May 25, 2007

Capital Pacific Homes
12401 Research Blvd, Bldg II, Suite 100
Austin, Texas 78759
Attn: Bart Koonse

RE: Level B Investigation – Evaluate Drywall Cracking
240 Canterbury Drive
Belterra Subdivision
Dripping Springs, Texas
Job No.: # 714008000.004

Dear Mr. Koonse:

Scope
At your request, we evaluated the structural condition of the home at the above referenced address. We performed floor elevation surveys using a pro-level manometer and developed surface contours based on those surveys. We used these contours and our visual investigation to evaluate the drywall cracking noted in the home. We consider this evaluation a Level B Investigation, as defined by ASCE Texas Section's "*Guidelines for the Evaluation and Repair of Residential Foundations*", the publication can be ordered through the publication section of the Texas Section's website, www.texasasce.org.

Sources of Information and Data
The following sources of information were used as a basis for this report:

- Interview with the homeowner
- Review, visual observation and pictorial baseline taken of the interior and exterior of the home
- Conducted elevation surveys with a Pro-Level manometer
- Removed drywall and subfloor to observe framing at the
- ASCE-TX Section Doc. No. 4.6.5.2.2, "*Guidelines for the Evaluation and Repair of Residential Foundations*"

Property Location and Description
The house is located in the Belterra Subdivision. The stud walls have masonry on three sides with conventional siding and stucco accents on the sides of the second story. The roof is constructed with metal plate connected roof trusses with a composition shingle covering.

Observations and Actions
We conducted a floor surface elevation survey with a Pro-Level manometer and developed surface contours based on that survey. We used the contours of the floor finish materials and the observations of the superstructure to evaluate the performance of the slab-on-grade foundation and the second floor.

During our visual observation of the home we found the following cosmetic distress:

- Ceiling separations in upstairs rooms, primarily at the game room.
- Minor nail popouts located throughout house.
- Minor drywall cracks in stairwell and above doorway in guest bedrooms.
- Doors in several upstairs rooms are sticking and are difficult to shut.
- Minor drywall cracking in downstairs walls and ceilings.
- Sheetrock joints visible in the lower level ceiling
- Protrusion in lower level ceiling sheetrock at the dining / entry area

Discussion

Based on our visual observations, elevation readings and review of the truss drawings we have two points to discuss.

1. **Ceiling to wall sheetrock separation (bedrooms, game room areas)**: based on our attic observation and review of the relative elevation surveys, we believe that the deflection in the floor system caused sheetrock cracking in the walls and at multiple ceiling to wall interfaces. Although the floor system has approximately 1 inch of elevation drop from the perimeter to the center of the home we believe that most of the deflection existed prior to the application of sheetrock or was "built-in." We make this claim due to the fact that the magnitude of the distress does not appear to correspond with the magnitude of the deflection. The ceiling to wall interface cracking is approximately ¼" wide while the elevation change from the left rear corner of bedroom two to the hallway next to bathroom two is approximately 1 inch. We would like to point out that at least .3 inches of elevation drop is caused by concrete finishing and .1 inches of elevation drop in the compression of the framing. The remaining deflection occurred in the beam (spanning between the family room and the breakfast area) and the floor trusses (spanning from the beam to the walls on either side.) As stated previously, we believe that the beam had .2 inches of deflection and the affected floor trusses (see title heading above) had .2 inches of deflection. The remaining .2 inches of deflection occurred after sheetrock installation and is what caused the distress. To clarify, most homes, with movement or deflection of this magnitude would have cracking much more severe. Therefore, we believe most of the deflection occurred during the framing stage and that minor deflection occurred after sheetrock installation causing the distress that was noted during our investigation.
2. **Bedroom 4 and roof girder truss T5G:** based on our elevation surveys, observation of the sheetrock at the dining room and observation of the sheetrock at the (rear most) wall of bedroom 4 we believe that the floor system is overloaded. After much study, investigation and consultation with the builder and truss supplier we have determined that the girder truss that spans across the width of the home is overloading the floor system. The current configuration of the roof trusses are shown on the attached upper level ceiling drawings. In the current configuration the T5G uses the wall of bedroom 4 as a bearing point which transfers significant load into the (2) 2x12 below which is supported by a floor truss. It is this floor truss that has the hanger / sheetrock issue noted by the homeowners at the dining room area. We have a repair drawing for this truss to change the bearing location to a stacked wall thus alleviating the load to the floor system, see attached T5G detail. This overloading is causing the deflection in the floor system as noted when walking out of bedroom 4 into the hallway.

Conclusions:
During our discussion above we did not focus on two other homeowner issues, visible joints in the lower level ceiling sheetrock and a "bump" in the sheetrock at the dining room. Both of these items are considered cosmetic. The "shadows" in the sheetrock are caused by the tape and float process and the "bump" is caused by setting a floor truss hanger slightly below the bottom of a support beam. These items are unsightly but are not considered a structural defect or failure. The next two items are discussed above and the conclusions follow:

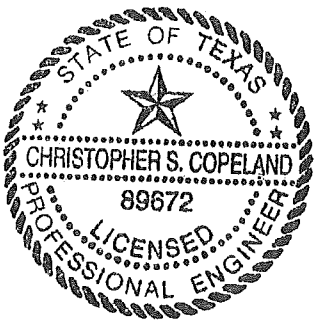
1. We believe that the home was constructed with existing deflection. Although the degree of deflection is difficult to ascertain we surmise that .6 inches of deflection had occurred prior to sheetrock installation. We believe that .3 inches occurred in the concrete finishing, .1 inches occurred in the compression of the framing at the beam bearing location, .2 inches occurred in the beam and .2 inches occurred in the floor trusses. The remaining deflection occurred after sheetrock installation thus causing the distress noted. Keep in mind however that the deflection values listed above are based on judgment and others may differ in their opinion. We believe refinishing the distress in the upper level sheetrock and re-setting the affected doors would be the most prudent action at this time. We would like to monitor the deflection of the upper level after the repair over the next year.
2. We recommend removing the bearing post under the T5G girder truss and applying the "tail scabs" according to the drawing supplied by Buffalo Framing and Truss. This will remove the point load to the floor system next to the staircase below. In addition, re-finish the sheetrock and re-set any affected doors.

As stated above, we would like the opportunity to monitor the performance of the repairs over the next year. Thank-you for the opportunity to provide our professional services, if there are any questions concerning the content of this report please do not hesitate to call our office.

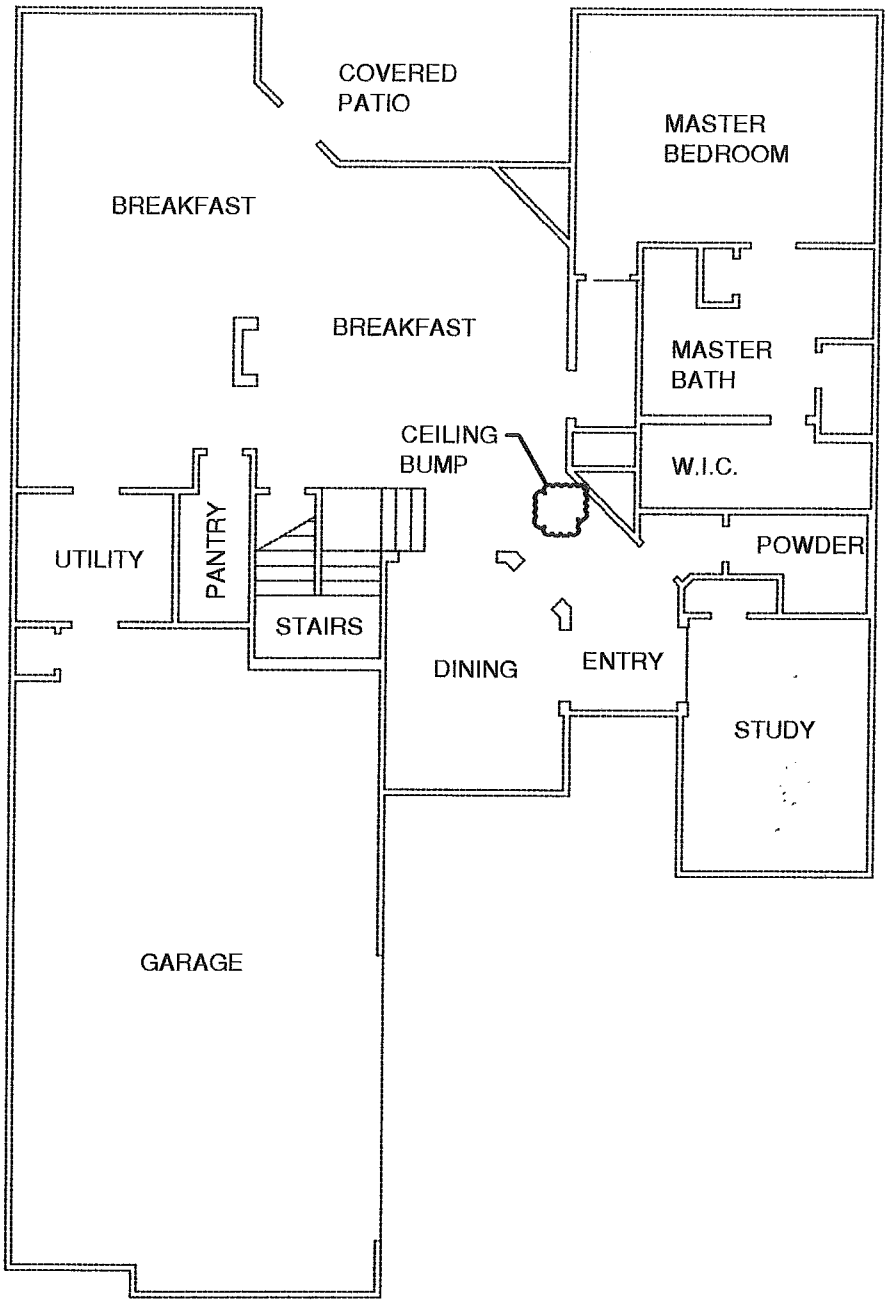
Sincerely,

MLAW
Consultants & Engineers

Christopher S. Copeland, P.E.
Vice President



Enclosed:
Limitations of report
Lower level room names and distress locations
Upper level room names and distress locations
Foundation elevation readings
Lower level ceiling elevation readings
Upper floor level elevation readings
Upper ceiling level elevation readings
Buffalo Framing and Truss modification to T5G



LOWER LEVEL WALLS

READINGS IN .25 INCH INCREMENTS

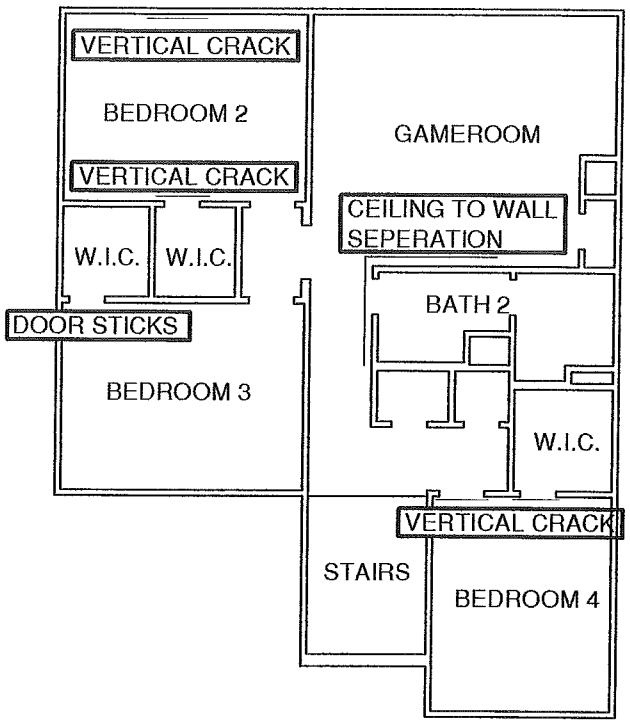
ADDRESS: 240 CANTERBURY DRIVE
JOB No: 714008000.004

CLIENT: CAPITAL PACIFIC
DATE: 4-25-07
SHEET:

GEOSTRUCTURAL/STRUCTURAL
GEOTECHNICAL/PAVEMENTS
FORENSIC

MLAW
CONSULTANTS AND ENGINEERS

2804 LONGHORN BLVD.
AUSTIN, TEXAS 78758
(512) 835-7000



UPPER LEVEL WALLS

READINGS IN .25 INCH INCREMENTS

ADDRESS: 240 CANTERBURY DRIVE
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DATE: 4-25-07
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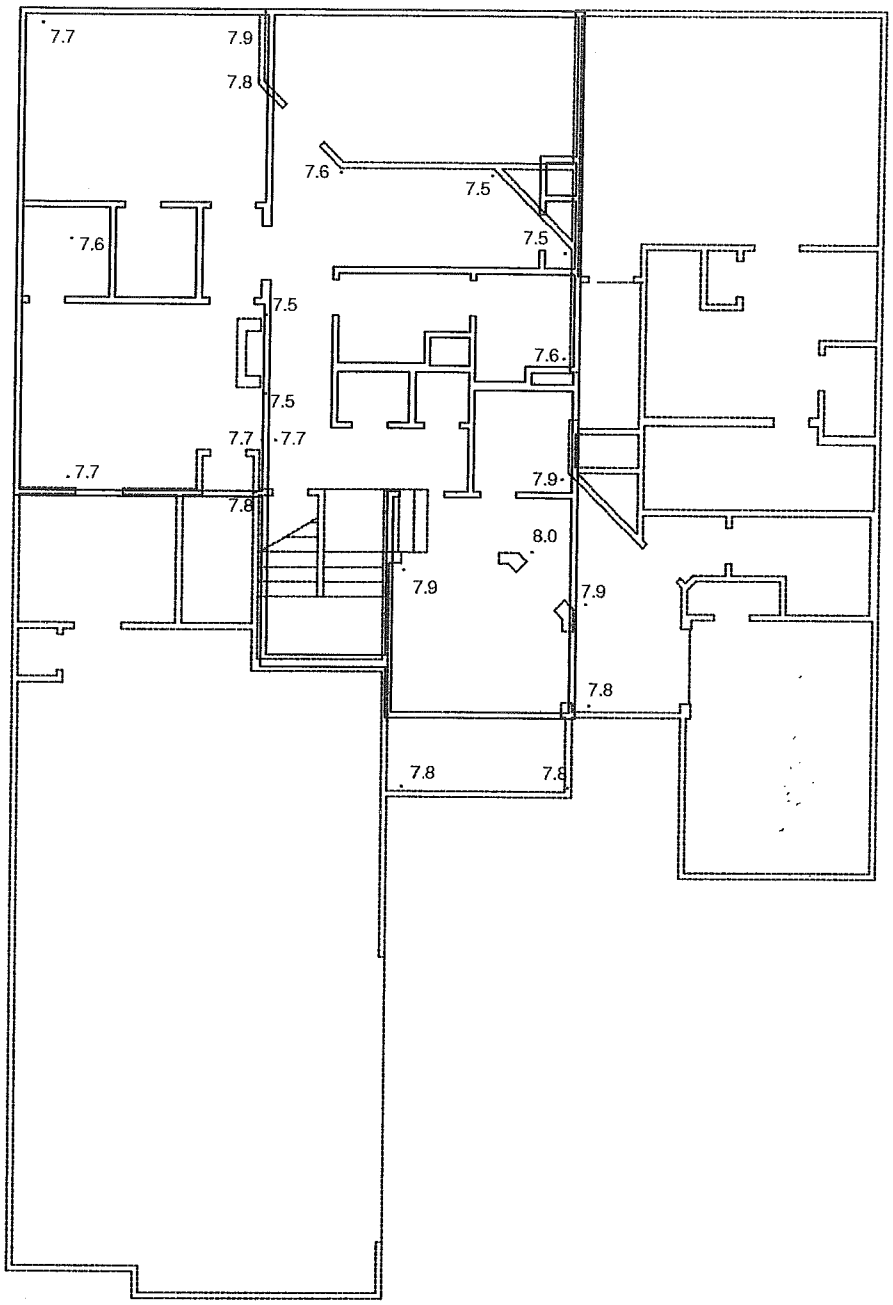

FOUNDATION ELEVATION READINGS WITH 2nd LEVEL OVERLAY

READINGS IN .25 INCH INCREMENTS

ADDRESS: 240 CANTERBURY DRIVE
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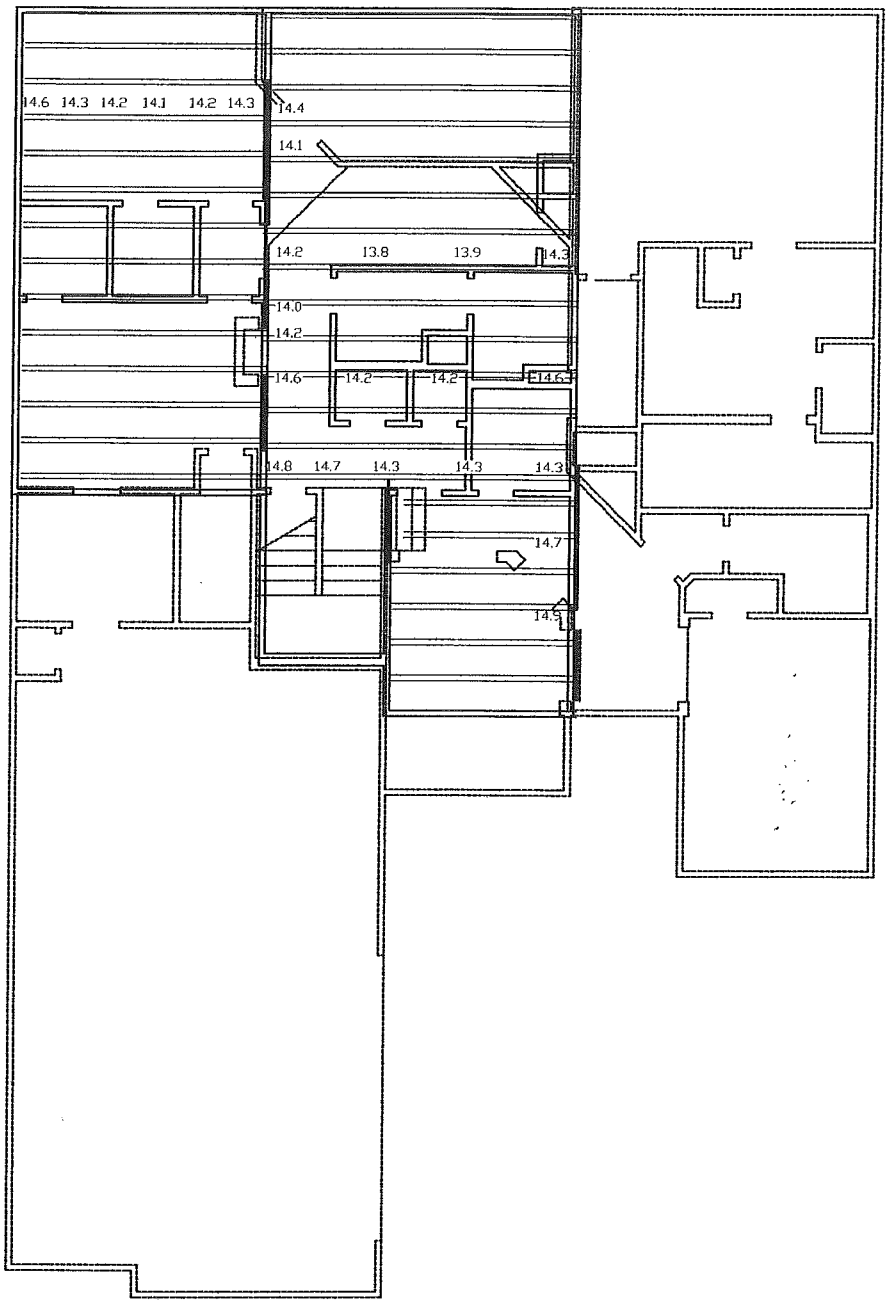

LOWER LEVEL CEILING ELEVATIONS

READINGS IN .25 INCH INCREMENTS

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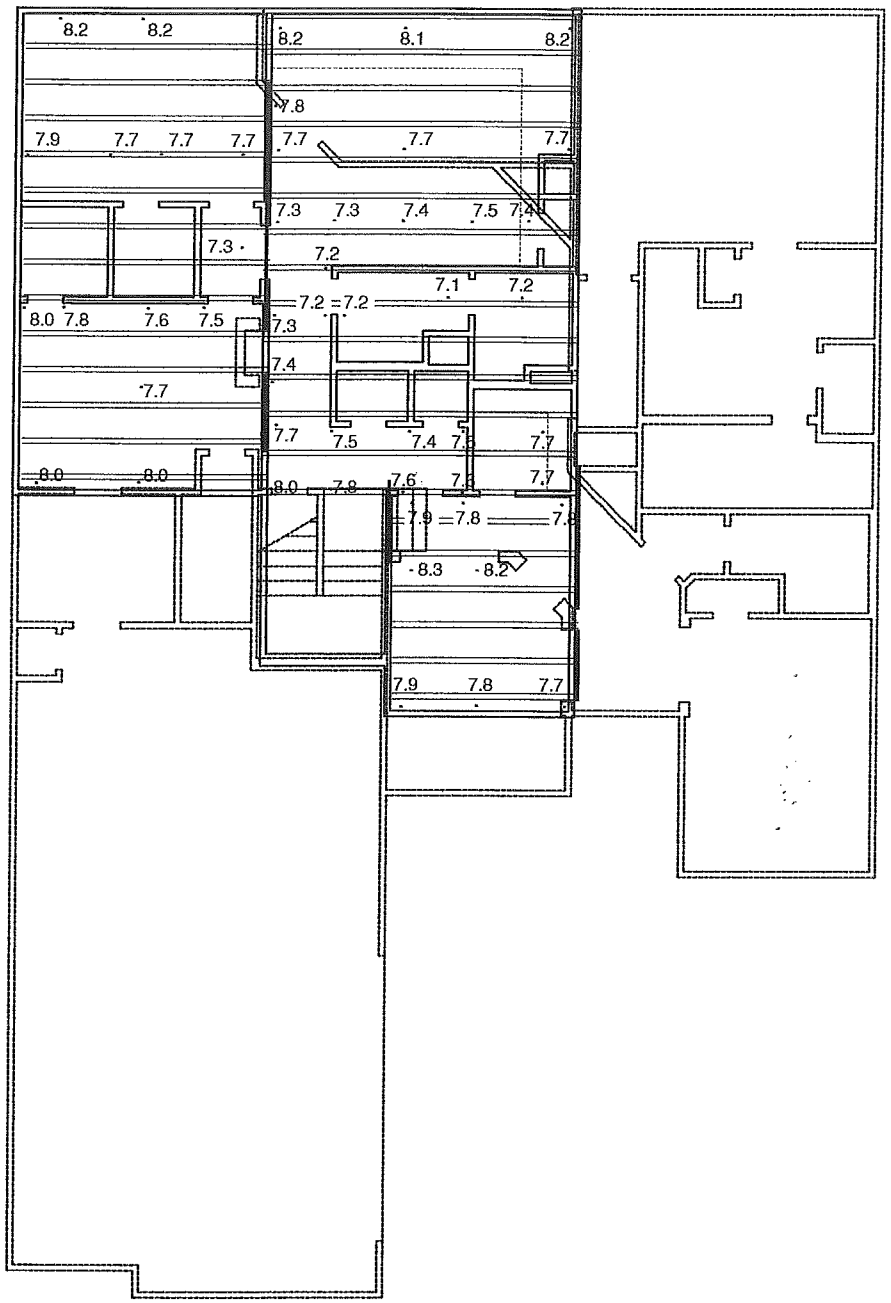

UPPER FLOOR ELEVATION READINGS

READINGS IN .25 INCH INCREMENTS

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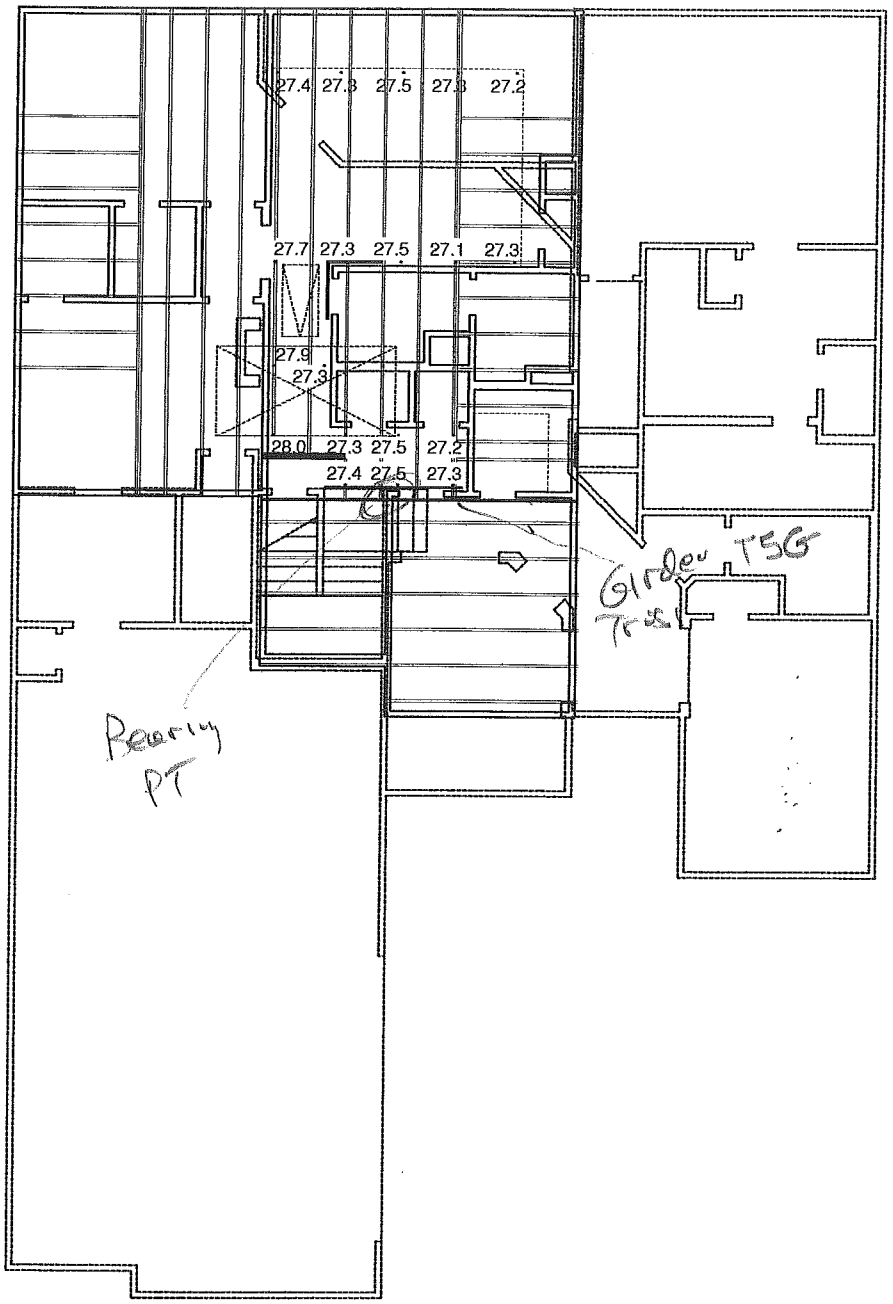

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Job: (XX) KWOOD D / CANT REAR / / REV AT A/C / TRAY ENT / . THIS DWG. PREPARED BY THE ALPINE JOB DESIGNER PROGRAM FROM TRUSS MFR'S LAYOUT

. Complete Trusses Required

Top chord 2x8 SP #1
Bot chord 2x6 SP #2
Webs 2x4 SP #3 :W2, W8 2x4 SP #2:

SPECIAL LOADS
------(LUMBER DUR.FAC.=1.25 / PLATE DUR.FAC.=1.25)
TC - From 48 PLF at 0.00 to 48 PLF at 17.96
BC - From 14 PLF at 0.00 to 14 PLF at 17.96
BC - 1718 LB Conc. Load at 5.00
BC - 847 LB Conc. Load at 7.00, 9.00
BC - 1788 LB Conc. Load at 11.12

Deflection meets L/360 live and L/240 total load.

(1) 2x8x7-6-15 SP #1 scab at left end. Attach scab to face of chord with: 10d_Box_or_Gun_(0.128"x3",_min.)_nails @ 8" OC, plus additional nail clusters at : BRG.: (7), heel: (11), 1st panel point: (4).

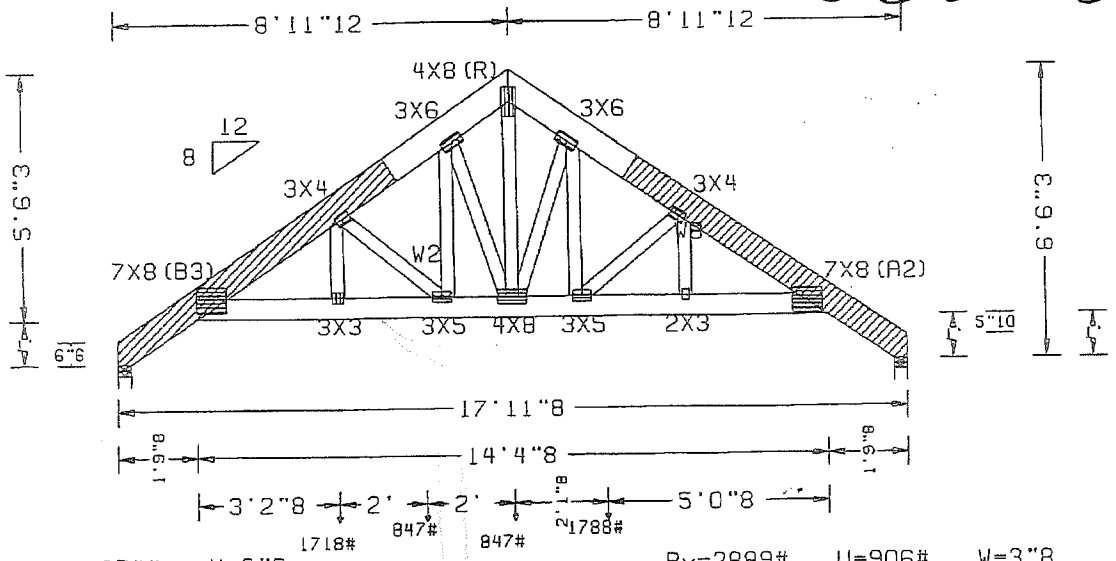
Nailing Schedule: (10d_Box_or_Gun_(0.128"x3",_min.)_nails)
Top Chord: 1 Row @12.00" o.c.
Bot Chord: 1 Row @ 5.00" o.c.
Webs : 1 Row @ 4" o.c.
Use equal spacing between rows and stagger nails in each row to avoid splitting.

80 mph wind, 22.11 ft mean hgt, ASCE 7-93, CLOSED bldg, not located within 4.50 ft from roof edge, 100 mi from coast, CAT I, EXP C, wind TC DL=4.8 psf, wind BC DL=4.2 psf.

Calculated horizontal deflection is 0.14" due to live load and 0.13" due to dead load.

(1) 2x8x7-6-15 SP #1 scab at right end. Attach scab to face of chord with: 10d_Box_or_Gun_(0.128"x3",_min.)_nails @ 8" OC, plus additional nail clusters at : BRG.: (6), heel: (9), 1st panel point: (4).

CPH
240 Canterbury
without interior Bdg



Rv=3425# U=1074# W=3"8

Rv=2889# U=906# W=3"8

LEFT RAKE = 1'9"10
LEFT JIG = 9'0"12
TAG = 175
PLT. TYP.-WAVE/R

UBC/TPI1995(STD)

QTY= 1 PLIES= 2 TOTAL= 2

RIGHT RAKE = 1'9"10
RIGHT JIG = 9'0"12
SEQ = 19568
REV. 7.24.1230.17 SCALE =0.2500

WARNING TRUSSES REQUIRE EXTREME CARE IN FABRICATING, HANDLING, SHIPPING, INSTALLING AND BRACING. REFER TO BCSI 1-03 (BUILDING COMPONENT SAFETY INFORMATION), PUBLISHED BY TPI (TRUSS PLATE INSTITUTE, 583 D'ONOFRIO DR., SUITE 200, MADISON, WI. 53719) AND WTCA (WOOD TRUSS COUNCIL OF AMERICA, 6300 ENTERPRISE LN, MADISON, WI 53719) FOR SAFETY PRACTICES PRIOR TO PERFORMING THESE FUNCTIONS. UNLESS OTHERWISE INDICATED, TOP CHORD SHALL HAVE PROPERLY ATTACHED STRUCTURAL PANELS AND BOTTOM CHORD SHALL HAVE A PROPERLY ATTACHED RIGID CEILING.
IMPORTANT FURNISH COPY OF THIS DESIGN TO INSTALLATION CONTRACTOR. ALPINE ENGINEERED PRODUCTS, INC., SHALL NOT BE RESPONSIBLE FOR ANY DEVIATION FROM THIS DESIGN: ANY FAILURE TO BUILD THE TRUSS IN CONFORMANCE WITH TPI: OR FABRICATING, HANDLING, SHIPPING, INSTALLING & BRACING OF TRUSSES. DESIGN CONFORMS WITH APPLICABLE PROVISIONS OF NDS (NATIONAL DESIGN SPEC, BY AF&PA) AND TPI. ALPINE CONNECTOR PLATES ARE MADE OF 20/18/16GA (V,H/S/K) ASTM A653 GRADE 40/60 (V,K/H,S) GALV. STEEL. APPLY PLATES TO EACH FACE OF TRUSS AND, UNLESS OTHERWISE LOCATED ON THIS DESIGN, POSITION PER DRAWINGS 160A-Z. ANY INSPECTION OF PLATES FOLLOWED BY (I) SHALL BE PER ANNEX A3 OF TPI 1-2002 SEC. 3. A SEAL ON THIS DRAWING INDICATES ACCEPTANCE OF PROFESSIONAL ENGINEERING RESPONSIBILITY SOLELY FOR THE TRUSS COMPONENT DESIGN SHOWN. THE SUITABILITY AND USE OF THIS COMPONENT FOR ANY BUILDING IS THE RESPONSIBILITY OF THE BUILDING DESIGNER, PER ANSI/TPI 1 SEC. 2

TC LL	16.0psf	REF	
TC DL	8.0psf	DATE	05-18-2007
BC DL	7.0psf	DRWG	
BC LL	0.0psf		
TOT.LD.	31.0psf	O/A LEN.	171108
DUR.FAC.	1.25		
SPACING	24.0"	TYPE	SPEC

LIMITATIONS OF REPORT

- These observations do not intend to provide an exhaustive analysis of the structural or foundation conditions and does not intend to convey the impression that detailed measurements, or examinations of the superstructure or the hidden elements of the structure were performed. Hidden elements would include framing or floors covered by sheetrock, brick veneer, carpeting or tile, etc.

- Unless otherwise indicated, this report was prepared expressly for the client involved and expressly for the purposes indicated by the client. Permission for use by any other persons for any purpose, or by the client for a different purpose is denied unless otherwise stated in writing by MLAW.

- The observations, discussions, and conclusions in this report are based solely on the Field Observations contained in the report. The observed conditions are subject to change with the passage of time. The Field Observations and this report are not to be construed in any way as a guarantee or warranty as to the future life, performance, and need of repair or suitability of purpose of the subject property.

- Detailed structural calculations were not performed and a report that the structure is in good condition does not imply that it meets all Building Code provisions.

- Soil borings and materials testing are not included in this investigation, unless specifically reported.

- These observations do not include an examination or opinion regarding electrical, mechanical, plumbing systems or appliances, or roof or wall waterproof condition.

- Water damage or rotted wood will be noted if obvious, but the limited scope of the examination precludes observations of all structural members, and hidden defects may be present. Surface drainage may be noted in general as being adequate or inadequate to prevent casual water from entering the structure or ponding adjacent to foundation, but no evaluation of regional or lot drainage was done to ensure that floodwaters do not rise above the levels of the foundation and enter the building.

- Termite damage was specifically not examined for and is not a part of this scope of work.