales Rep: TERRY WARD \_\_\_\_\_

**Trenco**

818 Soundside Rd  
Edenton, NC 27932

Re: 19-033682T  
BIRCH

The truss drawing(s) referenced below have been prepared by Truss Engineering Co. under my direct supervision based on the parameters provided by Stock Building Supply.

Pages or sheets covered by this seal: T16817013 thru T16817023

My license renewal date for the state of North Carolina is December 31, 2019.

North Carolina COA: C-0844



April 17, 2019

Velez, Joaquin

**IMPORTANT NOTE:** Truss Engineer's responsibility is solely for design of individual trusses based upon design parameters shown on referenced truss drawings. Parameters have not been verified as appropriate for any use. Any location identification specified is for file reference only and has not been used in preparing design. Suitability of truss designs for any particular building is the responsibility of the building designer, not the Truss Engineer, per ANSI/TPI-1, Chapter 2.



Job	Truss	Truss Type	Qty	Ply	BIRCH	T16817013
19-033682T	A01	Roof Special	8	1		

Job Reference (optional)

BMC (Middlesex, NC), Middlesex, NC - 27557, 8.220 s Nov 16 2018 MiTek Industries, Inc. Wed Apr 17 14:20:29 2019 Page 1

ID:1U5Pd5nU9BVNIRbPZ\_RbPLyGxlg-sDJbcknG?Z4cEQfnJOkP78tLGG6dLfl?qSlzPnm0

0-10-8	6-8-13	13-0-0	18-0-11	23-1-5	30-0-0	30-10-8
0-0-8	6-8-13	6-3-3	5-0-11	5-0-11	6-10-11	0-10-8

Scale = 1:54.6

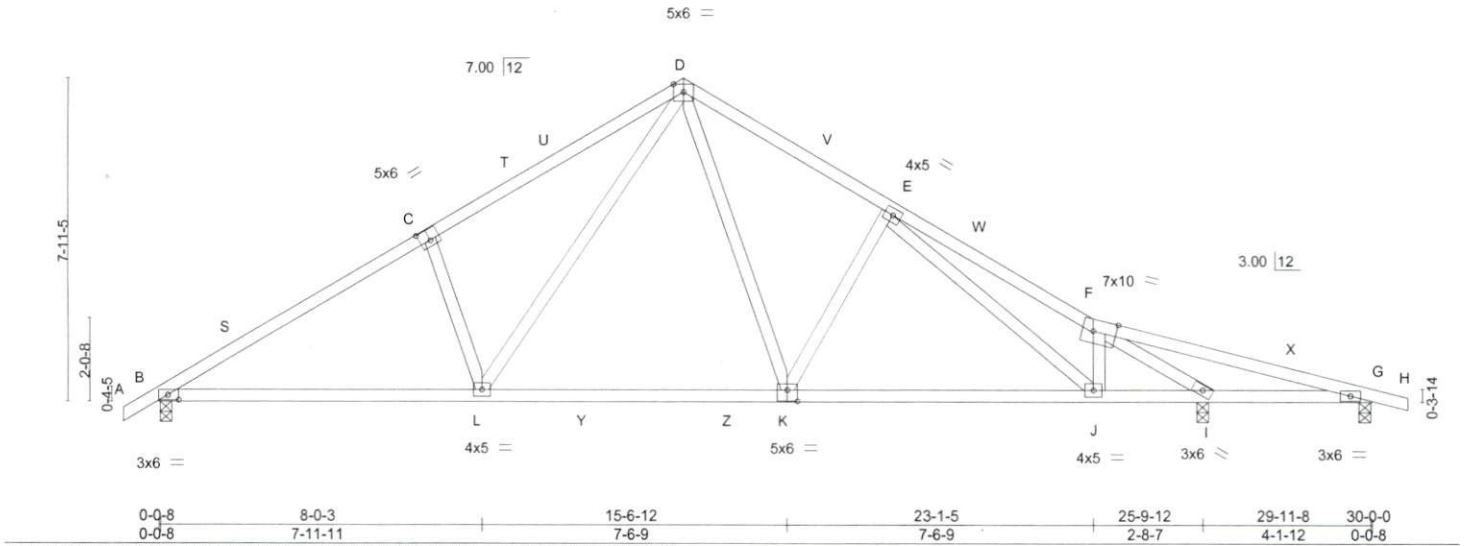


Plate Offsets (X,Y)-- [B:0-3-3,0-1-8], [C:0-3-0,0-3-4], [F:0-6-12,Edge], [K:0-3-0,0-3-4]

LOADING (psf)	SPACING-	2-0-0	CSI.	DEFL.	in (loc)	l/defl	L/d	PLATES	GRIP
TCLL (roof) 20.0	Plate Grip DOL	1.00	TC 0.42	Vert(LL)	-0.14	K-L	>999	MT20	244/190
Snow (Pf/Pg) 13.9/20.0	Lumber DOL	1.15	BC 0.51	Vert(CT)	-0.22	L-O	>999		
TCDL 10.0	Rep Stress Incr	YES	WB 0.43	Horz(CT)	0.04	I	n/a		
BCLL 0.0	Code IRC2015/TPI2014		Matrix-MS						
BCDL 10.0								Weight: 153 lb	FT = 20%

LUMBER-	BRACING-
TOP CHORD 2x4 SP 1650F 1.5E or 2x4 SP No.1 or 2x4 SP SS	TOP CHORD Structural wood sheathing directly applied or 4-7-2 oc purlins.
BOT CHORD 2x4 SP 1650F 1.5E or 2x4 SP No.1 or 2x4 SP SS	BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing. Except:
WEBS 2x4 SP No.2	6-0-0 oc bracing: G-I.

**REACTIONS.** (lb/size) B=899/0-3-8, G=7/0-3-8, I=1209/0-3-8  
 Max Horz B=-221(LC 12)  
 Max Uplift B=-178(LC 14), G=-117(LC 11), I=-232(LC 15)  
 Max Grav B=1066(LC 2), G=105(LC 39), I=1425(LC 2)

**FORCES.** (lb) - Max. Comp./Max. Ten. - All forces 250 (lb) or less except when shown.  
 TOP CHORD B-C=-1592/265, C-D=-1509/347, D-E=-1231/289, E-F=-1475/307, F-G=-138/811  
 BOT CHORD B-L=-257/1455, K-L=-46/907, J-K=-87/1143, I-J=-104/1216, G-I=-749/177  
 WEBS C-L=-422/280, D-L=-219/750, D-K=-122/547, E-K=-331/238, F-I=-2282/326

- NOTES-**
- Unbalanced roof live loads have been considered for this design.
  - Wind: ASCE 7-10; Vult=115mph (3-second gust) Vasd=91mph; TCDL=6.0psf; BCDL=6.0psf; h=30ft; Cat. II; Exp C; Enclosed; MWFRS (envelope) gable end zone and C-C Exterior(2) -0-10-8 to 2-1-8, Interior(1) 2-1-8 to 10-0-0, Exterior(2) 10-0-0 to 16-0-0, Interior(1) 16-0-0 to 27-10-8, Exterior(2) 27-10-8 to 30-10-8 zone; cantilever left and right exposed; end vertical left and right exposed; C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.33
  - TCLL: ASCE 7-10; Pr=20.0 psf (roof live load: Lumber DOL=1.15 Plate DOL=1.00); Pg=20.0 psf (ground snow); Pf=13.9 psf (flat roof snow: Lumber DOL=1.15 Plate DOL=1.00); Category II; Exp C; Fully Exp.; Ct=1.10; Min. flat roof snow load governs.
  - Unbalanced snow loads have been considered for this design.
  - This truss has been designed for greater of min roof live load of 12.0 psf or 1.00 times flat roof load of 13.9 psf on overhangs non-concurrent with other live loads.
  - This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
  - \* This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-6-0 tall by 2-0-0 wide will fit between the bottom chord and any other members, with BCDL = 10.0psf.
  - Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 100 lb uplift at joint(s) except (jt=lb) B=178, G=117, I=232.



April 17, 2019

**WARNING - Verify design parameters and READ NOTES ON THIS AND INCLUDED MITEK REFERENCE PAGE MII-7473 rev. 10/03/2015 BEFORE USE.**  
 Design valid for use only with MiTek® connectors. This design is based only upon parameters shown, and is for an individual building component, not a truss system. Before use, the building designer must verify the applicability of design parameters and properly incorporate this design into the overall building design. Bracing indicated is to prevent buckling of individual truss web and/or chord members only. Additional temporary and permanent bracing is always required for stability and to prevent collapse with possible personal injury and property damage. For general guidance regarding the fabrication, storage, delivery, erection and bracing of trusses and truss systems, see ANSIT/TP11 Quality Criteria, DSB-89 and BCSI Building Component Safety Information available from Truss Plate Institute, 218 N. Lee Street, Suite 312, Alexandria, VA 22314.

**ENGINEERING BY TRENCO**  
 A MiTek Affiliate  
 818 Soundside Road  
 Edenton, NC 27932

Job 19-033682T	Truss B01	Truss Type Roof Special	Qty 6	Ply 1	BIRCH	T16817014
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BMC (Middlesex, NC), Middlesex, NC - 27557, 8.220 s Nov 16 2018 MiTek Industries, Inc. Wed Apr 17 14:20:31 2019 Page 1

ID:1U5Pd5nU9BVNIRbPZ\_RbPLYGxlg-pct30II\_JuFHKvOpnCLtqqCUA9yDaa477UxXezPnm\_

0-10-8	6-8-13	13-0-0	19-3-3	26-0-0	26-10-8
0-10-8	6-8-13	6-3-3	6-3-3	6-8-13	0-10-8

Scale = 1:51.1

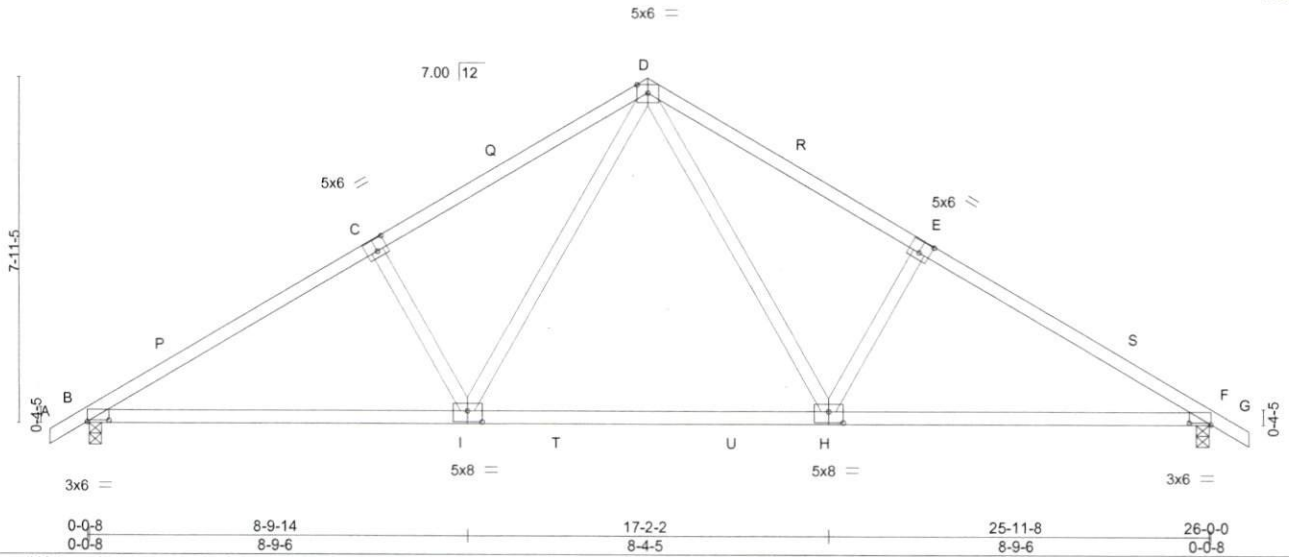


Plate Offsets (X,Y) - [B:0-6-0,0-0-6], [C:0-3-0,0-3-4], [E:0-3-0,0-3-4], [F:0-6-0,0-0-6], [H:0-4-0,0-3-0], [I:0-4-0,0-3-0]

<b>LOADING (psf)</b>	<b>SPACING-</b>	<b>CSI.</b>	<b>DEFL.</b>	<b>PLATES</b>	<b>GRIP</b>
TCLL (roof) 20.0	2-0-0	TC 0.43	in (loc) l/defl L/d	MT20	244/190
Snow (Pf/Pg) 13.9/20.0	Plate Grip DOL 1.00	BC 0.55	Vert(LL) -0.21 H-I >999 240		
TCDL 10.0	Lumber DOL 1.15	WB 0.22	Vert(CT) -0.29 H-I >999 180		
BCLL 0.0 *	Rep Stress Incr YES	Matrix-MS	Horz(CT) 0.04 F n/a n/a		
BCDL 10.0	Code IRC2015/TPI2014			Weight: 124 lb	FT = 20%

**LUMBER-**  
TOP CHORD 2x4 SP 1650F 1.5E or 2x4 SP No.1 or 2x4 SP SS  
BOT CHORD 2x4 SP 1650F 1.5E or 2x4 SP No.1 or 2x4 SP SS  
WEBS 2x4 SP No.2

**BRACING-**  
TOP CHORD Structural wood sheathing directly applied or 4-5-12 oc purlins.  
BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.

**REACTIONS.** (lb/size) B=922/0-3-8, F=922/0-3-8  
Max Horz B=-220(LC 12)  
Max Uplift B=-181(LC 14), F=-181(LC 15)  
Max Grav B=1093(LC 2), F=1093(LC 2)

**FORCES.** (lb) - Max. Comp./Max. Ten. - All forces 250 (lb) or less except when shown.  
TOP CHORD B-C=-1631/278, C-D=-1485/321, D-E=-1485/321, E-F=-1631/278  
BOT CHORD B-I=-260/1496, H-I=-49/952, F-H=-120/1363  
WEBS D-H=-166/714, E-H=-416/273, D-I=-166/714, C-I=-416/273

- NOTES-**
- 1) Unbalanced roof live loads have been considered for this design.
  - 2) Wind: ASCE 7-10; Vult=115mph (3-second gust) Vasd=91mph; TCDL=6.0psf; BCDL=6.0psf; h=30ft; Cat. II; Exp C; Enclosed; MWFRS (envelope) gable end zone and C-C Exterior(2) 0-10-8 to 2-1-8, Interior(1) 2-1-8 to 10-0-0, Exterior(2) 10-0-0 to 16-0-0, Interior(1) 16-0-0 to 23-10-8, Exterior(2) 23-10-8 to 26-10-8 zone; cantilever left and right exposed ; end vertical left and right exposed; C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.33
  - 3) TCLL: ASCE 7-10; Pr=20.0 psf (roof live load: Lumber DOL=1.15 Plate DOL=1.00); Pg=20.0 psf (ground snow); Pf=13.9 psf (flat roof snow: Lumber DOL=1.15 Plate DOL=1.00); Category II; Exp C; Fully Exp.; Ct=1.10
  - 4) Unbalanced snow loads have been considered for this design.
  - 5) This truss has been designed for greater of min roof live load of 12.0 psf or 1.00 times flat roof load of 13.9 psf on overhangs non-concurrent with other live loads.
  - 6) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
  - 7) \* This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-6-0 tall by 2-0-0 wide will fit between the bottom chord and any other members, with BCDL = 10.0psf.
  - 8) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 100 lb uplift at joint(s) except (jt=lb) B=181, F=181.



April 17, 2019

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Design valid for use only with MiTek® connectors. This design is based only upon parameters shown, and is for an individual building component, not a truss system. Before use, the building designer must verify the applicability of design parameters and properly incorporate this design into the overall building design. Bracing indicated is to prevent buckling of individual truss web and/or chord members only. Additional temporary and permanent bracing is always required for stability and to prevent collapse with possible personal injury and property damage. For general guidance regarding the fabrication, storage, delivery, erection and bracing of trusses and truss systems, see **ANSI/TPH Quality Criteria, DSB-89 and BCSI Building Component Safety Information** available from Truss Plate Institute, 218 N. Lee Street, Suite 312, Alexandria, VA 22314.

**ENGINEERING BY**  
**TRENCO**  
A MiTek Affiliate

818 Soundside Road  
Edenton, NC 27932



Job	Truss	Truss Type	Qty	Ply	BIRCH	T16817015
19-033682T	B02	GABLE	1	1		

Job Reference (optional)

BMC (Middlesex, NC), Middlesex, NC - 27557,

8.220 s Nov 16 2018 MiTek Industries, Inc. Wed Apr 17 14:20:33 2019 Page 1  
 ID:1U5Pd5nU9BVNIRbPZ\_RbPLyGxlg-l\_?QznErVV\_ZDYBudNLvFHwkyip2VTlazz2aXzPnly

-0-10-8 13-0-0 26-0-0 26-10-8  
 0-10-8 13-0-0 13-0-0 0-10-8

Scale = 1:58.3

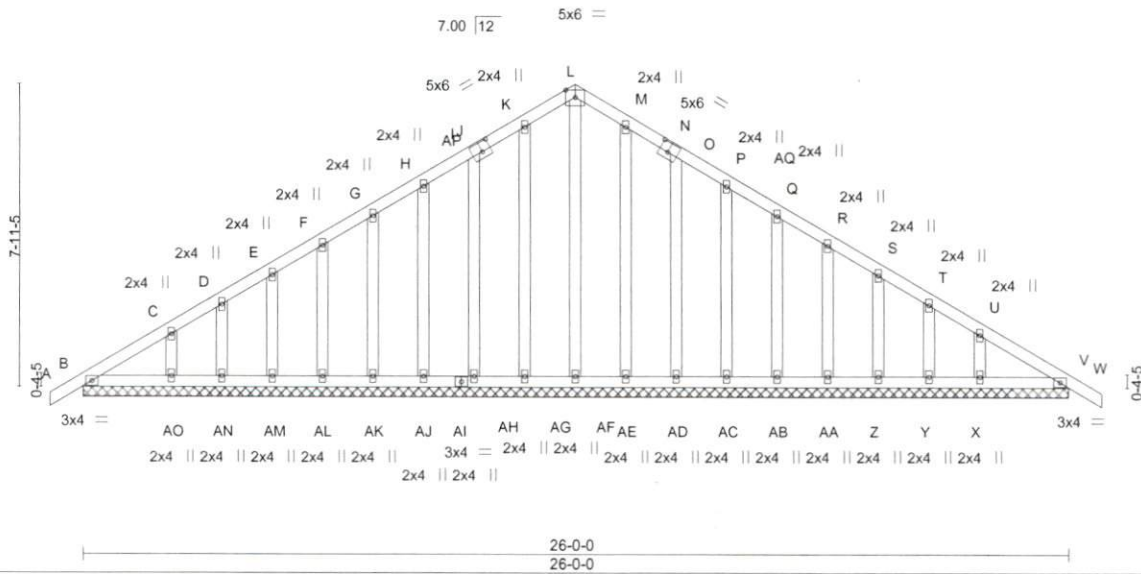


Plate Offsets (X,Y)-- [I:0-2-0,0-0-0], [J:0-2-12,0-3-0], [J:0-0-0,0-1-12], [N:0-2-12,0-3-0], [N:0-0-0,0-1-12], [O:0-2-0,0-0-0]

LOADING (psf)	SPACING-	CSI.	DEFL.	in (loc)	l/defl	L/d	PLATES	GRIP
TCLL (roof) 20.0	2-0-0	TC 0.04	Vert(LL) -0.00	V	n/r	120	MT20	244/190
Snow (Pf/Pg) 13.9/20.0	Plate Grip DOL 1.00	BC 0.03	Vert(CT) 0.00	V	n/r	120		
TCDL 10.0	Lumber DOL 1.15	WB 0.16	Horz(CT) 0.01	V	n/a	n/a		
BCLL 0.0	Rep Stress Incr YES	Matrix-S	Wind(LL) 0.00	V	n/r	90		
BCDL 10.0	Code IRC2015/TPI2014						Weight: 191 lb	FT = 20%

**LUMBER-**

TOP CHORD 2x4 SP 1650F 1.5E or 2x4 SP No.1 or 2x4 SP SS  
 BOT CHORD 2x4 SP 1650F 1.5E or 2x4 SP No.1 or 2x4 SP SS  
 OTHERS 2x4 SP No.3

**BRACING-**

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

**REACTIONS.**

All bearings 26-0-0.  
 (lb) - Max Horz B=-220(LC 12)  
 Max Uplift All uplift 100 lb or less at joint(s) B, AG, AH, AJ, AK, AL, AM, AN, AO, AE, AD, AC, AB, AA, Z, Y, X  
 Max Grav All reactions 250 lb or less at joint(s) B, AF, AG, AH, AJ, AK, AL, AM, AN, AO, AE, V, AD, AC, AB, AA, Z, Y, X

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

**NOTES-**

- Unbalanced roof live loads have been considered for this design.
- Wind: ASCE 7-10; Vult=115mph (3-second gust) Vasd=91mph; TCCL=6.0psf, BCDL=6.0psf; h=30ft; Cat. II; Exp C; Enclosed; MWFRS (envelope) gable end zone and C-C Corner(3) -0-10-8 to 2-4-0, Exterior(2) 2-4-0 to 10-0-0, Corner(3) 10-0-0 to 16-0-0, Exterior(2) 16-0-0 to 23-8-0, Corner(3) 23-8-0 to 26-10-8 zone; cantilever left and right exposed; end vertical left and right exposed; C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.33
- Truss designed for wind loads in the plane of the truss only. For studs exposed to wind (normal to the face), see Standard Industry Gable End Details as applicable, or consult qualified building designer as per ANSI/TPI 1.
- TCLL: ASCE 7-10; Pr=20.0 psf (roof live load: Lumber DOL=1.15 Plate DOL=1.00); Pg=20.0 psf (ground snow); Pf=13.9 psf (flat roof snow: Lumber DOL=1.15 Plate DOL=1.00); Category II; Exp C; Fully Exp.; Ct=1.10
- Unbalanced snow loads have been considered for this design.
- This truss has been designed for greater of min roof live load of 12.0 psf or 1.00 times flat roof load of 13.9 psf on overhangs non-concurrent with other live loads.
- Gable requires continuous bottom chord bearing.
- Gable studs spaced at 1-4-0 oc.
- This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
- \* This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-6-0 tall by 2-0-0 wide will fit between the bottom chord and any other members.
- Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 100 lb uplift at joint(s) B, AG, AH, AJ, AK, AL, AM, AN, AO, AE, AD, AC, AB, AA, Z, Y, X.



April 17, 2019

**WARNING - Verify design parameters and READ NOTES ON THIS AND INCLUDED MITEK REFERENCE PAGE MII-7473 rev. 10/03/2015 BEFORE USE.**

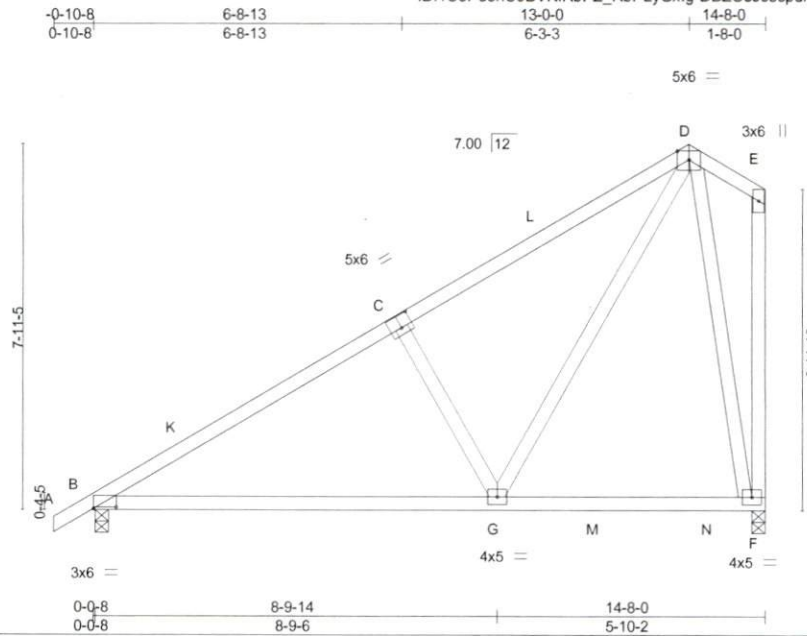
Design valid for use only with MiTek® connectors. This design is based only upon parameters shown, and is for an individual building component, not a truss system. Before use, the building designer must verify the applicability of design parameters and properly incorporate this design into the overall building design. Bracing indicated is to prevent buckling of individual truss web and/or chord members only. Additional temporary and permanent bracing is always required for stability and to prevent collapse with possible personal injury and property damage. For general guidance regarding the fabrication, storage, delivery, erection and bracing of trusses and truss systems, see **ANSI/TPI Quality Criteria, DSB-89 and BCSI Building Component Safety Information** available from Truss Plate Institute, 218 N. Lee Street, Suite 312, Alexandria, VA 22314.



818 Soundside Road  
 Edenton, NC 27932

Job	Truss	Truss Type	Qty	Ply	BIRCH	T16817016
19-033682T	B03	Common	6	1		

BMC (Middlesex, NC), Middlesex, NC - 27557, 8.220 s Nov 16 2018 MiTek Industries, Inc. Wed Apr 17 14:20:34 2019 Page 1  
 ID:1U5Pd5nU9BVNIRbPZ\_RbPLYGxlg-DBZCeJoscprBN7OSLvaRTqy1M\_HnqCRpdb6zzPnlx



Scale: 1/4"=1'

Plate Offsets (X,Y)-- [B:0-6-0,0-0-6], [C:0-3-0,0-3-4]

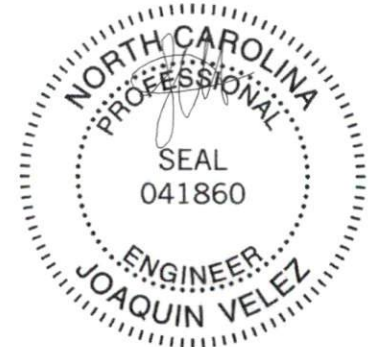
LOADING (psf)	SPACING-	CSI.	DEFL.	in (loc)	l/defl	L/d	PLATES	GRIP
TCLL (roof) 20.0	2-0-0	TC 0.58	Vert(LL) -0.12	G-J	>999	240	MT20	244/190
Snow (Pf/Pg) 13.9/20.0	Plate Grip DOL 1.00	BC 0.46	Vert(CT) -0.27	G-J	>637	180		
TCDL 10.0	Lumber DOL 1.15	WB 0.65	Horz(CT) 0.01	F	n/a	n/a		
BCLL 0.0	Rep Stress Incr YES	Matrix-MS						
BCDL 10.0	Code IRC2015/TPI2014						Weight: 89 lb	FT = 20%

LUMBER-	BRACING-
TOP CHORD 2x4 SP 1650F 1.5E or 2x4 SP No.1 or 2x4 SP SS	TOP CHORD Structural wood sheathing directly applied or 6-0-0 oc purlins, except end verticals.
BOT CHORD 2x4 SP 1650F 1.5E or 2x4 SP No.1 or 2x4 SP SS	BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.
WEBS 2x4 SP No.2 *Except* E-F: 2x4 SP No.3	

**REACTIONS.** (lb/size) B=535/0-3-8, F=490/0-3-8  
 Max Horz B=312(LC 13)  
 Max Uplift B=-112(LC 14), F=-148(LC 14)  
 Max Grav B=635(LC 2), F=663(LC 28)

**FORCES.** (lb) - Max. Comp./Max. Ten. - All forces 250 (lb) or less except when shown.  
 TOP CHORD B-C=-736/164, C-D=-614/207  
 BOT CHORD B-G=-178/686  
 WEBS D-G=-184/679, D-F=-640/153, C-G=-431/272

- NOTES-**
- Unbalanced roof live loads have been considered for this design.
  - Wind: ASCE 7-10; Vult=115mph (3-second gust) Vasd=91mph; TCCL=6.0psf; BCDL=6.0psf; h=30ft; Cat. II; Exp C; Enclosed; MWFRS (envelope) gable end zone and C-C Exterior(2) -0-10-8 to 2-1-8, Interior(1) 2-1-8 to 10-0-0, Exterior(2) 10-0-0 to 14-6-4 zone; cantilever left and right exposed; end vertical left and right exposed; C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.33
  - TCLL: ASCE 7-10; Pr=20.0 psf (roof live load); Lumber DOL=1.15 Plate DOL=1.00; Pg=20.0 psf (ground snow); Pf=13.9 psf (flat roof snow); Lumber DOL=1.15 Plate DOL=1.00; Category II; Exp C; Fully Exp.; Ct=1.10
  - Unbalanced snow loads have been considered for this design.
  - This truss has been designed for greater of min roof live load of 12.0 psf or 1.00 times flat roof load of 13.9 psf on overhangs non-concurrent with other live loads.
  - This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
  - \* This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-6-0 tall by 2-0-0 wide will fit between the bottom chord and any other members, with BCDL = 10.0psf.
  - Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 100 lb uplift at joint(s) except (jt=lb) B=112, F=148.

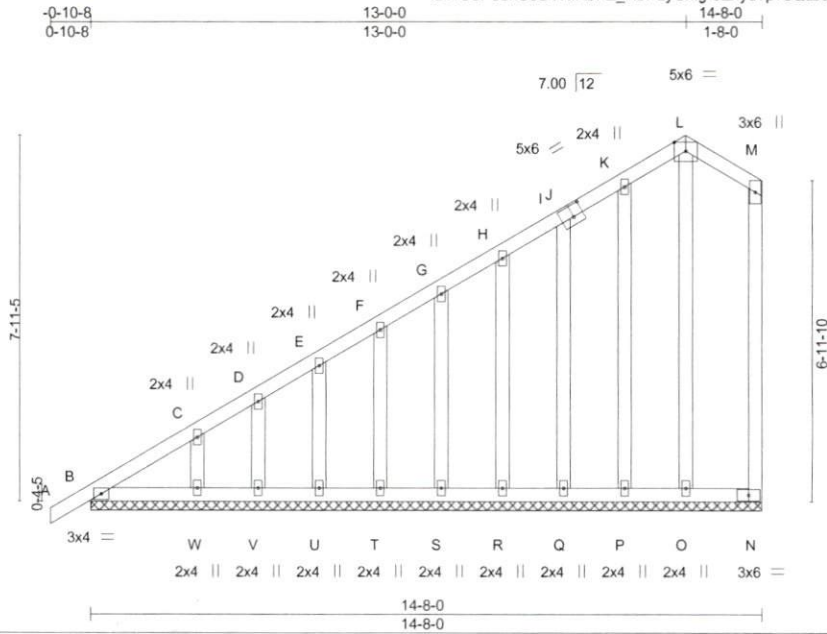


April 17, 2019



Job	Truss	Truss Type	Qty	Ply	BIRCH	T16817017
19-033682T	B04	GABLE	1	1		

BMC (Middlesex, NC), Middlesex, NC - 27557, 8.220 s Nov 16 2018 MiTek Industries, Inc. Wed Apr 17 14:20:36 2019 Page 1  
 ID:1U5Pd5nU9BVNIRbPZ\_RbPlyGxlg-9Zhy3?78QtZQhHmamx2XuvLpAlwFrNkGxBiBrzPnlv



Scale: 1/4"=1'

LOADING (psf)		SPACING-		CSI.		DEFL.				PLATES	GRIP	
TCLL (roof)	20.0	2-0-0	Plate Grip DOL	1.00	TC	0.37	in	(loc)	l/defl	L/d	MT20	244/190
Snow (Pf/Pg)	13.9/20.0	1.15	Lumber DOL	1.15	BC	0.13	Vert(LL)	-0.00	A	n/r	120	
TCDL	10.0	YES	Rep Stress Incr	YES	WB	0.22	Vert(CT)	0.00	A	n/r	120	
BCLL	0.0	Code IRC2015/TPI2014	Code	IRC2015/TPI2014	Matrix-S		Horz(CT)	0.00	N	n/a	n/a	
BCDL	10.0						Wind(LL)	0.00	A	n/r	90	Weight: 116 lb FT = 20%

LUMBER-	BRACING-
TOP CHORD	TOP CHORD
BOT CHORD	BOT CHORD
WEBS	
OTHERS	

**REACTIONS.** All bearings 14-8-0.  
 (lb) - Max Horz B=311(LC 11)  
 Max Uplift All uplift 100 lb or less at joint(s) N, B, O, P, Q, R, S, T, U, V, W  
 Max Grav All reactions 250 lb or less at joint(s) N, B, O, P, Q, R, S, T, U, V, W

**FORCES.** (lb) - Max. Comp./Max. Ten. - All forces 250 (lb) or less except when shown.  
 TOP CHORD B-C=-272/188

- NOTES-**
- Unbalanced roof live loads have been considered for this design.
  - Wind: ASCE 7-10; Vult=115mph (3-second gust) Vasd=91mph; TCDL=6.0psf; BCDL=6.0psf; h=30ft; Cat. II; Exp C; Enclosed; MWFRS (envelope) gable end zone and C-C Corner(3) -0-10-8 to 2-4-0, Exterior(2) 2-4-0 to 10-0-0, Corner(3) 10-0-0 to 14-6-4 zone; cantilever left and right exposed; end vertical left and right exposed; C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.33
  - Truss designed for wind loads in the plane of the truss only. For studs exposed to wind (normal to the face), see Standard Industry Gable End Details as applicable, or consult qualified building designer as per ANSI/TPI 1.
  - TCLL: ASCE 7-10; Pr=20.0 psf (roof live load: Lumber DOL=1.15 Plate DOL=1.00); Pg=20.0 psf (ground snow); Pf=13.9 psf (flat roof snow: Lumber DOL=1.15 Plate DOL=1.00); Category II; Exp C; Fully Exp.; Ct=1.10
  - Unbalanced snow loads have been considered for this design.
  - This truss has been designed for greater of min roof live load of 12.0 psf or 1.00 times flat roof load of 13.9 psf on overhangs non-concurrent with other live loads.
  - Gable requires continuous bottom chord bearing.
  - Gable studs spaced at 1-4-0 oc.
  - This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
  - \* This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-6-0 tall by 2-0-0 wide will fit between the bottom chord and any other members.
  - Bearing at joint(s) N considers parallel to grain value using ANSI/TPI 1 angle to grain formula. Building designer should verify capacity of bearing surface.
  - Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 100 lb uplift at joint(s) N, B, O, P, Q, R, S, T, U, V, W.
  - Gap between inside of top chord bearing and first diagonal or vertical web shall not exceed 0.500in.

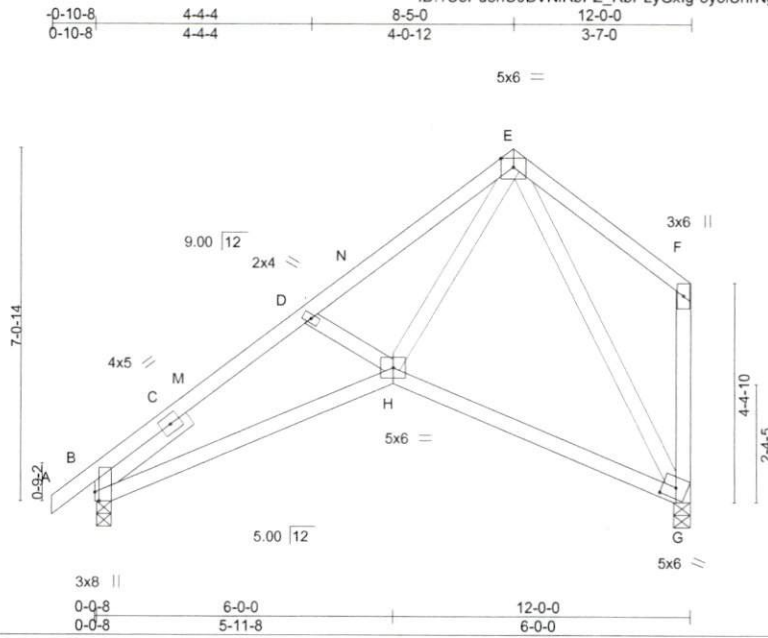


April 17, 2019

Job	Truss	Truss Type	Qty	Ply	BIRCH	T16817018
19-033682T	C01	Scissor	1	1		

Job Reference (optional)

BMC (Middlesex, NC), Middlesex, NC - 27557, 8.220 s Nov 16 2018 MiTek Industries, Inc. Wed Apr 17 14:20:38 2019 Page 1  
 ID:1U5Pd5nU9BVNIRbPZ\_RbPLyGxlg-5yoiUhrNg17Hf\_Q9hAzWcJ?QzQYjhd1kEgoFkzPnlt



Scale = 1:44.5

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

LOADING (psf)	SPACING-	2-0-0	CSI.	DEFL.	in (loc)	l/defl	L/d	PLATES	GRIP
TCLL (roof) 20.0	Plate Grip DOL	1.00	TC 0.24	Vert(LL)	-0.05	G-H	>999	MT20	244/190
Snow (Pf/Pg) 13.9/20.0	Lumber DOL	1.15	BC 0.25	Vert(CT)	-0.10	G-H	>999		
TCDL 10.0	Rep Stress Incr	YES	WB 0.49	Horz(CT)	0.05	G	n/a		
BCLL 0.0	Code IRC2015/TPI2014		Matrix-MS						
BCDL 10.0								Weight: 74 lb	FT = 20%

**LUMBER-**

TOP CHORD 2x4 SP 1650F 1.5E or 2x4 SP No.1 or 2x4 SP SS  
 BOT CHORD 2x4 SP 1650F 1.5E or 2x4 SP No.1 or 2x4 SP SS  
 WEBS 2x4 SP No.2 \*Except\*  
 F-G: 2x4 SP No.3  
 SLIDER Left 2x4 SP No.3 2-5-0

**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.

**REACTIONS.**

(lb/size) B=445/0-3-8, G=400/0-4-0  
 Max Horz B=251(LC 11)  
 Max Uplift B=-83(LC 12), G=-93(LC 12)  
 Max Grav B=529(LC 2), G=472(LC 2)

**FORCES.**

(lb) - Max. Comp./Max. Ten. - All forces 250 (lb) or less except when shown.  
 TOP CHORD B-D=-887/221, D-E=-745/188  
 BOT CHORD B-H=-273/866, G-H=-111/302  
 WEBS E-H=-144/741, E-G=-516/139

**NOTES-**

- Unbalanced roof live loads have been considered for this design.
- Wind: ASCE 7-10; Vult=115mph (3-second gust) Vasd=91mph; TC DL=6.0psf; BCDL=6.0psf; h=30ft; Cat. II; Exp C; Enclosed; MWFRS (envelope) gable end zone and C-C Exterior(2) 0-10-8 to 2-1-8, Interior(1) 2-1-8 to 5-5-0, Exterior(2) 5-5-0 to 11-10-4 zone; cantilever left and right exposed; end vertical left and right exposed; C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.33
- TCLL: ASCE 7-10; Pr=20.0 psf (roof live load; Lumber DOL=1.15 Plate DOL=1.00); Pg=20.0 psf (ground snow); Pf=13.9 psf (flat roof snow; Lumber DOL=1.15 Plate DOL=1.00); Category II; Exp C; Fully Exp.; Ct=1.10
- This truss has been designed for greater of min roof live load of 12.0 psf or 1.00 times flat roof load of 13.9 psf on overhangs non-concurrent with other live loads.
- This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
- \* This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-6-0 tall by 2-0-0 wide will fit between the bottom chord and any other members.
- Bearing at joint(s) B, G considers parallel to grain value using ANSI/TPI 1 angle to grain formula. Building designer should verify capacity of bearing surface.
- Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 100 lb uplift at joint(s) B, G.



April 17, 2019

**WARNING - Verify design parameters and READ NOTES ON THIS AND INCLUDED MITTEK REFERENCE PAGE MII-7473 rev. 10/03/2015 BEFORE USE.**

Design valid for use only with MiTek® connectors. This design is based only upon parameters shown, and is for an individual building component, not a truss system. Before use, the building designer must verify the applicability of design parameters and properly incorporate this design into the overall building design. Bracing indicated is to prevent buckling of individual truss web and/or chord members only. Additional temporary and permanent bracing is always required for stability and to prevent collapse with possible personal injury and property damage. For general guidance regarding the fabrication, storage, delivery, erection and bracing of trusses and truss systems, see **ANSI/TPI Quality Criteria, DSB-89 and BCSI Building Component Safety Information** available from Truss Plate Institute, 218 N. Lee Street, Suite 312, Alexandria, VA 22314.

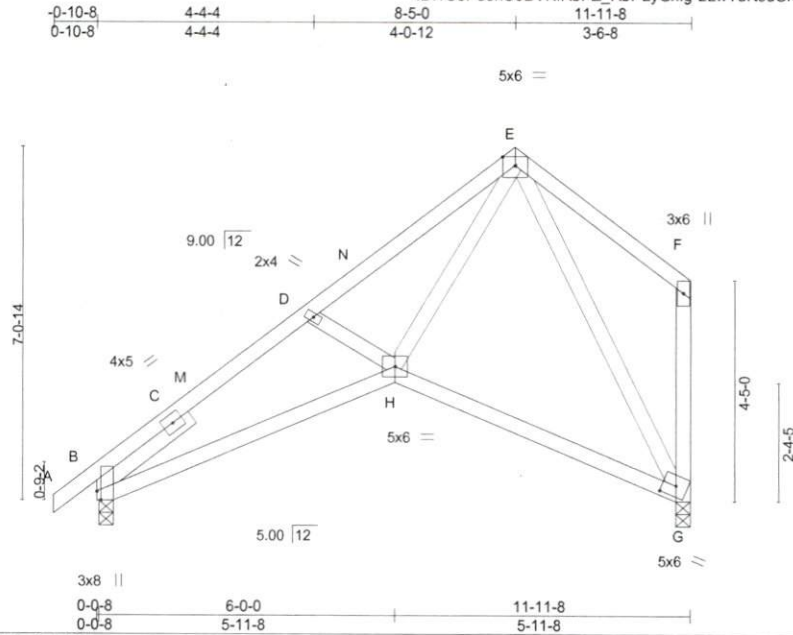
ENGINEERING BY  
**TRENCO**  
 A MiTek Affiliate

818 Soundside Road  
 Edenton, NC 27932



Job	Truss	Truss Type	Qty	Ply	BIRCH	T16817019
19-033682T	C02	Scissor	6	1		

BMC (Middlesex, NC), Middlesex, NC - 27557, 8.220 s Nov 16 2018 MITek Industries, Inc. Wed Apr 17 14:20:40 2019 Page 1  
 ID:1U5Pd5nU9BVNIRbPZ\_RbPlyGxlg-2LwTuNsdCfO?vlaYpb?\_hk43vn51BbDKBY9vKdzPnlr



Scale = 1:44.5

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

LOADING (psf)	SPACING-	2-0-0	CSI.	DEFL.	in (loc)	l/defl	L/d	PLATES	GRIP
TCLL (roof) 20.0	Plate Grip DOL	1.00	TC 0.24	Vert(LL)	-0.05	G-H	>999	MT20	244/190
Snow (Pf/Pg) 13.9/20.0	Lumber DOL	1.15	BC 0.25	Vert(CT)	-0.10	G-H	>999		
TCDL 10.0	Rep Stress Incr	YES	WB 0.48	Horz(CT)	0.04	G	n/a		
BCLL 0.0 *	Code IRC2015/TPI2014		Matrix-MS						
BCDL 10.0								Weight: 74 lb	FT = 20%

LUMBER-	BRACING-
TOP CHORD 2x4 SP 1650F 1.5E or 2x4 SP No.1 or 2x4 SP SS	TOP CHORD Structural wood sheathing directly applied or 6-0-0 oc purlins, except end verticals.
BOT CHORD 2x4 SP 1650F 1.5E or 2x4 SP No.1 or 2x4 SP SS	BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.
WEBS 2x4 SP No.2 *Except*	
F-G: 2x4 SP No.3	
SLIDER Left 2x4 SP No.3 2-5-0	

**REACTIONS.** (lb/size) B=443/0-3-8, G=398/0-3-8  
 Max Horz B=251(LC 11)  
 Max Uplift B=-83(LC 12), G=-94(LC 12)  
 Max Grav B=527(LC 2), G=471(LC 2)

**FORCES.** (lb) - Max. Comp./Max. Ten. - All forces 250 (lb) or less except when shown.  
 TOP CHORD B-D=-883/220, D-E=-740/187  
 BOT CHORD B-H=-273/862, G-H=-111/299  
 WEBS E-H=-145/738, E-G=-515/140

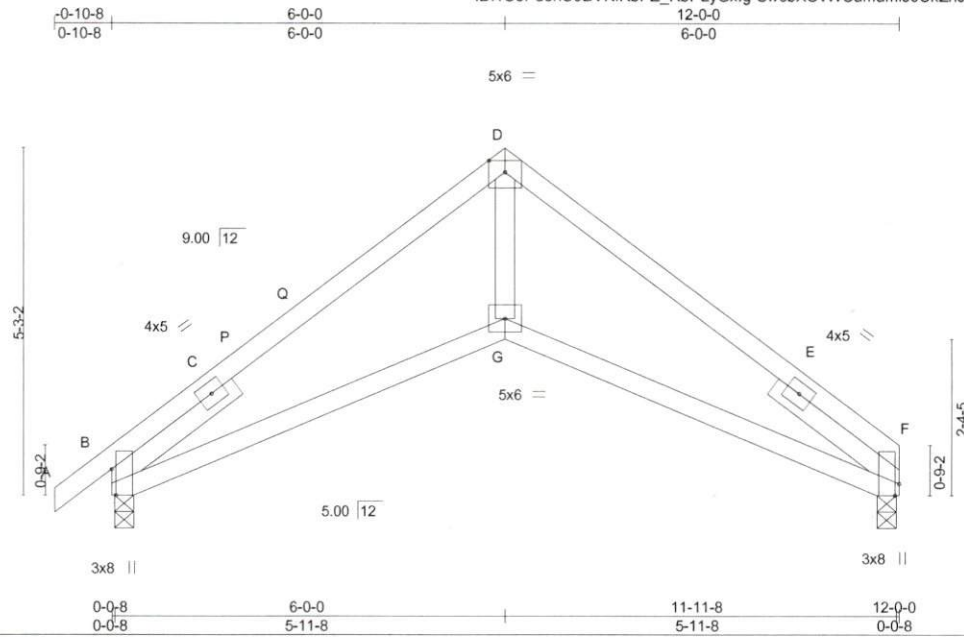
- NOTES-**
- Unbalanced roof live loads have been considered for this design.
  - Wind: ASCE 7-10; Vult=115mph (3-second gust) Vasd=91mph; TCCL=6.0psf; BCDL=6.0psf; h=30ft; Cat. II; Exp C; Enclosed; MWFRS (envelope) gable end zone and C-C Exterior(2) 0-10-8 to 2-1-8, Interior(1) 2-1-8 to 5-5-0, Exterior(2) 5-5-0 to 11-9-12 zone; cantilever left and right exposed; end vertical left and right exposed; C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.33
  - TCLL: ASCE 7-10; Pr=20.0 psf (roof live load: Lumber DOL=1.15 Plate DOL=1.00); Pg=20.0 psf (ground snow); Pf=13.9 psf (flat roof snow: Lumber DOL=1.15 Plate DOL=1.00); Category II; Exp C; Fully Exp.; Ct=1.10
  - This truss has been designed for greater of min roof live load of 12.0 psf or 1.00 times flat roof load of 13.9 psf on overhangs non-concurrent with other live loads.
  - This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
  - \* This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-6-0 tall by 2-0-0 wide will fit between the bottom chord and any other members.
  - Bearing at joint(s) B, G considers parallel to grain value using ANSI/TPI 1 angle to grain formula. Building designer should verify capacity of bearing surface.
  - Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 100 lb uplift at joint(s) B, G.



April 17, 2019

Job	Truss	Truss Type	Qty	Ply	BIRCH	T16817020
19-033682T	D01	Scissor	1	1		

BMC (Middlesex, NC), Middlesex, NC - 27557, 8.220 s Nov 16 2018 MiTek Industries, Inc. Wed Apr 17 14:20:43 2019 Page 1  
 ID:1U5Pd5nU9BVNIRbPZ\_RbPlyGxlg-SwcbXOvWUamamJ6UkZhJMIZT\_7aO19mtWOZxxzPnlo



Scale = 1:33.7

Plate Offsets (X,Y)-- [B:0-4-12,Edge], [F:0-2-2,Edge]

LOADING (psf)	SPACING-	2-0-0	CSI.	DEFL.	in (loc)	l/defl	L/d	PLATES	GRIP
TCLL (roof) 20.0	Plate Grip DOL	1.00	TC 0.28	Vert(LL)	0.05	G-J >999	240	MT20	244/190
Snow (Pf/Pg) 13.9/20.0	Lumber DOL	1.15	BC 0.26	Vert(CT)	-0.07	G-J >999	180		
TCDL 10.0	Rep Stress Incr	YES	WB 0.15	Horz(CT)	0.06	F n/a	n/a		
BCLL 0.0	Code	IRC2015/TPI2014	Matrix-MS					Weight: 55 lb	FT = 20%
BCDL 10.0									

**LUMBER-**  
 TOP CHORD 2x4 SP 1650F 1.5E or 2x4 SP No.1 or 2x4 SP SS  
 BOT CHORD 2x4 SP 1650F 1.5E or 2x4 SP No.1 or 2x4 SP SS  
 WEBS 2x4 SP No.2  
 SLIDER Left 2x4 SP No.3 2-5-0, Right 2x4 SP No.3 2-5-0

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

**REACTIONS.** (lb/size) F=405/0-3-8, B=450/0-3-8  
 Max Horz B=134(LC 9)  
 Max Uplift F=-64(LC 13), B=-85(LC 12)  
 Max Grav F=478(LC 2), B=534(LC 2)

**FORCES.** (lb) - Max. Comp./Max. Ten. - All forces 250 (lb) or less except when shown.  
 TOP CHORD B-D=-823/151, D-F=-805/151  
 BOT CHORD B-G=-75/694, F-G=-68/687  
 WEBS D-G=-13/623

- NOTES-**
- Unbalanced roof live loads have been considered for this design.
  - Wind: ASCE 7-10; Vult=115mph (3-second gust) Vasd=91mph; TCCL=6.0psf; BCDL=6.0psf; h=30ft; Cat. II; Exp C; Enclosed; MWFRS (envelope) gable end zone and C-C Exterior(2) -0-10-8 to 2-1-8, Interior(1) 2-1-8 to 3-0-0, Exterior(2) 3-0-0 to 12-0-0 zone; cantilever left and right exposed; end vertical left and right exposed; C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.33
  - TCLL: ASCE 7-10; Pr=20.0 psf (roof live load); Lumber DOL=1.15 Plate DOL=1.00; Pg=20.0 psf (ground snow); Pf=13.9 psf (flat roof snow); Lumber DOL=1.15 Plate DOL=1.00; Category II; Exp C; Fully Exp.; Ct=1.10
  - This truss has been designed for greater of min roof live load of 12.0 psf or 1.00 times flat roof load of 13.9 psf on overhangs non-concurrent with other live loads.
  - This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
  - \* This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-6-0 tall by 2-0-0 wide will fit between the bottom chord and any other members.
  - Bearing at joint(s) F, B considers parallel to grain value using ANSI/TPI 1 angle to grain formula. Building designer should verify capacity of bearing surface.
  - Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 100 lb uplift at joint(s) F, B.



April 17, 2019

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 Design valid for use only with MiTek® connectors. This design is based only upon parameters shown, and is for an individual building component, not a truss system. Before use, the building designer must verify the applicability of design parameters and properly incorporate this design into the overall building design. Bracing indicated is to prevent buckling of individual truss web and/or chord members only. Additional temporary and permanent bracing is always required for stability and to prevent collapse with possible personal injury and property damage. For general guidance regarding the fabrication, storage, delivery, erection and bracing of trusses and truss systems, see **ANSI/TPI1 Quality Criteria, DSB-89 and BCSI Building Component Safety Information** available from Truss Plate Institute, 218 N. Lee Street, Suite 312, Alexandria, VA 22314.

ENGINEERING BY  
**TRENCO**  
 A MiTek Affiliate  
 818 Soundside Road  
 Edenton, NC 27932



Job	Truss	Truss Type	Qty	Ply	BIRCH	T16817021
19-033682T	D02	Roof Special	1	1		
						Job Reference (optional)

BMC (Middlesex, NC), Middlesex, NC - 27557, 8.220 s Nov 16 2018 MiTek Industries, Inc. Wed Apr 17 14:20:45 2019 Page 1  
 ID:1U5Pd5nU9BVNIRbPZ\_RbPlyGxlg-OljMy4wm0BOH?3TVb9b9Onnvyp2sxf3Lqtg?qzPnIm



5x6 =

Scale = 1:33.7

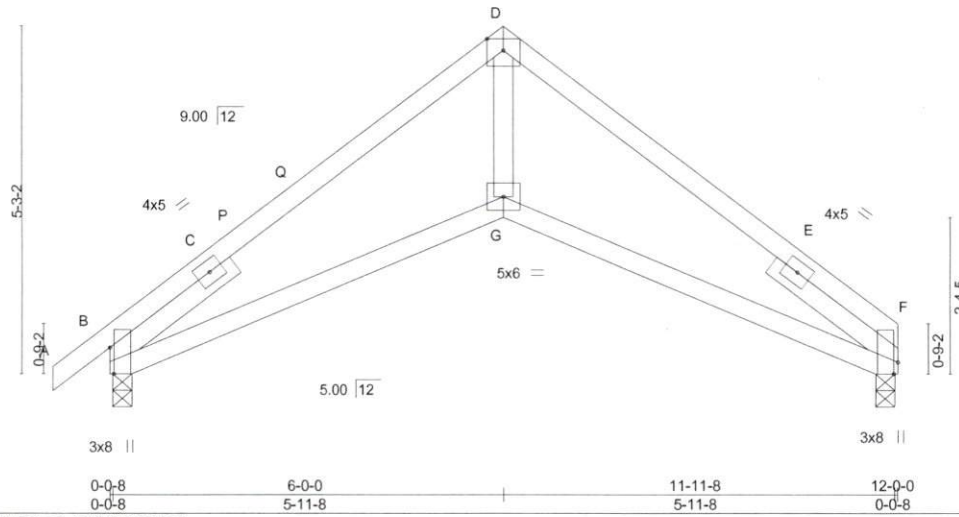


Plate Offsets (X,Y)-- [B:0-4-12,Edge], [F:0-2-2,Edge]

LOADING (psf)	SPACING-	2-0-0	CSI.	DEFL.	in (loc)	l/defl	L/d	PLATES	GRIP
TCLL (roof) 20.0	Plate Grip DOL	1.00	TC 0.28	Vert(LL)	0.05	G-J	>999	MT20	244/190
Snow (Pf/Pg) 13.9/20.0	Lumber DOL	1.15	BC 0.26	Vert(CT)	-0.07	G-J	>999		
TCDL 10.0	Rep Stress Incr	YES	WB 0.15	Horz(CT)	0.06	F	n/a		
BCLL 0.0	Code IRC2015/TPI2014		Matrix-MS						
BCDL 10.0								Weight: 55 lb	FT = 20%

**LUMBER-**

TOP CHORD 2x4 SP 1650F 1.5E or 2x4 SP No.1 or 2x4 SP SS  
 BOT CHORD 2x4 SP 1650F 1.5E or 2x4 SP No.1 or 2x4 SP SS  
 WEBS 2x4 SP No.2  
 SLIDER Left 2x4 SP No.3 2-5-0, Right 2x4 SP No.3 2-5-0

**BRACING-**

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

**REACTIONS.**

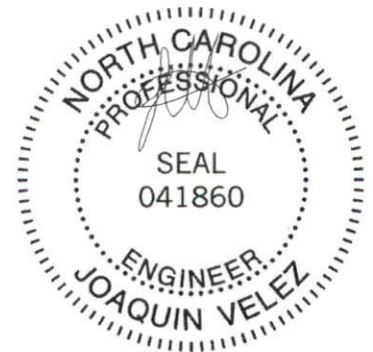
(lb/size) F=405/0-3-8, B=450/0-3-8  
 Max Horz B=134(LC 9)  
 Max Uplift F=-64(LC 13), B=-85(LC 12)  
 Max Grav F=478(LC 2), B=534(LC 2)

**FORCES.**

(lb) - Max. Comp./Max. Ten. - All forces 250 (lb) or less except when shown.  
 TOP CHORD B-D=-823/151, D-F=-805/151  
 BOT CHORD B-G=-75/694, F-G=-68/687  
 WEBS D-G=-13/623

**NOTES-**

- Unbalanced roof live loads have been considered for this design.
- Wind: ASCE 7-10; Vult=115mph (3-second gust) Vasd=91mph; TCDL=6.0psf; BCDL=6.0psf; h=30ft; Cat. II; Exp C; Enclosed; MWFRS (envelope) gable end zone and C-C Exterior(2) 0-10-8 to 2-1-8, Interior(1) 2-1-8 to 3-0-0, Exterior(2) 3-0-0 to 12-0-0 zone; cantilever left and right exposed; end vertical left and right exposed; C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.33
- TCLL: ASCE 7-10; Pr=20.0 psf (roof live load; Lumber DOL=1.15 Plate DOL=1.00); Pg=20.0 psf (ground snow); Pf=13.9 psf (flat roof snow; Lumber DOL=1.15 Plate DOL=1.00); Category II; Exp C; Fully Exp.; Ct=1.10
- This truss has been designed for greater of min roof live load of 12.0 psf or 1.00 times flat roof load of 13.9 psf on overhangs non-concurrent with other live loads.
- This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
- \* This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-6-0 tall by 2-0-0 wide will fit between the bottom chord and any other members.
- Bearing at joint(s) F, B considers parallel to grain value using ANSI/TPI 1 angle to grain formula. Building designer should verify capacity of bearing surface.
- Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 100 lb uplift at joint(s) F, B.



April 17, 2019

**WARNING - Verify design parameters and READ NOTES ON THIS AND INCLUDED MITEK REFERENCE PAGE MII-7473 rev. 10/03/2015 BEFORE USE.**

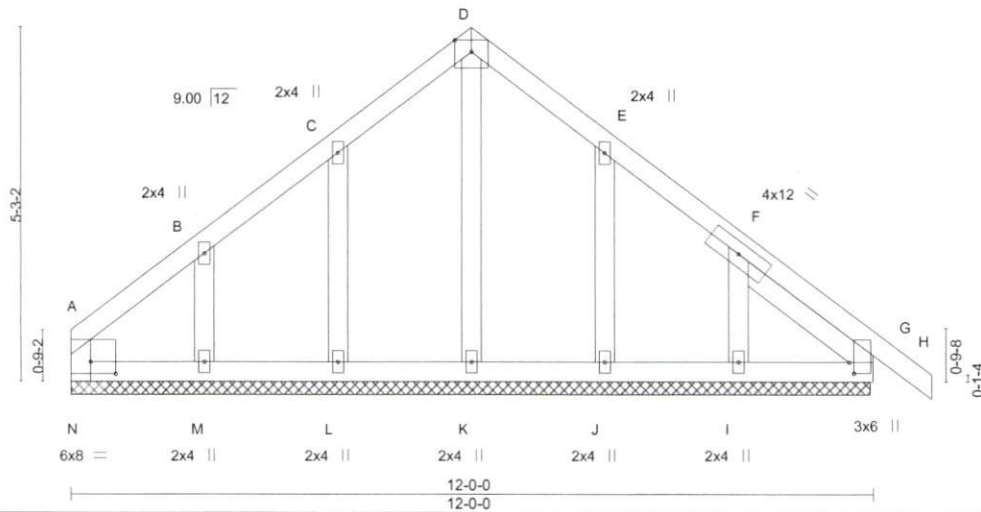
Design valid for use only with MiTek® connectors. This design is based only upon parameters shown, and is for an individual building component, not a truss system. Before use, the building designer must verify the applicability of design parameters and properly incorporate this design into the overall building design. Bracing indicated is to prevent buckling of individual truss web and/or chord members only. Additional temporary and permanent bracing is always required for stability and to prevent collapse with possible personal injury and property damage. For general guidance regarding the fabrication, storage, delivery, erection and bracing of trusses and truss systems, see **ANSI/TPI1 Quality Criteria, DSB-89 and BCSI Building Component Safety Information** available from Truss Plate Institute, 218 N. Lee Street, Suite 312, Alexandria, VA 22314.



818 Soundside Road  
 Edenton, NC 27932

Job 19-033682T	Truss D03	Truss Type Common Supported Gable	Qty 1	Ply 1	BIRCH	T16817022
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BMC (Middlesex, NC), Middlesex, NC - 27557, 8.220 s Nov 16 2018 MiTek Industries, Inc. Wed Apr 17 14:20:46 2019 Page 1  
 ID:1U5Pd5nU9BVNIRbPZ\_RbPLyGxlg-sVHk9QxOnV88dD2h9s6Ox?K8ZCBqPMCZUcEYGzPnll



LOADING (psf)		SPACING-		CSI.		DEFL.		PLATES	GRIP
TCLL (roof)	20.0	2-0-0	2-0-0	TC	0.04	in (loc)	l/defl	MT20	244/190
Snow (Pf/Pg)	13.9/20.0	Plate Grip DOL	1.00	BC	0.03	Vert(LL)	-0.00 G n/r		
TCDL	10.0	Lumber DOL	1.15	WB	0.06	Vert(CT)	-0.00 G n/r		
BCLL	0.0	Rep Stress Incr	YES	Matrix-S		Horz(CT)	0.00 G n/a		
BCDL	10.0	Code IRC2015/TPI2014				Wind(LL)	0.00 G n/r		
								Weight: 68 lb	FT = 20%

LUMBER-	BRACING-
TOP CHORD	TOP CHORD
BOT CHORD	BOT CHORD
WEBS	
OTHERS	
SLIDER	

**LOADING (psf)**  
 TCLL (roof) 20.0  
 Snow (Pf/Pg) 13.9/20.0  
 TCDL 10.0  
 BCLL 0.0  
 BCDL 10.0

**SPACING-**  
 2-0-0  
 Plate Grip DOL 1.00  
 Lumber DOL 1.15  
 Rep Stress Incr YES  
 Code IRC2015/TPI2014

**CSI.**  
 TC 0.04  
 BC 0.03  
 WB 0.06  
 Matrix-S

**DEFL.**  
 in (loc) l/defl L/d  
 Vert(LL) -0.00 G n/r 120  
 Vert(CT) -0.00 G n/r 120  
 Horz(CT) 0.00 G n/a n/a  
 Wind(LL) 0.00 G n/r 90

**PLATES** MT20  
**GRIP** 244/190  
 Weight: 68 lb FT = 20%

**LUMBER-**  
 TOP CHORD 2x4 SP 1650F 1.5E or 2x4 SP No.1 or 2x4 SP SS  
 BOT CHORD 2x4 SP 1650F 1.5E or 2x4 SP No.1 or 2x4 SP SS  
 WEBS 2x4 SP No.2  
 OTHERS 2x4 SP No.3  
 SLIDER Right 2x4 SP No.3 2-4-9

**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.

**REACTIONS.** All bearings 11-11-8.  
 (lb) - Max Horz N=-146(LC 8)  
 Max Uplift All uplift 100 lb or less at joint(s) N, G, L, J except M=-118(LC 12), I=-108(LC 13)  
 Max Grav All reactions 250 lb or less at joint(s) N, G, K, L, M, J, I

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

- NOTES-**
- Unbalanced roof live loads have been considered for this design.
  - Wind: ASCE 7-10; Vult=115mph (3-second gust) Vasd=91mph; TCDL=6.0psf; BCDL=6.0psf; h=30ft; Cat. II; Exp C; Enclosed; MWFRS (envelope) gable end zone and C-C Corner(3) 0-1-12 to 9-0-0, Exterior(2) 9-0-0 to 9-10-8, Corner(3) 9-10-8 to 12-10-8 zone; cantilever left and right exposed; end vertical left and right exposed; C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.33
  - Truss designed for wind loads in the plane of the truss only. For studs exposed to wind (normal to the face), see Standard Industry Gable End Details as applicable, or consult qualified building designer as per ANSI/TPI 1.
  - TCLL: ASCE 7-10; Pr=20.0 psf (roof live load: Lumber DOL=1.15 Plate DOL=1.00); Pg=20.0 psf (ground snow); Pf=13.9 psf (flat roof snow: Lumber DOL=1.15 Plate DOL=1.00); Category II; Exp C; Fully Exp.; Ct=1.10
  - This truss has been designed for greater of min roof live load of 12.0 psf or 1.00 times flat roof load of 13.9 psf on overhangs non-concurrent with other live loads.
  - Gable requires continuous bottom chord bearing.
  - Gable studs spaced at 2-0-0 oc.
  - This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
  - \* This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-6-0 tall by 2-0-0 wide will fit between the bottom chord and any other members.
  - Bearing at joint(s) N considers parallel to grain value using ANSI/TPI 1 angle to grain formula. Building designer should verify capacity of bearing surface.
  - Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 100 lb uplift at joint(s) N, G, L, J except (jt=lb) M=118, I=108.
  - Beveled plate or shim required to provide full bearing surface with truss chord at joint(s) G.
  - Gap between inside of top chord bearing and first diagonal or vertical web shall not exceed 0.500in.



April 17, 2019

**WARNING - Verify design parameters and READ NOTES ON THIS AND INCLUDED MITEK REFERENCE PAGE MII-7473 rev. 10/03/2015 BEFORE USE.**  
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**ENGINEERING BY**  
**TRENCO**  
 A MiTek Affiliate

818 Soundside Road  
 Edenton, NC 27932



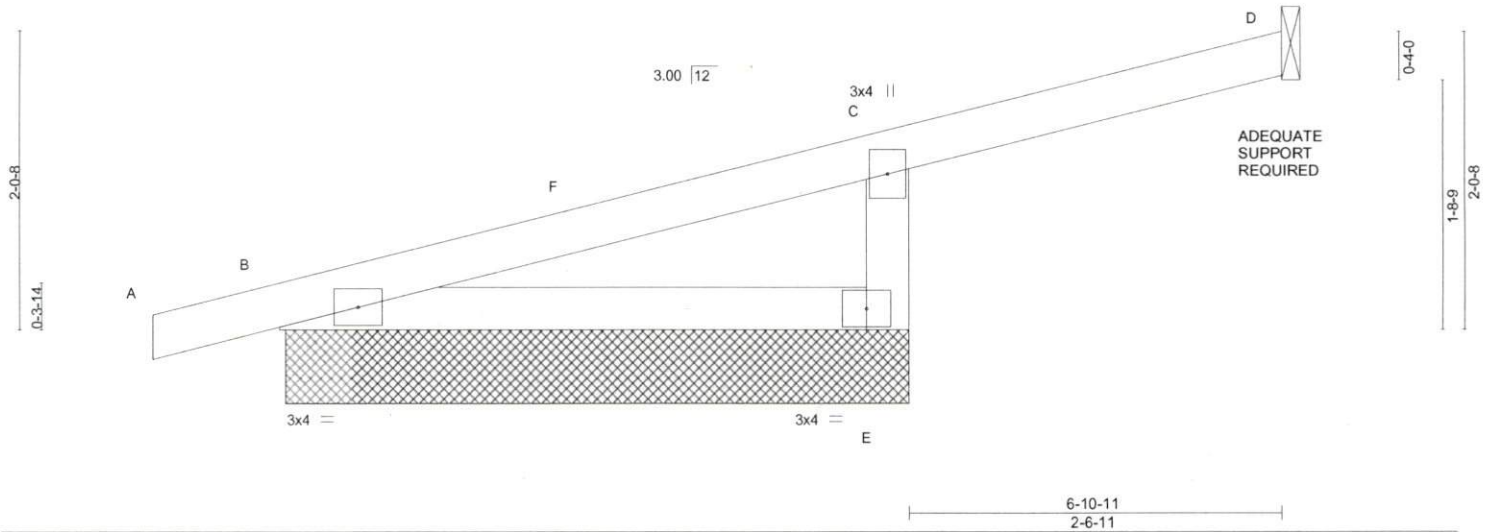
Job	Truss	Truss Type	Qty	Ply	BIRCH	T16817023
19-033682T	E01	Monopitch Supported Gable	1	1		
					Job Reference (optional)	

BMC (Middlesex, NC), Middlesex, NC - 27557,

8.220 s Nov 16 2018 MiTek Industries, Inc. Wed Apr 17 14:20:49 2019 Page 1  
ID:1U5Pd5nU9BVNIRbPZ\_RbPLYGxlg-H3zsnSzG4QWjUgmGq\_g5Ydyd1PBYom\_fSru8bzPnli



Scale = 1:15.2



LOADING (psf)	SPACING-	CSI.	DEFL.	in (loc)	l/defl	L/d	PLATES	GRIP
TCLL (roof) 20.0	2-0-0	TC 0.15	Vert(LL)	-0.02	B-E	>999	MT20	244/190
Snow (Pf/Pg) 13.9/20.0	Plate Grip DOL 1.00	BC 0.16	Vert(CT)	-0.03	B-E	>999		
TCDL 10.0	Lumber DOL 1.15	WB 0.00	Horz(CT)	-0.00	D	n/a		
BCLL 0.0	Rep Stress Incr YES	Matrix-P						
BCDL 10.0	Code IRC2015/TPI2014						Weight: 20 lb	FT = 20%

LUMBER-	BRACING-
TOP CHORD 2x4 SP 1650F 1.5E or 2x4 SP No.1 or 2x4 SP SS	TOP CHORD Structural wood sheathing directly applied or 4-4-0 oc purlins, except end verticals.
BOT CHORD 2x4 SP 1650F 1.5E or 2x4 SP No.1 or 2x4 SP SS	BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.
WEBS 2x4 SP No.2	

**REACTIONS.** (lb/size) D=35/Mechanical, E=246/4-3-8, B=170/4-3-8  
 Max Horz B=70(LC 11)  
 Max Uplift D=-25(LC 10), E=-115(LC 14), B=-60(LC 10)  
 Max Grav D=45(LC 21), E=299(LC 2), B=203(LC 2)

**FORCES.** (lb) - Max. Comp./Max. Ten. - All forces 250 (lb) or less except when shown.  
 TOP CHORD C-E=-257/251

- NOTES-**
- 1) Wind: ASCE 7-10; Vult=115mph (3-second gust) Vasd=91mph; TCDL=6.0psf; BCDL=6.0psf; h=30ft; Cat. II; Exp C; Enclosed; MWFRS (envelope) gable end zone and C-C Corner(3) -0-10-8 to 2-1-8, Exterior(2) 2-1-8 to 6-9-15 zone; cantilever left and right exposed ; end vertical left and right exposed; C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.33
  - 2) Truss designed for wind loads in the plane of the truss only. For studs exposed to wind (normal to the face), see Standard Industry Gable End Details as applicable, or consult qualified building designer as per ANSI/TPI 1.
  - 3) TCLL: ASCE 7-10; Pr=20.0 psf (roof live load: Lumber DOL=1.15 Plate DOL=1.00); Pg=20.0 psf (ground snow); Pf=13.9 psf (flat roof snow: Lumber DOL=1.15 Plate DOL=1.00); Category II; Exp C; Fully Exp.; Ct=1.10; Min. flat roof snow load governs.
  - 4) Unbalanced snow loads have been considered for this design.
  - 5) This truss has been designed for greater of min roof live load of 12.0 psf or 1.00 times flat roof load of 13.9 psf on overhangs non-concurrent with other live loads.
  - 6) Gable studs spaced at 2-0-0 oc.
  - 7) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
  - 8) \* This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-6-0 tall by 2-0-0 wide will fit between the bottom chord and any other members.
  - 9) Refer to girder(s) for truss to truss connections.
  - 10) Bearing at joint(s) E considers parallel to grain value using ANSI/TPI 1 angle to grain formula. Building designer should verify capacity of bearing surface.
  - 11) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 100 lb uplift at joint(s) D, B except (jt=lb) E=115.



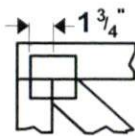
April 17, 2019

**WARNING - Verify design parameters and READ NOTES ON THIS AND INCLUDED MITEK REFERENCE PAGE Mil-7473 rev. 10/03/2015 BEFORE USE.**  
 Design valid for use only with MiTek® connectors. This design is based only upon parameters shown, and is for an individual building component, not a truss system. Before use, the building designer must verify the applicability of design parameters and properly incorporate this design into the overall building design. Bracing indicated is to prevent buckling of individual truss web and/or chord members only. Additional temporary and permanent bracing is always required for stability and to prevent collapse with possible personal injury and property damage. For general guidance regarding the fabrication, storage, delivery, erection and bracing of trusses and truss systems, see **ANSI/TPI1 Quality Criteria, DSB-89 and BCSI Building Component Safety Information** available from Truss Plate Institute, 218 N. Lee Street, Suite 312, Alexandria, VA 22314.

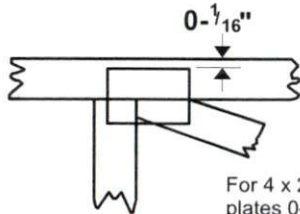
**ENGINEERING BY**  
**TRENCO**  
 A MiTek Affiliate  
 818 Soundside Road  
 Edenton, NC 27932

# Symbols

## PLATE LOCATION AND ORIENTATION



Center plate on joint unless x, y offsets are indicated. Dimensions are in ft-in-sixteenths. Apply plates to both sides of truss and fully embed teeth.



For 4 x 2 orientation, locate plates 0- $\frac{1}{16}$ " from outside edge of truss.



This symbol indicates the required direction of slots in connector plates.

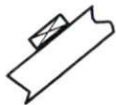
\* Plate location details available in MiTek 20/20 software or upon request.

## PLATE SIZE

4 x 4

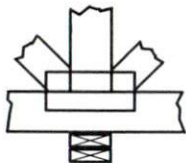
The first dimension is the plate width measured perpendicular to slots. Second dimension is the length parallel to slots.

## LATERAL BRACING LOCATION



Indicated by symbol shown and/or by text in the bracing section of the output. Use T or I bracing if indicated.

## BEARING



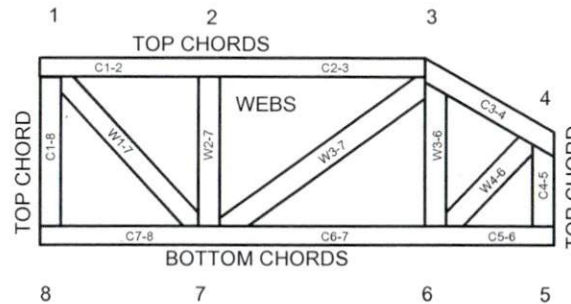
Indicates location where bearings (supports) occur. Icons vary but reaction section indicates joint number where bearings occur. Min size shown is for crushing only.

### Industry Standards:

- ANSI/TPI1: National Design Specification for Metal Plate Connected Wood Truss Construction.  
 DSB-89: Design Standard for Bracing.  
 BCSI: Building Component Safety Information, Guide to Good Practice for Handling, Installing & Bracing of Metal Plate Connected Wood Trusses.

# Numbering System

6-4-8 dimensions shown in ft-in-sixteenths (Drawings not to scale)



JOINTS ARE GENERALLY NUMBERED/LETTERED CLOCKWISE AROUND THE TRUSS STARTING AT THE JOINT FARTHEST TO THE LEFT.

CHORDS AND WEBS ARE IDENTIFIED BY END JOINT NUMBERS/LETTERS.

## PRODUCT CODE APPROVALS

ICC-ES Reports:

ESR-1311, ESR-1352, ESR1988  
 ER-3907, ESR-2362, ESR-1397, ESR-3282

Trusses are designed for wind loads in the plane of the truss unless otherwise shown.

Lumber design values are in accordance with ANSI/TPI 1 section 6.3 These truss designs rely on lumber values established by others.

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MiTek Engineering Reference Sheet: MII-7473 rev. 10/03/2015

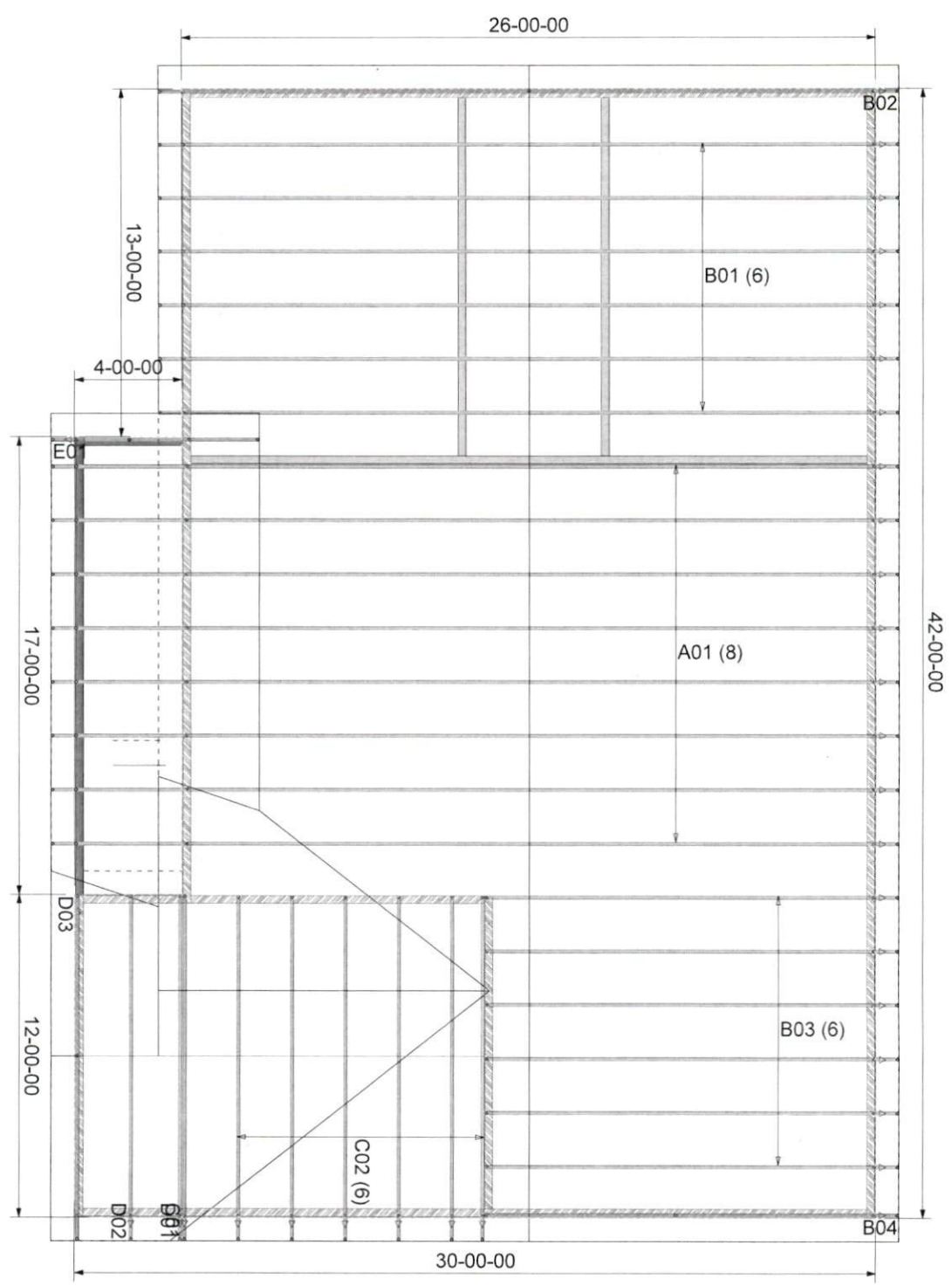
# General Safety Notes

## Failure to Follow Could Cause Property Damage or Personal Injury

1. Additional stability bracing for truss system, e.g. diagonal or X-bracing, is always required. See BCSI.
2. Truss bracing must be designed by an engineer. For wide truss spacing, individual lateral braces themselves may require bracing, or alternative Tor I bracing should be considered.
3. Never exceed the design loading shown and never stack materials on inadequately braced trusses.
4. Provide copies of this truss design to the building designer, erection supervisor, property owner and all other interested parties.
5. Cut members to bear tightly against each other.
6. Place plates on each face of truss at each joint and embed fully. Knots and wane at joint locations are regulated by ANSI/TPI 1.
7. Design assumes trusses will be suitably protected from the environment in accord with ANSI/TPI 1.
8. Unless otherwise noted, moisture content of lumber shall not exceed 19% at time of fabrication.
9. Unless expressly noted, this design is not applicable for use with fire retardant, preservative treated, or green lumber.
10. Camber is a non-structural consideration and is the responsibility of truss fabricator. General practice is to camber for dead load deflection.
11. Plate type, size, orientation and location dimensions indicated are minimum plating requirements.
12. Lumber used shall be of the species and size, and in all respects, equal to or better than that specified.
13. Top chords must be sheathed or purlins provided at spacing indicated on design.
14. Bottom chords require lateral bracing at 10 ft. spacing, or less, if no ceiling is installed, unless otherwise noted.
15. Connections not shown are the responsibility of others.
16. Do not cut or alter truss member or plate without prior approval of an engineer.
17. Install and load vertically unless indicated otherwise.
18. Use of green or treated lumber may pose unacceptable environmental, health or performance risks. Consult with project engineer before use.
19. Review all portions of this design (front, back, words and pictures) before use. Reviewing pictures alone is not sufficient.
20. Design assumes manufacture in accordance with ANSI/TPI 1 Quality Criteria.



= BEARING WALLS ARE SHADED  
 ALL POINT LOADS ARE < 3000#



Customer:		Customer	
Job Name	Lot # Subdivision	Plan Model	Plan Name
Level	Roof, Floor, Walls?	Drawn By	Job #
Scale	N.T.S.	Date	17-010001XX
		ABC	17-010001XX
BMC, NC & SC 1-800-672-2145			

THIS IS A TRUSS PLACEMENT DIAGRAM ONLY. These trusses are designed as individual building components to be incorporated into the building design at the specification of the building designer. It is the builder's responsibility to verify that the structure can support the entire roof or floor truss system. See engineered drawings for required lateral bracing and other information for each truss design identified on this placement drawing. The building designer is responsible for permanent bracing of the roof and floor system and for the overall structure. For general guidance regarding bracing, consult the BC3-B1 SUMMARY SHEET provided by BMC. THE BUILDER IS CAUTIONED TO seek professional advice or follow the bracing guidelines of BC3-B1 while installing the trusses in order to prevent topping or doming of inadequately braced trusses.

THE BIRCH "B"  
JOHNSON BUILDING  
COMPANY INC.

#1140  
HEATED FOOTAGE:

SQUARE FOOTAGE:  
FRONT FLOOR = 68  
FRONT PORCH = 140

HEATHER HALL  
165 HEATHERSTONE CT  
BENSON NC 27504  
(919) 207-1403

H SQUARED  
HOME  
DESIGN, INC.

ANY DEVIATION OF THE  
SPECIFIED REQUIREMENTS  
SHALL BE THE RESPONSIBILITY  
OF H SQUARED HOME DESIGN,  
INC.'S LIABILITY.

THIS PLAN HAS BEEN DRAWN  
IN ACCORDANCE WITH NORTH  
CAROLINA BUILDING CODES  
BUILDING CODES 2008 EDITION.

THIS PLAN IS TO  
BE USED BY THE  
CITY BUILDER  
OR HOMEOWNER.  
NOT FOR MULTIPLE  
PERMITS UNLESS  
APPROVED BY  
H SQUARED.

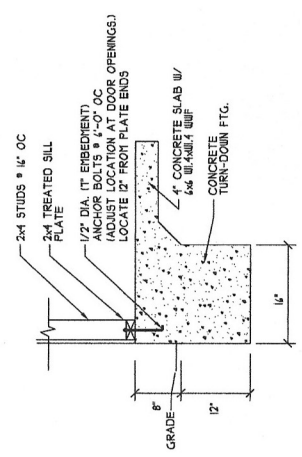
DATE: 02/19/19

1 STORY

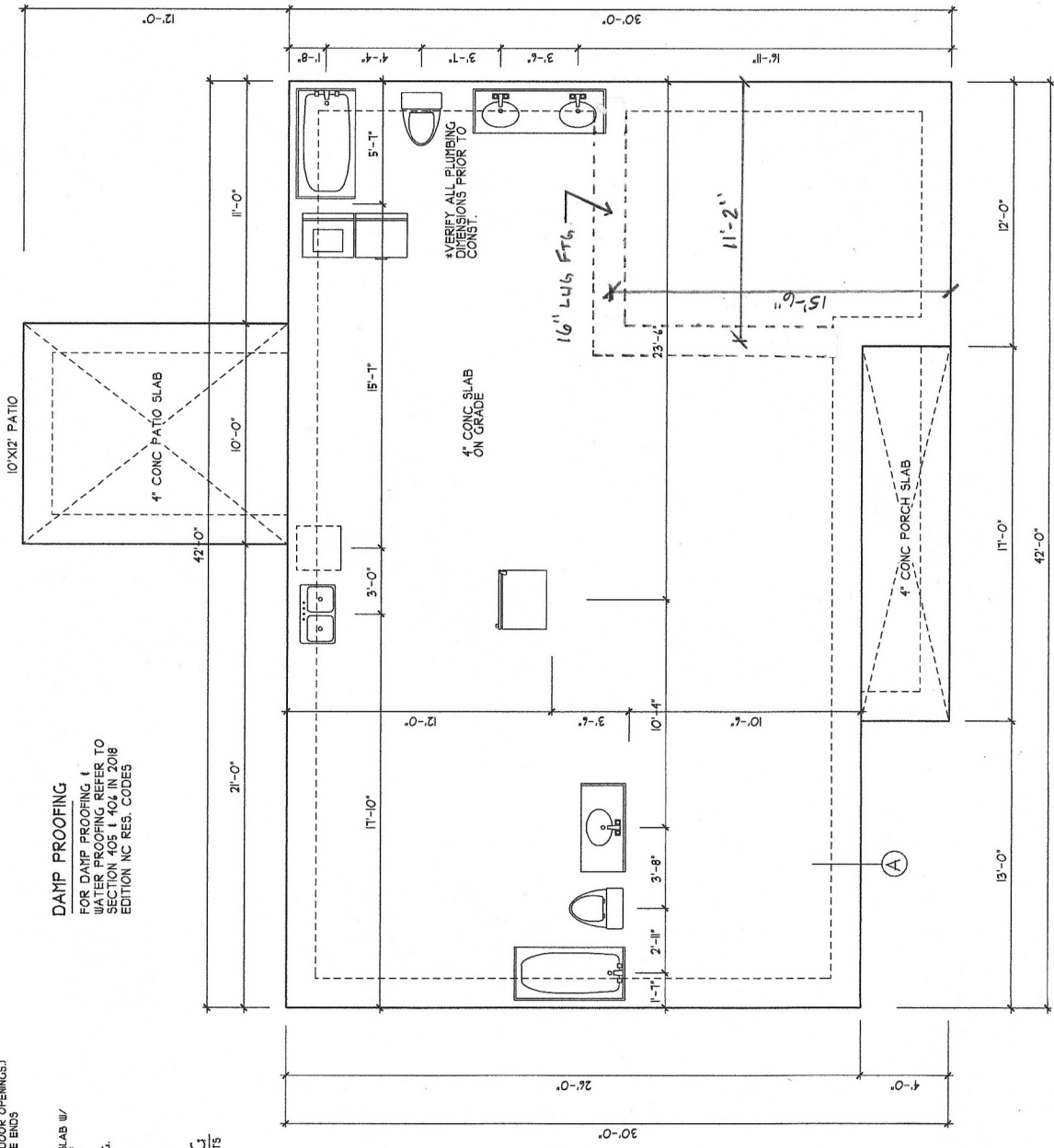
FILE: 051318

**ANCHOR BOLTS**  
ANCHOR BOLTS TO BE  
PLACED 24" ON CENTER  
FROM CORNER AND FROM  
EVERY SPICE AND AT 1'-0"  
O.C. WITH 7" MIN. IN CONC.

**DAMP PROOFING**  
FOR DAMP PROOFING &  
WATER PROOFING REFER TO  
SECTION 405 & 404 IN 2018  
EDITION NC RES. CODES

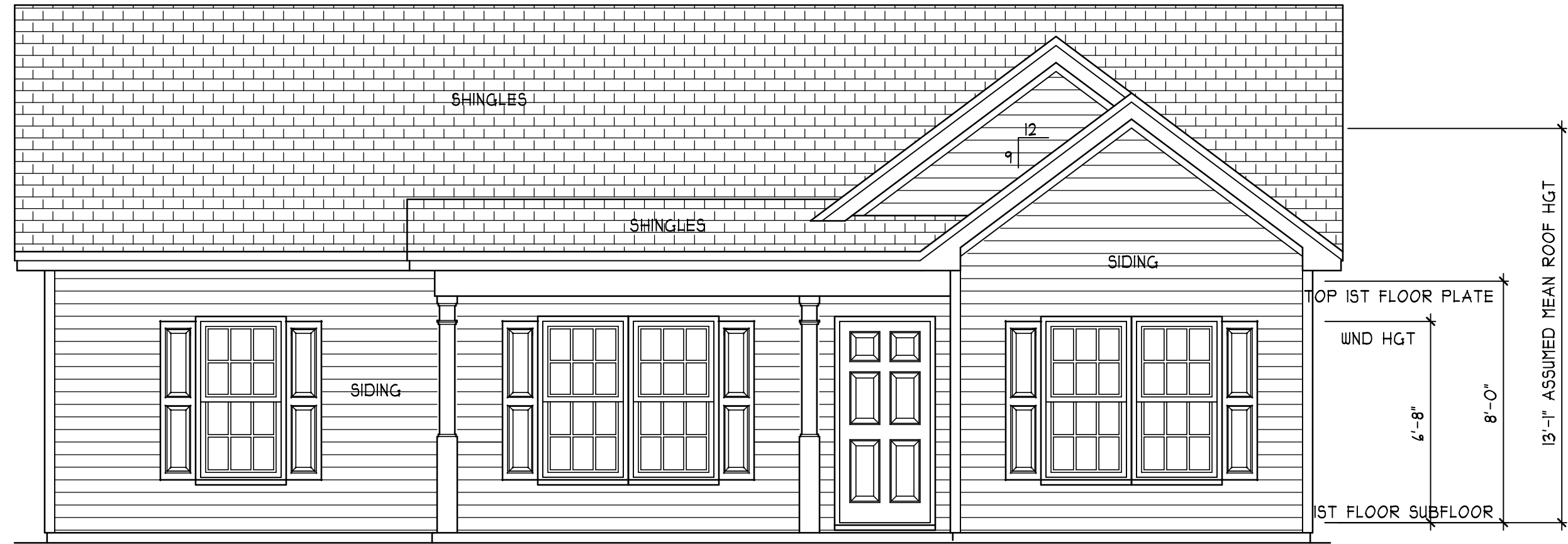


A TURN DOWN SLAB FOOTING  
NTS



FOUNDATION PLAN  
SCALE 1/4" = 1'-0"



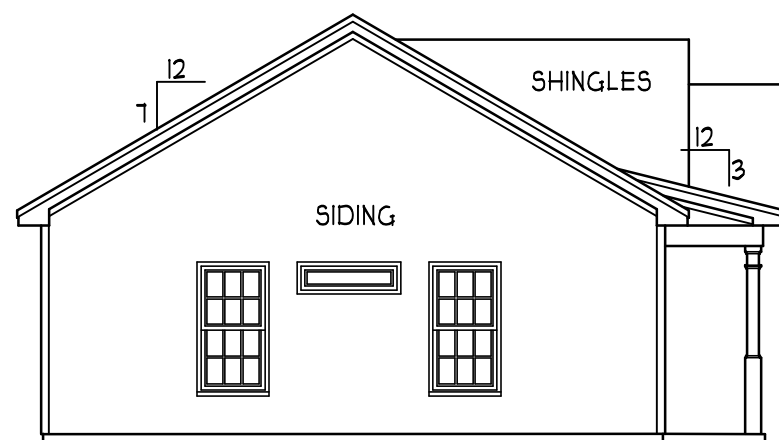


FRONT ELEVATION "B"  
SCALE 1/4" = 1'-0"

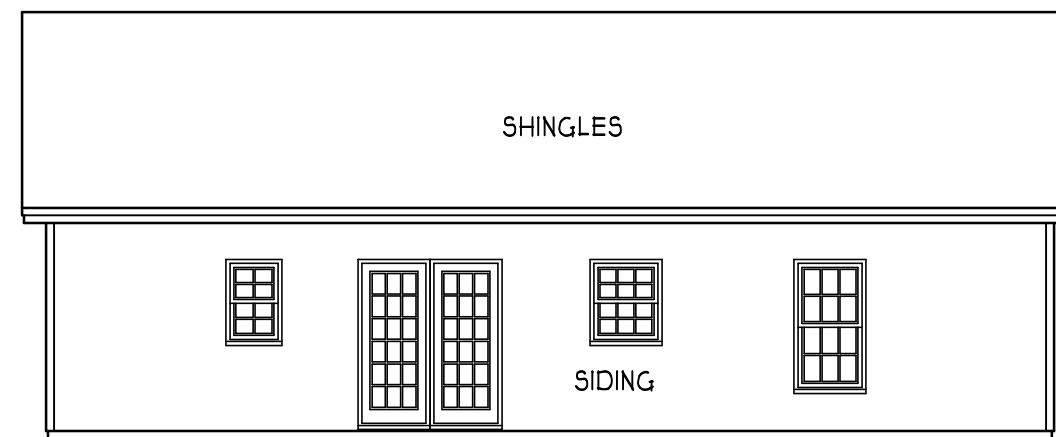
**ATTIC VENTILATION:**

THE NET FREE VENTILATING AREA SHALL BE NOT LESS THAN 1 TO 150 OF THE AREA OF THE SPACE VENTILATED EXCEPT THAT THE AREA MAY BE 1 TO 300 PROVIDED AT LEAST 50 PERCENT OF THE REQUIRED VENTILATING AREA IS PROVIDED BY VENTILATORS LOCATED IN THE UPPER PORTION OF THE SPACE TO BE VENTILATED AT LEAST 3 FEET ABOVE EAVE OR CORNICE VENTS WITH THE BALANCE OF THE REQUIRED VENTILATION TO BE PROVIDED BY EAVE OR CORNICE VENTS.

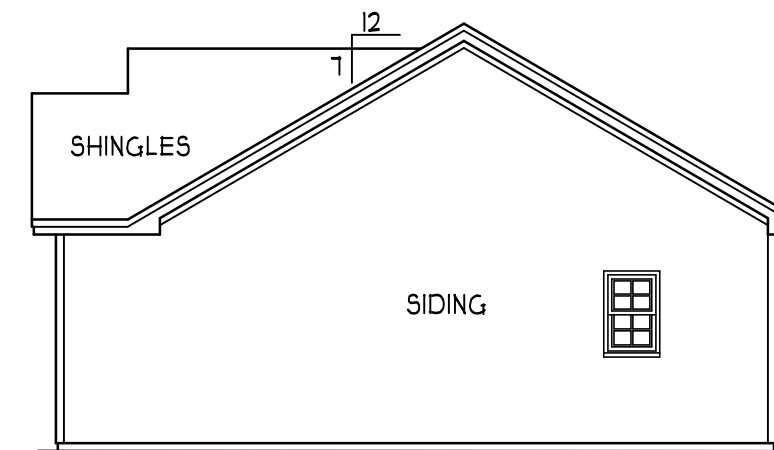
GROSS ATTIC AREA TO BE VENTILATED 1208 SQ.FT.  
1208/150 = 8.05 SQ.FT. NET FREE AREA



LEFT ELEVATION  
SCALE 1/8" = 1'-0"



REAR ELEVATION  
SCALE 1/8" = 1'-0"



RIGHT ELEVATION  
SCALE 1/8" = 1'-0"

**ENERGY COMPLIANCE**

ZONE 3 = MAX. GLAZING U-FACTOR .35  
R-VALUE = CEILING R38, WALLS R15, FLOORS R19  
FOR JOHNSTON, SAMPSON, WAYNE COUNTY

ZONE 4 = MAX. GLAZING U-FACTOR .35  
R-VALUE = CEILING R38, WALLS R15, FLOORS R19  
FOR WAKE, DURHAM, ORANGE COUNTY

THE BIRCH "B"  
JOHNSON BUILDING  
COMPANY INC.

HEATED FOOTAGE:  
#1140

SQUARE FOOTAGE:  
FIRST FLOOR = 1140  
FRONT PORCH = 68

HEATHER HALL  
165 HEATHERSTONE CT  
BENSON NC 27504  
(919) 207-1403

H SQUARED HOME DESIGN, INC.

ANY DEVIATION OF THE SPECIFIED MEASUREMENTS OR DIMENSIONS VOIDS H SQUARED HOME DESIGN, INC.'S LIABILITY.

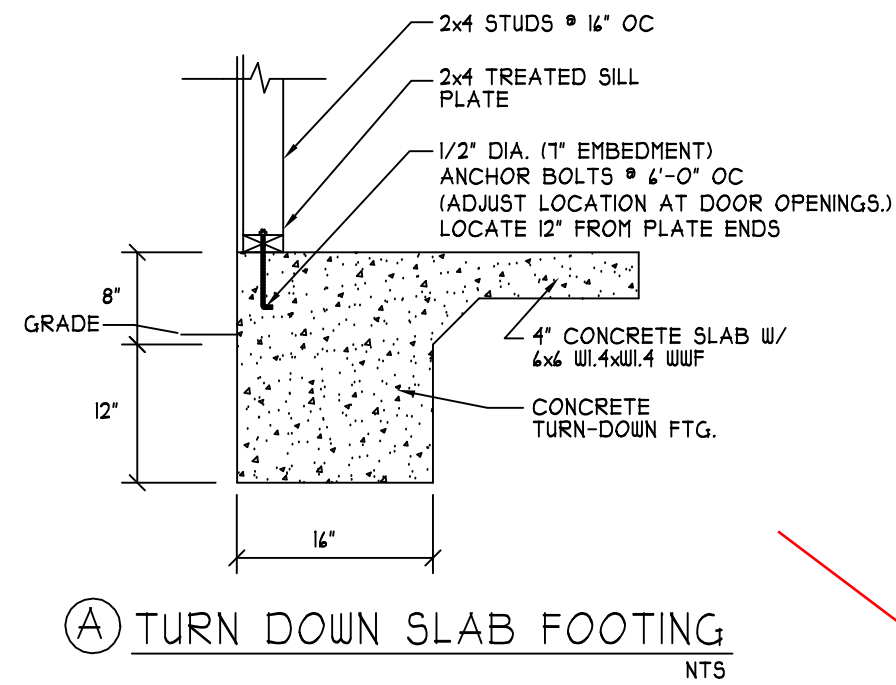
THIS PLAN HAS BEEN DRAWN IN ACCORDANCE WITH NORTH CAROLINA STATE RESIDENTIAL BUILDING CODES 2018 EDITION.

THIS PLAN IS TO ONLY BE BUILT BY THE ABOVE CITED BUILDER OR HOMEOWNER. NOT FOR MULTIPLE BUILDS UNLESS APPROVED BY H SQUARED.

DATE: 03/19/19

1 STORY

FILE: 051318



**ANCHOR BOLTS**

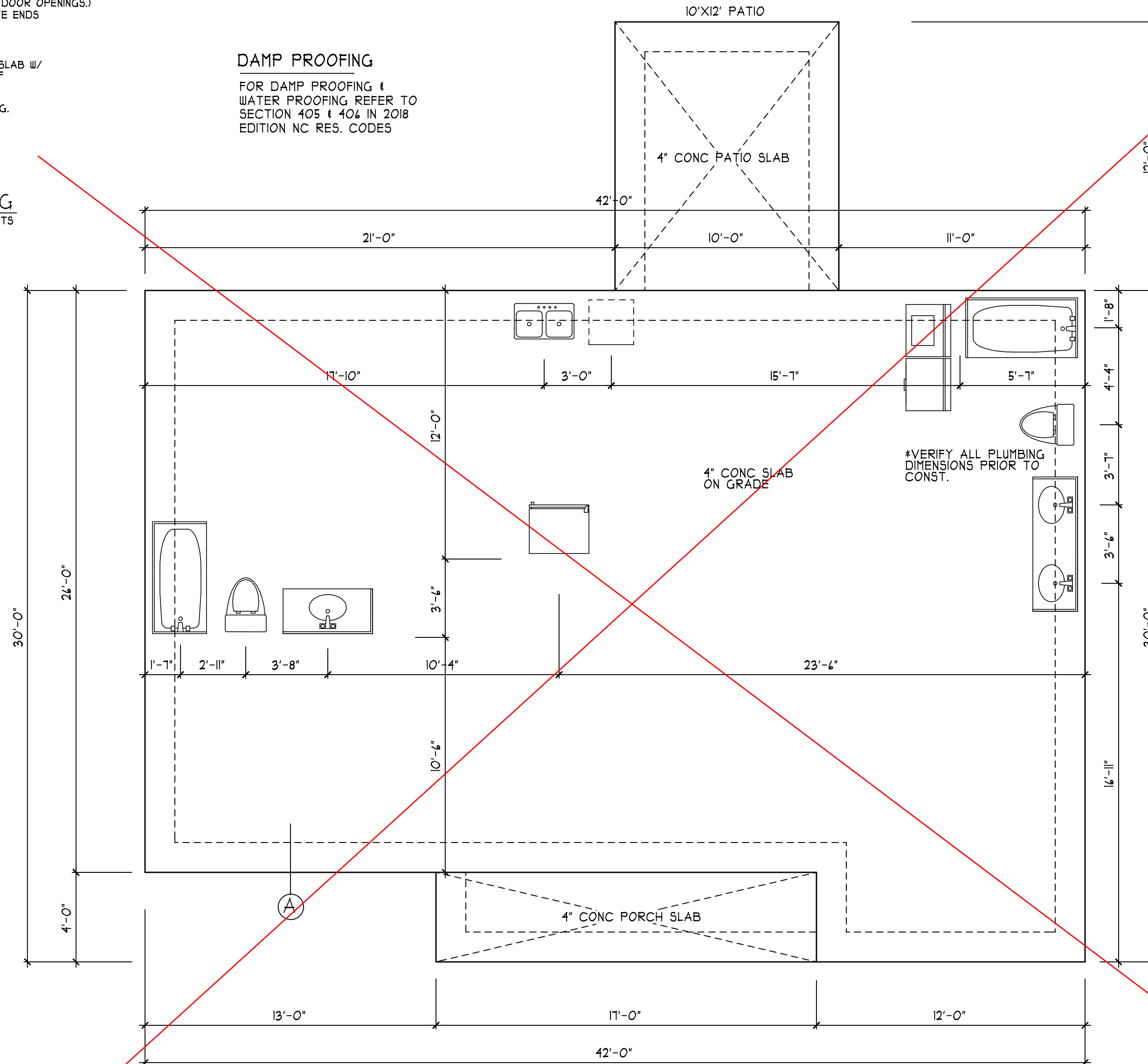
ANCHOR BOLTS TO BE PLACED WITHIN 12" OF EVERY CORNER AND FROM EVERY SPLICE AND AT 4'-0" O.C. WITH 1" MIN. IN CONC.

**DAMP PROOFING**

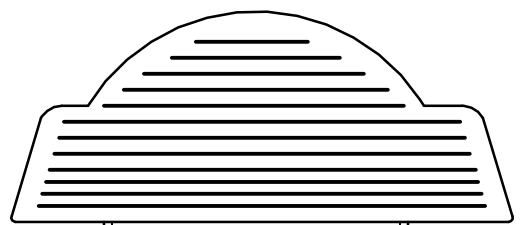
FOR DAMP PROOFING & WATER PROOFING REFER TO SECTION 405 & 406 IN 2018 EDITION NC RES. CODES

(A) TURN DOWN SLAB FOOTING  
NTS

Use updated plan page in attachments



FOUNDATION PLAN  
SCALE 1/4" = 1'-0"



THE BIRCH "B"  
JOHNSON BUILDING  
COMPANY INC.

HEATED FOOTAGE:  
#1140

SQUARE FOOTAGE:  
FIRST FLOOR = 1140  
FRONT PORCH = 68

HEATHER HALL  
165 HEATHERSTONE CT  
BENSON NC 27504  
(919) 207-1403

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HOME  
DESIGN, INC.

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THIS PLAN HAS BEEN DRAWN IN ACCORDANCE WITH NORTH CAROLINA STATE RESIDENTIAL BUILDING CODES 2018 EDITION.

THIS PLAN IS TO ONLY BE BUILT BY THE ABOVE CITED BUILDER OR HOMEOWNER. NOT FOR MULTIPLE BUILDS UNLESS APPROVED BY H SQUARED.

DATE:  
03/19/19

1 STORY

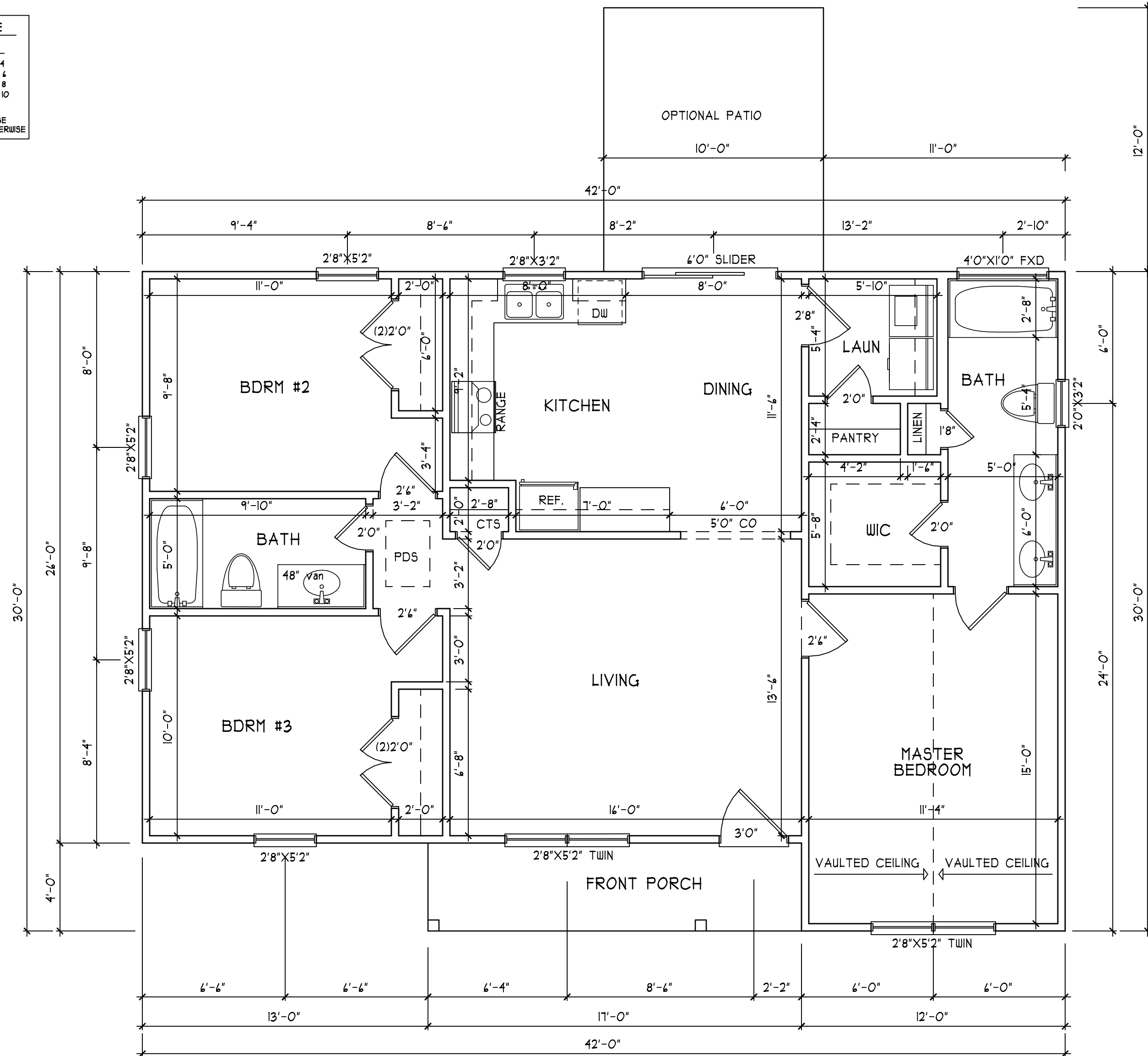
FILE:  
051318



GENERAL HEADER SCH.

HEADER SCHEDULE	
SPAN	SIZE
LESS THAN 3'-0"	(2) 2 X 4
3'-0" to 4'-0"	(2) 2 X 6
4'-0" to 5'-0"	(2) 2 X 8
5'-0" to 8'-0"	(2) 2 X 10

ALL EXTERIOR OR LOAD BEARING HEADERS SHALL BE (2)2X10 UNLESS NOTED OTHERWISE



FIRST FLOOR PLAN  
SCALE 1/4" = 1'-0"

THE BIRCH "B"  
JOHNSON BUILDING  
COMPANY INC.

HEATED FOOTAGE:  
#1140

SQUARE FOOTAGE:  
FIRST FLOOR = 1140  
FRONT PORCH = 68

HEATHER HALL  
165 HEATHERSTONE CT  
BENSON NC 27504  
(919) 207-1403

H SQUARED  
HOME  
DESIGN, INC.

ANY DEVIATION OF THE SPECIFIED MEASUREMENTS OR DIMENSIONS VOIDS H SQUARED HOME DESIGN, INC.'S LIABILITY.

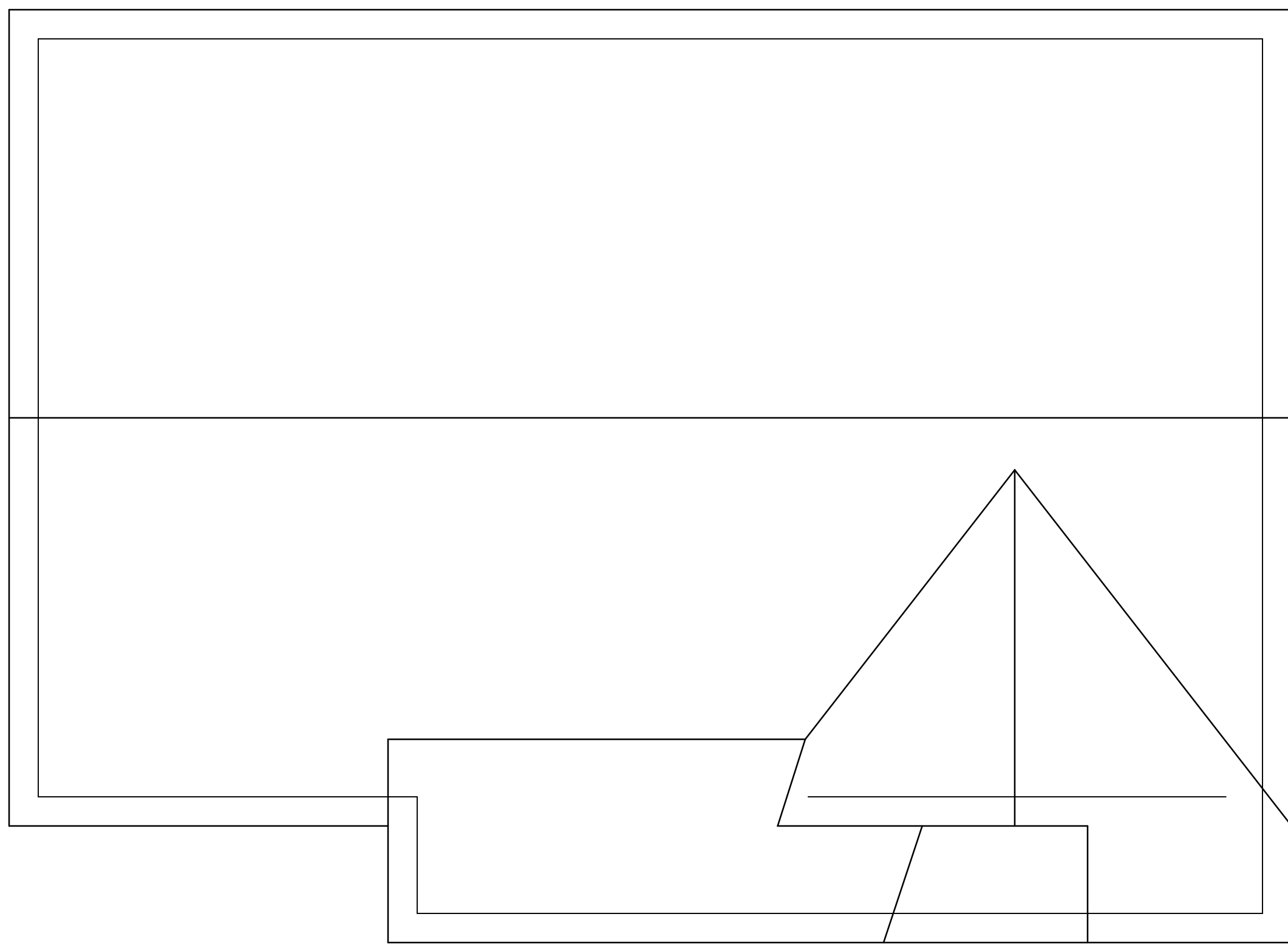
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DATE:  
03/19/19

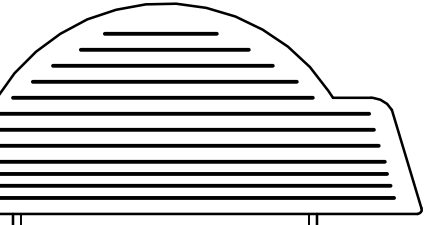
1 STORY

FILE:  
051318



4'-0"

**ROOF PLAN**  
SCALE 1/4" = 1'-0"

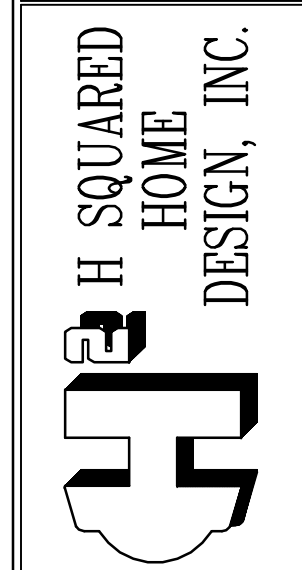


**THE BIRCH "B"**  
JOHNSON BUILDING  
COMPANY INC.

HEATED FOOTAGE:  
**#1140**

SQUARE FOOTAGE:  
FIRST FLOOR = 1140  
FRONT PORCH = 68

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DATE: 03/19/19

1 STORY

FILE: 051318



# STRUCTURAL NOTES

1) ENGINEER'S SEAL APPLIES ONLY TO STRUCTURAL COMPONENTS INCLUDING ROOF RAFTERS, HIPs, VALLEYS, RIDGES, FLOORS, WALLS, BEAMS AND HEADERS, COLUMNS, CANTILEVERS, OFFSET LOAD BEARING WALLS, PIER & GIRDER SYSTEM AND FOOTINGS. ENGINEER'S SEAL DOES NOT CERTIFY DIMENSIONAL ACCURACY OR ARCHITECTURAL LAYOUT INCLUDING ROOF SYSTEM. ALL REQUIREMENTS FOR PROFESSIONAL CERTIFICATION SHALL BE PROVIDED BY THE APPROPRIATE PROFESSIONAL.

2) ALL CONSTRUCTION SHALL CONFORM TO THE LATEST REQUIREMENTS OF THE NORTH CAROLINA STATE RESIDENTIAL CODE - 2018 EDITION, PLUS ALL LOCAL CODES AND REGULATIONS. THE STRUCTURAL ENGINEER IS NOT RESPONSIBLE FOR, AND WILL NOT HAVE CONTROL OF, CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES OR PROCEDURES, OR FOR SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE CONSTRUCTION WORK, NOR WILL THE ENGINEER BE RESPONSIBLE FOR THE CONTRACTOR'S FAILURE TO CARRY OUT THE CONSTRUCTION WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. \*CONSTRUCTION REVIEW SERVICES ARE NOT PART OF OUR CONTRACT. ALL MEMBERS SHALL BE FRAMED, ANCHORED, TIED AND BRACED IN ACCORDANCE WITH GOOD CONSTRUCTION PRACTICE AND THE BUILDING CODE.

DESIGN LOADS (R301.4)	LIVE LOAD (PSF)	DEAD LOAD (PSF)	DEFLECTION (LL)
ROOMS OTHER THAN SLEEPING ROOMS	40	10	L/360
SLEEPING ROOMS	30	10	L/360
ATTIC WITH PERMANENT STAIR	40	10	L/360
ATTIC WITH OUT PERMANENT STAIR	20	10	L/360
ATTIC WITH OUT STORAGE	10	10	L/240
STAIRS	40	---	L/360
EXTERIOR BALCONIES	40	---	L/360
DECKS	40	10	L/360
GUARDRAILS AND HANDRAILS	200	---	---
PASSENGER VEHICLE GARAGES	50	10	L/340
FIRE ESCAPES	50	10	L/340
SNOW	20	---	---
WIND LOAD (BASED ON 120 MPH WIND VELOCITY & EXPOSURE B FOR JoCo)	---	---	---

4) WALL BRACING: BRACED WALL PANELS SHALL BE CONSTRUCTED ACCORDING TO SECTION R602.10.3. THE AMOUNT AND LOCATION OF BRACING SHALL COMPLY WITH TABLE R602.10.1. THE LENGTH OF BRACED PANELS SHALL BE DETERMINED BY SECTION R602.10.4. LATERAL BRACING SHALL BE SATISFIED PER METHOD 3 BY CONTINUOUSLY SHEATHING WALLS WITH STRUCTURAL SHEATHING PER SECTION R602.10.3. NOTE THAT ANY SPECIFIC BRACED WALL DETAIL SHALL BE INSTALLED AS SPECIFIED.

5) CONCRETE SHALL HAVE A MINIMUM 28 DAY STRENGTH OF 3000 PSI AND A MAXIMUM SLUMP OF 5 INCHES UNLESS NOTED OTHERWISE (UNO). AIR ENTRAINMENT PER TABLE 402.2. ALL CONCRETE SHALL BE PROPORTIONED, MIXED, HANDLED, SAMPLED, TESTED, AND PLACED IN ACCORDANCE WITH ACI STANDARDS. ALL SAMPLES FOR PUMPING SHALL BE TAKEN FROM THE EXIT END OF THE PUMP.

6) ALLOWABLE SOIL BEARING PRESSURE ASSUMED TO BE 2000 PSF. THE CONTRACTOR MUST CONTACT A GEOTECHNICAL ENGINEER AND THE STRUCTURAL ENGINEER IF UNSATISFACTORY SUBSURFACE CONDITIONS ARE ENCOUNTERED. THE SURFACE AREA ADJACENT TO THE FOUNDATION WALL SHALL BE PROVIDED WITH ADEQUATE DRAINAGE, AND SHALL BE GRADED SO AS TO DRAIN SURFACE WATER AWAY FROM FOUNDATION WALLS.

7) ALL FRAMING LUMBER SHALL BE SPF #2 (F<sub>b</sub> = 875 PSI) UNLESS NOTED OTHERWISE (UNO). ALL TREATED LUMBER SHALL BE SYP #2 (F<sub>b</sub> = 915 PSI). PLATE MATERIAL MAY BE SPF #3 OR SYP #3 (F<sub>c(perp)</sub> = 425 PSI - MIN).

8) ALL WOODEN BEAMS AND HEADERS SHALL HAVE THE FOLLOWING END SUPPORTS:  
(1) 2x4 STUD COLUMN FOR 4'-0" MAX. BEAM SPAN (UNO), (2) 2x4 STUDS FOR BEAM SPAN GREATER THAN 4'-0" (UNO).

9) L.V.L. SHALL BE LAMINATED VENEER LUMBER: F<sub>b</sub>=2400 PSI, F<sub>v</sub>=285 PSI, E=1.9x10<sup>6</sup> PSI. P.S.L. SHALL BE PARALLEL STRAND LUMBER: F<sub>b</sub>=2900 PSI, F<sub>v</sub>=290 PSI, E=2.0x10<sup>6</sup> PSI. L.S.L. SHALL BE LAMINATED STRAND LUMBER: F<sub>b</sub>=2250 PSI, F<sub>v</sub>=400 PSI, E=1.55x10<sup>6</sup> PSI. INSTALL ALL CONNECTIONS PER MANUFACTURERS INSTRUCTIONS.

10) ALL ROOF TRUSS AND I-JOIST LAYOUTS SHALL BE PREPARED IN ACCORDANCE WITH ANY SEALED STRUCTURAL DRAWINGS. TRUSSES AND I-JOISTS SHALL BE INSTALLED ACCORDING TO THE MANUFACTURE'S SPECIFICATIONS. ANY CHANGE IN TRUSS OR I-JOIST LAYOUT SHALL BE COORDINATED WITH DESIGNER OR ENGINEER.

11) ALL STRUCTURAL STEEL SHALL BE ASTM A-36. STEEL BEAMS SHALL BE SUPPORTED AT EACH END WITH A MINIMUM BEARING LENGTH OF 3 1/2 INCHES AND FULL FLANGE WIDTH. PROVIDE SOLID BEARING FROM BEAM SUPPORT TO FOUNDATION. BEAMS SHALL BE ATTACHED TO EACH SUPPORT WITH TWO LAG SCREWS (1/2" DIAMETER x 4" LONG). LATERAL SUPPORT IS CONSIDERED ADEQUATE PROVIDED THE JOIST ARE TOE NAILED TO THE SOLE PLATE, AND SOLE PLATE IS NAILED OR BOLTED TO THE BEAM FLANGE @ 48" O.C. . ALL STEEL TUBING SHALL BE ASTM A500.

12) REBAR SHALL BE DEFORMED STEEL, ASTM#65, GRADE 60.

13) FLITCH BEAMS SHALL BE BOLTED TOGETHER USING (2) ROWS OF 1/2" DIAMETER BOLTS (ASTM A307) WITH WASHERS PLACED UNDER THE THREADED END OF BOLT. BOLTS SHALL BE SPACED AT 24" O.C. (MAX), AND STAGGERED AT THE TOP AND BOTTOM OF BEAM (2" EDGE DISTANCE), WITH 2 BOLTS LOCATED AT 4" FROM EACH END.

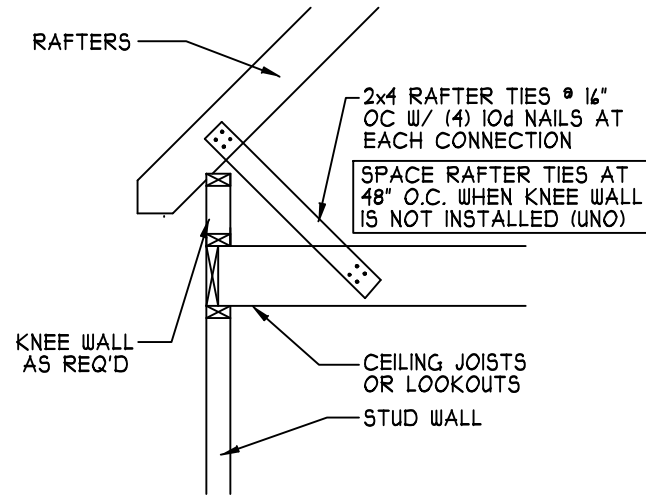
14) BRICK LINTELS SHALL BE 3 1/2"x3 1/2"x1/4" STEEL ANGLE FOR UP TO 4'-0" SPAN AND 4"x4"x5/16" STEEL ANGLE WITH 4" LEG VERTICAL FOR SPANS UP TO 9'-0" (UNO).

15) THE POSITIVE AND NEGATIVE DESIGN PRESSURE FOR DOORS AND WINDOWS FOR A MEAN ROOF HEIGHT OF 35 FEET OR LESS SHALL BE 25 PSF.

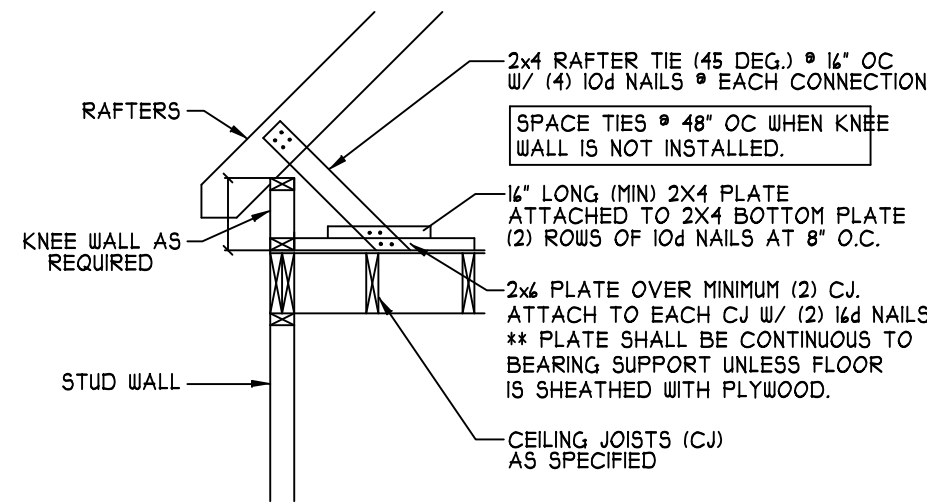
16) THE POSITIVE AND NEGATIVE DESIGN PRESSURES REQUIRED FOR ANY ROOF OR WALL CLADDING APPLICATION NOT SPECIFICALLY ADDRESSED IN THE NORTH CAROLINA STATE RESIDENTIAL CODE - 2018 EDITION SHALL BE AS FOLLOWS:

ROOF:  
45.4 PSF - 2.25:12 PITCH OR LESS  
34.8 PSF - 2.25:12 TO 1:12 PITCH  
21 PSF - 1:12 TO 12:12 PITCH

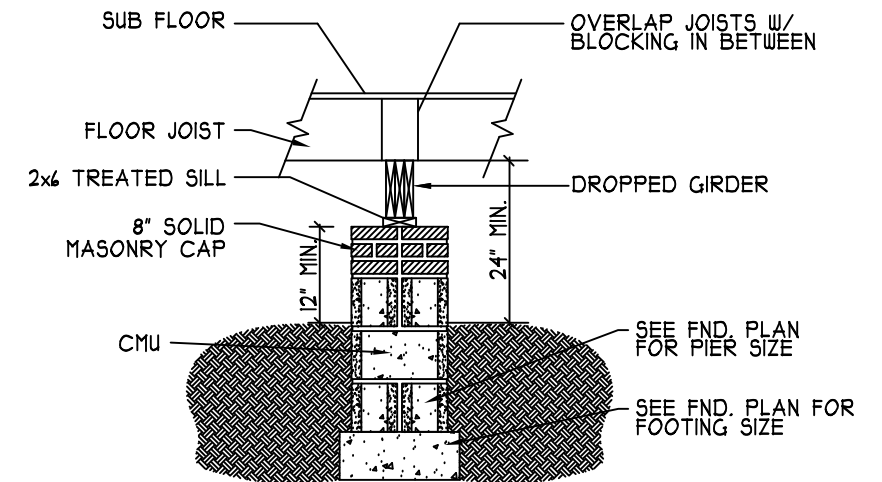
WALLS:  
24.1 PSF - WALLS



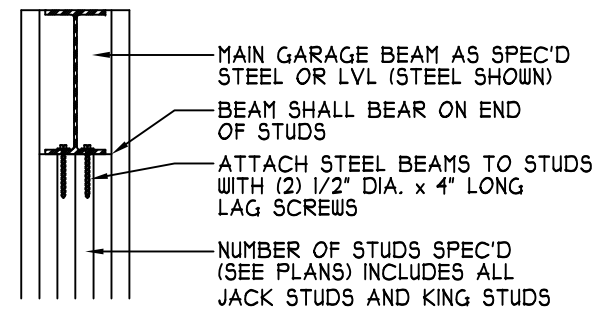
○ RAFTER TIE DOWN (TYP) NTS.



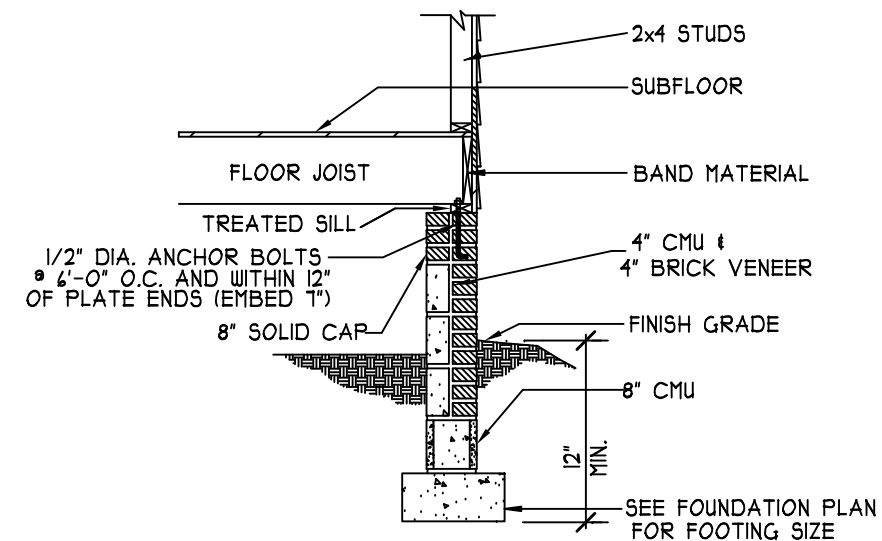
○ RAFTER TIE DOWN (TYP) (RAFTERS PERPENDICULAR TO JOISTS) NTS.



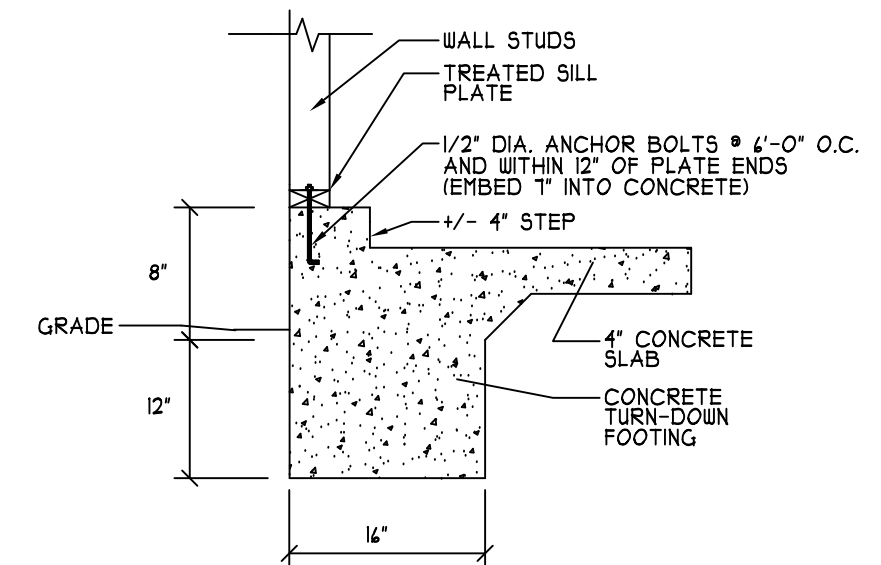
○ DROPPED GIRDER NTS



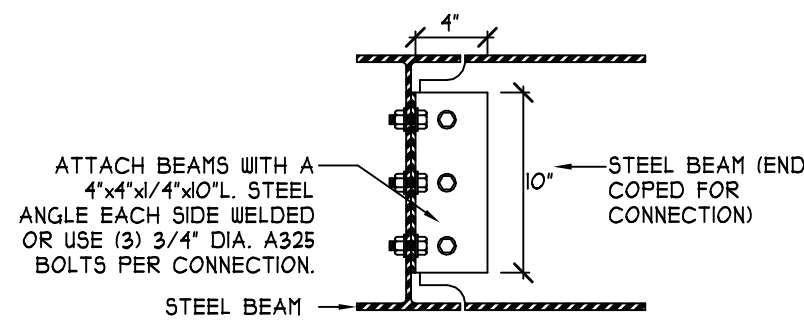
○ TYP. GARAGE BEAM BEARING NTS



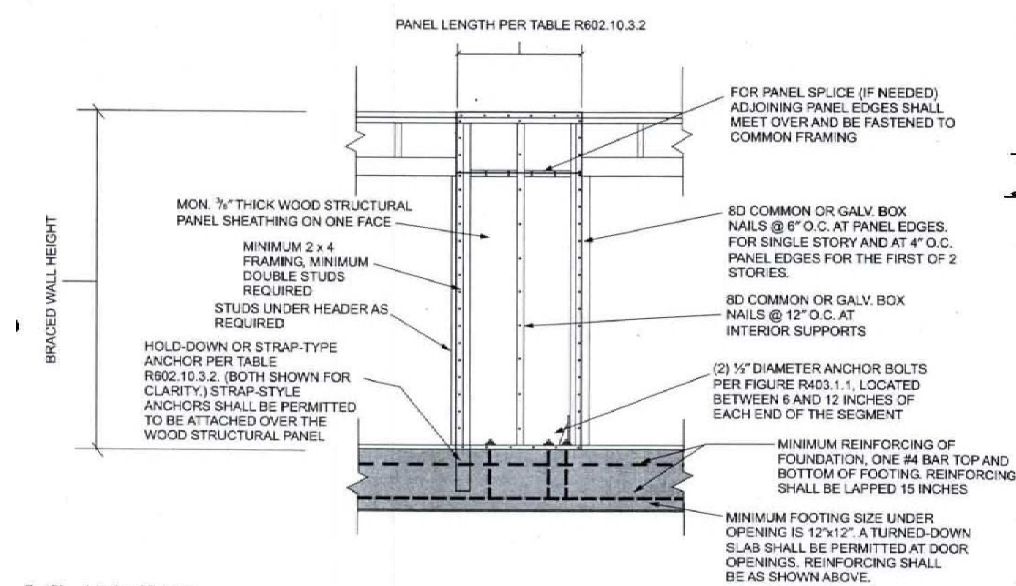
○ CRAWL SECTION NTS



○ TURN DOWN SLAB @ GARAGE (SIDING) NTS

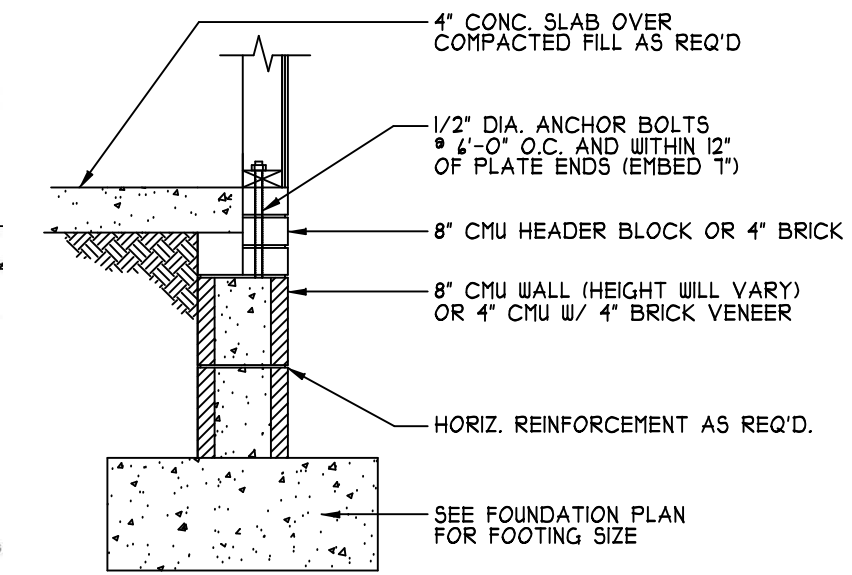


○ BEAM CONNECTION DETAIL (THREE BOLTS) NTS

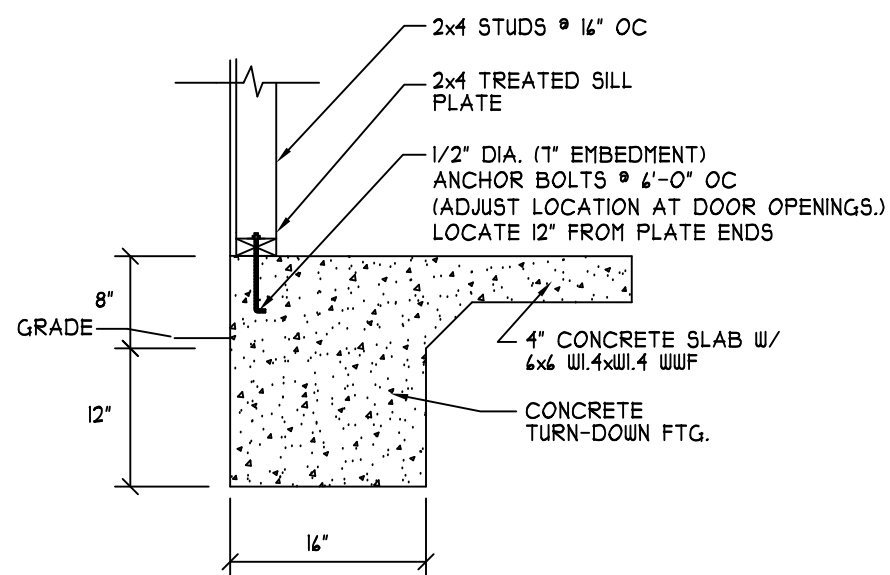


For S1: 1 inch = 25.4 mm.

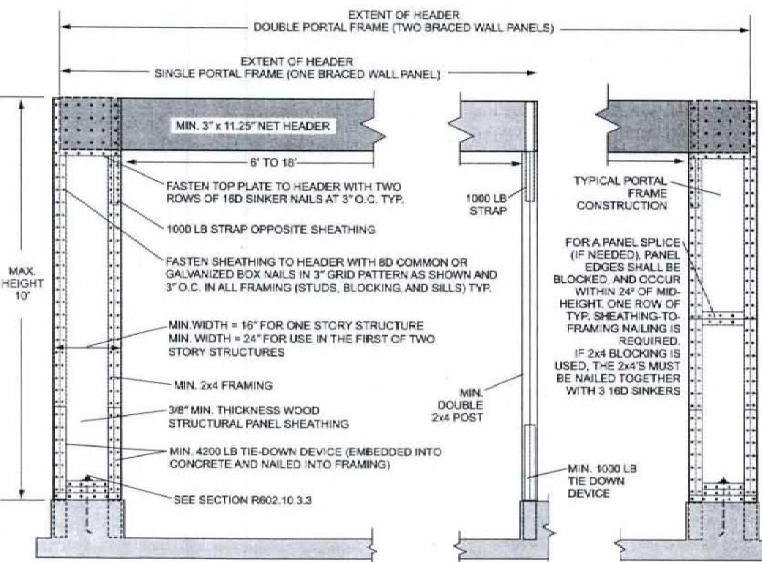
FIGURE R602.10.3.2 ALTERNATE BRACED WALL PANEL



○ SLAB FND. W/ STEM WALL NTS

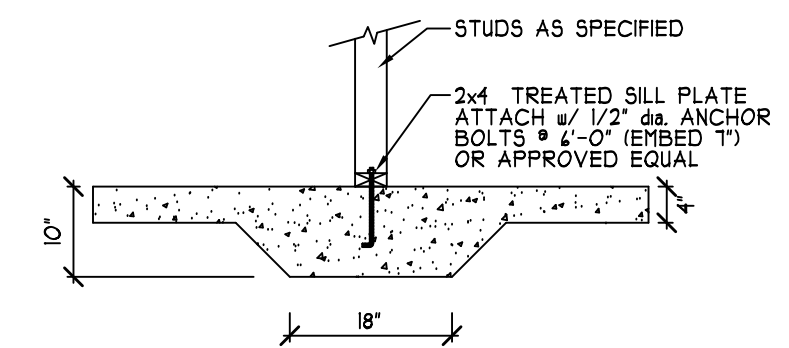


○ TURN DOWN SLAB FOOTING NTS

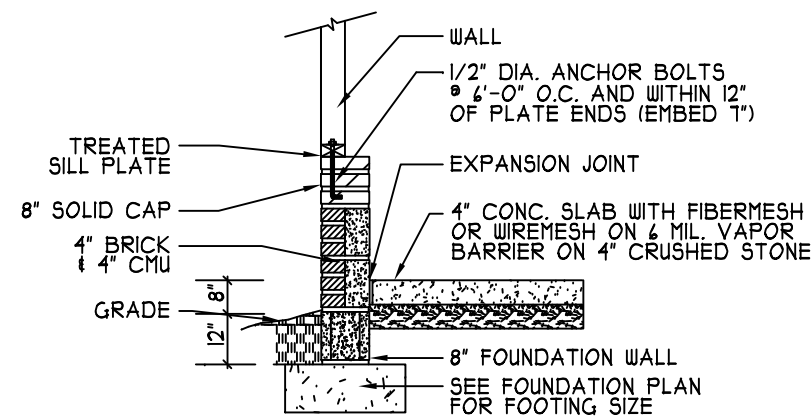


For S1: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 pound force = 4.448 N.

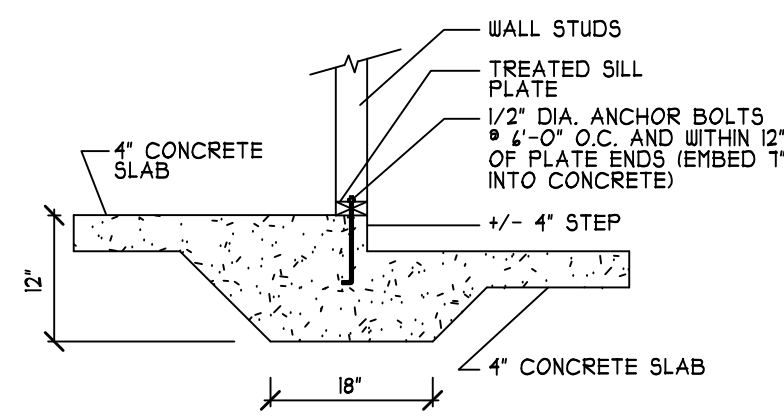
FIGURE R602.10.3.3 METHOD PFH: PORTAL FRAME WITH HOLD-DOWNS



○ TYPICAL THICKENED SLAB NTS



○ GARAGE SLAB NTS



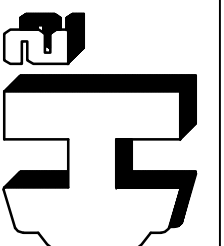
○ TYPICAL THICKENED SLAB NTS

BASIC BUILDING  
DETAIL SHEET

\*PLEASE NOTE THAT NOT  
ALL DETAILS APPLY TO  
EVERY PLAN.

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