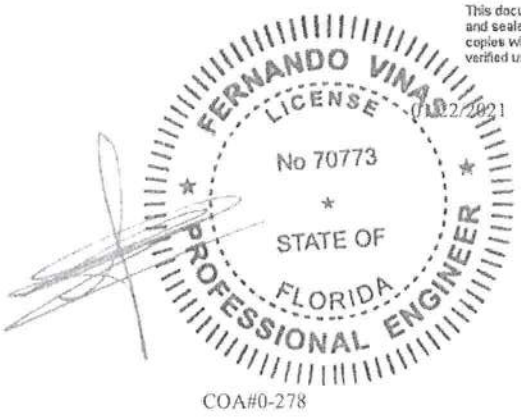
#39440



1/22/2021

COA#0-278

This document has been electronically signed and sealed using a Digital Signature. Printed copies without an original signature must be verified using the original electronic version.

ALPINE
AN ITW COMPANY

Alpine, an ITW Company
6750 Forum Drive, Suite 305
Orlando, FL 32821
Phone: (800)755-6001
www.alpineitw.com

Site Information:	Page 1:
Customer: W. B. Howland Company, Inc.	*Job Number:* 19-3781 REPAIR
Job Description: 19-3781 REPAIR	
Address:	

Job Engineering Criteria:	
Design Code: FBC 2017 RES	*IntelliVIEW Version:* 20.01.01A *JRef #:* 1X292150006
Wind Standard: ASCE 7-10 *Wind Speed (mph):* 130 *Building Type:* Closed	*Design Loading (psf):* 40.00

This package contains general notes pages, 2 truss drawing(s) and 0 detail(s).

Item	Drawing Number	Truss
1	022.21.1052.21077	B10

Item	Drawing Number	Truss
2	022.21.1115.13730	B09

General Notes

Truss Design Engineer Scope of Work, Design Assumptions and Design Responsibilities:
The design responsibilities assumed in the preparation of these design drawings are those specified in ANSI/TPI 1, Chapter 2; and the National Design Standard for Metal Plate Connected Wood Truss Construction, by the Truss Plate Institute. The truss component designs conform to the applicable provisions of ANSI/TPI 1 and NDS, the National Design Specification for Wood Construction by AWC. The truss component designs are based on the specified loading and dimension information furnished by others to the Truss Design Engineer. The Truss Design Engineer has no duty to independently verify the accuracy or completeness of the information provided by others and may rely on that information without liability. The responsibility for verification of that information remains with others neither employed nor controlled by the Truss Design Engineer. The Truss Design Engineer's seal and signature on the attached drawings, or cover page listing these drawings, indicates acceptance of professional engineering responsibility solely for the truss component designs and not for the technical information furnished by others which technical information and consequences thereof remain their sole responsibility.

The suitability and use of these drawings for any particular structure is the responsibility of the Building Designer in accordance with ANSI/TPI 1 Chapter 2. The Building Designer is responsible for determining that the dimensions and loads for each truss component match those required by the plans and by the actual use of the individual component, and for ascertaining that the loads shown on the drawings meet or exceed applicable building code requirements and any additional factors required in the particular application. Truss components using metal connector plates with integral teeth shall not be placed in environments that will cause the moisture content of the wood in which plates are embedded to exceed 19% and/or cause corrosion of connector plates and other metal fasteners.

The Truss Design Engineer shall not be responsible for items beyond the specific scope of the agreed contracted work set forth herein, including but not limited to: verifying the dimensions of the truss component, calculation of any of the truss component design loads, inspection of the truss components before or after installation, the design of temporary or permanent bracing and their attachment required in the roof and/or floor systems, the design of diaphragms or shear walls, the design of load transfer connections to and from diaphragms and shear walls, the design of load transfer to the foundation, the design of connections for truss components to their bearing supports, the design of the bearing supports, installation of the truss components, observation of the truss component installation process, review of truss assembly procedures, sequencing of the truss component installation, construction means and methods, site and/or worker safety in the installation of the truss components and/or its connections.

This document may be a high quality facsimile of the original engineering document which is a digitally signed electronic file with third party authentication. A wet or embossed seal copy of this engineering document is available upon request.

Temporary Lateral Restraint and Bracing:
Temporary lateral restraint and diagonal bracing shall be installed according to the provisions of BCSI chapters B1, B2, B7 and/or B10 (Building Component Safety Information, by TPI and SBCA), or as specified by the Building Designer or other Registered Design Professional. The required locations for lateral restraint and/or bracing depicted on these drawings are only for the permanent lateral support of the truss members to reduce buckling lengths, and do not apply to and may not be relied upon for the temporary stability of the truss components during their installation.

Permanent Lateral Restraint and Bracing:
The required locations for lateral restraint or bracing depicted on these drawings are for the permanent lateral support of the truss members to reduce buckling lengths. Permanent lateral support shall be installed according to the provisions of BCSI chapters B3, B7 and/or B10, or as specified by the Building Designer or other Registered Design Professional. These drawings do not depict or specify installation/erection bracing, wind bracing, portal bracing or similar building stability bracing which are parts of the overall building design to be specified, designed and detailed by the Building Designer.

Connector Plate Information:
Alpine connector plates are made of ASTM A653 or ASTM A1063 galvanized steel with the following designations, gauges and grades: W=Wave, 20ga, grade 40; H=High Strength, 20ga, grade 60; S=Super Strength, 18ga, grade 60. Information on model code compliance is contained in the ICC Evaluation Service report ESR-1118, available on-line at www.icc-es.org.

Fire Retardant Treated Lumber:
Fire retardant treated lumber must be properly re-dried and maintained below 19% or less moisture level through all stages of construction and usage. Fire retardant treated lumber may be more brittle than untreated lumber. Special handling care must be taken to prevent breakage during all handling activities.

General Notes (continued)

Key to Terms:
Information provided on drawings reflects a summary of the pertinent information required for the truss design. Detailed information on load cases, reactions, member lengths, forces and members requiring permanent lateral support may be found in calculation sheets available upon written request.

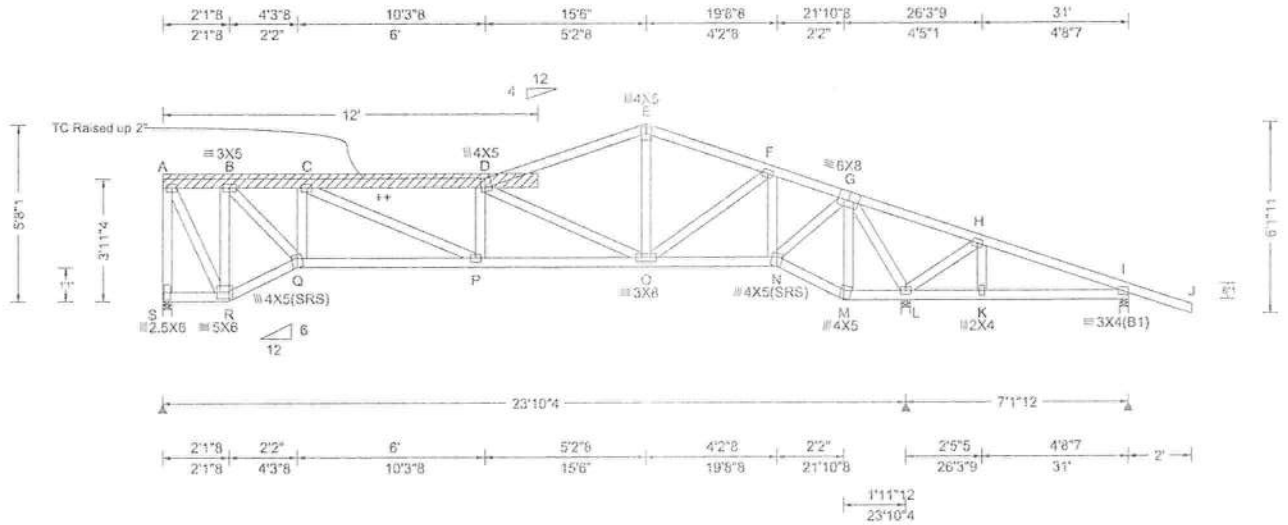
BCDL = Bottom Chord standard design Dead Load in pounds per square foot.
BCLL = Bottom Chord standard design Live Load in pounds per square foot.
CL = Certified lumber.
Des Ld = total of TCLL, TCDL, BCLL and BCDL Design Load in pounds per square foot.
FRT = Fire Retardant Treated lumber.
FRT-DB = D-Blaze Fire Retardant Treated lumber.
FRT-DC = Dricon Fire Retardant Treated lumber.
FRT-FP = FirePRO Fire Retardant Treated lumber.
FRT-FL = FlamePRO Fire Retardant Treated lumber.
FRT-FT = FlameTech Fire Retardant Treated lumber.
FRT-PG = PYRO-GUARD Fire Retardant Treated lumber.
g = green lumber.
HORZ(LL) = maximum Horizontal panel point deflection due to Live Load, in inches.
HORZ(TL) = maximum Horizontal panel point long term deflection in inches, due to Total Load, including creep adjustment.
HPL = additional Horizontal Load added to a truss Piece in pounds per linear foot or pounds.
Ic = Incised lumber.
FJ = Finger Jointed lumber.
L/# = user specified divisor for limiting span/deflection ratio for evaluation of actual L/defl value.
L/defl = ratio of Length between bearings, in inches, divided by the vertical Deflection due to creep, in inches, at the referenced panel point. Reported as 999 if greater than or equal to 999.
Loc = Location, starting location of left end of bearing or panel point (joint) location of deflection.
Max BC CSI = Maximum bending and axial Combined Stress Index for Bottom Chords for of all load cases.
Max TC CSI = Maximum bending and axial Combined Stress Index for Top Chords for of all load cases.
Max Web CSI= Maximum bending and axial Combined Stress Index for Webs for of all load cases.
NCBCLL = Non-Concurrent Bottom Chord design Live Load in pounds per square foot.
PL = additional Load applied at a user specified angle on a truss Piece in pounds per linear foot or pounds.
PLB = additional vertical load added to a Bottom chord Piece of a truss in pounds per linear foot or pounds
PLT = additional vertical load added to a Top chord Piece of a truss in pounds per linear foot or pounds.
PP = Panel Point.
R = maximum downward design Reaction, in pounds, from all specified gravity load cases, at the indicated location (Loc).
-R = maximum upward design Reaction, in pounds, from all specified gravity load cases, at the identified location (Loc).
Rh = maximum horizontal design Reaction in either direction, in pounds, from all specified gravity load cases, at the indicated location (Loc).
RL = maximum horizontal design Reaction in either direction, in pounds, from all specified non-gravity (wind or seismic) load cases, at the indicated location (Loc).
Rw = maximum downward design Reaction, in pounds, from all specified non-gravity (wind or seismic) load cases, at the identified location (Loc).
TCDL = Top Chord standard design Dead Load in pounds per square foot.
TCLL = Top Chord standard design Live Load in pounds per square foot.
U = maximum Upward design reaction, in pounds, from all specified non-gravity (wind or seismic) load cases, at the indicated location (Loc).
VERT(CL) = maximum Vertical panel point deflection in inches due to Live Load and Creep Component of Dead Load in inches.
VERT(CTL) = maximum Vertical panel point deflection ratios due to Live Load and Creep Component of Dead Load, and maximum long term Vertical panel point deflection in inches due to Total load, including creep adjustment.
VERT(LL) = maximum Vertical panel point deflection in inches due to Live Load.
VERT(TL) = maximum Vertical panel point long term deflection in inches due to Total load, including creep adjustment.
W = Width of non-hanger bearing, in inches.

Refer to ASCE-7 for Wind and Seismic abbreviations.
Uppercase Acronyms not explained above are as defined in TPI 1.

References:

1. AWC: American Wood Council; 222 Catoctin Circle SE, Suite 201; Leesburg, VA 20175; www.awc.org.
2. ICC: International Code Council; www.iccsafe.org.
3. Alpine, a division of ITW Building Components Group Inc.: 514 Earth City Expressway, Suite 242, Earth City, MO 63045; www.alpineitw.com.
4. TPI: Truss Plate Institute, 2670 Crain Highway, Suite 203, Waldorf, MD 20601; www.tpinst.org.
5. SBCA: Wood Truss Council of America, 6300 Enterprise Lane, Madison, WI 53719; www.sbcindustry.com.

SEQN: 606980 COMN	Ply: 1	Job Number: 19-3781 REPAIR	Cust: R 215 JRef: 1X292150006 T24
FROM: CDM	Qty: 1	19-3781 REPAIR	DrwNo: 022.21.1052.21077
		Truss Label: B10	GA / FV 11/25/2020



Loading Criteria (psf)	Wind Criteria	Snow Criteria (Pg,Pf in PSF)	Defl/CSI Criteria
TCLL: 20.00	Wind Std: ASCE 7-10	Pg: NA Ct: NA CAT: NA	PP Deflection in loc L/defl L/#
TCDL: 10.00	Speed: 130 mph	Pf: NA Ce: NA	VERT(LL): 0.084 D 999 240
BCLL: 0.00	Enclosure: Closed	Lu: NA Cs: NA	VERT(CL): 0.170 D 999 180
BCDL: 10.00	Risk Category: II	Snow Duration: NA	HORZ(LL): 0.037 M - -
Des Ld: 40.00	EXP: C Kzt: NA		HORZ(TL): 0.074 M - -
NCBCLL: 10.00	Mean Height: 15.00 ft	Building Code:	Creep Factor: 2.0
Soffit: 2.00	TCDL: 5.0 psf	FBC 2017 RES	Max TC CSI: 0.581
Load Duration: 1.25	BCDL: 5.0 psf	TPI Std: 2014	Max BC CSI: 0.553
Spacing: 24.0 "	MWFRS Parallel Dist: h to 2h	Rep Fac: Yes	Max Web CSI: 0.712
	C&C Dist a: 3.10 ft	FT/RT:20(0)/10(0)	
	Loc. from endwall: not in 9.00 ft	Plate Type(s):	
	GCpi: 0.18	WAVE	VIEW Ver: 20.01.01A.0724.11
	Wind Duration: 1.60		

▲ Maximum Reactions (lbs)

Loc	Gravity R+	Gravity / R-	Gravity / Rh	Non-Gravity / Rw	Non-Gravity / U	Non-Gravity / RL
S	863	/-	/-	/438	/130	/101
L	1651	/-	/-	/904	/104	/-
I	119	/-166	/-	/36	/61	/-

Wind reactions based on MWFRS
S Brg Width = 3.5 Min Req = 1.5
L Brg Width = 3.5 Min Req = 1.6
I Brg Width = 3.5 Min Req = 1.5
Bearings S, L, & I are a rigid surface.
Members not listed have forces less than 375#

Maximum Top Chord Forces Per Ply (lbs)

Chords	Tens.	Comp.	Chords	Tens.	Comp.
A - B	139	-453	E - F	326	-993
B - C	316	-1208	F - G	190	-575
C - D	538	-1853	G - H	952	-205
D - E	331	-1010	H - I	642	-141

Maximum Bot Chord Forces Per Ply (lbs)

Chords	Tens.	Comp.	Chords	Tens.	Comp.
R - Q	521	-41	O - N	571	-83
Q - P	1273	-230	L - K	147	-591
P - O	1871	-442	K - I	147	-585

Maximum Web Forces Per Ply (lbs)

Webs	Tens.	Comp.	Webs	Tens.	Comp.
A - S	268	-840	D - O	314	-1070
A - R	894	-273	O - F	437	-98
B - R	260	-968	F - N	180	-580
B - Q	1166	-275	N - G	866	-197
Q - C	212	-576	G - L	378	-1482
C - P	641	-219	L - H	165	-523

Lumber

Top chord: 2x4 SP #2;
Bot chord: 2x4 SP #2;
Webs: 2x4 SP #3;

Plating Notes

All plates are 3X4 except as noted.

Purlins

In lieu of structural panels use purlins to brace all flat TC @ 24" oc.

Wind

Wind loads based on MWFRS with additional C&C member design.

Left end vertical not exposed to wind pressure.

Additional Notes

The overall height of this truss excluding overhang is 5-8-1.

++(1) 2X6X 12-0-0 SP #2 (OR BETTER) SCAB. ATTACH ONE SCAB TO ONE FACE OF TRUSS AS SHOWN WITH 2 ROWS OF 0.131"X3.0" GUN NAILS AT 4.0"OC THROUGHOUT ALL MEMBERS, WITHOUT SPLITTING LUMBER.

Truss repaired to raise up the flat TC by 2" as shown.

Refer to drawing 330.20.1359.06570 for plates and other data not given here.

Repair(s) must comply with Alpine designs and specifications.

Note: Prior to and during the repair operation, this truss and any supported spans must be temporarily braced and shored. The design and positioning of this bracing and shoring to be designed by others.

FERNANDO VINAS LICENSE No 70773 STATE OF FLORIDA PROFESSIONAL ENGINEER

COA#0-278

01/22/2021

"WARNING" READ AND FOLLOW ALL NOTES ON THIS DRAWING!
"IMPORTANT" FURNISH THIS DRAWING TO ALL CONTRACTORS INCLUDING THE INSTALLERS

Trusses require extreme care in fabricating, handling, shipping, installing and bracing. Refer to and follow the latest edition of BCSI (Building Component Safety Information, by TPI and SBCA) for safety practices prior to performing these functions. Installers shall provide temporary bracing per BCSI. Unless noted otherwise, top chord shall have properly attached structural sheathing and bottom chord shall have a properly attached rigid ceiling. Locations shown for permanent lateral restraint of webs shall have bracing installed per BCSI sections B3, B7, or B10, as applicable. Apply plates to each face of truss and position as shown above and on the Joint Details, unless noted otherwise. Refer to drawings 160A-Z for standard plate positions. Refer to job's General Notes page for additional information.

Alpine, a division of ITW Building Components Group Inc. shall not be responsible for any deviation from this drawing, any failure to build the truss in conformance with ANSI/TPI 1, or for handling, shipping, installation and bracing of trusses. A seal on this drawing or cover page listing this drawing, indicates acceptance of professional engineering responsibility solely for the design shown. The suitability and use of this drawing for any structure is the responsibility of the Building Designer per ANSI/TPI 1 Sec.2.

For more information see these web sites: Alpine: alpineitw.com; TPI: tpinst.org; SBCA: sbcindustry.com; ICC: iccsafe.org; AWC: awc.org

ALPINE
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6750 Forum Drive
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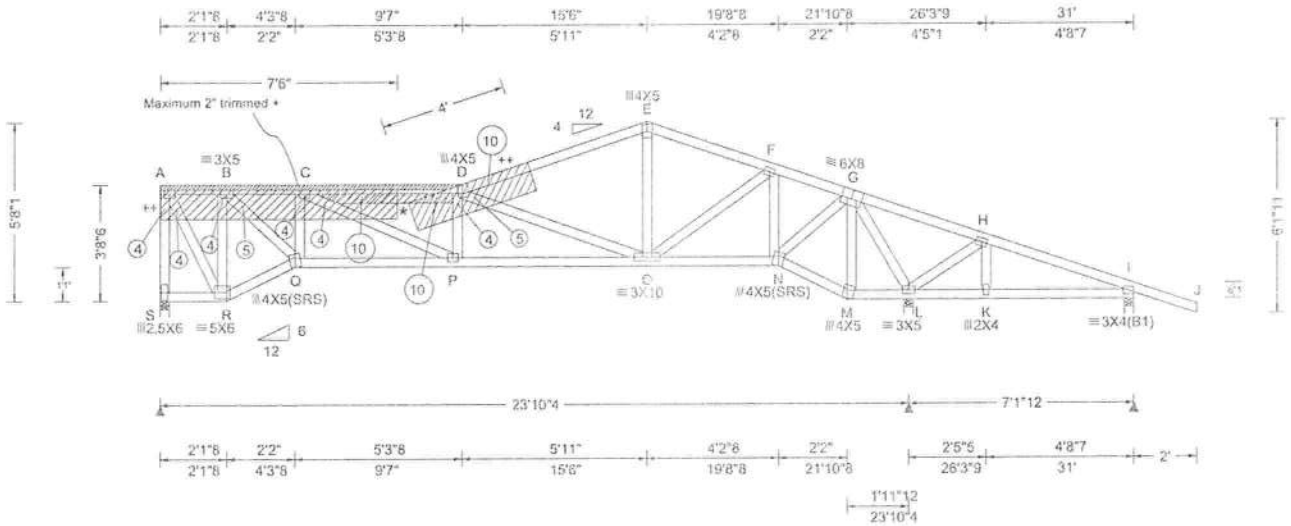
SEQN: 606983 COMN FROM: CDM	Ply: 1 Qty: 1	**Job Number:** 19-3781 REPAIR 19-3781 REPAIR **Truss Label:** B09	Cust: R 215 JRef: 1X292150006 T23 DrwNo: 022.21.1115.13730 GA / FV 11/25/2020	



Loading Criteria (psf)	Wind Criteria	Snow Criteria (Pg,Pf in PSF)	Defl/CSI Criteria
TCLL: 20.00	Wind Std: ASCE 7-10	Pg: NA Ct: NA CAT: NA	PP Deflection in loc L/defl L/#
TCDL: 10.00	Speed: 130 mph	Pf: NA Ce: NA	VERT(LL): 0.094 D 999 240
BCLL: 0.00	Enclosure: Closed	Lu: NA Cs: NA	VERT(CL): 0.190 D 999 180
BCDL: 10.00	Risk Category: II	Snow Duration: NA	HORZ(LL): 0.040 M - -
Des Ld: 40.00	EXP: C Kzt: NA		HORZ(TL): 0.080 M - -
NCBCLL: 10.00	Mean Height: 15.00 ft	Building Code:	Creep Factor: 2.0
Soffit: 2.00	TCDL: 5.0 psf	FBC 2017 RES	Max TC CSI: 0.553
Load Duration: 1.25	BCDL: 5.0 psf	TPI Std: 2014	Max BC CSI: 0.595
Spacing: 24.0 "	MWFRS Parallel Dist: h to 2h	Rep Fac: Yes	Max Web CSI: 0.955
	C&C Dist a: 3.10 ft	FT/RT:20(0)/10(0)	
	Loc. from endwall: not in 9.00 ft	Plate Type(s):	
	GCpi: 0.18	WAVE	VIEW Ver: 20.01.01A.0724.11
	Wind Duration: 1.60		

▲ Maximum Reactions (lbs)

	Gravity			Non-Gravity		
Loc	R+	/ R-	/ Rh	/ Rw	/ U	/ RL
S	855	/-	/-	/434	/124	/114
L	1682	/-	/-	/908	/97	/-
I	237	/-134	/-	/128	/78	/-

Wind reactions based on MWFRS
S Brg Width = 3.5 Min Req = 1.5
L Brg Width = 3.5 Min Req = 1.6
I Brg Width = 3.5 Min Req = 1.5
Bearings S, L, & I are a rigid surface.
Members not listed have forces less than 375#

Maximum Top Chord Forces Per Ply (lbs)

Chords	Tens.	Comp.	Chords	Tens.	Comp.
A - B	147	-483	E - F	315	-974
B - C	331	-1296	F - G	167	-520
C - D	562	-1985	G - H	1068	-228
D - E	316	-999	H - I	724	-207

Maximum Bot Chord Forces Per Ply (lbs)

Chords	Tens.	Comp.	Chords	Tens.	Comp.
R - Q	552	-43	O - N	519	-42
Q - P	1365	-233	L - K	277	-671
P - O	2009	-455	K - I	278	-664

Maximum Web Forces Per Ply (lbs)

Webs	Tens.	Comp.	Webs	Tens.	Comp.
A - S	265	-833	D - O	351	-1198
A - R	907	-276	O - F	498	-132
B - R	258	-974	F - N	185	-617
B - Q	1189	-269	N - G	858	-182
Q - C	195	-566	G - L	386	-1542
C - P	691	-230	L - H	124	-474

Lumber

Top chord: 2x4 SP #2;
Bot chord: 2x4 SP #2;
Webs: 2x4 SP #3;

Purlins

In lieu of structural panels use purlins to brace all flat TC @ 24" oc.

Additional Notes

The overall height of this truss excluding overhang is 5-8-1.

+ USE A SHARP METAL CUTTING SAW BLADE TO CAREFULLY REMOVE MATERIAL FROM THE TRUSS AS SHOWN. REMAINING PORTIONS OF TRUSS AND ALPINE PLATES MUST BE FREE FROM DAMAGE.

* (1)NEW 2x4 SP #2-13B (OR BETTER) MEMBERS, CUT TO FIT AS SHOWN WITH HATCHED MEMBER BELOW.
(+)REMOVE EXISTING MEMBER AND REPLACE WITH *.

++(2) 2X12X (cut-to-fit) SP #2 (OR BETTER) SCAB. ATTACH ONE SCAB TO EACH FACE OF TRUSS AS SHOWN WITH 2 ROWS OF 0.131"X3.0" GUN NAILS AT 3.0"OC THROUGHOUT ALL MEMBERS, WITHOUT SPLITTING LUMBER.
MINIMUM NUMBER OF NAILS PER SCAB ARE SHOWN WITH NUMBERS IN CIRCLES.
NAILS MAY BE CLUSTERED TO ACHIEVE MINIMUM NAILING.

Truss repaired to trim maximum 2" from the flat TC as shown.

Refer to drawing 330.20.1359.05327 for plates and other data not given here.

Repair(s) must comply with Alpine designs and specifications.

Note: Prior to and during the repair operation, this truss and any supported spans must be temporarily braced and shored. The design and positioning of this bracing and shoring to be designed by others.

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