TO:

Mr. Craig Browne, Building Official Weber County Building Inspection Department 2380 Washington Blvd, Ste 240 Ogden, UT 84401 T (801) 399-8374

RE:

Ninebark Townhomes for Summit Powder Mountain $1^{\rm st}\, Plan\, Review\, Resubmittal\, Narrative$

DATE:

March 10, 2017



Below, please find a narrative of revisions, additions, and clarifications for the above noted project per the WC3 First Review dated February 13, 2017. Please do not hesitate to contact me should you have any questions.

Note that per the revised plat, the lot numbers have changed as follows:Original:60A60B61A61B62RRevised:138139140141142

COMMENT DESCRIPTION

A1.	Sheet S3.11: As a matter of consideration for field practices, it is this reviewer's opinion that these highlighted details below are extremely difficult to correctly apply in the field. Typical field practices don't allow for j-bolts and horizontal re-enforcing bar extensions mid-wall or below top of form because it would become necessary for the foundation contractor to cut or drill the forms. The design and installation is not ipso facto against code and no correction is required, but it would serve well, if these details do remain, to note that drilling and epoxying require special inspection and test on all anchors installed post foundation casting.
Response	Noted.
A2.	Please clearly indicate on the plans the requirements for safety glazing and where it is to be provided. IRC R308.4 requires that all shower compartments, sliding glass doors, windows adjacent to doors, and other hazardous areas have safety glazing.
Response	Requirements for safety glazing are noted in the specifications, sheet A0.21, in the general notes on sheets A6.10 and A6.11, and have been added to sheets A0.10 where clouded.
АЗ.	Please provide details and dimensions for stairs, including rise and run dimensions.



STUDIO MA ARCHITECTURE & ENVIRONMENTAL DESIGN

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Response	Stair dimensions and tread/riser dimensions are noted for the typical unit on sheet A2.10; and on A2.11 for unique unit 62R.
A4.	Please provide details and dimensions for guardrails to be provided at the interior and exterior stairs, and at the edge of the exterior deck. Guards should meet the minimum requirements of IRC R312.1.
Response	Details for the exterior guardrails are provided as per drawings 3 and 4 on sheet A5.07, and dimensions for the exterior guardrail are indicated on the building sections on sheets A2.00, A2.01, and A2.03. Dimensions for the interior stair guardrail and handrails are provided on drawing 3/A2.10, and details are provided as drawings 6 and 7 on sheet A2.10, and as drawings 10, 11, 13, and 14 on sheet A5.11. There are no exterior stairs within this project's scope of work.
A5.	Please show on the plans how the building address will be listed as required by IRC R319.1.
Response	Address signage requirement is noted on code analysis sheet A0.10, and has been added to specifications, sheet A0.22.
A6.	Provide notes or details on the plans showing the required separation between the garage and the dwelling with a minimum of ½ inch gypsum board as required by IRC R302.6, and 5/8 type X at the ceiling where living space is located above the garage.
Response	Requirements per R302.6 are noted on code analysis sheet A0.10: Dwelling/Garage Fire Separation [TABLE R302.6]: Walls: 1/2" thk. gypsum board applied to the garage side. Ceiling: 5/8" thk. Type X gypsum board.
M2.*	Please provide details/cut sheets on fireplaces in order to determine code compliance.
Response* provided by Architect based on specification scope.	Refer to attached product information indicating UL compliance.

Sincerely,

Daniel IJ Jman

Dan Hoffman, RA Studio Ma, Inc.

END OF MEMORANDUM

GLHN

Plan Review Comment Responses

Project: Summit Powder Mountain Townhomes GLHN No. 1530.00

Architect: **Studio MA** 130 N. Cewntral Ave. #300 Phoenix AZ 85004 602-251-3800

Plan Reviewer:

WC3 Project No. 217-525-008

Reviewers Rewiew: February 13, 2017

Contact: Tim Keil

Issued to Engineer: Feb. 14, 2017 via e-mail

Reviewer: Mike Molyneux

The following are comments and or concerns with the sealed contract documents as reviewed by the above mentioned office having jurisdiction to do so. As indicated below, the adjustments have been made and incorporated into the sealed contract documents. The acceptance of these adjustments incorporated into the sealed documents shall be approved by the plan reviewer mentioned above and made available to the contractor for construction. **GLHN** shall not be responsible for any documents issued to contractor for bidding purposes if differ from these plans and do not carry the approval for construction signatures from the office having jurisdiction.

The below represents **GLHN's** response to the plan reviewer's comments. Please refer to your office copy for actual comment.

Mechanical Comments

- 1. Total dryer duct lengths have been added to the plans. Original design included booster fans and installations in accordance with IRC M1502.4.4.1
- 2. Fire place details and cut sheets have been provided.

Plumbing Comments

- 1. Comply Added "maximum flow rates" to fixture schedule.
- 2. Comply Added "vacuum breaker" to FPH on fixtureschedule. FPHB has integral vacuum breaker already called out.

Electrical Comments

- 1. Added "GFCI" device symbol sheet e1.21 and e1.23.
- 2. Added 1- GFCI rated (keynote #8) above counter receptacle location sheet e1.21. Adjusted spacing and deleted 1- device sheet e1.23.

- 3. Revised FA symbol identification to include a combination Carbon Monoxide sensor and Ioniztion Smoke Alarm. Added and adjust Fire Alarm devices sheets e1.20, e1.21, e1.22, and e1.23
- 4. Added comment to sheet e1.20 General Note "X".
- 5. Refer to General Note "S" sheet e1.20.
- 6. Added comment to General Note "P" sheet e1.20.

End of review comments.

GLHN Architects & Engineers

Stanley Yellowhair (M) Mechanical Designer – Project Manager

Ross Mellencamp (P) Plumbing Designer

John Gomez III (E) Senior Electrical Designer

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MAR

designed by: checked by:

Page S01

date: 3/2017 date:

Summit Powder Mountain Townhomes Copper Crest East WC³ Project #217-525-008

Response to Plan Review Comments

Architectural Comment A1: Sheet S3.11: As a matter of consideration for field practices, it is this reviewer's opinion... Response: We generally agree with your assessment and are planning to discuss alternate post-installed fasteners

with the contractor once he has been selected and can tell us what type of fastener he prefers to use (adhesive, expansion, screw, etc). For now we will leave the drawings with the cast-in anchors.

Structural Comments:

Structural Drawings:

Comment S1: Please provide the geotechnical report by IGES referenced in the plans for further review.

<u>Response S1:</u> The geotechnical report is included as an appendix to the structural calculations that were submitted. Please refer to sheet 448 of 484 of the calculation pdf.

Comment S2: Sheet s0.12: The Simpson strap schedule has not been provided with marks as shown on the plans. Please address.

Response S2: The missing marks were inadvertently left off the schedule and have now been added to it.

<u>Comment S3</u>: Sheet s0.13: The special inspection requirements shown are per the 2009 IBC. Significant changes have been made to the special inspection requirements especially the steel inspections per Section N5.4 of AISC 360-10. Please address.

<u>Response S3:</u> The statement of special inspections has been revised to reflect the current code requirements.



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<u>Comment S4:</u> The footing calculations (page 333) for SW-5 show that a 3.67 foot wide footing is required while the drawings show a WF3 which is a 3-foot wide footing. Please coordinate. <u>Response S4:</u> Refer to calculation sheet 282. The wall SW5 is the first wall west (right) of grid B on the plan (just right of the concrete basement wall). This wall is noted as WF6 which is a 3'-8" footing matching the calculations. The wall with the WF3 mark is wall SW3 which is correct per calculation sheet 329.

<u>Comment S5A:</u> Sheet S1.23: Detail 5/S4.14 is shown at gridline B at the entry level. This detail has not been provided. Please address.

Response S5A: The missing detail has been added to the plans as requested.

<u>Comment S5B</u>: Sheet S1.23: Beam TH11 at the entry level does not match what is shown in the calculations. The calculations show 6-3/4x10-1/2 glu-lam beam while the drawings show a 6-3/4x9 glu-lam beam. Please address.

<u>Response S5B:</u> We have changed the size on the plans to match the calculations.

<u>Comment S6:</u> Sheet s1.24: Please provide the size of the header near beam FB8 that is supporting FB10. This is not shown in the plans or detail 1/s4.14. <u>Response S6:</u> The header size has been added to the framing plan.

<u>Comment S7:</u> Sheet s4.10: Multiple floor framing details reference a Simpson hanger per schedule. Please clarify where this schedule can be found on the plans. <u>Response S7:</u> The hanger schedule has been added to sheet S0.12.

<u>Comment S8:</u> Sheet s4.13: Detail 9 does not show end wall blocking at the floor joists which run parallel to the foundation walls. Please provide a detail showing the blocking requirements as required by Section 12.11.2.2 of ASCE 7-10.

Response S8: The blocking requirements have been added to the plan and detail.

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Structural Calculations:

<u>Comment S9:</u> There is a nonparallel irregularity as defined in Table 12.3-1 of ASCE 7-10. This occurs at the end unit. Please address.

<u>Response S9:</u> The lateral analysis for unit 62R has been revised to satisfy ASCE 7-10. The unit has been modelled in RISA3d using stiffness coefficients per NDS for all shear walls and floor/roof diaphragms. Forces have been determined based on the worst case of 100% of one direction plus 30% of the orthogonal direction as required. All calculations have been modified and the drawings adjusted as required. See the attached sheets S6 through S70 for the revised analysis.

<u>Comment S10:</u> The beam calculations are per the 2012 IBC and 2012 NDS. Please verify that the calculations meet the requirements of the 2015 IBC and all referenced standards. <u>Response S10:</u> We have reviewed all beam calculations for the 2015 IBC and 2015 NDS requirements and have found that none of the members need to be changed.

<u>Comment S11A</u>: Please clarify whether the simplified or equivalent lateral force method was used.

Response S11A: The equivalent lateral force method was used.

<u>Comment S11B</u>: Please show how the forces at each level were determined (vertical distribution of forces, etc. as applicable). Calculations for Unit 62R show the vertical distribution of forces. Please provide for the other units. <u>Response S11B</u>:

For both the 62R and Typical 20 foot units: The seismic coefficients are determined on page 20 using the Equivalent Lateral Force method of ASCE 7-10 section 12.8. On pages 22-24 the wind pressures are determined using the ASCE sections noted. Wind pressures are broken into pressure and suction (windward and leeward) to allow a more accurate load determination due to the split floor levels.

For the typical 20 foot wide unit:

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job number:Copper Crest East
15105designed by:
checked by:MAR
date:
date:

e: 3/2017 e:

On page 280, dead loads are determined for each floor and roof level and seismic redistribution is performed to determine the adjusted percentage of total seismic force going to each level and the resulting force at each level. On page 281 the resulting ASD seismic loads at each level are shown (without rho applied). The loads are shown as total seismic loads on a given floor section.

On pages 282 and 283, the wind loads at each floor and roof level are developed based on tributary heights to each floor/roof level. Tributary heights were determined graphically using the building elevations and sections due to the complexity of the building profile and the pressure/suction effects of the split levels.

On pages 284 and 285, wind and seismic loads (with rho added) are determined for each wall using tributary widths and simple (flexible) diaphragm spans between shear walls.

For the 62R Unit:

Due to the non-regular shape of the unit, the simpler method used for the typical unit can't be followed for unit 62R. On page 286, seismic loads at each level are shown in the form of varying line loads applied to the diaphragm edges. These loads are developed on pages 287-288 based on the floor and roof weights and the varying building dimensions. The total seismic load at each level is calculated based on the varying line loads and building dimensions. On page 289, the seismic redistribution is performed based on the seismic load at each level and the height of the level above the ground. An adjustment factor is determined at each level that reflects the magnification or reduction of the seismic load at each level due to the redistribution exercise. (For example the roof seismic load of 8774# is 42.4 percent of the total seismic force, however the redistributed roof seismic load is 61.1 percent. This results in an adjustment factor of 1.44 (61.1/42.4) for the seismic loads at the roof level.) On pages 290 and 291, the seismic forces at each shear wall are determined. The diaphragms have been modeled as simple beam elements with the varying line loads applied to determine the forces going to each wall. We did not include these analyses in the calculation book but can provide them if you want them. The resulting shear wall forces are then adjusted using the adjustment factors determined in the seismic force redistribution exercise described earlier.

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On pages 292-295, wind loads are developed using the method described for the typical 20 foot unit.

<u>Comment S12:</u> The roof snow load is listed as 263psf. Please confirm that a percentage of the snow was considered in the seismic weight of the structure as required by Section 1605.3.1 and 1605.3.2 of the Utah Amended Code

<u>Response S12:</u> The ground snow load is 263 psf. The roof snow load is 203 psf as calculated on page 17. Twenty percent of the roof snow load is included in the effective seismic weight as required by ASCE section 12.7.2.4. This can be seen on page 280 for example in the calculation of the roof dead load at the top of the sheet where 0.2 x 203 is added to the typical 30 psf DL allowance.

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date: 3/17 date:

Revised Lateral Analysis at Unit 62R

To account for the non-orthogonal systems irregularity, the unit has been redesigned using RISA3D to model the semi-rigid floor and roof diaphragms and shear walls.

Seismic Loads from previous load calculations (see calculation page 289):

Roof (Level 5) V = 8774 * 1.44 = 12591#Roof Area = 1391 ft2 Load to plate elements in model = 9.05 psf

<u>+9-11 (Level 4)</u> V = 1266 * 0.98 = 1241# Floor Area = 506 ft2 Load to plate elements in model = 2.45 psf

<u>+6-9 (Level 3)</u> V = 1617 * 0.81 = 1310# Floor Area = 586 ft2 Load to plate elements in model = 2.24 psf

+5-3 (Level 2 - Terrace) V = 4291 * 0.81 = 3476#Floor Area = 674 ft2 Load to plate elements in model = 5.16 psf

<u>-4-8 (Level 1)</u> V = 4764 * 0.43 = 2049# Floor Area = 1322 ft2 Load to plate elements in model = 1.55 psf



















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Wall Panel Forces

	LC	Wall Label	Elevation [ft]	Axial [k]	x Shear [k]	z Shear [k]	x-x Moment [k-ft]	z-z Moment [k-ft]
1	1	SW1-0-1	-14.67	0	.312	011	0	-23.264
2	1	SW1-1-2	-4.67	0	.279	.007	.039	-20.147
3	1	SW1-2-3	5.25	0	399	127	152	-17.376
4	1	SW1-3-R	6.75	0	1.179	008	.016	-17.975
5	1	SW2-4-R	9.92	0	1.493	008	018	-18.069
6	1	SW2-G-4	0	0	3.475	005	0	-52.575
7	1	SW3-0-1	-14.67	0	.127	005	0	-1.199
8	1	SW3-1-3	-4.67	0	.295	005	001	.075
9	1	SW3-3-4	6.75	0	-1.085	01	.002	3.437
10	1	SW4-0-1	-14.67	-5.553	3.32	014	0	17.511
11	1	SW4-1-G	-4.67	-4.095	1.078	039	012	33.94
12	1	SW4-3-4	6.75	-1.005	.267	027	0	6.548
13	1	SW4-G-3	0	-2.288	1.073	009	0	8.679
14	1	SW5-0-1	-14.67	1.21	96	008	0	16.501
15	1	SW6-0-1	-14.67	-1.21	18.039	.008	0	-446.861
16	1	SW6-1-G	-4.67	0	14.582	.019	0	-289.014
17	1	SW6-2-3	5.25	0	12.485	.003	022	-144.818
18	1	SW6-3-4	6.75	0	10.478	038	009	-124.514
19	1	SW6-4-R	9.92	0	7.705	.013	.112	-92.927
20	1	SW6-G-2	0	0	14.579	.017	01	-221.131
21	1	SW7-0-1	-14.67	5.553	5.29	0	0	-94.986
22	1	SW7-1-2	-4.67	4.095	6.432	.001	004	-73.138
23	1	SW7-2-3	5.25	1.288	4.762	005	0	-80.154
24	1	SW7-3-4	6.75	1.005	5.451	013	004	-76.577
25	1	SW7-4-R	9.92	0	5.982	0	.006	-71.912



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Wall Panel Forces

	LC	Wall Label	Elevation [ft]	Axial [k]	x Shear [k]	z Shear [k]	x-x Moment [k-ft]	z-z Moment [k-ft]
1	2	SW1-0-1	-14.67	0	-5.958	.001	0	279.784
2	2	SW1-1-2	-4.67	0	-10.182	011	011	220.266
3	2	SW1-2-3	5.25	0	-6.382	.076	.097	119.381
4	2	SW1-3-R	6.75	0	-7.211	001	017	109.829
5	2	SW2-4-R	9.92	0	-6.218	.008	.059	75.032
6	2	SW2-G-4	0	0	-6.796	003	0	142.372
7	2	SW3-0-1	-14.67	0	269	0	0	10.068
8	2	SW3-1-3	-4.67	0	842	0	.002	7.427
9	2	SW3-3-4	6.75	0	.663	001	004	-2.133
10	2	SW4-0-1	-14.67	.909	-5.334	0	0	78.094
11	2	SW4-1-G	-4.67	.979	-2.662	.009	.013	24.097
12	2	SW4-3-4	6.75	.517	-1.653	.007	001	1.358
13	2	SW4-G-3	0	1.157	-2.632	0	0	14.502
14	2	SW5-0-1	-14.67	-3.282	-3.892	001	0	20.159
15	2	SW6-0-1	-14.67	3.282	-2.607	019	0	19.174
16	2	SW6-1-G	-4.67	0	-3.611	056	054	53.566
17	2	SW6-2-3	5.25	0	-2.512	.006	.041	17.582
18	2	SW6-3-4	6.75	0	-1.271	.052	009	13.608
19	2	SW6-4-R	9.92	0	805	027	183	9.768
20	2	SW6-G-2	0	0	-3.612	053	009	36.626
21	2	SW7-0-1	-14.67	91	.139	028	0	2.164
22	2	SW7-1-2	-4.67	979	.561	071	016	2.084
23	2	SW7-2-3	5.25	679	416	026	006	19.76
24	2	SW7-3-4	6.75	517	-1.676	02	005	21.152
25	2	SW7-4-R	9.92	0	-1.844	03	016	22.269

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structural enginee	ring	
scottsdale, arizona	85251	
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job name: job number: CCE 15105 MAR

designed by: checked by:

date: 3/2017 date:

	Shear Wall Forces								
		Gross Shears							
Shear Wall Segment	Roof/Floor Levels	EqX (N- S)	EqZ (E- W)	Eq-X (S- N)	Eq-Z (W- E)	EqX + .3EqZ	EqX + .3Eq- Z	EqZ + .3EqX	EqZ + .3Eq- X
		(kips)	(kips)	(kips)	(kips)	(kips)	(kips)	(kips)	(kips)
	0-1	-5.958	0.312	5.958	-0.312	-5.864	-6.052	-1.475	2.099
C) 1/1	1-2	-10.182	0.279	10.182	-0.279	-10.098	-10.266	-2.776	3.334
2001	2-3	-6.382	-0.399	6.382	0.399	-6.502	-6.262	-2.314	1.516
	3-RF	-7.211	1.179	7.211	-1.179	-6.857	-7.565	-0.984	3.342
014/2	G-4	-6.796	3.475	6.796	-3.475	-5.754	-7.839	1.436	5.514
5002	4-RF	-6.218	1.493	6.218	-1.493	-5.770	-6.666	-0.372	3.358
	0-1	-0.269	0.127	0.269	-0.127	-0.231	-0.307	0.046	0.208
SW3	1-3	-0.842	0.295	0.842	-0.295	-0.754	-0.931	0.042	0.548
	3-4	0.663	-1.085	-0.663	1.085	0.338	0.989	-0.886	-1.284
	0-1	-5.334	3.320	5.334	-3.32	-4.338	-6.330	1.720	4.920
SW4	1-3	-2.662	1.078	2.662	-1.078	-2.339	-2.985	0.279	1.877
	3-4	-1.653	0.267	1.653	-0.267	-1.573	-1.733	-0.229	0.763
SW5	0-1	-3.892	-0.960	3.892	0.96	-4.180	-3.604	-2.128	0.208
	0-1	-2.607	18.039	2.607	-18.039	2.805	-8.019	17.257	18.821
	1-2	-3.611	14.582	3.611	-14.582	0.764	-7.986	13.499	15.665
SW6	2-3	-2.512	12.485	2.512	-12.485	1.234	-6.258	11.731	13.239
	3-4	-1.271	10.478	1.271	-10.478	1.872	-4.414	10.097	10.859
	4-RF	-0.805	7.705	0.805	-7.705	1.507	-3.117	7.464	7.947
	0-1	0.139	5.290	-0.139	-5.29	1.726	-1.448	5.332	5.248
	1-2	0.561	6.432	-0.561	-6.432	2.491	-1.369	6.600	6.264
SW7	2-3	-0.417	4.762	0.417	-4.762	1.012	-1.846	4.637	4.887
	3-4	-1.676	5.451	1.676	-5.451	-0.041	-3.311	4.948	5.954
	4-RF	-1.844	5.982	1.844	-5.982	-0.049	-3.639	5.429	6.535

Level 0 = -14'-8"

Level 1 = -4'-8"

Level 2 = +5'-3"

Level 3 = +6'-9"

Level 4 = +9'-11"

Level G = 0'-0"

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job name:	CCE
job number:	15105
designed by: checked by:	MAR

date: 3/2017 date:

	Shear Wall Forces					
Shear		Gross	Net			
Wall	ROOI/FIOOr	Shear	Shear			
Segment	Levels	(kips)	(kips)			
SW1	0-1	-6.052	-4.214			
	1-2	-10.266	4.003			
	2-3	-6.262	-1.302			
	3-RF	-7.565	6.834			
SW/2	G-4	-7.839	1.173			
5002	4-RF	-6.666	6.666			
	0-1	-0.307	0.623			
SW3	1-3	-0.931	-1.919			
	3-4	0.989	0.989			
SW4	0-1	-6.330	3.345			
	1-3	-2.985	1.252			
	3-4	-1.733	1.733			
SW5	0-1	-4.180	4.180			
	0-1	18.821	3.156			
	1-2	15.665	2.427			
SW6	2-3	13.239	2.379			
	3-4	10.859	2.913			
	4-RF	7.947	7.947			
	0-1	5.248	-1.015			
	1-2	6.264	1.377			
SW7	2-3	4.887	-1.067			
	3-4	5.954	-0.581			
	4-RF	6.535	6.535			

Copper Crest East job name: pg of 295 rudow + berry job number: 15105 structural engineering scottsdale, arizona 85251 designed by: MAR date: 1/17 t (480) 946-8171 date: checked by: f (480) 946-9480 SHEAR WALL DESIGN SWI - WALLS ON LINE C Au ways the Thes To Genter Ar Rook of Loz, MAITS ARE MADEPENDENT AT LOI Ar ROOF $\frac{26393}{100} = 4(4101) + 6631 = 25459^{#} Ex$ = 4095 + 3021 (38) = 5243# WILLO LWAU = 4(4,5) + 6,33 = 24,335' 26393 Vorup 4419 = 254,45 5243 (24,35) = 4881 # ER, 970 Hinto VGLR = " (24:35) = (104# EQ., 1364 WINTED $\frac{A+Lo2}{V_{Ter}} = 4(2053) + 4054 = 12216 BR,$ = 6712 + 5881(.38) = 8947 WILLE $\begin{aligned} & -\omega_{AU} = 4(10,92) + 10.5 = 54.18 \text{ Fr} \\ \hline 10913 \\ V_{AUP, UNHT} = 17246 (10.92) = 2200 \text{ # } \\ \hline 79947 (54.18) = 2412 \text{ For }, 1803 \text{ # } \text{ H}. \end{aligned}$ $\prod_{i} \left(\frac{10.5}{10.18} \right) = \frac{2113}{2371^{4}} Eq, [734^{4}] ht.$ Yore = AT LOI Varme UNIT = 558 The, 30555 WINTE (N. UNIT ON 44) $V_{(m,p)} = \frac{-4214}{C37} \# ER, 1027 \# WiHD$ STLAP FORCE BOWLL UNITS: 10- # USE SIMPSON TALLOW = 2055 ASTA30 STRAP 2701-2113 = 588#

rudow + berry structural engineering	job name: Copper Crest I job number: 15105	East	of He
scottsdale, arizona 85251 t (480) 946-8171 f (480) 946-9480	designed by: MAR checked by:	date: 1/17 date:	
SHEAR WALL DESIGN <u>SW2</u> <u>FOR WALLS ON LINE K</u> , TIED TOGETHER AT LO ASSUME SHEAR DISTR. TO WALL LENGTH.	Au WAUS AN 2 & ROOF. 15 PROPORTION	LE AL	
$L_{WALL} = 4(4161') + 5,5 = 4(4101) + 5,5 = 4(4101) + 5$	$\frac{24.16}{6666} = \frac{2548}{2482}$	94 53, # 65,	
For Lo2 = 3759 (0.37) 7 (N.4) For fueron 25494 VTHP ULLIT = 24853 VFHP ULLIT = 24853 VG2R = 11 VG2R = 11 AT LO2 VFT = 4(492) + 2 = 1734 (.38)	$ \begin{pmatrix} 4 & 1 \\ 2 & 4 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\$	5-7# WINHD ER, 1093# W ER, 1287# W WINHD	1 4
$ \begin{aligned} & Lwanc = 4(4.07) + \\ & 3141 \\ & 3141 \\ & V_{MP} & unit = 2851 \\ & V_{MP} = 11 \end{aligned} $	$5.5 = 74.18$ $\frac{(4.17)}{(24.18)} = 449 = 449 = 607$ $\frac{(5.5)}{(24.18)} = 541^{#} = 62$ $\frac{(5.5)}{(24.18)} = 541^{#} = 62$, 55, the Winte	2
$M_{AX} - 572 ar Force Brown Un T_{ROOF} = 66666-5798 = 868# T_{LOZ} = 1173-714 = 459#$	HITZS: # USTAZU MIN	4 (TAuan ² b	-1235*

pg of 297

rudow + berry structural engineering scottsdale, arizona 85251 t (480) 946-8171 f (480) 946-9480 job name: Copper Crest East job number: 15105

designed by: MAR checked by:

date: 1/17 date:

MAIGAL UNIT SHEAR WALLS HEAD (PAINES NIPT = 4709 = 7.0 (USE (B) LPT4 WARE SWI $H_{LHC} = \frac{4707}{1.0(10)} = 4.1 \qquad [155 (5) 5/6"d$ LAGSVRF 4881 1091" EQ970" WINDVRF 4-6 $P_{1} = \frac{3}{500} + \frac{3}{5300} + \frac{3}{5300} + \frac{3}{5240}$ P3=2526 + 19890 + 23691 + 5240 $V_2 - V_2 = 102 V_2 = 2412^{\#} Fre.$ 1803# WIND $P_{3} = P_{4} = 164^{\pm} + 5892^{\pm}$ $W_{i} = 3900 + 3000 + , RF$ $-V_{i} = 401 \quad V_{i} = 558^{\pm} ER.$ T3 PC Ps WZ 3055 WILLD (M. UNIT) 0-01 P==P1= 130to + 882th W2= 3050 + 423L, PCF WALL BANK LOZ & ROOF 5 = 1046 PCF ER, 216 PCF WIND H/L = Z, 85>Z USE = SHT'L B.S. OF WALL M 10 d C 2"0, C. (JANOW (ER) = 2(1740) 1 (20) = 1221 0K. (Aurow (WILLS) = 2 (2435) 2.0 (2.85) = 170.9 ok SILL Contrat. 3 to tourse 16"0, C. ", JANOW = 1.4 (100) 12 = 1208 PLF of (3 Bours

Copper Crest East job name: pg of 298 rudow + berry job number: 15105 structural engineering scottsdale, arizona 85251 designed by: MAR date: 1/17 t (480) 946-8171 checked by: date: f (480) 946-9480 $OTM \ \mathcal{C} \ \mathcal{LOZ} = \frac{4.881}{4.709} (12.73) = \frac{62.62}{400.42} \ \mathcal{LOZ} = \frac{62.62}{400.42} \ \mathcal{LOZ} = \frac{62.62}{400.42} = \frac{62.62}{400.42} = \frac{16.35}{400.42} = \frac{$ TIE AT TI' $P = \frac{7300}{3098} + \frac{7300}{3098} \frac{114}{514} + \frac{16,350}{5760} = R.$ $= \frac{18818}{18815} + \frac{16}{164} (500 = 1675 - 1000 - 16,350)$ $= \frac{16}{16} + \frac{12}{18} + \frac{12}{18} + \frac{16}{16} + \frac$ SIMUSONI MAT37 EA, SIDE DE EA, P. + ST TAMON = 4 (6080) = 20320 02 TIE AT TZ! P = 257260 + 23697 Max 5 ± 16,350 32,561 = 32/18 the Max (SEE Kleer SHIPS FOR POST DEEXCAL) = , G(2626+321) - 16760 = -140677 + (UAR TELSION) = , G(2626+321) - 16760 = -140677 + (UAR TELSION) = 14642 = 1.4% $T_{Aurow} = 144465 + Delta = 1.4\%$ = 1.4%4881+2200=7081 < 7181 OK by Inspection WAN BROUT LOI # LOZ V = 7181 # Etc, 2713 # WINHD OF WALL M Dde 6"O.C. (MIN) U= 658 52, 254 WALD, PLF VANON = 2(680) = 680 ER. H/b_ = 0.91 × Z oh $= \frac{2(950)}{2.0} = 950 \text{ (WWD)}$ SILL CONTAL N= 1181 = 4.45 (USE (5) 5/45 BOLAZS

Page 623₁₅₁₀₅ 299

Printed 24 JAN 2017, 7 54PM

Wood Column		i di diska di sela	ENEF	File = C:_jobs\15105C~1\EN RCALC, INC, 1983-2017, Build:6.17.1	G\cce-2017.ec6
Lic. # : KW-06002357			the second	Licensee : RUD	OW & BERRY
Description : Typ Unit - SW1 - T	1 Post from L02 to Roof - 4x8 D.Fir#1				
Code References					
Calculations per 2012 NDS, I Load Combinations Used : A	BC 2012, CBC 2013, ASCE 7-1 SCE 7-10 w/ ASD Wind & EQ	0			
General Information					
Analysis Method : Allowable End Fixities Top & Bo	e Stress Design ottom Pinned	Wood Section Name Wood Grading/Manuf.	4x8 Graded	Lumber	
Overall Column Height	12.50 ft	Wood Member Type	Sawn		
Wood Species Douglas Fir	- Larch	Exact Width	3.50 in A	Allow Stress Modification Fact	ors
Wood Grade No.1		Exact Depth	7.250 in	Cf or Cv for Bending	1.30
Fb - Tension 1,200.0 psi	Fy 170.0 psi	Area	25.375 in*2	Cf or Cv for Complession	1.050
Fb - Compr 1,200.0 psj	Ft 825.0 psj	IX Iv	111.148 in ⁴	Cm : Wet Lise Eactor	1.20
Fc - Prll 1,000.0 psi	Density 31.20 pcf	Iy	25.904 in ⁴	Ct Temperature Factor	1.0
Fc - Perp 625.0 psi	, , , , , , , , , , , , , , , , , , ,			Cfu : Elat i ise Factor	1.0
E : Modulus of Elasticity	x-x Bending y-y Bending Ax	tial		Kf : Built-un columns	1.0 1 0 NDS 15.
Basic	1,600.0 1,600.0 1,6	00.0 ksi		Use Cr : Renetitive ?	No
Minimum	580.0 580.0	Brace condition for de X-X (width) axis :	flection (buckling Fully braced	g) along columns : I against buckling along X-X Axis	
		Y-Y (depth) axis	: Unbraced L	ength for X-X Axis buckling = 12.	50 ft, K = 1.0
AXIAL LOADS Axial Load at 12.50 ft, D = DESIGN SUMMARY	0.330, S = 8.30, E = 15.760 k	OK by Inspec	ction		
Bending & Shear Check Resu PASS Max. Axial+Bending Stress Load Combination Governing NDS Forumla Location of max.above bas At maximum location values	Ilts s Ratio = 0.8015 : 1 +D+0.750L+0.750S+0.750E+H Comp Only, fc/Fc' e 0.0tt s are 18818	Maximum SERVICE Top along Y-Y Top along X-X Maximum SERVICE Loa Along Y-Y	E Lateral Load O.O k O.O k d Lateral Deflect O.O in at	Reactions Bottom along Y-Y Bottom along X-X ions ft above base	0.0 k 0.0 k
Applied Axial	18.375k	for load combin	nation :		
Applied IVX Applied My	0.0 k-ft	Along X-X	in at	ft above base	
Fc : Allowable	903.51 psi	for load combi	nation :		
		Other Factors used to c	alculate allowabl	e stresses	
PASS Maximum Shear Stress Ra Load Combination Location of max.above bas Applied Design Shear	atio = 0.0 : 1 +0.60D+E+0.60H e 12.50 ft 0.0 psi			Bending Compression	Lension
Allowable Shear	272.0 psi				
Load Combination Results	1				
Load Combination		ximum Axial + Bending Stre Stress Ratio Status I	ess Ratios	Maximum Shear Ra Stress Ratio Status	atios Location
Maximum Deceliere	- F 5				
waximum reactions	V V Avia Departies	V V Aula	Ponction	Note: Unly non-zero reactio	ris are listed
Load Combination	@ Base @ Top	0 Base	@ Top	Axial Read @ Bas	Such Se
Maximum Deflections for Loa	ad Combinations				
Load Combination	Max. X-X Deflection Distance	Max. Y-Y Deflection	Distance		

Wood Column

Printed 24 JAN 2017, 7 54PM File = C:_jobs\15105C~1\ENG\cce-2017.ec6

ENERCALC, INC. 1983-2017, Build:6.17.1.16, Ver.6.17.1.16 Licensee : RUDOW & BERRY

Lic. # : KW-06002357 Description : Typ Unit - SW1 - T2 Post from L02 to Roof - 6x8 D.Fir#1

Code References

Calculations per 2012 NDS, IBC 2012, CBC 2013, ASCE 7-10 Load Combinations Used : ASCE 7-10 w/ ASD Wind & EQ

General Information

ochora inform	acion									
Analysis Method	: Allowable	Stress Desi	gn		Wood Section Na	me 6 :	x8			
End Fixities	Top & Bo	ttom Pinned			Wood Grading/Man	uf. G	raded l	_umber		
Overall Column H	leight		13.170 ft		Wood Member Type	e S	awn			
(Used for	non-slender calc	ulations)			Exact Width	5.5	o in Al	low Stress Modification	n Factor	s
Wood Species	Douglas Fir -	Larch			Exact Depth	7.25	0 in	Cf or Cv for Bending		1.0
Wood Grade	No.1				Area	39.87	5 in^2	Cf or Cv for Compress	sion	1.0
Fb - Tension	1,200.0 psi	Fv	170.0	psi	Ix	174.66	1 in^4	Cf or Cv for Tension		1.0
Fb - Compr	1,200.0 psi	Ft	825.0	psi	lv	100.51	8 in^4	Cm : Wet Use Factor		1.0
Fc - Prll	1,000.0 psi	Density	31.20	pcf	,	100.01	0	Ct : Temperature Fact	tor	1.0
Fc - Perp	625.0 psi							Cfu : Flat Use Factor		1.0
E : Modulus of El	asticity	x-x Bending	y-y Bending	Axial				Kf : Built-up columns		1.0 NDS 15.
	Basic	1,600.0	1,600.0	1,600).0 ksi			Use Cr : Repetitive	?	No
	Minimum	580.0	580.0		Brace condition fo	r deflection (huckling	along columns :		
					X-X (width) a	xis: Full	ly braced	against buckling along X-	X Axis	
					Y-Y (depth) a	ixis: Uni	oraced Le	ngth for X-X Axis buckling	g = 13.17	'0 ft, K = 1.0
A 2020 LA 2010					· · (
Applied Loads					Service I	oads entere	ed. Load	Factors will be appli	ed for (calculations.
AXIAL LOADS					00 504/00 44	0)* 074				
Axial Load	at 13.170 ft, D =	2.526, S = 23	3.697, E = 15.	760 k 🛛 🌔	32,561/32,11	9)^.974	4			
DESIGN SUMM	IARY				= .988	3				
Rending & Shea	ar Check Resul	ts		. /	🖊 ОК					
PASS Max Axia	al+Bending Stress	Ratio =	0.07					Posstions		
Load Co	mbination	+D+0 7501 +	0.97 0 750S+0 750F	44:I	Top along Y-Y		i Luau r i k	Bottom along Y-Y		0.0 k
Governi	ng NDS Forumla	Co	mp Only, fc/	Fc'	Top along X-X	0.0	k	Bottom along X-X		0.0 k
Location	of max.above base			p.p.ft	Maximum SERVICE	Load Lateral	Deflectio	ns		
At maxir	num location values	are	32,561		Along Y-Y	0.0	in at	ft above	e base	
Appl	ied Axial		32.1	19 k	for load co	mbination :				
Appl	ied Mx		I	0.0 k-ft	Along X-X		in at	ft above	e hase	
Appl	ied My		000	0.0 k-ft	for load co	mbination ·	in at	1, 4504	5 DUGG	
FC:	Allowable		826	.62 psi	Other Factors used	to calculate :	allowable	stresses		
PASS Maximum	h Shear Stress Rat	tio =		0.0:1		to calculate a	anomabic	Bending Compres	ssion	Tension
Load Co	ombination		+0.60D+E+0.6	50H						
Location	of max.above base		13.1	70 ft						
Applied	Design Shear		1	0.0 psi						
Allowab	le Shear		27	2.0 psi						
Load Combina	tion Results									
				Maxin	num Axial + Bending	Stress Ratio	s	Maximum Sh	ear Rati	OS
Load Combina	tion	CD	СР	Stre	ss Ratio Status	Location	-	Stress Ratio Sta	itus	Location
Maximum Read	ctions						N	ote: Only non-zero re	actions	s are listed.
			X-X Axis Rea	action	Y-Y /	Axis Reaction		Axia	al Reacti	on
Load Combinati	on		@ Base @) Тор	@ Base	e @ Top	2		@ Base	
Maximum Doff	ections for Los	d Comhinativ	205							
Load Combination	ECHOIIS IUI LOU		Deflection D	istanco	Max V V Doffer	ction Dist	2000			
LUAU CUIIDINAUON		IVIdX. A-A	Dellection D	ISICIIICE	IVIAX. 1-1 Dellet	Juuri DiSt	anuc			



Copper Crest East job name: pg 303 rudow + berry job number: 15105 structural engineering scottsdale, arizona 85251 designed by: MAR date: 1/17 t (480) 946-8171 date: checked by: f (480) 946-9480 $\begin{array}{rcl} & \mathcal{O} \mathcal{M} & \mathcal{C} \ \mathcal{L} \mathcal{O} \ & = \ \mathcal{I} & \mathcal{I$ CUMULATIVE TO TI = 15.76 + 7.12 = 22.88 BE. = 3.25 + 2.75 = 6.00 K W/140 TIE AT TI P= 1094 = + 14192 Max 5 + 22880 ER. 1094 = + 7990 MIN 5 + 22880 M. = 28 BOTS # Mare (Set Nexy SHT FOR POST) = ,6 (1094+142+ 10.92(9.92) (0)) - 22880 = -21513 # Mar. Teaus. TIE AT T3 P= 164 = + 58925 ± 7120 ER = 10913 that (SEE MELT SHT For Part) = , ((164 + 10.92(9.92)) - 71120 = - 6337 # Mar Terrsion SIMPSON MET37 \$14'SDE OF EACH POST TANON = 20320 # 04 4881+2200+1085=8166 VAU Equipi GALD + LOI V= 7139 # EQ, 5828 # WINED V= 7139" EQ, 5828" WIND (USE SHIC BOTH SIDES US= 709 ER, 534 WARD, PUP OF WALL MIDDE 4".O.C. (MIN) UALLOW = 1010 ER, 1430 WIND 0 748 SILL CANENT 8166 1739 = 3.14 USE (4) 34 4 AB 5 TO GREM

Wood Column

Lic. # : KW-06002357

Copper Crest East MAR

Printed 24 JAN 2017. 7 54PM File = C:_jobs\15105C~1\ENG\cce-2017.ec6 ENERCALC, INC. 1983-2017, Build:6.17.1.16, Ver.6.17.1.16 Licensee : RUDOW & BERRY

Description : Typ Unit - SW1 - T1 Post from GND to L01 - (2)4x8 D.Fir#1

Code References

Calculations per 2012 NDS, IBC 2012, CBC 2013, ASCE 7-10 Load Combinations Used : ASCE 7-10 w/ ASD Wind & EQ

General Information

Analysis Method : End Fixities Overall Column Heigh	Allowable Top & Bot	Stress Desi tom Pinned	gn 10.0 ft		Wood S Wood Gi Wood Mi	ection Name ading/Manuf. ember Type	e 4x8 Grade Sawn	d Lumber	
(Used for non Wood Species D Wood Grade N Fb - Tension Fb - Compr Fc - Prll Fc - Perp E : Modulus of Elastic	-slender calcu ouglas Fir - lo.1 1,200.0 psi 1,200.0 psi 1,000.0 psi 625.0 psi ity Basic Minimum	<i>llations)</i> Larch Ft Density x-x Bending 1,600.0 580.0	170.0 825.0 31.20 y-y Bending 1,600.0 580.0	osi pof Axial 1,600.	Exact Wi Exact De Are Ix Iy O ksi Brace cc X-X Y-Y	dth ppth a ondition for do ((width) axis ((depth) axis	3.50 in 7.250 in 25.375 in 111.148 in 25.904 in 25.904 in effection (buckli : Fully brac : Unbraced	Allow Stress Modification Fac Cf or Cv for Bending Cf or Cv for Compression Cf or Cv for Compression Cf or Cv for Tension Cm : Wet Use Factor Ct : Temperature Factor Cfu : Flat Use Factor Kf : Built-up columns Use Cr : Repetitive ? ing) along columns : ed against buckling along X-X Axis Length for X-X Axis buckling = 10	tors 1.30 1.050 1.20 1.0 1.0 1.0 1.0 NO 5 .0 ft, K = 1.0
Applied Loads AXIAL LOADS Axial Load at 1	0.0 ft, D = 1.7	′30, L = 0.882	20, S = 14.192	2, W = 24.3	340, E =	Service loa 30.620 k	ds entered. Lo	ad Factors will be applied fo	r calculations.
Bending & Shear C FAIL Max. Axial+B Load Combin Governing NI Location of m At maximum Applied A Applied M Applied M Fc: Allow	heck Result ending Stress hation DS Forumla hax.above base location values a xial fx fy hable	s Ratio = +D+0.750L+(Coi are	1.2 0.750S+0.750E mp Only, fc/F <u>36.69</u> 36.00 0 0 1,181.0	01:1 +H 0.0 01 k 0.0 k-ft 0.0 k-ft 0.0 k-ft 0.8 psi	36690/ Maximu Top alo Top alo Maximum Along Y Along X	36001 * m SERVICI ng Y-Y ng X-X SERVICE Lo -Y for load comb tors used to	1.201/2 = E Lateral Load 0.0 k 0.0 k ad Lateral Defle 0.0 in a ination : in a ination :	= 0.612 - OK d Reactions Bottom along Y-Y Bottom along X-X ctions at ft above base at ft above base	0.0 k 0.0 k
PASS Maximum Shu Load Combin Location of m Applied Desig Allowable Sh	ear Stress Rati nation nax.above base gn Shear ear	0 =	0 +0.60D+E+0.6 10 0 272	0 .0 : 1 0H 0.0 ft 0.0 psi 2.0 psi				Bending Compression	<u>Tension</u>
Load Combination	Results								
Load Combination		CD	С _Р	<u>Maximu</u> Stres	um Axial + s Ratio	Bending Stro Status	ess Ratios Location	<u>Maximum Shear R</u> Stress Ratio Status	atios Location
Maximum Reaction	ns							Note: Only non-zero reaction	ons are listed.
Load Combination		(X-X Axis Read @ Base @	ction Top		Y-Y Axis @ Base	Reaction @ Top	Axial Rea @ Ba	ction se
Maximum Deflection	ons for Load	Combinatio	ns						
Load Combination		Max. X-X [Deflection Dis	stance	Max.	Y-Y Deflection	n Distance		

Wood Column

Lic. # : KW-06002357

Description :

End Fixities

Wood Species

Wood Grade

Fb - Tension

Fb - Compr

Fc - Prll

Fc - Perp

Project Title:

age, \$2815105

Printed: 24 JAN 2017, 7 54PM

File = C:_jobs\15105C~1\ENG\cce-2017.ec6 ENERCALC, INC. 1983-2017, Build:6.17.1.16, Ver.6.17.1.16 Licensee : RUDOW & BERR Typ Unit - SW1 - T3 Post from GND to L01 - (2)4x8 D.Fir#1 **Code References** Calculations per 2012 NDS, IBC 2012, CBC 2013, ASCE 7-10 Load Combinations Used : ASCE 7-10 w/ ASD Wind & EQ General Information Analysis Method : Allowable Stress Design Wood Section Name 4x8 Wood Grading/Manuf. Top & Bottom Pinned Graded Lumber 10.0 ft Wood Member Type **Overall Column Height** Sawn (Used for non-slender calculations) Exact Width 3.50 in Allow Stress Modification Factors Douglas Fir - Larch Exact Depth Cf or Cv for Bending 7.250 in 1.30 No.1 Cf or Cv for Compression 1.050 25.375 in^2 Area 1,200.0 psi Fv 170.0 psi Cf or Cv for Tension 1.20 lх 111.148 in⁴ 1,200.0 psi Ft 825.0 psi Cm : Wet Use Factor 1.0 ly 25.904 in⁴ 1,000.0 psi 31.20 pcf Density Ct : Temperature Factor 1.0 625.0 psi Cfu: Flat Use Factor 1.0 Axial E : Modulus of Elasticity . . . x-x Bending y-y Bending Kf : Built-up columns 1.0 NDS 15.3.2 Basic 1,600.0 1,600.0 1,600.0 ksi Use Cr : Repetitive ? No Minimum 580.0 580.0 Brace condition for deflection (buckling) along columns : X-X (width) axis : Fully braced against buckling along X-X Axis Y-Y (depth) axis : Unbraced Length for X-X Axis buckling = 10.0 ft, K = 1.0 **Applied Loads** Service loads entered. Load Factors will be applied for calculations. AXIAL LOADS . . Axial Load at 10.0 ft, D = 1.40, L = 0.8820, S = 5.892, W = 8.580, E = 14.860 k **DESIGN SUMMARY** OK by inspection Bending & Shear Check Results PASS Max. Axial+Bending Stress Ratio = Maximum SERVICE Lateral Load Reactions . . 0.5881:1 Load Combination +D+0.750L+0.750S+0.750E+H Top along Y-Y 0.0 k Bottom along Y-Y 0.0 k Governing NDS Forumla Comp Only, fc/Fc' Top along X-X 0.0 k Bottom along X-X 0.0 k Location of max.above base 0Øft Maximum SERVICE Load Lateral Deflections ... 17.873 At maximum location values are . . . Along Y-Y 0.0 in at ft above base Applied Axial 17.626 k for load combination : Applied Mx 0.0 k-ft Along X-X in at above base ft Applied My 0.0 k-ft for load combination : Fc : Allowable 1,181.08 psi Other Factors used to calculate allowable stresses ... PASS Maximum Shear Stress Ratio = 0.0:1 Bending Tension Compression Load Combination +0.60D+E+0.60H Location of max.above base 10.0 ft Applied Design Shear 0.0 psi Allowable Shear 272.0 psi Load Combination Results Maximum Axial + Bending Stress Ratios Maximum Shear Ratios CP Сп Load Combination Stress Ratio Stress Ratio Status Location Location Status Maximum Reactions Note: Only non-zero reactions are listed. X-X Axis Reaction Y-Y Axis Reaction Axial Reaction Load Combination @ Base @ Top @ Base @ Top @ Base

Maximum Deflections for Load Combinations

Load Combination Max. X-X Deflection Distance Max. Y-Y Deflection Distance

rudow + berry structural engineering	job name: Copper Cre job number: 15105	est East	of 313
t (480) 946-8171 rbinc@rbise.com	designed by:MAR checked by:	date: 1/17 date:	
		R	
FOOTHE			
OTMC B.O. FIGZ	151.90 8.166 148.02 + 7.1392 ((2,76) = [66,	7 K 03 EQ.
Por= 10+2526+24+	+764 + 636+636 +	+ 4,5(126) + 10	Az (199)
+ (0.92(390+305) =	- 15994		
$W_{pL} = \frac{15994}{10.92} = 1465$	PLF		
Mon = (330+764+630 (5.46) = 6.08th cont	+ 576 (3.21) + 2526	(90) - (UA+652	(5,46)
PL = 882+882+10.92/4	$(z_3) = (coz^{\pm}, W_L)$	= COG PLF	-
ML= 0			
PSL= Proo+ 19890 + 58	392+5892+10,9263	(000) = 12,800	#
WGL = 4600 PLF	-		
MSL = (0:3+5:892) 5.	40)+ 19,99 (196) - 5,	1997(5.42)	
= 64,41 th ce	W		

-SERE MERS SHIT For For -

Page S30

rudow + berry	proje	ct name: CCE				projec	t no.
structural engineering						151	05
scottsdale, arizona (602) 946-8171	desi	gned by: MAR		date: Jun-15 date:			
(002) 540-0111	che	okcu by.		date.			
	SHEA	R WALL F	-00	OTING DESIG	N		
INPUT DATA :	Typical U	nit Wall SW1					
Allow. Soil Pr. = 2.400 Fy = 60 ksi f'c = 3000 psi Wall DL = 1.47 klf Roof LL = 6.67 klf Floor LL = 0.61 klf Wall Length = 10.92 Wall Thickness = 8	ksf feet inches			DL OTM = FLR LL OTM = RF LL OTM = SEISMIC OTM = Footing Length : Footing Width : Footing Thkness: Footing DL :	6.08 ft-kips 0 ft-kips 64.41 ft-kips 166.03 < ft-kips 16.67 feet 4.33 feet 18 inches 1.649 klf	-170.2 See next shee	7 t
OUTPUT DATA:							
EQ'N 16-11 : $DL + .75(FL + RL)$ P =103.0 kipsOTM =54.39 ft-kipse =0.53 feetSoil Pr. =1.70 ksf, max.,EQ'N 16-14: $DL + .75(FL + RL)$ P =103.0 kipsOTM =178.9 ft-kips0.71.74 foot	.): P _{ult} = OTM _{ult} = X bar = 2.43 + .7E) P _{ULT} = OTM _{ULT} =	147.5 kips 84.59 ft-kips N/A feet ksf, ult. 147.5 kips 283.82 ft-kips	;		Required Width =	3.06	feet
Soil Pr. = 2.32 ksf, max.,	3.32	ksf, ult.			Required Width =	4.19	feet
EQ'N 16-16: 0.6DL + 0.7E P = 26.1 kips OTM = 169.7 ft-kips e = 6.50 feet Soil Pr. = 2.19 ksf, max.,	P (ult) = OTM _{ULT} = X bar = 2.63	31.3 kips 190.33 ft-kips 1.83 feet ksf, ult.	5		Required Width =	3.96	feet
Resisting Moment = 362.43	ft-kips				Factor of Safety =	3.02	
FOOTING REINFORCING	3:						
LONGITUDINAL DIRECTION: Req'd Unreinf Thickness = Moment = 16.40 ft-kips/ft Shear = 0.69 kips/ft	32	inches Fb(allow)= Fv(allow)=	178 71	psi psi	fb(act.)= fv(act.)=	109 3	psi psi
TRANSVERSE DIRECTION: Req'd Unreinf Thickness = Moment = 6.84 ft-kips/ft Shear = 0.54 kips/ft	20	inches Fb(allow)= Fv(allow)=	178 71	psi psi	fb(act.)= fv(act.)=	127 3	psi psi
Reinf. Thickness (if used) = Longitudinal Steel Required = Transverse Steel Required =	18 0.26 0.11	inches sq.in./ft. sq.in./ft.			v(longit.) = v(transv.)= V(allow) =	31 11 93.1	psi psi psi

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rudow + berry
structural engineering

project name: CCE

project no. 15105

scottsdale, arizona

(602) 946-8171

designed by: MAR checked by:

date: 3/6/17 date:

SHEAR WALL FOOTING DESIGN							
INPUT DATA :	Typical L	Init Wall SW1					
Allow. Soil Pr. = 2.400 Fy = 60 ksi f'c = 3000 psi Wall DL = 1.47 klf Roof LL = 6.67 klf Floor LL = 0.61 klf Wall Length = 10.92 Wall Thickness = 8	ksf feet inches		DL OTM = FLR LL OTM = RF LL OTM = SEISMIC OTM = Footing Length : Footing Width : Footing Thkness: Footing DL :	6.08 ft-kips 0 ft-kips 64.41 ft-kips 170.27 ft-kips 16.67 feet 4.33 feet 18 inches 1.649 klf			
OUTPUT DATA :							
EQ'N 16-11 : DL + .75(FL + R P = 103.0 kips OTM = 54.39 ft-kips e = 0.53 feet Soil Pr. = 1.70 ksf, max.,	L): P _{ult} = OTM _{ult} = X bar = 2.43	147.5 kips 84.59 ft-kips N/A feet ksf, ult.		Required Width =	3.06	feet	
EQ'N 16-14: DL + .75(FL + RL P = 103.0 kips OTM = 182.1 ft-kips e = 1.77 feet Soil Pr. = 2.34 ksf, max.,	+ .7E) P _{ULT} = OTM _{ULT} = X bar = 3.34	147.5 kips 288.91 ft-kips N/A feet ksf, ult.		Required Width =	4.21	feet	
EQ'N 16-16: 0.6DL + 0.7E P = 26.1 kips OTM = 173.9 ft-kips e = 6.67 feet Soil Pr. = 2.41 ksf, max.,	P (ult) = OTM _{ULT} = X bar = 2.89	31.3 kips 195.08 ft-kips 1.67 feet ksf, ult.		Required Width =	4.34	feet	
Resisting Moment : 362.43	ft-kips			Factor of Safety =	2.95		
	G:			-			
LONGITUDINAL DIRECTION: Req'd Unreinf Thickness = Moment = 16.51 ft-kips/ft Shear = 0.69 kips/ft	32	inches Fb(allow)= 1 Fv(allow)= 7	78 psi 71 psi	fb(act.)= fv(act.)=	110 3	psi psi	
TRANSVERSE DIRECTION: Req'd Unreinf Thickness = Moment = 6.89 ft-kips/ft Shear = 0.55 kips/ft	20	inches Fb(allow)= 1 Fv(allow)= 7	78 psi 71 psi	fb(act.)= fv(act.)=	128 3	psi psi	
Reinf. Thickness (if used) = Longitudinal Steel Required = Transverse Steel Required =	18 0.26 0.11	inches sq.in./ft. sq.in./ft.		v(longit.) = v(transv.)= V(allow) =	31 11 93.1	psi psi psi	

		Page	S32
rudow + berry structural engineering scottsdale, arizona 85251 t (480) 946-8171	job name: Copper Cre job number: 15105 designed by: MAR	st East date: 1/17	of 315
f (480) 946-9480	checked by:	date:	
WALL SW-2			
V VRE ROOT	$V_{RF} = 4800^{+}E$ $P_1 = mn^{+}E + 12$	ER, 1093# WIM 2715328 + 7205#	4Ъ ± 5240
Parti Tatipa 6 to 18	Pz=2591+1+2	9412 3366 + 2402	5240
W1 W2 V2 002	Kz = 459 # E	x, 551 # ht	чъ
41-31 =	$P_3 = \frac{1}{2}(4, c_1)(1, 1)$ = $C_8^{+} +$	109#L	
1 W2 1 5 1 201	P4========	25,+40)	
15th C' SPEM 1	= (39) + $W_1 = 9(10) = 90$	METL, PLF	
$P_{5} = 1669 + \frac{16106}{15418} 5$	$W_2 = 9i91(10) + 1i$ = 1260 + 4	17 (25+40) ML, PUF	
WALL BRWH LOZ & ROOF U= 1008 PLFER, 234 PLFA	MAD WEEE"	SHIGES, W	
$H_{b} = 1.973 \times 2$	Uprien	$= \frac{2(1120)}{2.0} = 17.$	40 cm,
	ž.	= z(2935) = 24	35 W.
	1	A OK	
5111 Contract. 4924 3.05 M = 4600 = 2.98	USE MIN (3)	"b & BOUTS @	LOZ
1.6(1001)	4924 7.35	ME (B) SIMP	al 474
HEADCENIN Nupt 4924	10 = 4.12 Th	Lun Kerter	ALL
NLAL = Tula	4.81	E WIN 13187C	103
Page S33 **Copper Crest East** job name: pg of 316 rudow + berry job number: 15105 structural engineering scottsdale, arizona 85251 designed by: MAR date: 1/17 t (480) 946-8171 checked by: date: f (480) 946-9480 the $\begin{array}{l} \hline THE ATTI: 11310 \\ P = M7 + 1271 & 11310 \\ P = M7 + 1271 & 1145 \pm 1010 & B_{T} \\ \hline 14663 \\ P_{Max} = VAAA6^{-\#} - 56T & NETT 54T & FOR POST DESIGN \\ P_{Max} = VAAA6^{-\#} - 56T & NETT 54T & FOR POST DESIGN \\ P_{Max} = 16(11 + 490) - 11310 \\ \hline 11310 = 10718 \\ Har Testsion \\ \hline 11310 \\ P_{Max} = -10476 & Mar Testsion \\ \hline 11310 \\ \hline 10718 \\ Har Testsion \\ \hline 11310 \\ \hline 10718 \\ Har Testsion \\ \hline 11310 \\ \hline 10718 \\ \hline$ (USE SIMPSONS MET 37 EA SIDE OF CA POST TALLOW = 4 (5080) = 20160 06 $\begin{array}{l} \hline T I = A T T Z \\ P = 2591 + 24071 \text{ Max} 5 \pm 11000 \text{ GR}. \\ \hline 2510 \text{ W}. \\ \hline 30063 \\ P \text{ Max} = 0 [4100 - -585 \text{ MeVT} 5 \text{ Max} 5 \text{ For } Pass Desical \\ \hline P \text{ Max} = 0 [4100 - -585 \text{ MeVT} 5 \text{ Max} 5 \text{ For } Pass Desical \\ \hline P \text{ Min} = ((2591 + \frac{450}{2} \text{ Gr})) - 11000 = -91199 \\ \hline M \text{ Max} T \text{ For } 1 \text{ Max} T \text{$ THE SAME ASTI Controls due to lower duration factor $\frac{5111 \text{ Const}}{N = \frac{5259}{1.0(1540)}} = 2.13$ USE 3 74 4 ABCS TO STEM

Lic. # : KW-06002357

Code References

Calculations per 2012 NDS, IBC 2012, CBC 2013, ASCE 7-10 Load Combinations Used : ASCE 7-10 w/ ASD Wind & EQ

General Information

Analysis Method : End Fixities Overall Column He	Allowable Top & Bo eight	e Stress Des ttom Pinned	ign 9.330 ft		Wood Section Name Wood Grading/Manuf. Wood Member Type	3x8 Gradeo Sawn	d Lumber	
(Used for n	ion-slender cald	ulations)			Event Midth	FA	Alleria Olenne Alleria De La Deserva	ha
Wood Species	Douglas Fir	- Larch			Exact Width	5.0 1	Allow Stress Modification Fac	
Wood Grade	No.1				Exact Depth	7.25U II	Cf or Cv for Compression	1.20
Fb - Tension	1,200.0 psi	Fv	170.0	psi	Area	36.25U IN"2	Cf or Cy for Tension	1.000
Fb - Compr	1.200.0 nsi	Ft	825.0	psi	IX	158.783 in*4	Crist Wet Lies Easter	1.20
Fc - Pril	1.000.0 psi	Density	31.20	pcf	iy	75.521 in*4	Chi Tomostive Factor	1.0
Fc - Perp	625.0 psi	,		F				1.0
E Modulus of Fla	sticity	x-x Bending	v-v Bending	Axial			Ciu : Flat Use Factor	1.0
	Basic	1 600 0	1 600 0	1 600	() koj		Kt : Bulit-up columns	1.0 WDS 10
	Minimum	580.0	580.0	1,000	.0 151	~	Use Cr : Repetitive ?	INO
	WITHINGTH	500.0	500.0		Brace condition for de	eflection (bucklin	ng) along columns :	
					X-X (width) axis	: Fully brace	a against buckling along X-X Axis	6 120 # K - 1 0
					Y-Y (depth) axis	: Unbraced I	Length for X-X Axis buckling = 9.3	30 π, K = 1.0
Applied Loads	States and the				Service load	ds entered. Loa	ad Factors will be applied fo	r calculations.
AXIAL LOADS Axial Load a	 at 9.330 ft, D = ().7770, S = 7.	.205, E = 11.0	20 k				
DESIGN SUMMA	ARY				OK by incom	otion		
DESIGN SUMMA	ARY	line and the second	1.1.2.20		OK by inspe	ection		
DESIGN SUMMA Bending & Shear	ARY r Check Resu	lts		V	OK by inspe	ection		
DESIGN SUMMA Bending & Shear PASS Max. Axial	4RY r Check Resu +Bending Stress	Its Ratio =	0.31	73:1	OK by inspe	E Lateral Load	I Reactions	0.0 k
DESIGN SUMM/ Bending & Shear PASS Max. Axial Load Con Governing	ARY r Check Resu +Bending Stress nbination a NDS Foruma	lts Ratio = +D+0.750L+	0.31 -0.750S+0.750E	1 73 : 1 +++ Fc'	OK by inspe	E Lateral Load	I Reactions Bottom along Y-Y	0.0 k
DESIGN SUMM/ Bending & Shear PASS Max. Axial Load Con Governing Location	ARY r Check Resu +Bending Stress nbination g NDS Forumla of max.above base	lts Ratio = +D+0.750L+ Co	0.3 1 -0.750S+0.750E omp Only, fc/	73:1 5+H Fc' 0.0 ft ↓	OK by inspe	E Lateral Load 0.0 k 0.0 k	I Reactions Bottom along Y-Y Bottom along X-X	0.0 k 0.0 k
DESIGN SUMM/ Bending & Shear PASS Max. Axial Load Con Governing Location of At maxim	ARY r Check Resu +Bending Stress nbination g NDS Forumla of max.above base um location values	lts Ratio = +D+0.750L+ Co are	0.31 0.750S+0.750E omp Only, fc/	1 73 : 1 E+H Fc' 0.0 ft	Maximum SERVICE Top along Y-Y Top along X-X Maximum SERVICE Lo	E Lateral Load 0.0 k 0.0 k ad Lateral Deflec	I Reactions Bottom along Y-Y Bottom along X-X	0.0 k 0.0 k
DESIGN SUMM/ Bending & Shear PASS Max. Axial Load Con Governing Location of At maxim Applie	ARY r Check Resu +Bending Stress nbination g NDS Forumla of max.above base um location values ad Axial	Its Ratio = +D+0.750L+ Co are	0.31 0.750S+0.750E omp Only, fc/ 14.4 14.2	73 : 1 +H Fc' 0.0 ft 663	OK by inspe Maximum SERVICE Top along Y-Y Top along X-X Maximum SERVICE Lo Along Y-Y	E Lateral Load 0.0 k 0.0 k ad Lateral Deflec 0.0 in a	I Reactions Bottom along Y-Y Bottom along X-X tions t ft above base	0.0 k 0.0 k
DESIGN SUMM/ Bending & Shear PASS Max. Axial Load Con Governing Location of At maxim Applie Applie	ARY r Check Resu +Bending Stress nbination g NDS Forumla of max.above base um location values ad Axial ad Mx	Its Ratio = +D+0.750L+ Co are	0.31 0.750S+0.750E omp Only, fc/ 14.6 14.2	73 : 1 Fc' 0.0 ft 563 146 k 0.0 k-ft	OK by inspe Maximum SERVICE Top along Y-Y Top along X-X Maximum SERVICE Lo Along Y-Y for load combi	E Lateral Load 0.0 k 0.0 k ad Lateral Deflec 0.0 in a ination :	I Reactions Bottom along Y-Y Bottom along X-X ttions t ft above base	0.0 k 0.0 k
DESIGN SUMM/ Bending & Shear PASS Max. Axial Load Con Governing Location of At maxim Applie Applie Applie	ARY r Check Resu +Bending Stress nbination g NDS Forumla of max.above base um location values ad Axial ad Mx ad My	Its Ratio = +D+0.750L+ Co are	0.31 0.750S+0.750E omp Only, fc/ 14.4 14.4	73 : 1 Fc' 0.0 ft 46 k 0.0 k-ft 0.0 k-ft	OK by inspe Maximum SERVICE Top along Y-Y Top along X-X Maximum SERVICE Lo Along Y-Y for load combi Along X-X for load combi	E Lateral Load O.O k O.O k ad Lateral Deflec O.O in a ination : in a	I Reactions Bottom along Y-Y Bottom along X-X ctions t ft above base t ft above base	0.0 k 0.0 k
DESIGN SUMM/ Bending & Shear PASS Max. Axial Load Con Governing Location of At maxim Applie Applie Applie Fc : A	ARY r Check Resu +Bending Stress nbination g NDS Forumla of max.above base um location values ad Axial ad Mx ad My llowable	Its Ratio = +D+0.750L+ Co are	0.31 0.750S+0.750E omp Only, fc/ 14.4 14.2	73 : 1 Fc' 0.0 ft 446 k 0.0 k-ft 0.0 k-ft .76 psi	OK by inspe Maximum SERVICE Top along Y-Y Top along X-X Maximum SERVICE Lo Along Y-Y for load combi Along X-X for load combi	E Lateral Load O.O k O.O k ad Lateral Deflec O.O in a ination : in a	I Reactions Bottom along Y-Y Bottom along X-X stions t ft above base t ft above base	0.0 k 0.0 k
DESIGN SUMM/ Bending & Shear PASS Max. Axial Load Con Governing Location of At maxim Applie Applie Applie Fc: A	ARY r Check Resu +Bending Stress nbination g NDS Forumla of max.above base um location values ad Axial ad Mx ad My llowable Shear Stress Ba	Its Ratio = +D+0.750L+ Co are	0.31 0.750S+0.750E omp Only, fc/ 14.4 14.2	73 : 1 FC' 0.0 ft 46 k 0.0 k-ft 0.0 k-ft .76 psi	OK by inspective Maximum SERVICE Top along Y-Y Top along X-X Maximum SERVICE Lo Along Y-Y for load combined Along X-X for load combined Other Factors used to a	E Lateral Load O.O k O.O k ad Lateral Deflec O.O in a ination : in a ination : calculate allowat	I Reactions Bottom along Y-Y Bottom along X-X stions t ft above base t ft above base ble stresses Bending Compression	0.0 k 0.0 k
DESIGN SUMM/ Bending & Shear PASS Max. Axial Load Con Governing Location of At maxim Applie Applie Fc: Al PASS Maximum Load Con	ARY r Check Resu +Bending Stress nbination g NDS Forumla of max.above base um location values ad Axial ad Mx ad My llowable Shear Stress Ra nbination	Its Ratio = +D+0.750L+ Co are	0.31 0.750S+0.750E omp Only, fc/ 14.4 14.2 1,255 +0.60D+F+0	73 : 1 Fc' 0.0 ft F6 k 0.0 k-ft 0.0 k-ft 0.0 k-ft .76 psi 0.0 : 1	OK by inspe Maximum SERVICE Top along Y-Y Top along X-X Maximum SERVICE Lo Along Y-Y for load comb Along X-X for load comb Other Factors used to a	E Lateral Load O.O k O.O k ad Lateral Deflec O.O in a ination : in a ination : calculate allowat	I Reactions Bottom along Y-Y Bottom along X-X stions t ft above base t ft above base ole stresses Bending <u>Compression</u>	0.0 k 0.0 k T <u>ension</u>
DESIGN SUMM/ Bending & Shear PASS Max. Axial Load Con Governing Location of At maxim Applie Applie Fc : Al PASS Maximum Load Con Location of	ARY r Check Resu +Bending Stress nbination g NDS Forumla of max.above base um location values ad Axial ad Mx ad My llowable Shear Stress Ra nbination of max.above base	Its Ratio = +D+0.750L+ Co are	0.31 0.750S+0.750E omp Only, fc/ 14.4 1,255 +0.60D+E+0.0 9.3	73 : 1 F C' 0.0 ft 146 k 0.0 k-ft 0.0 k-ft 0.0 : 1 0.0 H 1 0.0 : 1 0.0 ft 0.0 ft	OK by inspective Maximum SERVICE Top along Y-Y Top along X-X Maximum SERVICE Lo Along Y-Y for load combine Along X-X for load combine Other Factors used to a	E Lateral Load O.O k O.O k ad Lateral Deflec O.O in a ination : in a ination : calculate allowat	I Reactions Bottom along Y-Y Bottom along X-X stions t ft above base t ft above base t ft above base ole stresses Bending Compression	0.0 k 0.0 k <u>Tension</u>
DESIGN SUMM/ Bending & Shear PASS Max. Axial Load Con Governing Location of At maximum Applie Applie Fc : Al PASS Maximum Load Con Location of Applied D	ARY r Check Resu +Bending Stress nbination g NDS Forumla of max.above base um location values ad Axial ad Mx ad My llowable Shear Stress Ra nbination of max.above base Design Shear	Its Ratio = +D+0.750L+ Co are	0.31 0.750S+0.750E omp Only, fc/ 14.4 1,255 +0.60D+E+0.0 9.3	73 : 1 F c' 0.0 ft F c' 0.0 k-ft 0.0 k-ft 0.0 : 1 0.0 1 0.0 1 0.0 1 0.0 1 0.0 1 0.0 1 0.0 1 0.0 1 0.0 1 0.0 1 0.0 1 0.0 1 0.0 1 0.0 1 0.0 1 1 0.0 1 1 0.0 1 1 0.0 1 1 0.0 1 1 0.0 1 1 0.0 1 1 0.0 1 1 0.0 1 1 0.0 1 1 0.0 1 1 0.0 1 1 0.0 1 1 0.0 1 1 0.0 1 1 0.0 1 1 1 0.0 1 1 0.0 1 1 0.0 1 1 0.0 1 1 0.0 1 1 0.0 1 1 0.0 1 1 0.0 1 1 0.0 1 1 0.0 1 1 1 0.0 1 1 1 0.0 1 1 1 1 1 1 1 1	OK by inspe Maximum SERVICE Top along Y-Y Top along X-X Maximum SERVICE Lo Along Y-Y for load comb Along X-X for load comb Other Factors used to a	E Lateral Load O.O k O.O k ad Lateral Deflec O.O in a ination : in a ination : calculate allowat	I Reactions Bottom along Y-Y Bottom along X-X stions t ft above base t ft above base t ft above base ble stresses Bending Compression	0.0 k 0.0 k <u>Tension</u>
DESIGN SUMM/ Bending & Shear PASS Max. Axial Load Con Governing Location of At maximum Applie Applie Fc : Al PASS Maximum Load Con Location of Applied D Allowable	ARY r Check Resu +Bending Stress nbination g NDS Forumla of max.above base um location values ad Axial ad Mx ad My llowable Shear Stress Ra nbination of max.above base Design Shear a Shear	Its Ratio = +D+0.750L+ Co are	0.31 0.750S+0.750E omp Only, fc/ 14.4 1,255 +0.60D+E+0.1 9.3	73 : 1 F C' 0.0 ft F C' 0.0 k-ft 0.0 k-ft 0.0 k-ft 0.0 : 1 0.0 3.30 ft 0.0 psi 2.0 psi	OK by inspe Maximum SERVICE Top along Y-Y Top along X-X Maximum SERVICE Lo Along Y-Y for load comb Along X-X for load comb Other Factors used to a	E Lateral Load O.O k O.O k ad Lateral Deflec O.O in a ination : in a ination : calculate allowat	I Reactions Bottom along Y-Y Bottom along X-X stions t ft above base t ft above base ole stresses Bending Compression	0.0 k 0.0 k <u>Tension</u>
DESIGN SUMM/ Bending & Shear PASS Max. Axial Load Con Governing Location of At maxim Applie Applie Fc: Al PASS Maximum Load Con Location of Applied D Allowable	ARY r Check Resu +Bending Stress nbination g NDS Forumla of max.above base um location values ad Axial ad Mx ad My llowable Shear Stress Ra nbination of max.above base Design Shear a Shear ion Results	Its Ratio = +D+0.750L+ Co are	0.31 0.750S+0.750E omp Only, fc/ 14.4 1,255 +0.60D+E+0.1 9.3 27	73 : 1 Fc' 0.0 ft Fc' 0.0 k-ft 0.0 k-ft 0.0 k-ft 300 ft 0.0 psi 2.0 psi	OK by inspe Maximum SERVICE Top along Y-Y Top along X-X Maximum SERVICE Lo Along Y-Y for load comb Along X-X for load comb Other Factors used to a	E Lateral Load O.O k O.O k ad Lateral Deflec O.O in a ination : in a ination : calculate allowat	I Reactions Bottom along Y-Y Bottom along X-X stions t ft above base t ft above base ole stresses Bending Compression	0.0 k 0.0 k T <u>ension</u>
DESIGN SUMM/ Bending & Shear PASS Max. Axial Load Con Governing Location of At maximum Applie Applie Fc : Al PASS Maximum Load Con Location of Applied D Allowable	ARY r Check Resu +Bending Stress nbination g NDS Forumla of max.above base um location values ad Axial ad Mx ad My llowable Shear Stress Ra nbination of max.above base Design Shear a Shear ion Results	Its Ratio = +D+0.750L+ Co are	0.31 0.750S+0.750E pmp Only, fc/ 14.4 1,255 +0.60D+E+0.1 9.3 27	73 : 1 Fc' 0.0 ft H46 k 0.0 k-ft 0.0 k-ft .76 psi 0.0 : 1 330 ft 0.0 psi 2.0 psi <u>Maxim</u>	OK by inspe Maximum SERVICE Top along Y-Y Top along X-X Maximum SERVICE Lo Along Y-Y for load comb Along X-X for load comb Other Factors used to o	E Lateral Load 0.0 k 0.0 k ad Lateral Deflec 0.0 in a ination : in a ination : calculate allowat	I Reactions Bottom along Y-Y Bottom along X-X ttions t ft above base t ft above base ole stresses Bending Compression <u>Maximum Shear R</u>	0.0 k 0.0 k <u>Tension</u>
DESIGN SUMM/ Bending & Shear PASS Max. Axial Load Con Governing Location of At maximum Applie Applie Fc : Al PASS Maximum Load Con Location of Allowable Load Combination	ARY r Check Resu +Bending Stress nbination g NDS Forumla of max.above base um location values ad Axial ad Mx ad My llowable Shear Stress Ra nbination of max.above base Design Shear a Shear ion Results	Its Ratio = +D+0.750L+ Co are tio =	0.31 0.750S+0.750E pmp Only, fc/ 14.4 1,255 +0.60D+E+0.1 9.3 27 0 C p	73 : 1 Fc' 0.0 ft H46 k 0.0 k-ft 0.0 k-ft .76 psi 0.0 : 1 330 ft 0.0 psi 2.0 psi <u>Maxim</u> Strest	OK by inspe Maximum SERVICE Top along Y-Y Top along X-X Maximum SERVICE Lo Along Y-Y for load combi Along X-X for load combi Other Factors used to a	E Lateral Load O.O k O.O k ad Lateral Deflec O.O in a ination : in a ination : calculate allowat	I Reactions Bottom along Y-Y Bottom along X-X ttions t ft above base t ft above base ole stresses Bending Compression <u>Maximum Shear R</u> Stress Ratio Status	0.0 k 0.0 k <u>Tension</u>
DESIGN SUMM/ Bending & Shear PASS Max. Axial Load Con Governing Location of At maximum Applie Applie Fc : Al PASS Maximum Load Con Location of Allowable Load Combination Maximum React	ARY r Check Resu +Bending Stress nbination g NDS Forumla of max.above base um location values ad Axial ad Mx ad My llowable Shear Stress Ra nbination of max.above base Design Shear a Shear ion Results on tions	Its Ratio = +D+0.750L+ Co are tio =	0.31 0.750S+0.750E omp Only, fc/ 14.4 1,255 +0.60D+E+0.1 9.3 27 0 C p	73 : 1 FC' 0.0 ft FC' 0.0 k-ft 0.0 k-ft 0.0 k-ft 330 ft 0.0 psi 2.0 psi <u>Maxim</u> Stres	OK by inspective Maximum SERVICE Top along Y-Y Top along X-X Maximum SERVICE Lo Along Y-Y for load combin Along X-X for load combin Other Factors used to a other Factors used to a ss Ratio Status	E Lateral Load O.O k O.O k ad Lateral Deflec O.O in a ination : in a ination : calculate allowat	I Reactions Bottom along Y-Y Bottom along X-X stions t ft above base t ft above base ole stresses Bending Compression <u>Maximum Shear R</u> Stress Ratio Status Note: Only non-zero reaction	0.0 k 0.0 k Tension
DESIGN SUMM/ Bending & Shear PASS Max. Axial Load Con Governing Location of At maximum Applie Applie Fc : Al PASS Maximum Load Con Location of Allowable Load Combination Load Combination	ARY r Check Resu +Bending Stress nbination g NDS Forumla of max.above base um location values ad Axial ad Mx ad My llowable Shear Stress Ra nbination of max.above base Design Shear a Shear ion Results on tions	Its Ratio = +D+0.750L+ Co are tio =	0.31 0.750S+0.750E omp Only, fc/ 14.4 1,255 +0.60D+E+0.1 9.3 27 0 C p	73 : 1 F C' 0.0 ft F C' 0.0 k-ft 0.0 k-ft 0.0 k-ft 0.0 : 1 0.0 1 0.0 1 0.0 1 0.0 1 0.0 1 0.0 1 0.0 1 0.0 1 0.0 1 0.0 1 0.0 1 0.0 1 0.0 1 0.0 1 0.0 1 0.0 1 0.0 1 0.0 1 0.0 1 0.0 1 0.0 1 0.0 1 0.0 1 0.0 1 0.0 1 0.0 1 0.0 1 0.0 1 0.0 1 0.0 1 0.0 1 0.0 1 0.0 1 0.0 1 0.0 1 0.0 1 1 0.0 1 1 0.0 1 1 0.0 1 1 0.0 1 1 0.0 1 1 0.0 1 1 0.0 1 1 0.0 1 1 0.0 1 1 0.0 1 1 0.0 1 1 1 0.0 1 1 1 1 1 1 1 1	OK by inspe Maximum SERVICE Top along Y-Y Top along X-X Maximum SERVICE Lo Along Y-Y for load comb Along X-X for load comb Other Factors used to o	E Lateral Load 0.0 k 0.0 k ad Lateral Deflec 0.0 in a ination : in a ination : calculate allowat ess Ratios Location	I Reactions Bottom along Y-Y Bottom along X-X stions t ft above base t ft above base t ft above base ole stresses Bending Compression <u>Maximum Shear R</u> Stress Ratio Status Note: Only non-zero reaction Axial Rea	0.0 k 0.0 k Tension
DESIGN SUMM/ Bending & Shear PASS Max. Axial Load Con Governing Location of At maximum Applie Applie Fc : Al PASS Maximum Load Con Location of Allowable Load Combinatio	ARY r Check Resu +Bending Stress nbination g NDS Forumla of max.above base um location values ad Axial ad Mx ad My llowable Shear Stress Ra nbination of max.above base Design Shear a Shear ion Results on tions n	Its Ratio = +D+0.750L+ Co are tio =	0.31 0.750S+0.750E omp Only, fc/ 14.4 1,255 +0.60D+E+0.1 9.3 27 0 C p X-X Axis Rea @ Base @	73:1 +H Fc' 0.0 ft 63 146 k 0.0 k-ft 0.0 k-ft 0.0 k-ft 330 ft 0.0 psi 2.0 psi 2.0 psi <u>Maxim</u> Strest	OK by inspe Maximum SERVICE Top along Y-Y Top along X-X Maximum SERVICE Lo Along Y-Y for load comb Along X-X for load comb Other Factors used to o turn Axial + Bending Stra ss Ratio Status Q Base	E Lateral Load O.O k O.O k ad Lateral Deflec O.O in a ination : in a ination : calculate allowat ess Ratios Location © Top	I Reactions Bottom along Y-Y Bottom along X-X stions t ft above base t ft above base t ft above base ble stresses Bending Compression <u>Maximum Shear R</u> Stress Ratio Status Note: Only non-zero reactio Axial Rea @ Ba	0.0 k 0.0 k <u>Tension</u> <u>atios</u> Location ons are listed. ction se
DESIGN SUMM/ Bending & Shear PASS Max. Axial Load Con Governing Location of At maximu Applie Applie Fc : Al PASS Maximum Load Con Location of Allowable Load Combinatio Maximum React	ARY r Check Resu +Bending Stress nbination g NDS Forumla of max.above base um location values ad Axial ad Mx ad My llowable Shear Stress Ra nbination of max.above base Design Shear a Shear ion Results on tions n ctions for Loa	Its Ratio = +D+0.750L+ Co are tio = C D	0.31 0.750S+0.750E pmp Only, fc/ 14.4 1,255 +0.60D+E+0.1 9.3 27 0 C p X-X Axis Rea @ Base @ Ons	73 : 1 FC' 0.0 ft FC' 0.0 k-ft 0.0 k-ft 0.0 k-ft 76 psi 0.0 : 1 300 ft 0.0 psi 2.0 psi 2.0 psi <u>Maxim</u> Strest	OK by inspe Maximum SERVICE Top along Y-Y Top along X-X Maximum SERVICE Lo Along Y-Y for load comb Along X-X for load comb Other Factors used to of mum Axial + Bending Stratus with a second second second second Y-Y Axis @ Base	ection E Lateral Load 0.0 k ad Lateral Deflec 0.0 in a ination : in a ination : calculate allowat ess Ratios Location @ Top	I Reactions Bottom along Y-Y Bottom along X-X ttions t ft above base t ft above base ole stresses Bending Compression <u>Maximum Shear R</u> Stress Ratio Status Note: Only non-zero reactio Axial Rea @ Ba	0.0 k 0.0 k <u>Tension</u> <u>atios</u> Location ons are listed. ction se

Printed 24 JAN 2017. 7 54PM File = C:_jobs\15105C~1\ENG\cce-2017.ec6 ENERCALC, INC. 1983-2017, Build:6.17.1.16, Ver:6.17.1.16 Licensee : RUDOW & BERRY

Lic. # : KW-06002357

Description :

Typ Unit - SW2 - T2 Post from L02 to Roof - (2)3x8 D.Fir#1

Code References

Calculations per 2012 NDS, IBC 2012, CBC 2013, ASCE 7-10 Load Combinations Used : ASCE 7-10 w/ ASD Wind & EQ

General Information

End Fixities	Allowable Top & Bo	e Stress Desi ttom Pinned	gn		Wood Section Name Wood Grading/Manuf.	3x8 Grade	ed Lumber	
Overall Column H	leight		8.670 ft		Wood Member Type	Sawn		
Wood Species Wood Grade	non-slender calc Douglas Fir - No.1	ulations) - Larch			Exact Width Exact Depth	5.0 in 7.250 in	Allow Stress Modification Fac Cf or Cv for Bending	ctors 1.20
Fb - Tension	1,200.0 psi	Fv	170.0 psi		Area ix	158 783 in	2 Cf or Cv for Tension	1.20
Fb - Compr	1,200.0 psi	Ft	825.0 psi 31.20 psf		ly	75.521 in^	4 Cm : Wet Use Factor	1.0
Fc - Perp	625.0 psi	Density	01.20 pt				Ct : Temperature Factor	1.0
E : Modulus of Ela	asticity	x-x Bending	y-y Bending	Axial			Cfu : Flat Use Factor Kf : Built-up columns	1.0 1.0 NDS 15
	Basic	1,600.0	1,600.0	1,600.0) ksi		Use Cr : Repetitive ?	No
	WINNIGHT	000.0	000.0		Brace condition for de X-X (width) axis Y-Y (depth) axis	etlection (buckl : Fully brac : Unbraced	ing) along columns : ed against buckling along X-X Ax I Length for X-X Axis buckling = 8.	is 670 ft, K = 1.0
Applied Loads			S		Service load	ds entered. Lo	ad Factors will be applied f	or calculations.
DESIGN SUMM	$\frac{ARY}{ARY}$	2.591, 5 = 27.4	472, E = 11.020 K	κ				
PASS Max. Axia Load Co Governin	IT Check Resul	lts Ratio = Co	0.7986 +D+S+H mp Only, fc/Fc'	:1	Maximum SERVICE Top along Y-Y Top along X-X	E Lateral Loa 0.0 k 0.0 k	d Reactions Bottom along Y-Y Bottom along X-X	0.0 k 0.0 k
PASS Max. Axia Load Co Governin Location	IT Check Result N+Bending Stress mbination NDS Forumla of max.above base	lts Ratio = Co	0.7986 +D+S+H mp Only, fc/Fc' 8.670	: 1 ft	Maximum SERVICE Top along Y-Y Top along X-X Maximum SERVICE Lo:	E Lateral Loa O.O k O.O k ad Lateral Defle	d Reactions Bottom along Y-Y Bottom along X-X	0.0 k 0.0 k
Bending & Shea PASS Max. Axia Load Co Governin Location At maxim Appli	IT Check Result I+Bending Stress mbination Ig NDS Forumla of max.above base num location values ed Axial	Its Ratio = Co	0.7986 +D+S+H mp Only, fc/Fc' 8.670	:1 ft k	Maximum SERVICE Top along Y-Y Top along X-X Maximum SERVICE Los Along Y-Y for load combi	E Lateral Loa O.O k O.O k ad Lateral Defle O.O in nation :	d Reactions Bottom along Y-Y Bottom along X-X ections at ft above bas	0.0 k 0.0 k e
Bending & Shea PASS Max. Axia Load Co Govemir Location At maxim Appli Appli Fc : A	IT Check Result I+Bending Stress mbination Ing NDS Forumia of max.above base num location values ed Axial ed Mx ed My Allowable	tts Ratio = Con are Still controls due to	0.7986 +D+S+H mp Only, fc/Fc' 8.670 30.063 0.0 0.0 0.0 1,038.53	:1 ft k k-ft k-ft psi	Maximum SERVICE Top along Y-Y Top along X-X Maximum SERVICE Los Along Y-Y for load combi Along X-X for load comb	E Lateral Loa O.O k O.O k ad Lateral Defle O.O in nation : in	d Reactions Bottom along Y-Y Bottom along X-X ections at ft above bas at ft above bas	0.0 k 0.0 k e
PASS Max. Axia Load Co Govemir Location At maxin Appli Appli Fc : A PASS Maximum Load Co Location Applied I Allowable	Ir Check Result I+Bending Stress mbination Ig NDS Forumla of max.above base num location values ed Axial ed Mx ed My Allowable I Shear Stress Rat mbination of max.above base Design Shear e Shear	Its Ratio = Controls controls due to lower Co tio =	0.7986 +D+S+H mp Only, fc/Fc' 8.670 30.063 0.0 1,038.53 +0.60D+E+0.60H 8.670 0.0 272.0	:1 ft k_k-ft k-ft psi :1 ft psi psi	Maximum SERVICE Top along Y-Y Top along X-X Maximum SERVICE Los Along Y-Y for load combi Along X-X for load comb Other Factors used to o	E Lateral Loa O.O k O.O k ad Lateral Defie O.O in nation : in ination : calculate allowa	d Reactions Bottom along Y-Y Bottom along X-X ections at ft above bas at ft above bas able stresses Bending Compression	0.0 k 0.0 k e e <u>Tension</u>
PASS Max. Axia Load Co Governir Location At maxin Appli Appli Fc : A PASS Maximum Load Co Location Applied I Allowable	Ir Check Result I+Bending Stress mbination Ig NDS Forumla of max.above base num location values ed Axial ed Mx ed My Allowable I Shear Stress Rai mbination of max.above base Design Shear e Shear tion Results	Its Ratio = Co are Still controls due to lower Co to =	0.7986 +D+S+H mp Only, fc/Fc' 8.670 30.063 0.0 1,038.53 0.0 +0.60D+E+0.60H 8.670 0.0 272.0	:1 ft k_ft k-ft psi :1 ft psi psi	Maximum SERVICE Top along Y-Y Top along X-X Maximum SERVICE Los Along Y-Y for load combi Along X-X for load comb Other Factors used to o	E Lateral Loa O.O k O.O k ad Lateral Defle O.O in nation : ination : calculate allowa	d Reactions Bottom along Y-Y Bottom along X-X ections at ft above bas at ft above bas at ft above bas able stresses Bending Compression	0.0 k 0.0 k e <u>Tension</u>
PASS Max. Axia Load Co Governir Location At maxin Appli Appli Fc : A PASS Maximum Load Co Location Applied I Allowable	Ir Check Result I+Bending Stress mbination Ig NDS Forumla of max.above base num location values ed Axial ed Mx ed My Allowable I Shear Stress Raimbination of max.above base Design Shear e Shear tion Results	Its Ratio = Controls due to lower Controls	0.7986 +D+S+H mp Only, fc/Fc' 8.670 30.063 0.0 1,038.53 0.0 +0.60D+E+0.60H 8.670 0.0 272.0	: 1 ft k-ft k-ft psi psi Strees	Maximum SERVICE Top along Y-Y Top along X-X Maximum SERVICE Los Along Y-Y for load combi Along X-X for load combi Other Factors used to o	E Lateral Loa O.O k O.O k ad Lateral Defle O.O in nation : in ation : calculate allowa	d Reactions Bottom along Y-Y Bottom along X-X ections at ft above bas at ft above bas at ft above bas at ft above bas at <u>ft above bas</u> at <u>ft above bas</u>	0.0 k 0.0 k e Tension

Y-Y Axis Reaction

@ Тор

@ Base

Project Title: Engineer:

Project Descr:

Copper Crest East MAR

Maximum Deflections for Load Combinations

Load Combination

Load Combination Max. X-X Deflection Max. Y-Y Deflection Distance Distance

X-X Axis Reaction

@ Top

@ Base

319

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Axial Reaction

@ Base

ENERCALC, INC. 1983-2017, Build:6.17.1.16, Ver.6.17.1.16 Licensee : RUDOW & BERRY

Copper Crest East pg of 321 job name: rudow + berry job number: 15105 structural engineering scottsdale, arizona 85251 designed by: MAR date: 1/17 t (480) 946-8171 date: checked by: f (480) 946-9480 $ome \ Loi / Gauds = 44.3 \quad 5.531 \\ = 43.2 + 5.55 (g.92) = 99.17 \\ = 95.77 \\ = 9.8 + 1.044 (1) = 26.11 \\ Winto \\ F_7 = \frac{+95.57}{7.92} = \pm 24.32 \\ = 25.30 \\ \end{bmatrix}$ $\begin{array}{l} \hline I = A T I \\ \hline P = 845 + 109 i + \frac{1205 Max}{1271 Mint} & \pm 24300 & Ee. \\ \hline P_{MAX} & = \frac{26145}{15105} & Max - 500 & Mert - 500 & For Past Designal \\ \hline P_{MAX} & = \frac{26145}{15105} & Max - 500 & Mert - 500 & For Past Designal \\ \hline P_{MM} & = 16 \left(845 + \frac{4M}{2} (90 + 128) \right) - 24500 & = -13502 & # Max T. \\ \hline 25300 & -24487 \end{array}$ TIE AT TI $\begin{array}{l} T_{1} = A_{T} T_{2} \\ P = 2730 + 272 + 21472 \text{ Min} & 25300 \\ 42475 \\ P_{Max} = 41.140 \\ P_{Max} = 16 \left(2130 + \frac{4.10}{2}(218)\right) - 24370 \\ P_{Max} = 22356 \\ P_{Max} = 16 \left(2130 + \frac{4.10}{2}(218)\right) - 24370 \\ P_{Max} = 23356 \\ P_{Max} = 16 \left(2130 + \frac{4.10}{2}(218)\right) - 24370 \\ P_{Max} = 23356 \\ P_{Max} = 10 \\ P_{M$ USE GARONIC - BAR SUGTEM C TI & TZ

Lic. # : KW-06002357

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Rage $3715105 322
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Description :

Typ Unit - SW2 - T1 Post from L01 to L02 - (2)3x8 D.Fir#1

Code References

Calculations per 2012 NDS, IBC 2012, CBC 2013, ASCE 7-10 Load Combinations Used : ASCE 7-10 w/ ASD Wind & EQ

General Information

	and the second se	and the second sec	and the second se					
Analysis Method : End Fixities	: Allowable Top & Bo	e Stress Des ttom Pinned	ign I		Wood Section Name Wood Grading/Manuf.	e 3x8 Graded	Lumber	
Overall Column H	leight	ulations)	9.920 ft		Wood Member Type	Sawn		
(Used for i	non-siender carc	Lease			Exact Width	5.0 in	Allow Stress Modification Fac	tors
Wood Species	Douglas Fir	- Larch			Exact Depth	7.250 in	Cf or Cv for Bending	1.20
	1 200 0	-	470.0		Area	36.25 in^2	Cf or Cv for Compression	1.050
Fb - Tension	1,200.0 psi	Fv	170.0	psi	Ix	158.783 in^4	Cf or Cv for Tension	1.20
Fb - Compr	1,200.0 psi	Ft	825.0	psi	ly	75.521 in^4	Cm : Wet Use Factor	1.0
Fc - Pril	1,000.0 psi	Density	31.20	pct			Ct : Temperature Factor	1.0
Fc - Perp	625.0 psi						Cfu : Flat Use Factor	1.0
E : Modulus of Ela	asticity	x-x Bending	y-y Bending	Axial			Kf : Built-up columns	1.0 NDS 15.3
	Basic	1,600.0	1,600.0	1,600	.0 ksi		Use Cr : Repetitive ?	No
	Minimum	580.0	580.0		Brace condition for de	eflection (bucklin	a) along columns :	
					X-X (width) axis	: Fully brace	d against buckling along X-X Axis	5
					Y-Y (depth) axis	: Unbraced L	ength for X-X Axis buckling = 9.9	920 ft, K = 1.0
Applied Loads					Service loa	ds entered. Loa	ad Factors will be applied fo	or calculations.
AXIAL LOADS								
Axial Load a	at 9.920 ft, D = 0	0.8450, L = 0.	.1090, S = 7.2	205, E = 24	1.320 k			
DESIGN SUMM	IARY							
Bending & Shea	r Check Resu	lts		. [ction		
PASS Max. Axia	al+Bending Stress	Ratio =	0.5	222.1	Maximum SERVICI	EL ateral Load	Practions	
Load Co	mbination		+D+	E+H	Top along Y-Y		Bottom along Y-Y	0.0 k
Governin	ng NDS Forumla	Co	omp Only, fc	/Fc'	Top along X-X	0.0 k	Bottom along X-X	0.0 k
Location	of max.above base	•		<u>0.0 ft</u>	Maximum SERVICE Lo	ad Lateral Deflec	tions	
At maxim	num location values	are	26.1	45	Along Y-Y	0.0 in at	ft above base	;
Appli	ed Axial		25.1	165 k	for load comb	ination :		
Appli	ed Mx			0.0 k-ft	Along X-X	in at	ft above base	2
Appli	ied My Allowable		1 100	U.U K-π	for load comb	vination :		
FG.#	Allowable		1,190	. 14 psi	Other Factors used to	calculate allowab	le stresses	
PASS Maximum	Shear Stress Ra	tio =		0.0:1			Bending Compression	Tension
Load Co	mbination		+0.60D+E+0.	60H				
Location	of max.above base)	9.9	920 ft				
Applied [Design Shear			0.0 psi				
Allowable	e Shear		27	2.0 psi				
Load Combinat	tion Results							
		-	0	Maxim	um Axial + Bending Str	ess Ratios	Maximum Shear R	atios
Load Combinat	tion	C) ^C P	Stre	ss Ratio Status	Location	Stress Ratio Status	Location
Maximum Read	ctions						Note: Only non-zero reaction	ons are listed.
			X-X Axis Re	action	Y-Y Axis	s Reaction	Axial Rea	ction
Load Combination	on		@ Base ()) Тор	@ Base	@ Top	@ Ba	se
Maximum Defle	ections for Loa	d Combinati	ons	5				
Load Combination		Max. X-X	Deflection D	istance	Max. Y-Y Deflection	n Distance		

Project Title: Engineer:

Project Descr:

Copper Crest East MAR

Page \$3815105 324

Wood Cold	mn		ALC: N		台 赤山鄉武法部	El	NERCALC, INC. 1983-2017, Build:6.17.1	.16, Ver.6.17.1.16
Lic. # : KW-0600) Post from LOC	0100 (0 <u>00-0</u> 0) Cir#4			Licensee : RUD	OW & BERR
Description :	ryp Unit - 2445 - 17		U LUZ - (Z)3XÖ L	7.611#1				
Code Reference	95							
Calculations per Load Combinati	2012 NDS, IE ons Used : AS	BC 2012, CB SCE 7-10 w/	C 2013, AS ASD Wind	SCE 7-10 & EQ				
General Informa	ition							
Analysis Method : End Fixities	Allowable Top & Bo	e Stress Desi ttom Pinned	gn		Wood Section Name Wood Grading/Manuf.	3x8 Grade	ed Lumber	
Overall Column Ho (Used for r	eight Ion-slender calci	ulations)	9.920 ft		wood member Type	Sawn		
Wood Species Wood Grade	Douglas Fir - No.1	- Larch			Exact Width Exact Depth	5.0 in 7.250 in	Allow Stress Modification Fac Cf or Cv for Bending	1.20
Fb - Tension	1,200.0 psi	Fv	170.0) psi	Area	36.25 In ⁿ	Cf or Cv for Tension	1.050
Fb - Compr	1,200.0 psi	Ft	825.0) psi	lv	75 521 in ⁴	Cm : Wet Use Factor	1.0
Fc - Prll	1,000.0 psi	Density	31.20) pcf	7	10.021 11	Ct : Temperature Factor	1.0
Fc - Perp	625.0 psi						Cfu : Flat Use Factor	1.0
E : Modulus of Ela	sticity	x-x Bending	y-y Bending	Axia			Kf : Built-up columns	1.0 NDS
	Basic	1,600.0	1,600.0	1,600	U.U ksi		Use Cr : Repetitive ?	No
	WITHHUM	560.0	580.0		Brace condition for de X-X (width) axis Y-Y (depth) axis	eflection (buckl : Fully brace : Unbraced	ling) along columns : ced against buckling along X-X Axi d Length for X-X Axis buckling = 9.	s 920 ft, K = 1.0
					(
Applied Loads AXIAL LOADS					Service load	ds entered. L	oad Factors will be applied to	or calculations
Applied Loads AXIAL LOADS Axial Load a DESIGN SUMM	 t 9.920 ft, D = 2 4RY	2.730, L = 0.2	220, S = 27.4	472, E = 2	Service load 24.320 k	* 9675 -	- 9845 OK	or calculations
Applied Loads AXIAL LOADS Axial Load a DESIGN SUMM, Bending & Shea PASS Max Axia	t 9.920 ft, D = 2 ARY r Check Resul +Bending Stress	2.730, L = 0.2 Its Ratio =	220, S = 27. 0.9	472, E = 2 6 75 : 1	Service load 24.320 k 42475/41741 Maximum SERVICE	* .9675 = E Lateral Loa	 ad Factors will be applied to .9845 OK ad Reactions 	or calculations
Applied Loads AXIAL LOADS Axial Load a DESIGN SUMM Bending & Sheat PASS Max. Axial Load Cor Governin	tt 9.920 ft, D = 2 ARY r Check Resul +Bending Stress nbination	2.730, L = 0.2 Its Ratio = +D+0.750L+	0.9 0.750S+0.750	472, E = 2 675 : 1 /E + H	24.320 k 42475/41741 Maximum SERVICE Top along Y-Y Top along Y-Y	* .9675 = E Lateral Loa	= .9845 OK ad Reactions Bottom along Y-Y Bottom along Y-Y	0.0 k
Applied Loads AXIAL LOADS Axial Load a DESIGN SUMM Bending & Shea PASS Max. Axial Load Cor Governin Location	t 9.920 ft, D = 2 ARY r Check Resul +Bending Stress nbination g NDS Forumla of max.above base	2.730, L = 0.2 Its Ratio = +D+0.750L+ Co	220, S = 27.4 0.9 0.750S+0.750 mp Only, fo	472, E = 2 675 : 1 /E+H //Fc' 0.0 ft	24.320 k 24.320 k 24.3200 k 24.320 k 24.320 k 24.320 k 24.3200 k	* .9675 = E Lateral Loa 0.0 k 0.0 k	ad Factors will be applied to = .9845 OK ad Reactions Bottom along Y-Y Bottom along X-X	0.0 k 0.0 k
Applied Loads AXIAL LOADS Axial Load a DESIGN SUMM, Bending & Sheat PASS Max. Axial Load Cor Governin Location At maxim	t 9.920 ft, D = 2 ARY r Check Resul +Bending Stress nbination g NDS Forumla of max.above base um location values	2.730, L = 0.2 Its Ratio = +D+0.750L+ Co are	220, S = 27.4 0.9 0.750S+0.750 mp Only, fc 42.	472, E = 2 675 : 1 E+H 2/Fc' 0.0 ft 475	24.320 k 24.320 k 24.3200 k 24.	* .9675 = E Lateral Loa 0.0 k 0.0 k ad Lateral Defic 0.0 in	 ad Factors will be applied for = .9845 OK ad Reactions Bottom along Y-Y Bottom along X-X ections at ft above bas 	0.0 k 0.0 k 0.0 k
Applied Loads AXIAL LOADS Axial Load a DESIGN SUMM Bending & Sheat PASS Max. Axial Load Cor Governin Location At maxim Applie	tt 9.920 ft, D = 2 ARY r Check Result +Bending Stress nbination g NDS Forumla of max.above base um location values ed Axial	2.730, L = 0.2 Its Ratio = +D+0.750L+ Co are	0.9 0.750S+0.750 mp Only, fc 42. 41.	472, E = 2 675 : 1 E+H 2/Fc' 0.0 ft 475 741 k	24.320 k 24.320 k 24.3200 k 24.320	* .9675 = Lateral Loa 0.0 k 0.0 k ad Lateral Defle 0.0 in ination :	ad Factors will be applied to = .9845 OK ad Reactions Bottom along Y-Y Bottom along X-X ections at ft above bas	0.0 k 0.0 k 0.0 k
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Applied Loads AXIAL LOADS Axial Load a DESIGN SUMM Bending & Sheat PASS Max. Axial Load Cor Governin Location At maxim Applie Applie Fc : A PASS Maximum Load Cor	t 9.920 ft, D = 2 ARY r Check Result +Bending Stress nbination g NDS Forumla of max.above base um location values ed Axial ed Mx ed My llowable Shear Stress Rain nbination	2.730, L = 0.2 Its Ratio = +D+0.750L+ Co are	220, S = 27.4 0.9 0.750S+0.750 mp Only, fc 41. 41. 1,190	472, E = 2 675 : 1 E+H 2/Fc' 0.0 ft 475 741 k 0.0 k-ft 0.0 k-ft 0.0 k-ft 0.14 psi 0.0 : 1	24.320 k 24.320 k 24.3200 k 24.3200 k 24.3200 k 24.3200 k 24.3200 k 24.3200 k 24.320	* .9675 = Lateral Loa 0.0 k 0.0 k ad Lateral Defle 0.0 in ination : in ination : calculate allows	ad Factors will be applied for = .9845 OK ad Reactions Bottom along Y-Y Bottom along X-X ections at ft above bas at ft above bas able stresses <u>Bending</u> <u>Compression</u>	O.O k O.O k O.O k e e <u>Tension</u>
Applied Loads AXIAL LOADS Axial Load a DESIGN SUMM Bending & Sheat PASS Max. Axial Load Cor Governin Location At maxim Applie Applie Fc : A PASS Maximum Load Cor Location	t 9.920 ft, D = 2 ARY r Check Resul +Bending Stress nbination g NDS Forumla of max.above base um location values ed Axial ed Mx ed My llowable Shear Stress Rat nbination of max.above base	2.730, L = 0.2 Its Ratio = +D+0.750L+ Co are	220, S = 27. 0.9 0.750S+0.750 mp Only, fo 42. 41. 1,190 +0.60D+E+0 9	472, E = 2 675 : 1 E+H /Fc' 0.0 ft 475 741 k 0.0 k-ft 0.0 k-ft 0.0 k-ft 0.0 k-ft 0.14 psi 0.0 : 1 .60H 920 ft	24.320 k 24.320	* .9675 = E Lateral Loa 0.0 k ad Lateral Defie 0.0 in ination : in ination : calculate allows	 ad Factors will be applied for = .9845 OK ad Reactions Bottom along Y-Y Bottom along X-X ections at ft above bas at ft above bas at ft above bas able stresses Bending Compression 	O.O k O.O k O.O k e e <u>Tension</u>
Applied Loads AXIAL LOADS Axial Load a DESIGN SUMM, Bending & Shea PASS Max. Axial Load Cor Governin Location At maxim Applie Applie Fc : A PASS Maximum Load Cor Location Applied D	t 9.920 ft, D = 2 ARY r Check Result +Bending Stress nbination g NDS Forumla of max.above base um location values ad Axial ad Mx ad My llowable Shear Stress Rain nbination of max.above base besign Shear	2.730, L = 0.2 Its Ratio = +D+0.750L+ Co are tio =	220, S = 27.4 0.750S+0.750 mp Only, fo 42. 41. 1,190 +0.60D+E+0 9.	472, E = 2 675 : 1 E+H /Fc' 0.0 ft 475 741 k 0.0 k-ft 0.0 k-ft 0.14 psi 0.0 : 1 .60H 920 ft 0.0 psi	24.320 k 24.320 k 24.3200 k 24.3200 k 24.3200 k 24.3200 k 24.3200 k 24.320	* .9675 = E Lateral Loa 0.0 k 0.0 k ad Lateral Defle 0.0 in ination : in ination : calculate allows	ad Factors will be applied for ad Reactions Bottom along Y-Y Bottom along X-X ections at ft above bas at ft above bas able stresses <u>Bending</u> <u>Compression</u>	O.O k O.O k O.O k e E
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Applied Loads AXIAL LOADS Axial Load a DESIGN SUMM, Bending & Shear PASS Max. Axial Load Cor Governin Location At maxim Applie Applie Fc : A PASS Maximum Load Cor Location Applied D Allowable	A Second Stress Rates and Stress Result of the second stre	2.730, L = 0.2 Ratio = +D+0.750L+ Co are tio = C D	220, S = 27.4 0.750S+0.750 mp Only, fc 41. 1,190 +0.60D+E+0 9. 21 C P	472, E = 2 675 : 1 E+H 2/Fc' 0.0 ft 475 741 k 0.0 k-ft 0.0 k-ft 0.0 k-ft 0.0 k-ft 0.0 k-ft 0.0 k-ft 0.0 ft 1 60H 920 ft 0.0 psi 72.0 psi <u>Maxin</u> Stru	24.320 k 24.320	ds entered. Li * .9675 = E Lateral Loa 0.0 k ad Lateral Defle 0.0 in ination : in ination : calculate allows ess Ratios _ocation	ad Factors will be applied for = .9845 OK ad Reactions Bottom along Y-Y Bottom along X-X ections at ft above bas at ft above bas able stresses Bending Compression <u>Maximum Shear F</u> Stress Ratio Status	0.0 k 0.0 k e e <u>Tension</u> <u>Ratios</u> Location
Applied Loads AXIAL LOADS Axial Load a DESIGN SUMM, Bending & Sheat PASS Max. Axial Load Cor Governin Location At maxim Applie Applie Fc : A PASS Maximum Load Cor Location Applied D Allowable Load Combinati	t 9.920 ft, D = 2 ARY r Check Result +Bending Stress nbination g NDS Forumla of max.above base um location values ed Axial ed Mx ed My llowable Shear Stress Ration nof max.above base lesign Shear e Shear ion Results on	2.730, L = 0.2 Its Ratio = +D+0.750L+ Co are tio = C D	220, S = 27.4 0.9 0.750S+0.750 mp Only, fc 41. 41. 1,190 +0.60D+E+0 9. 21 C P	472, E = 2 675 : 1 E+H 2/Fc' 0.0 ft 475 741 k 0.0 k-ft 0.0 k-ft 0.0 k-ft 0.0 k-ft 0.0 k-ft 0.0 si 72.0 psi 72.0 psi Maxin Stra	24.320 k 24.320	* .9675 = E Lateral Loa 0.0 k 0.0 k ad Lateral Defie 0.0 in ination : in ination : calculate allows	ad Factors will be applied for = .9845 OK ad Reactions Bottom along Y-Y Bottom along X-X ections at ft above bas at ft above bas able stresses <u>Bending</u> <u>Compression</u> <u>Maximum Shear F</u> Stress Ratio Status Note: Only non-zero reacti	0.0 k 0.0 k e e <u>Tension</u> <u>Ratios</u> Location ons are listed.
Applied Loads AXIAL LOADS Axial Load a DESIGN SUMM, Bending & Shea PASS Max. Axial Load Cor Governin Location At maxim Applie Applie Fc : A PASS Maximum Load Cor Location Applied D Allowable Load Combinatio	A Second Stress Ration Results Stress Ration Stress Ration Results Stress Ration Ratio Rat	2.730, L = 0.2 Its Ratio = +D+0.750L+ Co are tio = C D	220, S = 27.4 0.750S+0.750 mp Only, fc 42. 41. 1,190 +0.60D+E+0 9. 21 C P X-X Axis Ro @ Base	472, E = 2 675 : 1 E+H 2/Fc' 0.0 ft 475 741 k 0.0 k-ft 0.0 k-ft 0.0 k-ft 0.0 k-ft 0.0 k-ft 0.0 k-ft 0.0 si 72.0 psi <u>Maxin</u> Stru- eaction @ Top	24.320 k 24.320 k 24.320 k 24.320 k 24.320 k 24.320 k 25.20	* .9675 = E Lateral Loa 0.0 k ad Lateral Defie 0.0 in ination : ination : calculate allows ess Ratios Location	ad Factors will be applied for = .9845 OK ad Reactions Bottom along Y-Y Bottom along X-X ections at ft above bas at ft above bas able stresses <u>Bending</u> <u>Compression</u> <u>Maximum Shear F</u> Stress Ratio Status Note: Only non-zero reacti Axial Re: @ Ba	0.0 k 0.0 k e e <u>Tension</u> <u>Ratios</u> Location ons are listed action ase
Applied Loads AXIAL LOADS Axial Load a DESIGN SUMM, Bending & Sheat PASS Max. Axial Load Cor Governin Location At maxim Applied Applied Fc : A PASS Maximum Load Cor Location Applied D Allowable Load Combination	ARY r Check Result +Bending Stress nbination g NDS Forumla of max.above base um location values ed Axial ed Mx ed My llowable Shear Stress Rain nbination of max.above base besign Shear e Shear ion Results on tions n ctions for Load	2.730, L = 0.2 Its Ratio = +D+0.750L+ Co are tio = C D d Combinatio	220, S = 27.4 0.9 0.750S+0.750 mp Only, fo 41. 1,190 +0.60D+E+0 9. 21 C P X-X Axis Ro @ Base ons	472, E = 2 675 : 1 E+H 2/Fc' 0.0 ft 475 741 k 0.0 k-ft 0.0 k-ft 0.0 k-ft 0.0 k-ft 0.0 k-ft 0.0 si 72.0 psi 72.0 psi Maxin Strue eaction @ Top	24.320 k 24.320 k 24.320 k 24.320 k 24.320 k 24.320 k 25.20 k 25.20 k 25.20 k 25.20 k 25.20 k 27.20	* .9675 = E Lateral Loa 0.0 k 0.0 k ad Lateral Defle 0.0 in ination : in ination : calculate allows ess Ratios _ocation	ad Factors will be applied for = .9845 OK ad Reactions Bottom along Y-Y Bottom along X-X ections at ft above bas at ft above bas able stresses Bending Compression Maximum Shear F Stress Ratio Status Note: Only non-zero reacti Axial Rei @ Ba	0.0 k 0.0 k e e <u>Tension</u> <u>Ratios</u> Location ons are listed. action ase

job name: Copper Crest East rudow + berry of 304 structural engineering job number: 15105 scottsdale, arizona 85251 t (480) 946-8171 designed by:MAR date: 1/17 rbinc@rbise.com checked by: date: orme B. o. Fro = 99.17 5.531 95.37 + 5.759(4) = 1/6.41 lk STEM L = 15'-C" $P_{DL} = 117 + 2591 + 68 + 139 + 4.07(218) + 1069 = 67.07 #$ WOL = 904 PLF Mor = (m+18)(2.01) + (2911+199)(292) + 1.019(53) + 1.129(-1.01) = 8.2014 PL = 109+222 + 4, 10(41) = 550# W1 = 35 PLF M1= 2 109(2.10) + 222(2.92) + 219(5.3) = 2.05 the P3 = 1405+14057 + 1610C# = 41948# 125 = 3093 PLF Ma= 1.205(1.01)+24,037(292)+16,702(-GAZ) = 9.84 m PIR. PG = 1791 + 19472 + 15478 = 44121# W2 = 2853 PLF Ma= 1.271 (7.67) + 27 ATZ (2.92) + 15,478 (-6.92) = -17,141k

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rudow + berry structural engineering	proje	ect name: CCE			project no. 15105
scottsdale, arizona (602) 946-8171	des che	igned by: MAR ecked by:	date: Jun-15 date:		
	SHEA		OOTING DESIG	6N	
INPUT DATA :	Typical U	nit Wall SW2		· · · · · · · · · · · · · · · · · · ·	
Allow. Soil Pr. = 2.400 Fy = 60 ksi f'c = 3000 psi Wall DL = 0.40 klf Roof LL = 3.09 klf Floor LL = 0.04 klf Wall Length = 15.50 Wall Thickness = 8	ksf feet inches		DL OTM = FLR LL OTM = RF LL OTM = SEISMIC OTM = Footing Length : Footing Width : Footing Thkness: Footing DL :	8.30 ft-kips 2.65 ft-kips 9.84 ft-kips 116.41 ft-kips 17.50 feet 2.67 feet 12 inches 1.422 klf	-121.29 See next sheet
OUTPUT DATA :					
EQ'N 16-11 : DL + .75(FL + R $P =$ 67.5 kipsOTM =17.67 ft-kips $e =$ 0.26 feetSoil Pr. =1.57 ksf, max.,EQ'N 16-14: DL + .75(FL + RL $P =$ 67.5 kipsOTM =105.0 ft-kips $e =$ 1.56 feetSoil Pr. =2.22 ksf, max.,EQ'N 16-16: 0.6DL + 0.7E $P =$ 18.7 kipsOTM =121.4 ft-kips $e =$ 5.50 feet	L): $P_{ult} =$ $OTM_{ult} =$ X bar = 2.23 + .7E) $P_{ULT} =$ $OTM_{ULT} =$ X bar = 3.14 P (ult) = $OTM_{ULT} =$ X bar =	95.6 kips 24.95 ft-kips N/A feet ksf, ult. 95.6 kips 164.64 ft-kips N/A feet ksf, ult. 22.4 kips 136.36 ft-kips 2.25 feet		Required Width = Required Width =	1.75 feet 2.46 feet
e = 6.50 feet Soil Pr. = 2.07 ksf, max.,	2.48 x bar =	2.25 feet ksf, uit.		Required Width =	2.30 feet
Resisting Moment = 272.49	ft-kips			Factor of Safety =	3.15
FOOTING REINFORCIN	G:				
LONGITUDINAL DIRECTION: Req'd Unreinf Thickness = Moment = 2.74 ft-kips/ft Shear = 0.00 kips/ft	32	inches Fb(allow)= Fv(allow)=	178 psi 71 psi	fb(act.)= fv(act.)=	18 psi 0 psi
TRANSVERSE DIRECTION: Req'd Unreinf Thickness = Moment = 2.66 ft-kips/ft Shear = 0.00 kips/ft	20	inches Fb(allow)= Fv(allow)=	178 psi 71 psi	fb(act.)= fv(act.)=	49 psi 0 psi
Reinf. Thickness (if used) = Longitudinal Steel Required = Transverse Steel Required =	12 0.07 0.07	inches sq.in./ft. sq.in./ft.		v(longit.) = v(transv.)= V(allow) =	9 psi 9 psi 93.1 psi

rudow + berry	
structural engineering	1

project name: CCE

structural engineerin scottsdale, arizona

(602) 946-8171

designed by: MAR checked by:

date: Jun-15 date:

SHEAR WALL FOOTING DESIGN INPUT DATA : Typical Unit Wall SW2 Allow. Soil Pr. = DL OTM = 2.400 ksf 8.30 ft-kips Fy = FLR LL OTM = 2.65 ft-kips 60 ksi f 'c = RF LL OTM = 9.84 ft-kips 3000 psi Wall DL = 0.40 klf SEISMIC OTM = 121.29 ft-kips Roof LL = Footing Length : 17.50 feet 3.09 klf Floor LL = Footing Width : 0.04 klf 2.67 feet Footing Thkness: Wall Length = 15.50 feet 12 inches Wall Thickness = 8 inches Footing DL : 1.422 klf OUTPUT DATA : EQ'N 16-11 : DL + .75(FL + RL): P = P_{ult} = 67.5 kips 95.6 kips OTM = 17.67 ft-kips OTM_{ult} = 24.95 ft-kips e = 0.26 feet X bar = N/A feet Soil Pr. = 1.57 ksf, max., 2.23 ksf, ult. Required Width = 1.75 feet EQ'N 16-14: DL + .75(FL + RL + .7E) P = 67.5 kips P_{ULT} = 95.6 kips OTM_{ULT} = OTM = 108.6 ft-kips 170.5 ft-kips e = 1.61 feet X bar = N/A feet Soil Pr. = 2.24 ksf, max., 3.17 ksf, ult. Required Width = 2.49 feet EQ'N 16-16: 0.6DL + 0.7E P = 18.7 kips P(ult) =22.4 kips OTM = 126.3 ft-kips $OTM_{ULT} = 141.82$ ft-kips 6.76 feet X bar = 1.99 feet e = Soil Pr. = 2.34 ksf, max., 2.81 ksf, ult. Required Width = 2.61 feet Factor of Safety = 3.03 Resisting Moment = 272.49 ft-kips FOOTING REINFORCING: LONGITUDINAL DIRECTION: Reg'd Unreinf Thickness = 32 inches 2.78 ft-kips/ft Fb(allow)= 178 psi Moment = fb(act.)= 19 psi Fv(allow)= 71 psi Shear = 0.00 kips/ft fv(act.)= 0 psi TRANSVERSE DIRECTION: Rea'd Unreinf Thickness = 20 inches Moment = 2.69 ft-kips/ft Fb(allow)= 178 psi fb(act.)= 50 psi Shear = 0.00 kips/ft Fv(allow)= 71 psi fv(act.)= 0 psi Reinf. Thickness (if used) = 12 inches Longitudinal Steel Required = 0.07 sq.in./ft. v(longit.) =9 psi Transverse Steel Required = 0.07 v(transv.)= 9 sq.in./ft. psi V(allow) = 93.1 psi

project no.

				Pag	<u>e S42</u>
rudow + berry structural engineering	job name: job numb er :	Copper C 15105	Crest East		of 360
scottsdale, arizona 85251 t (480) 946-8171 f (480) 946-9480	designed by checked by:	: MAR	-	date: 1/17 date:	
WALLS AT UNIT 62R					
6834 VLACI SWI 2113					
VROOF = 6629 thea, 1364 th WI	ND				
VLOZ = 2317 10, 1134 W	40				
VID = 9235# ER, 4125 # W	IHD -	- ER (COLITR	ous Des	cal
4733		B4	INKPE	27201	
$\frac{RooF}{100} = \frac{1000}{1000} = \frac{1000}{1000}$			_		
$L = 6'-4''$ $U_{MAR} = 1046 $	K, 215 1	V Th	he 76	SHT'G F	515
H/L = 1.88 <	2 oh		1100	Z 1740 EQ	2 64
		U ₁	qua	= 24355 k	
HEND CONH'S 6834	13.3	USE 1	MIN 14	SIMUSON	1 A34
6834 6834	6.57	(OR L	-PT4 4	VALION=6	.70 [#] en.)
$N'_{2'} \phi = \frac{UUT}{1.U(050)} =$	6.38	USE M	IN B	1/2" de Boci	B
6834 (a(d))	∂.67	TO W	10 BU		
X1476 = 114(690) = 0	.41	USE V	MIH C	1)3/2"\$ [ACS
	2				
SILL COMM					
$N_{5/i} = \frac{0834}{6001} = 4.$		15E (A)	5/8 4	BOLTS	
6 1.0(001)		∆ <i>=</i> 7	2.8%	ok	
35 <i>1</i>)			Delta = (additio	6% - OK due nal HSS pos conn's	e to st
		L		001113	

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pg 30

rudow + berry structural engineering scottsdale, arizona 85251 t (480) 946-8171 f (480) 946-9480 job name: Copper Crest East job number: 15105

designed by: MAR checked by:

date: 1/17 date:



pg 369

rudow + berry structural engineering scottsdale, arizona 85251 t (480) 946-8171 f (480) 946-9480

designed by: MAR

checked by:

date: 1/17 date:

ROOF TO LOZ (CONT'D) TIE AT TI: P= -4970 - 308 MIN 5 ±13830 ER P= -4970 - 308 MIN 5 ±13830 ER 13773 # -SEE NEET SHT FOR POST DESIGN $\mathcal{P}_{MM} = \left(-\frac{491}{2} + \frac{433(12(10))}{2}\right) - \frac{16(-1245 - 13139)}{2}$ = -16650 # Mar Tentsion! -16981 THE AT T2: P= 93980 + M45MIN 5 ± 13830 ER, USE HESS POST FULL HE PHAR 2 90810# - SEE HERT SHE FOR POST DESCON PMAL = , C (9398+ (100/10)) - 13830 = -79(23# Mare, T. USE HOS POST FULL HE 8947 - prev. design OK Where FROM LOZ TO LOI $V = 9001^{\pm} EQ$ U = 857 PLF LWARE = 10'-6''516"5476 B.S.M 10202" 0.C. VALLOW = 1140 ER, DK SILL CONTH'S (UNE MAN (6) 16 & BOLOS Night = 9001 = 5,59 0×m @ 189000 = 9,001 (+15) = 13,501k Fr(max) = 13,6 (1) = 1,36 h SIMPSONT (STA 24 B.S. TANOW = 2(1.735)=2.47h M

Page S45rudow + berry
structural engineering
scottsdale, anzona 85251job name: Copper Crest East
job number: 15105Pgg S45goo cottsdale, anzona 85251designed by: MAR
checked by:date: 1/17
date:OTM @ Lol =
$$9.947$$
(/// Arc) = 102.17 previous
design OKThe Arc T32:P= // ASI to + 912.L + 7830 to 5 to 00007East TA For Past Design OKThe Art T32:P= // ASI to + 912.L + 7830 to 5 to 00007Fage S45Phase = 1/55.17#Set TA For Past Design OKThe Art T4The associatedFine Art T4 | |

design OK

pg371

job name: Copper Crest East rudow + berry job number: 15105 structural engineering scottsdale, arizona 85251 designed by: MAR date: 1/17 t (480) 946-8171 checked by: date: f (480) 946-9480 STRAPS AT #55/12'S SIMPSONT LISTA 18 EA. SIDE OF WALL $T_{MM_{K}} = 23371\left(\frac{17b}{37c}\right) = 1$ TALLOW = 2(1275) (==) = 1497# DRAG AT EMS @ E.O. WALL Tune = 23M (15.5) + 3543 + SIMPSON MET 37 $T_{41,000} = 5080^{\#}$ previous
design Ok $0^{\#} = 102.179 + 9.038(10) = 199.17$ $F_{\rm F} = \pm \frac{199.17}{10.08^{\prime}} = \pm 19.76^{\rm h}$ TIE AT T3_ P= 21550 + 20962 + 16365 ± 19160

PMax = 244755# - SEE TA FOR POST DESIGN PMIN = . 6 (2155 + 1015 (515+443+21.42(10))) - 19760 = -14175# Mare T, SIMPSONT HPU14-50525 TANOW= 19945# A=2.3% of TIE AT TA A=2.3% oh P= 8128 + 8109 L + 245665 5 ± 19760 PMAK = 41453# - SEE NERT SHIT FOR POST DESKAL P.M.M. = . 6 (118+ 10.5 (515+443+214)) -19700 = 11191# Max T. SIMPSONT HOUL4-5052.5 TAMONT= HAAS# OK

$$\begin{array}{c|c} Page S47 \\ \hline rudow + berry & job name: Copper Crest East & pg 374 \\ \hline structural engineering & job number: 15105 & of 374 \\ \hline structural engineering & job number: 15105 & of 374 \\ \hline structural engineering & job number: 15105 & of 374 \\ \hline structural engineering & job number: 15105 & of 374 \\ \hline structural engineering & lob number: 15105 & lob number: 15105$$

job name: **Copper Crest East** pg 310 rudow + berry job number: 15105 structural engineering scottsdale, arizona 85251 designed by: MAR date: 1/17 t (480) 946-8171 checked by: date: f (480) 946-9480 UNH GER - WAN SWZ Pa P < VRF $V_{RF} = \frac{5798}{5653} \# E_{RF}$ = $1287^{\#} W_{1}$ 5-6" P. = 204 # + 17868 Mm 5 Wz Pz= 2963 > + 33660 Mik 5 1-16 W1= 2100+ 2508 5 134 $V_{1m} = 541^{\pm} ER$ = 1,48th 14140 Wz=9.5/25+90) = 1365 + 380 L VANOW = 1940 ok Hend Contracts $H_{A34} = \frac{5798}{5798} = \frac{4.9}{4.9}$ $N_{A34} = \frac{5798}{5798} = \frac{4.9}{4.9}$ $N_{10} = \frac{5798}{5798} = 5.58$ $N_{20} = \frac{5.58}{1.6}$ (USE MIN (5)) SIMUSON ABUT + CATA UKE MINI (C) 2'd BOLES TO WIO BM NLOC = 5798 = 5.66 16(640) = 5.52 (USE MIN (C) = 64 LAGS TO BUKG

^{pg} of 311

rudow + berry structural engineering scottsdale, arizona 85251 t (480) 946-8171 f (480) 946-9480 job name: Copper Crest East job number: 15105

designed by: MAR checked by:

 $\frac{5111}{N_{56}} = \frac{5798}{16(1007)} = \frac{3.6}{3.6}$ $U_{56} = \frac{5653}{16(1007)} = 3.6$ $U_{56} = (4) \frac{5}{6} \frac{4}{6} \frac{14144}{1414} - \frac{16007}{16007}$ OME LOZ = 5,655 (8,42) = 48.82 in $F_{T} = \frac{48.82}{470} ih}_{5.21'} = \pm 9.14 h$ TIE AT TI P= 204 = + 17868 5 ± 9370 15642 5 ± 9140 Private = 20.63 h - SEE NERT SHE FOR POST DES. PMIN =, 6(204+ 5,5(270)+ 55(85(10)) - 9140 = -8432# MAR T. -8662 - STEEL POST OK BG MISP TIE AT TZ P= 39630 + 396605 ± 9140 PMax = 31623# - SEE NERT SHIES FOR POST DESIGN PMIN = , (1903+143+234) - 9190 = 6(76# Mar +, -STI POST OR BG West,

rudow + berry structural engineering	job name: Copper Crest East job number: 15105	pg of 38)
t (480) 946-8171 f (480) 946-9480	designed by: MARdate:checked by:date:	

 $\begin{aligned} & \downarrow_{\text{Auc}} \not \downarrow_{\text{BWNH}} \downarrow_{01} \not \downarrow_{\text{LOZ}} \\ & \downarrow_{=0}^{6512} \downarrow_{=0}^{\text{H}} \not \downarrow_{=0}^{\text{H}} \\ & \downarrow_{=0}^{6512} \downarrow_{=0}^{\text{H}} \not \downarrow_{=0}^{\text$ STRAP & POST & TOP DE 2 1.50 THAN = 6194 (1.50) = 3059 # -Simpsont UST 27 EA. SIDE OF DE Thuas= 2(Mas) = 1400# STRAF & WALL ELLOS: Tm

$$514C Constat:
5 = \frac{1.6(1540)}{483} (12) = 61''0.C, \qquad (1155 - 34'' of J-BOUTS)
508 58" 0 32'' OC Max
(3 min Retio)$$



 \mathbb{C}

pg of **3**83 **Copper Crest East** job name: rudow + berry job number: 15105 structural engineering scottsdale, arizona 85251 date: 1/17 designed by: MAR t (480) 946-8171 checked by: date: f (480) 946-9480 $06m \in B, 0, For = 41.00 + 01.94 + 0.194(4) = 139.47 \text{ lh}$ Lum = 1210", te 0-5" Poc = 204+3693+ 5.5(270+85)+ 12.83(238+100) = 10186# War = 194 PLF Mm = 204(UAC) + 3(A3(192) + 1952(3,10) = 11.87 th W4 = 380 PCF M11=0 P2 = 1868+13660 = 51528# WG1 = 4016 PCF M3L = 17.868(6.42)+ 33.66(.92) = 145.68 1h -SEE Ness SHE For For For -

rudow + berry		proje	ct name: CCE				proje	st no.
structural engi	neering						151	05
scottsdale, arizo	ona	desi	gned by: MAR		date: Jun-15			
(602) 946-8171		Che	ескеа ру:		date:			
		SHEA		-00	OTING DESIG	N		
INPUT DAT	A :	Unit 62R	Wall SW2					
Allow. Soil Pr. Fy = f 'c = 3 Wall DL = Roof LL = Floor LL = Wall Length = Wall Thickness	= 2.400 60 ksi 3000 psi 0.79 klf 4.02 klf 0.38 klf 12.83 s = 8	ksf feet inches			DL OTM = FLR LL OTM = RF LL OTM = SEISMIC OTM = Footing Length : Footing Width : Footing Thkness: Footing DL :	0.00 ft-kips 0 ft-kips 0 ft-kips 133.82 ft-kips 17.17 feet 3.00 feet 12 inches 1.590 klf	-139 Se ne: she	47 e xt et
OUTPUT D	ATA :							
EQ'N 16-11 : I P = OTM = e = Soil Pr. = EQ'N 16-14: D P = OTM = 1 e = Soil Pr. =	DL + .75(FL + RI 79.8 kips 0.00 ft-kips 0.00 feet 1.55 ksf, max., L + .75(FL + RL 79.8 kips 00.4 ft-kips 1.26 feet 2 23 ksf max	.): P _{ult} = OTM _{ult} = X bar = 2.19 + .7E) P _{ULT} = OTM _{ULT} = X bar = 3.15	112.7 kips 0.00 ft-kips N/A feet ksf, ult. 112.7 kips 160.58 ft-kips N/A feet	; ;		Required Width =	1.94	feet
	2.20 K31, 110A.,	0.10	Kor, uit.				2.70	1001
EQ'N 16-16: 0. P = OTM = 1 e = Soil Pr. =	6DL + 0.7E 22.5 kips 33.8 ft-kips 5.95 feet 1.90 ksf, max.,	P (ult) = OTM _{ULT} = X bar = 2.28	27.0 kips 149.88 ft-kips 2.64 feet ksf, ult.	i		Required Width =	2.37	feet
Resisting Morr	nent = 321.83	ft-kips				Factor of Safety =	3.44	
FOOTING F	REINFORCING	<u>;</u>						
LONGITUDIN/ Req'd Unreinf Moment = Shear =	AL DIRECTION: Thickness = 9.60 ft-kips/ft 0.00 kips/ft	32	inches Fb(allow)= Fv(allow)=	178 71	psi psi	fb(act.)= fv(act.)=	64 0	psi psi
TRANSVERSE Req'd Unreinf Moment = Shear =	E DIRECTION: Thickness = 3.25 ft-kips/ft 0.00 kips/ft	20	inches Fb(allow)= Fv(allow)=	178 71	psi psi	fb(act.)= fv(act.)=	60 0	psi psi
Reinf. Thickne Longitudinal S Transverse Ste	ss (if used) = teel Required = eel Required =	12 0.26 0.09	inches sq.in./ft. sq.in./ft.			v(longit.) = v(transv.)= V(allow) =	44 13 93.1	psi psi psi

384

Page S53

rudow + berry	project name: CCE	
structural engineering		
		4.4.

scottsdale, arizona (602) 946-8171

designed by: MAR checked by:

date: Jun-15 date:

S	HEAR WALL FOOTING DESIG	SN	
INPUT DATA : Unit	62R Wall SW2		
Allow. Soil Pr. = 2.400 ksfFy = 60 ksif'c = 3000 psiWall DL = 0.79 klfRoof LL = 4.02 klfFloor LL = 0.38 klfWall Length = 12.83 feeWall Thickness = 8 inc	f DL OTM = FLR LL OTM = RF LL OTM = SEISMIC OTM = Footing Length : Footing Width : Footing Thkness: ches Footing DL :	0.00 ft-kips 0 ft-kips 0 ft-kips 139.47 ft-kips 17.17 feet 3.00 feet 12 inches 1.590 klf	
OUTPUT DATA :			
EQ'N 16-11 : DL + .75(FL + RL): P = 79.8 kips OTM = 0.00 ft-kips OTM e = 0.00 feet X H Soil Pr. = 1.55 ksf, max., EQ'N 16-14: DL + .75(FL + RL + .75	P _{ult} = 112.7 kips M _{ult} = 0.00 ft-kips bar = N/A feet 2.19 ksf, ult. E)	Required Width =	1.94 feet
P = 79.8 kips P OTM = 104.6 ft-kips OTM e = 1.31 feet X H Soil Pr. = 2.26 ksf, max.,	$P_{ULT} = 112.7 \text{ kips}$ $M_{ULT} = 167.36 \text{ ft-kips}$ bar = N/A feet 3.19 ksf, ult.	Required Width =	2.82 feet
EQ'N 16-16: 0.6DL + 0.7E P = 22.5 kips P (1 OTM = 139.5 ft-kips OTM e = 6.20 feet X H Soil Pr. = 2.10 ksf, max.,	ult) = 27.0 kips M_{ULT} = 156.21 ft-kips bar = 2.38 feet 2.52 ksf, ult.	Required Width =	2.62 feet
	lps	Factor of Salety =	3.30
LONGITUDINAL DIRECTION: Req'd Unreinf Thickness = 3 Moment = 9.72 ft-kips/ft Shear = 0.00 kips/ft	32 inches Fb(allow)= 178 psi Fv(allow)= 71 psi	fb(act.)= fv(act.)=	65 psi 0 psi
TRANSVERSE DIRECTION: Req'd Unreinf Thickness = 2 Moment = 3.29 ft-kips/ft Shear = 0.00 kips/ft	20 inches Fb(allow)= 178 psi Fv(allow)= 71 psi	fb(act.)= fv(act.)=	61 psi 0 psi
Reinf. Thickness (if used) = 1 Longitudinal Steel Required = 0. Transverse Steel Required = 0.	12 inches .26 sq.in./ft. .09 sq.in./ft.	v(longit.) = v(transv.)= V(allow) =	45 psi 14 psi 93.1 psi

project no. 15105

Page S55 job name: **Copper Crest East** pg of **385** rudow + berry job number: 15105 structural engineering scottsdale, arizona 85251 designed by: MAR date: 1/17 t (480) 946-8171 checked by: date: f (480) 946-9480 WAR SW3 .989 VIN= 701 ER., 2438 WIND (10890+9-11, 1490+6-9) $\frac{V_{LDI}}{-1919} = \frac{7}{117} \frac{\#}{117} \frac{177}{117} \frac{\#}{1117} \frac{1177}{1117} \frac{\#}{1117} \frac{1117}{1117} \frac{1117}{11$ WIND Controls previous design OK Lunar = 7'-4" FROM LOI TO LOZ E'stric ul 8de COC. IT= AMS PLF WINDS (FALLOW = 365 PLF WINES DAME + 6'-9" FLR = 1.189(3.17') = 5.351h Won DL = (.17(10)= G2 PLF Fr= 2(6,75)(n)(0,6) - 5350 = 499 # Fais SIMPSON MST.37 08m @-A18" = 5.35+ 2.438(11.42) = 33.19" TANOW = 2465# WALL DL = 8,379 (24) + M.75(10) = 318 PLF Fr= 8.67 (315)(.6) - 33190 = 2833 # TEALS TANOW = 3900# FROM GHD TO LOI 15= 432 PLF 12"SHTC 1 8de 4"0.C. UMDW = 533 PLF OK SILL CONNES 5 = 1.6(141) (12) = 4.3" Use lod a 6" O.C.

rudow + berry structural engineering	job name: Copper Crest East job number: 15105	of 360
scottsdale, arizona 85251 t (480) 946-8171 f (480) 946-9480	designed by: MAR date: 1/17 checked by: date:	

 $W_{102} = 567^{\pm} E_{R}, 1685^{\pm} W_{H+1}$ $V_{101} = 90^{\#} Ea, 221^{\#} WIHD$ $1252 - 619^{\#} 1906^{\#} WIHD CONSTROLS$ $\frac{2985}{2985} = \frac{14^{4}}{2985} = \frac{19}{14} \text{ Ver} \qquad \frac{1005}{211} = \frac{19}{211} \text{ Ver} \qquad \frac{1005}{211} = \frac{1005}{211} = \frac{1.733}{17.19} \text{ Ver} = \frac{1.733}{17.19} \text{ Ver} = \frac{1.733}{1672} \text{ Ver} = \frac{1.733}{17.19} \text{ Ver} = \frac{1.733}{1672} \text{ Ver} = \frac{1.733}{1672} \text{ Ver} = \frac{1.733}{17.19} \text{ Ver} = \frac{1.733}{1672} \text{ Ver} = \frac{1.733}{17.19} \text{ Ver} = \frac{1.733}{17.$

OTM @ B.O.FTG = 1.733(9.92) + 2.985(16.83) = 67.43 ft-kips Wall DL = 12(25) + 14.92(10) + 15.83(150) = 2824 plf Floor LL = 12(40) = 480 plf See next sheet for footing design.

 $\begin{array}{l} \hline Wall \; SW{-5:} \\ V_{_{EQ}} = 4.18 \; kips \\ OTM @ B.O.FTG = 4.18(15) = 62.7 \; ft{-kips} \\ Wall \; DL = 14(100) + 9(25 + 28) = 1877 \; plf \\ Floor \; LL = 9(40) = 360 \; plf \\ Snow \; LL = 9(264) = 2376 \; plf \\ See \; second \; sheet \; following \; for \; footing \; design. \end{array}$

rudow + berry	project name: CCE	
structural engineering		

scottsdale, arizona (602) 946-8171

Reg'd Unreinf Moment = Shear =

designed by: MAR

date: 3/6/2017

(602) 946-8171	ch	ecked by:	date:		
	SHE	AR WALL F	OOTING DES	SIGN	
INPUT DATA :	Unit 62F	R Wall SW4			
Allow. Soil Pr. = Fy = 60 F f'c = 3000 F Wall DL = 2.82 F Roof LL = 0.00 F Floor LL = 0.48 F Wall Length = Wall Thickness =	2.400 ksf ksi psi klf klf 23.00 feet 12 inches		DL OTM = FLR LL OTM = RF LL OTM = SEISMIC OTM Footing Length Footing Width : Footing Thknes Footing DL :	$\begin{array}{rrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrr$	
OUTPUT DATA :					
EQ'N 16-11 : DL + .7 P = 87.4 ki OTM = 0.00 ft e = 0.00 fe Soil Pr. = 1.90 ks EQ'N 16-14: DL + .75	25(FL + RL): ips P _{ult} = -kips OTM _{ult} = eet X bar = sf, max., 2.35 i(FL + RL + .7E)	= 108.2 kips = 0.00 ft-kips = N/A feet 5 ksf, ult.	3	Required Width =	1.58 feet
P = 87.4 ki OTM = 50.6 ft- e = 0.58 fe Soil Pr. = 2.19 ks	$P_{ULT} =$ -kips OTM _{ULT} = eet X bar = sf, max., 2.71	 108.2 kips 80.916 ft-kips N/A feet ksf, ult. 	5	Required Width =	1.82 feet
EQ'N 16-16: 0.6DL + P = 47.5 ki OTM = 67.4 ft- e = 1.42 fe Soil Pr. = 1.41 ks	0.7E ips P (ult) = -kips OTM _{ULT} = eet X bar = sf, max., 1.70	= 57.0 kips = 75.522 ft-kips = N/A feet) ksf, ult.	3	Required Width =	1.18 feet
Resisting Moment =	909.72 ft-kips	1		Factor of Safety =	19.27
LONGITUDINAL DIRI Req'd Unreinf Thickne Moment = 0.15 ft- Shear = 0.00 ki	ECTION: ess = 12 -kips/ft ips/ft	inches Fb(allow)= Fv(allow)=	178 psi 71 psi	fb(act.)= fv(act.)=	9 psi 0 psi
TRANSVERSE DIRE Req'd Unreinf Thickne Moment = 0.93 ft-	CTION: ess = 12 -kips/ft	inches Fb(allow)=	178 psi	fb(act.)=	56 psi

project no. 15105

rudow + berry	project name: CCE
rudow + berry	
structural engineering	

scottsdale, arizona (602) 946-8171

Reinf. Thickness (if used) =

Longitudinal Steel Required =

Transverse Steel Required =

designed by: MAR checked by:

inches

sq.in./ft.

sq.in./ft.

12

0.19

0.04

date: 3/6/2017 date[.]

(002) 940-0171	Che	ckeu by.		uale.				
	SHEA	R WALL F	-00	TING DESIG	θN			
INPUT DATA :	Unit 62R	Wall SW5						
Allow. Soil Pr. = 2.400 Fy = 60 ksi f'c = 3000 psi Wall DL = 1.88 klf Roof LL = 2.38 klf Floor LL = 0.36 klf Wall Length = 11.50 Wall Thickness = 8	ksf feet inches		D FI SI Fo Fo	L OTM = _R LL OTM = F LL OTM = EISMIC OTM = poting Length : poting Width : poting Thkness: poting DL :	0.00 0 62.7 15.00 2.00 12 0.604	f t - kips f t - kips f t - kips f t - kips feet feet feet inches klf		
EQ'N 16-11 : DL + .75(FL + RI P = 54.2 kips OTM = 0.00 ft-kips e = 0.00 feet Soil Pr. = 1.81 ksf, max.,	_): P _{ult} = OTM _{ult} = X bar = 2.48	74.5 kips 0.00 ft-kips N/A feet ksf, ult.	3		Require	ed Width =	1.51	feet
EQ'N 16-14: DL + .75(FL + RL P = 54.2 kips OTM = 47.0 ft-kips e = 0.87 feet Soil Pr. = 2.44 ksf, max.,	+ .7E) P _{ULT} = OTM _{ULT} = X bar = 3.35	74.5 kips 75.24 ft-kips N/A feet ksf, ult.	3		Require	ed Width =	2.03	feet
EQ'N 16-16: 0.6DL + 0.7E P = 18.4 kips OTM = 62.7 ft-kips e = 3.41 feet Soil Pr. = 1.50 ksf. max	P (ult) = OTM _{ULT} = X bar = 1.80	22.1 kips 70.224 ft-kips 4.09 feet ksf. ult.	3		Require	d Width =	1.25	feet
Resisting Moment = 229.83	ft-kips	,			Factor c	of Safety =	5.24	
FOOTING REINFORCING	G:	I						
LONGITUDINAL DIRECTION: Req'd Unreinf Thickness = Moment = 7.09 ft-kips/ft Shear = 0.83 kips/ft	18	inches Fb(allow)= Fv(allow)=	178 ps 71 ps	si Si		fb(act.)= fv(act.)=	166 6	psi psi
TRANSVERSE DIRECTION: Req'd Unreinf Thickness = Moment = 1.55 ft-kips/ft Shear = 0.00 kips/ft	12	inches Fb(allow)= Fv(allow)=	178 ps 71 ps	si Si		fb(act.)= fv(act.)=	93 0	psi psi

v(longit.) = 34psi v(transv.)= 0 psi V(allow) = 93.1 psi

project no. 15105

job name: CCE rudow + berry pg job number: 15105 structural engineering of scottsdale, arizona 85251 date: 3 2017 designed by: Mare t (480) 946-8171 date: rbinc@rbise.com checked by: WALL SW-6 (Revises) I.P. VRF 36-10" 18'-1" W. 12 Ni 13 AT. 121 414 8'could TO FLR 1º5' CONC 31-4" -SEISMIC Contrais When DEScul P. = 768 = + 1770 5 VRE = 1947# V4 = 10959 # GR, 2913# MET V3 = 13239# CR, 2299# NET P2= 15750 + 10855 5 V3 = 15445# CR, 2427# Alest W= 2 (25+40) = 50 = + 80L V, = 18821# GR, 3166# NET WALL Brost LO3 & RE: U= 13229 = 1471 DLF = (5/6"547'C Bis of 10 dez" VALLOW = 1740 04 ROOF CONN'S " NLPTA = 1949 = 14.9 (USE(14)) LIPTA CUPS NREDC \$ AFA = 1947 = 8.3 (1/5E (B) AAU + RBC CUPS (515+435) A= 4.54 - 04 1=4,5% de

`

Lic. # : KW-06002357

Project Title: C Engineer: M Project Descr:

Copper Crest East MAR

Paget \$6115105

Printed: 7 MAR 2017, 10:35AM

File = C:_jobs\15105C-1\ENG\CCE-20-1.EC6 ENERCALC, INC. 1983-2017, Build:6.17.2.28, Ver:6.17.2.28 Licensee : RUDOW & BERRY

Description : 62R - SW6 - T2 Post from L02 to Roof - 4x8 D.Fir#1

Code References

Calculations per NDS 2015, IBC 2015, CBC 2016, ASCE 7-10 Load Combinations Used : ASCE 7-10 w/ ASD Wind & EQ

General Information

Analysis Method End Fixities Overall Column H	: Allowable Top & Bc leight	e Stress Des ottom Pinned	ign 14.250 ft	W W W	ood Section Name ood Grading/Manuf. ood Member Type	; (4x8 Grade Sawn	d Lumber	
(Used for Wood Species Wood Grade Fb - Tension Fb - Compr Fc - Prll Fc - Perp	non-slender calc Douglas Fir No.1 1,000.0 psi 1,000.0 psi 1,500.0 psi 625.0 psi	- Larch Fv Ft Density	180.0 ps 675.0 ps 31.20 pc	Ex Ex i f	aact Width aact Depth Area Ix Iy	3. 7.2 25.3 111.1 25.9	50 in 50 in 75 in ² 48 in ⁴ 04 in ⁴	Allow Stress Modification Factors Cf or Cv for Bending Cf or Cv for Compression 1 Cf or Cv for Tension Cm : Wet Use Factor Ct : Temperature Factor	1.30 .050 1.20 1.0 1.0
E : Modulus of Ela	asticity Basic Minimum	x-x Bending 1,700.0 620.0	y-y Bending 1,700.0 620.0	Axial 1,700.0 ks Br	i ace condition for de X-X (width) axis Y-Y (depth) axis	eflection : Fi 5: U	(buckling) ully brace	Kf : Built-up columns Use Cr : Repetitive ? ng) along columns : ed against buckling along X-X Axis Length for X-X Axis buckling = 14.250	1.0 NDS 15 No

Applied Loads

AXIAL LOADS	
Axial Load at 14.250 ft, D = 1.575, S = 11.149, E = 14.	.140 k

DESIGN SUMMARY

Bending & Shear Check Results

PASS	Max. Axiai+Bending Stress F	Ratio = 0.9710 : 1
	Load Combination	+D+0.750L+0.750S+0.750E+H
	Governing NDS Forumla	Comp Only, fc/Fc'
	Location of max.above base	0.0 ft
	At maximum location values a	ire
	Applied Axial	20.542 k
	Applied Mx	0.0 k-ft
	Applied My	0.0 k-ft
	Fc : Allowable	833.68 psi
PASS	Maximum Shear Stress Ratio	0 = 0.0 : 1
	Load Combination	+0.60D+E+0.60H
	Location of max.above base	14.250 ft
	Applied Design Shear	0.0 psi
	Allowable Shear	288.0 psi

Maximum SERVICI Top along Y-Y Top along X-X	E Lateral Lo 0.0 k 0.0 k	ad R	Reactions Bottom along Y Bottom along Y	/-Y (-X	0.0 k 0.0 k
Maximum SERVICE Lo	ad Lateral Def	lectic	ons		
Along Y-Y	0.0 in	at	0.0 ft	above base	
for load comb	nation : n/a				
Along X-X	0.0 in	at	0.0 ft	above base	
for load comb	ination : n/a				
Other Factors used to	calculate allow	vable	stresses		
			Bending C	ompression	Tension

Service loads entered. Load Factors will be applied for calculations.

Load Combination Results

			Maximum Axial	+ Bending	Stress Ratios	Maximu	m Shear Ra	atios
Load Combination	С _D	СР	Stress Ratio	Status	Location	Stress Ratio	Status	Location
+D+H	0.900	0.528	0.08292	PASS	0.0 ft	0.0	PASS	14.250 ft
+D+L+H	1.000	0.488	0.08069	PASS	0.0 ft	0.0	PASS	14.250 ft
+D+Lr+H	1.250	0.409	0.07712	PASS	0.0 ft	0.0	PASS	14.250 ft
+D+S+H	1.150	0.438	0.6326	PASS	0.0 ft	0.0	PASS	14.250 ft
+D+0.750Lr+0.750L+H	1.250	0.409	0.07712	PASS	0.0 ft	0.0	PASS	14.250 ft
+D+0.750L+0.750S+H	1.150	0.438	0.4940	PASS	0.0 ft	0.0	PASS	14.250 ft
+D+W+H	1.600	0.331	0.07445	PASS	0.0 ft	0.0	PASS	14.250 ft
+D+E+H	1.600	0.331	0.7429	PASS	0.0 ft	0.0	PASS	14.250 ft
+D+0.750Lr+0.750L+0.750W+H	1.600	0.331	0.07445	PASS	0.0 ft	0.0	PASS	14.250 ft
+D+0.750L+0.750S+0.750W+H	1.600	0.331	0.4697	PASS	0.0 ft	0.0	PASS	14.250 ft
+D+0.750L+0.750S+0.750E+H	1.600	0.331	0.9710	PASS	0.0 ft	0.0	PASS	14.250 ft
+0.60D+W+0.60H	1.600	0.331	0.04467	PASS	0.0 ft	0.0	PASS	14.250 ft
+0.60D+E+0.60H	1.600	0.331	0.7131	PASS	0.0 ft	0.0	PASS	14.250 ft

+0.60D+E+0.60H

D Only

Lr Only

L Only

S Only

W Only

Wood Column		ENERCALC. INC	2. 1983-2017. Build:6.17.2.28. Ver:6.17.2.28
Lic. # : KW-06002357			Licensee : RUDOW & BERRY
Description : 62R - SW6 - T2 Post from	1 L02 to Roof - 4x8 D.Fir#1		
Maximum Reactions		Note: Or	nly non-zero reactions are listed.
	X-X Axis Reaction	Y-Y Axis Reaction	Axial Reaction
Load Combination	@ Base @ Top	@ Base @ Top	@ Base
+D+H	k	k	1.575 k
+D+L+H	k	k	1.575 k
+D+Lr+H	k	k	1.575 k
+D+S+H	k	k	12.724 k
+D+0.750Lr+0.750L+H	k	k	1.575 k
+D+0.750L+0.750S+H	k	k	9.937 k
+D+W+H	k	k	1.575 k
+D+E+H	k	k	15.715 k
+D+0.750Lr+0.750L+0.750W+H	k	k	1.575 k
+D+0.750L+0.750S+0.750W+H	k	k	9.937 k
+D+0.750L+0.750S+0.750E+H	k	k	20.542 k
+0.60D+W+0.60H	k	k	0.945 k

k

k

k

k

k

k

E Oply		1.			
E Ulliy		K		K	14.140 k
H Only		k		k	k
Maximum Deflections for Load	d Combinations				
Load Combination	Max. X-X Deflection	Distance	Max. Y-Y Deflection	Distance	
+D+H	0.0000 in	0.000 ft	0.000 in	0.000 ft	
+D+L+H	0.0000 in	0.000 ft	0.000 in	0.000 ft	
+D+Lr+H	0.0000 in	0.000 ft	0.000 in	0.000 ft	
+D+S+H	0.0000 in	0.000 ft	0.000 in	0.000 ft	
+D+0.750Lr+0.750L+H	0.0000 in	0.000 ft	0.000 in	0.000 ft	
+D+0.750L+0.750S+H	0.0000 in	0.000 ft	0.000 in	0.000 ft	
+D+W+H	0.0000 in	0.000 ft	0.000 in	0.000 ft	
+D+E+H	0.0000 in	0.000 ft	0.000 in	0.000 ft	
+D+0.750Lr+0.750L+0.750W+H	0.0000 in	0.000 ft	0.000 in	0.000 ft	
+D+0.750L+0.750S+0.750W+H	0.0000 in	0.000 ft	0.000 in	0.000 ft	
+D+0.750L+0.750S+0.750E+H	0.0000 in	0.000 ft	0.000 in	0.000 ft	
+0.60D+W+0.60H	0.0000 in	0.000 ft	0.000 in	0.000 ft	
+0.60D+E+0.60H	0.0000 in	0.000 ft	0.000 in	0.000 ft	
D Only	0.0000 in	0.000 ft	0.000 in	0.000 ft	
Lr Only	0.0000 in	0.000 ft	0.000 in	0.000 ft	
L Only	0.0000 in	0.000 ft	0.000 in	0.000 ft	
S Only	0.0000 in	0.000 ft	0.000 in	0.000 ft	
W Only	0.0000 in	0.000 ft	0.000 in	0.000 ft	
E Only	0.0000 in	0.000 ft	0.000 in	0.000 ft	
H Only	0.0000 in	0.000 ft	0.000 in	0.000 ft	

Copper Crest East MAR Project Title: Engineer: Project Descr:

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rudow + berry, inc. 4021 north 75th street, #101 scottsdale, arizona 85251 480.946.8171

Project Title:	Copper Crest East
Engineer:	MA'R
Project Descr:	

Paget \$6315105

Printed: 7 MAR 2017, 10:35AM Wood Column File = C:_jobs\15105C-1\ENG\CCE-20-1.EC6 ENERCALC, INC. 1983-2017, Build:6.17.2.28, Ver:6.17.2.28 Lic. #: KW-06002357 Description : 62R - SW6 - T2 Post from L02 to Roof - 4x8 D.Fir#1

Sketches



job name: CCE rudow + berry pg structural engineering job number: 15105 of scottsdale, arizona 85251 designed by: Mare date: 3/2016 t (480) 946-8171 date: rbinc@rbise.com checked by: WAR BANH LOZ & LOZ V=17739# 2 5= 116 PCF (516"SHAC BIS. M/ 10606" L=18-6) VALION= 680 PCF 1=5% ok SILL COMPANY: Ve a' WIMM = 10859 + 2219 = 1295 PLF Ve 9' WIDMA = 10859 + 2219 (18.5) = 12010# N3/4" = 12010 = 7.82 [[ISE MIN (8) 34" & LACS Poper To Rem. of WALL' VORAC = 10859 (9.5) = 557C# (UKE SIMOSEN) UST37 EA SIDE OF WALL TIE AT TZ! *Since $F_{T} = -126165 + \left(\frac{13239(1.5)}{141}\right) = -13218^{\#}$ TIE AT T3: For Inon (15) = 103 = Sore Con Cand ok By MASP.

job name: CEE rudow + berry pg job number: [5]05 structural engineering of scottsdale, arizona 85251 date: 3/2017 designed by: Marz t (480) 946-8171 date: rbinc@rbise.com checked by: War Brost Loz & T.o. 8" Cost WALL V= 15665 3 5= ALESPLE 518" B.S. al 10 del" L= 36-10 J = ALESPLE 518" B.S. al 10 del" VALLOW = CAO Sh SILL CORTERS' (16(10) (12) = 3418" (115= 2"\$ A15'S SROR'D = 116(10) (12) = 3418" (115= 2"\$ A15'S @ 16" DC Max $V_{\text{MRMZ}} = 1411 \left(\frac{165}{36.93}\right) \left(\frac{4}{1.53}\right) = 3751^{\text{H}} 5772\text{AF}$ PRICE CONTRA TALLOW = 4585# N= 3151 (50) = 41 (USE (40) 10 dx 1 2" NAILS orm e T.O. Conc WALL = 15,665 (5,25) = 82,24 th Fr= 82,24 = ±2,28k TIE AT TE: FT= 0.4 (18142(40 + 9,25(15)) - 2280 = 194# 20 0 ALO MPLIET DUE TO WALL AROUND CORRER TIE AT TZ! $F_{f} = -13716 + \left(.C(50+9.25(15)) - 2280 \right) = -13912^{\#}$ SIMPSON HDU14-SDEZIES TANOW= 14445# 0K (To 52" Pour)

job name: OCE rudow + berry pg job number: 15105 of structural engineering scottsdale, arizona 85251 date: 3/2017 designed by: Mare t (480) 946-8171 date: rbinc@rbise.com checked by: Wan Swar C CAR P2 Wi PS W 10-10 24-10 12-0 K DRAG ARAG TRA Pio DRAG 42-2 VRF = 6535 OR Y4 = 5954 GR, -581 Abor V2 = 4882# GR, -1062# 4100 V2 = 6264 GR, 13m # Hor V1 = 5248# GR, -1015# Net PI= REBEL= 1205 0L + 944 P7 = RFB7L = 10380 + 1383 L P2= RROSL= 511+L + 4559 5 PE= RFBIEL = 15130 + 23462 P3= REABHL = 22860 + 14619 5 Pa= R+++51 = 206300 + 138625 PA= RRBAL = 41000 + -2629 5 PS= REBIZE = 16930 + 9319 -5 Plo= RtHaL = 5155 + MOL - 23735 PU= RIBOL = 14510 + 912L + 78365 W, = 9(24+203) = 2160 + 18275, PCF

iob name: CCE rudow + berry pg job number: 15105 structural engineering of scottsdale, arizona 85251 designed by: Mare date: 3/2017 t (480) 946-8171 date: rbinc@rbise.com checked by: WALL BOURT ROOF & LOZ V = 6595 Mar, 4887 Minl U= 263 PLF [2"5486 M 8d ec" Lmin = 24-10 VALLOW = 260 ok 09me LO3 = (1,595 (19,42) + 5,954 (3,12) = 100,51 1/2 $F_{T} = \frac{106.51}{41.1} = \pm 23.12^{\#}$ TIE @ EAST 1, FT = 0.6 (1683+0.2(9319))+ 76.59(23)(6)) - 2316 = O NO LAPUET TIE @ WEAT: F= 0.6 (1205 + 0.2 (1948) + 1658 (3)(10) - 7316 = 0 NO GPLIFT DRAG @ Lot: France = 581 (1183) (4) = 948# SIMPSONI CHESTCH STRAC N= 94B (50) = 110 USE (20)/02 x12 MALLS LORANG = THE = 3164 FT MINI C-SF-W1 FIRAC = 10(1 (22) 4) = 1542# DRAG @ 103: SIMPSONI CHISTCIG STRAP N= 16.8 CHAM C. FREIN FL (The (20) 10d x 1.2 NAILS Brown = 1542 = 5.93 MIN

job name: CEE rudow + berry pg job number: 15105 of structural engineering scottsdale, arizona 85251 designed by: MAR date: 3/2017 t (480) 946-8171 date: rbinc@rbise.com checked by: DRAC @ LOZ: FORAZ = 1371 (24,73) (4) = 2495# FIMPSON CUSTCIC GARAF N= 2495 (50) = 11.2 (155 (28) 100 x 12 NAILS LORAG 2 2495 = 9.0 FT MIN DRAG @ LOI FORAC = 4887 (12) (4) = 1004# 2) SIMPSON HDUA-505265 TAMON = 2(4565) = 9130 th op OTM @ T.O. STEM = (MAN (A.) - THAN (?). $= (575 \left(\frac{24.83}{44.83}\right)(38') - 581 \left(\frac{24.83}{44.83}\right)(24.58) - 1067 \left(\frac{24.83}{44.83}\right)(21.42)$ + 1311 (19.92) + 4887 (22-) (14.15) - 1015 (10) = 162.941k PREVIOUS OTH FOR SEEMAN (B = 115.30" > 162.94" PREMOUS FOOTHG BESIGN OK
Page	S69
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					Page S69
rudow + berry structural engineering scottsdale, arizona 85251 t (480) 946-8171 rbinc@rbise.com		job name: Copper Crest East job number: 15105		of 399	
		designed by:MAR checked by:	date: 1/ date:	17	
HOLDOU	ION BOL	TEMB	ED, REGUL	EMENT	2
UNIT	KLARL	TIE #	T (ASD)	T(ULT)	14to
THP.	SHI	TI	28544	4/9/3 #	FTG. (18
	Shill	T2	14642 #	24110 #	FTG, (18')
	541	T3	13697 # 137367 #	22513 # 21984	FTG. (18"
	SKIZ	TI	24487	39505 # 71938	E" WALL
	Sh12	T2	23356	38148 36579#	8"WALL
62R	541	TI	16981	26105 #	REBAR TO FTG
		T2.	8403 # 19 (-3 #	15792 # 5088	REBAR TO FTG
		T3	14115#	25634#	FTC- (18")
		T4	(1191#	21333	FTG (18")
	5K/Z	TI	12048 #	20315 # 1955 #	REBAR TO STE
		T2	6406 # 6176	11435 1000 #	REBARIOSIE
		13	3972 # 5715 #	6876 # 6464	B" WALL
	5146	TI	13038 #-	21278 # 5078	2" WALL
		TZ	13912 # 9858	26070 (6597#	e" where
		Т3	1103#	1765#	STEEL POST
		T4	<u>∩</u> #	0#	N/A

rudow + berry job name: Copper Crest East ^{pg} 400 structural engineering job number: 15105 scottsdale, arizona 85251 designed by:MAR t (480) 946-8171 date: 1/17 rbinc@rbise.com checked by: date: THPE 1: BOLT EMBED IN 18" THE FOL Pu (max) = 46,50 K 47.973 Max Emped = 15" AHAD = 9(15) = 2015 142 ANC = AHCO

NB= 24 (3000)2 (15)115 = 161374 Heb = Hb = 76.37k

QNG5= 0.75 (7637)= 57,28 - 46,50 de THE IS" MILL EMBOD

MPEZ: BOLT EMBED IN E" WALL (12" WALL SIMILAR) Py (Max) = 31938 $A_{5}(RE+b) = \frac{\frac{39.505}{71.9738}}{0.9(60)} = \frac{0.73}{0.70} H^{2}$ $U_{4} = (4.)^{4} 5 \text{ Verts}$ TENS, DEN. LENGTH = 20,7" } ok HOOK DEV. LEALONH = 8" MPE 3', STEEL POST TO EMEED Pu (max) = 26595# As (READ) = 0.49 412 (USE (4) # 6 TO EMBED

> TENS. TED. lettert = 12 Mut HOOK DED. CERCITY = (" MINT