



UTAH OFFICES
Sandy
Layton
St. George

Project Number: L0133-001-171

March 17, 2017

Brighton Land Holdings
1275 East Fort Union Blvd. Ste 210
Cottonwood Heights, UT 84047

ATTENTION: Thomas Godfrey

REFERENCE: **Brighton Recovery Campus, Building B (4911 S 900 E, SLC, UT)
Interior Demolition & New Wall Openings**

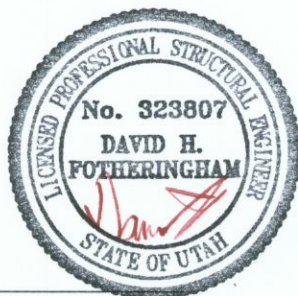
Mr. Godfrey:

Per your request, we have reviewed the architectural drawings for the above-referenced project. We also visited the above-referenced site on December 20, 2016. Please be advised as follows:

- 1) From our observation, the roof structure appeared to be manufactured wood roof trusses, bearing at the exterior perimeter walls and/or exterior overhang beams. In addition, there is an interior beam running the length of the building, supporting the roof trusses at or near their mid-span. See the enclosed "Demolition Plan," for approximate location of existing beams and posts. Interior partitions are non-bearing non-shear walls and can, therefore, be removed without adversely affecting the structure.
- 2) Two new openings may be constructed at exterior walls, as shown in the enclosed "Demolition Plan." The new headers, trimmers, and king studs are also specified on sheet 2. Supporting calculations are provided on sheets 3 and 4, enclosed. The contractor is responsible for shoring the existing roof framing during construction.

We hope this meets your needs. If you have any further questions regarding this matter, please call this office at your convenience.

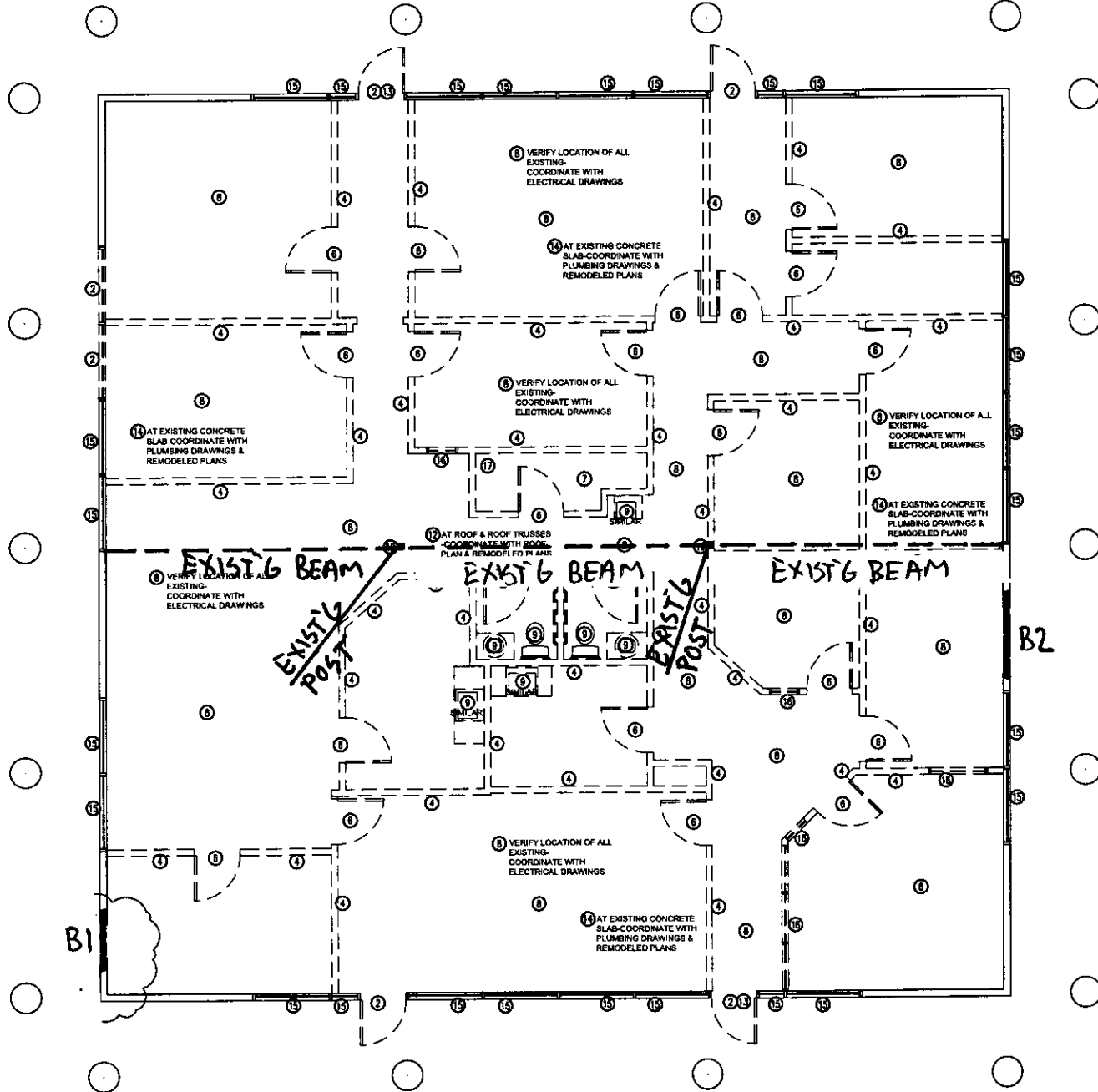
Very truly yours,
VECTOR STRUCTURAL ENGINEERS



David H. Fotheringham, S.E.
Principal

3-17-17

Enclosures



NEW HEADERS:

- B1 = (3) 2x6 w/ 2x6 TRIMM & 2x6 KING STUD EA. END
- B2 = (3) 2x6 w/ 2x6 TRIMM & 2x6 KING STUD EA. END

DEMOLITION PLAN
 $\frac{3}{32}'' = 1'-0''$



JOB NO.: L0133-001-171

DESIGNED: DHF

DATE: 3/17/2017

CHECKED: DHF

SHEET 3

PROJECT: BRIGHTON RECOVERY CAMPUS

SUBJECT: GRAVITY LOADS

| ROOF | | Increase due to pitch | Original loading |
|------------------|--|-----------------------------|---------------------|
| ROOF PITCH/12 | | 4 | |
| ASPHALT SHINGLES | | 4.22 | 1.05 4.00 |
| 1/2" PLYWOOD | | 1.58 | 1.05 1.50 |
| FRAMING | | 3.00 | |
| INSULATION | | 2.00 | |
| 1/2" GYPSUM CLG. | | 2.20 | |
| M, E & MISC | | 2.00 | |

| | | |
|--------------------------|------|-------|
| | DL | 15.00 |
| | LL | 20.00 |
| | SNOW | 30.00 |
| SNOW INCLUDED IN LATERAL | | 0.0 |

2ND FLOOR (WHERE OCCURS)

| | | |
|-----------------------|----|-------|
| FLOOR COVERING | | 1.00 |
| 3/4" T&G PLYWOOD | | 2.30 |
| MFG TRUSSES / FRAMING | | 2.00 |
| INSULATION | | 1.00 |
| 1/2" GYPSUM CEILING | | 2.20 |
| PARTITION | | 2.00 |
| M, E & MISC. | | 1.50 |
| OTHER | | 0.00 |
| | DL | 12.00 |
| | LL | 40.00 |

EXTERIOR WALLS

| | | |
|-----------------------|----|-------|
| STUCCO/SIDING | | 3.50 |
| 2x FRAMING W/3 PLATES | | 1.30 |
| INSULATION | | 1.00 |
| 1/2" GYPSUM | | 2.20 |
| 1/2" PLYWOOD | | 1.50 |
| OTHER | | 0.50 |
| | DL | 10.00 |

OVERFILL

| | | |
|------------------|----|-------|
| ASPHALT SHINGLES | | 4.00 |
| 1/2" PLYWOOD | | 1.50 |
| RAFTERS & MISC | | 3.50 |
| OTHER | | 0.00 |
| | DL | 9.00 |
| | LL | 20.00 |

TYPICAL ROOF OVERBUILD MAX SPAN TABLE

| Grade | Size | Spacing (ft) | L _{max} (ft) |
|-------|------|-----------------|-----------------------|
| DFL#2 | 2X4 | 2 | 5.80 |
| DFL#2 | 2X6 | 2 | 8.80 |
| DFL#2 | 2X8 | 2 | 10.80 |
| DFL#2 | 2X10 | 2 | 13.20 |

| C _r | C _D | C _{F,V} | M _{allow} (ft-lb) | V _{allow} (lb) | Ctrl'g factor |
|----------------|----------------|------------------|-------------------------------|----------------------------|------------------|
| 1.15 | 1.00 | 1.50 | 385 | 382 | Moment |
| 1.15 | 1.00 | 1.40 | 888 | 601 | Moment |
| 1.15 | 1.00 | 1.20 | 1322 | 792 | Moment |
| 1.15 | 1.00 | 1.10 | 1973 | 1011 | Moment |



JOB NO.: L0133-001-171
DATE: 3/17/2017

DESIGNED: DHF
CHECKED: DHF

SUBJECT: BEAMS

PROJECT: BRIGHTON RECOVERY CAMPUS

DESIGN LOADS:

| Load Type: | Snow ¹ | Live | Dead |
|------------|-------------------|------|------|
| Roof | 30 | 20 | 18 |
| Floor | | 40 | 15 |
| Wall | | | 12 |

Add 2* S_{os} to dead load? Yes 0.2267 = 2* S_{os}
note: 'a' must be less than or equal to 'L/2'

CRITERIA (L)

| | D _{TL} | D _{LL} | D _{DL} |
|-----------|-----------------|-----------------|-----------------|
| A (BLANK) | 240 | 360 | |
| B | 240 | 480 | |
| C | 600 | | 800 |

| Abbrev | GRADES | F _{max} (psi) | F _{ox} (psi) | E _{ox} (psi) | g (lb/ft ³) |
|-----------|--------------------|------------------------|-----------------------|-----------------------|-------------------------|
| DFL#1 | DFL#1 | 1,000 | 180 | 1,700,000 | 32 |
| DFL#2 | DFL#2 | 900 | 180 | 1,600,000 | 32 |
| DF1 (5X) | DFL#1 5X5 & LARGER | 1,350 | 170 | 1,600,000 | 32 |
| 24F-V4 | 24F-V4 | 2,400 | 240 | 1,800,000 | 32 |
| 24F-V8 | 24F-V8 | 2,400 | 240 | 1,800,000 | 40 |
| LVL (1.9) | LVL (1.9X108E) | 2,600 | 285 | 1,900,000 | 40 |
| LVL (2.0) | LVL (2.0X108E) | 2,200 | 285 | 2,000,000 | 42 |
| LSL | LSL (1.3X108E) | 1,700 | 400 | 1,300,000 | 42 |
| PSL | PSL (2.0X108E) | 2,900 | 290 | 2,000,000 | 42 |
| STL36 | GRADE 36 STEEL | 21,600 | 14,400 | 29,000,000 | 490 |
| STL46 | GRADE 46 STEEL | 27,600 | 18,400 | 29,000,000 | 490 |
| STL50 | GRADE 50 STEEL | 30,000 | 20,000 | 29,000,000 | 490 |

| Label | Length 'L' (ft) | Roof Trib (ft) | Floor Trib (ft) | Wall Trib (ft) | Add'l Live Load (plf) | Add'l Dead Load (plf) | Point Load From | Reactions (A, B) | Dist 'a' (ft) | Point Live Load 'P _{LL} ' (lb) | Point Dead Load 'P _{DL} ' (lb) | # PILES | Grade | Size | "BM/HDR" | D CRITERIA | C _r | C _b | C _{F-V} | R _s (lb) | R _s (lb) | M _{max} (ft-lb) | M _{allow} (ft-lb) | V _{max} (lb) | V _{allow} (lb) | D _{TL} (in) | D _{TL,allow} (in) | D _{LL} (in) | D _{LL,allow} (in) | 1.5DL COND 'C' | GLB COND 'C' | Camb | Check | |
|--------|-----------------|----------------|-----------------|----------------|-----------------------|-----------------------|-----------------|------------------|---------------|---|---|---------|-------|------|----------|------------|----------------|----------------|------------------|---------------------|---------------------|--------------------------|----------------------------|-----------------------|-------------------------|----------------------|----------------------------|----------------------|----------------------------|----------------|--------------|------|--------|--|
| EXISTG | 27 | 37.5 | | | | | | | | | | | | | | | 1.00 | 1.00 | 1.00 | 24501 | 24501 | 165381 | | | | 1.350 | | | | | | | | |
| B1 | 3.5 | 8 | | | | | | | | | | (3) | DFL#2 | 2X6 | H | | 1.00 | 1.00 | 1.00 | 730 | 730 | 639 | 2382 | 539 | 2970 | 0.014 | 0.175 | 0.005 | 0.117 | | | | 0.27 M | |
| B2 | 5.5 | 8 | | | | | | | | | | (3) | DFL#2 | 2X6 | H | | 1.00 | 1.00 | 1.40 | 1147 | 1147 | 1578 | 2382 | 956 | 2970 | 0.086 | 0.275 | 0.033 | 0.183 | | | | 0.66 M | |