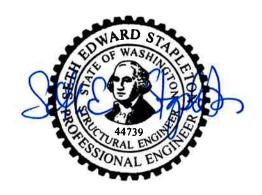
## **Building 900 Renovation**

Central Kitsap School District

December 20, 2019

Prepared for: Rice Fergus Miller

# STRUCTURAL CALCULATIONS



#### Prepared By:

Seth Stapleton, P.E., S.E., Jennifer Johnson, P.E.

### ReidMiddleton

728 134th Street SW, Suite 200 Everett, WA 98204 425/741-3800 (Fax 425/741-3900) www.reidmiddleton.com File No. 262018.024



728 134th Street SW · Suite 200 Everett, Washington 98204 Ph: 425 741-3800

Fax: 425 741-3900

Client	Rice Fergus Miller	Sheet	of
Project	Bldg 900 Renovation	Design by	SES
		Date	
		Checked by	
Project N	o. <b>262019.034</b>	Date	

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ReidMiddleton	Client	Rice Fergus Miller	Sheet	of
	Project	Bldg 900	Design by	SES
728 134th Street SW · Suite 200		Structural Design Criterla	Date 12	/19/19
Everett, Washington 98204 Ph: 425 741-3800			Checked by	

262019.034

#### **DESIGN SUMMARY**

Project No.

Fax: 425 741-3900

Building 900 is an existing wood-framed and CMU masonry structure, built in the 1970's for the Central Kitsap High School. The Central Kitsap School District is renovating the building and it will provide space for Administration Offices, Classrooms and a Library.

Date

Building 900 is evaluated and renovated in accordance with the International Existing Building Code (IEBC) 2015 Edition, with Washington State amendments and the ASCE 41-13 Standard.

ReidMiddleton	Client	Rice Fergus Miller	Sheet of
	Project	Bldg 900	Design by SES
728 134th Street SW - Suite 200 Everett, Washington 98204		Structural Design Criteria	Date <b>12/19/19</b>
Ph: 425 741-3800			Checked by
Fax: 425 741-3900	Project N	0 262010 034	Date

Date

#### **CODES AND REFERENCES**

Project No.

#### General

- 2015 International Existing Building Code with WA state amendments
- ASCE 41-13 Seismic Rehabilitation of Existing Buildings

262019.034

SEAW Snow Load Analysis for Washington, 2010 Edition

#### Concrete

- ACI 318-14 Building Code Requirements for Structural Concrete
- PCI Design Handbook Precast and Prestressed Concrete, Seventh Edition (2010)

#### Steel

- AISC 325-11 Steel Construction Manual, 14th Edition (2011)
- AISC 341-10 Seismic Provisions for Structural Steel Buildings (2010)
- AISC Hollow Structural Sections Connections Manual
- AWS D1.1-2010 Structural Welding Code Steel

#### Wood

- ANSI/AF&PA-2015 National Design Specification for Wood Construction
- AITC Timber Construction Manual, Sixth Edition

#### Catalogs and Miscellaneous

Simpson Strong-Tie Catalog

ReidMiddleton Client Sheet Rice Fergus Miller Project Bldg 900 Design by SES 728 134th Street SW - Suite 200 Structural Design Criteria Date 12/19/19 Everett, Washington 98204 Checked by Ph: 425 741-3800

Fax: 425 741-3900 Project No. 262019.034 Date

#### MATERIAL PROPERTIES

#### Concrete

Normal Weight Type Foundations  $f_c = 3,500 \text{ psi}$ Slab-on-Grade  $f_c = 4,000 \text{ psi}$  $f_c = 4,500 \text{ psi}$ Retaining Walls

#### Reinforcing Steel

**Typical** ASTM A615, Grade 60

#### **Structural Steel**

Wide Flanges ASTM A992, Grade 50

ASTM A36 Plates Angles and Channels ASTM A36 Rods ASTM A36

Pipe ASTM A53, Type E or S, Grade B,  $f_y = 35$  ksi

**Tubes** ASTM A500, Grade B,  $f_v = 46$  ksi

**Base Plates** ASTM A36 Connection Mat'l, Embedded Plates ASTM A36 ASTM A325

Anchor Rods in Concrete/Masonry **ASTM F1554, Grade 36** 

Welding Electrodes E70XX

Headed Shear Studs ASTM A108, AWS D1.1 Grade B,  $f_u = 60 \text{ ksi}$ 

#### Masonry

ASTM C90, Grade N, Type 1, Medium Weight **CMU** 

 $f'_{m} = 1500 \text{ psi}$ Assembly Strength

Grout Min. Compressive Strength = 2000 psi

Mortar Type S

#### Wood

Wall Studs and Plates Doug-Fir No. 2 & Better,  $F_b = 900 \text{ psi}$ Doug-Fir No. 2 & Better,  $F_b = 900 \text{ psi}$ Joists and Planking

Doug-Fir No. 1,  $F_b = 1350 \text{ psi}$ Beams and Stringers Posts (4x) Doug-Fir No. 1,  $F_b = 1500 \text{ psi}$ Posts (6x and larger) Doug-Fir No. 1,  $F_b = 1000 \text{ psi}$ 

Glu-lam Beams 24F-V4,  $F_b = 2400$  psi

#### FOUNDATIONS AND SOILS

Soil properties and allowable bearing pressures are based on original design documents.

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Project Rice Fergus Miller

Project Bldg 900

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Everett, Washington 98204

Ph: 425 741-3800

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**LIVE LOADS** 

**Roof Live Loads** 

Snow Load 28 psf (non-reducible)

Includes Is = 1.1

Floor Live Loads

Office 50 psf (reducible) + 20 psf partition,

or 2 k point load

Exit Corridors, Stairways 100 psf (reducible)

80 psf (above 1st floor)

Assembly Areas 100 psf (non-reducible)

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Ph: 425 741-3800 Fax: 425 741-3900

Rice Fergus Miller

**Project** 

Project No.

Bldg 900

262019.034

Structural Design Criteria

Sheet Design by

Date

Date

SES

12/19/19

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#### **DEAD LOADS**

#### **Roof Dead Loads**

#### **Light Frame Construction:**

Roofing Plywood Sheathing Wood Joists / Beams Ceiling Lights, ducts, etc.

7 psf 2 psf

5 psf 3 psf

<u>3 psf</u> Beam DL =20 psf

#### Floor Dead Loads

#### **Light Frame Construction:**

2" Lightweight Topping Slab 21 psf Plywood Sheathing 2 psf Wood Joists / Beams 6 psf 3 psf Ceiling Lights, ducts, etc. <u>3 psf</u> 35 psf Beam DL =

#### Wall Dead Loads

8" CMU 55 psf 45 psf 4" Brick

#### **Stair Dead Loads**

Steel Framing 15 psf Concrete Fill 25 psf 40 psf

# ReidMiddleton Client Rice Fergus Miller Sheet Project Bldg 900 Design by

728 134th Street SW - Suite 200 Everett, Washington 98204 Ph: 425 741-3800

Fax: 425 741-3900

 Project
 BIdg 900
 Design by
 SES

 Structural Design Criteria
 Date
 12/19/19

 Checked by

 Project No. 262019.034
 Date

#### **SEISMIC LOADS**

#### **Loads Based on ASCE 41-13**

Damage Control (between LS and IO)
Reinforced Masonry (CMU)
0.512g
0.192g
0.710g
0.390g
1.010g
0.407g
1.110g
0.650g

August 13, 2018 File No. 262018.054/00101

Mr. Steve Rice Rice Fergus Miller Architecture & Planning 275 Fifth Street, Suite 100 Bremerton, WA 98337

Subject:

Central Kitsap School District 900 Building

ASCE 41-13 Tier 1 Seismic Evaluation

Dear Mr. Rice:

We understand that the Central Kitsap School District (CKSD) is considering renovating the 900 building located on the campus of Central Kitsap High School. The intent would be to convert the existing building into a multi-use building that would include administration space for the school district and a community library. A seismic evaluation of the existing building was performed in accordance with the ASCE 41-13 Tier 1 procedure to identify potential seismic deficiencies in the building and recommend concept-level seismic upgrades to mitigate the deficiencies.

### **Background**

Building 900 is an approximately 42,000-square-foot, partial-three-story building located on a sloping grade. The building was originally built in the mid 1970s and is constructed of a variety of materials including reinforced masonry, precast concrete, steel, and wood. The building consists of two structures separated by a 1-inch seismic gap.

The north end is a one-story, 3,500-square-foot building constructed with 8-inch-thick precast concrete sandwich panels (insulation in the middle of thin concrete walls) which compose the vertical- and lateral-force-resisting systems (LFRS) of the building. Roof panels are supported by glulam beams. As-builts for the construction of roof panels and framing were not available for review because these were identified as bidder designed elements in the as-built drawings.

The main building is a partial-three-story building and approximately 38,000 square feet in size. The building construction is a mix of reinforced concrete masonry unit (CMU), concrete, steel, and wood. The majority of the exterior perimeter walls and interior partition walls are partially grouted 8-inch-thick CMU walls and compose most of the vertical- and lateral-force-resisting systems (LFRS) of the building. The exterior CMU

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wall along the north end of the building is 12 inches thick. The walls toward the south and southeast end of the building are partially and fully below the grade. The belowgrade walls are constructed as 12-inch retaining walls, and the above-grade walls are 7-3/4-inch-thick concrete walls with a 4-inch brick veneer. The concrete walls transition to CMU walls at the floors above.

In the main building, the floor panels at the main floor and the partial second floor appear to be wood construction with 2-inch-thick, lightweight concrete topping and supported on glulam beams and girders. As-built drawings with information on floor framing and sheathing are not available for review because these were identified as bidder designed elements in the as-built drawings. The roof framing for the three-story portion of the main building consists of 2x6 joists spanning between glulam hip trusses. The roof diaphragm appears to be 1/2-inch-thick plywood over wood joists. The remainder of the lower roof framing appears to be constructed of roof panel overlaid on glulam beams spanning in the east-west direction at 15 feet on center. As-built information documenting the roof panel and the size of the glulam beams is not available for review because these were identified as bidder designed elements in the as-built drawings.

The building also has an open corridor along the west façade to access the rooms on each floor. The corridor roof and floor framing are supported by concrete columns with brick veneer and partial-height precast wall panels forming a railing type barrier. The foundation of the building is composed of concrete spread footings under columns and continuous spread footings under exterior and interior CMU walls and precast concrete panels. Only limited as-built drawings for the building are available. Therefore, information pertaining to the roof and floor framing systems, diaphragm construction, and details of some member connections are unknown, because these were identified as bidder designed elements in the as-built drawings.

#### **ASCE 41-13 Seismic Evaluation Criteria**

The current standard for the seismic evaluation and retrofit of existing buildings is the ASCE 41-13, *Seismic Evaluation and Retrofit of Existing Buildings*. ASCE 41-13 provides screening and evaluation procedures used to identify potential seismic deficiencies that may require further investigation or hazard mitigation. It presents a three-tiered review process that is implemented by following a series of predefined checklists and "quick check" structural calculations. Each successive tier is designed to perform an increasingly refined evaluation procedure for seismic deficiencies identified in previous tiers in the process.

The Tier 1 checklists in ASCE 41-13 are specific to each common building type and contain seismic evaluation statements based on observed structural damage in past



earthquakes. These checklists screen for potential seismic deficiencies by examining the lateral-force-resisting systems and details of construction that have historically caused poor seismic performance in similar buildings. Tier 1 screenings include basic "Quick Check" analyses for primary components of the lateral system: in this building's case, the shear walls and wall anchorage. They also include prescriptive checks for proper seismic detailing of connections, diaphragm spans and continuity, and overall system configuration. Use of ASCE 41-13 for seismic evaluations requires buildings be classified from a group of common building types. Building 900 is classified as Precast or Tilt-Up Concrete Shear Walls (with flexible diaphragms), PC1, for the Gymnasium building, and Reinforced Masonry Shear Walls (with flexible diaphragms), RM1, for the rest of the building. Both buildings were checked for Life Safety criteria. The ASCE 41-13 Tier 1 Preliminary Seismic Evaluation structural checklist was completed and is included for reference.

#### **Findings & Conclusions**

The results of the structural seismic evaluation indicate that the building has multiple seismic deficiencies, including an inadequate seismic separation joint, overstressed CMU shear walls, inadequate wall thickness at precast walls, cross-grain bending at wood ledgers, long diaphragm spans, lack of cross-ties and beam connections.

The seismic separation between the precast building and the adjacent main building is 1 inch, which is greater than 4 percent of the height of the shorter precast building. Buildings with inadequate separation may impact each other by pounding during seismic events, which may cause extensive damage on both buildings. This deficiency can be mitigated by removing a portion of the building, by tying the buildings together structurally to force them to respond as a single structure, or by stiffening the taller building by adding supplementary concrete shear walls.

The precast concrete wall panels are sandwich panels. The precast panels are 8 inches thick but have 2 inches of insulation sandwiched between 3 inches of concrete on each side. Due to the thickness and height of the sections of concrete, the walls are considered slender walls. The load bearing slender walls are susceptible to buckling out-of-plane under the axial loading and have a higher potential for damage. The slender walls can be strengthened by overlaying a fiber composite or adding supplementary concrete walls to reduce the load that the walls have to resist. It is Reid Middleton's understanding that the current proposal is to demolish the portion of the building composed of the precast panels which would alleviate this deficiency and the seismic separation deficiency previously noted.

The CMU walls running in the east-west direction are overstressed near the center of the building. The overstressed walls may impact the overall strength of the building.



To mitigate this deficiency, new concrete shear walls can be added in the east-west direction. These walls may be able to be cast against specific wall piers to limit the impact to the interior of the structure.

The CMU wall along Grid N-70 between Grids EW-45 and EW-145 are discontinuous at the ground floor. In lieu of a supporting wall below, the walls are supported by steel columns and beams at the ground floor. Creating a discontinuous lateral load path increases the forces in the supporting elements and requires the supporting element to transfer lateral forces to surrounding systems. This deficiency can be mitigated by infilling some of the window openings at the ground floor level and providing supplementary concrete walls to provide a continuous lateral load path to foundation. A more-detailed analysis may also indicate that the support elements have adequate capacity for an adequate discontinuous lateral load path.

The plywood diaphragms appear to be unblocked and exceed the 40-foot maximum span. Unblocked diaphragms have lower capacities than those that are blocked. The diaphragm can be enhanced by adding additional blocking and nailing at the diaphragm panel edges. Blocked diaphragms at panel edges have more strength to transfer lateral forces than those that are unblocked at panel edges. As an alternate, the span of the diaphragms could be reduced by adding shear walls near the center of the spans. This would also help to reduce the loads applied to the existing shear walls and may limit the required upgrades to the overstressed walls.

There are multiple connections that have insufficient capacity. There is a lack of cross-ties between the diaphragm chords, and the wood ledger induces cross grain bending at the roof area composed of trusses. Walls that are not adequately anchored to the diaphragms may separate from the structure. Wall anchorage strength can be increased by providing supplementary tension ties and diaphragm cross-ties.

In addition, it is unclear from review of the as-built drawings what ledger connection was typically used and also if two ties are present at the glulam beam to pilaster connections. Additional investigation is required to confirm the glulam beam connections and to determine if cross grain bending is present in the typical ledger connection. The alternate connection shown in the as-built drawings would require additional analysis.

Building 900 does not meet the Life Safety performance level as determined by the ASCE 41-13 Tier 1 evaluation. During a design-level earthquake, extensive damage of the lateral-force-resisting elements may occur, posing a risk to the building occupants. It is recommended that the building be upgraded to meet the Life Safety performance objective. Attached to this letter are concept-level upgrade drawings for improvement of the lateral force resisting system (LFRS) to meet the LS performance objective. The



upgrade concept involves adding and strengthening existing shear walls, upgrading the diaphragm, and multiple framing connections.

Thank you for allowing us the opportunity to assist you with this project. If you need any clarification or additional information, please call.

Sincerely,

Reid Middleton, Inc.

Katherine R. Brawner, P.E.

**Project Engineer** 

Corbin M. Hammer, P.E., S.E.

Principal Engineer

Attachments

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#### 16.1.2LS Life Safety Basic Configuration Checklist

The evaluation statements represent general configuration issues applicable for most buildings based on observed earthquake structural damage during actual earthquakes. This checklist should be completed for all buildings in Very Low, Low, Moderate, and High Seismicity for Life Safety Performance Levels.

Each of the evaluation statements in this checklist shall be marked Compliant (C), Noncompliant (NC), Unknown (U), or Not Applicable (N/A) for a Tier 1 screening. Compliant statements identify issues that are acceptable according to the criteria of this standard, whereas noncompliant and unknown statements identify issues that require further investigation. Certain statements may not apply to the building being evaluated. For noncompliant and unknown evaluation statements, the design professional may choose to conduct further investigation using the corresponding Tier 2 evaluation procedure; corresponding section numbers are in parentheses after each evaluation statement.

#### **Very Low Seismicity**

#### **Building System**

#### General

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С	NC	N/A	U	EVALUATION STATEMENT	COMMENT
X				LOAD PATH: The structure shall contain a complete, well-defined load path, including structural elements and connections, that serves to transfer the inertial forces associated with the mass of all elements of the building to the foundation. (Commentary: Sec. A.2.1.1. Tier 2: Sec. 5.4.1.1)	
	х			ADJACENT BUILDINGS: The clear distance between the building being evaluated and any adjacent building is greater than 4% of the height of the shorter building. This statement need not apply for the following building types: W1, W1a, and W2. (Commentary: Sec. A.2.1.2. Tier 2: Sec. 5.4.1.2)	1-inch wide seismic separation between precast concrete building and masonry building.
		Х		MEZZANINES: Interior mezzanine levels are braced independently from the main structure or are anchored to the seismic-force-resisting elements of the main structure. (Commentary: Sec. A.2.1.3. Tier 2: Sec. 5.4.1.3)	No mezzanine.

**Building Configuration** 

С	NC	N/A	U	EVALUATION STATEMENT	COMMENT
X				WEAK STORY: The sum of the shear strengths of the seismic-force-resisting system in any story in each direction shall not be less than 80% of the strength in the adjacent story above. (Commentary: Sec. A.2.2.2. Tier 2: Sec. 5.4.2.1)	
X				SOFT STORY: The stiffness of the seismic-force-resisting system in any story shall not be less than 70% of the seismic-force-resisting system stiffness in an adjacent story above or less than 80% of the average seismic-force-resisting system stiffness of the three stories above. (Commentary: Sec. A.2.2.3. Tier 2: Sec. 5.4.2.2)	
X				VERTICAL IRREGULARITIES: All vertical elements in the seismic-force-resisting system are continuous to the foundation. (Commentary: Sec. A.2.2.4. Tier 2: Sec. 5.4.2.3)	

### 16.1.2LS Life Safety Basic Configuration Checklist

С	NC	N/A	U	EVALUATION STATEMENT	COMMENT
X				GEOMETRY: There are no changes in the net horizontal dimension of the seismic-force-resisting system of more than 30% in a story relative to adjacent stories, excluding one-story penthouses and mezzanines. (Commentary: Sec. A.2.2.5. Tier 2: Sec. 5.4.2.4)	
X				MASS: There is no change in effective mass more than 50% from one story to the next. Light roofs, penthouses, and mezzanines need not be considered. (Commentary: Sec. A.2.2.6. Tier 2: Sec. 5.4.2.5)	
X				TORSION: The estimated distance between the story center of mass and the story center of rigidity is less than 20% of the building width in either plan dimension. (Commentary: Sec. A.2.2.7. Tier 2: Sec. 5.4.2.6)	

Low Seismicity: Complete the Following Items in Addition to the Items for Very Low Seismicity.

#### **Geologic Site Hazards**

C	NC	N/A	U	EVALUATION STATEMENT	COMMENT
			X	LIQUEFACTION: Liquefaction-susceptible, saturated, loose granular soils that could jeopardize the building's seismic performance shall not exist in the foundation soils at depths within 50 ft under the building. (Commentary: Sec. A.6.1.1. Tier 2: 5.4.3.1)	
			X	SLOPE FAILURE: The building site is sufficiently remote from potential earthquake-induced slope failures or rockfalls to be unaffected by such failures or is capable of accommodating any predicted movements without failure. (Commentary: Sec. A.6.1.2. Tier 2: 5.4.3.1)	
			Х	SURFACE FAULT RUPTURE: Surface fault rupture and surface displacement at the building site are not anticipated. (Commentary: Sec. A.6.1.3. Tier 2: 5.4.3.1)	

## 16.1.2LS Life Safety Basic Configuration Checklist

Moderate and High Seismicity:

Complete the Following Items in Addition to the Items

for Low Seismicity.

#### **Foundation Configuration**

C	NC	N/A	U	EVALUATION STATEMENT	COMMENT
X				OVERTURNING: The ratio of the least horizontal dimension of the seismic-force-resisting system at the foundation level to the building height (base/height) is greater than $0.6S_a$ . (Commentary: Sec. A.6.2.1. Tier 2: Sec. 5.4.3.3)	
X				TIES BETWEEN FOUNDATION ELEMENTS: The foundation has ties adequate to resist seismic forces where footings, piles, and piers are not restrained by beams, slabs, or soils classified as Site Class A, B, or C. (Commentary: Sec. A.6.2.2. Tier 2: Sec. 5.4.3.4)	Footings are tied with slab-on-grade.

# 16.12LS Life Safety Structural Checklist for Building Types PC1: Precast or Tilt-Up Concrete Shear Walls with Flexible Diaphragms and PC1A: Precast or Tilt-Up Concrete Shear Walls with Stiff Diaphragms

This Life Safety Structural Checklist shall be completed where required by Table 4-7 and where the building configuration complies with the description of PC1 or PC1a building type defined in Table 3-1. Tier 1 screening shall include on-site investigation and condition assessment as required by Section 4.2.1.

Each of the evaluation statements in this checklist shall be marked Compliant (C), Noncompliant (NC), Not Applicable (N/A), or Unknown (U) for a Tier 1 screening. Compliant statements identify issues that are acceptable according to the criteria of this standard, whereas noncompliant and unknown statements identify issues that require further investigation. Certain statements may not apply to the buildings being evaluated. For noncompliant and unknown evaluation statements, the design professional may choose to conduct further investigation using the corresponding Tier 2 evaluation procedure; corresponding section numbers are in parentheses after each evaluation statement.

#### Low Seismicity

#### **Connections**

С	NC	N/A	U	EVALUATION STATEMENT	COMMENT
X				WALL ANCHORAGE: Exterior concrete or masonry walls that are dependent on the diaphragm for lateral support are anchored for out-of-plane forces at each diaphragm level with steel anchors, reinforcing dowels, or straps that are developed into the diaphragm. Connections shall have adequate strength to resist the connection force calculated in the Quick Check procedure of Section 4.5.3.7. (Commentary: Sec. A.5.1.1. Tier 2: Sec. 5.7.1.1)	DCC

**Moderate Seismicity:** 

Complete the Following Items in Addition to the Items for Low Seismicity

#### **Seismic-Force-Resisting System**

С	NC	N/A	U	EVALUATION STATEMENT	COMMENT
X				REDUNDANCY: The number of lines of shear walls in each principal direction is greater than or equal to 2. (Commentary: Sec. A.3.2.1.1. Tier 2: Sec. 5.5.1.1)	
X				WALL SHEAR STRESS CHECK: The shear stress in the precast panels, calculated using the Quick Check procedure of Section 4.5.3.3, is less than the greater of 100 lb/in. <sup>2</sup> or $2\sqrt{f'_c}$ . (Commentary: Sec. A.3.2.3.1. Tier 2: Sec. 5.5.3.1.1)	
	Х			REINFORCING STEEL: The ratio of reinforcing steel area to gross concrete area is not less than 0.0012 in the vertical direction and 0.0020 in the horizontal direction. (Commentary: Sec. A.3.2.3.2. Tier 2: Sec. 5.5.3.1.3)	Welded wire fabric between discrete piers.
	X			WALL THICKNESS: Thicknesses of bearing walls shall not be less than 1/40 the unsupported height or length, whichever is shorter, nor less than 4 in. (Commentary: Sec. A.3.2.3.5. Tier 2: Sec. 5.5.3.1.2)	3" on each side of 2" insulated panels for 8-inch thick insulated sandwich panels.

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# 16.12LS Life Safety Structural Checklist for Building Types PC1: Precast or Tilt-Up Concrete Shear Walls with Flexible Diaphragms and PC1A: Precast or Tilt-Up Concrete Shear Walls with Stiff Diaphragms

#### **Diaphragms**

С	NC	N/A	U	EVALUATION STATEMENT	COMMENT
		X		TOPPING SLAB: Precast concrete diaphragm elements are interconnected by a continuous reinforced concrete topping slab with a minimum thickness of 2 in. (Commentary: Sec. A.4.5.1. Tier 2: Sec. 5.6.4)	

#### **Connections**

С	NC	N/A	U	EVALUATION STATEMENT	COMMENT
	X			WOOD LEDGERS: The connection between the wall panels and the diaphragm does not induce cross-grain bending or tension in the wood ledgers. (Commentary: Sec. A.5.1.2. Tier 2: Sec. 5.7.1.3)	
X				TRANSFER TO SHEAR WALLS: Diaphragms are connected for transfer of seismic forces to the shear walls. (Commentary: Sec. A.5.2.1. Tier 2: Sec. 5.7.2)	
X				TOPPING SLAB TO WALLS OR FRAMES: Reinforced concrete topping slabs that interconnect the precast concrete diaphragm elements are doweled for transfer of forces into the shear wall or frame elements. (Commentary: Sec. A.5.2.3. Tier 2: Sec. 5.7.2)	
Х		2		GIRDER-COLUMN CONNECTION: There is a positive connection using plates, connection hardware, or straps between the girder and the column support. (Commentary: Sec. A.5.4.1. Tier 2: Sec. 5.7.4.1)	

High Seismicity: Complete the Following Items in Addition to the Items for Low and Moderate Seismicity

#### **Seismic-Force-Resisting System**

С	NC	N/A	U	EVALUATION STATEMENT	COMMENT
		Х		DEFLECTION COMPATIBILITY FOR RIGID DIAPHRAGMS: Secondary components have the shear capacity to develop the flexural strength of the components. (Commentary: Sec. A.3.1.6.2. Tier 2: Sec. 5.5.2.5.2)	Flexible diaphragm (wood)
X				WALL OPENINGS: The total width of openings along any perimeter wall line constitutes less than 75% of the length of any perimeter wall when the wall piers have aspect ratios of less than 2-to-1. (Commentary: Sec. A.3.2.3.3. Tier 2: Sec. 5.5.3.3.1)	

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# 16.12LS Life Safety Structural Checklist for Building Types PC1: Precast or Tilt-Up Concrete Shear Walls with Flexible Diaphragms and PC1A: Precast or Tilt-Up Concrete Shear Walls with Stiff Diaphragms

#### **Diaphragms**

C	NC	N/A	U	EVALUATION STATEMENT	COMMENT
	X			CROSS TIES IN FLEXIBLE DIAPHRAGMS: There are continuous cross ties between diaphragm chords. (Commentary: Sec. A.4.1.2. Tier 2: Sec. 5.6.1.2)	As-built drawings not fully legible but appears detailing is not present.
X				STRAIGHT SHEATHING: All straight sheathed diaphragms have aspect ratios less than 2-to-1 in the direction being considered. (Commentary: Sec. A.4.2.1. Tier 2: Sec. 5.6.2)	Plywood called out and appears to be straight sheathed to allow for strap connections and nailing.
X				SPANS: All wood diaphragms with spans greater than 24 ft consist of wood structural panels or diagonal sheathing. (Commentary: Sec. A.4.2.2. Tier 2: Sec. 5.6.2)	
	Х			DIAGONALLY SHEATHED AND UNBLOCKED DIAPHRAGMS: All diagonally sheathed or unblocked wood structural panel diaphragms have horizontal spans less than 40 ft and aspect ratios less than or equal to 4-to-1. (Commentary: Sec. A.4.2.3. Tier 2: Sec. 5.6.2)	Span exceeds 40 ft and appears to be unblocked.
X				OTHER DIAPHRAGMS: The diaphragm does not consist of a system other than wood, metal deck, concrete, or horizontal bracing. (Commentary: Sec. A.4.7.1. Tier 2: Sec. 5.6.5)	

#### **Connections**

С	NC	N/A	U	EVALUATION STATEMENT	COMMENT
X				MINIMUM NUMBER OF WALL ANCHORS PER PANEL: There are at least two anchors from each precast wall panel into the diaphragm elements. (Commentary: Sec. A.5.1.3. Tier 2: Sec. 5.7.1.4)	
Х				PRECAST WALL PANELS: Precast wall panels are connected to the foundation. (Commentary: Sec. A.5.3.6. Tier 2: Sec. 5.7.3.4)	
		х		UPLIFT AT PILE CAPS: Pile caps have top reinforcement, and piles are anchored to the pile caps. (Commentary: Sec. A.5.3.8. Tier 2: Sec. 5.7.3.5)	
	Х			GIRDERS: Girders supported by walls or pilasters have at least two ties securing the anchor bolts unless provided with independent stiff wall anchors with adequate strength to resist the connection force calculated in the Quick Check procedure of Section 4.5.3.7. (Commentary: Sec. A.5.4.2. Tier 2: Sec. 5.7.4.2)	

# 16.15LS Life Safety Structural Checklist for Building Types RM1: Reinforced Masonry Bearing Walls with Flexible Diaphragms and RM2: Reinforced Masonry Bearing Walls with Stiff Diaphragms

This Life Safety Structural Checklist shall be completed where required by Table 4-7 and where the building configuration complies with the description of RM1 or RM2 building type defined in Table 3-1. Tier 1 screening shall include on-site investigation and condition assessment as required by Section 4.2.1.

Each of the evaluation statements in this checklist shall be marked Compliant (C), Noncompliant (NC), Not Applicable (N/A), or Unknown (U) for a Tier 1 screening. Compliant statements identify issues that are acceptable according to the criteria of this standard, whereas noncompliant and unknown statements identify issues that require further investigation. Certain statements may not apply to the buildings being evaluated. For noncompliant and unknown evaluation statements, the design professional may choose to conduct further investigation using the corresponding Tier 2 evaluation procedure; corresponding section numbers are in parentheses after each evaluation statement.

#### Low and Moderate Seismicity

#### **Seismic-Force-Resisting System**

С	NC	N/A	U	EVALUATION STATEMENT	COMMENT
X				REDUNDANCY: The number of lines of shear walls in each principal direction is greater than or equal to 2. (Commentary: Sec. A.3.2.1.1. Tier 2: Sec. 5.5.1.1)	
	X			SHEAR STRESS CHECK: The shear stress in the reinforced masonry shear walls, calculated using the Quick Check procedure of Section 4.5.3.3, is less than 70 lb/in. <sup>2</sup> . (Commentary: Sec. A.3.2.4.1. Tier 2: Sec. 5.5.3.1.1)	
X				REINFORCING STEEL: The total vertical and horizontal reinforcing steel ratio in reinforced masonry walls is greater than 0.002 of the wall with the minimum of 0.0007 in either of the two directions; the spacing of reinforcing steel is less than 48 in., and all vertical bars extend to the top of the walls. (Commentary: Sec. A.3.2.4.2. Tier 2: Sec. 5.5.3.1.3)	

#### Stiff Diaphragms

С	NC	N/A	U	EVALUATION STATEMENT	COMMENT
		Х		TOPPING SLAB: Precast concrete diaphragm elements are interconnected by a continuous reinforced concrete topping slab. (Commentary: Sec. A.4.5.1. Tier 2: Sec. 5.6.4)	

# 16.15LS Life Safety Structural Checklist for Building Types RM1: Reinforced Masonry Bearing Walls with Flexible Diaphragms and RM2: Reinforced Masonry Bearing Walls with Stiff Diaphragms

#### **Connections**

С	NC	N/A	U	EVALUATION STATEMENT	COMMENT
X				WALL ANCHORAGE: Exterior concrete or masonry walls that are dependent on the diaphragm for lateral support are anchored for out-of-plane forces at each diaphragm level with steel anchors, reinforcing dowels, or straps that are developed into the diaphragm. Connections shall have adequate strength to resist the connection force calculated in the Quick Check procedure of Section 4.5.3.7. (Commentary: Sec. A.5.1.1. Tier 2: Sec. 5.7.1.1)	
	X			WOOD LEDGERS: The connection between the wall panels and the diaphragm does not induce cross-grain bending or tension in the wood ledgers. (Commentary: Sec. A.5.1.2. Tier 2: Sec. 5.7.1.3)	Detail B/S10
X			X	TRANSFER TO SHEAR WALLS: Diaphragms are connected for transfer of seismic forces to the shear walls. (Commentary: Sec. A.5.2.1. Tier 2: Sec. 5.7.2)	
		X		TOPPING SLAB TO WALLS OR FRAMES: Reinforced concrete topping slabs that interconnect the precast concrete diaphragm elements are doweled for transfer of forces into the shear wall or frame elements. (Commentary: Sec. A.5.2.3. Tier 2: Sec. 5.7.2)	
Х				FOUNDATION DOWELS: Wall reinforcement is doweled into the foundation. (Commentary: Sec. A.5.3.5. Tier 2: Sec. 5.7.3.4)	
	X			GIRDER-COLUMN CONNECTION: There is a positive connection using plates, connection hardware, or straps between the girder and the column support. (Commentary: Sec. A.5.4.1. Tier 2: Sec. 5.7.4.1)	

**High Seismicity:** 

Complete the Following Items in Addition to the Items for Low and Moderate Seismicity

#### Stiff Diaphragms

C	NC	N/A	U	EVALUATION STATEMENT	COMMENT
X				OPENINGS AT SHEAR WALLS: Diaphragm openings immediately adjacent to the shear walls are less than 25% of the wall length. (Commentary: Sec. A.4.1.4. Tier 2: Sec. 5.6.1.3)	
X				OPENINGS AT EXTERIOR MASONRY SHEAR WALLS: Diaphragm openings immediately adjacent to exterior masonry shear walls are not greater than 8 ft long. (Commentary: Sec. A.4.1.6. Tier 2: Sec. 5.6.1.3)	

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# 16.15LS Life Safety Structural Checklist for Building Types RM1: Reinforced Masonry Bearing Walls with Flexible Diaphragms and RM2: Reinforced Masonry Bearing Walls with Stiff Diaphragms

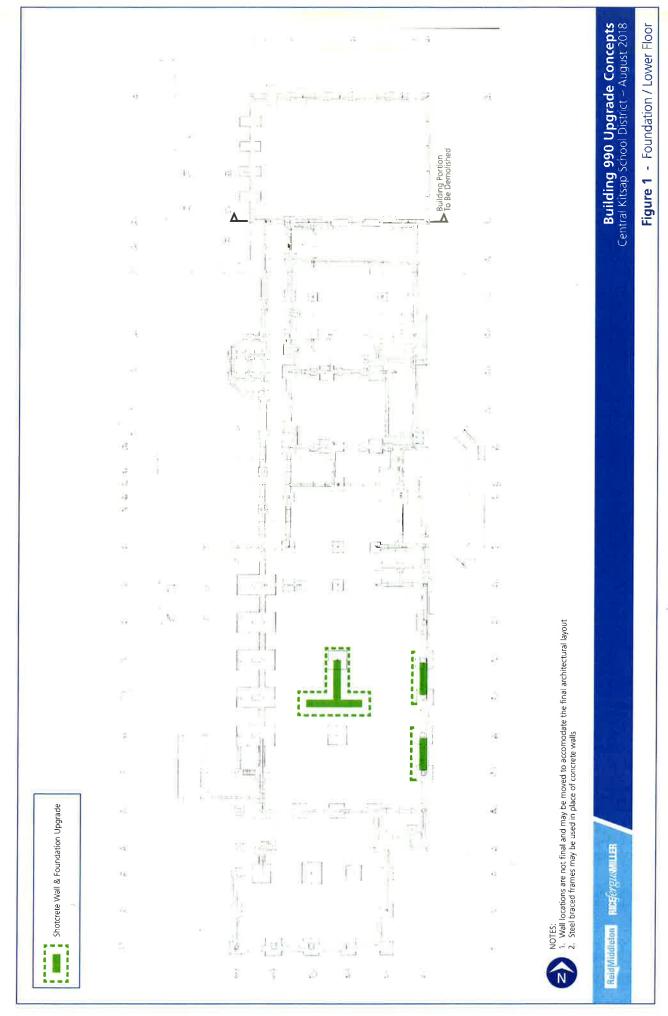
#### Flexible Diaphragms

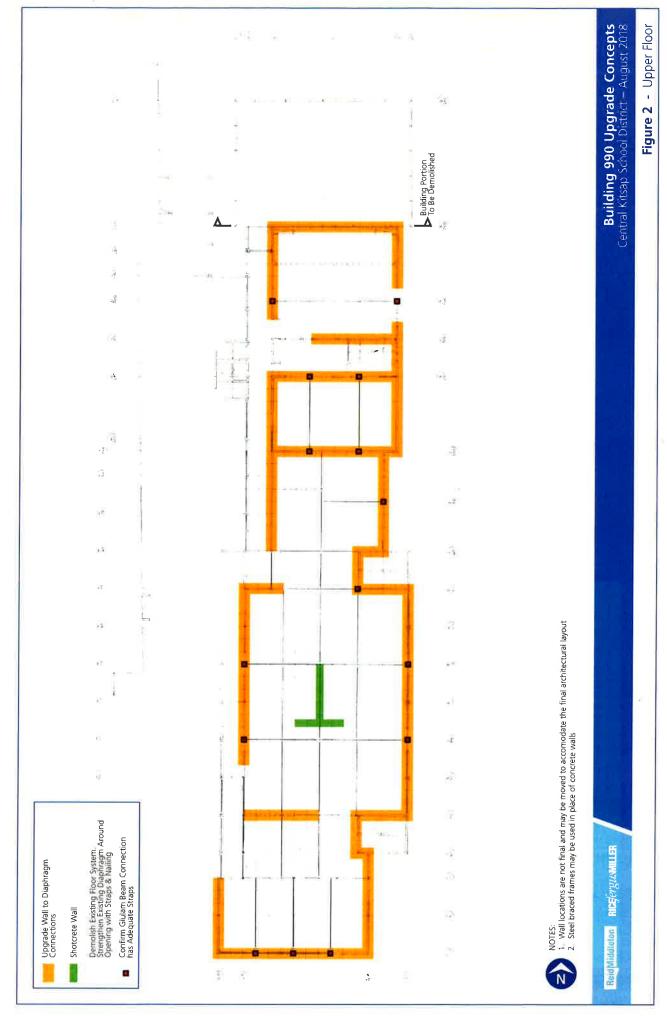
С	NC	N/A	U	EVALUATION STATEMENT	COMMENT
	X			CROSS TIES: There are continuous cross ties between diaphragm chords. (Commentary: Sec. A.4.1.2. Tier 2: Sec. 5.6.1.2)	As-built drawings not fully legible but appears detailing is not present.
X				OPENINGS AT SHEAR WALLS: Diaphragm openings immediately adjacent to the shear walls are less than 25% of the wall length. (Commentary: Sec. A.4.1.4. Tier 2: Sec. 5.6.1.3)	
X				OPENINGS AT EXTERIOR MASONRY SHEAR WALLS: Diaphragm openings immediately adjacent to exterior masonry shear walls are not greater than 8 ft long. (Commentary: Sec. A.4.1.6. Tier 2: Sec. 5.6.1.3)	¥i
X				STRAIGHT SHEATHING: All straight sheathed diaphragms have aspect ratios less than 2-to-1 in the direction being considered. (Commentary: Sec. A.4.2.1. Tier 2: Sec. 5.6.2)	
X				SPANS: All wood diaphragms with spans greater than 24 ft consist of wood structural panels or diagonal sheathing. (Commentary: Sec. A.4.2.2. Tier 2: Sec. 5.6.2)	
	X			DIAGONALLY SHEATHED AND UNBLOCKED DIAPHRAGMS: All diagonally sheathed or unblocked wood structural panel diaphragms have horizontal spans less than 40 ft and aspect ratios less than or equal to 4-to-1. (Commentary: Sec. A.4.2.3. Tier 2: Sec. 5.6.2)	Span exceeds 40 ft and appears to be unblocked.
X				OTHER DIAPHRAGMS: The diaphragm shall not consist of a system other than wood, metal deck, concrete, or horizontal bracing. (Commentary: Sec. A.4.7.1. Tier 2: Sec. 5.6.5)	

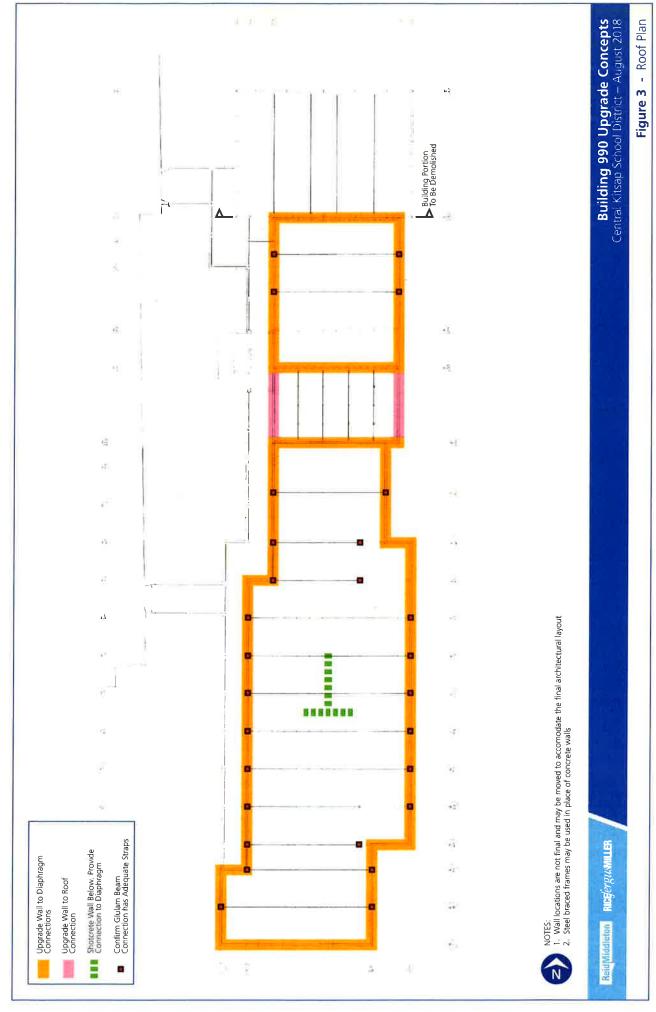
#### **Connections**

С	NC	N/A	U	EVALUATION STATEMENT	COMMENT
X				STIFFNESS OF WALL ANCHORS: Anchors of concrete or masonry walls to wood structural elements are installed taut and are stiff enough to limit the relative movement between the wall and the diaphragm to no greater than 1/8 in. before engagement of the anchors. (Commentary: Sec. A.5.1.4. Tier 2: Sec. 5.7.1.2)	

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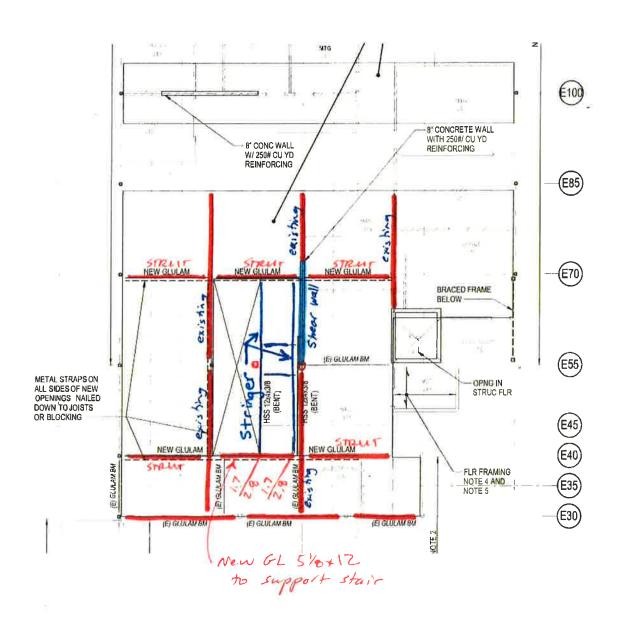
Ph: 425 741-3800 Fax: 425 741-3900 
 Client
 Rice Fergus Miller
 Sheet
 of

 Project
 Bldg 900 Renovation
 Design by SES

 Date
 Checked by

 Project No.
 262019.034
 Date

**GRAVITY FRAMING** 



FLOOR PLAN: 200 FLOOR-Bldg 200 Renovation

### **Gravity Beam Design** Stair Stringer RAM SBeam v5.01

12/19/19 14:16:59

STEEL CODE: AISC 360-05 LRFD

**SPAN INFORMATION (ft): I-End (0.00,0.00)** J-End (16.00,0.00)

Beam Size (User Selected) = HSS12X4X3/16

Fy = 46.0 ksi

Total Beam Length (ft)

= 16.00

Mp (kip-ft)

= 75.13

Top flange not braced by decking.

LINE LOADS (k/ft):

Load	Dist (ft)	DL	LL
1	0.000	0.018	0.000
	16.000	0.018	0.000
2	0.000	0.193	0.350
	16.000	0.193	0.350

SHEAR (Ultimate): Max Vu (1.2DL+1.6LL) = 6.51 kips 0.90Vn = 92.89 kips

**MOMENTS** (Ultimate):

Span	Cond	LoadCombo	Mu	<u>a</u>	Lb	Cb	Phi	Phi*Mn
			kip-ft	ft	ſt			kip-ft
Center	Max +	1.2DL+1.6LL	26.0	8.0	16.0	1.14	0.90	66.68
Controlling		1.2DL+1.6LL	26.0	8.0	16.0	1.14	0.90	66.68

**REACTIONS** (kips):

	Lett	Right
DL reaction	1.69	1.69
Max +LL reaction	2.80	2.80
Max +total reaction (factored)	6.51	6.51

**DEFLECTIONS:** 

Dead load (in)	at	8.00  ft =	-0.117	L/D =	1641
Live load (in)	at	8.00  ft =	-0.194	L/D =	990
Net Total load (in)	at	8.00  ft =	-0.311	L/D =	618



Client RFM
Project Blog 900

Design by *SES* Date 12/19/19

Sheet ....... of \_

Checked by

Date \_\_\_

Project No. 262019,034

BEAM SUPPORTING STAIRS &' + 96.6 K 15-0" Shears Moments Amax = PL3 EI = PL3 x360 = 1,094 x10° 5 5 1/2 GULAM EI = 1,328 × 10° V Vnax = 9.84h Man = 24.6 Kft V

#### DOUGLAS FIR 24F - V3/V4/V8

 $F_b$  = 2400 psi  $F_v$  = 240 psi E = 1800 ksi  $F_{c\perp}$  = 650 psi

b	x d	M <sub>ellov</sub>	, (ft-k) = F	b' * S	V <sub>allow</sub> (k)	) = 2/3 * F	v' * b * d	El		S	
(in)	(in)	$C_D = 1.0$	= 1.15	= 1.6	$C_D = 1.0$	= 1.15	= 1.6	(lb-in <sup>2</sup> x 10 <sup>3</sup> )	(in <sup>4</sup> )	(in³)	C <sub>∨</sub> ª
5 1/8	3 x 6	6.15	7.07	9.84	4.92	5.66	7.87	166.05	92.25	30.75	1.00
5 1/8	3 x 7 1/2	9.61	11.05	15.38	6.15	7.07	9.84	324.32	180.18	48.05	1.00
5 1/8	3 x 9	13.84	15.91	22.14		8.49	11.81	560.42	311.34	69.19	1.00
5 1/8	3 x 10, 1/2	18.83	_21.66	<del>30</del> .14	8.61	9 90	13.78	889,92	494.40	94.17	1.00
5 1/8	3 x 12	24.60	28.29	39.36	9.84	11.32	15.74	1,328.40	738.00	123.00	1.00
-514	3 x 13 1/2	30.92	<del>35.56</del>	<del>- 49.4</del> 7	11.07	12.73	17.74	-1,891,41	1050.79	155.67	0.99
5 1/8	3 x 15	37.77	43.44	60.44	12.30	14.15	19.68	2,594.53	1441.41	192.19	0.98
5 1/8	3 x 16 1/2	43.47	49.99	69.56	13.53	15.56	21.65	3,453.32	1918.51	232.55	0.93
5 1/8	3 x 18	51.29	58.98	82.06	14.76	16.97	23.62	4,483.35	2490.75	276.75	0.93
5 1/8	3 x 19 1/2	59.71	68.67	95.54	15.99	18.39	25.58	5,700.19	3166.77	324.80	0.92
5 1/8	3 x 21	68.74	79.05	109.99	17.22	19.80	27.55	7,119.39	3955.22	376.69	0.91
5 1/8	3 x 22 1/2	78.37	90.12	125.39	18.45	21.22	29.52	8,756.54	4864.75	432.42	0.91
5 1/8	3 x 24	88.59	101.88	141.75	19.68	22.63	31.49	10,627.20	5904.00	492.00	0.90
5 1/8	3 x 25 1/2	96.59	111.08	154.54	20.91	24.05	33.46	12,746.93	7081.63	555.42	0.87
5 1/8	3 x 27	107.67	123.82	172.27	22.14	25.46	35.42	15,131.31	8406.28	622.69	0.86
5 1/8	3 x 28 1/2	119.32	137.22	190.91	23.37	26.88	37.39	17,795.89	9886.61	693.80	0.86
5 1/8	3 x 30	131.53	151.26	210.45	24.60	28.29	39.36	20,756.25	11531.25	768.75	0.86
5 1/8	3 x 31 1/2	144.31	165.96	230.90	25.83	29.70	41.33	24,027.95	13348.86	847.55	0.85
5 1/8	3 x 33	154.17	177.29	246.67	27.06	31.12	43.30	27,626.57	15348.09	930.19	0.83
5 1/8	x 34 1/2	167.75	192.92	268.41	28.29	32.53	45.26	31,567.66	17537.59	1016.67	0.83
5 1/8	x 36	181.88	209.16	291.01	29.52	33.95	47.23	35,866.80	19926.00	1107.00	0.82

1		
		mes the following to determine actual
	C <sub>V</sub> .	
$C_V = (21)$	(L) <sup>//x</sup> (12/d) <sup>//x</sup> (5.	$(125/b)^{1/x} \le 1.0$
	1.0	x = 10
		pths up to 15"
	$' \le L \le 30'$ for de	
	$' \le L \le 40'$ for de	
40	$' \le L \le 50'$ for de	pths up to 36"

<sup>b</sup>For non-prismatic members, notched members (NDS 3.4.3.2), members subject to impact or cyclic loading, or shear design of bending members at connections (NDS 3.4.3.3), the design value for shear shall be multiplied by a factor of 0.8 (190 psi). For the determination of radial tension design values (NDS 5.2.2), the design value for shear shall be multiplie by a factor of 0.7 for DF-L (170 psi) and SP or by 0.8 (190 psi) for all other species.



Client RFM

Project BUDG 900

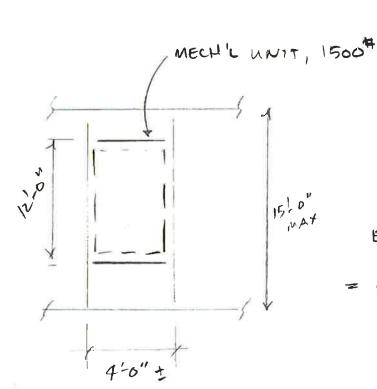
Sheet Design by SES Date 12/12/19

Project No. 26 2019,034

Date

Checked by





$$EFread = 675wL^3$$
  
=  $453.4 \times 10^6 \# - in^2$ 

USE AU3,25/12 HANGER 1/1= 4,030# /

#### DOUGLAS FIR 24F - V3/V4/V8

 $F_b = 2400 \text{ psi}$   $F_v = 240 \text{ psi}$  E = 1800 ksi $F_{c\perp} = 650 \text{ psi}$ 

b x d	M <sub>allow</sub>	, (ft-k) = F	,' * S	V <sub>allow</sub> (k)	= 2/3 * F	v' * b * d	EI	1	S	
(in) (in)	$C_D = 1.0$	= 1.15	= 1.6	$C_D = 1.0$	= 1.15	= 1.6	(lb-in <sup>e</sup> x 10°)	(in <sup>+</sup> )	(in³)	C <sub>V</sub> <sup>8</sup>
3 1/8 x 6	3.75	4.31	6.00	3.00	3.45	4.80	101.25	56.25	18.75	
3 1/8 x 7 1/2	5.86	6.74	9.38	3.75	4.31	6.00		109.86	29.30	
3 1/8 x 9	8.44	9.70	13.50		5.18	7.20		189.84	42.19	
3 1/8 x 10 1/2	11.48	13.21	18.38	5.25	6.04	8.40	542.64	301.46	57.42	1.00
3 1/8 x 12	15.00	17.25	24.00	6.00	6.90	9.60	810.00	450.00	75.00	1.00
3 1/8 x 13 1/2	18.98	21.83	30.38	6.75	7.76	10.80	1,153.30	640.72	94.92	1.00
3 1/8 x 15	23.44	26.95	37.50	7.50	8.63	12.00		878.91	117.19	
3 1/8 x 16 1/2	27.85	32.03	44.56	8.25	9.49	13.20	2,105.68	1169.82	141.80	0.98
3 1/8 x 18	32.86	37.79	52.57	9.00	10.35	14.40	2,733.75	1518.75	168.75	0.97
3 1/8 x 19 1/2	38.26	44.00	61.21	9.75	11.21	15.60	3,475.72	1930.96	198.05	0.97
3 1/8 x 21	44.04	50.65	70.47	10.50	12.08	16.80	4,341.09	2411.72	229.69	0.96
3 1/8 x 22 1/2	50.21	57.74	80.34	11.25	12.94	18.00	5,339.36	2966.31	263.67	0.95
3 1/8 x 24	56.76	65.27	90.82	12.00	13.80	19.20	6,480.00	3600.00	300.00	0.95
3 1/8 x 25 1/2	61.88	71.17	99.01	12.75	14.66	20.40	7,772.52	4318.07	338.67	0.91
3 1/8 x 27	68.98	79.33	110.37	13.50	15.53	21.60	9,226.41	5125.78	379.69	
3 1/8 x 28 1/2	76.45	87.91	122.31	14.25	16.39	22.80	10,851.15	6028.42	423.05	0.90
3 1/8 x 30	84.27	96.91	134.83	15.00	17.25	24.00	12,656.25	7031.25	468.75	0.90
3 1/8 x 31 1/2	92.46	106.32	147.93	15.75	18.11	25.20	14,651.19	8139.55	516.80	0.89
3 1/8 x 33	98.77	113.59	158.03	16.50	18.98	26.40	16,845.47	9358.59	567.19	
3 1/8 x 34 1/2	107.48	123.60	171.96	17.25	19.84	27.60	19,248.57	10693.65	619.92	0.87
3 1/8 x 36	116.53	134.01	186.45	18.00	20.70	28.80	21,870.00	12150.00	675.00	0.86

<sup>a</sup>The preceding table assumes the following values. Refer to NDS 5.3.6 to determine actual

 $C_V = (21/L)^{7/K} (12/d)^{7/K} (5.125/b)^{7/K} \le 1.0$ 

x = 10

L ≤ 20' for depths up to 15"

 $20' \le L \le 30'$  for depths up to 24''

 $30' \le L \le 40'$  for depths up to  $31\frac{1}{2}$ "

 $40' \le L \le 50'$  for depths up to 36"

<sup>b</sup>For non-prismatic members, notched members (NDS 3.4.3.2), members subject to impact or cyclic loading, or shear design of bending members at connections (NDS 3.4.3.3), the design value for shear shall be multiplied by a factor of 0.8 (190 psi). For the determination of radial tension design values (NDS 5.2.2), the design value for shear shall be multiplie by a factor of 0.7 for DF-L (170 psi) and SP or by 0.8 (190 psi) for all other species.

## Face-Mount Hangers - I-Joists, Glulam and SCL

These products are available with additional corrosion protection. For more information, see p. 15.

Codes: See p. 12 for Code Reference Key Chart.

Actual				arr em	ied ber		Dimensior (in.)	ns			teners in.)			Allo	wable L	_oads			
Joist Size	Model No.	Glulam	-	l-toist	Web Stiff	w	н	В	Min./ Max.		Joist			/SP s Heade	er	Spe	SPF/HI		Code Ref.
(in.)		Glu	S	1	Reqd					race	Just	Uplift (160)	(100)	Snow (115)	Roof (125)	Floor (100)		Roof (125)	
	IUS2.56/16					25/8	16	2	Min. Max.	(14) 0.148 x 3 (16) 0.148 x 3		70 70	1,660 1,805	-	1,805 1,805		1,555 1,555		
2½ x 16	MIU2.56/16	t	t		_	2%	151/16	21/2	-	(24) 0.162 x 3½	(2) 0.148 x 1½	230	_		_	2,970		3,480	4
272 10	U314	t	-		1	2%		2		(16) 0 162 x 3½"	(6) 0.148 x 1½"	970	_	1	2,375		_	2,045	4
	HU316 / HUC316	t	t		1	2%	1	21/2		(20) 0 162 x 3½	(8) 0.148 x 11/2	1,515	-	-	3,610		-	-	Lina
	MIU2.56/18	T	t		-	29/16	-	21/2	-	(26) 0.162 x 3½	(2) 0.148 x 1½	230		-	4,045			-	all III
2½ x 18	HU316 / HUC316		T		1	29/16	141/8	21/2	_	(20) 0.162 x 3½"	(8) 0.148 x 1½"	1515			3,610	1			-^
2½ x 20	MIU2.56/20				_	29/16	197/16	21/2	-	(28) 0.162 x 3½	(2) 0.148 x 1½	230	4,030	-	4,060	-	-	•	
2½ x 22 to 26	MIU2.56/20				<b>v</b>	2%6	197/16	21/2	-	(28) 0.162 x 3½	(2) 0 <sub>-</sub> 148 x 1½	230	4,030	4,060	4,060	3,465	3,495	3,495	
2% s x 9% to 26			-			2%	e" wide jois	ls use	the sa	rne hangers as 2½"	wide joists and have	the sam	e loads.						•
	MIU3.12/9	Г	Г	١.	-	31/6	91/16	21/2	_	(16) 0 162 x 31/2	(2) 0 148 x 1 ½	230	2 305	2 615	2,820	1 980	2,245	2.425	Г
3 x 9½	HU210-2 / HUC210-2	-			1	31/6	813/16	-	Max.	(18) 0.162 x 3½	(10) 0.148 x 3		2,680	3,020	3,250	2,305	2,605	2,800	le c
	MIU3.12/11					31/8	111/6	21/2	-	(20) 0.162 x 3½	(2) 0.148 x 1½	230			3,135				
3 x 11 1/8	HU212-2 / HUC212-2	-			1	31/8	10%6	21/2	Max	(22) 0.162 x 3½	(10) 0.148 x 3		3,275	_	3,970				1 0
. 1	HU3.25/12 / HUC3.25/12		T	r		31/4	113/4	21/2		(24) 0.162 x 3½	(12) 0.148 x 3	1,795	3,570		4,335				-
-	HU3 25/16 /		-						Min.	(20) 0.162 x 3½	(8) 0 148 x 3			The same of the same of	3,610	Street, Street, Square,			-
	HUC3 25/16			r		31/4	13 <sup>13</sup> /16	21/2	Max.	(26) 0 162 x 31/2	(12) 0 148 x 3		3,870	-		3,330	_	4,040	1-
3 % glulam	HUCQ210-2-SDS	•	Г			31/4	9	3		(12) 1/4" x 21/2" SDS	(6) 1/4" x 21/2" SDS	2,345	4,315	4,315		3,600		3,710	FL
	HGUS3.25/10					31/4	85/8	4	=	(46) 0.162 x 3½	(16) 0.162 x 3½	4,095	9,100	9,100	9,100	7,825	7,825	7,825	IBC,
	HGUS3 25/12					31/4	105/8	4	-	(56) 0 162 x 3½	(20) 0 162 x 3½	5,040	9,400	9,400	9,400	8,085	8,085		1 - 1
	LGU3.25-SDS	•			-	31/4	8 to 30	41/2	-5	(16) 1/4" x 21/2" SDS	(12) 1/4" x 2 1/2" SDS	5,555	6,720	7,310	7;310	4,840	5,265	5,265	
3½ x 5¼	HHUS46	٠	•		-	3%	51/a	3	-/	(14) 0.162 x 3 ½	(6) 0.162 x 3½	1,320	2,785	3,155	3,405	2,395	2,715	2,930	
3 72 X 3 74	HGUS46	•	•		-	3%	41/16	4		(20) 0.162 x 3½	(8) 0 162 x 31/2	2,155	4,360	4,885	5,230	3,750	4,200	4,500	
	HUS48	•	•			3%6	6 15/16	2	_	(6) 0.162 x 3½	(6) 0 162 x 31/4	1,320	1,595	1,815	1,960	1,365	1,555	1,680	
3½ x 7¼	HHUS48	•	•		-	3%	71/8	3	_	(22) 0.162 x 31/2	(8) 0.162 x 3½	1,780	4,210	4,770	5,140	3,615	4,095	4,415	
	HGUS48	•	•			35/8	71/16	4	-	(36) 0.162 x 3½	(12) 0.162 x 3½	3,235	7,460	7,460	7,460	6,415	-		
	IUS3.56/9.5			•	-	3%	91/2	2	-	(10) 0.148 x 3	-	70	1,185	1,345					
	MIU3.56/9	٠	٠	•		3%16	813/16	21/2		(16) 0.162 x 3½	(2) 0.148 x 1½		_	2,615					
	U410	•	•	٠	√_	3%16	8%	2		(14) 0 162 x 3½	(6) 0 148 x 3				2,465				
	HUS410	٠	•			3%6	815/16	2		(8) 0 162 x 3½	(8) 0.162 x 3½	-			2,615				
3½ x 9½	HHUS410	•	•			35/8	9	3		(30) 0.162 x 3½	(10) 0 162 x 3½	3,565					-		
•	HU410/HUC410	•	•	•	<b>✓</b>	3%16	8%	21/2	_	(36) 0 162 x 3½	(12) 0.162 x 3½				7,460		_		
	HUCO410-SDS	•	•		-	3%16	9	3		(12) 1/4" x 21/2" SDS									
	HGUS410	•	•			35/8	91/16	4		(46) 0.162 x 3½	(16) 0 162 x 3½				9,100				
	LGU3.63-SDS	•	•			35/8	8 to 30	41/2			(12) 1/4" x 21/2" SDS	-							LA
	MGU3.63-SDS	•	•			35/8	91/4 to 30	41/2			(16) ¼" x 2½" SDS								İ
	IUS3 56/11.88	-		•		35/8	11%	2		(12) 0 148 x 3	(0) 0 440 444				1,745			-	
	MIU3.56/11	_		•		3%6	11 1/8	2½		(20) 0.162 x 3½	(2) 0 148 x 1½				3,135				
	U414	•	•	•	<b>~</b>	3%6	10	2	1000	(16) 0.162 x 3½	(6) 0.148 x 3			-	2,820				
	HHUS410	•	•			35/8	9	3		(30) 0.162 x 3½	(10) 0 162 x 3½	3,565 3,435							
	HUS412	•				3%16	101/2	2	1 tin	(10) 0 162 x 3½ (16) 0.162 x 3½	(10) 0 162 x 3½ (6) 0 148 x 3	1,135	_	-					
3½ x 11¾	HU412 / HUC412	•	•			3%16	105/16	21/2	Min. Max	(22) 0 162 x 3½	(10) 0 148 x 3	1,795							
	HUCQ412 SDS			-		3 <del>%</del> 16	11		. rear	(14) 1/4" x 21/2" SDS		2,265		-					
	HGUS412 3D3					35/8	107/16	4	-	(56) 0.162 x 3½	(20) 0 162 x 3½	5,040							
	LGU3 63-SDS			İ		3%	8 to 30	41/2			(12) 1/4" x 21/2" SDS		_		- 1				
	MGU3 63-SDS			-	- 1	35/B		41/2			(16) 1/4" x 21/2" SDS				- 1		1		
	HGU3 63-SDS		- 1	1			11 to 30	41/2			(24) 1/4" x 21/2" SDS	- 4	2004	270-1		198			!



Client RFM
Project BLDG 900

Design by SES

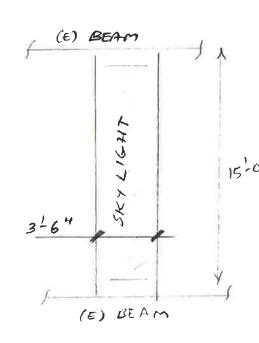
Date 12/12/19

Checked by

Project No. 262019.034

Date .\_\_

ROOF FRAMING: Skylight supports



#### **DOUGLAS FIR-LARCH #2 (WWPA/WCLIB)**

 $F_b$  = 900 psi  $F_v$  = 180 psi E = 1600 ksi  $F_{c\perp}$  = 625 psi

	Mailo	w (ft-k) = F <sub>b</sub>	'*S	V <sub>allow</sub> (k)	= 2/3 * F	v' * b * d	EI		S	
Size	$C_D = 1.0$	= 1.15	= 1.6	$C_D = 1.0$	= 1.15	= 1.6	(lb-in-x 10°)	(in³)	(in <sup>3</sup> )	C <sub>F</sub>
(1) 2x4	0.34	0.40	0.55	0.63	0.72	1.01	8.57	5.36	3.063	1.5
	[0.40]	[0.46]	[0.63]							
(1) 2x6	0.74	0.85	1.18	0.99	1,14	1.58	33.28	20.80	7.563	1.3
(0) 0,46	[0.85]	[0.98]	[1.36]	1.00	2.20	3.17	CC EE	44.50	15.12	4.2
(2) 2x6	1.47 [1.70]	1.70 [1.95]	2.36 [2.71]	1.98	2.28	3.17	66.55	41.59	15.13	1.3
(3) 2x6	2.54	2.93	4.07	2.97	3.42	4.75	99.83	62.39	22.69	1.3
(\$) 2,0	2.04	2.00	4.07	2.57	0.42	7.70	00.00	02.00	22.00	1.0
(4) 2x6	3.39	3.90	5.43	3.96	4.55	6.34	133.10	83.19	30.25	1.3
. ,										
(1) 2x8	1.18	1.36	1.89	1.31	1.50	2.09	76.22	47.64	13.14	1.2
	[1.36]	[1.56]	[2.18]							
(2) 2x8	2.37	2.72	3.78	2.61	3.00	4.18	152.43	95.27	26.28	1.2
(0) 0 0	[2.72]	[3.13]	[4.35]	0.00	4.50	0.00	222.05	1.10.01	90.40	4.0
(3) 2x8	4.08	4.69	6.53	3.92	4.50	6.26	228.65	142.91	39.42	1.2
(4) 2x8	5.44	6.26	8.70	5.22	6.00	8.35	304.86	190.54	52.56	1.2
(4) 200	0.17	0.20	0.70	0.22	0.00	0.00	001.00	100.01	02.00	1.2
(1) 2x10	1.76	2.03	2.82	1.67	1.91	2.66	158.29	98.93	21.39	1.1
	[2.03]	[2,33]	[3.25]				_ <	_		
(2) 2x10	3.53	4.06	5.65	3.33	3.83	5.33	316.58	197.86	42.78	1.1
~ ~	[4.06]	[4.67]	[6.49]			-				28
(3) 2x10	6.09	7:00	9.74	5.00	5.74	7.99	474:87	296.80	64.17	1.1
(4) 2x10	8.12	9.34	12.99	6.66	7.66	10.66	633.16	395.73	85.56	1.1
(4) 2 × 10	0.12	3.54	12.50	0.00	7.00	10.00	000,10	000.70	00.00	
(1) 2x12	2.37	2.73	3.80	2.03	2.33	3.24	284.77	177.98	31.64	1.0
	[2.73]	[3.14]	[4.37]							
(2) 2x12	4.75	5.46	7.59	4.05	4.66	6.48	569.53	355.96	63.28	1.0
	[5.46]	[6.28]	[8.73]							
(3) 2x12	8.19	9.42	13.10	6.08	6.99	9.72	854.30	533.94	94.92	1.0
(4) 2x12	10.92	12.55	17.47	8.10	9.32	12.96	1,139.07	711.92	126.56	1.0

Notes: Repetitive Member Factor is used for all (3) 2x\_ and (4) 2x\_ beams (bending only) [Repetitive Member Factor for (1) 2x\_ and (2) 2x\_ beams in brackets]

# Face-Mount Hangers - Solid Sawn Lumber (DF/SP)

These products are available with additional corresion protection. For more information, see p. 15.

For stainlesssteel fasteners see p 21

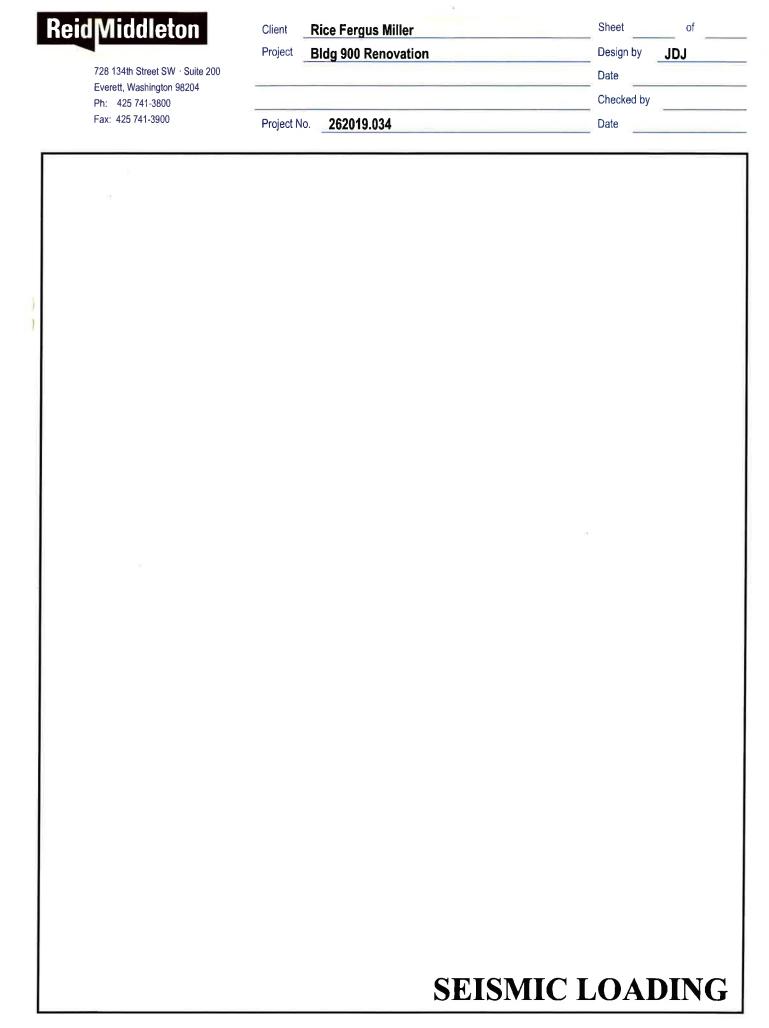
SD

Many of These products are approved for installation with Strong Drive? SD Cormector screws See pp. 335-337 for more information.

Joist	Model		Dime	ensi <b>o</b> ns	(in.)	Min./	Fasten	ers (in.)	0	F/SP Allov	wable Loa	ds	Installed	Code
Size	No.	Ga.	w	Н	В	Max.	Header	Joist	Uplift (160)	Floor (100)	Snow (115)	Roof (125)	Cost Index (ICI)	Ref
		-		1 17			Sawn Lu	mber Sizes						
	LUS28	18	1%16	65/8	13/4	-	(6) 0.148 x 3	(4) 0.148 x 3	1,165	1,100	1,260	1,350	Lowest	
	LU28	20	19/16	63/8	1 1/2		(8) 0.162 x 3½	(6) 0.148 x 1½	850	1,110	1,180	1,180	13%	
	LUS210	18	1%16	713/16	13/4	-	(8) 0.148 x 3	(4) 0.148 x 3	1,165	1,335	1,530	1,640	15%	
	LU210	20	1%16	713/16	11/2	-	(10) 0.162 x 3½	(6) 0.148 x 1½	850	1,390	1,580	1,615	28%	
2x10	U210	16	19/16	7 13/16	2	-	(10) 0.162 x 3½	(6) 0.148 x 1½	990	1,440	1,565	1,565	76%	
	LUC210Z	18	1%16	73/4	13/4		(10) 0.162 x 3½	(6) 0.148 x 1½	985	1,185	1,345	1,455	180%	
	HU210	14	1 %16	71/a	21/4	-	(8) 0.162 x 3½	(4) 0.148 x 1½	605	1,190	1,345	1,440	225%	
	HUS210	16	15/8	9	3	-	(30) 0.162 x 3½	(10) 0.162 x 3½	2,635	5,450	5,795	5,830	450%	IBC, FL
1	HGUS210	12	1 5/a	91/6	5	T-	(46) 0.162 x 31/2	(16) 0.162 x 31/2	2.090	9,100	9,100	9,100		
-	LUS28-2	18	31/6	7	2	_	(6) 0 162 x 31/2	(4) 0.162 x 3 ½	1,060	1,315	1,490	1,610	Lowest	
	LUS210-2	18	31/8	9	2	-	(8) 0 162 x 3½	(6) 0.162 x 31/2	1,445	1,830	2,075	2,245	34%	
	U210-2	16	31/e	81/2	2	-	(14) 0 162 x 31/2	(6) 0 148 x 3	990	2,015	2,280	2,465	88%	
DBL	HUS210-2	14	31/8	93/16	2	_	(8) 0.162 x 3½	(8) 0.162 x 31/2	3,270	2,110	2,385	2,575	217%	
2X10		14	31/a	819/16	21/2	Min_	(14) 0.162 x 3½	(6) 0.148 x 3	1,135	2,085	2,350	2,520	441%	
	HU210-2 / HUC210-2	14	31/6	813/16	21/2	Max.	(18) 0 162 x 31/2	(10) 0.148 x 3	1,895	2,680	3,020	3,250	467%	
	HUCQ210-2-SDS	14	31/4	9	3		(12) 1/4 x 2 1/2 SDS	(6) 1/4 x 2 1/2 SDS	2,345	4,315	4,315	4,315		FL
	HHUS210-2	14	35/16	95/32	3	- 1	(30) 0.162 x 3½	(10) 0.162 x 3½	3,550	5,705	6,435	6,485		IBC, FL
	LUS28-3	18	45/8	61/4	2		(6) 0.162 x 3½	(4) 0.162 x 3½	1,060	1,315	1,490	1,610		ID0
	LUS210-3	18	45/8	83/16	2	157	(8) 0.162 x 3½	(6) 0.162 x 3½	1,445	1,830	2,075	2,245		IBC,
	U210-3	16	45/8	73/4	2		(14) 0.162 x 3½	(6) 0.148 x 3	990	2,015	2,280	2,465	- 4	
TPL		14	411/16	81/ia	21/2	Min.	(14) 0.162 x 3½	(6) 0.148 x 3	1,135	2,085	2,350	2,520		IBC, FL
2X10	HU210-3 / HUC210-3	14	411/16	81/16	21/2	Max.	(18) 0 162 x 3½	(10) 0.148 x 3	1,895	2,680	3,020	3,250		
1	HHUS210-3	14	4 11/16	81/8	3		(30) 0.162 x 3½	(10) 0.162 x 3½	3,405	5,630	6,375	6,485		FL
1	HGUS210-3	12	4 15/16	91/8	4	_	(46) 0.162 x 3½	(16) 0.162 x 3½	4,095	9,100	9,100	9,100		IBC, I
	HUCQ210-3-SDS	14	45/8	9	3		(12) 1/4 x 21/2 SDS	(6) 1/4 x 2 1/2 SDS	2,345	4,315	4,315	4,315		FL
		14	61/6	83/8	21/2	Min.	(14) 0.162 x 3½	(6) 0.162 x 3½	1,345	2,085	2,350	2,520		IBC, I
QUAD	HU210-4 / HUC210-4	14	61/6	8%	21/2	Max.	(18) 0.162 x 3½	(8) 0.162 x 3 ½	1,795	2,680	3,020	3,250		IBC, F
2x10	HHUS210-4	14	61/8	87/8	3		(30) 0.162 x 3½	(10) 0.162 x 3½	3,405	5,630	6,375	6,485		FL
	HGUS210-4	12	6%	91/6	4		(46) 0.162 x 3½	(16) 0 162 x 3½	4,095	9,100	9,100	9,100		IBC, I
	LUS210	18	19/16	713/16	13/4		(8) 0.148 x 3	(4) 0.148 x 3	1,165	1,335	1,530	1,640	Lowest	
	LU210	20	19/16	713/16	11/2		(10) 0.162 x 3½	(6) 0.148 x 1½	850	1,390	1,580	1,615	11%	
	U210	16	1 %16	713/16	2		(10) 0.162 x 3½	(6) 0.148 x 1½	990	1,440	1,565	1,565	53%	
2x12	LUC210Z	18	1 9/16	73/4	13/4	_	(10) 0.162 x 3½	(6) 0.148 x 1½	985	1,185	1,345	1,455	180%	
	HU212	14	1 9/16	9	21/4	211	(10) 0.162 x 3½	(6) 0.148 x 1½	1,135	1,490	1,680	1,800	347%	
	HUS210	16	15/8	9	3	<u> </u>	(30) 0.162 x 31/2	(10) 0.162 x 3½	2,635	5,450	5,795	5,830	378%	
	LUS210-2	18	31/8	9	2		(8) 0.162 x 31/2	(6) 0 162 x 3½	1,445	1,830	2,075	2,245	Lowest	IBC, FL
	U210-2	16	31/8	81/2	2		(14) 0.162 x 3½	(6) 0.148 x 3	990	2,015	2,280	2,465	40%	
	LUS214-2	18	31/6	1015/16	2		(10) 0.162 x 3½	(6) 0.162 x 3½	1,445	2,110	2,395	2,590	56%	
D	HUS210-2	14	31/8	93/16	2		(8) 0.162 x 3½	(8) 0.162 x 3½	3,270	2,110	2,385	2,575		
DBL 2x12			_	103/4	2		(10) 0.162 x 3½	(10) 0.162 x 3½	3,435	2,635	2,985	3,220		
	HUS212-2	14	31/8	-	21/2	Min	(16) 0.162 x 3½	(6) 0.148 x 3	1,135	2,385	2,690	2,880		
	HU212-2 / HUC212-2	14	31/8	10%		Min.		(10) 0.146 x 3 (10) 0.148 x 3	1,895	3,275	3,695	3,970	411%	
	UII.00010 0 000	14	31/6	10%6	21/2	Max.	(22) 0 162 x 3½					4,315	41170	FL
-	HUCQ210-2-SDS	14	31/4	9	3		(12) ¼ x 2½ SDS	(6) ¼ x 2½ SDS	2,345	4,315	4,315			
-	LUS210-3	18	45%	83/16	2_		(8) 0.162 x 3½	(6) 0.162 x 3½	1,445	1,830	2,075	2,245		IBC, F
TPL	HU212-3 / HUC212-3	14	411/16	913/16	21/2	Min.	(16) 0.162 x 3½	(6) 0.148 x 3	1,135	2,385	2,690	2,880	•	IDC F
2x12		14	411/16	913/16	21/2	Max.	(22) 0.162 x 3½	(10) 0.148 x 3	1,895	3,275	3,695	3,970		IBC, FL,
	U210-3	16	45/a	73/4	2		(14) 0.162 x 3½	(6) 0.148 x 3	990	2,015	2,280	2,465		
	HUCQ210-3-SDS	14	45/8	9	3	- 1	(12) ¼ x 2½ SDS	(6) 1/4 x 2 1/2 SDS	2,345	4,.315	4,315	4,315		FL

See footnotes on p. 108

Codes: See p. 12 for Code Reference Key Chart





Client RFM
Project 900 Bldg Renovation

Sheet of \_\_\_\_\_ of \_\_\_\_ Design by SES

Date 4/16/19

Checked by

Project No. 262019.034

Date

Bldg 900 weights:	
2nd Floor: Elev. 94-0"	
31/2" slab and metal form deck	37 psf
STEEL DOISTS @ 24" OC	3 PSF
STEEL GIRDENS WZIX44	2 PSF
CEILING	3 ×F
MECH'L /ELEC'L	3 PSF
FINISHES	ZPSF
	50 PSF
3rd + 4th Floor. 110'-124'	
Z' lightweight conc	21 PSF
WOOD JOISTS + GLULAMS + PLYNOOD	6 PSF
CEILING	3 PSF
MECH'L	3 PSF
MNISHES	2 PSF
	35 BF
8" cmu WAUS GROUTED 46" OC EA	+ WAY 55 PSF
4" BRICK VENEER	45 PSF



Client RFM
Project 900 Cldg Renovation

Design by SES

Date \$/16/19

Checked by

Project No. 762019,034

Date

Externor hall Braces / tension ties

Wall weight W = 100 PSF x 15' = 1500 PIF Tie spacing 4' => Gpoot per anchor

GDS = 0.90 6.45DS × 2 × 1.25 Wp = 0.9 W = 5,400 = at EA, ANCHOR

5/2" & EXPANSION BOLT CAPACITY
IN TENSION = 2,219#

NOMINAL STRENGTH = 1620 #

Install additional anchors

LTT 208 ULTIMATE MINUS 15.0. = 3455#

AT CONDITIONS WHERE JOIST ARE PARALLEL TO WALL

TO SUPPLEMENT EXISTING ANCHORS

AVERAGE: 2,219 +3,455 5,674

DCR = 0,95 / OKAY

PER 48"



Client RFM
Project 900 Blag

Design by SES

Date 4/16/19

Checked by

Project No. 262019.034

Date

3/4" J-BOLT IN TENSION ACI 530-13  $Ap_{\epsilon} = \# 1_{0}^{2} = 3.14 (5^{2}) = 78.5 \text{ in}^{2}$   $B_{anb} = 4 (78.5) \sqrt{1500} \text{ ps} = 12.161^{\frac{1}{2}}$   $B_{ans} = 0.44 \text{ in}^{2} \times 36 \text{ ks} = 15.8400^{\frac{1}{2}}$   $B_{anp} = 1.5 (1500 \text{ ps}) (15)(0.75)$   $+ 300 \pi (5" + 1.5" + 0.75) 0.75 = 7.653^{\frac{1}{2}}$   $DCR = \frac{5.400 \#}{7.653^{\frac{1}{2}}} = 0.71 \text{ okay}$ 

:. ANCHORS AT JOISTS PERP TO WALL ARE ACCEPTABLE

### LTP4/LTP5/A34/A35



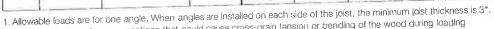


# Framing Angles and Plates (cont.)

These products are available with additional corresion protection. For more information, see p. 18.

These products are approved for installation with the Strong-Drive® SD Connector screw. See pp. 39-40 for more information.

			Direction	Al	DF/SP lowable Loa	ds	A	SPF/HF lowable Load	S	Code
Model Type of Fas No. Connection	Fasteners	of Load	Floor (100)	Roof (125)	(160)	Floor (100)	Roof (125)	(160)	Ref.	
,	<b> </b>		E <sub>1</sub>	395	485	515	340	415	445	IP1, L5,
	1	(8) 8d x 1 1/2"	F <sub>2</sub> °	395	455	455	340	390	390	L18, FL
1			F <sub>1</sub>	395	485	515	340	415	445	127, L5, F
A34		(8) #9 x 1½" SD	F <sub>2</sub>	395	455	455	340	390	390	
		(6) 113 11 112 00	Uplift	240	240	240	170	170	170	170
-			At. E. 295 365 395 255	315	340					
	[2]	(9) 8d x 1 ½"	C <sub>1</sub>	210	210	210	180	180	180	
			A <sub>2</sub>	295	365	380	255	315	325	ID1 LE
	3	(12) 8d x 1½"	C2	295	365	370	255	315	320	IP1, L5 L18, Fl
A35	[5]	(12) 0d x 1 1 c	D	230	230	230	200	500	200	_
			F1	595	695	695	510	600	600	
	4	(12) 8d x 1½"	F28	595	670	670	510	575	575	
-	5	(12) #6 x ½" SPAX	Fi	420	-420	420	360	360	360	170
-		(12) 110 x 12 31 717	G	580	670	670	500	570	575	IP1, L5
LTP4	6	(12) 8d x 1½"	Н	580	600	600	500	515	515	L18, F
			G	580	620	620	500	535	535	IP1,
LTP5	7	(12) 8d x 1½"	Н	545	545	545	470	47.0	470	L18, F



2. Some illustrations show connections that could cause cross-grain tension or bending of the wood during loading if not reinforced sufficiently. In this case, mechanical reinforcement should be considered,

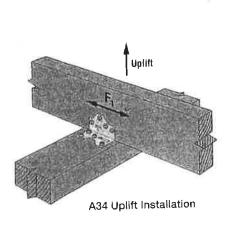
3. LTP4 can be installed over %" wood structural panel sheathing with 8d x 11/2" nails and achieve 0,72 of the listed load, or over ½" and achieve 0.64 of the listed load. 8d commons will achieve 100% load.

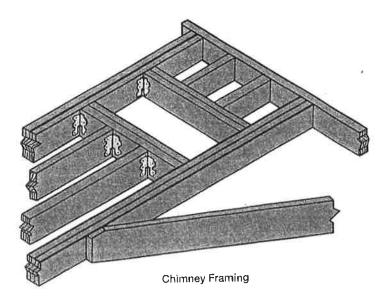
4. LTP4 satisfies the IRC continuously shealhed portal frame (CS-PF) framing anchor requirements when installed over raised

wood floor framing per Figure R602.10.6.4 5. The LTP5 may be installed over wood structural panel sheathing up to ½" thick using 8d x 1 ½" nails with no reduction in load.

6. Connectors are required on both sides to achieve F2 loads in both directions.

7. Fasteners: 8d x 11/2" = 0,131" dia. x 11/2" long; SPAX #6 x 1/2" = 0,138" dia, x 1/2" long. See pp. 26–27 for other nail sizes and information.







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BUILDING D	EAD LOAD	TOTALS	
ROOL	LOAD	AREA	WA
D/APHRAG M	20psf	19,150#	383.0k
CM U WALLS	100psf	7880#	788.0K
1 - 11 - 1 3 E1 - 10		Tz	1171 K
LEVEL 3 FLOOR	LOAD	AREA	W(K)
DIAPHRAGI	2062+	2250#	78.8 <sup>k</sup>
CMU WALL	100psf	2250#	225.0K

T= 303,85

LEVEL 2 FLOOR

	LOAD	AREA	W/L)
DIAPHRAGM	35psf	16,350#	572,3K
CMU WALLS	100psf	12,975#	1297,5K
WALK WHYS	50psf	2800#	140.0K

T= 2009.8K



Client RFM
Project 900 BLDG

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LEVEL 1 PLOOR		w	
	LUMD	AREA	W(K)
DIAPHRAGM	50psf	3200#	160.04
CMU WALLS	100 psf	2240#	224,0t

T= 384.0k

TOTAL WZ 3868.6K

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728 134th Street SW - Suite 200			Design by	JD
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Fav. 405 744 2000	B :	262010 024	ъ.	

ASCE 4	11-13: LINEAR STATIC PROCEDURE (SEC. 7.4.1)	
I.D.:		
MAPPED SPECTRAL RESPONSE AC	CELERATION:	Ref:
BSE-2E mapped short period accel.:E	S <sub>S2M</sub> = 1.01 g	2.4.1.3
BSE-2E mapped accel. @ T=1 s:	$S_{12M} = \frac{0.407}{g}$	2.4.1.3
BSE-1E mapped short period accel.:	$S_{S1M} = \frac{0.512}{g}$	2.4.1.4
BSE-1E mapped accel. @ T=1 s:	$S_{11M} = \frac{0.192}{g}$	2.4.1.4
BSE-2N mapped short period accel.:	S <sub>S2NM</sub> = 1.401	2.4.1.1
BSE-2N mapped accel. @ T=1 s:	$S_{12NM} = \frac{0.559}{}$	2,4.1.1
BSE-2E controlling short period accel.:	$S_{S2} = MIN(S_{S2M}, S_{S2NM}) = 1.01 g$	2.4.1.3
BSE-2E controlling accel. @ T=1 s:		2.4.1.3
BSE-1E controlling short period accel.:	$S_{S1} = MIN(S_{S1M}, 2/3*S_{S2NM}) = 0.512 g$	2.4.1.4
BSE-1E controlling accel. @ T=1 s:	$S_{11} = MIN(S_{11M}, 2/3*S_{12NM}) = 0.192 g$	2.4.1.4
MODIFIED SPECTRAL RESPONSE P		Ref:
Site class:	D 🔻	2.4.1.6
BSE-2E acceleration site coefficient:	$F_{a2} = 1.10$	Table 2-3
BSE-2E velocity site coefficient:	$F_{v2} = 1.59$	Table 2-4
BSE-1E acceleration site coefficient:	$F_{a1} = 1.39$	Table 2-3
BSE-1E velocity site coefficient:	$F_{v1} = 2.03$	Table 2-4
BSE-2N acceleration site coefficient:	$F_{a2N} = 1.00$	2.5/2.4.1.
	$F_{v2N} = 1.50$	2.5/2.4.1.
BSE-2E design short period accel.:	$S_{XS2} = F_{a2} * S_{S2} =$ 1.11 g	2.4.1.6
BSE-2E design 1 sec. period accel.:		2.4.1.6
BSE-1E design short period accel.:	-	2.4.1.6
BSE-1E design 1 sec. period accel.:		2.4.1.6
ASCE 7 design short period accel:		2.5
ASCE 7 design 1 sec. period accel:		2.5
Seismicity zone:	Zone of seismicity is <b>HIGH</b>	2.5
RESPONSE SPECTRA CHARACTERI		Ref:
BSE-2E spectra:	$T_{S2} = S_{X12}/(S_{XS2}) = 0.59$ s	2.4.1.7.1
	$T_{02} = 0.2 * T_{S2} = 0.12$ s	2.4.1.7.1
BSE-1E spectra:	$T_{S1} = S_{X11}/(S_{XS1}) = 0.55$ s	2.4.1.7.1
	$T_{01} = 0.2 T_{S1} = 0.11$ s	2.4.1.7.1
STRUCTURE DYNAMIC PROPERTIES		Ref:
Building seismic weight:	W = 3868.6 k	7.4.1.3
Number of stories:	n = 2	7.4.1.3
Effective damping ratio:	$\beta = \frac{5}{}$ %	7.2.3.6
Damping coefficients:	B <sub>1</sub> = 1.0	2.4.1.7.1
_ateral system:	Wood buildings ▼	7.4.1.2.2
Period coefficient:	$C_1 = 0.020$	7.4.1.2.2
Period exponent:	$\beta = 0.75$	7,4.1.2,2
Building height:	$h_n = \frac{41.5}{1}$ ft	7.4.1.2.2
Calculated period	$T_c = \frac{1}{s}$	7.4.1.2.1
Empirical period:	$T_e = C_t * h_n^{\beta} = 0.33$ s	7.4.1.2.2
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			ASCE 4	41-13: LIN	EAR STA	TIC PROC	EDURE (SE	C. 7.4.1)			
I.D.:											
m <sub>max</sub> @ B	SE-2E:			m <sub>max2</sub>	2.0						7.4.1.3.1
m <sub>max</sub> @ B				m <sub>max1</sub>	2.0						7.4.1.3.1
PSEUDO		L LOAD:									Ref:
BSE-2E s	pectral ac	celeration	(*)	S <sub>a2</sub> =	1.104	g					2.4.1.7.1
BSE-1E s	pectral ac	celeration	:	S <sub>a1</sub> =	0.710	g					2.4.1.7.1
Effective i	mass fact	or:		C <sub>m</sub> =	1.0						7.4,1.3.1
		rs product		$C_{12}^*C_{22} =$							7.4.1.3.1
BSE-1E n	nod. facto	rs product	i	$C_{11}^*C_{21} =$							7.4.1.3.1
BSE-2E p	seudo late	eral load:		_	$C_{12}C_{22}C_{m}$		1.215		4700	k	7.4.1.3.1
BSE-1E p					$C_{11}C_{21}C_m$	$S_{a1}W =$	0.781	W =	3022	k	7.4.1.3.1
FORCE D	ISTRIBU	TION CAL	CULATIO				11/15/20				Ref:
Story forc	e:				^ ^ \	v <sub>x</sub> *h <sub>x</sub> *)*V =			see table		7.4.1.3.2
					IF(T<=0.5	5,1,IF(T>=	2.5,2,1+(T-0.	5)/2)) =	1.000		7.4.1.3.2
				$\sum w_x^* h_x^k =$					89867		7.4.1.3.2
Diaphragr	n force:			F <sub>px</sub> =	$V_x^*w_x/W_x$	=			see table		7.4.1.3.4
									_		i
	≘	274.7		BSE-2E	-33		BSE-1E	Total	No. 100	BSE-1E	
Story	Story	Story		Story	Story	Story	Story	Weight	Diaph.	Diaph.	
Name	Weight	Height		Force	Force	Shear	Shear	Above	Force	Force	
	w <sub>x</sub>	h <sub>x</sub>	w <sub>x</sub> *h <sub>x</sub> <sup>k</sup>	F <sub>x2</sub>	F <sub>x1</sub>	V <sub>x2</sub>	V <sub>x1</sub>	W <sub>x</sub>	F <sub>px2</sub>	F <sub>px1</sub>	
	(k)	(ft)		(k)	(k)	(k)	(k)	(k)	(k)	(k)	
ROOF	1171	41.5	48597	2541	1634	2541	1634	1171	2541	1634	
Mezz	303.8	30	9114	477	307	3018	1941	1474.8	622	400	
Level 2	2009.8	16 0	32157 0	1682 0	1081 0	4700 4700	3022	3484.6 3868.6	2711 466	1743 300	
Level 1	384	U	U	U	U	4700	3022	3000.0	400	300	
								49			
	- 1										
		<b>-</b>								=	
								76			
-											

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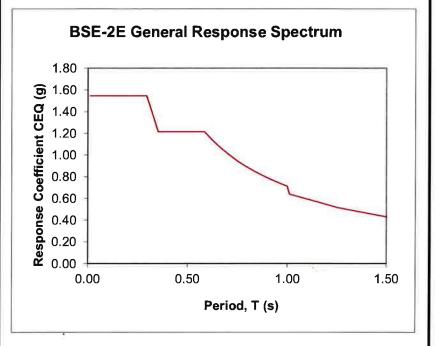
#### ASCE 41-13: LINEAR STATIC PROCEDURE (SEC. 7.4.1)

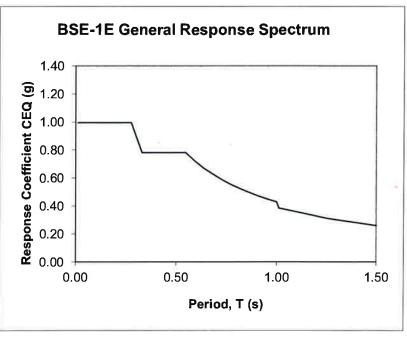
I.D.:

#### **ACCELERATION RESPONSE SPECTRA:**

9				
		E-2E		E-1E
	Т	$C_{EQ}$	T	$C_{EQ}$
	(s)	(g)	(s)	(g)
	0.01	1.55	0.01	0.99
	0.02	1.55	0.02	0.99
	0.04	1.55	0.03	0.99
	0.05	1.55	0.04	0.99
	0.06	1.55	0.05	0.99
	0.07	1.55	0.07	0.99
	0.08	1.55	0.08	0.99
	0.09	1.55	0.09	0.99
	0.11	1.55	0.10	0.99
$T_0 =$	0.12	1.55	0.11	0.99
	0.18	1.55	0.16	0.99
	0.23	1.55	0.22	0.99
	0.29	1.55	0.27	0.99
	0.35	1.21	0.33	0.78
	0.41	1.21	0.38	0.78
	0.47	1.21	0.44	0.78
	0.53	1.21	0.49	0.78
T <sub>s</sub> =	0.59	1.21	0.55	0.78
	0.63	1.13	0.59	0.72
	0.67	1.06	0.64	0.67
	0.71	1.00	0.68	0.63
	0.75	0.95	0.73	0.59
	0.79	0.90	0.77	0.55
	0.83	0.85	0.82	0.52
	0.88	0.81	0.86	0.50
	0.92	0.78	0.91	0.47
	0.96	0.74	0.95	0.45
	1.00	0.71	1.00	0.43
	1.01	0.64	1.01	0.39
	1.25	0.52	1.25	0.31
	1.50	0.43	1.50	0.26
	1.75	0.37	1.75	0.22
	2.00	0.32	2.00	0.19
	3.00	0.22	3.00	0.13
Į	4.00	0.16	4.00	0.10

$$\begin{split} C_{EQ} &= \ C_1 C_2 C_m S_{XS} [(5/B_1 - 2)^* T/T_S + 0.4] & @ \ T <= \ T_0 \\ C_{EQ} &= \ C_1 C_2 C_m S_{XS} / B_1 & @ \ T_0 < T <= \ T_S \\ C_{EQ} &= \ C_1 C_2 C_m S_{X1} / (B_1 ^* T) & @ \ T > T_S \end{split}$$





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RFM Project 900 B LDG

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DIA PHRACIEN	LOADS	ē ģ		
ROOF	BSE-1E 1634E	B F-2E 2541K	19 150 P	
Me 2 2	400K	622K	2250H	
Level 2	1743 <sup>k</sup>	2711K	19150#	
Lezal	300	466 K	3200中	
NORTH /Sou	TH DIRECTION	(ROOF)		
BETWEEN	GRIDS E290	+E160		
T. AREA = 77	50 \$ BS	E-1E = 661.	3 K BSE-2E= 1028	,3 <sup>k</sup>
WALKWAY AREA =	1450\$ MAIN	BLDG ARE = 6	300#	
WALKWAY LOP	AD => BSE-1	= 123.7k	BSE-2E = 192.4K	
MAIN BLDG, LO	DAD =) BSE-1E	= 5,37.6K B	SE-JE = 8.35.9 K	
	108 E160 to			L
T. APEA = 900	∞ # Bs	E-1E = 767.9	K LE = DE = 1/94.2	
WALKWAY ARE	+= 1350 # MAIN	BLBG, ACERs	7650\$	
WALKWATIONL	=> BSG-1E = /	15,2K BSE	-2E=179,1K	
MAINBLOG L	DAD=) BSE-1E=	652,7 K BSE	-2E = 1015.1K	
	DS E40 to E			
T.A REA = 2400 WALKWAY A = 11	中 800年 85E-1E:	= 204,8 <sup>K</sup> BSE	-2E= 318,5K	
WALKWAY LOA	D => BSE-16-	8,5 K BSE-2	E = 13,3 k	

Permit Number: 19-05911

MAIN BLOG => BSE-16= 196.3 K BSE-2E= 305,2K



Client RFM Project 900 BLDG

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MEZZ.

BETWEEN GRAS E 245 TO E 200

BSE-1E = 400 t BSE-2E = 622 K

LEVEL 2

BETWEEN GRID E290 TO Ello

TIAREA = 7750# DSE-1E= 705.4k BSE-2E=1,097.1K

WALKWAMAFER = 1450\$ MAN BLDG AFEA = 6300\$

WALKWAY LOND => BSE-IE = 132.0 BSE-2E = 205.3K

MAIN BLOG LOAD => BSE-18= 573.4 BSE-2E = 891.8K

BETWEEN GRILL E160 +0 E40

TIAREA = 9000\$ BSE-IE = 819.2K BSE-ZE = 1274.1K

WALKWAY AREA = 1350 \$ MAIN BLOG, AREA 7650 H

WALKWAY LOAD => BSE-1E=122.9 K BSE-DE= 191,1K

MAINBLAG LOAD => BSE-1E = 696.3K BSE-2E = 1083.0K

BETWEEN GRIDS E40 to EO

THAREA = 2400# BSE-IE = 218.4k BSE-JE = 339.8K

WALKWAY ARE 1004 MAYNBLOGAREA = 23004

WALKING LOAD => BSE-1E= 9,1K BSE-2E= 14,2K

MAINBLDG, LOAD => BSE-1E = 269.3k BSE-2E = 325.6K

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LEUEL 1 BETWEEN GRIDS EYO HO BO

AREA = 3179# BSE-IE = 300k BSE-JE = 466k

EAST / WEST DIRECTION

(ROOF)

BETWEEN GARDS E 290 10 2245 AREX = 26001

BSE-IE = 221.8K BSE-2E = 345.0K

BETWEEN GRIDS E245 TOE E230 AREA = 1050 \$

BSE-1E = 89.6k BSE-2E = 139,3k

BETWEEN GRIDS & 230 TO E200 AREA = 1900 #

BSE-1E = 162,1 BSE-2E = 252.1 K

BETWEEN GRIDS E200 to E160 AREA = 2200 \$
BSE-1E = 187.7 K
BSE-2E = 291.9 K

BETWEENGRIDS E160 TO E 145 AREA = 1/25 \$ BSE-2E= 149.3K BSE-18= 96.0K

BETWEEN GRIDS E145 to E 100 AREA = 3375 \$

BSE-1E = 288.0K BSE-2E = 447.8K

BETWEEN GRIDS ELOO TO ESS AREA = 33754

BSE-1E - 288.0 K BSE-2E= 447.8K

BETWEEN 6, RIDS ESS TO BYD ANEX = 1125\$ BSE-1E = 96.0K BSE-2E = 149.3K

BETWEEN GRIDS E 40 to EO ARBA = 2400 \$

BSE-16 = 204.8K

BSE-2E= 318.5K

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LEVEL MEZZ BETWEEN GRILL E 245 TO E 230 A = 7504 BSE-IE = 133.3 k BSE-2E= 207.3 k

BETWEEN GRIDS E330 to 8200 A = 1500 BSE-IE = 266.7 K BSE-ZE = 414,75

LEVEL 2 BETWEEN GRIDS E290 TO E245 A = 2600 \$\pm\$ BSE-1E = 2366 \text{ BSE-2E = 368.1k}

BETWEEN GRIDS E245 + 0 E230 A = 1050# BSE-IE = 95.6K BSE-2E = 148.6K

BETWEEN GRIDS E230 TO E 200 A = 1700 \$\Pi\$

BSE-1E = 172.9 \text{ BSE-2E = 269.0 \text{

BSE-1E = 260, 2k BSE-2E = 311,4k

BETWEEN GRIDS E145 to E100 K= 3375 H

CE 307,2 (SE-32 477.8K

BETWEEN GRES = 100 to ESS A= 3375# BSE-1E = 307.2 K BSE-2E = 477.8 K



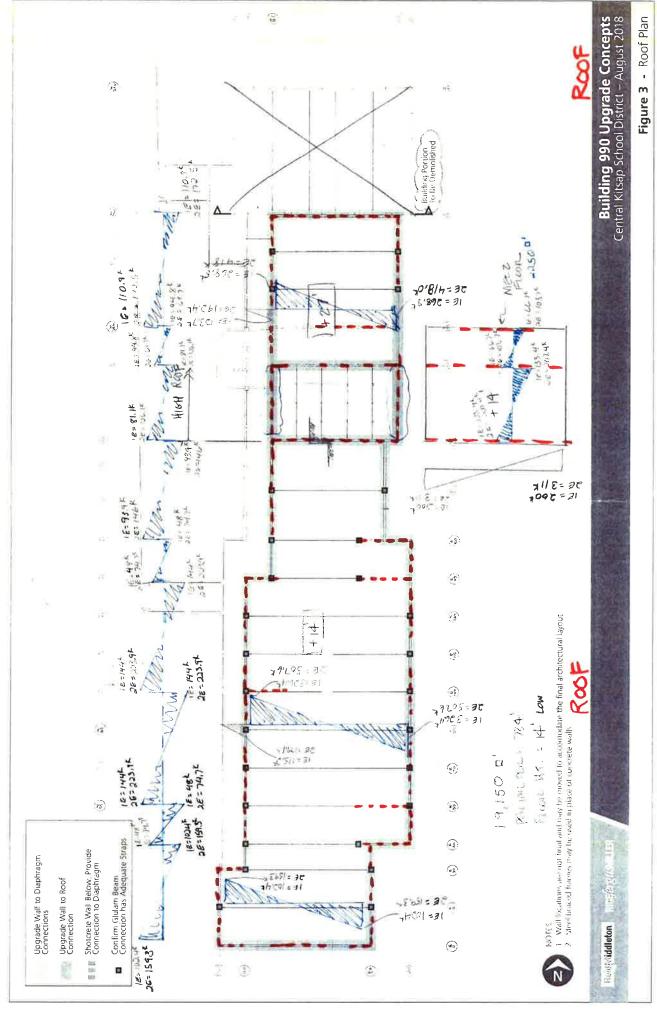
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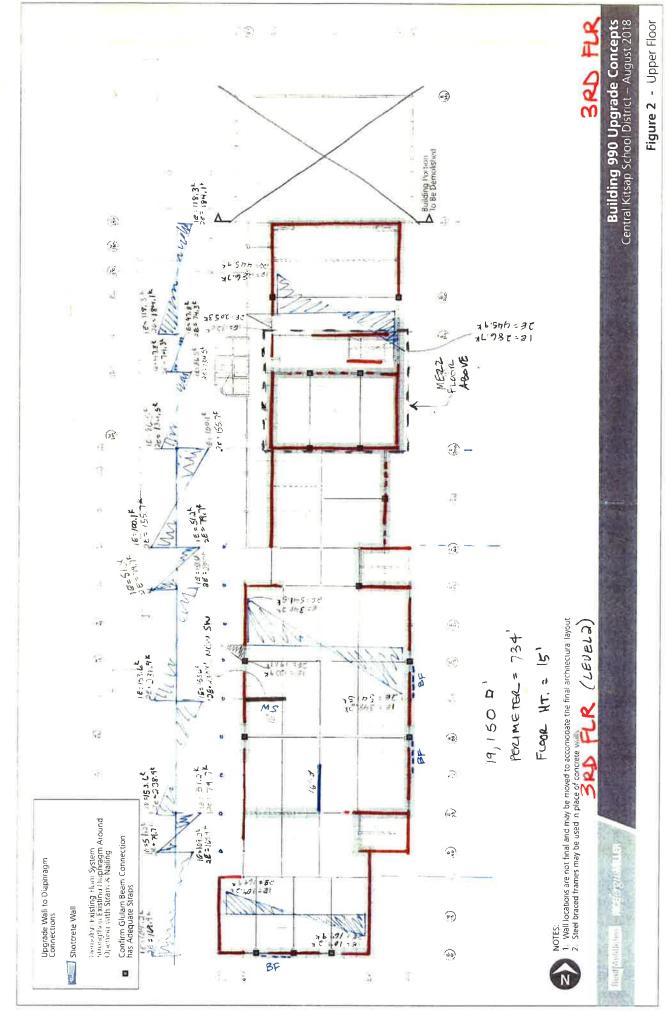
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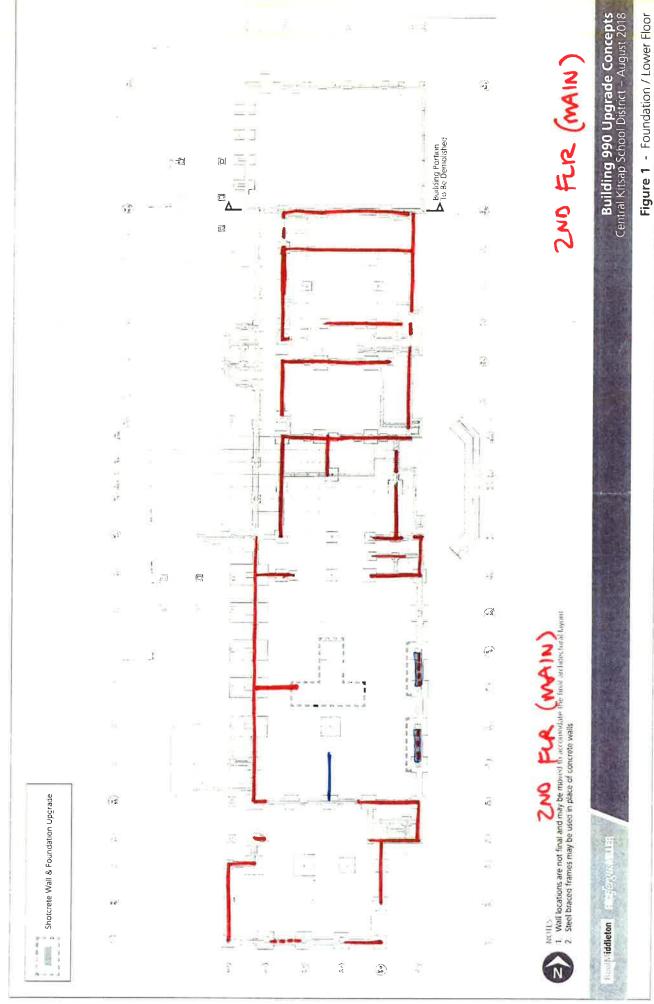
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WALL LENGTH

E 290 TO E 160

CROOF

GRID S20 = 12 ft (25' PIER)

GRID S70 = 72 ft (30' PIER)

GRID #270 = 50ft

GRID E245 = 30A

GRID & 230 = 25 Pt (5' PIER)

GRIDE 200 = 46ft (22' PIER)

GRID = 160 = 20Ab

E160 +0 E40

GRID S10 = 71 ft (10' PIER)

GRID 575 = 98St (8! PIER)

CARIO E 145 = 35 St (10' PIR)

GRID E 100 = 16ft (concrete SW) GRIDE 100 = 16ft (Comb. SW)

GRID E 55 = 20 St

GRID E 40 = 2086

E40 +0 E0

GRID 50 = 30ft

GRIDS 60 = 33 ft (15' PIER)

GRID E 0 = 30 f4

[290 tOE 160

CLEVEL 2

GRID 5 20 = 93 ft (7 PIER)

GRID 570 = 105 ft (6' PIER)

GRID E290 = 4/Pt (10' PIER)

GRID E 245= 2784

GRID E230 = 50ft

GRID & 200 = 44 8+ (91 PIER)

GRIDE 160= 16 ft

E160 TO E 40

GRID SID = 75ft (conc. SW)

GRID S75 = 308+ +2 B.F. (15/14

GRID E145 = 33 86 (13' PIER)

GRID E 55 = 20 84

GRID 640 = 20 ft

E 40 TO E0

GRID SO = 30/4

GRID S60= 40A

GRIDEO = 15 ft + B.F.

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262019,034	Date:

	Legend			Determine FC vs DC Table 1.	1-6
Input			Mu/(Vudv)	0.08	
Calculated			Y.	1.0	#5 Bars or smaller
DCR/Check			Vn (kips) upperbound	246	TMS 402-13, Eq. 9-22
			Vn (kips) upperbound		TMS 402-13, Eq. 9-23
	General Inputs		Vnm (kip)	163.1	TMS 402-13, Sec 9.3.4.1.2.1
Pier ID	Grid EO		Vn (kip)	163.1	TMS 402-13, Equation 9-21
ocation/Gridline	EO		Holdown Anchor Rod As (in^2)	0.31	At one wall end
'm (psi)	810	Table 11-2(a)	a (in)	2.4	
m (ksi)	729	TM5 402-13, Sec 4.2.2.2.1	Distance from Edge of Wall to Rod (in)	4	
me (psi)	1053	Table 11-1	d (in)	176	
y (ksi)	40		Mn (kip*ft)	467	*
ye (ksi)	52		Ve (kip)	33	<u> </u>
s (ksi)	29000		Shear vs. Flexure Control	Flexure Control	
Masonry Denisty (pcf)	125		An (in^2)	1440	
Vorninal Pier Length (ft)	15		f <sub>ae</sub> (psi)	19.0	
ier Height (H)	14.00		Shear vs. Force Controlled	144	l l
Vall thickness (in)	8				
oof Trib (SF)	113			etermine m-factors Table 1	1-6
Roof DL (psf)	20		fae/fme	0.018	
Roof SL (psf)	25		L/heff	1.07	* 1.111 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -
Mezz Trib (SF)	0		As (in^2)	0.31	Total Vertical Reinforcement
Mezz DI. (psf)	0		ρν	0.00022	
Mezz LL (psf)	0		Av (in^2)	0.3	Total Vertical Reinforcement
nd FLR Trib (SF)	60		ρδ	0.0002	
nd FLR DL (psf)	35		p <sub>e</sub> fye/fme	0.022	N
nd FLR LL (psf)	40		rn-factor	5.7	
hearline Tot Shear (kips)	211.6	BSE-1E	m-factor restriction	7	
hearline Tot Length (ft)	30	10000000	m-factor used	6.7	
applicable Wall Trib Length (ft)	15		1000	-	
eismic Axial Load (kips)	0.0	Holdown Force From Wall Above		Deformation Control DCR	ti.
foldown to Wall Centroid (ft)	0.0		Shear DCR	0.10	T I
O, LS, CP	LS		Moment DCR	0.48	
				-	
	General Calculation			Force Control DCRs	
Vall Self-Weight (kips)	17.5		Shear DCR		
N. (kips)	4.4	Super-imposed DL @ Top of Wall	Moment DCR		
L (kips)	2.4				
L (kips)	2.8		Out-Of-	Plane Capacity TMS 402-13,	Sec 9.3.5
.1(Q <sub>0</sub> + Q <sub>1</sub> +0.2*Q <sub>5</sub> )	27.3	Eq. 7-1	d (in)	4	
.9(Q <sub>0</sub> )	19.7	Eq. 7-2	a (in)	0.3	
hear/Unit Length (kip/ft)	7.1		Mn (kip*ft)	10.2	
Vall Shear (Q <sub>r</sub> ) (kips)	105.8		- Constitution of the cons	-	
Noment Generated from Holdown (kip*ft)	0.0	About Centroid of Wall	Out-Of-Plane Demands TM	S 402-13 Sec 9 3 5 & ASC F	11-13 Section 11.3.5>7.2.11
ionent Generated iron Holdown (kip 1t)	0.0	About Centroid of Wall	y Sur-of-France Serious Time	1.3	ASCE 41-13, Table 7-2, LS
	Wall Demands		Sxs,1E	0.71	POLL 41-15, Tame 7-2, LS
(kips)	27.3	Eq. 7-34	h (ft)	14	Full Wall Height
(kips)	19.7	Eq. 7-34	w (psf)	100.0	Elevation Wall Unit Weight
(kips)	105.8		Fp*L (plf)	553.8	ASCE 41-13, Eq. 7-13
(kip*ft)	1481.2		Fp_min*L (plf)	195.0	ASCE 41-13, Eq. 7-14
ASSESSED.		1	Mu,o (kip*ft)	13.57	
Lower-Bo	ound Vertical Compressive S	trenath	l n	39.8	
1.5Mer-ue	1	Table 6-1	tsp (in)	8	<u>(1)</u>
(in)	0.535	Weak Axis Radius of Gyration	c (in)	0.4	TMS 402-13, Eq. 9-35
(r	314		leff = icr (in^4)	412	TMS 402-13, Eq. 9-34
a (kip)	38	TMS 402-13, Eq. 9-19, Eq. 9-20	Pe (kips)	105	TMS 402-13, Eq. 9-33
	38	THE TREE COLUMN STREET STREET	Ψ	1.351	TMS 402-13, Eq. 9-32
P <sub>CL</sub> (kip)		100	_		
2	2	ıs	ΨMu,o (kip*ft)	18.33	TMS 402-13, Eq. 9-31
ıc,	1.1	19			
l <sub>6</sub> +(Q <sub>ℓ</sub> )/(JC1C2) (kip)	27.3			ut-Of-Plane DCR, Sec 11.3.	5.3
CR	0.73		Flexure DCR	0.8	

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### ASCE 41-13 Reinforc

	Legend	
Input		
Calculated		
DCR/Check		
	2	
NI CALID	General Inputs	
Pier ID Location/Gridline	Grid E0 E0	
f'm (psi)	810	Table 11-2(a)
Em (ksi)	729	TMS 402-13, Sec 4.2.2.2.1
fme (psi)	1053	Table 11-1
fy (ksi)	40	1000.22.1
(ye (ksi)	52	
Es (ksi)	29000	
Masonry Denisty (pcf)	125	
Nominal Pier Length (ft)	15	
Pier Height (H)	14.00	
Wall thickness (in)	8	
Roof Trib (SF)	113	
Roof DL (psf)	20	
Roof SL (psf)	25	
Mezz Trib (SF)	0	
Mezz DL (psf)	0	
Mezz LL (psf)	0	
2nd FLR Trib (SF)	60	
and FLR DL (psf)	35	
2nd FLR LL (psf)	40	
shearline Tot Shear (kips)	211.6	BSE-1E
Shearline Tot Length (ft)	30	
Applicable Wall Trib Length (ft)	15	
ieismic Axial Load (kips)	0.0	Holdown Force From Wall Above
Holdown to Wall Centroid (ft)	0.0	
O, LS, CP	1.5	
	General Calculation	
Vall Self-Weight (kips)	17.5	
DL (kips)	4.4	Super-imposed DL @ Top of Wall
L (kips)	2.4	Sapar importa de gritop di Wali
iL (kips)	2.8	
1(Q <sub>0</sub> + Q <sub>4</sub> +0.2*Q <sub>5</sub> )	27.3	Eq. 7-1
1.9(Q <sub>0</sub> )	19.7	Eq. 7-2
Shear/Unit Length (kip/ft)	7.1	Eq. 7-2
Wall Shear (Q <sub>x</sub> ) (kips)	105.8	4
Moment Generated from Holdown (kip*ft)	0.0	About Centroid of Wall
noment delierated from Holdown (kip 1t)	0.0	About Centrold of Wall
	Wall Demands	
(kips)	27.3	Eq. 7-34
(kips)	19.7	Eq. 7-34
/ (kips)	105.8	-
vi (kip*ft)	1481.2	
	, , , , , , , , , , , , , , , , , , , ,	
	nd Vertical Compressive Streng	
	1	Table 6-1
(in)	0.535	Weak Axis Radius of Gyration
/r	314	
cl (kip)	38	TMS 402-13, Eq. 9-19, Eq. 9-20
P <sub>CL</sub> (kip)	38	
	2	LS
C <sub>1</sub> C <sub>2</sub>	1,1	
Q <sub>G</sub> +(Q <sub>E</sub> )/(JC1C2) (kip)	27.3	
nce .	0.73	

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	Legend		Det	ermine FC vs DC Tabl	e 11-6
input			Mu/(Vudv)	80.0	
alculated			Y	1.0	#5 Bars or smaller
CR/Check			Vn (kips) upperbound	2.56	TMS 402-13, Eq. 9-22
			Vn (kips) upperbound		TMS 402-13, Eq. 9-23
	General Inputs		Vnm (kip)	163:1	TMS 402-13, Sec 9.3.4.1.2.1
Pier IO	Grid E0		Vn (kip)	163.1	TM5 402-13, Equation 9-21
ocation/Gridline	EO		Holdown Anchor Rod As (in^2)	0.31	At one wall end
'm (psi)	810	Table 11-2(a)	a (in)	2.4	
Em (ksi)	729	TMS 402-13, Sec 4.2.2.2.1	Distance from Edge of Wall to Rod (in)	4	
lme (psi)	1053	Table 11-1	d (in)	175	
y (ksi)	40		Mn (kip*ft)	467	
ye (ksi)	52		Ve (kip)	33	
Es (ksi)	29000		Shear vs. Flexure Control	Flanute Control	
Masonry Denisty (pcf)	125		An (in^2)	1.440	
Nominal Pier Length (ft)	15	1	f <sub>se</sub> (psi)	19.0	
Pier Height (H)	14.00		Shear vs. Force Controlled	NA.	
Wall thickness (in)	8				
Roof Trib (SF)	113		Dete	rmine m-factors Tabi	le 11-6
Roof DL (psf)	20		fae/fme	0,018	
Roof St (psf)	25		L/heff	1.07	
Mezz Trib (SF)	0		As (in^2)	0.62	Total Vertical Reinforcement
Mezz DL (psf)	0		P.	0.00043	
Mezz LL (psf)	0		Av (in^2)	0.6	Total Vertical Reinforcement
2nd FLR Trib (SF)	60		Ph.	0.0005	TOTAL VESTICAL REINDICEIDENT
			-		
Pind FLR DL (psf)	35		ρ <sub>g</sub> fye/tme	0.044	
2nd FLR LL (psf)	40		m-factor	7.2	
hearline Tot Shear (kips)	329.2	BSE-2E	m-factor restriction	7	
hearline Tot Length (ft)	30		m-factor used	7.0	
Applicable Wall Trib Length (ft)	15				
seismic Axial Load (kips)	0.0	Holdown Force From Wall Above		eformation Control D	CRs
Holdown to Wall Centroid (ft)	0.0		Shear DCR	0.14	
O, LS, CP	CP		Moment DCR	9.79	
	General Calculation		i r	Force Control DCRs	
Vall Self-Weight (kips)	17.5		Shear DCR	****	
OL (kips)	4.4	Super-imposed DL @ Top of Wall	Moment DCR		
L (kips)	2.4	A STATE OF THE PARTY OF THE PAR	Contraction		
St. (kips)	2.8		Out-Of-Plan	ne Capacity TMS 402	-13 Sec 9.3.5
.1(Q <sub>6</sub> + Q <sub>1</sub> +6.2*Q <sub>2</sub> )	27.3	Eq. 7-1	d (in)	4	
).9(Q <sub>0</sub> )	19.7	Eq. 7-2	a (in)	0.4	
The second secon		cd: /-c	The state of the s		
hear/Unit Length (kip/ft)	11.0		Min (kip*ft)	14:0	
Vall Shear (Q <sub>c</sub> ) (kips)	164.6				Name of the second seco
forment Generated from Holdown (kip*ft)	0.0	About Centroid of Wall	Out-Of-Plane Demands TMS 4		CE 41-13 Section 11.3.5>7.2.11
	- Trimits - S		X X	1	ASCE 41-13, Table 7-2, CP
27.7	Wall Demands		5xs,1E	1.11	
(kips)	27.3	Eq. 7-34	h (ft)	14	Full Wall Height
(kips)	19,7	Eq. 7-34	w (psf)	2,000	Elevation Wall Unit Weight
(kips)	164.6		Fp*L (plf)	865.0	ASCE 41-13, Eq. 7-13
(kip*ft)	2304.4		Fp_min*L (plf)	150-0	ASCE 41-13, Eq. 7-14
			Mu,o (kip*ft)	16.22	
tower-Bou	nd Vertical Compressive S		n	39,0	
	1	Table 6-1	tsp (in)	12	
(in)	0.609	Weak Axis Radius of Gyration	c (in)	6.5	TMS 402-13, Eq. 9-35
le	276		leff = (cr (in^4)	531	TMS 402-13, Eq. 9-34
(kip)	49	TMS 402-13, Eq. 9-19, Eq. 9-20	Pe (kips)	195	TMS 402-13, Eq. 9-33
G MARK			Ψ	1,251	TMS 402-13, Eq. 9-32
	49				
	-740	IS	ΨMu.o (kip*ft)	20.41	TMS 402-13 Fo. 9-31
Pa (kip)	2	LS.	ΨMu,o (kip*ft)	20.41	TMS 402-13, Eq. 9-31
C ((ip) 1,C <sub>2</sub> 1 <sub>0</sub> ((Q <sub>1</sub> )/((C1C2) (kip)	-740	LS		20.41  Of-Plane DCR, Sec 11	

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	Legend		De	termine FC vs DC Table	11-6
nput			Mu/(Vudv)	0.04	
alculated			1 100(14007)	1.0	#5 Bars or smaller
			1 1 1 1 1 1 1 1	492	TMS 402-13, Eq. 9-22
DCR/Check			Vn (kips) upperbound	472	
	- 12.5		Vn (kips) upperbound	-	TMS 402-13, Eq. 9-23
	General Inputs		Vnm (kip)	330,6	TMS 402-13, Sec 9.3.4.1.2.1
Pier ID	Grid E0		Vn (kip)	330.6	TMS 402-13, Equation 9-21
ocation/Gridline	EO		Holdown Anchor Rod As (in^2)	0.31	At one wall end
'm (psi)	810	Table 11-2(a)	a (in)	2.4	
m (ksi)	729	TMS 402-13, Sec 4.2.2.2.1	Distance from Edge of Wall to Rod (in)	4	
me (psi)	1053	Table 11-1	d (in)	356	
y (ksi)	40		Mn (kip*ft)	1358	
ye (ksi)	52		Ve (kip)	97	
s (ksi)	29000		Shear vs. Flexure Control	Flexure Control	
Nasonry Denisty (pcf)	125		An (in^2)	2880	
ominal Pier Length (ft)	30		f <sub>se</sub> (psi)	14.4	
er Height (H)	14.00		Shear vs. Force Controlled	NA NA	
/all thickness (in)	8				
oof Trib (SF)	113		Det	ermine m-factors Table	11-6
oof DL (psf)	20	-	fae/fme	0.014	
oof SL (psf)	25		L/heff	2.14	
lezz Trib (SF)	0		As (in^2)	0.62	Total Vertical Reinforcement
					Total vertical kellilorcellient
Sezz Dl. (psf)	0		ργ	0.00022	
dezz LL (psf)	0		Av (in^2)	0.6	Total Vertical Reinforcement
nd FLR Trib (SF)	0		ρh	0.0005	
nd FLR DL (psf)	35		p <sub>s</sub> tye/fme	0.033	
Market war to Harris			THE DESCRIPTION OF THE PERSON		
nd FLR LL (psf)	40		m-factor	6.7	
nearline Tot Shear (kips)	102.4	BSE-1E	m-factor restriction	7	
nearline Tot Length (ft)	30		m-factor used	6.7	
pplicable Wall Trib Length (ft)	30				
eismic Axial Load (kips)	0.0	Holdown Force From Wall Above	ı	eformation Control DC	Rs
loldown to Wall Centroid (ft)	0.0		Shear DCR	0.05	
D, LS, CP	LS		Moment DCR	0.16	
2 442.41					
	General Calculation		1	Force Control DCRs	
/all Self-Weight (kips)	35,0		Shear DCR	roice control bens	
	2.3	6		_	
L (kips)		Super-imposed DL @ Top of Wall	Moment DCR		
(kips)	0.0		4	CONTRACTOR OF THE PARTY OF THE	PO-MAN POOR P
. (kips)	2.0		Out-Of-Pla	ine Capacity TMS 402-1	3, Sec 9.3.5
1(Q <sub>0</sub> + Q <sub>1</sub> +0.2*Q <sub>5</sub> )	41.6	Eq. 7-1	d (in)	4	
9(Q <sub>0</sub> )	33,5	Eq. 7-2	a (in)	0.3	
111111111111111111111111111111111111111	3,4	Edit C. 4		18.8	
near/Unit Length (kip/ft)			Mn (kip*ft)	18.6	
/all Shear (Q <sub>e</sub> ) (kips)	102:4				
oment Generated from Holdown (kip*ft)	0.0	About Centroid of Wall	Out-Of-Plane Demands TMS	102-13 Sec 9.3.5 & ASCE	41-13 Section 11.3.5>7.2.11
			X	1.3	ASCE 41-13, Table 7-2, LS
	Wall Demands		Sxs,1E	0.71	4
(kips)	41.6	Eq. 7-34	h (ft)	14	Full Wall Height
(kips)	33.5	Eg. 7-34	w (psf)	40070	Elevation Wall Unit Weight
	102,4	EMILATES.	Fp*L (plf)	1107.6	ASCE 41-13, Eq. 7-13
(kips)					
(kip*ft)	1433.6		Fp_min*L (plf)	390.0	ASCE 41-13, Eq. 7-14
	SELECTIVE DOWN IT SHOW THE		Mu,o (kip*ft)	27,14	
Lower-Box	und Vertical Compressive S		n	39.8	
	1	Table 6-1	tsp (in)	â	
in)	0.519	Weak Axis Radius of Gyration	c (in)	0.4	TMS 402-13, Eq. 9-35
r	324		leff = lcr (in^4)	226	TMS 402-13, Eq. 9-34
(kip)	71	TMS 402-13, Eq. 9-19, Eq. 9-20	Pe (kips)	195	TMS 402-13, Eq. 9-33
		11M3 402-13, Eq. 3-13, Eq. 3-20			
CL (kip)	71		Ψ	1,265	TMS 402-13, Eq. 9-32
	2	LS	ΨMu,o (kip*ft)	24.25	TMS 402-13, Eq. 9-31
ic,	1.1				
	41.6		1	Of-Plane DCR, Sec 11.3	
6+{Q <sub>t</sub> }/(JC1C2) {kip}					5.3.3
DCR	0.59		Flexure DCR	(0:0)	

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	Legend	
Input		
Calculated		
DCR/Check		
	Consultante	
Pier ID	General Inputs Grid E0	
Location/Gridline	EO	
f'm (psi)	810	Table 11-2(a)
Em (ksi)	729	TMS 402-13, Sec 4.2.2.2.1
fme (psi)	1053	Table 11-1
fy (ksi)	40	
fye (ksi)	52	
Es (ksi)	29000	
Masonry Denisty (pcf)	125	
Nominal Pier Length (ft)	30	
Pier Height (H)	14,00	
Wall thickness (in)	8	
Roof Trib (SF)	113	
Roof DL (psf)	20	
Roof SL (psf)	25	
Mezz Trib (SF)	0	
Mezz DL (psf)	0	
Mezz LL (psf)	0	
2nd FLR Trib (SF)	0	1
2nd FLR DL (psf)	35	<u> </u>
2nd FLR LL (psf)	40	
Shearline Tot Shear (kips)	102.4	BSE-1E
Shearline Tot Length (ft) Applicable Wall Trib Length (ft)	30	
Applicable Wall Trib Length (ft)	30	1
Seismic Axial Load (kips)	0.0	Holdown Force From Wall Above
Holdown to Wall Centroid (ft) IO, LS, CP	0.0	
IO, LS, CP	LS	
	General Calculation	
Wall Self-Weight (kips)	35,0	
DL (kips)	2.3	Super-imposed DL @ Top of Wall
LL (kips)	0.0	
SL (kips)	2.8	
1.1(Q <sub>0</sub> + Q <sub>1</sub> +0.2*Q <sub>5</sub> )	41.6	Eq. 7-1
0.9(Q <sub>0</sub> )	33.5	Eq. 7-2
Shear/Unit Length (kip/ft)	3.4	
Wall Shear (Q <sub>e</sub> ) (kips)	102.4	
Moment Generated from Holdown (kip*ft)	0.0	About Centroid of Wali
3345 - 34 - 35 - 34 - 35 - 35 - 35 - 35		***************************************
	Wall Demands	475
P (kips)	41.6	Eg. 7-34
P (kips)	33.5	Eq. 7-34
V (kips)	102.4	
M (kip*ft)	1433.6	
Inuar 2a	und Vertical Compressive Strengt	h
K Lower-so	1	Table 6-1
r (in)	0.519	Weak Axis Radius of Gyration
h/r	324	7,000
P <sub>CL</sub> (kip)	71	TMS 402-13, Eq. 9-19, Eq. 9-20
KP <sub>CL</sub> (kip)	71	
1	2	LS
C1C2	1.1	
Q <sub>6</sub> +(Q <sub>6</sub> )/(JC1C2) (kip)	41.6	
DCR	0.59	

Reid Middleton
728 134th Street SW+ Suite 200
Everett, Washington 98204
Ph: 425 741-3800
Fax: 425 741-3900

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	Legend		Det	termine FC vs DC Table	e 11-6
Input	1777		Mu/(Vudv)	0.04	
Calculated			γ	1,0	#5 Bars or smaller
DCR/Check			Vn (kips) upperbound	492	TMS 402-13, Eq. 9-22
			Vn (kips) upperbound		TMS 402-13, Eq. 9-23
	General Inputs		Vnm (kip)	330.6	TMS 402-13, Sec 9.3.4.1.2.1
Pier ID	Grid E0		Vn (kip)	330.6	TMS 402-13, Equation 9-21
Location/Gridline	60		Holdown Anchor Rod As (in^2)	0.31	At one wall end
f'm (psi)	810	Table 11-2(a)	a (in)	2.4	
Em (ksi)	729	TMS 402-13, Sec 4.2.2.2.1	Distance from Edge of Wall to Rod (in)	- 4	
fme (psi)	1053	Table 11-1	d (in)	356.	
fy (ksi)	40		Mn (kip*ft)	1358	
fye (ksi)	52		Ve (kip)	97	124
Es (ksi)	29000		Shear vs. Flexure Control	Flamure Control	
Masonry Denisty (pd)	125		An (in^2)	2880	
Nominal Pier Length (ft)	30		f <sub>er</sub> (psi)	14.4	
Pier Height (H)	14.00		Shear vs. Force Controlled	114	
Wall thickness (in)	8				
Roof Trib (SF)	113		Det	ermine m-factors Tabi	le 11-6
Roof DL (psf)	20		fae/fme	0.014	
Roof St (psf)	25		L/heff	2.14	• •
Mezz Trib (SF)	0		As (in^2)	0.93	Total Vertical Reinforcement
Mezz DL (psf)	0		Pv	0.00032	
Mezz LL (psf)	0		Av (in^2)	0.9	Total Vertical Reinforcement
	0		WA (101-51		Total vertical Restroncement
2nd FLR Trib (SF)			Ph.	0.0007	
2nd FLR DL (psf)	35		ρ <sub>s</sub> fye/fme	0.050	
2nd FLR LL (psf)	40		m-factor	7.5	
Shearline Tot Shear (kips)	159.3	8SE-ZE	m-factor restriction	7	
Shearline Tot Length (ft)	30		m-factor used	7.0	
Applicable Wall Trib Length (ft)	30				
Seismic Axial Load (kips)	0.0	Holdown Force From Wall Above	0	eformation Control D	CRs
Holdown to Wall Centroid (ft)	0.0		Shear DCR	9.07	
IO, LS, CP	CP.	=1	Moment OCR	0.23	
	General Colculation			Force Control DCRs	
Wall Self-Weight (kips)	35.0		Shear DCR		
DL (kips)	23	Super-imposed DL @ Top of Wall	Moment DCR		
LL (kips)	0.0				
St. (kips)	2.8		Out-Of-Pla	ne Copacity TMS 402-	13, Sec 9.3.5
1.1(Q <sub>0</sub> + Q <sub>1</sub> +0.2*Q <sub>5</sub> )	41.6	Eq. 7-1	d (in)	4	
0.9(Q <sub>0</sub> )	33.5	Eq. 7-2	a (in)	0.3	
Shear/Unit Length (kip/ft)	53		Mn (kip*ft)	22.6	
Wall Shear (Q <sub>r</sub> ) (kips)	159.3		1 1011111111111111111111111111111111111		-
Moment Generated from Holdown (kip*ft)	0,0	About Centrold of Wall	Dut Of Blass Demands 7845	102 12 Car 0 2 C 8 AC	E 41-13 Section 11.3,5>7.2.11
woment Generated from Holdown (692-11)	0,0	Addut Centrold of Wali	Out-Of-Plane Demanas IMIS	1	ASCE 41-13, Table 7-2, CP
	Wall Demands		Sxs,1E	1.11	ASCE 41-13, Table 7-2, CF
(kips)	41.6	Eq. 7-34	h (ft)	14	Full Wall Height
(kips)	33.5	Eq. 7-34	w (psf)	100,0	Elevation Wall Unit Weight
/ (kips)	159.3	SQL 27-04	Fp*L(plf)	1332.0	ASCE 41-13, Eq. 7-13
A (kip*ft)	2230.2		Fp_min*L(pif)	300.0	ASCE 41-13, Eq. 7-14
AMME 132	KERVIE		Mu,o (kip*ft)	32.63	100 CH1-13, EQ. 7-14
I mune Davi	nd Vertical Compressive S	trenath	1 0	39.8	
tower-box	na vertical compressive s	Table 6-1	tsp (in)	8	
(in)	0.562	Weak Axis Radius of Gyration	c (in)	0.4	TMS 402-13, Eq. 9-35
/r	299	Treat has neuros or operation	leff = (cr (in^4)	909	TMS 402-13, Eq. 9-35
c (kip)	83	TMC 402 12 Eq. 0 10 Eq. 0 22	Pe (kips)	232	
		TM5 402-13, Eq. 9-19, Eq. 9-20			TM5 402-13, Eq. 9-33
Pa (kip)	83		Ψ	1,219	TMS 402-13, Eq. 9-32
	2	LS	ΨMo,o (kip*ft)	39,77	TMS 402-13, Eq. 9-31
iC)	1.1				
Q <sub>4</sub> +(Q <sub>4</sub> )/(IC1C2) (kip)	41.6		Out	Of-Plane DCR, Sec 11.	3.5.3
distribution and the second					

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	Legend		Det	ermine FC vs DC Table 1.	I-6
nput			Mu/(Vudv)	0,06	
Calculated			γ.	1.0	#5 Bars or smaller
DCR/Check			Vn (kips) upperbound	328	TMS 402-13, Eq. 9-22
			Vn (kips) upperbound	9 1 2	TMS 402-13, Eq. 9-23
	General Inputs		Vnm (kip)	220.7	TMS 402-13, Sec 9.3.4.1.2.1
Pier ID	Grid E40		Vn (kip)	220.7	TMS 402-13, Equation 9-21
ocation/Gridline	E40		Holdown Anchor Rod As (in^2)	0.61	At one wall end
'm (psi)	810	Table 11-2(a)	a (in)	4.7	
Em (ksi)	729	TMS 402-13, Sec 4.2.2.2.1	Distance from Edge of Wall to Rod (in)	4	
me (psi)	1053	Table 11-1	d (in)	29.5	
y (ksi)	40		Mn (kip*ft)	1081	
ye (ksi)	52		Ve (kip)	22	
s (ksi)	29000		Shear vs. Flexure Control	Cleaner Control	
Masonry Denisty (pcf)	125		An (in^2)	1920	
Nominal Pier Length (ft)	20		f <sub>as</sub> (psi)	24,6	
ler Height (H)	14.00		Shear vs. Force Controlled	NA.	W. Committee of the com
Vall thickness (in)	8			200	
toof Trib (SF)	300			rmine m-factors Table 1	1-6
toof DL (psf)	20		fae/fme	0.023	
toof SL (psf)	25		L/heff	1/43	Programme and the programme and the
Mezz Trib (SF)	0		As (in^2)	0.31	Total Vertical Reinforcement
Aezz DL (psf)	0		ρ <sub>γ</sub>	0.00016	
Mezz LL (psf)	0		Av (in^2)	0.3	Total Vertical Reinforcement
and FLR Trib (SF)	150		ρ <sub>h</sub>	0.0002	
and FLR DL (psf)	35		p <sub>s</sub> fye/fme	0.019	
nd FLR LL (psf)	40		m-factor	6.8	
hearline Tot Shear (kips)	310.8	BSE-1E	m-factor restriction	7	
hearline Tot Length (ft)	20		m-factor used	6.8	
Applicable Wall Trib Length (ft)	20				
ielsmic Axial Load (kips)	0.0	Holdown Force From Wall Above		eformation Control DCR	
foldown to Wall Centroid (ft)	0.0		Shear DCR	9.21	
O, LS, CP	LS		Moment DCR	0.60	
			- Transaction		
	General Calculation			Force Control DCRs	
Vall Self-Weight (kips)	23.3		Shear DCR		
DL (kips)	11.3	Super-imposed Dt. @ Top of Wall	Moment DCR		
L (kips)	6,0				
£ (kips)	7.5		Out-Of-Pla	ne Capacity TMS 402-13,	Sec 9.3.5
.1(Qo + Qt +0.2*Qs)	46.3	Eq. 7-1	d (in)	4	
.9(Q <sub>a</sub> )	31.1	Eq. 7-2	a (in)	0.4	
hear/Unit Length (kip/ft)	15.5	50077	Mn (kip*ft)	13.8	
			Dwitterb tri	13.6	
Vall Shear (Q <sub>L</sub> ) (kips)	310.8	was a second second	1		
foment Generated from Holdown (kip*ft)	0.0	About Centroid of Wall	Out-Of-Plane Demands TMS 4		
			X	1.3	ASCE 41-13, Table 7-2, LS
	Wall Demands	I MANUARY	Sxs,1E	0.71	TO THE PARTY OF TH
(kips)	46,3	Eq. 7-34	h (ft)	14	Full Wall Height
(kips)	31.1	Eg. 7-34	w (psf)	100.0	Elevation Wall Unit Weight
(kips)	310.8		Fp*L (plf)	738.4	ASCE 41-13, Eq. 7-13
/ (kip*ft)	4351.2		Fp_min*L (plf)	260.0	ASCE 41-13, Eq. 7-14
			Mu,o (kip*ft)	18.09	
Low	er-Bound Vertical Compressive S	trength	n	39.8	
	1	Table 6-1	tsp (in)	8	
(in)	0.534	Weak Axis Radius of Gyration	c (in)	0.5	TMS 402-13, Eq. 9-35
/r	315	The state of the s	teff = Icr (in^4)	547	TMS 402-13, Eq. 9-34
ci. (kip)	50	TMS 402-13, Eq. 9-19, Eq. 9-20	Pe (kips)	140	TMS 402-13, Eq. 9-33
		1003 402-13, eq. 3-13, eq. 3-20	ι ε (κιμο)		
P <sub>CL</sub> (kip)	50		W .	1.497	TMS 402-13, Eq. 9-32
	2	LS	ΨMu,o (kip*ft)	27,07	TMS 402-13, Eq. 9-31
•	1.1		/		
10)					
C <sub>1</sub> C <sub>2</sub> C <sub>2</sub> +(Q <sub>2</sub> )/(JC1C2) (kip)	46.3		Out	Of-Plane DCR, Sec 11.3.5	5.3

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	Legend		Dete	rmine FC vs DC Table 1	1-6
nput			Mu/(Vudv)	0.06	
Calculated			у	1.0	#5 Bars or smaller
CR/Check			Vn (kips) upperbound	328	TMS 402-13, Eq. 9-22
			Vn (kips) upperbound		TMS 402-13, Eq. 9-23
	General Inputs		Vnm (kip)	220,7	TM5 402-13, Sec 9.3.4.1.2.1
ier ID	Grid E40		Vn (kip)	220.7	TMS 402-13, Equation 9-21
ocation/Gridline	E40		Holdown Anchor Rod As (in^2)	0.61	At one wall end
'm (psi)	810	Table 11-2(a)	a (in)	4.7	
im (ksi)	729	TMS 402-13, Sec 4.2.2.2.1	Distance from Edge of Wall to Rod (in)	4	
me (psi)	1053	Table 11-1	d (in)	236	
y (ksi)	40		Mn (kip*ft)	1081	
ye (ksi)	52		Ve (kip)	27	
s (ksi)	29000		Shear vs. Flexure Control	Flexure Control	10
fasonry Denisty (pcf)	125		An (in^2)	1920	
iominal Pier Length (ft)	20	<u> </u>	f <sub>ae</sub> (psi)	24.1	
		<del>-  </del> -		29/2	
ier Height (H)	14.00	<del>-  </del>	Shear vs. Force Controlled	NA NA	
Vall thickness (in)	8				52
oof Trib (SF)	300			mine m-factors Table 1	1-6
oof DL (psf)	20		fae/fme	0.023	
oof St. (psf)	25		L/heff	1.43	
Леzz Trib (SF)	0		As (in^2)	0.62	Total Vertical Reinforcement
/lezz DL (psf)	0		ρ,	0.00032	
Mezz LL (psf)	0		Av (in^2)	0.6	Total Vertical Reinforcement
nd FLR Trib (SF)	150		Ph	0.0005	
nd FLR DL (psf)	35		p <sub>a</sub> fye/fme	0.039	
nd FLR LL (psf)	40	nor or	m-factor	7.4	-4
hearline Tot Shear (kips)	483.6	BSE-2E	m-factor restriction	7	
hearline Tot Length (ft)	20		m-factor used	7.0	
Applicable Wall Trib Length (ft)	20				
eismic Axial Load (kips)	0.0	Holdown Force From Wall Above		formation Control DCR	5
foldown to Wall Centroid (ft)	0.0		Shear DCR	0.31	
O, LS, CP	CP		Moment DCR	0.89	
			1 12		
	General Calculation		- L	Farce Control DCRs	
Vall Self-Weight (kips)	29.3		Shear DCR		
L (kips)	40.3	Super-imposed DL @ Top of Wall	Moment DCR	45.0	
L (kips)	6.0		- I		
L (kips)	7.5		Out-Of-Plan	e Capacity TMS 402-13,	Sec 9.3.5
.1(Q <sub>0</sub> + Q <sub>1</sub> +0.2*Q <sub>5</sub> )	43,3	Eq. 7-1	d (in)	-4	
.9(Q <sub>0</sub> )	31.1	Eq. 7-2	a (in)	0.5	
hear/Unit Length (kip/ft)	24.2	TADA SA	Mn (kip*ft)	17.6	
Vall Shear (Q <sub>€</sub> ) (kips)	493.6		G.III.ANE.IV	4639	
	1 22		1 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2		
foment Generated from Holdown (kip*ft)	0.0	About Centroid of Wall	Out-Of-Plane Demands TMS 40		
	4.25 04 25 00 100 00 00		1 X	1	ASCE 41-13, Table 7-2, CP
MUDEL	Wall Demands	Paggraphy	Sxs,1E	1.11	42
(kips)	46.3	Eq. 7-34	h (ft)	14	Full Wall Height
(kips)	31,1	Eq. 7-34	w (psf)	100.0	Elevation Wall Unit Weight
(kips)	483.6		Fp*L (plf)	888.0	ASCE 41-13, Eq. 7-13
1 (kip*ft)	6770.4		Fp_min*L (plf)	200.0	ASCE 41-13, Eq. 7-14
			Mu,o (kip*ft)	21,76	
Low	er-Bound Vertical Compressive St			39.8	
	1	Table 6-1	tsp (in)	8	
in)	0,590	Weak Axis Radius of Gyration	c (in)	0.6	TMS 402-13, Eq. 9-35
r	285		leff = Icr (in^4)	669	TMS 402-13, Eq. 9-34
(kip)	61	TMS 402-13, Eq. 9-19, Eq. 9-20	Pe (kips)	170	TMS 402-13, Eq. 9-33
Po. (kip)	61	and and add a such add a sec.	w w	1,373	
O' turbi		12	- C		TMS 402-13, Eq. 9-32
	2	LS	PMu,o (kip*ft)	29.87	TMS 402-13, Eq. 9-31
C <sub>2</sub>	1.1				
<sub>G</sub> +(Q <sub>E</sub> )/(3C1C2) (kip)	46.3		Out-C	of-Plane DCR, Sec 11.3.	5.3
	0.75		Flexure DCR		

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	Legend	_	Det	ermine FC vs DC Table 1	1-6
input			Mu/(Vudv)	0.06	
Calculated			7.	1.0	#S Bars or smaller
DCR/Check			Vn (kips) upperbound	328	TMS 402-13, Eq. 9-22
			Vn (kips) upperbound	1 1 1	TMS 402-13, Eq. 9-23
	General Inputs		Vnm (kip)	219.5	TMS 402-13, Sec 9.3.4.1.2.1
Pier ID	Grid E40		Vn (kip)	219.5	TMS 402-13, Equation 9-21
Location/Gridline	E40		Holdown Anchor Rod As (in^2)	0.61	At one wall end
ľm (psi)	810	Table 11-2(a)	a (in)	4.7	
Em (ksi)	729	TMS 402-13, Sec 4.2.2.2.1	Distance from Edge of Wall to Rod (in)	. 4	
fme (psi)	1053	Table 11-1	d (in)	236	
y (ksi)	40		Mn (kip*ft)	589	
fye (ksi)	52		Ve (kip)	71	
Es (ksi)	29000		Shear vs. Flexure Control	Flexure Control	
Masonry Denisty (pcf)	125		An (in^2)	1920	
Nominal Pier Length (ft)	20		f <sub>ac</sub> (psi)	17.7	
Pier Height (H)	14.00		Shear vs. Force Controlled	NA:	
Wall thickness (in)	8				
Roof Trib (SF)	300		Dete	ermine m-factors Table .	11-6
Roof DL (psf)	20		fae/fme	0.017	
Roof SL (psf)	25		L/heff	1.43	
Mezz Trib (SF)	0		As (in^2)	0.31	Total Vertical Reinforcement
Mezz DL (psf)	0		ρ,	0.00016	
Mezz LL (psf)	0		Av (in^2)	0.3	Total Vertical Reinforcement
2nd FLR Trib (SF)	0		ρ <sub>h</sub>	0.0002	
2nd FLR DL (psf)	35		ρ <sub>s</sub> fye/fme	0.019	
2nd FLR LL (psf)	40		m-factor	6.8	
Shearline Tot Shear (kips)	150.4	BSE-1E	m-factor restriction	7	
Shearline Tot Length (ft)	20	BJE-IE	m-factor used	6.8	
Applicable Wall Trib Length (ft)	20		in-necor oscu	9.0	
Seismic Axial Load (kips)	0.0	Holdown Force From Wall Above		eformation Control DCR	*
Holdown to Wall Centroid (ft)	0.0	Tholadwir raice from Wall Above	Shear DCR	0.10	
IO, LS, CP	LS		Moment DCR	8.31	
105,105,51					
	General Calculation			Force Control DCRs	
Wall Self-Weight (kips)	29.3		Shear DCR		
DL (kips)	6.0	Super-imposed DL @ Top of Wall	Moment DCR		
LL (kips)	210				
SL (kips)	7.5		Out-Of-Pla	ne Capacity TMS 402-13	, Sec 9.3.5
1.1(Q <sub>0</sub> + Q <sub>1</sub> +0.2*Q <sub>5</sub> )	33.9	Eq. 7-1	d (in)	-4	
0.9(Q <sub>q</sub> )	28.4	Eq. 7-2	a (in)	0.3	
Shear/Unit Length (kip/ft)	7.5	CQ: 376	Mn (kip*ft)	12,5	
	\$50.4		[Mit Jup 10]	1410	
Wall Shear (Q <sub>L</sub> ) (kips)		W. D. S. D. WOOD		*** **** * * * * * * * * * * * * * * * *	
Moment Generated from Holdown (kip*ft)	10	About Centroid of Wall	Out-Of-Plane Demands TMS	1.3	ASCE 41-13, Table 7-2, LS
			] X	- 0.71	ASCE 41-13, Table 7-2, 15
Miles	Wall Demands	En 7.24	Sxs,1E h (ft)	14	Full Wall Height
P (kips)	33.9	Eq. 7-34 Eq. 7-34	w (psf)	1000	Elevation Wall Unit Weight
P (kips)	26.4 150.4	Eq. 7-34	Fp*L (pif)	736.4	ASCE 41-13, Eq. 7-13
/ (kips)				2000	ASCE 41-13, Eq. 7-14
M (kip*ft)	2105,6		Fp_min*L (plf) Mu,o (kip*ft)	1805	Marc 41-13/ cd: 1-14
Facces	-Bound Vertical Compressive S	tranath	mu,o (kip-it)	39.9	
Lower	-Bound Vertical Compressive S	Table 6-1	tsp (in)	350s	
(fig)	0.516	Weak Axis Radius of Gyration	c (in)	0.8	TMS 402-13, Eq. 9-35
(in)	325	reak rivis naulus of Gyration	leff = tcr (in*4)	512	TMS 402-13, Eq. 9-34
	47	This 402 12 Ea D 10 Ea D 20		-331	TMS 402-13, Eq. 9-33
Ct (kip)		TMS 402-13, Eq. 9-19, Eq. 9-20	Pe (kips)		
(P <sub>CL</sub> (kip)	47		Ψ.	1.351	TM5 402-13, Eq. 9-32
J	2	LS	Ψ'Mu,o (kip*ft)	28,44	TMS 402-13, Eq. 9-31
:,c,	1.1				
Q <sub>c</sub> +(Q <sub>c</sub> )/(JC1C2) (kip)	33,9		Out	Of-Plane DCR, Sec 11.3.	5.3
DCR	0.73		Flexure DCR	0.9	

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	Legend		Dete	rmine FC vs DC Table	11-6
nput			Mu/(Vudv)	0.06	
Calculated			7	1.0	#5 Bars or smaller
DCR/Check			Vn (kips) upperbound	328	TMS 402-13, Eq. 9-22
			Vn (kips) upperbound		TMS 402-13, Eq. 9-23
	General Inputs		Vnm (kip)	219.5	TMS 402-13, Sec 9.3.4.1.2.1
Pier ID	Grid E40		Vn (kip)	219.5	TMS 402-13, Equation 9-21
Location/Gridline	E40		Holdown Anchor Rod As (In^2)	0.61	At one wall end
°m (psi)	810	Table 11-2(a)	a (in)	4.7	
Em (ksi)	729	TMS 402-13, Sec 4.2.2.2.1	Distance from Edge of Wall to Rod (in)	4	
me (psi)	1053	Table 11-1	d (in)	286	
y (ksi)	40		Mn (kip*ft)	939	<u> </u>
ye (ksi)	52		Ve (kip)	74	
Es (ksi)	29000		Shear vs. Flexure Control	Flexure Control	
Masonry Denisty (pcf)	125		An (in^2)	1920	
Yominal Pier Length (ft)	20		f <sub>ae</sub> (psi)	17.7	
ier Height (H)	14.00		Shear vs. Force Controlled	RA:	
Vall thickness (in)	8			- IIAHI	
oof Trib (SF)	300		Deter	mine m-factors Table	11-6
Roof DL (psf)	20		fae/fme	0.017	
Roof SL (psf)	25		L/heff	1.43	
Mezz Trib (SF)	0		As (in^2)	0.62	Total Vertical Reinforcement
Aezz DL (psf)	0		Pv	0.00032	
Aezz LL (psf)	0		Av (in^2)	0.6	Total Vertical Reinforcement
nd FLR Trib (SF)	0		- Parameter	0.0005	Total vertical Ammorcement
AND THE PROPERTY OF THE PROPER			ρ <sub>h</sub>		
and FLR DL (psf)	35		ρ <sub>ε</sub> fye/fme	0.039	
nd FLR LL (psf)	40	100000000000000000000000000000000000000	m-factor	7,5	
hearline Tot Shear (kips)	234	BSE-2E	m-factor restriction	77	
hearline Tot Length (ft)	20		m-factor used	7.0	
pplicable Wall Trib Length (ft)	20				
eismic Axial Load (kips)	0.0	Holdown Force From Wall Above		formation Control DC	Rs
foldown to Wall Centroid (ft)	0,0		Shear DCR	0.15	
O, LS, CP	CP	,	Moment DCR	0.47	
	General Calculation			Force Control DCRs	
Vall Self-Weight (kips)	23.3		Shear DCR		
DL (kips)	6.0	Super-imposed DL @ Top of Wall	Moment DCR		
L (kips)	0.0				
L (kips)	7.5			e Capacity TMS 402-1	3, Sec 9.3.5
.1(Q <sub>b</sub> + Q <sub>t</sub> +0,2*Q <sub>s</sub> )	33.9	Eq. 7-1	d (in)	- 4	
.9(Q <sub>0</sub> )	26.4	Eq. 7-2	a (in)	0.4	
hear/Unit Length (kip/ft)	11.7		Mn (kip*ft)	16.3	
Vall Shear (Q <sub>E</sub> ) (kips)	234				
foment Generated from Holdown (kip*ft)	0.0	About Centroid of Wall	Out-Of-Plane Demands TMS 40	2-13 Sec 9.3.5 & ASCE	41-13 Section 11.3.5>7.2.11
The state of the s	4.5	LIBERTARIUS III III III	y	1	ASCE 41-13, Table 7-2, CP
	Wall Demands		Sxs,1E	1.11	7. 7. 7. 7. 7. 7. 7. 7. 7. 7. 7. 7. 7. 7
(kips)	33.9	Eq. 7-34	h (ft)	14	Full Wall Height
(kips)	26.4	Eq. 7-34	w (psf)	100.0	Elevation Wall Unit Weight
(kips)	234		Fp*L(plf)	888.0	ASCE 41-13, Eq. 7-13
(kip*ft)	3276.0	C 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Fp_min*L (plf)	200.0	ASCE 41-13, Eq. 7-14
	38.00	<del></del>	Mu,o (kip*ft)	21.76	and the say say a say
Lower-R	ound Vertical Compressive S	trenath	1 0	39.8	
LOWER	1	Table 6-1	tsp (in)	8	
(in)	0,578	Weak Axis Radius of Gyration	c (in)	0.5	TMS 402-13, Eq. 9-35
r	290	Transferred at Alleran	leff = icr (in^4)	642	TMS 402-13, Eq. 9-34
x (kip)	59	TMS 402-13, Eq. 9-19, Eq. 9-20	Pe (kips)	164	TMS 402-13, Eq. 9-33
		11112 TOE-23, eq. 3-23, eq. 3-20	Ф		TARGETT SOLES FOR THE SOLES FOR THE
Ct (kip)	59			1.261	TMS 402-13, Eq. 9-32
	2	LS	ΨMu,o (kip*ft)	27,44	TMS 402-13, Eq. 9-31
1C2	1.1		01		
G+(Qc)/(IC1C2) (kip)	33.9	_ 4	Out-0	f-Plane DCR, Sec 11.3	.5.3
CR			Flexure DCR		

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Controlled   Control   C		Legend		Dete	rmine FC vs DC Table 1	1-6
Calculated	Input					
College				v v	1.0	#5 Bars or smaller
	A CONTRACTOR OF THE CONTRACTOR			Vn (kips) upperbound	328	
Content   Con	STATE OF THE STATE		· ·			
Proceedings		General Inputs			220.7	
Section   Sect	Pier ID					
mg   mg   mg   mg   mg   mg   mg   mg			· · · · · · · · · · · · · · · · · · ·			
Immission   7-99   TMS-802-18, Seet 2, 22.31   Contract from Edge of Wail to Rode (iii)   4   Contract from Edge of Wail to Rode (iii)   225   Contract from Edge of Wail to Rode (iii)			Table 11-2(a)			10
Fig.   103						
Victor   40   40   52   52   53   53   53   54   54   54   54   54						
Ver (sign)						
Second Policy (perf)   125   130   130   140						
Assempt perhative part   125   126						
Shear vs. Force Controlled   Sa	TO SECURITION OF THE SECURITIO					
National Control (1971   1972   1973   1974   197					24.1	
Determine Infortor Table 11-6   Control (1)   Control (1				Shear vs. Force Controlled	Min	
Description   Description				200		area.
As [in						1-6
A						
Apr   Apr						
Rez.LL (pdf)				As (in^2)		Total Vertical Reinforcement
Description for Section   150   15	fezz DL (psf)					<u> </u>
of Fie DL (psf)         35           of Fie DL (psf)         40           nearline Tot Shear (lips)         36.8         85E-1E           nearline Tot Length (ft)         20           place place Wall Find Length (ft)         20           place place Wall Find Length (ft)         20           place place Wall Find Length (ft)         20           place place Wall Find Length (ft)         0.0           place place Wall Length (ft)         0.0           place place Wall Length (ft)         0.0           place place Wall Length (ft)         0.0           place Place Wall Length (ft)         0.0           place Place Wall Length (ft)         0.0           place Place Wall Length (ft)         0.0           place Place Wall Length (ft)         0.0           place Place Wall Length (ft)         4.6           place Place Wall Le	Mezz LL (psf)	0		Av (in^2)	0.3	Total Vertical ReInforcement
of Fie DD (psf)         35           of Fie DD (psf)         35           nearline Tot Shear (lips)         35.8.8         855-1E           nearline Tot Length (ft)         20           pollicable Wall Triol Length (ft)         20           pollicable Wall Triol Length (ft)         20           pollicable Wall Triol Length (ft)         20           pollicable Wall Triol Length (ft)         0.0           pollicable Wall Triol Length (ft)         4.6           pollicable Wall Triol Length (ft)         4.6           pollicable Wall Triol Length (ft)         4.6           pollicable Wall Triol Length (ft)         4.	nd FLR Trib (SF)	150		Ph	0.0002	
MF.REL ([spf] 4.0	- Caraller and Car			o_fve/fme		
Interaction   10.5   Sec   List						
In-factor used   6.8   In-factor used   6.8   In-factor used   6.8   In-factor used   6.8   In-factor used			955 15			
Deformation Control DCRs   Deformation Control DCRs			036-16			
Defamation Control DCRs			<del>_</del>	m-ractor used	9,9	
Shear DCR   She			N. ry			20
Self-Weight (kips)   23.3			Holdown Force From Wall Above		formation Control DCK	
					0.27	
Nation   N	D, LS, CP	LS		Moment DCR	0.76	
Nation   N		CAROLOGICA DE LA CAROLA DE LA PORTE DE LA		7 (	ACCOUNT NAME	
Moment DCR				-	Force Control DCRs	
L(kips)   6.0						
L (kips)			Super-Imposed DL @ Top of Wall	Moment DCR		
A   A   A   A   A   A   A   A   A   A				-	-5 77-50-13-15-13-13	2-242
Second   S						Sec 9.3.5
Mail   Shear   Color   Kips   Shear   Color   Col	1(Q <sub>0</sub> + Q <sub>1</sub> +0.2*Q <sub>5</sub> )	46.3	Eq. 7-1	d (in)	4	
All Shear (Qc) (kips)   396.8	9(Q <sub>0</sub> )	31.1	Eq. 7-2	a (in)	0.4	
Vall Shear (Q <sub>e</sub> ) (kips)   396.8	hear/Unit Length (kip/ft)	19.8				
About Centroid of Wall				V BOUDONI MODEL		11111
X			About Centroid of Wall	Out-Of-Plane Demands TMC At	12.13 Car Q 2 5 & ACFE	11-13 Section 11 3 S->7 2 11
Sks,1E   0.71	omen, generated from Holdown (kip 10)	0.0	Lyonar Centrola of Wall	Out-Oj-Flane Demonds TMS 40		
Kips   46.3   Eq. 7-34   Kips   31.1   Eq. 7-34   W (psf)   100.0   Elevation Wall Unit Weight (kips)   396.8   Fp*L(pif)   738.4   ASCE 41-13, Eq. 7-13		Wall Demands		Sw 15		Mace 41-13, 180le 7-2, 13
(kips)   31.1   Eq. 7-34     w (pst)   100.0   Elevation Wall Unit Weight (kips)   396.8     Fp*t (pit)   738.4   ASCE 41-13, Eq. 7-13   Fp*t (pit)   260.0   ASCE 41-13, Eq. 7-14   Mu.o (kip*tt)   18.09   Mu.o (kip*tt)	(Island)		En 2 34			Sull Wall Height
Kips   396.8						
Fp_min*L(pil)   260.0   ASCE 41-13, Eq. 7-14   Mu.o (kip*ft)   18.09			Eq. 7-34			
Mu,o (kip*ft)   18.09						
Compressive Strength   1   Table 6-1   1   15p (in)   8   15p (in)   8.5   15p (in)   0.5   15m (sq. 9-35   15p (in)   15p (in)   0.5   15m (sq. 9-35   15p (in)	(Kip*It)	5555.2				A3CE 41-13, Eq. 7-14
1   Table 6-1     tsp (in)   8		Tribunitari a	- /a	Mu,o (kip*ft)		
C   C   C   C   C   C   C   C   C   C	Lower-Bo			In .		
F   315						
L (kip) 50 TMS 402-13, Eq. 9-19, Eq. 9-20 Pe (kips) 140 TMS 402-13, Eq. 9-33 Ψ 1.497 TMS 402-13, Eq. 9-32 Ψ 1.497 TMS 402-13, Eq. 9-32 Ψ 2. US ΨΜυ,ο (kip*ft) 27.07 TMS 402-13, Eq. 9-31 Φ 1.497 TMS 402-13, Eq. 9-32 Ψ 1.497 TMS 402-13, Eq.		0,000	Weak Axis Radius of Gyration			
Φ <sub>CL</sub> (kip)     50     Ψ     1.497     TMS 402-13, Eq. 9-32       ΨMu, σ (kip*ft)     27.07     TMS 402-13, Eq. 9-31       C2     1.1     46,3     Out-Of-Plane DCR, Sec 11.3.5.3						
2 LS ΨMu,o (kip*ft) 27.07 TMS 402-13, Eq. 9-31  C2 1.1  σ+(Q <sub>ℓ</sub> )/(IC1C2) (kip) 46,3 Out-Of-Plane DCR, Sec 11.3.5.3	t (kip)	50	TM5 402-13, Eq. 9-19, Eq. 9-20	Pe (kips)	140	TMS 402-13, Eq. 9-33
2 LS ΨMu,o (kip*ft) 27.07 TMS 402-13, Eq. 9-31 (C <sub>2</sub> 1.1 g+(Q <sub>2</sub> )/(JC1C2) (kip) 46,3 Out-Of-Plane DCR, Sec 11.3.5.3		50		Ψ	1.497	TMS 402-13, Eq. 9-32
1.1 (g+(Q <sub>ℓ</sub> )/(IC1C2) (kip) (46,3 (Out-Of-Plane DCR, Sec 11.3.5.3)			IS			
<sub>0</sub> +(Q <sub>ℓ</sub> )/(IC1C2) (kip) 46,3 Out-Of-Plane DCR, Sec 11.3.5.3	C:		100.1	1. more last at	E/IO/	THIS TOK AS LICE STOLE
				The second second		2724
					OJ-Plane DCR, Sec 11.3.	5.3

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	Legend		244	rmine FC vs DC Table 1:	1.6
	cegena			0.06	1-8
nput			Mu/(Vudv)		Mr. David and Mark
Calculated			Y	1.0	#5 Bars or smaller
DCR/Check			Vn (kips) upperbound	328	TMS 402-13, Eq. 9-22
	General Contract and Contract		Vn (kips) upperbound	222.1	TMS 402-13, Eq. 9-23
No. 10 Personal Property Control of the Control of	General Inputs		Vnm (kip)	222.1	TMS 402-13, Sec 9.3.4.1.2.1
Pier ID	Grid ESS		Vn (kip)		TMS 402-13, Equation 9-21
ocation/Gridline	ESS		Holdown Anchor Rod As (In^2)	0.61	At one wall end
'm (psi)	810	Table 11-2(a)	a (in)	4.7	
m (ksi)	729	TMS 402-13, Sec 4.2.2.2.1	Distance from Edge of Wall to Rod (in)	4	
me (psi)	1053	Table 11-1	d (in)	236	
y (ksi)	40	1	Mn (kip*ft)	1191	
ye (ksi)	52		Ve (kip)	85	
s (ksi)	29000		Shear vs. Flexure Control	Flaxure Control	
fasonry Denisty (pcf)	125		An (in^2)	1920	
ominal Pier Length (ft)	20		f <sub>ae</sub> (psi)	31.3	
ier Height (H)	14.00		Shear vs. Force Controlled	NA	
Vall thickness (in)	8				
oof Trib (SF)	350			mine m-factors Table 1	1-6
oof DL (psf)	20		fae/fme	0.030	
oof SL (psf)	25		L/heff	1.43	
Mezz Trib (SF)	0		As (in^2)	0.62	Total Vertical Reinforcement
fezz DL (psf)	0		ρε	0.00032	
Aezz LL (psf)	0		Av (in^2)	0.6	Total Vertical Reinforcement
nd FLR Trib (SF)	300		D <sub>b</sub>	0.0005	
CANADA CONTRACTOR CONT				0.039	
nd FLR DL (psf)	35		ρ <sub>ε</sub> fye/fme	TATISTA IS	
nd FLR LL (psf)	40		m-factor	7,3	
hearline Tot Shear (kips)	617.2	BSE-2E	m-factor restriction	8	
hearline Tot Length (ft)	20		m-factor used	7.3	
pplicable Wall Trib Length (ft)	20				
eismic Axial Load (kips)	0.0	Holdown Force From Wall Above		formation Control DCR:	
foldown to Wall Centroid (ft)	0.0		Shear DCR	0.86	
D, LS, CP	CP		Moment DCR	0.99	
	General Calculation			Force Control DCRs	
Vall Self-Weight (kips)	23.3		Shear DCR		
N. (kips)	1.7.5	Super-imposed DL @ Top of Wall	Moment DCR		11
L (kips)	12.0				
L (kips)	5.8	- AC		e Capacity TMS 402-13,	Sec 9.3.5
.1(Q <sub>0</sub> + Q <sub>1</sub> +0.2*Q <sub>5</sub> )	65/0	Eq. 7-1	d (in)	4	
.9(Q <sub>0</sub> )	35/8	Eq. 7-2	a (in)	0.5	
hear/Unit Length (kip/ft)	30.9		Mn (kip*ft)	19.1	
Vall Shear (Q <sub>€</sub> ) (kips)	517.2		Contract of		
Ioment Generated from Holdown (kip*ft)	66	About Control of Mall	Out-Of-Plane Demands TMS 40	2 12 5 0 2 5 0 4555	11 12 Familia 11 2 F . 2 2 11
ioment Generated from Holdown (kip-ft)	Man	About Centroid of Wall	Out-Oj-Plane Demanas 1 ms 40	1	ASCE 41-13, Table 7-2, CP
	WATER TO SERVICE		7 2	1.11	ASCE 41-13, 1able 7-2, CP
(GI-a)	Wall Demands	S- 7.24	Sxs,1E h (ft)	14	Full Wall Height
(kips)	50:0 36:8	Eq. 7-34 Eq. 7-34		100/0	Elevation Wall Unit Weight
(kips)		cq. /-34	w (psf)	388.0	ASCE 41-13, Eq. 7-13
(kips)	\$17.1		Fp*L (plf)		
(kip*ft)	8640,8		Fp_min*L (plf)	2000	ASCE 41-13, Eq. 7-14
			Mu,o (kip*ft)	91,75	+
Lower-Box	and Vertical Compressive 5		- I	19.6	
	1	Table 6-1	tsp (in)	- 3	
in)	0,604	Weak Axis Radius of Gyration	c (in)	0.7	TMS 402-13, Eq. 9-35
lr	278	0.0000000 02004 1 da FM (0217) 2000	leff = Icr (in^4)	599	TMS 402-13, Eq. 9-34
ca (kip)	64	TM5 402-13, Eq. 9-19, Eq. 9-20	Pe (kips)	173	TMS 402-13, Eq. 9-33
Pcs (kip)	64		The state of the s	1.508	TMS 402-13, Eq. 9-32
-	2	LS	ΨMu,o (kip*ft)	37,81	TMS 402-13, Eq. 9-31
ic,	1.1		1		
No.			1 2000	of Name DEC Co. 41 2 1	
l <sub>G</sub> +(Q <sub>c</sub> )/(JC1C2) (kip)	60.0		Flexure DCR	Of-Plane DCR, Sec 11.3.	7.3
DCR	0.04				

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	Legend		Dete	rmine FC vs DC Table 1	1-6
Input			Mu/(Vudv)	0.06	
Calculated			γ	1.0	#5 Bars or smaller
DCR/Check			Vn (kips) upperbound	328	TMS 402-13, Eq. 9-22
			Vn (kips) upperbound		TMS 402-13, Eq. 9-23
	General Inputs		Vnm (kip)	219,5	TMS 402-13, Sec 9.3.4.1.2.1
Pier ID	Grid E55		Vn (kip)	219.5	TMS 402-13, Equation 9-21
location/Gridline	E55		Holdown Anchor Rod As (in^2)	0.61	At one wall end
'm (psi)	810	Table 11-2(a)	a (in)	4.7	
Em (ksi)	729	TMS 402-13, Sec 4.2.2.2.1	Distance from Edge of Wall to Rod (in)	4	
me (psi)	1053	Table 11-1	d (in)	235	
fy (ksi)	40		Mn (kip*ft)	989	
fye (ksi)	52		Ve (kip)	74	
Es (ksi)	29000		Shear vs. Flexure Control	Elegure Control	
Masonry Denisty (pcf)	125		An (in^2)	1920	
Naminal Pier Length (ft)	20		f <sub>se</sub> (psi)	17.7	
				NA.	
Pier Height (H)	14.00		Shear vs. Force Controlled		
Wall thickness (in)	8		4		Table 1
Roof Trib (SF)	300			mine m-factors Table 1	1-6
Roof DL (psf)	20		fae/fme	0.017	
Roof St. (psf)	25		L/heff	1.43	
Mezz Trib (SF)	\(\rangle 0\)		As (in^2)	0.31	Total Vertical Reinforcement
Vezz DL (psf)	0		ρν	0.00016	- Z
Mezz LL (psf)	0		Av (in^2)	0.3	Total Vertical Reinforcement
2nd FLR Trib (SF)	0		ρ <sub>h</sub>	0:0002	
2nd FLR DL (psf)	35		ρ₂fye/fme	0.019	
Ind FLR LL (psf)	40	Ana. u.b.:	m-factor	6.8	
hearline Tot Shear (kips)	192	BSE-1E	m-factor restriction	7	
Shearline Tot Length (ft)	20		m-factor used	6.8	
Applicable Wall Trib Length (ft)	20				
seismic Axial Load (kips)	0.0	Holdown Force From Wall Above		formation Control DCR	5
foldown to Wall Centroid (ft)	0.0		Shear DCR -	0.13	
O, LS, CP	LS		Moment DCR	0.10	
			72 //2		
	General Calculation			Force Control DCRs	
Wall Self-Weight (kips)	23.3		Shear DCR		
OL (kips)	5.0	Super-imposed DL @ Top of Wall	Moment DCR		
L (kips)	0.0				
St. (kips)	7/5		Out-Of-Plan	e Capacity TMS 402-13,	Sec 9.3.5
$1.1(Q_0 + Q_1 + 0.2^*Q_5)$	33.5	Eq. 7-1	d (in)		
- Contract - Contract					_
.9(Q <sub>0</sub> )	25,4	Eq. 7-2	a (in)	6.3	
Shear/Unit Length (kip/ft)	9.6		Mn (kip*ft)	12:5	t.
Wall Shear (Q <sub>E</sub> ) (kips)	191		- U		
Noment Generated from Holdown (kip*ft)	6.0	About Centroid of Wall	Out-Of-Plane Demands TMS 40	02-13 Sec 9.3.5 & ASCE 4	
			Z.	1.3	ASCE 41-13, Table 7-2, LS
(A)	Wall Demands		Sxs,1E	0.71	
(kips)	33.9	Eq. 7-34	h (ft)	14	Full Wall Height
(kips)	26.4	Eq. 7-34	w (psf)	1000	Elevation Wall Unit Weight
(kips)	192		Fp*L (pif)	732.4	ASCE 41-13, Eq. 7-13
// (kip*ft)	2688.0		Fp_min*L(plf)	269.0	ASCE 41-13, Eq. 7-14
	22333		Mu,o (kip*ft)	12.69	and de attached
Lau	er-Bound Vertical Compressive St	renath	in the state of th	39.8	
Low	1	Table 6-1	tsp (in)	35.6	
(in)	0.516	Weak Axis Radius of Gyration	c (in)	0.4	TMS 402-13, Eq. 9-35
(in)	325	vyeak Axis nadius of Gyration		512	TMS 402-13, Eq. 9-35
/r			leff = lcr (in^4)		
cı (kip)	47	TMS 402-13, Eq. 9-19, Eq. 9-20	Pe (kips)	131	TMS 402-13, Eq. 9-33
P <sub>CL</sub> (kip)	47		Ψ	1,35).	TMS 402-13, Eq. 9-32
	2	L5	Y'Mu,o (kip*ft)	26,44	TMS 402-13, Eq. 9-31
1C2	1.1		- Wilderstand	- PERMINE	
l <sub>G</sub> +(Q <sub>E</sub> )/(JC1C2) (kip)				V Nove DC0 * ** *	
	33.9		Out-C	of-Plane DCR, Sec 11.3.5	7.3
DCR	0.73	_	Flexure DCR	Commence Commence	

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d By:

	Legend		Det	ermine FC vs DC Table 1	1-6
Input			Mu/(Vudv)	0.06	
Calculated			7	1.0	#5 Bars or smaller
DCR/Check			Vn (kips) upperbound	328	TMS 402-13, Eq. 9-22
			Vn (kips) upperbound		TMS 402-13, Eq. 9-23
	General Inputs		Vnm (kip)	219.5	TMS 402-13, Sec 9.3.4.1.2.1
Pier ID	Grid E55		Vn (kip)	219.5	TMS 402-13, Equation 9-21
Location/Gridline	ESS		Holdown Anchor Rod As (in^2)	0.61	At one wall end
"m (psi)	810	Table 11-2(a)	a (in)	4.7	THE STILL WELL LING
Ern (ksi)	729	TMS 402-13, Sec 4.2.2.2.1	Distance from Edge of Wall to Rod (in)	4	
	1053	Table 11-1		325	
me (psi)		Vable 11-1	d (in)		
y (ksi)	40		Mn (kip*ft)	669	
ye (ksi)	52		Ve (kip)	3/2	
s (ksi)	29000		Shear vs. Flexure Control	Flancure Control	
Masonry Denisty (pcf)	125		An (in^2)	1920	
Iominal Pier Length (ft)	20		f <sub>ee</sub> (psi)	17.7	
ier Height (H)	14.00		Shear vs. Force Controlled	NA NA	
Vall thickness (in)	8		112-27-24-24-44-25-24-44-25-2		
oof Trib (SF)	300		Dete	rmine m-factors Table 1	1-6
toof OL (psf)	20		fae/fme	0.017	
toof SL (psf)	25		L/heff	1.43	
Mezz Trib (SF)	0		As (in^2)	0.62	Total Vertical Reinforcemen
Aezz DL (psf)	0		p <sub>v</sub>	0.00032	The state of the s
			Av (in^2)	0.6	Total Vortical Painferson
Mezz LL (psf)	0				Total Vertical Reinforcemen
nd FLR Trib (SF)	0		ρh	0.0005	
nd FLR DL (psf)	35		ρ <sub>g</sub> (ye/fme	0.039	
nd FLR LL (psf)	40		m-factor	7.5	
hearline Tot Shear (kips)	298.6	BSE-2E	m-factor restriction	7	
hearline Tot Length (ft)	20		m-factor used	7.0	
Applicable Wall Trib Length (ft)	20				
eismic Axial Load (kips)	0.0	Holdown Force From Wall Above	1 1	eformation Control DCR	
foldown to Wall Centroid (ft)	0.0	TIGIGORNI GICE ITOM WILL PLOTE	Shear DCR	0.19	
O, LS, CP	CP CP		Moment DCR	0.60	
U, LJ, LF	Cr.		Moneyork	79(50)	
	General Calculation		1 [	Force Control DCRs	
Vali Self-Weight (kips)	23.3		Shear DCR	Porce control bens	
	6.0		- Contract C		
A (kips)	2.0	Super-imposed DL @ Top of Wall	Moment DCR		
L (kips)			-		
L (kips)	7.5	*		ne Capacity TMS 402-13,	Sec 9.3.5
.1(Q <sub>0</sub> + Q <sub>1</sub> +0.2*Q <sub>5</sub> )	33.9	Eq. 7-1	d (in)		
1910-01 191 199		Light your	0 (111)	4	
All Designation of the Control of th	26.4	Eq. 7-2	a (in)	0.4	
).9(Q <sub>0</sub> )	26.4	- Carrier - Carr	a (in)	0.4	
.9(Q <sub>o</sub> ) hear/Unit Length (kip/ft)	26.4 14.9	- Carrier - Carr	- International Control of the Contr		
.9(Q <sub>0</sub> ) hear/Unit Length (kip/ft) /all Shear (Q <sub>e</sub> ) (kips)	26.4 14.9 235.5	Eq. 7-2	a (in) Mn (kip*ft)	0.4 16.3	11.13 Seeding 11.25 . 32.44
.9(Q <sub>0</sub> ) hear/Unit Length (kip/ft) Vall Shear (Q <sub>e</sub> ) (kips)	26.4 14.9	- Carrier - Carr	a (in)	0.4 16.3 102-13 Sec 9.3.5 & ASCE	
.9(Q <sub>0</sub> ) hear/Unit Length (kip/ft) Vall Shear (Q <sub>e</sub> ) (kips)	26.4 14.9 225.5 0.0	Eq. 7-2	a (in) Mn (kip*ft)  Out-Of-Plane Demands TMS 4 X	0.4 16.3 102-13 Sec 9.3.5 & ASCE 4	11-13 Section 11.3.5>7.2.11 ASCE 41-13, Table 7-2, CP
.9(Q <sub>0</sub> ) hear/Unit Length (kip/ft) Vali Shear (Q <sub>2</sub> ) (kips) foment Generated from Holdown (kip*ft)	26.4 (14.9 205.6 0.0 Wall Demands	Eq. 7-2 About Centroid of Wall	a (in) Mn (kip*ft)  Out-Of-Plane Demands TMS 4 X Sxs,1E	0.4 16.3 102-13 Sec 9.3.5 & ASCE 4 1 1,11	ASCE 41-13, Table 7-2, CP
.9(Q <sub>0</sub> ) hear/Unit Length (kip/ft) Vall Shear (Q <sub>e</sub> ) (kips) forment Generated from Holdown (kip*ft) (kips)	26.4 14.9 205.5 0.0 Wall Demands 30.5	Eq. 7-2 About Centroid of Wall Eq. 7-34	a (in) Mn (kip*ft)  Out-Of-Plane Demands TMS - X Sxs,1E h (ft)	0.4 16.3 102-13 Sec 9.3.5 & ASCE 4 1 1,11 14	ASCE 41-13, Table 7-2, CP Full Wall Height
.9(Q <sub>0</sub> ) hear/Unit Length (kip/ft) Vall Shear (Q <sub>0</sub> ) (kips) foment Generated from Holdown (kip*ft) (kips) (kips)	26.4 14.9 205.5 0.0 Wall Demands 325.5 26.4	Eq. 7-2 About Centroid of Wall	a (in) Mn (kip*ft)  Out-Of-Plane Demands TMS 4  X  Sxs,1E h (ft) w (psf)	0,4 16.3 002-13 Sec 9,3.5 & ASCE 4 1 1,111 14 139.0	ASCE 41-13, Table 7-2, CP Full Wall Height Elevation Wall Unit Weight
.9(Q <sub>0</sub> ) hear/Unit Length (kip/ft) Vall Shear (Q <sub>0</sub> ) (kips) Anoment Generated from Holdown (kip*ft) (kips) (kips) (kips)	26.4 (14.9 205.6 0.0 Wall Demands 305.5 26.4 258.6	Eq. 7-2 About Centroid of Wall Eq. 7-34	a (in) Mn (kip*ft)  Out-Of-Plane Demands TMS - X.  Sxs,1E In (ft) W (psf) Fp*( (pif)	0.4 16.3 002-13 Sec 9.3.5 & ASCE 4 1 1.11 14 12930 3020	ASCE 41-13, Table 7-2, CP Full Wall Height Elevation Wall Unit Weight ASCE 41-13, Eq. 7-13
.9(Q <sub>0</sub> ) hear/Unit Length (kip/ft) fall Shear (Q <sub>0</sub> ) (kips) foment Generated from Holdown (kip*ft) (kips) (kips) (kips)	26.4 14.9 205.5 0.0 Wall Demands 325.5 26.4	Eq. 7-2 About Centroid of Wall Eq. 7-34	a (in) Mn (kip*ft)  Out-Of-Plane Demands TMS 4  X. Sxs,1E h (ft) w (psf) Fp*L (plf) Fp_min*L (plf)	0.4 16.3 102-13 Sec 9.3.5 & ASCE 4 1 1.11 14 137-10 2026 2046	ASCE 41-13, Table 7-2, CP Full Wall Height Elevation Wall Unit Weight
9(Q <sub>0</sub> ) hear/Unit Length (kip/ft) fall Shear (Q <sub>0</sub> ) (kips) hear/Unit Length (kip/ft) hear/Unit Length (kip/ft) hear/Unit Length (kips) hear/Unit Length (kip*ft)	26.4 14.9 235.5 0.0 Wall Demands 32.5 26.4 259.6 4372.8	Eq. 7-2  About Centroid of Wall  Eq. 7-34  Eq. 7-34	a (in) Mn (kip*ft)  Out-Of-Plane Demands TMS - X.  Sxs,1E In (ft) W (psf) Fp*( (pif)	0.4 16.3 102-13 Sec 9.3.5 & ASCE 4 1 1.11 14 139.0 3920 2030 2136	ASCE 41-13, Table 7-2, CP Full Wall Height Elevation Wall Unit Weight ASCE 41-13, Eq. 7-13
9(Q <sub>0</sub> ) hear/Unit Length (kip/ft) fall Shear (Q <sub>0</sub> ) (kips) hear/Unit Length (kip/ft) hear/Unit Length (kip/ft) hear/Unit Length (kips) hear/Unit Length (kip*ft)	26.4 (14.9 205.6 0.0 Wall Demands 305.5 26.4 258.6	Eq. 7-2  About Centroid of Wall  Eq. 7-34  Eq. 7-34	a (in) Mn (kip*ft)  Out-Of-Plane Demands TMS 4  X. Sxs,1E h (ft) w (psf) Fp*L (plf) Fp_min*L (plf)	0.4 16.3 102-13 Sec 9.3.5 & ASCE 4 1 1.11 14 139.0 298.0 204.0 21.75 39.0	ASCE 41-13, Table 7-2, CP Full Wall Height Elevation Wall Unit Weight ASCE 41-13, Eq. 7-13
(kips) (kips) (kips) (kips)	26.4 14.9 235.5 0.0 Wall Demands 32.5 26.4 259.6 4372.8	Eq. 7-2  About Centroid of Wall  Eq. 7-34  Eq. 7-34	a (in) Mn (kip*ft)  Out-Of-Plane Demands TMS 4  X. Sxs,1E h (ft) w (psf) Fp*L (plf) Fp_min*L (plf)	0.4 16.3 102-13 Sec 9.3.5 & ASCE 4 1 1.11 14 139.0 3920 2030 2136	ASCE 41-13, Table 7-2, CP Full Wall Height Elevation Wall Unit Weight ASCE 41-13, Eq. 7-13
(kips) (kips) (kips) (kips) (kips) (kips) (kips) (kips) (kips) (kips) (kips) (kips) (kips)	26.4 (14.9 23%6 0.0 Wall Demands 3255 26.4 25%6 4372.8	Eq. 7-2  About Centroid of Wall  Eq. 7-34  Eq. 7-34	a (in) Mn (kip*ft)  Out-Of-Plane Demands TMS 4  Xx, 5x, 1E h (ft) w (psf) Fp*L (pif) Fp_min*L (pif) Mu,o (kip*ft) n	0.4 16.3 102-13 Sec 9.3.5 & ASCE 4 1 1.11 14 139.0 298.0 204.0 21.75 39.0	ASCE 41-13, Table 7-2, CP Full Wall Height Elevation Wall Unit Weight ASCE 41-13, Eq. 7-13
.9(Q <sub>0</sub> ) hear/Unit Length (kip/ft) /all Shear (Q <sub>c</sub> ) (kips) /oment Generated from Holdown (kip*ft) /kips) /kips) /kips) /kips  /	26.4 14.9 225.6 0.0 Wall Demands 225.5 46.4 227.6 4372.8	Eq. 7-2  About Centroid of Wall  Eq. 7-34  Eq. 7-34  trength Table 6-1	a (in)  Mn (kip*ft)   Out-Of-Plane Demands TMS 4  X.  Sxs,1E  h (ft)  w (psf)  Fp*L (pif)  Fp_min*L (pif)  Mu,0 (kip*ft)  n  tsp (in)  c (in)	0.4 16.3 102-13 Sec 9.3.5 & ASCE 4 1 1.11 14 137-10 2090 2040 24-75 39-3 900	ASCE 41-13, Table 7-2, CP  Full Wall Height  Elevation Wall Unit Weight  ASCE 41-13, Eq. 7-13  ASCE 41-13, Eq. 7-14  TMS 402-13, Eq. 9-35
.9(Q <sub>0</sub> ) hear/Unit Length (kip/ft) Vall Shear (Q <sub>c</sub> ) (kips) froment Generated from Holdown (kip*ft)  (kips) (kips) (kips) (kips) (kips) (kip*ft)  Lower-B	26.4 14.9 205.5 0.0 Wall Demands 22.5 26.4 25.6 4372.8 tound Vertical Compressive St	Eq. 7-2  About Centroid of Wall  Eq. 7-34  Eq. 7-34  trength  Table 6-1  Weak Axis Radius of Gyration	a (in)  Mn (kip*ft)   Out-Of-Plane Demands TMS 4  X.  Sxs, 1E  h (ft)  w (psf)  Fp*t (pif)  Fp_min*t (pif)  Mu,o (kip*ft)  n  tsp (in)  c (in)  leff = lcr (in^4)	0.4 16.3 102-13 Sec 9.3.5 & ASCE 4 1 1.11 14 1.99 c 32.90 2.176 39.8 39.8 41.0 642	ASCE 41-13, Table 7-2, CP Full Wall Height Elevation Wall Unit Weight ASCE 41-13, Eq. 7-13 ASCE 41-13, Eq. 7-14  TMS 402-13, Eq. 9-35 TMS 402-13, Eq. 9-34
.9(Q <sub>0</sub> ) hear/Unit Length (kip/ft) Vall Shear (Q <sub>0</sub> ) (kips) Anoment Generated from Holdown (kip*ft) (kips) (kips) (kips) (kips) (kip*ft)  Lower-B (in) fr (c, (kip)	26.4 (14.9 20.6 0.0 Wall Demands 32.5 26.4 252.6 4322.8 Jound Vertical Compressive St 1 0.578 290 59	Eq. 7-2  About Centroid of Wall  Eq. 7-34  Eq. 7-34  trength Table 6-1	a (in) Mn (kip*ft)   Out-Of-Plane Demands TMS 4  X.  Sxs,1E h (ft) w (psf) Fp*L (pif) Fp_min*L (pif) Mu,0 (kip*ft) n  15p (in) c (in) leff = lcr (in*4) Pe (kips)	0.4 16.3 102-13 Sec 9.3.5 & ASCE 4 1 1.11 14 139.0 229.0 224.0 24.75 39.5 39.5 39.5 44.1	ASCE 41-13, Table 7-2, CP  Full Wall Height Elevation Wall Unit Weight ASCE 41-13, Eq. 7-13 ASCE 41-13, Eq. 7-14  TMS 402-13, Eq. 9-35 TMS 402-13, Eq. 9-34 TMS 402-13, Eq. 9-33
.9(Q <sub>0</sub> ) hear/Unit Length (kip/ft) Vall Shear (Q <sub>c</sub> ) (kips) froment Generated from Holdown (kip*ft)  (kips) (kips) (kips) (kips) (kips) (kips)	26.4 14.9 205.6 0.0 Wall Demands 205.5 26.4 205.6 4180.8 tound Vertical Compressive St 1 0.578 290 59	Eq. 7-2  About Centroid of Wall  Eq. 7-34  Eq. 7-34  Trength  Table 6-1  Weak Axis Radius of Gyration  TMS 402-13, Eq. 9-19, Eq. 9-20	a (in)  Mn (kip*ft)   Out-Of-Plane Demands TMS 4  X.  Sxs, 1E  in (ft)  w (psf)  Fp*( pif)  Fp_min*L (pif)  Mu, o (kip*ft)  n  tsp (in)  c (in)  leff = lcr (in^4)  Pe (kips)  yr	0.4 16.3 102-13 Sec 9.3.5 & ASCE 4 1 1.11 14 1936 3020 2040 21.76 30.0 8 0.2 642 124 1.264	ASCE 41-13, Table 7-2, CP  Full Wall Height Elevation Wall Unit Weight ASCE 41-13, Eq. 7-13 ASCE 41-13, Eq. 7-14  TMS 402-13, Eq. 9-35 TMS 402-13, Eq. 9-34 TMS 402-13, Eq. 9-33 TMS 402-13, Eq. 9-32
.9(Q <sub>0</sub> ) hear/Unit Length (kip/ft) /ali Shear (Q <sub>0</sub> ) (kips) /oment Generated from Holdown (kip*ft) /(kips) /(kips) /(kips) /(kips) // (kip*ft) // (kip*ft) // (kip*ft) // (kip*ft) // (kip*ft) // (kip*ft)	26.4 14.9 205.6 0.0 Wall Demands 325.5 26.4 205.6 4182.8 tound Vertical Compressive St 1 0.578 290 59 59	Eq. 7-2  About Centroid of Wall  Eq. 7-34  Eq. 7-34  trength  Table 6-1  Weak Axis Radius of Gyration	a (in) Mn (kip*ft)   Out-Of-Plane Demands TMS 4  X.  Sxs,1E h (ft) w (psf) Fp*L (pif) Fp_min*L (pif) Mu,0 (kip*ft) n  15p (in) c (in) leff = lcr (in*4) Pe (kips)	0.4 16.3 102-13 Sec 9.3.5 & ASCE 4 1 1.11 14 139.0 229.0 224.0 24.75 39.5 39.5 39.5 44.1	ASCE 41-13, Table 7-2, CP  Full Wall Height Elevation Wall Unit Weight ASCE 41-13, Eq. 7-13 ASCE 41-13, Eq. 7-14  TMS 402-13, Eq. 9-35 TMS 402-13, Eq. 9-34 TMS 402-13, Eq. 9-33
(kips)  (kips)	26.4 14.9 205.6 0.0 Wall Demands 205.5 26.4 205.6 4180.8 tound Vertical Compressive St 1 0.578 290 59	Eq. 7-2  About Centroid of Wall  Eq. 7-34  Eq. 7-34  Trength  Table 6-1  Weak Axis Radius of Gyration  TMS 402-13, Eq. 9-19, Eq. 9-20	a (in)  Mn (kip*ft)   Out-Of-Plane Demands TMS 4  X.  Sxs, 1E  in (ft)  w (psf)  Fp*( pif)  Fp_min*L (pif)  Mu, o (kip*ft)  n  tsp (in)  c (in)  leff = lcr (in^4)  Pe (kips)  yr	0.4 16.3 102-13 Sec 9.3.5 & ASCE 4 1 1.11 14 1936 3020 2040 21.76 30.0 8 0.2 642 124 1.264	ASCE 41-13, Table 7-2, CP  Full Wall Height Elevation Wall Unit Weight ASCE 41-13, Eq. 7-13 ASCE 41-13, Eq. 7-14  TMS 402-13, Eq. 9-35 TMS 402-13, Eq. 9-34 TMS 402-13, Eq. 9-33 TMS 402-13, Eq. 9-32
.9(Q <sub>0</sub> ) hear/Unit Length (kip/ft) Vall Shear (Q <sub>0</sub> ) (kips) Anoment Generated from Holdown (kip*ft) (kips) (kips) (kips) (kips) (kip*ft)  Lower-B (in) fr (c, (kip)	26.4 14.9 205.6 0.0 Wall Demands 325.5 26.4 205.6 4182.8 tound Vertical Compressive St 1 0.578 290 59 59	Eq. 7-2  About Centroid of Wall  Eq. 7-34  Eq. 7-34  Trength  Table 6-1  Weak Axis Radius of Gyration  TMS 402-13, Eq. 9-19, Eq. 9-20	a (in) Mn (kip*ft)  Out-Of-Plane Demands TMS 4  X.  Sxs, 1E h (ft) w (psf) Fp*(.pif) Fp_min*L (pif) Mu,o (kip*ft) n tsp (in) c (in) leff = lcr (in*4) Pe (kips)  Y  'PMu,o (kip*ft)	0.4 16.3 102-13 Sec 9.3.5 & ASCE 4 1 1.11 14 1936 3020 2040 21.76 30.0 8 0.2 642 124 1.264	ASCE 41-13, Table 7-2, CP  Full Wall Height Elevation Wall Unit Weight ASCE 41-13, Eq. 7-13 ASCE 41-13, Eq. 7-14  TMS 402-13, Eq. 9-35 TMS 402-13, Eq. 9-34 TMS 402-13, Eq. 9-33 TMS 402-13, Eq. 9-32 TMS 402-13, Eq. 9-32

728 134th Street SW - Suite 200 Everett, Washington 98204 Ph: 425 741-3800 Fax: 425 741-3900

Client: Project: Project No: 
 RFM
 Designed By:

 900 Bldg
 Date:

 Checked By:
 Checked By:

 262019,034
 Date:

	Legend		Determine FC vs DC Table 11-6		
nput			Mu/(Vudv)	0.09	1
Calculated			7	1.0	#5 Bars or smaller
OCR/Check			Vn (kips) upperbound	213	TMS 402-13, Eq. 9-22
			Vn (kips) upperbound		TMS 402-13, Eq. 9-23
	General Inputs		Vnm (kip)	141.0	TMS 402-13, Sec 9.3.4.1.2.1
Pier ID	Grid E145		Vn (kip)	141.0	TMS 402-13, Equation 9-21
ocation/Gridline	E145		Holdown Anchor Rod As (in^2)	0.62	At one wall end
'm (psi)	810	Table 11-2(a)	a (in)	4.8	
Em (ksi)	729	TMS 402-13, Sec 4.2.2.2.1	Distance from Edge of Wall to Rod (in)	4	/
me (psi)	1053	Table 11-1	d (in)	152	L.
y (ksi)	40		Mn (kip*ft)	544	
ye (ksi)	52		Ve (kip)	39	
Es (ksi)	29000		Shear vs. Flexure Control	Flexure Control	
Masonry Denisty (pcf)	125		An (in^2)	1248	
Nominal Pier Length (ft)	13		f <sub>se</sub> (psi)	21.1	
ier Height (H)	14.00		Shear vs. Force Controlled	NA NA	
Vall thickness (in)	8				
Roof Trib (SF)	195			termine m-factors Table 11-6	
Roof DL (psf)	20		fae/fme	0.020	
Roof St. (psf)	25		L/heff	0.93	
Mezz Trib (SF)	0		As (in^2)	0.31	Total Vertical Reinforcement
Mezz DL (psf)	0		ρ <sub>ν</sub>	0.00025	
Mezz LL (psf)	0		Av (in^2)	0.3	Total Vertical Reinforcement
2nd FLR Trib (SF)	52		Ph	0.0002	
and FLR DL (psf)	35		p <sub>a</sub> lye/fme	0.024	
			- Indiana contract		
end FLR LL (psf)	40		m-factor	6.4	
hearline Tot Shear (kips)	396.8	BSE-1E	m-factor restriction	7	
hearline Tot Length (ft)	33		m-factor used	6.4	
Applicable Wall Trib Length (ft)	13				
ieismic Axial Load (kips)	0.0	Holdown Force From Wall Above		Deformation Control DCRs	
foldown to Wall Centroid (ft)	0.0		Shear DCR	0.17	
O, LS, CP	i.S		Moment DCR	0.51	
**			7), 1)(7)		
	General Calculation			Force Control DCRs	
Vall Self-Weight (kips)	15.7		Shear DCR		
	5.7	Super-imposed Dt. @ Top of Wall	Moment DCR		
OL (kips)					t .
	2.1	Super-imposed of Gripp of Wall	(Wolfield DCK		
L (kips)		Super-imposed or, go top or waii		ane Capacity TMS 402-13, Se	c 9.3.5
.L (kips) iL (kips)	2,1 4,9		Out-Of-Pl	ane Capacity TMS 402-13, Se	c 9.3.5
1. (kips) 1. (kips) 1.1(Q <sub>0</sub> + Q <sub>4</sub> +9.2*Q <sub>5</sub> )	2,1 4,9 26,3	Eq. 7-1	Out-Of-Pl d (in)	4	c 9.3.5
.1 (kips) 81 (kips) .1 (Q <sub>0</sub> + Q <sub>4</sub> +0.2 *Q <sub>5</sub> ) .9 (Q <sub>0</sub> )	2.1 4.9 26.3 19.0		Out-Of-Pl d (in) a (in)	4 0.4	c 9.3.5
L (kips) L (kips) L (kips) L (kips) L (kips) L (Q <sub>0</sub> + Q <sub>4</sub> + 9.2 * Q <sub>5</sub> ) L (Q <sub>0</sub> + Q <sub>4</sub> + 9.2 * Q <sub>5</sub> ) L (Q <sub>0</sub> + Q <sub>4</sub> + 9.2 * Q <sub>5</sub> ) L (Q <sub>0</sub> + Q <sub>4</sub> + 9.2 * Q <sub>5</sub> )	2,1 4,9 26,3 12,8 12,0	Eq. 7-1	Out-Of-Pl d (in)	4	c 9.3.5
L (kips) L (kips) L (kips) .1(Q <sub>0</sub> + Q <sub>4</sub> +0.2*Q <sub>5</sub> ) .9(Q <sub>0</sub> ) hear/Unit Length (kip/ft)	2.1 4.9 26.3 19.0	Eq. 7-1	Out-Of-Pl d (in) a (in)	4 0.4	c 9.3.5
L (kips) L (kips) 1.(Q <sub>0</sub> + Q <sub>4</sub> +0.2*Q <sub>5</sub> ) 9.(Q <sub>0</sub> ) 1.(Q <sub>1</sub> + Q <sub>4</sub> +0.2*Q <sub>5</sub> ) 9.(Q <sub>0</sub> ) hear/Unit Length (kip/ft) Vali Shear (Q <sub>4</sub> ) (kips)	2,1 4,9 26,3 12,8 12,0	Eq. 7-1	Out-Of-Pl d (in) a (in)	0.4 9,9	
L (kips) L (kips) 1.(Q <sub>0</sub> + Q <sub>4</sub> +0.2*Q <sub>5</sub> ) 9.(Q <sub>0</sub> ) 1.(Q <sub>1</sub> + Q <sub>4</sub> +0.2*Q <sub>5</sub> ) 9.(Q <sub>0</sub> ) hear/Unit Length (kip/ft) Vali Shear (Q <sub>4</sub> ) (kips)	2,1 4,9 26,3 12,8 12,6 156,3151515	Eq. 7-1 Eq. 7-2	Out-Of-Pi d (in) a (in) Mn (kip*ft)	0.4 9,9	
L (kips) L (kips) 1.(Q <sub>0</sub> + Q <sub>4</sub> +0.2*Q <sub>5</sub> ) 9.(Q <sub>0</sub> ) 1.(Q <sub>1</sub> + Q <sub>4</sub> +0.2*Q <sub>5</sub> ) 9.(Q <sub>0</sub> ) hear/Unit Length (kip/ft) Vali Shear (Q <sub>4</sub> ) (kips)	2,1 4,9 26,3 12,8 12,6 156,3151515	Eq. 7-1 Eq. 7-2	Out-Of-Pi d (in) a (in) Mn (kip*ft)	4 0.4 9.9 402-13 Sec 9.3.5 & ASCE 41-1	3 Section 11.3.5>7.2.11
L (kips) L (kips) L (kips) L (kips) L (kips) 1/(Q <sub>0</sub> + Q <sub>4</sub> +0.2*Q <sub>5</sub> ) 1/(Q <sub>0</sub> ) 1/(Q	2.1 4.9 26.3 3.29 12.0 156.3151515	Eq. 7-1 Eq. 7-2	Out-Of-Pl d (in) a (in) Mn (kip*ft)  Out-Of-Plane Demands TMS	4 0.4 9.9 402-13 Sec 9.3.5 & ASCE 41-1	3 Section 11.3.5>7.2.11
L (kips) L (kips) .1(Q <sub>0</sub> + Q <sub>4</sub> +0.2*Q <sub>5</sub> ) .1(Xips) .2(Xips) .2(Xips) .2(Xips) .2(Xips) .2(Xips) .2(Xips)	2.1 4.9 26.3 28.8 12.0 156.3151515 0.0	Eq. 7-1 Eq. 7-2  About Centroid of Wall  Eq. 7-34	Out-Of-Pl d (in) a (in) Mn (kip*ft)  Out-Of-Plane Demands TMS X Sxs,1E h (ft)	4 0.4 9.9 402-13 Sec 9.3.5 & ASCE 41-1 1.3 0.71 14	3 Section 11.3.5>7.2.11 ASCE 41-13, Table 7-2, LS Full Wall Height
L (kips) L (kips) L1(Q <sub>0</sub> + Q <sub>4</sub> + Q.2*Q <sub>5</sub> ] L1(Q <sub>0</sub> + Q <sub>4</sub> + Q.2*Q <sub>5</sub> ] Joy(Q <sub>0</sub> ) Shear/Unit Length (kip/ft) Vail Shear (Q <sub>4</sub> ) (kips) Moment Generated from Holdown (kip*ft)  * (kips) * (kips)	2.1 4.9 26.3 12.3 12.7 156.3353515 0.3 Wall Demands 26.3 3.3.2	Eq. 7-1 Eq. 7-2 About Centroid of Wall	Out-Of-Pl d (in) a (in) Mn (kip*ft)  Out-Of-Plane Demands TMS X Sxs,1E h (ft) w (psf)	4 0.4 9.9 402-13 Sec 9.3.5 & ASCE 41-1 1.3 0.71 14	3 Section 11.3.5>7.2.11 ASCE 41-13, Table 7-2, LS Full Wall Height Elevation Wall Unit Weight
L (kips) L (kips) L (kips) L (kips) L (kips) J (Q <sub>0</sub> + Q <sub>4</sub> +0.2 * Q <sub>5</sub> ) J (Q <sub>0</sub> ) hear/Unit Length (kip/ft) Vali Shear (Q <sub>4</sub> ) (kips) Aoment Generated from Holdown (kip*ft) (kips) (kips) (kips)	2.1 4.9 26.3 12.0 156.3353515 0.0 Wall Demands 26.3 28.8 156.3351518	Eq. 7-1 Eq. 7-2  About Centroid of Wall  Eq. 7-34	Out-Of-Pl d (in) a (in) Mn (kip*ft)  Out-Of-Plane Demands TMS X Sxs,1E h (ft) w (pst) Fp*t (plf)	4 0.4 9.9 402-13 Sec 9.3.5 & ASCE 41-1 1.3 0.71 14 100/0 480/0	3 Section 11.3.5->7.2.11 ASCE 41-13, Table 7-2, LS Full Wall Height Elevation Wall Unit Weight ASCE 41-13, Eq. 7-13
L (kips) L (kips) L (kips) L (kips) J(Q <sub>0</sub> + Q <sub>4</sub> +0.2*Q <sub>5</sub> ) J(Q <sub>0</sub> ) hear/Unit Length (kip/ft) Vali Shear (Q <sub>4</sub> ) (kips) homent Generated from Holdown (kip*ft) (kips) (kips) (kips)	2.1 4.9 26.3 12.3 12.7 156.3353515 0.3 Wall Demands 26.3 3.3.2	Eq. 7-1 Eq. 7-2  About Centroid of Wall  Eq. 7-34	Out-Of-Pl d (in) a (in) Mn (kip*ft)  Out-Of-Plane Demands TMS X Sxs,1E h (ft) w (psf) Fp*L (plf) Fp_min*L (plf)	4 0.4 9.9 402-13 Sec 9.3.5 & ASCE 41-1 1.3 0.71 14 100/0 48(0.0	3 Section 11.3.5>7.2.11 ASCE 41-13, Table 7-2, LS Full Wall Height Elevation Wall Unit Weight
(kips) (kips) (1(Q <sub>0</sub> + Q <sub>4</sub> +0.2*Q <sub>5</sub> ) (3(Q <sub>0</sub> +0.2	2.1 4.9 25.3 12.8 12.0 156.3151515 0.0 Wall Demands 26.3 38.2 156.3151515 216.6	Eq. 7-1 Eq. 7-2  About Centroid of Wall  Eq. 7-34 Eq. 7-34	Out-Of-Pl d (in) a (in) Mn (kip*ft)  Out-Of-Plane Demands TMS X Sxs,1E h (ft) w (pst) Fp*t (plf)	4 0.4 9.9 402-13 Sec 9.3.5 & ASCE 41-1 1.3 0.71 14 100:0 48(0) 158:0 11-76	3 Section 11.3.5->7.2.11 ASCE 41-13, Table 7-2, LS Full Wall Height Elevation Wall Unit Weight ASCE 41-13, Eq. 7-13
L (kips) L (kips) .1(Q <sub>0</sub> + Q <sub>4</sub> +0.2*Q <sub>5</sub> ) .9(Q <sub>0</sub> ) hear/Unit Length (kip/ft) Vali Shear (Q <sub>4</sub> ) (kips) forment Generated from Holdown (kip*ft) (kips) (kips) (kips) (kips) (kips)	2.1 4.9 26.3 12.8 12.0 156.3151515 0.0 Wall Demands 46.3 38.8 116.3151515 21.50.4	Eq. 7-1 Eq. 7-2  About Centroid of Wall  Eq. 7-34 Eq. 7-34	Out-Of-Pl d (in) a (in) Mn (kip*ft)  Out-Of-Plane Demands TMS X Sxs,1E h (ft) w (pst) Fp*L (plt) Fp_min*L (plf) Mu,o (kip*ft) n	4 0.4 9.9 402-13 Sec 9.3.5 & ASCE 41-1 1.3 0.71: 14 100.0 42(1) 159.0 11.76 30.3	3 Section 11.3.5->7.2.11 ASCE 41-13, Table 7-2, LS Full Wall Height Elevation Wall Unit Weight ASCE 41-13, Eq. 7-13
L (kips) L (kips) L (kips) L (kips) J(Q <sub>0</sub> + Q <sub>4</sub> + 0.2*Q <sub>5</sub> ) J(Q <sub>0</sub> ) hear/Unit Length (kip/ft) Vall Shear (Q <sub>4</sub> ) (kips) Annent Generated from Holdown (kip*ft) (kips) (kips) (kips) (kips) (kips) (kip*ft) Lower-	2.1 4.9 26.3 32.8 12.3 156 3151515 0.0 Wall Demands 26.3 38.2 126.3(51518) 2166.2	Eq. 7-1 Eq. 7-2  About Centroid of Wall  Eq. 7-34 Eq. 7-34  Table 6-1	Out-Of-Pi d (in) a (in) Mn (kip*ft)  Out-Of-Plane Demands TMS X Sxs,1E h (ft) w (pst) Fp*t (pit) Fp_min*t (pift) Mu,o (kip*ft) n tsp (in)	4 0.4 9.9 402-13 Sec 9.3.5 & ASCE 41-1 1.3 0.71 14 109:0 42(h)0 159:0 11.76 39:3	3 Section 11.3.5->7.2.11 ASCE 41-13, Table 7-2, LS Full Wall Height Elevation Wall Unit Weight ASCE 41-13, Eq. 7-13 ASCE 41-13, Eq. 7-14
L (kips) L (kips) L (kips) L (kips) J9(Q <sub>0</sub> ) hear/Unit Length (kip/ft) Vall Shear (Q <sub>1</sub> ) (kips) forment Generated from Holdown (kip*ft)  (kips) (kips) (kips) (kips) (kips) (kips) (kips) (kips) (kips) (kips)	2.11 4.9 26.3 26.3 12.0 12.0 156.3451515 0.0 Wall Demands 26.3 28.9 156.3451515 2150.3 2150.3 2150.3 2150.3 2150.3 2150.3 2150.3 2150.3 2150.3 2150.3 2150.3 2150.3 2150.3 2150.3 2150.3	Eq. 7-1 Eq. 7-2  About Centroid of Wall  Eq. 7-34 Eq. 7-34	Out-Of-Pi d (in) a (in) Mn (kip*ft)  Out-Of-Plane Demands TMS X Sxs,1E h (ft) w (pst) Fp*L (plt) Fp_min*L (plf) Mu,0 (kip*ft) ri tsp (in) c (in)	4 0.4 9.9 402-13 Sec 9.3.5 & ASCE 41-1 1.3 0.71 14 100.0 4200 1500 11.70 39 8 4	3 Section 11.3.5>7.2.11 ASCE 41-13, Table 7-2, LS Full Wall Height Elevation Wall Unit Weight ASCE 41-13, Eq. 7-13 ASCE 41-13, Eq. 7-14
L (kips) L (kips) L (kips) .1(Q <sub>0</sub> + Q <sub>4</sub> +0.2*Q <sub>5</sub> ) .1(Q <sub>0</sub> + Q <sub>4</sub> + Q <sub>5</sub> ) .1(Q <sub>0</sub> + Q <sub>4</sub> + Q <sub>5</sub> ) .1(Q <sub>0</sub> + Q <sub>4</sub> + Q <sub>5</sub> ) .1(Q <sub>0</sub> + Q <sub>5</sub> + Q <sub>5</sub> ) .1(Q <sub>0</sub> + Q <sub>5</sub> + Q <sub>5</sub> ) .1(Q <sub>0</sub> + Q <sub>5</sub> + Q <sub>5</sub> ) .1(Q <sub>0</sub> + Q <sub>5</sub> + Q <sub>5</sub> ) .1(Q <sub>0</sub> + Q <sub>5</sub> + Q <sub>5</sub> ) .1(Q <sub>0</sub> + Q <sub>5</sub> + Q <sub>5</sub> ) .1(Q <sub>0</sub> + Q <sub>5</sub> + Q <sub>5</sub> ) .1(Q <sub>0</sub> + Q <sub>5</sub> + Q <sub>5</sub> ) .1(Q <sub>0</sub> + Q <sub>5</sub>	2.11 4.9 25.3 12.0 12.0 12.0 156.3151515 0.0 Wall Demands 46.3 28.8 156.3151515 2126.4 10.559 300	Eq. 7-1 Eq. 7-2  About Centroid of Wall  Eq. 7-34 Eq. 7-34  Eq. 7-34  Weak Axis Radius of Gyration	Out-Of-Pi d (in) a (in) Mn (kip*ft)  Out-Of-Plane Demands TMS X Sxs,1E h (ft) w (psf) Fp*L (pif) Fp_min*L (pif) Mu,o (kip*ft) n tsp (in) c (in) leff = lcr (in*4)	4 0.4 9.9 402-13 Sec 9.3.5 & ASCE 41-1 1.3 0.71: 14 100/0 48(0) 158:0 11.76 39.3 8 0.5	3 Section 11.3.5>7.2.11 ASCE 41-13, Table 7-2, LS Full Wall Height Elevation Wall Unit Weight ASCE 41-13, Eq. 7-13 ASCE 41-13, Eq. 7-14  TMS 402-13, Eq. 9-35 TMS 402-13, Eq. 9-34
L (kips) L (kips) L (kips) L (kips) L (kips) J(Q <sub>0</sub> + Q <sub>4</sub> +0.2*Q <sub>5</sub> ) J(Q <sub>0</sub> ) hear/Unit Length (kip/ft) Vali Shear (Q <sub>4</sub> ) (kips) Ament Generated from Holdown (kip*ft) (kips) (kips) (kips) (kips) f (kip*ft)  Lower- (in) fr Q <sub>1</sub> (kip)	2.1 4.9 26.3 12.8 12.0 156.3151515 0.0 Wall Demands 26.3 18.2 216.3151518 216.3.51518 116.3.51518 216.3.5 9.0 9.0 9.0 9.0 9.0	Eq. 7-1 Eq. 7-2  About Centroid of Wall  Eq. 7-34 Eq. 7-34  Table 6-1	Out-Of-Pl d (in) a (in) Mn (kip*ft)  Out-Of-Plane Demands TMS  Z  Sxs,1E h (ft) w (pst) Fp*t_(plt) Fp_min*t_(plf) Mu,o (kip*ft) n tsp (in) leff = lcr (in*4) Pe (kips)	4 0.4 9.9 402-13 Sec 9.3.5 & ASCE 41-1 1.3 0.71 14 100.0 420.0 155.0 11.76 30.3 8 0.5 12.76 30.3 8 0.5 12.76 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.	3 Section 11.3.5>7.2.11 ASCE 41-13, Table 7-2, LS Full Wall Height Elevation Wall Unit Weight ASCE 41-13, Eq. 7-13 ASCE 41-13, Eq. 7-14
L (kips) L (kips) L (kips) L (kips) L (kips) J (Q <sub>0</sub> + Q <sub>1</sub> + 0.2 * Q <sub>3</sub> ) J (Q <sub>0</sub> ) hear/Unit Length (kip/ft) Vali Shear (Q <sub>1</sub> ) (kips) Anoment Generated from Holdown (kip*ft) (kips)	2.11 4.9 25.3 12.0 12.0 12.0 156.3151515 0.0 Wall Demands 46.3 28.8 156.3151515 2126.4 10.559 300	Eq. 7-1 Eq. 7-2  About Centroid of Wall  Eq. 7-34 Eq. 7-34  Eq. 7-34  Weak Axis Radius of Gyration	Out-Of-Pi d (in) a (in) Mn (kip*ft)  Out-Of-Plane Demands TMS X Sxs,1E h (ft) w (psf) Fp*L (pif) Fp_min*L (pif) Mu,o (kip*ft) n tsp (in) c (in) leff = lcr (in*4)	4 0.4 9.9 402-13 Sec 9.3.5 & ASCE 41-1 1.3 0.71: 14 100/0 48(0) 158:0 11.76 39.3 8 0.5	3 Section 11.3.5>7.2.11 ASCE 41-13, Table 7-2, LS Full Wall Height Elevation Wall Unit Weight ASCE 41-13, Eq. 7-13 ASCE 41-13, Eq. 7-14  TMS 402-13, Eq. 9-35 TMS 402-13, Eq. 9-34
L (kips) L (kips) L (kips) L (kips) L (kips) J (Q <sub>0</sub> + Q <sub>1</sub> + 0.2 * Q <sub>3</sub> ) J (Q <sub>0</sub> ) hear/Unit Length (kip/ft) Vali Shear (Q <sub>1</sub> ) (kips) Anoment Generated from Holdown (kip*ft) (kips)	2.1 4.9 26.3 12.8 12.0 156.3151515 0.0 Wall Demands 26.3 18.2 216.3151518 216.3.51518 116.3.51518 216.3.5 9.0 9.0 9.0 9.0 9.0	Eq. 7-1 Eq. 7-2  About Centroid of Wall  Eq. 7-34 Eq. 7-34  Eq. 7-34  Weak Axis Radius of Gyration	Out-Of-Pl d (in) a (in) Mn (kip*ft)  Out-Of-Plane Demands TMS  Z  Sxs,1E h (ft) w (pst) Fp*t_(plt) Fp_min*t_(plf) Mu,o (kip*ft) n tsp (in) leff = lcr (in*4) Pe (kips)	4 0.4 9.9 402-13 Sec 9.3.5 & ASCE 41-1 1.3 0.71 14 100.0 420.0 155.0 11.76 30.3 8 0.5 12.76 30.3 8 0.5 12.76 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.	3 Section 11.3.5>7.2.11 ASCE 41-13, Table 7-2, LS Full Wall Height Elevation Wall Unit Weight ASCE 41-13, Eq. 7-13 ASCE 41-13, Eq. 7-14  TMS 402-13, Eq. 9-35 TMS 402-13, Eq. 9-34 TMS 402-13, Eq. 9-33 TMS 402-13, Eq. 9-32
L (kips) L (	2.11 4.9 26.3 32.03 12.0	Eq. 7-1 Eq. 7-2  About Centroid of Wall  Eq. 7-34 Eq. 7-34 Table 6-1 Weak Axis Radius of Gyration TMS 402-13, Eq. 9-19, Eq. 9-20	Out-Of-Pl d (in) a (in) Mn (kip*ft)  Out-Of-Plane Demands TMS X Sxs,1E h (ft) w (pst) Fp*t (plt) Fp_min*t (plf) Mu,0 (kip*ft) n tsp (in) c (in) leff = lcr (in*4) Pe (kips)  v	4 0.4 9.9 402-13 Sec 9.3.5 & ASCE 41-1 1.3 0.71 14 100/0 48/0 159/0 117/0 39/3 4 0.72 39/3 4 0.75 39/3 4 4 0.75 39/3 4 0.75 39/3 4 0.75 39/3 4 0.75 39/3 4 0.75 39/3 4 0.75 39/3 4 0.75 39/3 4 0.75 39/3 4 4 4 4 4 4 4 4 4 4 4 4 4	3 Section 11.3.5>7.2.11 ASCE 41-13, Table 7-2, LS Full Wall Height Elevation Wall Unit Weight ASCE 41-13, Eq. 7-13 ASCE 41-13, Eq. 7-14  TMS 402-13, Eq. 9-35 TMS 402-13, Eq. 9-34 TMS 402-13, Eq. 9-33
DL (kips) LL r/Unit Length (kip/ft) Wall Shear (Q <sub>4</sub> ) (kips) Moment Generated from Holdown (kip*ft) Part (kips) Part (kips) M (kip*ft) Lower-( ((in) Part (kip) Part (kip) Part (kip) Lower-( ((in) Part (kip) Part (kip) Part (kip)	2.1 4.9 26.3 22.8 12.0 156.3151515 0.0 Wall Demands (6.3 38.8 21.5.3151515 21.6.2 4.0 5.59 300 36	Eq. 7-1 Eq. 7-2  About Centroid of Wall  Eq. 7-34 Eq. 7-34 Table 6-1 Weak Axis Radius of Gyration TMS 402-13, Eq. 9-19, Eq. 9-20	Out-Of-Pi d (in) a (in) Mn (kip*ft)  Out-Of-Plane Demands TMS X Sxs,1E h (ft) w (pst) Fp*L (pit) Fp_min*L (pit) Mu,o (kip*ft) n tsp (in) c (in) leff = lcr (in*4) Pe (kips)	4 0.4 9.9 402-13 Sec 9.3.5 & ASCE 41-1 1.3 0.71 14 100/0 48/0 159/0 117/0 39/3 4 0.72 39/3 4 0.75 39/3 4 4 0.75 39/3 4 4 4 4 4 4 4 4 4 4 4 4 4	3 Section 11.3.5>7.2.11 ASCE 41-13, Table 7-2, LS Full Wall Height Elevation Wall Unit Weight ASCE 41-13, Eq. 7-13 ASCE 41-13, Eq. 7-14  TMS 402-13, Eq. 9-35 TMS 402-13, Eq. 9-34 TMS 402-13, Eq. 9-33 TMS 402-13, Eq. 9-32

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Client: Project: Project No: 
 RFM
 Designed 8y

 900 Bldg
 Date:

 Checked By:
 262019.034

12/18/2019

	Legend		Determine FC vs DC Table 11-6		
Input			Mu/(Vudv)	0.09	
Calculated			7	1,0	#5 Bars or smaller
DCR/Check			Vn (kips) upperbound	213	TMS 402-13, Eq. 9-22
		*	Vn (kips) upperbound		TMS 402-13, Eq. 9-23
	General Inputs		Vnm (kip)	141.0	TMS 402-13, Sec 9.3.4.1.2.1
Pier ID	Grid E145		Vn (kip)	141.0	TMS 402-13, Equation 9-21
ocation/Gridline	E145		Holdown Anchor Rod As (in^2)	0.62	At one wall end
'm (psi)	810	Table 11-2(a)	a (in)	4.8	The Colon State City
Em (ksi)	729	TMS 402-13, Sec 4.2.2.2.1	Distance from Edge of Wall to Rod (in)	4	
tire A stable	1053	Table 11-1	d (in)	152	
me (psi)		Table 11-1		544	
y (ksi)	40		Mn (kip*ft)	39	
ye (ksi)	52		Ve (kip)	Flexure Control	
s (ksi)	29000		Shear vs. Flexure Control	The state of the s	
Masonry Denisty (pcf)	125		An (in^2)	1248	
Iominal Pier Length (ft)	13		f <sub>ae</sub> (psi)	21.1	
Pier Helght (H)	14.00		Shear vs. Force Controlled	MA	
Vall thickness (in)	8				
oof Trib (SF)	195	<u> </u>	Deter	mine m-factors Table 1	1-6
toof DL (psf)	20		fae/fme	0.020	
Roof St. (psf)	25		L/heff	0.93	
Mezz Trib (SF)	0		As (in^2)	0.31	Total Vertical Reinforcemen
Mezz DL (psf)	0		O <sub>v</sub>	0.00025	
			Av (in^2)	0.3	Total Vertical Reinforcemen
Mezz LL (psf)	0	_			total vertical Reinforcemen
tnd FLR Trib (SF)	52		ρ <sub>b</sub>	0.0002	
end FLR DL (psf)	35		ρ <sub>g</sub> fye/fme	0.028	
nd FLR LL (psf)	40		m-factor	7.5	
hearline Tot Shear (kips)	617.2	BSE-2E	m-factor restriction	7	
hearline Tot Length (ft)	33		m-factor used	7.0	
Applicable Wall Trib Length (ft)	13		- / India-11/4/200		11
eismic Axial Load (kips)	0.0	Holdown Force From Wall Above	De	formation Control DCRs	
foldown to Wall Centroid (ft)	0.0		Shear DCR	0.25	
O, LS, CP	CP		Moment DCR	0.89	
0, 10, 01					
	General Calculation		1 (	Force Control DCRs	
Vall Self-Weight (kips)	15.2		Shear DCR	Porce common ocus	
DL (kips)	5.7	Super-imposed DL @ Top of Wall	Moment DCR		
		Super-imposed by & Top bi Wall	Internation of the second		
L (kips)	2.1	<del></del>	0.4.06.00	e Capacity TMS 402-13,	F035
L (kips)	45.9	acres in		e Capacity 1MS 402-13,	3ec 9.3.3
.1(Q <sub>0</sub> + Q <sub>4</sub> +0.2*Q <sub>5</sub> )	26.3	Eq. 7-1	d (in)	- 6	
1.9(Q <sub>0</sub> )	12.3	Eq. 7-2	a (in)	0.4	
hear/Unit Length (kip/ft)	45.7		Mn (kip*ft)	9.9	
Vall Shear (Q <sub>6</sub> ) (kips)	248:1393939				
Noment Generated from Holdown (kip*ft)	0,6	About Centroid of Wall	Out-Of-Plane Demands TMS 40	2-13 Sec 9.3.5 & ASCE 4	1-13 Section 11.3.5->7.2.11
months of the state of the months and the state of the st	339	Product Certifold of Holi	v v v v v v v v v v v v v v v v v v v	1	ASCE 41-13, Table 7-2, CP
	Wall Demands		Sxs,1E	1.11	Think Ta' AU, 100/E 174, GT
(bine)		En 7.24	h (ft)	14	Full Wall Height
(kips)	26.3	Eq. 7-34		109.0	Elevation Wall Unit Weight
(kips)	16.8	Eq. 7-34	w (psf)	377/2	ASCE 41-13, Eq. 7-13
(kips)	249,1393039		Fp*L (pif)	130/0	
f (kip*ft)	34040		Fp_min*L (plf)		ASCE 41-13, Eq. 7-14
92276		ORIGINAL CONTROL OF THE PROPERTY OF THE PROPER	Mu,o (kip*ft)	15.14	
Lowe	er-Bound Vertical Compressive Str		n	39/3	
	1	Table 6-1	tsp (in)	8	
(in)	0.559	Weak Axis Radius of Gyration	c (in)	6.5	TMS 402-13, Eq. 9-35
le	300		leff = lcr (in^4)	195	TMS 402-13, Eq. 9-34
cı (kip)	36	TMS 402-13, Eq. 9-19, Eq. 9-20	Pe (kips)	199	TMS 402-13, Eq. 9-33
P <sub>G</sub> (kip)	36		Ψ	1,360	TMS 402-13, Eq. 9-32
T. Suibi		i.e		19.23	
	2	LS	ΨMu,o (kip*ft)	19.43	TM5 402-13, Eq. 9-31
ıc,	1.1				
(Q <sub>c</sub> )/(JC1C2) (kip)	26.3		Out-C	of-Plane DCR, Sec 11.3.5	.3
DCR	0.74		Flexure DCR	0.9	

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	Legend		Determine FC vs DC Table 11-6		
Input			Mu/(Vudv)	0.12	
Calculated			y	1.0	#5 Bars or smaller
DCR/Check			Vn (kips) upperbound	164	TMS 402-13, Eq. 9-22
**************************************			Vn (kips) upperbound		TMS 402-13, Eq. 9-23
	General Inputs		Vnm (kip)	107.0	TMS 402-13, Sec 9.3.4.1.2.
Pier ID	Grid E145		Vn (kip)	107.0	TMS 402-13, Equation 9-21
ocation/Gridline	E145		Holdown Anchor Rod As (in^2)	0.62	At one wall end
m (psi)	810	Table 11-2(a)	a (in)	4.8	
m (ksi)	729	TMS 402-13, Sec 4.2.2.2.1	Distance from Edge of Wall to Rod (in)	4	
me (psi)	1053	Table 11-1	d (in)	116	
(ksi)	40		Mn (kip*ft)	367	
e (ksi)	52		Ve (kip)	26	
s (ksi)	29000		Shear vs. Flexure Control	Flavoure Control	7.0
lasonry Denisty (pcf)	125		An (in^2)	960	
ominal Pier Length (ft)	10		f <sub>se</sub> (psi)	19.0	
er Height (H)	14.00		Shear vs. Force Controlled	na.	
all thickness (in)	8		Shear vs. Force Controlled	760-	
			-	ates as Possesso Patrici	
oof Trib (SF)	195			mine m-factors Table 1	1-0
oof DL (psf)	20		fae/fme	0.018	
ouf SL (psf)	25		L/heff	0.71	Taxal Markland Dallaf
ezz Trib (SF)	0		As (in^2)	0.31	Total Vertical Reinforceme
lezz DL (psf)	0		ρÿ	0.00032	
lezz LL (psf)	0		Av (in^2)	0.3	Total Vertical Reinforcemen
nd FLR Trib (SF)	0		Ph	0.0002	
nd FLR DL (psf)	35		p <sub>e</sub> fye/fme	0.027	
nd FLR LL (psf)	40		m-factor	6.0	
tearline Tot Shear (kips)	192	BSE-1E	m-factor restriction	7	
earline Tot Length (ft)	35	d3C-1C	m-factor used	6.0	
pplicable Wall Trib Length (ft)	10		Interactor useu	0.0	_
eismic Axial Load (kips)	0.0	Holdown Force From Wall Above			-
	0.0	notdown Force From Wall Above	Shear DCR	ormation Control DCR	
oldown to Wall Centroid (ft) ), LS, CP	U.O LS			0.09	
), LS, CP		<del>_</del>	Moment DCR	0.19	
	General Colculation		1	Carre Carrest OCO.	
We that I was a	General Colculation		Shear DCR	Force Control DCRs	
all Self-Weight (kips)	3.9				
(kips)		Super-imposed DI, @ Top of Wall	Moment DCR		
(kips)	9,0				(207/20202)
(kips)	4,9	1920		Capacity TMS 402-13	Sec 9.3.5
1(Q <sub>0</sub> + Q <sub>L</sub> +0.2*Q <sub>S</sub> )	18.2	Eq. 7-1	d (in)	4	
.9(Q <sub>0</sub> )	14.0	Eq. 7-2	a (in)	0.4	
near/Unit Length (kip/ft)	3.5		Mn (kip*ft)	8.4	
/all Shear (QL) (kips)	54.85714286				
oment Generated from Holdown (kip*ft)	0.0	About Centroid of Wall	Out-Of-Plane Demands TMS 402	2.13 Sec 9 2 5 8 ACCE	11-13 Section 11.3 S->7.2.11
and a second sec		Chicago Company or 11th	y I	1.3	ASCE 41-13, Table 7-2, LS
	Wall Demands		Sxs,1E	0.71	72-23, 19the 7-2, C3
kips)	12.1	Eq. 7-34	h (ft)	14	Full Wall Height
kips)	140	Eq. 7-34 Eq. 7-34	w (psf)	100.0	Elevation Wall Unit Weight
kips)	\$4.05714253	545 F 39	Fp*L (pif)	369.2	ASCE 41-13, Eq. 7-13
(kip*ft)	75±10-14-203		Fp_min*L (pif)	130.0	ASCE 41-13, Eq. 7-14
teib 10	0.691=30.			9.05	MSCE 41-13, EQ. /-14
1 (100000-200	and Marklant Community Co.	200049	Mu,o (kip*ft)		
Lower-80	und Vertical Compressive Str		n	39,8	
	1	Table 6-1	tsp (in)	8	
n)	0.585	Weak Axis Radius of Gyration	c (in)	0.5	TMS 402-13, Eq. 9-35
	287		leff = Icr (in^4)	328	TM5 402-13, Eq. 9-34
(kip)	30	TMS 402-13, Eq. 9-19, Eq. 9-20	Pe (kips)	84	TMS 402-13, Eq. 9-33
c. (kip)	30		Ψ	1.278	TMS 402-13, Eq. 9-32
	2	LS	¹l'Mu,o (kip*ft)	11.56	TMS 402-13, Eq. 9-31
c,	1.1		Leading Property .		
				IN DEF	
s+(Q <sub>e</sub> )/(JC1C2) (kip)	18.2			f-Plane DCR, Sec 11.3.:	2.3
DCR	0.60		Flexure DCR	6.5	

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	Legend		Deter	mine FC vs DC Table 1	1-6
Input			Mu/(Vudv)	0,12	
Calculated	STATE OF THE STATE		Ÿ	1.0	#5 Bars or smaller
DCR/Check			Vn (kips) upperbound	164	TMS 402-13, Eq. 9-22
			Vn (kips) upperbound		TMS 402-13, Eq. 9-23
	General Inputs		Vnm (kip)	107.0	TMS 402-13, Sec 9.3.4.1.2.1
Pier ID	Grid E145		Vn (kip)	107.0	TMS 402-13, Equation 9-21
Location/Gridline	E145		Holdown Anchor Rod As (in^2)	0.62	At one wall end
f'm (psi)	810	Table 11-2(a)	a (in)	4.8	
Em (ksi)	729	TMS 402-13, Sec 4.2.2.2.1	Distance from Edge of Wall to Rod (in)	4	
fme (psi)	1053	Table 11-1	d (in)	105	
fy (ksi)	40		Mn (kip*ft)	367	
fye (ksi)	52		Ve (kip)	26	
Es (ksi)	29000		Shear vs. Flexure Control	Flavure Control	
Masonry Denisty (pcf)	125		An (in^2)	960	
Nominal Pier Length (ft)	10		f <sub>at</sub> (psi)	1933	
Pier Height (H)	14.00		Shear vs. Force Controlled	NA.	
Wall thickness (in)	8				
Roof Trib (SF)	195			nine m-factors Table 1	1-6
Roof DL (psf)	20		fae/fme	0.018	
Roof SL (psf)	25		L/heff	0.71	
Mezz Trib (SF)	0		As (in^2)	0.31	Total Vertical Reinforcement
Mezz DL (psf)	0		ρν	0.00032	
Mezz LL (psf)	0		Av (in^2)	0.3	Total Vertical Reinforcement
2nd FLR Trib (SF)	0		ρh	0.0002	
2nd FLR DL (psf)	35		ρ <sub>s</sub> fye/fme	0.027	
2nd FLR LL (psf)	40		m-factor	7.1	
Shearline Tot Shear (kips)	298.6	BSE-2E	m-factor restriction	7	
Shearline Tot Length (ft)	35		m-factor used	7.0	
Applicable Wall Trib Length (ft)	10		1		
Seismic Axial Load (kips)	0.0	Holdown Force From Wall Above	Defe	ormation Control DCR:	E
Holdown to Wall Centroid (ft)	0.0		Shear DCR	0.11	
O, LS, CP	CP		Moment DCR	9.46	
			773 (# 101101) - 111		
	General Calculation			Force Control DCRs	
Wall Self-Weight (kips)	24.5		Shear DCR		
Ot (kips)	3,9	Super-imposed DL @ Top of Wall	Moment DCR		
L (kips)	0.0				
SL (kips)	4.9			Capacity TMS 402-13,	Sec 9.3.5
$1.1(Q_0 + Q_L + 0.2^*Q_S)$	18.2	Eq. 7-1	d (in)	4	X-11
0.9(Q <sub>0</sub> )	184(0	Eq. 7-2	a (in)	0.4	
hear/Unit Length (kip/ft)	8.5		Mn (kip*ft)	8.4	
Vall Shear (Q <sub>€</sub> ) (kips)	85.31422571	-VI	1		
Moment Generated from Holdown (kip*ft)	8.5	About Centroid of Wall	Out-Of-Plane Demands TMS 402	-13 Sec 9.3.5 & ASCE	11-13 Section 11.3.5>7.2.11
The state of the s	3.7	Property westerness are seen	y J	1	ASCE 41-13, Table 7-2, CP
	Wall Demands		Sxs,1E	1.11	
(kips)	13.2	Eq. 7-34	h (ft)	14	Full Wall Height
(kips)	14.0	Eq. 7-34	w (psf)	10000	Elevation Wall Unit Weight
(kips)	85 31428571		Fp*L (pif)	1/4/10	ASCE 41-13, Eq. 7-13
A (kip*ft)	12:4.4		Fp_min*L(plf)	1600	ASCE 41-13, Eq. 7-14
	- ISTANA		Mu,o (kip*ft)	10.86	
Lower	r-Bound Vertical Compressive St	rength	n	30,8	
	1	Table 6-1	tsp (in)	- 18	
(in)	0.525	Weak Axis Radius of Gyration	c (in)	0.5	TMS 402-13, Eq. 9-35
je .	217		leff = lcr (in^4)	32.8	TMS 402-13, Eq. 9-34
ci (kip)	30	TMS 402-13, Eq. 9-19, Eq. 9-20	Pe (kips)	84	TMS 402-13, Eq. 9-33
P <sub>CL</sub> (kip)	30		Sh Sh	1,278	TMS 402-13, Eq. 9-32
5.64.00(88)	2	LS	¹ºMu,o (kip*ft)	13.90	TMS 402-13, Eq. 9-31
		LS.	[ rwu,o (kip tt)	13,90	11/03 402-13, Eq. 3-31
•					
C <sub>1</sub> C <sub>2</sub> C <sub>2</sub> +(Q <sub>2</sub> )/(JC1C2) (kip)	1.1		l	f-Plane DCR, Sec 11.3.	

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	Legend		De	termine FC vs DC Table 11-6	
Input			Mu/(Vudv)	0.07	
Calculated			γ	1.0	#5 Bars or smaller
DCR/Check			Vn (kips) upperbound	262	TMS 402-13, Eq. 9-22
			Vn (kips) upperbound	V (6)	TMS 402-13, Eq. 9-23
	General Inputs		Vom (kip)	176.1	TMS 402-13, Sec 9.3.4.1.2.1
Pier ID	Grid E160		Vn (kip)	176.1	TMS 402-13, Equation 9-21
ocation/Gridline	E160	**	Holdown Anchor Rod As (in^2)	0.31	At one wall end
'm (psi)	810	Table 11-2(a)	a (in)	2.4	
Em (ksi)	729	TM5 402-13, Sec 4.2.2.2.1	Distance from Edge of Wall to Rod (in)	4	
fme (psi)	1053	Table 11-1	d (in)	183	
y (ksi)	40		Mn (kip*ft)	627	
ye (ksi)	\$2		Ve (kip)	45	
is (ksi)	29000		Shear vs. Flexure Control	Flexuite Control	
Masonry Denisty (pcf)	125		An (in^2)	1536	
iominal Pier Length (ft)	16		f <sub>ae</sub> (psi)	29.4	
Pier Height (H)	14.00		Shear vs. Force Controlled	NA.	
Vall thickness (in)	8		Lanca varione cambine		-
Roof Trib (SF)	224		Det	ermine m-factors Table 11-	6
toof DL (psf)	20		fae/Ime	0.018	
Roof St. (psf)	25		L/heff	1.14	
Mezz Trib (SF)	0		As (in^2)	0.31	Total Vertical Reinforcement
	0			0.00020	Total vertical reimorcement
Mezz DL (psf)			ρ <sub>v</sub>		Warning and I was a
Mezz LL (psf)	0		Av (in^2)	0.3	Total Vertical Reinforcement
nd FLR Trib (SF)	224		Ph	0.0002	
and FLR DL (psf)	35		ρ <sub>a</sub> fye/fme	0.021	4
and FLR LL (psf)	40		m-factor	6.6	
hearline Tot Shear (kips)	293.2	BSE-1E	m-factor restriction	7	
hearline Tot Length (ft)	44		m-factor used	6,6	
Applicable Wall Trib Length (ft)	16		- Landana Cara	1007	•
eismic Axial Load (kips)	0.0	Holdown Force From Wall Above		Deformation Control DCRs	
foldown to Wall Centroid (ft)	0.0		Shear DCR	0.09	
O, LS, CP	LS		Moment DCR	0.36	
0) 10, 1	-				
	General Calculation			Force Control DCRs	
Wall Self-Weight (kips)	18.7		Shear DCR		
DL (kips)	12,3	Super-imposed DL @ Top of Wall	Moment DCR		
L (kips)	9,6	ouper miposed on grand or trans	- Individual Control of the Control		
L (kips)	5.6		Out-Of-Ple	one Capacity TMS 402-13, S	or 9 3 5
.1(Q <sub>0</sub> + Q <sub>1</sub> +0.2*Q <sub>5</sub> )	45.2	Eq. 7-1	d (in)	4	
10/04/1			ta-classic		
.9(Q <sub>0</sub> )	27.9	Eq. 7-2	a (in)	0.5	
hear/Unit Length (kip/ft)	6.7		Mn (kip*ft)	12.7	
Vall Shear (Q <sub>E</sub> ) (kips)	195.6181852	<b>- 1</b>		M.	
	0.0	About Centroid of Wall	Out-Of-Plane Demands TMS	402-13 Sec 9.3.5 & ASCE 41-	13 Section 11.3.5>7.2.11
foment Generated from Holdown (kip*ft)		Product Controls of Front			
Moment Generated from Holdown (kip*ft)		Produce Centrol of Train	z z	1.3	ASCE 41-13, Table 7-2, LS
Moment Generated from Holdown (kip*ft)	Wall Demands	Produced in the Control of Walt	X Sxs,1E		ASCE 41-13, Table 7-2, LS
	*	Eq. 7-34	X	1.3	ASCE 41-13, Table 7-2, LS Full Wall Height
(kips)	Wall Demands	The second secon	X Sxs,1E	1.3 0.71	
(kips) (kips)	Wall Demands	Eq. 7-34	X Sxs,1E h (ft)	1.3 0.71 14	Full Wall Height
(kips) (kips) (kips)	Wall Demands 15:2 27:9 256:5281818	Eq. 7-34	X Sxs,1E h (ft) w (psf) Fp*L (pif)	1.3 0.71 14 1000	Full Wall Height Elevation Wall Unit Weight ASCE 41-13, Eq. 7-13
(kips) (kips) (kips)	Wall Demands 15-2 27,9	Eq. 7-34	X Sxs,1E h (ft) w (psf) Fp*L (plf) Fp_min*L (plf)	1.3 0.71 14 2000 5400 2020	Full Wall Height Elevation Wall Unit Weight
(kips) (kips) (kips) t (kip*ft)	Wall Demands 35.2 27.9 26.652-1818 1492.7	Eq. 7-34 Eq. 7-34	X Sxs,1E h (ft) w (psf) Fp*L (pif)	1.3 0.71 14 2090 5900 2000 24,47	Full Wall Height Elevation Wall Unit Weight ASCE 41-13, Eq. 7-13
(kips) (kips) (kips) (kip*ft)	Wall Demands 15:2 27:9 256:5281818	Eq. 7-34 Eq. 7-34	X Sxs,1E h (ft) w (psf) Fp*L(pif) Fp_min*L(pif) Mu,o (kip*ft) n	1.3 0.71 14 2000 5400 2020	Full Wall Height Elevation Wall Unit Weight ASCE 41-13, Eq. 7-13
(kips) (kips) (kips) (kip*ft) tower-8	Wall Demands 45.2 27.9 266:54c1818 1492.7 tound Vertical Compressive Stri	Eq. 7-34 Eq. 7-34 India and the second secon	X Sss,1E h (ft) w (psf) Fp*L(pif) Fp_min*L(pif) Mu,0 (kip*ft) 0 tsp (in)	1.3 0.71 14 100:0 5900 200.0 14:07 33:8	Full Wall Height Elevation Wall Unit Weight ASCE 41-13, Eq. 7-13 ASCE 41-13, Eq. 7-14
(kips) (kips) (kips) 6 (kip*ft)  Lower-B	Wall Demands 45.2 27.9 20.6.7021818 1492.7  Round Vertical Compressive Str. 1 0.560	Eq. 7-34 Eq. 7-34	X Sxs,1E h (ft) w (psf) Fp*t (pif) Fp_min*L (pif) Mu,o (kip*ft) n tsp (in) c (in)	1.3 0.71 14 1970 5900 2620 1437 338 5	Full Wall Height Elevation Wall Unit Weight ASCE 41-13, Eq. 7-13 ASCE 41-13, Eq. 7-14
(kips) (kips) (kips) (kips) A (kip*ft)  Lower-8	Wall Demands 15.2 27.9 20.6;512.1818 1492.7  tound Vertical Compressive Str. 1 0.550 300	Eq. 7-34 Eq. 7-34  Eq. 7-34  In the factor of the factor o	X Sx5,1E h (ft) w (psf) Fp*L(plf) Fp_min*L(plf) Mu,o (kip*ft) n tsp (in) L (in) Leff = Ler (in^4)	1.3 0.71 14 1000 5900 5000 5407 338 5 0.05	Full Wall Height Elevation Wall Unit Weight ASCE 41-13, Eq. 7-13 ASCE 41-13, Eq. 7-14  TMS 402-13, Eq. 9-35 TMS 402-13, Eq. 9-34
(kips) (kips) (kips) (kips) (kips) (kip*ft)  Lower-8 ((in) (r (c; (kip)	Wall Demands 15.2 27.9 26.6.6.2.1818 1492.7  Round Vertical Compressive Str. 1 0.560 300 44	Eq. 7-34 Eq. 7-34 India and the second secon	X Sxs,1E h (ft) w (psf) Fp*L (plf) Fp_min*L (plf) Mu,o (kip*ft) n tsp (in) telf = ler (in^4) Pe (kips)	1.3 0.71 14 2000 5900 2020 14407 3918 5 0.05 480	Full Wall Height Elevation Wall Unit Weight ASCE 41-13, Eq. 7-13 ASCE 41-13, Eq. 7-14  TMS 402-13, Eq. 9-35 TMS 402-13, Eq. 9-34 TMS 402-13, Eq. 9-34
(kips) (kips) (kips) (kips) (kips) (kip*ft)  Lower-8 ((in) (r (c; (kip)	Wall Demands 15.2 27.9 25.6.0121818 1492.7  Cound Vertical Compressive Stri 0.560 300 44 44	Eq. 7-34 Eq. 7-34 Table 6-1 Weak Axis Radius of Gyration TMS 402-13, Eq. 9-19, Eq. 9-20	X Sxs,1E h (ft) w (psf) Fp*L(pif) Fp_min*L(pif) Mu,o (kip*ft) n tsp (in) c (in) leff = ler (in*4) Pe (kips) yr	1.3 0.71 14 2090 5900 2020 2437 395 0 6 438 423 423	Full Wall Height Elevation Wall Unit Weight ASCE 41-13, Eq. 7-13 ASCE 41-13, Eq. 7-14 TMS 402-13, Eq. 9-35 TMS 402-13, Eq. 9-34 TMS 402-13, Eq. 9-33 TMS 402-13, Eq. 9-33
(kips) (kips) (kips) (kips) (kips) (kip*ft)  tower-8 (in) fr c1 (kip) PC1 (kip)	Wall Demands 45.2 27.9 26.6.5121818 1492.7 tound Vertical Compressive Str. 1 0.560 300 44 44 44	Eq. 7-34 Eq. 7-34  Eq. 7-34  In the factor of the factor o	X Sxs,1E h (ft) w (psf) Fp*L (plf) Fp_min*L (plf) Mu,o (kip*ft) n tsp (in) telf = ler (in^4) Pe (kips)	1.3 0.71 14 2000 5900 2020 14407 3918 5 0.05 480	Full Wall Height Elevation Wall Unit Weight ASCE 41-13, Eq. 7-13 ASCE 41-13, Eq. 7-14  TMS 402-13, Eq. 9-35 TMS 402-13, Eq. 9-34 TMS 402-13, Eq. 9-34
(kips) (kips) (kips) (kips) (kip*ft)  tower-8 ((in) -/r	Wall Demands 15.2 27.9 25.6.0121818 1492.7  Cound Vertical Compressive Stri 0.560 300 44 44	Eq. 7-34 Eq. 7-34 Table 6-1 Weak Axis Radius of Gyration TMS 402-13, Eq. 9-19, Eq. 9-20	X Sxs,1E h (ft) w (psf) Fp*L(pif) Fp_min*L(pif) Mu,o (kip*ft) n tsp (in) c (in) leff = ler (in*4) Pe (kips) yr	1.3 0.71 14 2090 5900 2020 2437 395 0 6 438 423 423	Full Wall Height Elevation Wall Unit Weight ASCE 41-13, Eq. 7-13 ASCE 41-13, Eq. 7-14 TMS 402-13, Eq. 9-35 TMS 402-13, Eq. 9-34 TMS 402-13, Eq. 9-33 TMS 402-13, Eq. 9-33
Moment Generated from Holdown (kip*ft)	Wall Demands 45.2 27.9 26.6.5121818 1492.7 tound Vertical Compressive Str. 1 0.560 300 44 44 44	Eq. 7-34 Eq. 7-34 Table 6-1 Weak Axis Radius of Gyration TMS 402-13, Eq. 9-19, Eq. 9-20	X Sss,1E h (ft) w (psf) Fp*L (pif) Fp_min*L (pif) Mu,0 (kip*ft) n tsp (in) c (in) leff = lcr (in^4) Pe (kips)  Ψ ΨMu,0 (kip*ft)	1.3 0.71 14 2090 5900 2020 2437 395 0 6 438 423 423	Full Wall Height Elevation Wall Unit Weight ASCE 41-13, Eq. 7-13 ASCE 41-13, Eq. 7-14 TMS 402-13, Eq. 9-35 TMS 402-13, Eq. 9-33 TMS 402-13, Eq. 9-33 TMS 402-13, Eq. 9-32 TMS 402-13, Eq. 9-32

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	Legend		Det	ermine FC vs DC Table 11	-6
nput			Mu/(Vudv)	0.07	
Calculated			γ.	1.0	#5 Bars or smaller
DCR/Check			Vn (kips) upperbound	262	TMS 402-13, Eq. 9-22
			Vn (kips) upperbound		TMS 402-13, Eq. 9-23
	General Inputs		Vnm (kip)	176.1	TMS 402-13, Sec 9.3.4.1.2.1
Pier ID	Grid E160		Vn (kip)	175.1	TMS 402-13, Equation 9-21
ocation/Gridline	£160	Y.	Holdown Anchor Rod As (in^2)	0.31	At one wall end
'm (psi)	810	Table 11-2(a)	a (in)	2.4	4
Em (ksi)	729	TMS 402-13, Sec 4.2.2.2.1	Distance from Edge of Wall to Rod (in)	4	
me (psi)	1053	Table 11-1	<u>d (in)</u>	298	
y (ksi)	40		Mn (kip*ft)	\$27	
ye (ksi)	52		Ve (kip)	45	
is (ksi)	29000		Shear vs. Flexure Control	Flexure Control	
Masonry Denisty (pcf)	125		An (in^2)	1536	
Nominal Pier Length (ft)	16		f <sub>at</sub> (psi)	29.4	
Pier Height (H)	14.00		Shear vs. Force Controlled	MA	4
Vall thickness (in)	8				100
Roof Trib (SF)	224			rmine m-factors Table 1	1-6
Roof DL (psf)	20		fae/fme	0,028	
Roof St. (psf)	25		L/heff	1.14	
Mezz Trib (SF)	0		As (in^2)	0.62	Total Vertical Reinforcement
Mezz DL (psf)	.0		ρ <sub>ν</sub>	0.00040	
Mezz LL (psf)	0		Av (in^2)	0,6	Total Vertical Reinforcement
and FLR Trib (SF)	224		Ph	0.0005	
and FLR DL (psf)	35		ρ <sub>s</sub> fye/fme	0.043	
and FLR LL (psf)	40		m-factor	71	
hearline Tot Shear (kips)	456.1	BSE-2E	m-factor restriction	7	
hearline Tot Length (ft)	44	100.00	m-factor used	7.0	
Applicable Wall Trib Length (ft)	16				
seismic Axial Load (kips)	0.0	Holdown Force From Wall Above	D	eformation Control DCRs	1
foldown to Wall Centroid (ft)	0.0	110.00111111111111111111111111111111111	Shear DCR	0.13	
O, LS, CP	CP		Moment DCR	0.53	
o) toy ur					
	General Calculation			Force Control DCRs	
Wall Self-Weight (kips)	18.7		Shear DCR		
OL (kips)	12.3	Super-imposed DL @ Top of Wall	Moment DCR		
L (kips)	3.0		Thursday and the same of the s		
L (kips)	5.5		Out-Of-Pla	ne Capacity TMS 402-13,	Sec 9.3.5
.1(Q <sub>0</sub> + Q <sub>L</sub> +0.2*Q <sub>5</sub> )	45,2	Eq. 7-1	d (in)	4	
19(04)	27.5	Eq. 7-2	a (in)	0.6	
	10.4	SME FOR	Mn (kip*ft)	10.3	
ihear/Unit Length (kip/ft)			Livin (mp :rd	10.3	
Wall Shear (Q <sub>€</sub> ) (kips)	165/05/15455	Although desired and the second secon			14 45 Facility 44 5 F a 5 F a 5
Moment Generated from Holdown (kip*ft)	0.0	About Centroid of Wall	Out-Of-Plane Demands TMS 4		
	W. 85		1 2	1	ASCE 41-13, Table 7-2, LS
n	Wall Demands	75- 734	Sxs,16	1.11	Toll Wall Dalaha
(kips)	45.2	Eq. 7-34	h (ft)	14	Full Wall Height Elevation Wall Unit Weight
(kips)	27.8	Eq. 7-34	w (psf)	100.0	
(kips)	165/35/15/453		Fp*L (pif)	710.4 160.0	ASCE 41-13, Eq. 7-13 ASCE 41-13, Eq. 7-14
M (kip*ft)	2920	<del></del> !	Fp_min*L (plf)	17.40	Maue 41-13, Eq. 7-14
288572902		20.0046	Mu,o (kip*ft)	39.8	
Lower-l	Bound Vertical Compressive St		in the state of th		
W. A.	1	Table 6-1	tsp (in)	0.7	TARE 400 10 F- 6 05
(in)	0.621	Weak Axis Radius of Gyration	c (in)		TMS 402-13, Eq. 9-35
lr .	27/L	Market Control and the Control and Control	leff = lcr (in^4)	592	TMS 402-13, Eq. 9-34
c <sub>L</sub> (kip)	55	TMS 402-13, Eq. 9-19, Eq. 9-20	Pe (kips)	151	TMS 402-13, Eq. 9-33
P <sub>CL</sub> (kip)	55		Ψ	1.427	TMS 402-13, Eq. 9-32
	2	LS	ΨMu,o (kip*ft)	24.84	TM5 402-13, Eq. 9-31
1C <sub>2</sub>	1.1				
C <sub>1</sub> C <sub>2</sub> O <sub>G</sub> +(O <sub>E</sub> )/(JC1C2) (kip)			Out	Of-Plane DCR, Sec 11.3.5	.3

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62019.034	Date:

	Legend	we -	Det	ermine FC vs DC Table 1	1-6
Input			Mu/(Vudv)	0.06	
Calculated			y .	1.0	#5 Bars or smaller
DCR/Check			Vn (kips) upperbound	328	TMS 402-13, Eq. 9-22
		,,	Vn (kips) upperbound		TMS 402-13, Eq. 9-23
	General Inputs		Vnm (kip)	219.2	TMS 402-13, Sec 9.3.4.1.2.1
Pier ID	Grid E160		Vn (kip)	219.2	TMS 402-13, Equation 9-21
Location/Gridline	E160		Holdown Anchor Rod As (in^2)	0.31	At one wall end
f'm (psi)	810	Table 11-2(a)	a (in)	2.4	
Em (ksi)	729	TMS 402-13, Sec 4.2.2.2.1	Distance from Edge of Wall to Rod (in)	4	
fme (psi)	1053	Table 11-1	d (in)	236	
fy (ksi)	40		Mn (kip*ft)	732	
fye (ksi)	52		Ve (kip)	52	
Es (ksi)	29000		Shear vs. Flexure Control	Flexure Control	
Masonry Denisty (pcf)	125		An (in^2)	1920	
Nominal Pier Length (ft)	20		f <sub>ae</sub> (psi)	15.6	
Pier Height (H)	14.00	<del></del>	Shear vs. Force Controlled	NA.	
Wall thickness (In)	8		Sitear vs. Force Controlled	TAN .	
	224		7	emine m festers Table	11.6
Roof Trib (SF)	224			ormine m-factors Table : 0.016	14-10
Roof DL (psf)	25		fae/fme	1,43	
Roof SL (psf)					Total Martinal Bainford
Mezz Trib (SF)	0		As (in^2)	0.31	Total Vertical Reinforcement
Mezz DL (psf)	0		ρ <sub>v</sub>	0.00016	
Mezz LL (psf)	0		Av (in^2)	0.3	Total Vertical Reinforcement
2nd FLR Trib (SF)	0		Pa	0.0002	
2nd FLR DL (psf)	35		ρ₂fye/fme	0.019	
2nd FLR LL (psf)	40		m-factor	6.8	
Shearline Tot Shear (kips)	141.9	BSE-1E	m-factor restriction	7	
Shearline Tot Length (ft)	20	100 at	m-factor used	6.8	
Applicable Wall Trib Length (ft)	20		[miactor used	0.0	
Seismic Axial Load (kips)	0.0	Holdown Force From Wall Above		eformation Control DCR	*
Holdown to Wall Centroid (ft)	0.0	Holdowit Force From Wall Above	Shear DCR	9.10	32
IO, LS, CP	LS		Moment DCR	0.60	
10, 13, 0			Iwament ock	Miller-	
	General Calculation		1	Force Control DCRs	
Wall Self-Weight (kips)	23.3		Shear DCR	Porce control bens	
DL (kips)	4.5	Super-imposed DL @ Top of Wall	Moment DCR		
LL (kips)	0.0	Super-imposed by group of waii	[monient pck		
SL (kips)	5.6		0.40406	ne Capacity TMS 402-13	f025
		1		The second secon	, 360 9.3.5
$1.1(Q_0 + Q_L + 0.2*Q_S)$	31.8	Eq. 7-1	d (in)	4	
0.9(Q <sub>0</sub> )	25.0	Eq. 7-2	a (in)	0.3	
Shear/Unit Length (kip/ft)	7.1		Mn (kip*ft)	12.0	
Wall Shear (Q <sub>€</sub> ) (klps)	141.9				
Moment Generated from Holdown (kip*ft)	0.0	About Centroid of Wall	Out-Of-Plane Demands TMS 4	102-13 Sec 9.3.5 & ASCE	41-13 Section 11.3.5>7.2.11
		***************************************	у	1.3	ASCE 41-13, Table 7-2, LS
	Wall Demands		Sxs,1E	0.71	
P (kips)	31,8	Eq. 7-34	h (ft)	14	Full Wall Height
P (kips)	25.0	Eq. 7-34	w (psf)	1930	Elevation Wall Unit Weight
/ (kips)	141.9		Fp*L (plf)	739/4	ASCE 41-13, Eq. 7-13
M (kip*ft)	1986.6		Fp_min*L(plf)	260.0	ASCE 41-13, Eq. 7-14
Total Tale	Assured		Mu,o (kip*ft)	18:00	CONTRACTOR SALES AND ACCOUNT.
James	-Bound Vertical Compressive S	trenath	T IN THE STATE OF	39.8	
Lower	-Bound Vertical Compressive 3	Table 6-1	tsp (in)	8	
(in)	0.509	Weak Axis Radius of Gyration	c (in)	0.4	TMS 402-13, Eq. 9-35
		Weak Axis radius of Gyration		498	
n/r	330		leff = icr (in^4)		TMS 402-13, Eq. 9-34
P <sub>CL</sub> (kip)	45	TMS 402-13, Eq. 9-19, Eq. 9-20	Pe (kips)	127	TMS 402-13, Eq. 9-33
(P <sub>CL</sub> (kip)	45		Ψ	1,335	TMS 402-13, Eq. 9-32
	2	LS	ΨMu,o (kip*ft)	24.10	TMS 402-13, Eq. 9-31
C,C,	1.1				
C1C7					
Q <sub>G</sub> +(Q <sub>L</sub> )/(IC1C2) (kip)	31.8		Out	Of-Plane DCR, Sec 11.3.	5.3

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	Legend			ermine FC vs DC Table 1	1-6
nput			Mu/(Vudv)	0.06	
Calculated			y .	1.0	#5 Bars or smaller
OCR/Check			Vn (kips) upperbound	328	TMS 402-13, Eq. 9-22
			Vn (kips) upperbound		TMS 402-13, Eq. 9-23
	General Inputs		Vnm (kip)	219.2	TM5 402-13, Sec 9.3.4.1.2.1
Pier ID	Grid E160		Vn (kip)	219/2	TMS 402-13, Equation 9-21
ocation/Gridline	£160		Holdown Anchor Rod As (in^2)	0.31	At one wall end
'm (psi)	810	Table 11-2(a)	a (in)	2.4	
m (ksi)	729	TMS 402-13, Sec 4.2.2.2.1	Distance from Edge of Wall to Rod (in)	4	
me (psi)	1053	Table 11-1	d (in)	236	
y (ksi)	40		Mn (kip*ft)	732	
ye (ksi)	52		Ve (kip)	52	
s (ksi)	29000		Shear vs. Flexure Control	Fluxure Control	
Masonry Denisty (pcf)	125		An (in^2)	1920	
forninal Pier Length (ft)	20		f <sub>ae</sub> (psi)	16.6	
ier Height (H)	14.00		Shear vs. Force Controlled	HA	
Vall thickness (in)	8		mical various controlled		
loof Trib (SF)	224		Dete	rmine m-factors Table 1	1-6
oof DL (psf)	20		fae/fme	0.016	
Roof St. (psf)	25		L/heff	1.43	
Aezz Trib (SF)	0		As (in^2)	0.62	Total Vertical Reinforcement
	0			0.00032	. Star For Dear Neumon Centerit
Mezz DL (psf)			ρ, (1-42)		The transport of the fact of the control of the con
Mezz LL (psf)	0		Av (in^2)	0.6	Total Vertical Reinforcement
nd FLR Trib (SF)	0		Ph	0.0005	
nd FLR DL (psf)	35		ρ <sub>ε</sub> fye/fme	0.039	
nd FLR LL (psf)	40		m-factor	7.5	
hearline Tot Shear (kips)	220.7	BSE-2E	m-factor restriction	7	
hearline Tot Length (ft)	20		m-factor used	7.0	
Applicable Wali Trib Length (ft)	20				
elsmic Axial Load (kips)	0.0	Holdown Force From Wall Above	D.	formation Control DCR	f
foldown to Wall Centroid (ft)	0.0		Shear DCR	014	
O, LS, CP	CP		Moment DCR	:0:60	
		— 7.	William Control of the Control of th		
	General Calculation			Force Control DCRs	
Vall Self-Weight (kips)	23.3		Shear DCR		
OL (kips)	4.5	Super-imposed DL @ Top of Wall	Moment DCR		
L (kips)	-0,0				
L (kips)	5,6		Out-Of-Pla	ne Capacity TMS 402-13,	Sec 9.3.5
.1(Q <sub>0</sub> + Q <sub>c</sub> +0.2*Q <sub>c</sub> )	\$1.3	Eq. 7-1	d (in)	4	
THE PERSON NAMED IN COLUMN					
.9(Q <sub>b</sub> )	25:0	Eq. 7-2	a (in)	0,4	
hear/Unit Length (kip/ft)	\$1.0		Mn (kip*ft)	15.9	
Vall Shear (Q <sub>c</sub> ) (kips)	22/177				
Noment Generated from Holdown (kip*ft)	900	About Centroid of Wall	Out-Of-Plane Demands TMS 4		
	-		, X.	1	ASCE 41-13, Table 7-2, CP
	Wall Demands		Sxs,1E	1.11	
(kips)	31.8	Eq. 7-34	h (ft)	14	Full Wall Height
(kips)	25.0	Eq. 7-34	w (psf)	100:0	Elevation Wall Unit Weight
(kips)	220,7		Fp*L (plf)	E88/0	ASCE 41-13, Eq. 7-13
(kip*ft)	3089.8		Fp_min*L (plf)	2010	ASCE 41-13, Eq. 7-14
			Mu,o (kip*ft)	24,75	
tower	-Bound Vertical Compressive S	trength	n.	29/8	
	í	Table 6-1	tsp (in)		
(in)	0.573	Weak Axis Radius of Gyration	c (in)	0.5	TMS 402-13, Eq. 9-35
lr .	293		leff = Icr (in^4)	1620	TMS 402-13, Eq. 9-34
cı (kip)	58	TMS 402-13, Eq. 9-19, Eq. 9-20	Pe (kips)	161	TMS 402-13, Eq. 9-33
		tino too asy equal and a ray	The state of the s	1,247	
P <sub>ct</sub> (kip)	58		1		TMS 402-13, Eq. 9-32
	2	LS	ΨMu,o (kip*ft)	27,13	TMS 402-13, Eq. 9-31
ıC <sub>2</sub>	1.1				
Q <sub>6</sub> +{Q <sub>6</sub> }/(JC1C2) (kip)	31,8		Out-	Of-Plane DCR, Sec 11.3.	5.3
A STATE OF THE STA	0.55		Flexure DCR	4.6	

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	Legend	-	D	etermine FC vs DC Table 11-	6
nput			Mu/(Vudv)	0.07	
Calculated	2		Y	1.0	#5 Bars or smaller
DCR/Check			Vn (kips) upperbound	148	TMS 402-13, Eq. 9-22
CHARACTER CONTROL			Vn (kips) upperbound		TMS 402-13, Eq. 9-23
	General Inputs		Vnm (kip)	99.3	TMS 402-13, Sec 9.3.4.1.2.1
Pier ID	Grid E200		Vn (kip)	99.3	TMS 402-13, Equation 9-21
Location/Gridline	E200		Holdown Anchor Rod As (In^2)	0.31	At one wall end
l'm (psi)	810	Table 11-2(a)	a (in)	2.4	
Em (ksi)	729	TMS 402-13, Sec 4.2.2.2.1	Distance from Edge of Wall to Rod (in)	4	
fme (psi)	1053	Table 11-1	d (in)	104	
fy (ksi)	40		Mn (kip*ft)	228	
ye (ksi)	52		Ve (kip)	31	
Es (ksi)	29000		Shear vs. Flexure Control	Flexure Control	<u>-</u>
Masonry Denisty (pcf)	125		An (in^2)	864	
Nominal Pier Length (ft)	9		f <sub>se</sub> (psi)	34.2	
Pier Height (H)	7.00		Shear vs. Force Controlled	MA	
Wall thickness (in)	8				
Roof Trib (SF)	216		De	termine m-factors Table 11-	-6
Roof DL (psf)	20		fae/fme	0.032	
Roof SL (psf)	25		L/heff	129	
Mezz Trib (SF)	0		As (in^2)	0.31	Total Vertical Reinforcement
Mezz DL (psf)	0		ρ,	0.00036	remed mento sement
Mezz LL (psf)	0		Av (in^2)	0.3	Total Vertical Reinforcement
			- Portono - Port		Total Vertical Reinforcement
and FLR Trib (SF)	216		ρh	0.0005	
and FLR DL (psf)	35	•	ρ <sub>g</sub> fye/Ime	0.040	
and FLR LL (psf)	40		m-factor	5.9	
hearline Tot Shear (kips)	546.2	BSE-1E	m-factor restriction	7	
hearline Tot Length (ft)	44		m-factor used	5.9	
Applicable Wall Trib Length (ft)	9				• • • • • • • • • • • • • • • • • • • •
Seismic Axial Load (kips)	0.0	Holdown Force From Wall Above		Deformation Control DCRs	
foldown to Wall Centroid (ft)	0.0		Shear DCR	0.19	<u> </u>
O, LS, CP	LS		Moment DCR	0.55	
			1 /		
	General Calculation			Force Control DCRs	
Wall Self-Weight (kips)	5.3		Shear DCR		
OL (kips)	21.9	Super-imposed DL @ Top of Wall	Moment DCR		
L (kips)	8.6				
L (kips)	5.4			iane Capacity TMS 402-13, S	ec 9.3.5
.1(Q <sub>0</sub> + Q <sub>1</sub> +0.2*Q <sub>5</sub> )	29.5	Eq. 7-1	d (in)	4	
.9(Q <sub>0</sub> )	15.4	Eq. 7-2	a (in)	06	4
hear/Unit Length (kip/ft)	22.4		Mn (kip*ft)	8.6	<u> </u>
Vall Shear (Q <sub>4</sub> ) (kips)	111.7227273				
Noment Generated from Holdown (kip*ft)	0.0	About Centroid of Wall	Out-Of-Plane Demands TMS	402-13 Sec 9.3.5 & ASCE 41	-13 Section 11.3.5>7.2.11
The state of the s		District Control of the Control of t	X -	1.3	ASCE 41-13, Table 7-2, LS
	Wall Demands		Sxs,1E	0.71	
(kips)	19.5	Eq. 7-34	h (ft)	14	Full Wall Height
(kips)	15.4	Eq. 7-34	w (psf)	THE	Elevation Wall Unit Weight
(kips)	111.7232176		Fp*L (plf)	322:3	ASCE 41-13, Eq. 7-13
M (kip*ft)	782.1		Fp_min*L (pif)	117(0)	ASCE 41-13, Eq. 7-14
			Mu,o (kip*ft)	\$44	
Lower-I	Bound Vertical Compressive St	rength	n	39,5	
	1	Table 6-1	tsp (in)	3	<u> </u>
(in)	0.597	Weak Axis Radius of Gyration	c (in)	672	TMS 402-13, Eq. 9-35
lt .	1/01	and the second s	leff = lcr (in^4)	308	TMS 402-13, Eq. 9-34
(kip)	113	TMS 402-13, Eq. 9-19, Eq. 9-20	Pe (kips)	\$14	TMS 402-13, Eq. 9-33
	113	The same of the sa	ψ	1,100	The sale is a second district of the sale and the sale an
distriction of the second of t	1115				TMS 402-13, Eq. 9-32
distribution and the second se		100	I lames as west		
P <sub>CL</sub> (kip)	2	LS	ΨMu,o (kip*ft)	8.99	TMS 402-13, Eq. 9-31
P <sub>CL</sub> (kip)		LS		Y N	
$\langle P_{CL}(kip) \rangle$ $C_1C_2$ $C_0 \in (Q_c)/(JC1C2)$ (kip)	2	LS		8,99 nt-Of-Plane DCR, Sec 11.3.5.3	

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#### ASCE 41-13 Reinforce

r	WOZSEW	
Input	Legend	
Calculated		
DCR/Check		
	*	
	General Inputs	
Pier ID	Grld E200	
Location/Gridline	E200	
f'm (psi)	810	Table 11-2(a)
Em (ksi)	729	TMS 402-13, Sec 4.2.2.2.1
fme (psi)	1053	Table 11-1
fy (ksi)	40	
fye (ksi)	52	
Es (ksi)	29000	
Masonry Denisty (pcf)	125	
Nominal Pier Length (ft)	9	
Pier Height (H) Wall thickness (in)	7.00	
Roof Trib (SF)	216	
Roof DL (psf)	20	
Roof SL (psf)	25	
Mezz Trib (SF)	0	
Mezz DL (psf)	0	
Mezz LL (psf)	0	
2nd FLR Trib (SF)	216	
2nd FLR DL (psf)	35	
2nd FLR LL (psf)	40	
Shearline Tot Shear (kips)	546.2	BSE-1E
Shearline Tot Length (ft)	44	B3C-1E
Applicable Wall Trib Length (ft)	9	
Seismic Axial Load (kips)	0.0	Holdown Force From Wall Above
Holdown to Wall Centroid (ft)	0.0	
IO, LS, CP	LS	
	General Calculation	
Wall Self-Weight (kips)	5.3	
DL (kips)	11.9	Super-imposed DL @ Top of Wall
LL (kips)	8,6	
SL (kips)	5.4	20 -
1.1(Q <sub>0</sub> + Q <sub>L</sub> +0.2*Q <sub>S</sub> )	29.5	Eq. 7-1
0.9(Q <sub>0</sub> )	15.4	Eq. 7-2
Shear/Unit Length (kip/ft)	12.4	
Wall Shear (Q <sub>ℓ</sub> ) (kips)	111.7227273	
Moment Generated from Holdown (kip*ft)	0.0	About Centroid of Wall
	Wall Demands	7
P (kips)	29.5 15.4	Eq. 7-34
P (kips) V (kips)	111.7227273	Eq. 7-34
M (kip*ft)	782.1	
1030P 10	1.000	
Lower-B	ound Vertical Compressive Str	ength
К	1	Table 6-1
r (in)	0.597	Weak Axis Radius of Gyration
h/r	141	
P <sub>CL</sub> (kip)	113	TMS 402-13, Eq. 9-19, Eq. 9-20
KP <sub>CL</sub> (kip)	113	
I .	2	LS
c,c,	1.1	
Q <sub>c</sub> +(Q <sub>c</sub> )/(JC1C2) (kip)	29.5	
DCR	0.26	

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Reid Middleton
728 134th Street SW = Suite 200
Everett, Washington 98204
Ph; 425 741-3800
Fax: 425 741-3900

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	Legend		De	termine FC vs DC Table 11-	5
Input			Mu/(Vudv)	0.07	
Calculated			7	1.0	#5 Bars or smaller
DCR/Check			Vn (kips) upperbound	148	TMS 402-13, Eq. 9-22
19-1114-111E-			Vn (kips) upperbound		TMS 402-13, Eq. 9-23
	General Inputs		Vnm (kip)	99.3	TMS 402-13, Sec 9.3.4.1.2.1
Pier ID	Grid E200		Vn (kip)	99.3	TMS 402-13, Equation 9-21
Location/Gridline	F200		Holdown Anchor Rod As (in^2)	0.31	At one wall end
f'm (psi)	810	Table 11-2(a)	a (in)	2.4	E.
Em (ksi)	729	TMS 402-13, Sec 4.2.2.2.1	Distance from Edge of Wall to Rod (in)	4	
fme (psi)	1053	Table 11-1	d (in)	104	1
fy (ksi)	40		Mn (kip*ft)	238	
(ye (ksi)	52		Ve (kip)	34	
Es (ksi)	29000		Shear vs. Flexure Control	Plexion Control	
Masonry Denisty (pcf)	125		An (in†2)	864	
Nominal Pier Length (ft)	9		f <sub>a</sub> , (psi)	34.2	
Pier Height (H)	7.00		Shear vs. Force Controlled	NA NA	
Wall thickness (in)	8				
Roof Trib (SF)	216		Det	ermine m-factors Table 11-	6
Roof DL (psf)	20		fae/fme	0.032	
Roof SL (psf)	25		L/heff	1.29	
Mezz Trib (SF)	0		As (in^2)	0.31	Total Vertical Reinforcement
Mezz DL (psl)	0		0,	0.00036	
Mezz LL (psf)	0		Av (in^2)	0.3	Total Vertical Reinforcement
2nd FLR Trib (SF)	216		Ph.	0.0005	
and FLR DL (psf)	35		ρ <sub>s</sub> tye/tme	0.040	
2nd FLR LL (psf)	40	and the	m-factor	7.7	
hearline Tot Shear (kips)	769.7	BSE-2E	m-factor restriction	7	
hearline Tot Length (ft)	44		m-factor used	7.0	
Applicable Wall Trib Length (ft)	9	Section (Section Section States Section Sectio	-		
Seismic Axial Load (kips)	0.0	Holdown Force From Wall Above		Deformation Control DCRs	
Holdown to Wall Centroid (ft)	0.0		Shear DCR	0.31	
O, US, CP	CP		Moment DCR	0.56	
	Water and Pater Territory Inc.		1 [	and the second second	
telle area area area	General Calculation		10.000	Force Control DCRs	
Vall Self-Weight (kips) DL (kips)	5,3 11.9		Shear DCR		
	8.5	Super-imposed DL @ Top of Wali	Moment DCR		
L (kips)			0.000		
L (kips)	5,4			ine Capacity TMS 402-13, S	ec 9.3.5
.1(Q <sub>0</sub> + Q <sub>1</sub> +0.2*Q <sub>5</sub> )	19.5	Eq. 7-1	d (in)	4	
9.9(Q <sub>0</sub> )	15,4	Eq. 7-2	a (in)	0.6	
hear/Unit Length (kip/ft)	17.5		Mn (kip*ft)	8.6	
Vall Shear (Q <sub>c</sub> ) (kips)	157.4386364				
Moment Generated from Holdown (kip*ft)	0.0	About Centroid of Wall	Out-Of-Plane Demands TMS	102-13 Sec 9.3.5 & ASCE 41-	13 Section 11.3,5>7,2.11
		A STATE OF THE STA	lx.	1	ASCE 41-13, Table 7-2, CP
	Wall Demands		Sxs,1E	1.11	
(kips)	29,5	Eq. 7-34	h (ft)	14	Full Wall Height
(kips)	15.4	Eq. 7-34	w (psf)	1000	Elevation Wall Unit Weight
(kips)	157,4386364		Fp*L (pH)	990.0	ASCE 41-13, Eq. 7-13
4 (kip*ft)	1102.1		Fp_min*L (pif)	990	ASCE 41-13, Eq. 7-14
MINUSTRACE.			Mu,o (kip*ft)	9,79	
Lower-Box	and Vertical Compressive Str	ength	n	368	
	_ 1	Table 6-1	tsp (in)	0	
(in)	0.597	Weak Axis Radius of Gyration	c (in)	6.7	TMS 402-13, Eq. 9-35
/r	141		teff = lcr (in^4)	300	TMS 402-13, Eq. 9-34
(kip)	113	TMS 402-13, Eq. 9-19, Eq. 9-20	Pe (kips)	314	TMS 402-13, Eq. 9-33
P <sub>Q</sub> (kip)	113	THE THE AND PROPERTY OF STREET	Ψ		
LC (VIA)				1,464	TMS 402-13, Eq. 9-32
	2	LS	(4'Mu,o (kip*ft)	1080	TMS 402-13, Eq. 9-31
- <sub>1</sub> C,	1.1				
Q <sub>6</sub> +(Q <sub>F</sub> )/(IC1C2) (kip)	29.5		Out	-Of-Plane DCR, Sec 11.3.5.3	
DCR	0.766		Flexure DCR		

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	Legend		Dete	rmine FC vs DC Table 1	1.6
Input			Mu/(Vudv)	0.05	
Calculated			У	1.0	#5 Bars or smaller
DCR/Check			Vn (kips) upperbound	361	TMS 402-13, Eq. 9-22
			Vn (kips) upperbound	70.	TMS 402-13, Eq. 9-23
	General Inputs		Vnm (kip)	241.5	TMS 402-13, Sec 9.3.4.1.2.1
Pier ID	Grid E200		Vn (kip)	241.5	TMS 402-13, Equation 9-21
Location/Gridline	E200		Holdown Anchor Rod As (in^2)	0,31	At one wall end
f'm (psi)	810	Table 11-2(a)	a (in)	2,4	
Em (ksi)	729	TMS 402-13, Sec 4.2.2.2.1	Distance from Edge of Wall to Rod (in)	-4	
fme (psi)	1053	Table 11-1	d (in)	260	
fy (ksi)	40		Mn (kip*ft)	849	
fye (ksi)	52		Ve (kip)	61	
Es (ksi)	29000		Shear vs. Flexure Control	Flaxura Control	
Masonry Denisty (pcf)	125		An (in^2)	2112	
Nominal Pier Length (ft)	22		f <sub>ae</sub> (psi)	16.2	
Pier Height (H)	14.00		Shear vs. Force Controlled	NA	
Wall thickness (in)	8				
Roof Trib (SF)	216		Deter	mine m-factors Table :	11-6
Roof DL (psf)	20		fae/fme	0.015	
Roof SL (psf)	25		L/heff	1.57	
Mezz Trib (SF)	0		As (in^2)	0.62	Total Vertical Reinforcement
Mezz DL (psf)	0		Pv	0.00029	
Mezz LL (psf)	0		Av (in^2)	0,6	Total Vertical Reinforcement
2nd FLR Trib (SF)	0		Oh.	0.0005	Taken Ferniag Treatment of the Inc.
2nd FLR DL (psf)	35		- C	0.037	
Lanca Contract Contra			ρ <sub>ε</sub> fye/fme		
2nd FLR LL (psf)	40	0.05 4.5	m-factor	6.5	
hearline Tot Shear (kips)	308.4	BSE-1E	m-factor restriction	7	
shearline Tot Length (ft)	46		m-factor used	6.5	
Applicable Wall Trib Length (ft)	22		+ III		
seismic Axial Load (kips)	0.0	Holdown Force From Wall Above		formation Control DCR	5
Holdown to Wall Centroid (ft)	0.0		Shear DCR	0,09	
O, LS, CP	LS		Moment DCR	0.18	
				Carra Carra I DCDa	
Hall Call Maratala Maran	General Calculation			Force Control DCRs	
Wall Self-Weight (kips)	25.7 4.3	A CONTRACTOR OF THE CONTRACTOR	Shear DCR		
DL (kips)	0.2	Super-imposed DL @ Top of Wall	Moment DCR		
L (kips)	5.4		0.4000	F	
SL (kips)		and the same of th		e Capacity TMS 402-13	, sec 9.3.5
1.1(Q <sub>0</sub> + Q <sub>L</sub> +0.2*Q <sub>5</sub> )	34.2	Eq. 7-1	d (in)	4	
0.9(Q <sub>0</sub> )	27.0	Eq. 7-2	a (in)	0,3	
hear/Unit Length (kip/ft)	6.7		Mn (kip*ft)	16.5	
Wall Shear (Q <sub>E</sub> ) (kips)	107.4586502				
Moment Generated from Holdown (kip*ft)	(C.O.	About Centroid of Wall	Out-Of-Plane Demands TMS 40	2-13 Sec 9.3.5 & ASCE	41-13 Section 11.3.5>7.2.11
			X.	1.3	ASCE 41-13, Table 7-2, LS
	Wali Demands		Sxs,1E	0.71	- 4
(kips)	34.2	Eq. 7-34	h (ft)	14	Full Wall Height
(kips)	27.0	Eq. 7-34	w (psf)	10038	Elevation Wall Unit Weight
/ (kips)	1/97/46/93522		Fp*L (pif)	812.2	ASCE 41-13, Eq. 7-13
M (kip*ft)	2561.9		Fp_min*L (plf)	286.0	ASCE 41-13, Eq. 7-14
			Mu,o (kip*ft)	05,00	
towe	r-Bound Vertical Compressive St	ength	n	39.6	
	1	Table 6-1	tsp (in)	8	
(in)	0.560	Weak Axis Radius of Gyration	c (in)	610	TMS 402-13, Eq. 9-35
lt .	300	<u> </u>	leff = icr (in^4)	653	TMS 402-13, Eq. 9-34
<sub>CL</sub> (kip)	61	TMS 402-13, Eq. 9-19, Eq. 9-20	Pe (kips)	1.69	TMS 402-13, Eq. 9-33
P <sub>CL</sub> (kip)	61	1,20,1	Ψ	1,253	TMS 402-13, Eq. 9-32
n tt tort	2	LS	ΨMu,o (kip*ft)	24.94	TMS 402-13, Eq. 9-31
	1.1	13	Franch link and		1863 aug-13, Eq. 3:31
,C,	7775				
Q <sub>6</sub> +(Q <sub>r</sub> )/(JC1C2) (kip)	34.2			If-Plane DCR, Sec 11.3.	5.3
DCR	0.58		Flexure DCR	0.7	

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	Legend		Detec	mine FC vs DC Table	11-6
Input			Mu/(Vudv)	0.05	
Calculated			y	1.0	#5 Bars or smaller
DCR/Check			Vn (kips) upperbound	361	TM5 402-13, Eq. 9-22
			Vn (kips) upperbound		TMS 402-13, Eq. 9-23
	General Inputs	,,,,	Vnm (kip)	241.5	TMS 402-13, Sec 9.3.4.1.2.1
Pier ID	Grid E200		Vn (kip)	241.5	TMS 402-13, Equation 9-21
Location/Gridline	E200		Holdown Anchor Rod As (in^2)	0.31	At one wall end
f'm (psi)	810	Table 11-2(a)	a (in)	2.4	
Em (ksi)	729	TMS 402-13, Sec 4.2.2.2.1	Distance from Edge of Wall to Rod (in)	4	
fme (psi)	1053	Table 11-1	d (in)	260	
fy (ksi)	40		Mn (kip*ft)	889	
fye (ksi)	52		Ve (kip)	61	
Es (ksi)	29000		Shear vs. Flexure Control	Filmum Control	
Masonry Denisty (pcf)	125		An (in^2)	2112	
Nominal Pier Length (ft)	22		f <sub>se</sub> (psi)	16.2	
Pier Height (H)	14.00	_		NA NA	
Wall thickness (in)	8		Shear vs. Force Controlled	MA	
					22'2'
Roof Trib (SF) Roof DL (psf)	216			nine m-factors Table	11-0
	20		fae/fme	0.015	
Roof SL (psf)	25		L/heff	1,57	
Mezz Trib (SF)	0		As (in^2)	0.62	Total Vertical Reinforcement
Mezz DL (psf)	. 0		ρ <sub>v</sub>	0.00029	
Mezz LL (psf)	0		Av (in^2)	0.6	Total Vertical Reinforcement
2nd FLR Trib (SF)	0		Ph	0.0005	
2nd FLR DL (psf)	35		ρ <sub>e</sub> fye/fme	0.037	
2nd FLR LL (psf)	40		m-factor	7.5	
Shearline Tot Shear (kips)	479.5	BSE-2E	m-factor restriction	7.3	
	46	836-26			
Shearline Tot Length (ft)	22		m-factor used	7.0	
Applicable Wall Trib Length (ft)	0.0	W71 2 2 10W0	- I		
Seismic Axial Load (kips)		Holdown Force From Wall Above		ormation Control DCR	5:
Holdown to Wall Centroid (ft)	0.0		Shear DCR	0.14	
O, LS, CP	CP		Moment DCR	0.94	
	220000000000000000000000000000000000000		1		
	General Calculation			arce Control DCRs	
Wall Self-Weight (kips)	25.7	ACTIVITY OF THE PARTY OF THE PA	Shear DCR		
DL (kips)	43	Super-imposed DL @ Top of Wall	Moment DCR		
L (kips)	6:0				
SL (kips)	5.4			Capacity TMS 402-13	, Sec 9.3.5
1,1(Q <sub>0</sub> + Q <sub>4</sub> +0.2*Q <sub>5</sub> )	34,2	Eq. 7-1	d (in)	4	
0.9(Q <sub>0</sub> )	27:0	Eq. 7-2	a (in)	0.3	
Shear/Unit Length (kip/ft)	10.4	- Annual Control of the Control of t	Mn (kip*ft)	16.5	
Vall Shear (Q <sub>e</sub> ) (kips)	229.326687		The state of the s		
Moment Generated from Holdown (kip*ft)	0.0	About Centroid of Wall			
woment Generated from Holodwn (kip-1t)	0.0	About Centroid of Wali	Out-Of-Plane Demands TMS 402		
			X X	1	ASCE 41-13, Table 7-2, CP
Maria	Wall Demands	6- 204	Sxs,1E	1.11	
(kips)	34.2	Eq. 7-34	h (ft)	14	Full Wall Height
(kips)	27.0	Eq. 7-34	w (psf)	100.0	Elevation Wall Unit Weight
(kips)	229,328057		Fp*L (pif)	975.8	ASCE 41-13, Eq. 7-13
f (kip*ft)	32116		Fp_min*L (plf)	225-0	ASCE 41-13, Eq. 7-14
			Mu,o (kip*ft)	22,98	
Lower-Bo	und Vertical Compressive St		n	36/0	
	1	Table 6-1	tsp (in)	<b>B</b>	
(in)	0,560	Weak Axis Radius of Gyration	c (in)	9/4	TMS 402-13, Eq. 9-35
lt.	300		leff = tcr (in^4)	£63	TMS 402-13, Eq. 9-34
ci (kip)	61	TMS 402-13, Eq. 9-19, Eq. 9-20	Pe (kips)	420	TMS 402-13, Eq. 9-33
P <sub>CL</sub> (kip)	61		Ψ	1,259	TMS 402-13, Eq. 9-32
-94.5	2	LS	YMu,o (kip*ft)	30.00	
		113	[TIMU,O (KID-IL)	30,00	TMS 402-13, Eq. 9-31
(C)	1.1			dir tosa est	
2 <sub>6</sub> +(Q <sub>e</sub> )/(JC1C2) (kip)	34,2		Out-Of	Plane DCR, Sec 11.3.	5.3
DCR	0.54		Flexure DCR	0.8	

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	Legend		De	termine FC vs DC Table 1	1.6
Input	Legeno		Mu/(Vudv)	0.02	
Calculated			7	1.0	#5 Bars or smaller
DCR/Check			Vn (kips) upperbound	820	TMS 402-13, Eq. 9-22
			Vn (kips) upperbound		TMS 402-13, Eq. 9-23
	General Inputs	-11	Vnm (kip)	565.3	TMS 402-13, Sec 9.3.4.1.2.1
Pier ID	Grid E230		Vn (kip)	565.3	TMS 402-13, Equation 9-21
Location/Gridline	E230		Holdown Anchor Rod As (in^2)	0.31	At one wall end
ľm (psi)	810	Table 11-2(a)	a (in)	2.4	
Em (ksi)	729	TMS 402-13, Sec 4.2.2.2.1	Distance from Edge of Wall to Rod (in)	4	
fme (psi)	1053	Table 11-1	d (in)	596	
y (ksi)	40		Mn (kip*ft)	5470	
ye (ksi)	52		Ve (kip)	391	
Es (ksi)	29000		Shear vs. Flexure Control	Flexure Control	
Masonry Denisty (pcf)	125		An (in^2)	4800	
Nominal Pier Length (ft)	50		f <sub>se</sub> (psi)	33.6	
Pier Height (H)	14.00		Shear vs. Force Controlled	NA	
Wall thickness (in)	8		and the same same same same same same same sam		
Roof Trib (SF)	1125		Det	ermine m-factors Table 1	1-6
Roof DL (psf)	20		fae/tme	0.032	
Roof St. (psf)	25		L/heff	3.57	
Mezz Trib (SF)	400		As (in^2)	0.62	Total Vertical Reinforcement
Mezz DL (psf)	35		ρ,	0.00013	
Mezz LL (psf)	40		Av (in^2)	0.6	Total Vertical Reinforcement
2nd FLR Trib (SF)	400		- Contraction	0.0005	Total vertical relinorcement
	THAT IS		Ph .	1000000	
2nd FLR DL (psf)	35		ρ <sub>g</sub> fye/fme	0.029	
2nd FLR LL (psf)	40		m-factor	6.8	
Shearline Tot Shear (kips)	460,3	BSE-1E	m-factor restriction	7	
Shearline Tot Length (ft)	50		m-factor used	6.8	<u> </u>
Applicable Wall Trib Length (ft)	50		-	THE COURSE OF THE PARTY OF THE PARTY.	
Seismic Axial Load (kips)	0.0	Holdown Force From Wall Above		Deformation Control DCR:	
Holdown to Wall Centrold (ft)	0.0		Shear DCR	0.12	
IO, LS, CP	ی		Moment DCR	0.17	
	Comment Colombia			Form Control DCOs	
Wall Self-Weight (kips)	General Calculation		Shear DCR	Force Control DCRs	
	50.5	Constitution of the state of	Moment DCR		-
DL (kips) LL (kips)	32.0	Super-imposed DL @ Top of Wall	[Moment OCK		
SL (kips)	28.1		Out 06 86	ane Capacity TMS 402-13,	£44.03.5
		F- 74			360 2.3.3
1.1(Q <sub>0</sub> + Q <sub>k</sub> +0.2*Q <sub>s</sub> )	161.1	Eq. 7-1	d (in)	4	
0.9(Q <sub>0</sub> )	92.0	Eq. 7-2	a (in)	0.5	
Shear/Unit Length (kip/ft)	9.2		Mn (kip*ft)	38.5	
Wall Shear (Q <sub>f</sub> ) (kips)	450.3				
Moment Generated from Holdown (kip*ft)	-0.0	About Centroid of Wall	Out-Of-Plane Demands TMS	402-13 Sec 9.3.5 & ASCE 4	11-13 Section 11.3.5>7.2.11
			χ	1.3	ASCE 41-13, Table 7-2, LS
	Wall Demands		Sxs,1E	0.71	
(kips)	161.1	Eq. 7-34	h (ft)	14	Full Wall Height
(kips)	98.0	Eq. 7-34	w (psf)	100,0	Elevation Wall Unit Weight
/ (kips)	460.3		Fp*L (pif)	1846.0	ASCE 41-13, Eq. 7-13
M (kip*ft)	6444.2		Fp_min*L (plf)	650.0	ASCE 41-13, Eq. 7-14
1 mark 1000			Mu,o (kip*ft)	45.23	
Lower-	Bound Vertical Compressive S		n	39.8	
	1	Table 6-1	tsp (in)	8	
(in)	0.551	Weak Axis Radius of Gyration	c (in)	0.6	TMS 402-13, Eq. 9-35
lr .	305		leff = lcr (in^4)	1456	TMS 402-13, Eq. 9-34
cı (kip)	132	TMS 402-13, Eq. 9-19, Eq. 9-20	Pe (kips)	371	TMS 402-13, Eq. 9-33
AME TO SEE	132		Ψ'	1.767	TMS 402-13, Eq. 9-32
		is	MMu o /kin*ft)	79.92	TMS 402-13 For 9-31
(P <sub>CL</sub> (kip)	2	LS	'Y'Mu,o (kip*ft)	79.92	TMS 402-13, Eq. 9-31
CP <sub>CL</sub> (kip)	2 1.1	LS		***************************************	
C(, (kip) C <sub>1</sub> C <sub>2</sub> Q <sub>2</sub> +(Q <sub>2</sub> )/(JC1C2) (kip) DCR	2	LS		79.92 -Of-Plane DCR, Sec 11.3.	

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Legend		Mu/(Vudv)	termine FC vs DC Table 3	12-6
			1.0	#5 Bars or smaller
		Vertical constant		
			040	TM5 402-13, Eq. 9-22
Canada			826.9	TMS 402-13, Eq. 9-23
				TMS 402-13, Sec 9.3.4.1.2.1
				TMS 402-13, Equation 9-21
	Table 11 Max		-	At one wall end
	Table 11-1			
	1			
			The second second second second	
			4869	
50		f <sub>se</sub> (psi)	33/6	
14.00		Shear vs. Force Controlled	NA	
8				
1125		Det	ermine m-factors Table	11-6
20		fae/fme	0.032	
25		L/helf	3.57	
400				Total Vertical Reinforcemen
		0		1310.13130.131110.331111
		Au (in 62)		Total Martinal Salaforna an
		AV (in-z)		Total Vertical Reinforcemen
		Ph		
		ρ <sub>ε</sub> fye/fme		
40		m-factor	7.3	OH D
715.7	BSE-2E	m-factor restriction	7	
50		m-factor used	7.0	
50				
0.0	Holdown Force From Wall Above		Deformation Control DCA	rs .
0.0				
CP		Moment DCR	11.26	
	,	- 15 - 25		
General Calculation			Force Control DCRs	
58.3		Shear DCR	A CONTRACTOR OF THE PARTY OF TH	
50.5	Super-imposed DL @ Top of Wall		1000	
		- Line and the second s		
		Out-Of-Pla	one Connecto TMS 402-13	Spc 9 3 5
	En 7-1			, 300 3.0.0
	Eq. 7-2	- burgara		
		[Mn (kip*ft)	45.9	-//
715.7				
0.0	About Centroid of Wall	Out-Of-Plane Demands TMS	402-13 Sec 9.3.5 & ASCE	41-13 Section 11.3.5>7.2.11
		T T	1	ASCE 41-13, Table 7-2, CP
Wall Demands		Sxs,1E	1.11	
161.1	Eq. 7-34	h (ft)	14	Full Wall Height
98.0	Eq. 7-34	w (psf)		Elevation Wall Unit Weight
715,7				ASCE 41-13, Eq. 7-13
				ASCE 41-13, Eq. 7-14
20020.0	7/-			and the said said to and
nd Vertical Compressive S	trenath	1 n		
		ten (in)		
				TME 402 12 Em 0.25
	Weak Axis Radius of dyration			TMS 402-13, Eq. 9-35
				TMS 402-13, Eq. 9-34
	TM5 402-13, Eq. 9-19, Eq. 9-20	Pe (kips)		TM5 402-13, Eq. 9-33
154		Ψ	1.602	TMS 402-13, Eq. 9-32
2	LS	Ψ'Mu,o (kip*ft)	87.12	TMS 402-13, Eq. 9-31
				Market State of the Party of the State of th
		4	open - preservation	
161.1			Of-Plane DCR, Sec 11.3.	
	8 1125 20 25 400 35 40 400 35 40 400 35 50 50 0.0 0.0 CP  General Calculation 58.3 50.5 32.0 26.1 161.1 98.0 14.3 715.7 0.0  Wall Demands 161.1 98.0 715.7 10019.8  and Vertical Compressive St 1 0.592 284 154	Carried E230	Sin   File   F	General Inputs

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	Legend		De	termine FC vs DC Table .	11-6
nput			Mu/(Vudv)	0.10	
alculated			у	1.0	#5 Bars or smaller
DCR/Check			Vn (kips) upperbound	98	TMS 402-13, Eq. 9-22
			Vn (kips) upperbound		TMS 402-13, Eq. 9-23
	General Inputs		Vnm (kip)	64.6	TM5 402-13, Sec 9.3.4.1.2.1
Pier ID	Grid E230		Vn (kip)	64.6	TMS 402-13, Equation 9-21
ocation/Gridline	E230		Holdown Anchor Rod As (in^2)	0.31	At one wall end
'm (psi)	810	Table 11-2(a)	a (in)	2.4	
Em (ksi)	729	TMS 402-13, Sec 4.2.2.2.1	Distance from Edge of Wall to Rod (in)	4	
me (psi)	1053	Table 11-1	d (in)	68	
y (ksi)	40		Mn (kip*ft)	112	
ye (ksi)	52		Ve (kip)	16	
Es (ksi)	29000		Shear vs. Flexure Control	Flavure Control	
Masonry Denisty (pcf)	125		An (in^2)	576	
Nominal Pier Length (ft)	6		f <sub>se</sub> (psi)	22.2	
Pier Height (H)	7.00		Shear vs. Force Controlled	NA	
Wall thickness (in)	8				
Roof Trib (SF)	158			ermine m-factors Table	11-6
Roof DL (psf)	20		fae/fme	0.021	
Roof SL (psf)	25		L/heff	0.86	
Mezz Trib (SF)	56		As (in^2)	0.31	Total Vertical Reinforcement
Mezz DL (psf)	35		ρ <sub>v</sub>	0.00054	
Mezz LL (psf)	40		Av (in^2)	0.3	Total Vertical Reinforcement
2nd FLR Trib (SF)	0		Ph	0.0005	The state of the s
2nd FLR DL (psf)	35		ρ <sub>a</sub> tye/fme	0.049	
2nd FLR LL (psf)	40		m-factor	5.3	
Shearline Tot Shear (kips)	326	BSE-1E	m-factor restriction	7	
shearline Tot Length (ft)	25	D3E-1E	m-factor used	5.3	
Applicable Wall Trib Length (ft)	6		[m-tactor useu	9.0	
Seismic Axial Load (kips)	0.0	Holdown Force From Wall Above		Deformation Control DCI	De .
Holdown to Wall Centroid (ft)	0.0	Trouble Troit Fran Factor	Shear DCR	0.23	
IO, LS, CP	LS		Moment DCR	0.87	
0,13,01			1 Monten Den	7.77	
	General Calculation		1 [	Force Control DCRs	
Wall Self-Weight (kips)	3.5		Shear DCR	1010 0010	
OL (kips)	5.5	Super-imposed DL @ Top of Wall	Moment DCR		
L (kips)	2.2	The state of the s	The state of the s		<del></del>
St. (kips)	4.5		Out-Of-Pic	one Capacity TMS 402-1	3. Sec 9.3.5
1.1(Q <sub>0</sub> + Q <sub>L</sub> +0.2*Q <sub>S</sub> )	12.8	Eq. 7-1	d (in)	4	
0.9(00)	7.8	Eq. 7-2		0.5	
		SQ. 7-6	a (in)		
Shear/Unit Length (kip/ft)	13.0		Mn (kip*ft)	6.3	
Wall Shear (Q <sub>€</sub> ) (kips)	78,24	Water Committee	1		CONTRACTOR CONTRACTOR
Noment Generated from Holdown (kip*ft)	0.9	About Centroid of Wall	Out-Of-Plane Demands TMS		41-13 Section 11.3.5>7.2.11
	1949/492/1000/034-0		7 X	1.3	ASCE 41-13, Table 7-2, LS
Nasherodari.	Wall Demands		Sxs,1E	0.71	4 10 000 W 10 00 00
(kips)	12.8	Eq. 7-34	h (ft)	14	Full Wall Height
(kips)	7,8	Eq. 7-34	w (psf)	550(9)	Elevation Wall Unit Weight
(kips)	78.24		Fp*L (pit)	221.5	ASCE 41-13, Eq. 7-13
// (kip*ft)	547.7		Fp_min*L (plf)	78/0	ASCE 41-13, Eq. 7-14
<u> </u>			Mu,o (kip*ft)	5.43	
Lower	-Bound Vertical Compressive St		n .	39.8	
W. C.	1	Table 6-1	tsp (in)	- 8	
(in)	0.630	Weak Axis Radius of Gyration	c (in)	0.7	TMS 402-13, Eq. 9-35
/•	133		leff = lcr (in^4)	229	TMS 402-13, Eq. 9-34
ct (kip)	95	TMS 402-13, Eq. 9-19, Eq. 9-20	Pe (kips)	233	TMS 402-13, Eq. 9-33
P <sub>CL</sub> (kip)	85		Ψ	1.033	TMS 402-13, Eq. 9-32
	2	LS	'Y'Mu,o (kip*ft)	5.24	TMS 402-13, Eq. 9-31
,C,	1.1				
C <sub>1</sub> C <sub>2</sub> O <sub>G</sub> +(Q <sub>f</sub> )/(JC1C2) (kip)	1.1		- Out	-Of-Plane DCR, Sec 11.3	.5.3

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#### ASCE 41-13 Reinforc

	Legend	79.
Input		
Calculated		
DCR/Check		
	General Inputs	
Pier ID	Grid E230	
Location/Gridline	E230	
f'm (psi)	810	Table 11-2(a)
Em (ksi)	729	TMS 402-13, Sec 4.2.2.2.1
fme (psi)	1053	Table 11-1
fy (ksi)	40	
fye (ksi)	52	
Es (ksi)	29000	
Masonry Denisty (pcf)	125	
Nominal Pier Length (ft)	6	
Pier Height (H)	7.00	
Wall thickness (in)	8	_
Roof Trib (SF)	158	
Roof DL (psf)	20	
Roof St. (psf)	25	
Mezz Trib (SF)	56	
Mezz DL (psf)	35	
Mezz LL (psf)	40	
2nd FLR Trib (SF)	0	
2nd FLR DL (psf)	35	
2nd FLR LL (psf)	40	
Shearline Tot Shear (kips)	326	BSE-1E
Shearline Tot Length (ft)	25	
Applicable Wall Trib Length (ft)	- 6	
Seismic Axial Load (kips)	0.0	Holdown Force From Wall Above
Holdown to Wall Centroid (ft)	0.0	
O, LS, CP	LS	
	General Calculation	
Vall Self-Weight (kips)	3.5	4
OL (kips)	5.1	Super-imposed DL @ Top of Wall
L (kips)	2.2	A CONTRACTOR OF THE PARTY OF TH
SL (kips)	4:0	
$1.1(Q_0 + Q_1 + 0.2*Q_5)$	12.8	Eq. 7-1
0.9(Q <sub>0</sub> )	7.0	Eq. 7-2
Shear/Unit Length (kip/ft)	130	240. 2
Wall Shear (Q <sub>c</sub> ) (kips)	28:24	
		ALUM CONTROL OF STATE
Moment Generated from Holdown (kip*ft)	0.0	About Centroid of Wall
	Wall Demands	
(kips)	12.8	Eq. 7-34
(kips)	7.8	Eq. 7-34
		ENGLISCO.
f (kips)	78.24	
V (kips)	78.24	
	78.24 547.7	
d (kip*ft)  Lower-		rength
A (kip*ft)  Lower-	547.7 Bound Vertical Compressive Str	Table 6-1
A (kip*ft)  Lower-	547.7 8ound Vertical Compressive Str	
(kip*ft)  tower-	547.7 Bound Vertical Compressive Str	Table 6-1
# (kip*ft)  Lower- (in) /r	547.7 Bound Vertical Compressive Str 1 0.630	Table 6-1
Lower-   (   (in)   /r   re_(kip)	547.7 Bound Vertical Compressive Str 1 0.630 133	Table 6-1 Weak Axis Radius of Gyration
# (kip*ft)  Lower- ((in) //r /c. (kip)	547.7  Bound Vertical Compressive Str  1  0.630 133 85 85	Table 6-1 Weak Axis Radius of Gyration TMS 402-13, Eq. 9-19, Eq. 9-20
(kip*ft)   (awer-it)   (awer-it)   (in)   547.7  8ound Vertical Compressive Str 1 0,630 133 85 85 2	Table 6-1 Weak Axis Radius of Gyration	
W (kip*ft)	547.7  Bound Vertical Compressive Str  1  0.630 133 85 85	Table 6-1 Weak Axis Radius of Gyration TMS 402-13, Eq. 9-19, Eq. 9-20

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 Date:

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General Inputs Grid £230 £230 810		Mu/(Vudv)  / Vn (kips) upperbound  Vn (kips) upperbound	ermine FC vs DC Table 0.10 1.0 98	#5 Bars or smaller TMS 402-13, Eq. 9-22
Grid E230 E230				
Grid E230 E230			98	TMS 402-13, Eq. 9-22
Grid E230 E230	4	Vn (kips) upperbound		
Grid E230 E230	1			TMS 402-13, Eq. 9-23
E230		Vnm (kip)	67.2	TMS 402-13, Sec 9.3.4.1.2.1
		Vn (kip)	67.2	TMS 402-13, Equation 9-21
810		Holdown Anchor Rod As (in^2)	0.31	At one wall end
	Table 11-2(a)	(a (in)	2.4	
729	TMS 402-13, Sec 4, 2, 2, 2, 1	Distance from Edge of Wall to Rod (in)	4	
1053	Table 11-1	d (in)	68	
40		Mn (kip*ft)	172	
52		Ve (kip)	25	
29000		Shear vs. Flexure Control	Result Control	
125		An (in^2)	576	
- 6		f <sub>in</sub> (psi)	65.2	
			94	
		Sides 42.7 title conditiones	- 100	
		Dete	rmine mulactors Table	11.6
				Total Vertical Reinforcement
				Taken Persical Membershies
				Washington State Comment
				Total Vertical Reinforcement
			200	
35		p <sub>s</sub> tye/Ime	0.049	
40		m-factor	4.9	
506.9	BSE-2E	m-factor restriction	7	
25		m-factor used	4.9	
6		1		
0.0	Holdown Force From Wall Above	D	formation Control DC	Rs
0.0		Shear DCR	637	
CP:		Moment DCR	1.00	
General Calculation			Force Control DCRs	2511
3,5		Shear DCR		
17.0	Super-imposed DL @ Top of Wall	Moment DCR		
12.0				
8.1		Out-Of-Plan	ne Capacity TMS 402-1	13, Sec 9.3.5
37.5	Eg. 7-1	d (in)	- 4	
	ed-1-5		200	
		[min (kip:st)	0.9	
0.0	About Centroid of Wall	Out-Of-Plane Demands TMS 4		
		X X		ASCE 41-13, Table 7-2, CP
	(All and a second			
				Full Wall Height
	Eq. 7-34			Elevation Wall Unit Weight
				ASCE 41-13, Eq. 7-13
851,6				ASCE 41-13, Eq. 7-14
		Mu,o (kip*ft)		
		n		
	Weak Axis Radius of Gyration			TMS 402-13, Eq. 9-35
		1		TMS 402-13, Eq. 9-34
102	TMS 402-13, Eq. 9-19, Eq. 9-20	Pe (kips)	280	TMS 402-13, Eq. 9-33
102		]  Ψ	1.155	TMS 402-13, Eg. 9-32
	15	ΨMu.o (kip*ft)	7.54	TMS 402-13, Eq. 9-31
		1		
		1	Of Diame DCD Co	
			og-riane uCK, Sec 11.:	to the second
	125 6 7,00 8 37,700 8 37,700 8 37,700 38 37,700 35 40 0 35 40 506,9 25 6 0,0 0,0 CP  General Calculation 3,5 17,0 12,0 8,1 17,0 12,0 8,1 12,0 8,1 12,0 8,1 12,0 8,1 12,0 8,1 12,0 8,1 12,0 6 12,0 0 Wall Demands 37,5 18,5 12,656 851,6 d Vartical Compressive St 10,0,00 122 102	125 6 6 7,00 8 325 20 25 20 25 300 35 40 0 0 35 40 0 506.9 8SE-2E  25 6 0.0 Holdown Force From Wall Above 0.0 CP  General Calculation 3.5 17.0 Super-imposed Di. @ Top of Wall 12.0 8.1 37.5 Eq. 7-1 18.5 Eq. 7-2 20.3 121,656 0.0 About Centroid of Wall  Wall Demands 37.5 Eq. 7-34 18.5 Eq. 7-34 19.5  An (in-2)	125	

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	Legend		Det	ermine FC vs DC Table 1.	1-6
nput	- 120		Mu/(Vudv)	0.04	
Calculated			y	1.0	#5 Bars or smaller
DCR/Check			Vn (kips) upperbound	443	TMS 402-13, Eq. 9-22
			Vn (kips) upperbound		TM5 402-13, Eq. 9-23
	General Inputs		Vnm (kip)	303.1	TMS 402-13, Sec 9.3.4.1.2.1
Pier ID	Grid E245		Vn (kip)	303.1	TMS 402-13, Equation 9-21
Location/Gridline	E245		Holdown Anchor Rod As (in^2)	0.31	At one wall end
'm (psi)	810	Table 11-2(a)	a (in)	2.4	
Em (ksi)	729	TMS 402-13, Sec 4.2.2.2.1	Distance from Edge of Wall to Rod (in)	4	
me (psi)	1053	Table 11-1	d (in)	320	
y (ksi)	40	7000000	Mn (kip*ft)	1784	
fye (ksi)	52		Ve (kip)	127	
Es (ksi)	29000		Shear vs. Flexure Control	Rexure Control	
Masonry Denisty (pcf)	125		An (in^2)	2592	
Nominal Pier Length (ft)	27		f <sub>en</sub> (psi)	37.0	
Pier Height (H)	14.00		Shear vs. Force Controlled	NA:	
Wall thickness (in)	8		Sitear vs. Force Controlled	NA.	
	405		T Date	emino m factore Table 1	11.6
Roof Trib (SF) Roof DL (psf)	20		fae/fme	rmine m-factors Table 1 0.035	
	25		L/heff	1,93	
Roof SL (psf)					Total Vertical Painforce
Mezz Trib (SF)	202		As (in^2)	0.31	Total Vertical Reinforcement
Mezz DL (psf)	35		ρ,	0.00012	
Mezz LL (psf)	40		Av (in^2)	0.3	Total Vertical Reinforcement
2nd FLR Trib (SF)	405		ρ	0.0002	
2nd FLR DL (psf)	35		ρ <sub>4</sub> fye/fme	0.017	
2nd FLR LL (psf)	40		m-factor	6.9	
Shearline Tot Shear (kips)	388.5	BSE-1E	m-factor restriction	7	_
Shearline Tot Length (ft)	27	USC-IC	m-factor used	6.9	_
Applicable Wall Trib Length (ft)	27		In-ractor used	0.0	
Seismic Axial Load (kips)	0.0	Holdown Force From Wall Above		eformation Control DCR	
Holdown to Wall Centroid (ft)	0.0	Holdown Force From Wall Above	Shear DCR	0.19	
IO, LS, CP	LS		Moment DCR	0.44	
10, L3, CF			Indiment ock	.0.40	
	General Calculation		1	Force Control DCRs	
Wall Self-Weight (kips)	31.5		Shear DCR	Porce Control DCAS	
	29.3	Company of the Company	Moment DCR		
DL (kips) LL (kips)	24.3	Super-imposed DL @ Top of Wall	Imoment ock		
	24.3				
	10.4		0.40406	C In The 402 41	f
	10.1	Ber (Artis)		ne Capacity TMS 402-13,	, Sec 9.3.5
$1.1(Q_0 + Q_1 + 0.2^aQ_5)$	95.9	Eq. 7-1	d (in)	4	Sec 9.3.5
$1.1(Q_0 + Q_1 + 0.2^*Q_5)$		Eq. 7-1 Eq. 7-2		Control of the last of the las	Sec 9,3.5
1.1(Q <sub>0</sub> + Q <sub>L</sub> +0.2*Q <sub>S</sub> ) 0.9(Q <sub>0</sub> )	95.9		d (in) a (in)	4	Sec 9.3.5
1.1(Q <sub>0</sub> + Q <sub>1</sub> +0.2*Q <sub>5</sub> ) 0.9(Q <sub>0</sub> ) Shear/Unit Length (kip/ft)	95.9 54.8 14.4		d (in)	4 0.5	Sec 9.3.5
$1.1(Q_0 + Q_1 + 0.2^nQ_5)$ $0.9(Q_0)$ Shear/Unit Length (kip/ft) Wall Shear $\{Q_\ell\}$ (kips)	95.9 54.8 14.4 388.5	Eq. 7-2	d (in) a (in) Mn (kip*ft)	0.5 20.9	
$1.1(Q_0 + Q_1 + 0.2^nQ_5)$ $0.9(Q_0)$ Shear/Unit Length (kip/ft) Wall Shear $\{Q_\ell\}$ (kips)	95.9 54.8 14.4		d (in) a (in)	4 0.5 20.9 02-13 Sec 9.3.5 & ASCE 4	11-13 Section 11.3.5>7.2.11
$1.1(Q_0 + Q_1 + 0.2^nQ_5)$ $0.9(Q_0)$ Shear/Unit Length (kip/ft) Wall Shear $\{Q_\ell\}$ (kips)	95,9 92,8 14,4 388,5 0.0	Eq. 7-2	d (in) a (in) Mn (kip*ft)  Out-Of-Plane Demands TMS 4	4 0.5 20.9 02-13 Sec 9.3.5 & ASCE 4 1.3	
I.1(Q <sub>0</sub> + Q <sub>1</sub> +0.2*Q <sub>5</sub> ) J.9(Q <sub>0</sub> ) sihear/Unit Length (kip/ft) Wall Shear (Q <sub>2</sub> ) (kips) Moment Generated from Holdown (kip*ft)	95,9 54,8 14,4 388.5 0.0	Eq. 7-2 About Centroid of Wall	d (in) a (in) Mn (kip*ft)  Out-Of-Plane Demands TMS 4 X. Sxs,1E	4 0.5 20.9 02-13 Sec 9.3.5 & ASCE 4 1.3 0.71	11-13 Section 11.3.5->7.2.11 ASCE 41-13, Table 7-2, LS
1.1(Q <sub>0</sub> + Q <sub>1</sub> +0.2*Q <sub>5</sub> ) 0.9(Q <sub>0</sub> ) Shear/Unit Length (kip/ft) Wall Shear (Q <sub>1</sub> ) (kips) Moment Generated from Holdown (kip*ft)	95.9 52.8 14.4 388.5 0.0 Wall Demands 95.9	Eq. 7-2 About Centroid of Wall Eq. 7-34	d (in) a (in) Mn (kip*ft)  Out-Of-Plane Demands TMS 4 X Sxs,1E h (ft)	4 0.5 20.9 02-13 Sec 9.3.5 & ASCE 4 1.3 0.71 14	11-13 Section 11.3.5->7.2.11 ASCE 41-13, Table 7-2, LS Full Wall Height
1.1(Q <sub>0</sub> + Q <sub>1</sub> +0.2*Q <sub>5</sub> ) 0.9(Q <sub>0</sub> ) shear/Unit Length (kip/ft) Wall Shear (Q <sub>4</sub> ) (kips) Moment Generated from Holdown (kip*ft)  P (kips) P (kips)	95,9 54.8 14.4 388.5 0.0 Wall Demands 95,9 54,8	Eq. 7-2 About Centroid of Wall	d (in) a (in) Mn (kip*ft)  Out-Of-Plane Demands TMS 4 X Sxs,1E h (ft) w (psf)	4 0.5 20.9 02-13 Sec 9.3.5 & ASCE 4 1.3 0.71 14 159:0	II-13 Section 11.3.5->7.2.11  ASCE 41-13, Table 7-2, LS  Full Wall Height  Elevation Wall Unit Weight
1.1(Q <sub>0</sub> + Q <sub>1</sub> +0.2*Q <sub>5</sub> ) 1.9(Q <sub>0</sub> ) shear/Unit Length (kip/ft) Wall Shear (Q <sub>1</sub> ) (kips) Moment Generated from Holdown (kip*ft)  † (kips) † (kips)	95,9 54,8 14,4 388,5 0.0 Wall Demands 95,9 54,8 388,5	Eq. 7-2 About Centroid of Wall Eq. 7-34	d (in) a (in) Mn (kip*ft)  Out-Of-Plane Demands TMS 4  X.  Sxs,1E h (ft) w (psf) Fp*t (plf)	4 0.5 20.9 02-13 Sec 9.3.5 & ASCE4 1.3 0.71 14 155:0 990:8	11-13 Section 11.3.5->7.2.11 ASCE 41-13; Table 7-2, LS Full Wall Height Elevation Wall Unit Weight ASCE 41-13, Eq. 7-13
1(Q <sub>0</sub> + Q <sub>1</sub> +0.2°Q <sub>5</sub> )9(Q <sub>0</sub> ) .hear/Unit Length (kip/ft) Vall Shear (Q <sub>1</sub> ) (kips) Woment Generated from Holdown (kip*ft)  (kips) (kips)	95,9 54.8 14.4 388.5 0.0 Wall Demands 95,9 54,8	Eq. 7-2 About Centroid of Wall Eq. 7-34	d (in) a (in) Mn (kip*ft)  Out-Of-Plane Demands TMS 4  X. Sxs, 1E h (ft) w (psf) Fp*L (pif) Fp min*L (pift)	4 0.5 20.9 02-13 Sec 9.3.5 & ASCE 4 1.3 0.71 14 450.0 990.8 353.0	II-13 Section 11.3.5->7.2.11  ASCE 41-13, Table 7-2, LS  Full Wall Height  Elevation Wall Unit Weight
.1(Q <sub>0</sub> + Q <sub>1</sub> +0.2°Q <sub>5</sub> ) .9(Q <sub>0</sub> ) hear/Unit Length (kip/ft) Vall Shear (Q <sub>2</sub> ) (kips) Atoment Generated from Holdown (kip*ft)  (kips) (kips) (kips) (kips) (kips)	95.9 54.8 14.4 388.5 0.0 Wall Demands 95.9 54.8 388.5 5439.0	Eq. 7-2 About Centroid of Wall Eq. 7-34 Eq. 7-34	d (in) a (in) Mn (kip*ft)  Out-Of-Plane Demands TMS 4  X.  Sxs,1E h (ft) w (psf) Fp*t (plf)	4 0.5 20.9 02-13 Sec 9.3.5 & ASCE 4 1.3 0.71 14 405.0 990.8 351.0 23.42	11-13 Section 11.3.5->7.2.11 ASCE 41-13; Table 7-2, LS Full Wall Height Elevation Wall Unit Weight ASCE 41-13, Eq. 7-13
1.1(Q <sub>0</sub> + Q <sub>1</sub> + Q.2°Q <sub>S</sub> ) 1.9(Q <sub>0</sub> ) shear/Unit Length (kip/ft) Wall Shear (Q <sub>4</sub> ) (kips) Woment Generated from Holdown (kip*ft)  2 (kips) (kips) (kips) (kips) (kips) (kip*ft)	95,9 54.8 14.4 388.5 0.0 Wall Demands 95,9 54,8 388.5 5439.0	Eq. 7-2  About Centroid of Wall  Eq. 7-34  Eq. 7-34	d (in) a (in) Win (kip*ft)  Out-Of-Plane Demands TMS 4 X Sxs,1E h (ft) w (psf) Fp*L (plf) Fp _min*L (plf) Mu,0 (kip*ft) n	4 0.5 20.9 02-13 Sec 9.3.5 & ASCE 4 1.3 0.71 14 105:0 995:B 353:0 24,42 39:B	11-13 Section 11.3.5->7.2.11 ASCE 41-13; Table 7-2, LS Full Wall Height Elevation Wall Unit Weight ASCE 41-13, Eq. 7-13
1(Q <sub>0</sub> + Q <sub>1</sub> +0.2°Q <sub>5</sub> )9(Q <sub>0</sub> )9(Q <sub>0</sub> )	95,9 54,8 14,4 388,5 0.0 Wall Demands 95,9 54,8 388,5 5439,0 9ound Vertical Compressive St	Eq. 7-2  About Centroid of Wall  Eq. 7-34  Eq. 7-34  trength  Table 6-1	d (in) a (in) Mn (kip*ft)   Out-Of-Plane Demands TMS 4  X.  Sxs,1E h (ft) w (psf) Fp*t (pif) Fp_min*L (pif) Mu,0 (kip*ft) n tsp (in)	4 0.5 20.9 02-13 Sec 9.3.5 & ASCE4 1.3 0.71 14 153.0 995.8 353.0 24.42 39.8	11-13 Section 11.3.5->7.2.11 ASCE 41-13: Table 7-2, LS Full Wall: Height Elevation Wall Unit Weight ASCE 41-13, Eq. 7-13 ASCE 41-13, Eq. 7-14
.1(Q <sub>0</sub> + Q <sub>1</sub> +0.2°Q <sub>5</sub> ) .9(Q <sub>0</sub> ) shear/Unit Length (kip/ft) Vali Shear (Q <sub>2</sub> ) (kips) Woment Generated from Holdown (kip*ft)  * (kips) (kips) (kips) / (kips) / (kips) / (kips) / (kips) / (kips)	95,9 54,8 14,4 388.5 0.0 Wall Demands 95,9 54,8 388.5 5439.0 Bound Vertical Compressive Si	Eq. 7-2  About Centroid of Wall  Eq. 7-34  Eq. 7-34	d (in) a (in) Mn (kip*ft)  Out-Of-Plane Demands TMS 4 X. Sxs,1E h (ft) w (psf) Fp*L (pif) Fp_min*L (pif) Mu,0 (kip*ft) n tsp (in) c (in)	4 0.5 20.9 02-13 Sec 9.3.5 & ASCE 4 1.3 0.71 14 150.0 990.8 353.6 24.42 39.8 8	### ASCE 41-13, Eq. 7-14  ASCE 41-13, Table 7-2, LS    Full Wall Height
1.1(Q <sub>0</sub> + Q <sub>1</sub> + Q.2°Q <sub>5</sub> ) 1.9(Q <sub>0</sub> ) shear/Unit Length (kip/ft) Wall Shear (Q <sub>4</sub> ) (kips) Moment Generated from Holdown (kip*ft)  ? (kips) ? (kips) ( kips) / (kips) / (kips) / (kips)	95.9 54.8 14.4 388.5 0.0 Wall Demands 95.9 54.8 388.5 5439.0 Bound Vertical Compressive St	Eq. 7-2  About Centroid of Wall  Eq. 7-34  Eq. 7-34  Table 6-1  Weak Axis Radius of Gyration	d (in) a (in) A (in) Mn (kip*ft)  Out-Of-Plane Demands TMS 4 X Sss, LE h (ft) w (psf) Fp*t (plf) Fp _min*t (plf) Mu.o (kip*ft) n tsp (in) c (in) leff = tcr (in^4)	4 0.5 20.9 02-13 Sec 9.3.5 & ASCE 4 1.3 0.71 14 405.0 990.8 353.0 23.42 39.8 8	11-13 Section 11.3.5->7.2.11  ASCE 41-13, Table 7-2, LS  Full Wall Height Elevation Wall Unit Weight ASCE 41-13, Eq. 7-13  ASCE 41-13, Eq. 7-14  TMS 402-13, Eq. 9-35  TMS 402-13, Eq. 9-34
1.1(Q <sub>0</sub> + Q <sub>1</sub> +0.2°Q <sub>5</sub> ) 1.9(Q <sub>0</sub> ) Shear/Unit Length (kip/ft) Wall Shear (Q <sub>4</sub> ) (kips) Moment Generated from Holdown (kip*ft) P (kips) P (kips) P (kips) M (kip*ft) Lower-E	95,9 54.8 14.4 388.5 0.0 Wall Demands 95,9 54,8 388.5 5439.0  Bound Vertical Compressive St 1 0.549 306 71	Eq. 7-2  About Centroid of Wall  Eq. 7-34  Eq. 7-34  trength  Table 6-1	d (in) a (in) Mn (kip*ft)  Out-Of-Plane Demands TMS 4 X. Sxs,1E h (ft) w (psf) Fp*L (pif) Fp_min*L (pif) Mu,0 (kip*ft) n tsp (in) c (in)	4 0.5 20.9 02-13 Sec 9.3.5 & ASCE 4 1.3 0.71 14 150.0 990.8 353.6 24.42 39.8 8	### ASCE 41-13, Eq. 7-14  ASCE 41-13, Table 7-2, LS    Full Wall Height
1.1(Q <sub>0</sub> + Q <sub>1</sub> + Q <sub>2</sub> + Q <sub>2</sub> ) 1.9(Q <sub>0</sub> ) Shear/Unit Length (kip/ft) Wall Shear (Q <sub>2</sub> ) (kips) Moment Generated from Holdown (kip*ft)  P (kips) ( kips)	95.9 54.8 14.4 388.5 0.0 Wall Demands 95.9 54.8 388.5 5439.0 Bound Vertical Compressive St	Eq. 7-2  About Centroid of Wall  Eq. 7-34  Eq. 7-34  Table 6-1  Weak Axis Radius of Gyration	d (in) a (in) A (in) Mn (kip*ft)  Out-Of-Plane Demands TMS 4 X Sss, LE h (ft) w (psf) Fp*t (plf) Fp _min*t (plf) Mu.o (kip*ft) n tsp (in) c (in) leff = tcr (in^4)	4 0.5 20.9 02-13 Sec 9.3.5 & ASCE 4 1.3 0.71 14 405.0 990.8 353.0 23.42 39.8 8	11-13 Section 11.3.5->7.2.11  ASCE 41-13, Table 7-2, LS  Full Wall Height Elevation Wall Unit Weight ASCE 41-13, Eq. 7-13  ASCE 41-13, Eq. 7-14  TMS 402-13, Eq. 9-35  TMS 402-13, Eq. 9-34
1.1(Q <sub>0</sub> + Q <sub>1</sub> + Q.2°Q <sub>5</sub> ) 1.9(Q <sub>0</sub> ) shear/Unit Length (kip/ft) Wall Shear (Q <sub>2</sub> ) (kips) Moment Generated from Holdown (kip*ft)  P (kips) (kips) (kips) (kips) (kips) (kips) (kips) (kips) (kips) (kips) (kips) (kips) (kips)	95,9 54.8 14.4 388.5 0.0 Wall Demands 95,9 54,8 388.5 5439.0  Bound Vertical Compressive St 1 0.549 306 71	Eq. 7-2  About Centroid of Wall  Eq. 7-34  Eq. 7-34  Table 6-1  Weak Axis Radius of Gyration  TMS 402-13, Eq. 9-19, Eq. 9-20	d (in) a (in) A (in) Mn (kip*ft)   Out-Of-Plane Demands TMS 4  X.  SSS,1E h (ft) w (psf) Fp*L (pif) Fp _min*L (pif) Mu,0 (kip*ft) n tsp (in) c (in) leff = tcr (in^4) Pe (kips)  yr	4 0.5 20.9 02-13 Sec 9.3.5 & ASCE 4 1.3 0.71 14 109:0 99:18 352:0 24:42 39:8 8 0:6 781 100	ASCE 41-13, Table 7-2, LS  Full Wall Height Elevation Wall Unit Weight ASCE 41-13, Eq. 7-13 ASCE 41-13, Eq. 7-14  TMS 402-13, Eq. 9-35 TMS 402-13, Eq. 9-34 TMS 402-13, Eq. 9-33 TMS 402-13, Eq. 9-32
1.1(Q <sub>0</sub> + Q <sub>1</sub> + Q.2°Q <sub>5</sub> ) 0.9(Q <sub>0</sub> ) shear/Unit Length (kip/ft) Wall Shear (Q <sub>1</sub> ) (kips) Moment Generated from Holdown (kip*ft) P (kips) P (kips) V (kips) M (kip*ft)  Lower-8 ( ((in) n)/r P <sub>Q1</sub> (kip) P <sub>Q2</sub> (kip)	95,9 54,8 14,4 388,5 0.0 Wall Demands 95,9 54,8 388,5 5439,0  Sound Vertical Compressive St 1 0,549 306 71 71 71	Eq. 7-2  About Centroid of Wall  Eq. 7-34  Eq. 7-34  Table 6-1  Weak Axis Radius of Gyration	d (in) a (in) Yes (in)  A (in)  Mn (kip*ft)  Out-Of-Plane Demands TMS & X  Sxs,1E h (ft) w (psf) Fp*L (plf) Fp _min*L (plf) Mu,o (kip*ft) n tsp (in) leff = lcr (in^4) Pe (kips)	4 0.5 20.9 02-13 Sec 9.3.5 & ASCE 4 1.3 0.71 14 105:0 9908 353:0 24,42 39:8 9 0.6 784 109 409 409 409 409 409 409 409 409 409 4	MI-13 Section 11,3.5->7.2,11  ASCE 41-13, Table 7-2, LS  Full Wall Height Elevation Wall Unit Weight ASCE 41-13, Eq. 7-13  ASCE 41-13, Eq. 7-24  TMS 402-13, Eq. 9-35 TMS 402-13, Eq. 9-34 TMS 402-13, Eq. 9-34
P (kips) V (kips) M (kip*ft)	95,9 54.8 14.4 388.5 0.0 Wall Demands 95,9 54,8 388.5 5439.0  Sound Vertical Compressive St 1 0.549 306 71 71	Eq. 7-2  About Centroid of Wall  Eq. 7-34  Eq. 7-34  Table 6-1  Weak Axis Radius of Gyration  TMS 402-13, Eq. 9-19, Eq. 9-20	d (in) a (in) A (in) Mn (kip*ft)  Out-Of-Plane Demands TMS 4  X.  Sxs, 1E h (ft) w (psf) Fp*t (plf) Fp_min*L (plf) Mu,o (kip*ft) n tsp (in) c (in) leff = tcr (in^4) Pe (kips)  Y  WMu,o (kip*ft)	4 0.5 20.9 02-13 Sec 9.3.5 & ASCE 4 1.3 0.71 14 105:0 9908 353:0 24,42 39:8 9 0.6 784 109 409 409 409 409 409 409 409 409 409 4	11-13 Section 11.3.5->7.2.11 ASCE 41-13; Table 7-2, LS Full Wall Height Elevation Wall Unit Weight ASCE 41-13, Eq. 7-13 ASCE 41-13, Eq. 7-14  TMS 402-13, Eq. 9-35 TMS 402-13, Eq. 9-34 TMS 402-13, Eq. 9-32 TMS 402-13, Eq. 9-32 TMS 402-13, Eq. 9-32

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Legend			Determine FC vs DC Table 11-6		
Input			Mu/(Vudv)	0.04	
Calculated	The second second		7	1.0	#5 Bars or smaller
DCR/Check			Vn (kips) upperbound	443	TMS 402-13, Eq. 9-22
117 111111			Vn (kips) upperbound		TMS 402-13, Eq. 9-23
	General Inputs		Vnm (kip)	303.1	TMS 402-13, Sec 9.3.4.1.2.1
Pier ID	Grid E245		Vn (kip)	303.1	TM5 402-13, Equation 9-21
ocation/Gridline	E245		Holdown Anchor Rod As (in^2)	0.31	At one wall end
'm (psi)	810	Table 11-2(a)	a (in)	2.4	
m (ksi)	729	TMS 402-13, Sec 4.2.2.2.1	Distance from Edge of Wall to Rod (in)	4	
me (psi)	1053	Table 11-1	d (in)	320	
(ksi)	40		Mn (kip*ft)	1784	
ye (ksi)	52		Ve (kip)	127	
s (ksi)	29000		Shear vs. Flexure Control	Flexime Control	
fasonry Denisty (pcf)	125		An (in^2)	2592	
ominal Pier Length (ft)	27		f <sub>ae</sub> (psi)	37.0	
	14.00			NA.	
er Height (H)			Shear vs. Force Controlled	na.	
/all thickness (in)	8		1	emiles or factors Table	1.6
oof Trib (SF)	405			rmine m-factors Table 1	1.0
oof Dt. (psf)	20		fae/fme	0.035	
oof St. (psf)	25		L/heff	1.93	Table Mark State
lezz Trib (SF)	202		As (in^2)	0.62	Total Vertical Reinforcement
ezz DL (psf)	35		ρ,	0.00024	
fezz LL (psf)	40		Av (in^2)	0.6	Total Vertical Reinforcement
nd FLR Trib (SF)	405		ρh	0.0005	
nd FLR DL (psf)	35		p <sub>e</sub> fye/fme	0.035	
nd FLR LL (psf)	40		m-factor	7.7	
hearline Tot Shear (kips)	604.3	BSE-2E	m-factor restriction	7	
nearline Tot Snear (KIPS)	27	B3E-ZE	m-factor used	7.0	
pplicable Wall Trib Length (ft)	27		Im-ractor used	7.0	
eismic Axial Load (kips)	0.0	Holdown Force From Wall Above	1	eformation Control DCR	
		Holdown Force From Wall Above		ejormation Control UCK	3
oldown to Wall Centroid (ft)	0.0		Shear DCR	0.68	
), LS, CP	CP		Moment DCR	\$1.00	
	0 101 11		1	F C 1000-	
	General Colculation			Force Control DCRs	
/all Self-Weight (kips)	31.5	Plant Control of the	Shear DCR		
t. (kips)	29.3	Super-imposed DL @ Top of Wall	Moment DCR		
(kips)	24,3		-		Charles and the Carlo
(kips)	10.1	DALLOWS I		ne Capacity TMS 402-13	, Sec 9.3.5
1(Q <sub>0</sub> + Q <sub>4</sub> +0.2*Q <sub>5</sub> )	95.9	Eq. 7-1	d (in)	- 4	
9(Q <sub>0</sub> )	54.6	Eq. 7-2	a (in)	0.6	
near/Unit Length (kip/ft)	22.4		Mn (kip*ft)	24.6	
all Shear (Q <sub>k</sub> ) (kips)	604.3				
oment Generated from Holdown (kip*ft)	6.0	About Centroid of Wall	Out-Of-Plane Demands TMS 4	02-13 Sec 9 3 5 & Acre	41-13 Section 11.3 S->7 2.11
oment denerated from notdown (kip 10)	The The	Mode Centrale of Wall	Unit-Of-Flane Demailds 1893 4	1	ASCE 41-13, Table 7-2, CP
	Wall Demands		Sxs,1E	1.11	Have Haray Table 7-2, UP.
(bine)	Wall Demands 95.9	Eq. 7-34	h (ft)	14	Full Wall Height
(kips)	95.9 54.8			2(4)()	Elevation Wall Unit Weight
(kips)	604.3	Eq. 7-34	w (psf)	Head	ASCE 41-13, Eq. 7-13
(kips)			Fp*L(pif)		
(kip*ft)	8460.2		Fp_min*L (plf)	27(h))	ASCE 41-13, Eq. 7-14
2011/00/03	742 30 72	A COLONIA	Mu,o (kip*ft)	2E 37	
Lower-8	ound Vertical Compressive S		n	35.8	-
	1	Table 6-1	tsp (in)	8	
n)	0.587	Weak Axis Radius of Gyration	c (in)	0.2	TMS 402-13, Eq. 9-35
	226		teff = tcr (in^4)	892	TMS 402-13, Eq. 9-34
(kip)	28	TMS 402-13, Eq. 9-19, Eq. 9-20	Pe (kips)	227/	TMS 402-13, Eq. 9-33
c. (kip)	81		Ψ	1,729	TMS 402-13, Eq. 9-32
33.2.40 Etc.	2	ıs	ΨMu,o (kip*ft)	50.77	TMS 402-13, Eq. 9-31
C <sub>2</sub>	1.1		LAMES AND LINE		Access and the second
			1	arat	
s+{Q <sub>e</sub> }/(JC1C2) (kip)	95.9	Sea .		Of-Plane DCR, Sec 11.3.	5.5
DCR	2.18		Flexure DCR	0.9:	

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	Legend		Deter	mine FC vs DC Table	11-6
Input	1-11-11-11-11-11-11-11-11-11-11-11-11-1		Mu/(Vudv)	0.04	
alculated			γ	1.0	#5 Bars or smaller
DCR/Check			Vn (kips) upperbound	492	TMS 402-13, Eq. 9-22
			Vn (kips) upperbound	9	TMS 402-13, Eq. 9-23
	General Inputs		Vnm (kip)	333.5	TMS 402-13, Sec 9.3.4.1.2.1
Pier ID	Grid E245		Vn (kip)	333.5	TMS 402-13, Equation 9-21
Location/Gridline	E245		Holdown Anchor Rod As (in^2)	0.31	At one wall end
'm (psi)	810	Table 11-2(a)	a (in)	2.4	
Em (ksi)	729	TM5 402-13, Sec 4.2.2.2.1	Distance from Edge of Wall to Rod (in)	4	
me (psi)	1053	Table 11-1	d (in)	356	
y (ksi)	40		Mn (kip*ft)	1702	
fye (ksi)	52		Ve (kip)	122	
s (ksi)	29000		Shear vs. Flexure Control	Flexure Control	
Masonry Denisty (pcf)	125		An (in^2)	2880	
Vominal Pier Length (ft)	30		f <sub>ae</sub> (psi)	23.0	
Pier Height (H)	14.00		Shear vs. Force Controlled	NA.	
Wall thickness (in)	8	- 1			
Roof Trib (SF)	405			mine m-factors Table	11-6
coof DL (psf)	20		fae/fme	0.022	-
Roof St. (psf)	25		L/heff	2.14	Tatal Manufact Deleteran
Mezz Trib (SF)	202		As (in^2)	0.62	Total Vertical Reinforcement
Mezz DL (psf)	35		O <sub>V</sub>	0.00022	
Mezz LL (psf)	40		Av (in^2)	0.6	Total Vertical Reinforcement
nd FLR Trib (SF)	0		ρh	0.0005	
nd FLR DL (psf)	35		ρ <sub>4</sub> fye/fme	0.033	
nd FLR LL (psf)	40		m-factor	6,7	
hearline Tot Shear (kips)	222.4	BSE-1E	m-factor restriction	7	
hearline Tot Length (ft)	30		m-factor used	6.7	
pplicable Wall Trib Length (ft)	30				
eismic Axial Load (kips)	0.0	Holdown Force From Wall Above	Def	ormation Control DC	Rs
foldown to Wall Centroid (ft)	0.0		Shear DCR	0.10	
O, LS, CP	LS		Moment DCR	0.27	
VIII.	General Calculation			Force Control DCRs	
Vall Self-Weight (kips)	35.0	10.07 (44.1	Shear DCR		
Ot (kips)	35.2	Super-imposed DL @ Top of Wall	Mornent DCR		
L (kips)	8,1 10.1		Cut 04 Mary	Capacity TMS 402-1	2 60.25
L (kips)		SOUR			3, 3ec 9.3.3
.1(Q <sub>D</sub> + Q <sub>L</sub> +0, 2*Q <sub>S</sub> )	65.3	Eq. 7-1	d (in)	4	
1.9(Q <sub>0</sub> )	46.2	Eq. 7-2	a (in)	0.4	
hear/Unit Length (kip/ft)	7.4		Mn (kip*ft)	22.2	
Vall Shear (Q <sub>E</sub> ) (kips)	222.4				27.1
foment Generated from Holdown (kip*ft)	9:0	About Centroid of Wall	Out-Of-Plane Demands TMS 40.	2-13 Sec 9.3.5 & ASCE	41-13 Section 11.3.5>7.2.11
According to the second control of the control of t		2 02 24 24 24 24 24 24 24 24 24 24 24 24 24	_ X	1.3	ASCE 41-13, Table 7-2, LS
NEC 41	Wall Demands		Sxs,1E	0.71	
(kips)	56,3	Eq. 7-34	h (ft)	14	Full Wall Height
(kips)	45,2	Eq. 7-34	w (pst)	150.0	Elevation Wall Unit Weight
(kips)	222.4		Fp*L (pit)	1107/5	ASCE 41-13, Eq. 7-13
1 (kip*ft)	3113.6		Fp_min*L (plf)	380.0	ASCE 41-13, Eq. 7-14
13 92000.5003			Mu,o (kip*ft)	27,18	
Lower-Bo	ound Vertical Compressive S		n n	39.7	
in the second se	1	Table 6-1	tsp (in)	- 3	
(n)	0.550	Weak Axis Radius of Gyration	c (in)	0.5	TMS 402-13, Eq. 9-35
le	305		teff = tcr (in^4)	872	TMS 402-13, Eq. 9-34
n (kip)	80	TMS 402-13, Eq. 9-19, Eq. 9-20	Pe (kips)	222	TMS 402-13, Eq. 9-33
P <sub>CL</sub> (kip)	80	errol .	Ψ	0.425	TMS 402-13, Eq. 9-32
	2	LS	Y'Mu,o (kip*ft)	18:07	TMS 402-13, Eq. 9-31
iC2	1.1		/ 6		
ks+(Q <sub>L</sub> )/(JC1C2) (kip)	66.3		Out-O	f-Plane DCR, Sec 11.3	1.5.3
CR	0.83		Flexure DCR	0.8	

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	Legend		Det	ermine FC vs DC Table 1:	1-6
nput			Mu/(Vudv)	0.04	
Calculated			y	1.0	#5 Bars or smaller
DCR/Check			Vn (kips) upperbound	492	TMS 402-13, Eq. 9-22
			Vn (kips) upperbound		TMS 402-13, Eq. 9-23
	General Inputs		Vnm (kip)	333.5	TMS 402-13, Sec 9.3.4.1.2.1
Pier ID	Grid E245		Vn (kip)	333.5	TMS 402-13, Equation 9-21
Location/Gridline	E245		Holdown Anchor Rod As (in^2)	0.31	At one wall end
f'm (psi)	810	Table 11-2(a)	a (in)	2.4	THE STATE OF THE S
Em (ksi)	729	TMS 402-13, Sec 4.2.2.2.1	Distance from Edge of Wall to Rod (in)	4	
fme (psi)	1053	Table 11-1	d (in)	356	
fy (ksi)	40		Mn (kip*ft)	1702	
fye (ksi)	52		Ve (kip)	122	
Es (ksi)	29000		Shear vs. Flexure Control	Floring Control	
Masonry Denisty (pcf)	125		An (in^2)	7880	
Nominal Pier Length (ft)	30		f <sub>ac</sub> (psi)	23.0	
Pier Height (H)	14.00		Shear vs. Force Controlled	NA	
Wall thickness (in)	8				
Roof Trib (SF)	405			rmine m-factors Table 1	1-6
Roof DL (psf)	20	-	fae/fme	0.022	
Roof St. (psf)	25		L/heff	2.14	
Mezz Trib (SF)	202		As (in^2)	0.93	Total Vertical Reinforcement
Mezz DL (psf)	35		ρ <sub>v</sub>	0.00032	
Mezz LL (psf)	40		Av (in^2)	0.9	Total Vertical Reinforcement
2nd FLR Trib (SF)	0		0.	0.0007	
2nd FLR DL (psf)	35		p₂fye/fme	0.050	
2nd FLR LL (psf)	40				
	345.9	ner ar	m-factor	7.5	
Shearline Tot Shear (kips)		BSE-2E	rn-factor restriction		
Shearline Tot Length (ft)	30		m-factor used	7.0	
Applicable Wall Trib Length (ft)	30		- r		
Seismic Axial Load (kips)	0.0	Holdown Force From Wall Above		eformation Control DCRs	
Holdown to Wall Centroid (ft)	0.0		Shear DCR	0.15	
O, LS, CP	CP		Moment DCR	0.41	
TONING OF THE STATE IN STATE	General Calculation		- Inches	Force Control DCRs	
Wall Self-Weight (kips)	35/0	Lancata and the same and the sa	Shear DCR		
OL (kips)	15,2	Super-imposed DL @ Top of Wall	Moment DCR		
L (kips)	8.1				
St. (kips)	10.1			ne Capacity TMS 402-13,	Sec 9.3.5
1.1(Q <sub>0</sub> + Q <sub>L</sub> +0.2*Q <sub>S</sub> )	66,3	Eq. 7-1	d (in)	A	
1.9(Q <sub>0</sub> )	45.2	Eq. 7-2	a (in)	0.4	
shear/Unit Length (kip/ft)	11.5		Mn (kip*ft)	25.9	
Vall Shear (Q <sub>€</sub> ) (kips)	345.0		Everyop 11	AMOS	-
Moment Generated from Holdown (kip*ft)	3.0	About Centroid of Wall	Out of the parent The	02.12 Can D 3 F G ACCE	1. 12 Faction 11 2 F - 2 2 11
noment denerated from nordown (xip:rt)	201	About Centroid of Wall	Out-Of-Plane Demands TMS 4		
	Well Domeste		1 5 15	1	ASCE 41-13, Table 7-2, CP
Milan	Wall Demands	5- 224	Sxs.1E	1.11	E. II M. VIII T -
(kips)	66,3	Eq. 7-34	h (ft)	14	Full Wall Height
(kips)	45.2	Eq. 7-34	w (psf)	1000	Elevation Wall Unit Weight
(kips)	345.9		Fp*L (plf)	1332:0	ASCE 41-13, Eq. 7-13
A (kip*ft)	4842.6		Fp_min*L (plf)	200.0	ASCE 41-13, Eq. 7-14
		SAT THE OWN THAT	Mu,o (kip*ft)	32.53	
Lower-Bo	ound Vertical Compressive S		n	34.5	
	1	Table 6-1	tsp (in)	8	
(in)	0.583	Weak Axis Radius of Gyration	c (in)	0.6	TMS 402-13, Eq. 9-35
lt .	286		leff = lcr (in^4)	09%	TMS 402-13, Eq. 9-34
cs (kip)	91	TMS 402-13, Eq. 9-19, Eq. 9-20	Pe (kips)	255	TMS 402-13, Eq. 9-33
Pa (kip)	91		Ψ	1.305	TMS 402-13, Eq. 9-32
A-9-2-1/6-2-1	2	ıs	ЧМи,o (kip*ft)	41.20	TMS 402-13, Eq. 9-31
		Lag.	Li moto (kip-ti)	Aldivax.	11W3 402-13, Eq. 3-31
c	363	II.			
C <sub>1</sub> C <sub>2</sub> C <sub>5</sub> (Q <sub>6</sub> )/(JC1C2) (kip)	1.1			Of-Plane DCR, Sec 11.3.5	

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	Legend		Di	etermine FC vs DC Table 11-6	G
nput			Mu/(Vudv)	0.06	
Calculated		(III-	γ	1.0	#5 Bars or smaller
DCR/Check			Vn (kips) upperbound	164	TMS 402-13, Eq. 9-22
			Vn (kips) upperbound		TMS 402-13, Eq. 9-23
	General Inputs		Vnm (kip)	108.6	TMS 402-13, Sec 9.3.4.1.2.1
Pier ID	Grid E290		Vn (kip)	108.6	TMS 402-13, Equation 9-21
ocation/Gridline	E290		Holdown Anchor Rod As (in^2)	0.31	At one wall end
'm (psi)	810	Table 11-2(a)	a (in)	2.4	
Em (ksi)	729	TMS 402-13, Sec 4.2.2.2.1	Distance from Edge of Wall to Rod (in)	4	
me (psi)	1053	Table 11-1	d (in)	116	_
y (ksi)	40		Mn (kip*ft)	204	
ye (ksi)	52		Ve (kip)	29	
s (ksi)	29000		Shear vs. Flexure Control	Flexure Control	
Masonry Denisty (pcf)	125		An (in^2)	960	
Nominal Pier Length (ft)	10		f <sub>ar</sub> (psi)	15.3	
er Height (H)	7.00		Shear vs. Force Controlled	NA	
Vall thickness (in)	8				
Roof Trib (SF)	75		De	termine m-factors Table 11-	5
toof DL (psf)	20		fae/fme	0.015	
toof SL (psf)	25		L/heff	1.43	
Mezz Trib (SF)	0		As (in^2)	0.31	Total Vertical Reinforcement
Mezz DL (psf)	0		P <sub>V</sub>	0.00032	ACCOUNT OF THE PARTY OF
100000000000000000000000000000000000000	11/25/		The state of the s	0.3	Total Vertical Reinforcement
Mezz LL (psf)	0		Av (in^2)		Total vertical Reinforcement
nd FLR Trib (SF)	75		PK	0.0005	
and FLR DL (psf)	35		p <sub>e</sub> fye/fme	0.039	
nd FLR LL (psf)	40		m-factor	5.4	
hearline Tot Shear (kips)	229.2	BSE-1E	m-factor restriction	7	
hearline Tot Length (ft)	41		m-factor used	6.4	
Applicable Wall Trib Length (ft)	10				
eismic Axial Load (kips)	0.0	Holdown Force From Wall Above		Deformation Control DCRs	
foldown to Wall Centroid (ft)	0.0		Shear DCR	9,06	
O, LS, CP	LS		Mament DCR	0.30	
	General Calculation			Force Control DCRs	
Vall Self-Weight (kips)	5.0		Shear DCR		
DL (kips)	4.1	Super-imposed DL @ Top of Wall	Moment DCR		
t. (kips)	3.0				
L (kips)	1,9		Out-Of-Pi	ane Copocity TMS 402-13, Se	c 9.3.5
.1(Q <sub>0</sub> + Q <sub>4</sub> +0.2*Q <sub>5</sub> )	14.7	Eq. 7-1	d (in)	4	
0.9(Q <sub>0</sub> )	9.0	Eq. 7-2	a (in)	0.3	<u> </u>
hear/Unit Length (kip/ft)	5.0	TW.7.77	Mn (kip*ft)	5.8	
Vall Shear (Q <sub>E</sub> ) (kips)	55,93243902		Control 1d	9.9	
		About Control of the H	1 0 0 0 0 0	402 42 5 0 5 5 5 4555	12 Cardian 11 2 C - 2 2 44
fornent Generated from Holdown (kip*ft)	0.0	About Centroid of Wall	Out-Of-Plane Demands TMS		
	Mall Bar L		1 5 15	0.71	ASCE 41-13, Table 7-2, LS
Marat	Wall Demands	5- 224	Sxs,1E		Coll Wall Malaks
(kips)	14.7	Eq. 7-34	h (ft)	14	Full Wall Height
(kips)	9.0	Eq. 7-34	w (psf)	1999	Elevation Wall Unit Weight
(kips)	55.90243902		Fp*L(plf)	355,2	ASCE 41-13, Eq. 7-13
# (kip*ft)	391.3	<del></del>	Fp_min*L (plf)	136.6	ASCE 41-13, Eq. 7-14
110-1-11-1-1	CONTRACTOR AND A CONTRACTOR AND A	oonia uga	Mu,o (kip*ft)	9,05	
Lower-B	ound Vertical Compressive Str		n n	39/8	
	1	Table 6-1	tsp (in)	2	Maria 100 FG 6
(in)	0,534	Weak Axis Radius of Gyration	c (in)	(64	TMS 402-13, Eq. 9-35
lt.	157		leff = lcr (in^4)	225	TMS 402-13, Eq. 9-34
ct (kip)	100	TMS 402-13, Eq. 9-19, Eq. 9-20	Pe (kips)	379	TMS 402-13, Eq. 9-33
P <sub>CL</sub> (kip)	100		Ψ	1.633	TMS 402-13, Eq. 9-32
The same of the sa	2	LS	ΨMu,o (kip*ft)	9/55	TMS 402-13, Eq. 9-31
ıC <sub>2</sub>	1.1		The state of the s	1000	Marine Marine Andrews and Andr
102 0 <sub>G</sub> +(Q <sub>ε</sub> )/(JC1C2) (kip)	14.7		1	t-Of-Plane DCR, Sec 11.3.5.3	
DCR	0.15		Flexure DCR	9.6	

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	Legend		De	termine FC vs DC Table 1	1-6
nput			Mu/(Vudv)	0,06	
Calculated			γ	1.0	#S Bars or smaller
DCR/Check			Vn (kips) upperbound	164	TMS 402-13, Eq. 9-22
			Vn (kips) upperbound		TMS 402-13, Eq. 9-23
	General Inputs		Vrim (kip)	108.6	TMS 402-13, Sec 9.3.4.1.2.1
Pier ID	Grid E290		Vn (kip)	108.6	TMS 402-13, Equation 9-21
Location/Gridline	E290		Holdown Anchor Rod As (in^2)	0.31	At one wall end
I'm (psi)	810	Table 11-2(a)	a (in)	2,4	
Em (ksi)	729	TMS 402-13, Sec 4.2.2.2.1	Distance from Edge of Wall to Rod (in)	4	
fme (psi)	1053	Table 11-1	d (in)	116	
(y (ksi)	40	SACOSIONAL .	Mn (kip*ft)	264	
fye (ksi)	52		Ve (kip)	28	
Es (ksi)	29000		Shear vs. Flexure Control	Flexure Control	
Masonry Denisty (pcf)	125		An (in^2)	950	
Nominal Pier Length (ft)	10		f <sub>se</sub> (psi)	15,3	
Pier Height (H)	7.00		Shear vs. Force Controlled	RO.	
Wall thickness (in)	8				
Roof Trib (SF)	75		Det	ermine m-factors Table 1	1-6
Roof DL (psf)	20		fae/fme	0.015	
Roof St. (psf)	25		L/heff	1.43	
Mezz Trib (SF)	0		As (in^2)	0.31	Total Vertical Reinforcement
Mezz DL (psf)	0		Pv	0,00032	The state of the s
Mezz LL (psf)	0		Av (in^2)	0.3	Total Vertical Reinforcement
2nd FLR Trib (SF)	75			0.0005	Total version neighborsement
			PN		
2nd FLR DL (psf)	35		ρ <sub>ε</sub> fye/fme	0.039	
2nd FLR LL (psf)	40		m-factor	7.5	
hearline Tot Shear (kips)	356.6	BSE-2E	m-factor restriction	7	
Shearline Tot Length (ft)	41		m-factor used	7.0	
Applicable Wall Trib Length (ft)	10				
Seismic Axial Load (kips)	0.0	Holdown Force From Wall Above		eformation Control DCR	5
Holdown to Wall Centroid (ft)	0.0		Shear DCR	0.11	
O, LS, CP	CP		Moment DCR	0.45	
	General Calculation			Force Control DCRs	
Wall Self-Weight (kips)	5.6		Shear DCR		
DL (kips)	4.1	Super-imposed DL @ Top of Wall	Moment DCR		
L (kips)	3.0		1/64		
it (kips)	1.9			ne Capacity TMS 402-13	Sec 9.3.5
1.1(Q <sub>0</sub> + Q <sub>L</sub> +0.2*Q <sub>S</sub> )	14.7	Eq. 7-1	d (in)	4	
).9(Q <sub>0</sub> )	Shill	Eq. 7-2	a (in)	0.3	
ihear/Unit Length (kip/ft)	8.7		Mn (kip*ft)	6.8	
Wall Shear (Q <sub>E</sub> ) (kips)	85,97060978		A CONTRACTOR OF THE PROPERTY O		
Moment Generated from Holdown (kip*ft)	0.0	About Centroid of Wall	Out-Of-Plane Demands TMS	102-19 Sec 9 3 5 & ASCE	11-13 Section 11.3 5>7.2.11
noment denerated from holdown (kip. 10)	240	papour centroid of waii	Out-of-ridite Defination Titis	1	ASCE 41-13, Table 7-2, CP
	Wall Demands		Sxs,1E	1.11	Proce 4x-x3, rame 7-k, cr
(kips)	14,7	Eq. 7-34	h (ft)	14	Full Wall Height
(kips)	50	Eq. 7-34	w (psf)	2000	Elevation Wall Unit Weight
(kips)	85,97560076	330.027	Fp*L (pif)	444.0	ASCE 41-13, Eq. 7-13
/ (kip*ft)	€08.G		Fp_min*L (plf)	190.0	ASCE 41-13, Eq. 7-14
The Isl	Angel and and angel angel and angel and angel and angel and angel and angel and angel angel and angel and angel and angel and angel and angel and angel and angel and angel and angel and angel and angel and angel angel and angel an		Mu,o (kip*ft)	10.98	74 Ady 550 7 A7
100000	r-Bound Vertical Compressive St	renath	T P	39.8	
Lowe	1	Table 6-1	tsp (in)		
(in)	0.534	Weak Axis Radius of Gyration	c (in)	0%	TMS 402-13, Eq. 9-35
(in) Ir:	157	Weak Axis Radius of Gyradion	leff = Icr (in^4)	278	TMS 402-13, Eq. 9-34
		Thus 403 13 5- 0 10 5- 0 20	1		
cı (kip)	100	TMS 402-13, Eq. 9-19, Eq. 9-20	Pe (kips)	276	TMS 402-13, Eq. 9-33
P <sub>CL</sub> (kip)	100		Ψ	1.036	TMS 402-13, Eq. 9-32
	2	LS	ΨMu,o (kip*ft)	11.48	TMS 402-13, Eq. 9-31
,C,	1.1				
Q <sub>c</sub> +(Q <sub>t</sub> )/(IC1C2) (kip)	14.7		Out	Of-Plane DCR, Sec 11.3.	5.3
			The state of the s	The second secon	

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262019,034	Date:

	Legend		Dete	rmine FC vs DC Table	11.6
Input			Mu/(Vudv)	0.05	
Calculated			У	1.0	#5 Bars or smaller
DCR/Check			Vn (kips) upperbound	820	TMS 402-13, Eq. 9-22
			Vn (kips) upperbound		TMS 402-13, Eq. 9-23
	General Inputs		Vnm (kip)	561.3	TMS 402-13, Sec 9.3.4.1.2.1
Pier ID	Grid E290		Vn (kip)	561.3	TM5 402-13, Equation 9-21
Location/Gridline	E290		Holdown Anchor Rod As (in^2)	0.31	At one wall end
ľm (psi)	810	Table 11-2(a)	a (in)	2.4	
Em (ksi)	729	TMS 402-13, Sec 4.2.2.2.1	Distance from Edge of Wall to Rod (in)	4	
fme (psi)	1053	Table 11-1	d (in)	596	
fy (ksi)	40		Mn (kip*ft)	5700	
fye (ksi)	52		Ve (kip)	211	
Es (ksi)	29000		Shear vs. Flexure Control	Flexure Control	
Masonry Denisty (pcf)	125		An (in^2)	4800	
Nominal Pier Length (ft)	50		f <sub>at</sub> (psi)	26.2	
Pier Height (H)	27.00		Shear vs. Force Controlled	NA	
Wall thickness (in)	8		1 1		
Roof Trib (SF)	75		Deter	mine m-factors Table	11-6
Roof DL (psf)	20		fae/fme	0.025	
Roof SL (psf)	25		L/heff	1.85	
Mezz Trib (SF)	0		As (in^2)	4.03	Total Vertical Reinforcement
Mezz DL (psf)	0		ρ <sub>v</sub>	0.00084	
Mezz LL (psf)	0		Av (in^2)	4.0	Total Vertical Reinforcement
2nd FLR Trib (SF)	0		0.	0.0016	
2nd FLR DL (psf)	35		p <sub>s</sub> tye/fme	0.118	
The state of the s					
2nd FLR LL (psf)	40	and the	m-factor	4,9	
Shearline Tot Shear (kips)	110.9	BSE-1E	m-factor restriction	7	
Shearline Tot Length (ft)	50		m-factor used	4:9	
Applicable Wall Trib Length (ft)	50	11-14 F F WI-U-N		f100	
Seismic Axial Load (kips)	0.0	Holdown Force From Wall Above		formation Control DCI	ts
Holdown to Wall Centroid (ft) IO, LS, CP	U.U		Shear DCR Moment DCR	0.01	
10, 13, CP	LS.		Moment DCR	9.11	
	General Calculation		1	Force Control DCRs	
Wall Self-Weight (kips)	112.5		Shear DCR	13.35	
DL (kips)	1.5	Super-imposed DL @ Top of Wall	Moment DCR		
LL (kips)	0.0		Commission		
St (kips)	1.9		Out-Of-Plan	e Capacity TMS 402-1.	3. Sec 9.3.5
1.1(Q <sub>0</sub> + Q <sub>4</sub> +0.2*Q <sub>5</sub> )	125.8	Eq. 7-1	d (in)	4	
0.9(Q <sub>0</sub> )	192.6	Eq. 7-2	a (in)	0.7	
Vanilla Vanill		Eq. 7-2	40,302		
Shear/Unit Length (kip/ft)	2.2		Mn (kip*ft)	79.8	
Wall Shear (Q <sub>4</sub> ) (kips)	120.9				
Moment Generated from Holdown (kip*ft)	0.0	About Centroid of Wall	Out-Of-Plane Demands TMS 40		
			X	1,3	ASCE 41-13, Table 7-2, LS
W0.72	Wali Demands	La Maria	Sxs,1E	0.71	
(kips)	125.8	Eq. 7-34	h (ft)	14 -	Full Wall Height
(kips)	102.6	Eq. 7-34	w (psf)	1,87,8	Elevation Wall Unit Weight
/ (kips)	110.9		Fp*L (pif)	1945/0	ASCE 41-13, Eq. 7-13
M (kip*ft)	2994.3		Fp_min*L (plf)	650/0	ASCE 41-13, Eq. 7-14
		1101000-1-17	Mu,o (kip*ft)	45.23	
	ound Vertical Compressive S		<u>n</u>	30:8	
	1	Table 6-1	tsp (in)	8	
(in)	0.742	Weak Axis Radius of Gyration	c (in)	30.0	TMS 402-13, Eq. 9-35
dr:	437		leff = Icr (in^4)	2601	TMS 402-13, Eq. 9-34
ct (kip)	67	TMS 402-13, Eq. 9-19, Eq. 9-20	Pe (kips)	101	TMS 402-13, Eq. 9-33
P <sub>CL</sub> (kip)	67		q/	£.278	TMS 402-13, Eq. 9-32
	2	LS	ΨMu,o (kip*ft)	148.25	TMS 402-13, Eq. 9-31
,c,	1.1				and the second s
Q <sub>c</sub> +(Q <sub>c</sub> )/(JC1C2) (kip)	125.8		Out	of-Plane DCR, Sec 11.3	53
DCR	1.57		Flexure DCR		
Jun .	4:37		Triexure DCR	0.8	

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	Legend		
Input			Mu
Calculated			7
DCR/Check			Vn
			Vn
	General Inputs		Vni
Pier ID	Grid E290		Vn
Location/Gridline	E290		Ho
f'm (psi)	810	Table 11-2(a)	a (i
Em (ksi)	729	TMS 402-13, Sec 4.2.2.2.1	Dis
fme (psi)	1053	Table 11-1	d (i
fy (ksi)	40		Mn
fye (ksi)	52		Ve
Es (ksi)	29000		She
Masonry Denisty (pcf)	125		An
Nominal Pier Length (ft)	50		f se
Pier Height (H)	14.00		She
Wall thickness (in)	8		
Roof Trib (SF)	75		<b>-</b>
Roof DL (psf)	20		fae
Roof St. (psf)	25		1/6
Mezz Trib (SF)	0		As
Mezz DL (psf)	0		ρ <sub>v</sub>
Mezz LL (psf)	0		Av
2nd FLR Trib (SF)	0		Ph
2nd FLR DL (psf)	35		pat
2nd FLR LL (psf)	40		m-f
Shearline Tot Shear (kips)	172.5	BSE-2E	m-t
Shearline Tot Length (ft)	50	opi te	m-t
Applicable Wall Trib Length (ft)	50		7
Seismic Axial Load (kips)	0.0	Holdown Force From Wall Above	7 6
Holdown to Wall Centroid (ft)	0.0		She
IO, LS, CP	CP		Mo
	General Calculation		
Wall Self-Weight (kips)	58.3		She
DL (kips)	1.5	Super-imposed DL @ Top of Wall	Mo
LL (kips)	0.0		_
St. (kips)	1:0		
1.1(Q <sub>0</sub> + Q <sub>c</sub> +0.2*Q <sub>c</sub> )	66.2	Eq. 7-1	d (i
0.9(Q <sub>n</sub> )	59.0	Eq. 7-2	a (i
Shear/Unit Length (kip/ft)	3.5	100 000	Mn
Wall Shear (Qr) (kips)	122.5		
Moment Generated from Holdown (kip*ft)	0.0	About Centroid of Wall	
Moment denerated from Fibidowii (kg/ ft)	9.0	PACOUL CENTOOD OF WAIT	_  -
	Wall Demands		5xs
P (kips)	66.2	Eq. 7-34	h (f
P (kips)	53.9	Eq. 7-34	w (
V (kips)	172.5		Fp*
M (kip*ft)	2415.0		Fp
111111111111111111111111111111111111111	213010		Mu
Lower-Bour	nd Vertical Compressive S	trenath	n n
K I	1	Table 6-1	tsp
r (in)	0.702	Weak Axis Radius of Gyration	c (ir
h/r	239	AND THE OWNER OF THE PARTY.	leff
P <sub>CL</sub> (kip)	224	TMS 402-13, Eq. 9-19, Eq. 9-20	Pel
		CONTRACTOR ENGINEERS AND STREET	Ψ
KP <sub>CL</sub> (kip)	224	le l	
	2	LS	YW.
C1C3	1,1		4 -
Q <sub>4</sub> +(Q <sub>6</sub> )/(IC1C2) (kip)	56.2	====	
DCR	0.30		Fleo

Dete	rmine FC vs DC Table	11-6
Mu/(Vudv)	0.02	
7	1.0	#5 Bars or smaller
Vn (kips) upperbound	820	TMS 402-13, Eq. 9-22
Vn (kips) upperbound	74	TMS 402-13, Eq. 9-23
Vnm (kip)	554.3	TMS 402-13, Sec 9.3.4.1.2.1
Vn (kip)	550.3	TMS 402-13, Equation 9-21
Holdown Anchor Rod As (in^2)	0.31	At one wall end
a (in)	2.4	
Distance from Edge of Wall to Rod (in)	4	
d (in)	596	
Mn (kip*ft)	3284	100
Ve (kip)	235	
Shear vs. Flexure Control	Flexure Control	
An (in^2)	4800	
f <sub>se</sub> (psi)	13.8	cont.
Shear vs. Force Controlled	ÁÁ	
Detro	mine m-factors Table	11.6
fae/fme	0.013	44.4
L/heff	3.57	
As (in^2)	4,03	Total Vertical Reinforcement
ρ <sub>ν</sub>	0.00084	Total 15- asia nemorecinem
Av (in^2)	4.0	Total Vertical Sainforces and
	120000000	Total Vertical Reinforcement
Ph	0,0030	
p <sub>&amp;</sub> tye/fme	0.190	
m-factor	4.5	
m-factor restriction	7	
m-factor used	4.5	101
Moment DCR	0.15	
	Force Control DCRs	
Shear DCR		
Moment DCR		
Qut-Qf-Plan	e Capacity TMS 402-1	3 Sec 9.3.5
d (in)	4	3, 344 3,2,3
a (in)	0.6	
	66.4	
Mn (kip*ft)	90,4	
Out-Of-Plane Demands TMS 40	12-13 Sec 9.3.5 & ASCI	41-13 Section 11.3.5>7.2.11
	1	ASCE 41-13, Table 7-2, CP
Sxs,1E	1.11	
h (ft)	14	Full Wall Height
w (psf)	40000	Elevation Wall Unit Weight
Fp*L (plf)	22200	ASCE 41-13, Eq. 7-13
p_min*L (plf)	E0000	ASCE 41-13, Eq. 7-14
Mu,o (kip*ft)	54.89	
1	130/8	
sp (in)	- 3	
; (in)	0.7	TMS 402-13, Eq. 9-35
leff = lcr (in^4)	2859	TMS 402-13, Eq. 9-34
Pe (kips)	(4)2	TMS 402-13, Eq. 9-33
Ψ	4.424	TMS 402-13, Eq. 9-32
YMu,o (kip*ft)	51.16	TMS 402-13, Eq. 9-31
rate, o tab (t)	01,14	1103 402-13, Eq. 3-31
Out-0	of-Plane DCR. Sec 11.3	1.5.3
Out-C	Of-Plane DCR, Sec 11.3	1.5,3

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 Designed By:

 900 Bidg
 Date:

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 Checked By:

 262019,034
 Date:

# Designed By: JJ Date: 12/18/2019 Checked By: 12/18/2019

	Legend		Detern	ine FC vs DC Table 1:	1-6
nput			Mu/(Vudv)	0.04	THE STATE OF THE S
alculated			γ	1.0	#5 Bars or smaller
OCR/Check			Vn (kips) upperbound	492	TMS 402-13, Eq. 9-22
			Vn (kips) upperbound		TMS 402-13, Eq. 9-23
	General Inputs	11441	Vnm (kip)	330.8	TMS 402-13, Sec 9.3.4.1.2.1
Pier ID	Grid S0		Vn (kip)	330.8	TMS 402-13, Equation 9-21
Location/Gridline	50		Holdown Anchor Rod As (in^2)	0.31	At one wall end
ľm (psi)	810	Table 11-2(a)	a (in)	2.4	
Em (ksi)	729	TMS 402-13, Sec 4.2.2.2.1	Distance from Edge of Wall to Rod (in)	4	
fme (psi)	1053	Table 11-1	d (in)	356	
y (ksi)	40		Mn (kip*ft)	1386	
(ye (ksi)	52		Ve (kip)	99	
Es (ksi)	29000		Shear vs. Flexure Control	Flexure-Control	
Masonry Denisty (pcf)	125		An (in^2)	2880	
Nominal Pier Length (ft)	30		f <sub>ae</sub> (psi)	15.7	
Pier Height (H)	14,00		Shear vs. Force Controlled	MA	
Wall thickness (in)	8				
Roof Trib (SF)	60		Determ	ine m-factors Table 1	1.6
Roof DL (psf)	20		fae/fme	0.015	
Roof SL (psf)	25		L/heff	2.14	
Mezz Trib (SF)	0		As (in^2)	0.62	Total Vertical Reinforcement
	0				Total vertical Reinforcement
Mezz DL (psf)			ρ <sub>ν</sub>	0.00022	
Mezz LL (psf)	0		Av (in^2)	0.6	Total Vertical Reinforcement
2nd FLR Trib (SF)	60		Ph	0.0005	
2nd FLR DL (psf)	35		ρ <sub>a</sub> fye/fme	0.033	
and FLR LL (psf)	40		m-factor	6.7	
hearline Tot Shear (kips)	211.6	BSE-1E	m-factor restriction	7	
Shearline Tot Length (ft)	30		m-factor used	6.7	
Applicable Wall Trib Length (ft)	30		The sactor water		-i-
seismic Axial Load (kips)	0.0	Holdown Force From Wall Above	Deformation Control DCRs		
Holdown to Wall Centroid (ft)	0.0		Shear DCR	0.10	
O, LS, CP	LS		Moment DCR	0.32	
0) 10, 01			I Wolliest Delt		
	General Calculation		3	orce Control DCRs	
Wall Self-Weight (kips)	35.0		Shear DCR	The source of the	
OL (kips)	3.3	Super-imposed DL @ Top of Wall	Moment DCR		
L (kips)	2.4	Gapa anposed or go top or wan	[munencoen		
L (kips)	1.5		Out Of Plane	Capacity TMS 402-13,	Car Q 2 E
- Andrews	45.1	Eq. 7-1		4	320 3.3.3
1(Q <sub>0</sub> + Q <sub>1</sub> +0.2*Q <sub>5</sub> )	2,101,0		d (in)		
0.9(Q <sub>0</sub> )	34.5	Eq. 7-2	a (in)	0.3	
hear/Unit Length (kip/ft)	7.1		Mn (kip*ft)	19.0	
Vall Shear (Q <sub>€</sub> ) (kips)	211.6		3 07 307 30		
Moment Generated from Holdown (kip*ft)	0.0	About Centroid of Wall	Out-Of-Plane Demands TMS 402-	13 Sec 9.3.5 & ASCE 4	1-13 Section 11.3.5>7.2.11
		1.000.000.000.000	7	1.3	ASCE 41-13, Table 7-2, LS
	Wall Demands		Sxs,1E	0.71	
(kips)	45.1	Eq. 7-34	h (ft)	14	Full Wall Height
(kips)	34.5	Eq. 7-34	w (psf)	100.0	Elevation Wall Unit Weight
(kips)	211.6		Fp*L (pif)	1107.6	ASCE 41-13, Eq. 7-13
(kip*ft)	2962.4		Fp_min*L (plf)	390.0	ASCE 41-13, Eq. 7-14
A. M.	X70X14	- A	Mu,o (kip*ft)	27.14	74.40,54.7749
Injune Cour	nd Vertical Compressive S	tranath	1 In	39.8	
tower-add	1	Table 6-1	tsp (in)	8	
(in)	0.521	Weak Axis Radius of Gyration	c (in)	0.4	TMS 402-13, Eq. 9-35
		Weak Axis Radius of Gyration			
fr (III)	323	The 100 10 10 20 10 20 10 10	teff = lcr (in^4)	781	TMS 402-13, Eq. 9-34
ct (kip)	71	TMS 402-13, Eq. 9-19, Eq. 9-20	Pe (kips)	199	TMS 402-13, Eq. 9-33
P <sub>Ct</sub> (kip)	71		Ψ	1.293	TMS 402-13, Eq. 9-32
	2	LS	Ψ'Mu,o (kip*ft)	35.08	TMS 402-13, Eq. 9-31
ıC2	1,1		· · · · · · · · · · · · · · · · · · ·		
Q <sub>c</sub> +(Q <sub>c</sub> )/(JC1C2) (klp)	45.1			Plane DCR, Sec 11.3.5	
	4971			.une orn, sec 11.3.3	
DCR	3,53		Flexure DCR	0.8	

728 134th Street SW - Suite 200 Everett, Washington 98204 Ph: 425 741-3800 Fax: 425 741-3900

Client:
Project: \*

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 RFM
 Designed By:

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 Checked By:

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 Date:

# Designed By: JJ Date: 12/18/2019 Checked By: 3

	Legend		Detern	nine FC vs DC Table 11	1-6
nput			Mu/(Vudv)	0.04	
Calculated			y .	1.0	#5 Bars or smaller
CR/Check			Vn (kips) upperbound	492	TMS 402-13, Eq. 9-22
			Vn (kips) upperbound		TMS 402-13, Eq. 9-23
	General Inputs		Vnm (kip)	330.8	TMS 402-13, Sec 9.3.4.1.2.1
Pier ID	Grid S0		Vn (kip)	330.8	TMS 402-13, Equation 9-21
ocation/Gridline	50		Holdown Anchar Rod As (in^2)	0.31	At one wall end
'm (psi)	810	Table 11-2(a)	a (in)	2.4	
m (ksi)	729	TMS 402-13, Sec 4.2.2.2.1	Distance from Edge of Wall to Rod (in)	4	
me (psi)	1053	Table 11-1	d (in)	356	
y (ksi)	40		Mn (kip*ft)	1386	
ye (ksi)	52		Ve (kip)	99	
s (ksi)	29000		Shear vs. Flexure Control	Flavore Control	
tasonry Denisty (pcf)	125		An (in^2)	2880	
	30			15.7	
lominal Pier Length (ft)			f <sub>ae</sub> (psi)	15.2	
er Height (H)	14.00		Shear vs. Force Controlled		
Vall thickness (in)	8		-		9.74
oof Trib (SF)	60			ine m-factors Table 1	1-6
oof DL (psf)	20		fae/fme	0.015	
oof SL (psf)	25		L/heff	2/14	
Mezz Trib (SF)	0		As (in^2)	0.93	Total Vertical Reinforcemen
fezz DL (psf)	0		ρ <sub>v</sub>	0.00032	
fezz LL (psf)	0		Av (in^2)	0.9	Total Vertical Reinforcemen
nd FLR Trib (SF)	60		0.	0.0007	
The state of the s			Ph		
nd FLR DL (psf)	35		ρ <sub>s</sub> tye/fme	0.050	
nd FLR LL (psf)	40		m-factor	7.5	
nearline Tot Shear (kips)	329.2	BSE-2E	m-factor restriction	7	
hearline Tot Length (ft)	30		m-factor used	7.0	
pplicable Wall Trib Length (ft)	30		- 1 n		
eismic Axial Load (kips)	0.0	Holdown Force From Wall Above		rmation Control DCRs	
oldown to Wall Centroid (ft)	0.0		Shear DCR	0.14	
D, LS, CP	CP		Moment DCR	0.08	
A			→/ / / · · · · · · · · · · · · · · · · ·		Y
	General Calculation			orce Control DCRs	
fall Self-Weight (kips)	35.0		Shear DCR		
t. (kips)	3.3	Super-imposed DL @ Top of Wall	Moment DCR	151	
L (kips)	2.4				
(kips)	1.5		Out-Of-Plane	Capacity TMS 402-13,	Sec 9.3.5
$1(Q_0 + Q_4 + 0.2 \cdot Q_5)$	45.1	Eq. 7-1	d (in)	4	
9(Q <sub>0</sub> )	34.5	Eq. 7-2	a (in)	0.4	
		Eq. 7-2			
ear/Unit Length (kip/ft)	419		Mn (kip*ft)	22.8	
fall Shear (Q <sub>c</sub> ) (kips)	329.2		) (h		
loment Generated from Holdown (kip*ft)	0.0	About Centroid of Wall	Out-Of-Plane Demands TMS 402-	13 Sec 9.3.5 & ASCE 4	
		The state of the s	z z	1	ASCE 41-13, Table 7-2, CP
	Wall Demands		Sxs,1E	1.11	
(kips)	45.1	Eq. 7-34	h (ft)	14	Full Wall Height
(kips)	34.5	Eq. 7-34	w (psf)	1000	Elevation Wall Unit Weight
(kips)	329.2		Fp*L (pif)	2332/0	ASCE 41-13, Eq. 7-13
(kip*ft)	4508.8		Fp_min*L (plf)	3000	ASCE 41-13, Eq. 7-14
			Mu,o (kip*ft)	32.53	
Lower-Box	and Vertical Compressive S	trength	1 1	39.2	
toner ac	1	Table 6-1	tsp (in)	2	
in)	0,563	Weak Axis Radius of Gyration	c (in)	6.6	TMS 402-13, Eq. 9-35
r -	298	ACIE AND MINIOS OF CYTOLOGY	leff = Icr (in^4)	913	TMS 402-13, Eq. 9-34
		That and 42 ft. 4 40 ft. 4 40	- Inchini - Inch		
(kip)	84	TMS 402-13, Eq. 9-19, Eq. 9-20	Pe (kips)	233	TMS 402-13, Eq. 9-33
c. (kip)	84		φ	1,270	TMS 402-13, Eq. 9-32
	2	LS	'l'Mu,o (kip*ft)	40.48	TMS 402-13, Eq. 9-31
,C <sub>2</sub>	1.1				
g+(Q <sub>L</sub> )/(JC1C2) (kip)	45.1		Aug av	Plane DCR, Sec 11.3.5	2
				riune uch, 360 11.3.5	12
DCR	0.54		Flexure DCR	0.8	- 4

Reid Middleton

728 134th Street SW - Suite 200
Everett, Washington 98204
Ph: 425 741-3800
Fax: 425 741-3900

Client Project: Project No:

Designed By:
Date:
Checked By:
Date: RFM 900 Bldg 262019.034

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	Legend			Determine FC vs DC Tab	le 11-6
Input			Mu/(Vudv)	0.04	
Calculated			7	1.0	#5 Bars or smaller
DCR/Check			Vn (kips) upperbound	492	TMS 402-13, Eq. 9-22
			Vn (kips) upperbound		TMS 402-13, Eq. 9-23
	General Inputs		Vnm (kip)	330.2	TMS 402-13, Sec 9.3.4.1.2.1
Pier ID	Grid SO		Vn (kip)	330.2	TMS 402-13, Equation 9-21
Location/Gridline	SO		Holdown Anchor Rod As (in*2)	0.31	At one wall end
f'm (psi)	810	Table 11-2(a)	a (in)	2,4	
Em (ksi)	729	TMS 402-13, Sec 4.2.2.2.1	Distance from Edge of Wall to Rod (in)	4	
fme (psi)	1053	Table 11-1	d (in)	356	
fy (ksi)	40		Mn (kip*ft)	1309	
fye (ksi)	52		Ve (kip)	93	
Es (ksi)	29000		Shear vs. Flexure Control	Flature Cuttirot	
Masonry Denisty (pcf)	125		An (in^2)	7880	
Nominal Pler Length (ft)	30		f <sub>ss</sub> (psi)	13.6	-
Uluation and the second				12.0	
Pier Height (H)	14,00		Shear vs. Force Controlled	NA NA	
Wall thickness (in)	8				W-000
Roof Trib (SF)	20			Determine m-factors Tai	ble 11-6
Roof OL (psf)	20		fae/fme	0.013	
Roof SL (psf)	25		L/heff	2,14	
Mezz Trib (SF)	0		As (in^2)	2.48	Total Vertical Reinforcement
Mezz DL (psf)	0		p.	0,00086	
Mezz LL (psf)	0		Av (in^2)	2.5	Total Vertical Reinforcement
2nd FLR Trib (SF)	0		0.	0.0018	The state of the s
			7 N		
2nd FLR DL (psf)	35		ρ <sub>x</sub> fye/fme	0,134	
2nd FLR LL (psf)	40		m-factor	4.7	
Shearline Tot Shear (kips)	102.4	B5E-1E	m-factor restriction	7	
Shearline Tot Length (ft)	30		m-factor used	A.7	
Applicable Wall Trib Length (ft)	30				
Seismic Axial Load (kips)	0.0	Holdown Force From Wall Above		Deformation Control	DCRs
Holdown to Wall Centroid (ft)	0.0		Shear OCR	0.07	
10, L5, CP	LS		Moment DCR	0,23	
			PL 3		
	General Calculation			Force Control DCR	1
Wall Self-Weight (kips)	35.0		Shear DCR		
DL (kips)	0.4	Super-imposed DL @ Top of Wall	Moment DCR		
LL (kips)	0.0		1: 100000000000000000000000000000000000		
St (kips)	0.5		Out-0	of-Plane Capacity TMS 402	7-13, Sec 9.3.5
1.1(Q <sub>0</sub> + Q <sub>1</sub> +0.2*Q <sub>5</sub> )	39.1	Eg. 7-1	d (in)	4	
0.9(Q <sub>n</sub> )	31.9	Eg. 7-2	a (in)	0.6	
		Eq. 7-2			
Shear/Unit Length (kip/ft)	3,4		Mn (kip*ft)	40.5	
Wall Shear (Q <sub>r</sub> ) (kips)	102.4	<del></del>			
Moment Generated from Holdown (kip*ft)	0.0	About Centroid of Wall	Out-Of-Plane Demands		CE 41-13 Section 11.3.5>7.2.11
			X	1.3	ASCE 41-13, Table 7-2, LS
	Wall Demands		Sxs,1E	0.71	
(kips)	39.1	Eq. 7-34	h (ft)	14	Full Wall Height
(kips)	31.9	Eq. 7-34	w (pst)	100.0	Elevation Wall Unit Weight
/ (kips)	102.4		Fp*L (pif)	1107.6	ASCE 41-13, Eq. 7-13
4 (kip*ft)	1433.6		Fp_min*L (plf)	390.0	ASCE 41-13, Eq. 7-14
entroperation (all			Mu,o (kip*ft)	27.14	The state of the s
Lower-Ros	and Vertical Compressive 5	renath	] In	39.8	
Towerace	1	Table 6-1	tsp (in)	8	
(in)	0.705	Weak Axis Radius of Gyration	c (in)	0.7	TMS 402-13, Eq. 9-35
/r	238	VEHE PAR OBUILD OF DYTACON	teff = tcr (in^4)	1433	TMS 402-13, Eq. 9-34
		WARE AND AD E- 0.10 E- 0.22			
a (kip)	136	TMS 402-13, Eq. 9-19, Eq. 9-20	Pe (kips)	365	TMS 402-13, Eq. 9-33
(P <sub>CL</sub> (kip)	136		Ψ	1.120	TMS 402-13, Eq. 9-32
	2	LS	ΨMu,a (kip*ft)	30.38	TMS 402-13, Eq. 9-31
C <sub>1</sub> C <sub>2</sub>	1,1			- AUAT	The state of the s
Q <sub>c</sub> +(Q <sub>c</sub> )/(IC1C2) (kip)	39.1			Aut of these per cont	4353
	39.1		Flexure DCR	Out-Of-Plane DCR, Sec 1	1,3,3,3
DCR					

Reid Middleton

728 1.34th Street SW - Suite 200
Everett, Washington 98204
Ph: 425 741-3800
Fax: 425 741-3900

Client: Project Project Na:

Designed By:
Date:
Checked By:
Date: RFM 900 Bldg 262019.034

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	Legend			Determine FC vs DC Tab	ble 11-6
Input			Mu/(Vudv)	0.04	
Calculated		EAST IT	T	1.0	#S Bars or smaller
DCR/Check			Vn (kips) upperbound	492	TMS 402-13, Eq. 9-22
			Vn (kips) upperbound		TM5 402-13, Eq. 9-23
	General Inputs		Vnrn (kip)	330.2	TMS 402-13, Sec 9.3.4.1.2.1
Pier ID	Grid SO		Vn (kip)	330/2	TMS 402-13, Equation 9-21
Location/Gridline	SO		Holdown Anchor Rod As (in^2)	0.31	At one wall end
f'm (psi)	810	Table 11-2(a)	a (in)	2.4	
Em (ksi)	729	TMS 402-13, Sec 4.2.2.2.1	Distance from Edge of Wall to Rod (in)	4	
fme (psi)	1053	Table 11-1	d (in)	356	
fy (ksi)	40		Mn (kip*ft)	1309	
fye (ksi)	52		Ve (kip)	93	
Es (ksi)	29000		Shear vs. Flexure Control	Flavore Control	
Masonry Denisty (pcf)	125		An (in^2)	2880	
Nominal Pier Length (ft)	30		f <sub>se</sub> (psi)	13.6	
				13.0	
Pier Height (H)	14.00		Shear vs. Force Controlled	- 44	
Wall thickness (in)	8		-		
Roof Trib (SF)	20			Determine m-factors Ta	bie 11-6
Roof DL (psf)	20		fae/fme	0.013	
Roof SL (psf)	25		L/heff	2.14	
Mezz Trib (SF)	0		As (in^2)	2.48	Total Vertical Reinforcement
Mezz DL (psf)	0		ρ,	0.00086	
Mezz LL (psf)	0		Av (in^2)	2.5	Total Vertical ReInforcement
2nd FLR Trib (SF)	0		0.	0.0018	
2nd FLR DL (psf)	35		P <sub>s</sub> tye/fme	0.134	
			Professor Announce		
2nd FLR LL (psf)	40	0.000	m-factor	5.7	
Shearline Tot Shear (kips)	159.3	BSE-2E	m-factor restriction	7	
Shearline Tot Length (ft)	30		m-factor used	5.7	
Applicable Wall Trib Length (ft)	30				and the state of t
Seismic Axial Load (kips)	0.0	Holdown Force From Wall Above		Deformation Control	DCRs
Holdown to Wall Centroid (ft)	0.0		Shear DCR	9.98	
IO, LS, CP	CP		Moment DCR	0.80	
	General Calculation			Force Control DCR	
Walf Self-Weight (kips)	33.0		Shear OCR	Porce Control DCA	
	0.4	Company of the Compan	Moment DCR		
DL (kips)		Super-imposed DL @ Top of Wall	Infoment DCR		
LL (kips)	2,0		-	01.01 C T T 10	
St. (kips)	0.5	ewiers.		Of-Plane Capacity TMS 40.	2-13, Sec 9.3.5
1-1(Q <sub>0</sub> + Q <sub>1</sub> +0-2*Q <sub>5</sub> )	30.1	Eq. 7-1	d (in)	4	
0.9(Q <sub>0</sub> )	31.9	Eq. 7-2	a (in)	0,6	
Shear/Unit Length (kip/ft)	5.3		Mn (kip*ft)	40.5	
Wall Shear (Qو) (kips)	159.3				-1
Moment Generated from Holdown (kip*ft)	0.0	About Centroid of Wall	Out-Of-Plane Demands	TARC 403, 13 Car 0 2 C R A	SCE 41-13 Section 11.3.5->7.2.11
Moment denerated noth Holdown (op. 11)	0,0	PADOUL CENTION OF WAIT	Gat of France Demonds	1	ASCE 41-13, Table 7-2, CP
	Wall Demands		\$6,16	1.11	RSCE 41-13, Table 7-2, CF
D (friest)	THE RESERVE OF THE PERSON NAMED IN COLUMN TWO IS NOT THE PERSON NAMED IN COLUMN TWO IS NAMED IN COLUMN TWO IS NAMED IN COLUMN TWO IS NAMED IN COLUMN TWO IS NAMED IN COLUMN TWO IS NAMED IN COLUMN TWO IS NAMED IN COLUMN TWO IS NAMED IN COLUMN TWO IS NAMED IN COLUMN TWO IS NAMED IN COLUMN TWO IS NAME	For 3.24			Coult Marill Manager
P (kips)	39,1	Eq. 7-34	h (ft)	14	Full Wall Height
P (kips)	31.9	Eq. 7-34	w (psf)	(00%)	Elevation Wall Unit Weight
V (kips)	159.3		Fp*L (pit)	1332(0)	ASCE 41-13, Eq. 7-13
M (kip*ft)	2230.2		Fp_min*L (plf)	\$120 db	ASCE 41-13, Eq. 7-14
			Mu,o (kip*ft)	32.53.	
Lower-Bo	und Vertical Compressive S		0	3918	
K .	1	Table 6-1	tsp (in)	3	
r (in)	0.705	Weak Axis Radius of Gyration	c (in)	0.7/	TMS 402-13, Eq. 9-35
h/r	238		teff = tcr (in^4)	1423	TM5 402-13, Eq. 9-34
P <sub>cl.</sub> (kip)	136	TMS 402-13, Eq. 9-19, Eq. 9-20	Pe (kips)	355	TMS 402-13, Eq. 9-33
KP <sub>CI</sub> (kip)	136		Ψ	1,120	TMS 402-13, Eq. 9-32
TAXABLE .	2	ıs	ΨMu,o (kip*ft)	#8.8 <b>4</b>	TMS 402-13, Eq. 9-31
	1,1	14	Trimen total id	- UM7.	1 1100 40x-13, 14, 3-31
C <sub>1</sub> C <sub>2</sub>				100 NO. 100 NO	
Q <sub>6</sub> +(Q <sub>c</sub> )/(JC1C2) (kip)	39.1			Out-Of-Plane DCR, Sec 1	1.3.5.3
DCR	11.70		Flexure DCR	0.4	

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	Legend		Det	ermine FC vs DC Table	11-6
Input	N. G. III		Mu/(Vudv)	0.12	
Calculated			7	1.0	#5 Bars or smaller
DCR/Check			Vn (kips) upperbound	164	TMS 402-13, Eq. 9-22
			Vn (kips) upperbound		TMS 402-13, Eq. 9-23
	General Inputs		Vnm (kip)	106.2	TMS 402-13, Sec 9.3.4.1.2.1
Pier ID	Grid S10		Vn (kip)	106.2	TM5 402-13, Equation 9-21
Location/Gridline	\$10		Holdown Anchor Rod As (in^2)	0.31	At one wall end
f'm (psi)	810	Table 11-2(a)	a (in)	2,4	
Em (ksi)	729	TMS 402-13, Sec 4.2.2.2.1	Distance from Edge of Wall to Rod (in)	4	
fme (psi)	1053	Table 11-1	d (in)	106	
y (ksi)	40		Mn (kip*ft)	223	
ye (ksi)	52		Ve (kip)	16	
Es (ksi)	29000		Shear vs. Flexure Control	Flexure Control	
Masonry Denisty (pcf)	125		An (in^2)	966	
Nominal Pier Length (ft)	10			12.9	
TO STATE OF THE PARTY OF THE PA			f <sub>ae</sub> (psi)	123	
Pier Height (H)	14.00		Shear vs. Force Controlled	KA:	
Wall thickness (in)	8		4 7		599
Roof Trib (SF)	20			rmine m-factors Table	11-6
Roof DL (psf)	20		fae/fme	0.013	
Roof SL (psf)	25		L/heff	0.71	
Mezz Trib (SF)	0		As (in^2)	0.31	Total Vertical Reinforcement
Mezz DL (psf)	0		Py	0.00032	
Mezz LL (psf)	0		Av (in^2)	0.3	Total Vertical Reinforcement
2nd FLR Trib (SF)	0		ρ <sub>h</sub>	0.0002	
2nd FLR DL (psf)	35		p <sub>g</sub> fye/fme	0.027	
A CONTRACTOR OF THE CONTRACTOR				2000	
end FLR LL (psf)	40		m-factor	6.1	
shearline Tot Shear (kips)	441.6	BSE-1E	m-factor restriction	7	
Shearline Tot Length (ft)	71		m-factor used	6.1	
Applicable Wall Trib Length (ft)	10	NAME OF THE OWNER OF THE OWNER OF THE OWNER OF THE OWNER OF THE OWNER OF THE OWNER OF THE OWNER OF THE OWNER OWNER.	4		W-1
Seismic Axial Load (kips)	0.0	Holdown Force From Wall Above		formation Control DCR	ls
Holdown to Wall Centroid (ft)	0.0		Shear DCR	0.10	
O, LS, CP	LS		Moment DCR	0.64	
			1		
2011-1-101-1-101-1-101-1-101-1-101-1-101-1-101-1-101-1-101-1-101-1-101-1-101-1-101-1-101-1-101-1-101-1-101-1-	General Calculation			Force Control DCRs	
Wall Self-Weight (kips)	20		Shear DCR	- 12	
DL (kips)	5.4	Super-imposed DL @ Top of Wall	Moment DCR	The state of the s	
LL (kips)	0.0				
St. (kips)	0.5			ne Capacity TMS 402-13	3, Sec 9.3.5
1.1(Q <sub>0</sub> + Q <sub>4</sub> +0.2*Q <sub>5</sub> )	13.4	Eq. 7-1	d (in)	(4)	
0.9(Q <sub>0</sub> )	10.5	Eq. 7-2	a (in)	0.3	
Shear/Unit Length (kip/ft)	5.2		Mn (kip*ft)	7,4	
Wall Shear (Q <sub>4</sub> ) (kips)	62,1975831		the state of	- 172	
	# W. T.	About Posterial of Health	0.40(0004-700)	A2 12 C A 2 F A 4 C C	*********
Moment Generated from Holdown (kip*ft)	1409	About Centroid of Wall	Out-Of-Plane Demands TMS 4		
	stand more and		7 X	1.3	ASCE 41-13, Table 7-2, LS
e that was	Wall Demands	F. 224	Sxs,1E	0.71	e-martin-
(kips)	13.4	Eq. 7-34	h (ft)	14	Full Wall Height
(kips)	10.9	Eq. 7-34	w (psf)	100.0	Elevation Wall Unit Weight
(kips)	62,1971831		Fp*L (plf)	369.2	ASCE 41-13, Eq. 7-13
M (kip*ft)	870.8		Fp_min*L (plf)	150.0	ASCE 41-13, Eq. 7-14
		201100	Mu,o (kip*ft)	\$105	
Lowe	r-Bound Vertical Compressive St		in .	36.6	
<u> </u>	1	Table 6-1	tsp (in)	\$	
(in)	0.559	Weak Axis Radius of Gyration	c (in)	0.4	TMS 402-13, Eq. 9-35
/r	300		leff = lcr (in^4)	3(4)	TMS 402-13, Eq. 9-34
ct (kip)	28	TMS 402-13, Eq. 9-19, Eq. 9-20	Pe (kips)	77	TMS 402-13, Eq. 9-33
P <sub>Ct</sub> (kip)	28	and in the contract of the Con	Ψ	1.212	TMS 402-13, Eq. 9-32
NO. AND THE STATE OF THE STATE	2	ıs		19,96	
		L3X	ΨMu,o (kip*ft)	12000	TMS 402-13, Eq. 9-31
C <sub>1</sub> C <sub>2</sub>	1,1				
Q <sub>6</sub> +(Q <sub>6</sub> )/(IC1C2) (kip)	13.4		Out-	Of-Plane DCR, Sec 11.3.	5.3
DCR	0.49		Flexure DCR	12	

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Input		Legend		Deter	mine FC vs DC Table 11	-6
Colicion   Colicion	Input			Mu/(Vudv)	0.12	
General Injusts				У.	1.0	#5 Bars or smaller
Part   Common   Com	DCR/Check			Vn (kips) upperbound	164	TMS 402-13, Eq. 9-22
## Common Report Supers    First   Common Report   Common Rep				Vn (kips) upperbound		
Prof.   Greek 550   Find   158   1		General Inputs			106.2	TM5 402-13, Sec 9.3.4.1.2.1
Section   Sect	Pier ID					
Find						
Trick   1972   1975			Table 11-2(a)		2.4	
Image     1055   Table 11-3						
Mail   Mail					116	
Ver   No.   Sept.						
Section   2000   125   140						150
An (pr. 2)   An						
Sear vs. Force Controlled   Sear vs. Force Controlled						
Note					13.3	
Determine m fractor Table 11-8   Determine m fractor m fract				Shear vs. Force Controlled	NA NA	
Total Vertical Reinforcement   Force Control OCRs						
Light    25						1-0
Age   Company						-
Pack   Pack						÷ 1.000 20.00 10.00
Are (in^2)						Total Vertical Reinforcement
Description   Description						
Table   File   Description	Mezz LL (psf)	0		Av (in^2)	0.3	Total Vertical Reinforcement
Page   Page	Ind FLR Trib (SF)	0		Ph	0.0002	
Internation   Total (Light)   A	and FLR DL (risf)	35		o_fye/fme	0.027	
Mearline Tot Shear (Nigos)	The state of the s			- Influence -		
The property   The			955.35			
			1030-20			
Mail Self-Weight (kips)   0.0   Holdown Force From Wall Above (biddown to Wall Centroid (ft)   0.0   0.15, CP   CP   Shear DCR   0.33   Moment DCR   0.34   Moment DCR   0.35   Moment D				[m-sactor used	7,0	
Shear DCR			Maldana Casa Stan Mall Above	1	competion Control DCD	
Color   Colo			Holdown Force From Wall Adove		ormation Control DCKS	
					0.13	
Shear DCR   Shear DCR   Shear DCR   Shear DCR   Shear DCR	U, LS, CP	L CP		Moment OCK	W/RW	
Shear DCR   Shear DCR   Shear DCR   Shear DCR   Shear DCR		Consent Coloniation			Faces Control OCOs	
Moment DCR	Unit Fall Materials (March				PORCE CONTROL DERS	
Likips			Constitution of the Constitution			
Control   Cont			Super-imposed DL @ Top of Wall	[Moment DCR		
1					C	
1   1   1   1   1   1   1   1   1   1	110000		annera I			Sec 9.3.5
Mail Shear / Unit Length (kip/ft)						
Mail Shear (Q <sub>c</sub> ) (kips)   36,7153836   Moment Generated from Holdown (kip*ft)   0.0   About Centroid of Wall	).9(Q <sub>0</sub> )	19.5	Eq. 7-2	a (in)	0.3	
Nall Shear (Q <sub>t</sub> ) (kips)   36,7133;836	hear/Unit Length (kip/ft)	9.7		Mn (kip*ft)	7.4	
About Centroid of Wall	Vall Shear (Q <sub>4</sub> ) (kips)	96,71580936				
			About Centroid of Wall	Out-Of-Plane Demands TMS 40.	2-13 Sec 9.3.5 & ASCE 4	1-13 Section 11.3.5->7.2.11
Six, S.E.   1.11				y		
Kips   13.4   Eq. 7-34   Kips   10.3   Eq. 7-34   Kips   10.3   Eq. 7-34   Kips   10.0   Elevation Wall Unit Weight   Vision		Wall Demands		Sxs.1E		
(kips)	(kips)		Eq. 7-34			Full Wall Height
(kips)						
Fp_min*L(plf)   10.00   ASCE 41-13, Eq. 7-14						
Nu,o (kip*ft)   10,50   10,5						
Lower-Bound Vertical Compressive Strength   1   Table 6-1   15p (in)   5c	ALIE AL					74-40 74-40; top: 7-43
1   Table 6-1     tsp (in)     E	January 6	ound Vertical Compressive Co.	enath	1 1000 1000 155		
(in) 0,553 Weak Axis Radius of Gyration c (in) 0,44 TMS 402-13, Eq. 9-35 (rd) 1eff = tcr (in^4) 300 TMS 402-13, Eq. 9-34 (rd) 1eff = tcr (in^4) 300 TMS 402-13, Eq. 9-34 (rd) 1eff = tcr (in^4) 300 TMS 402-13, Eq. 9-34 (rd) 1eff = tcr (in^4) 300 TMS 402-13, Eq. 9-35 (rd)	cower-s	The same of the sa		ten (in)		
fr   300	(m)					TAAS 402-13 En 9-35
1 (kip) 28 TMS 402-13, Eq. 9-19, Eq. 9-20 Pe (kips) 77 TMS 402-13, Eq. 9-33 Ψ 1.212 TMS 402-13, Eq. 9-32 Ψ 1.212 TMS 402-13, Eq. 9-32 Ψ 1.212 TMS 402-13, Eq. 9-32 Ψ 1.212 TMS 402-13, Eq. 9-32 Ψ 1.212 TMS 402-13, Eq. 9-31 (C <sub>2</sub> ) 1.1 TMS 402-13, Eq. 9-31 TMS 402			Weak Axis hadius di Gyration			
$P_{C_k}(kip)$ 128 $Ψ$ 1.202 TMS 402-13, Eq. 9-32 $Ψ$ 1.212 TMS 402-13, Eq. 9-32 $Ψ$ 1.212 TMS 402-13, Eq. 9-31 $Φ$ 1.11 $Φ$ 1.212 TMS 402-13, Eq. 9-31 $Φ$ 1.212 $Φ$						
2 L5 ΨMu,o (kip*ft) 13.18 TMS 402-13, Eq. 9-31 1,C <sub>2</sub> 1,1 1,c <sub>3</sub> 1,c <sub>4</sub> 1,c <sub>7</sub> 1,c <sub>7</sub> 1,c <sub>8</sub> 1,c <sub>9</sub>	A COLUMN TO THE PARTY OF THE PA		TMS 402-13, Eq. 9-19, Eq. 9-20			
1.1 (C <sub>2</sub> ) (kip) 1.3.4 Out-Of-Plane DCR, Sec 11.3.5.3	P <sub>CL</sub> (kip)	28		Ψ		TMS 402-13, Eq. 9-32
1.1 2.4(C <sub>2</sub> ) (μ(C) (kip) 13.4 Out-Of-Plane DCR, Sec 11.3.5.3		2	LS	ΨMu,o (kip*ft)	13,18	TM5 402-13, Eq. 9-31
Out-Of-Plane DCR, Sec 11.3.5.3	1C)	1.1				
				Outo	f.Plane DCP Sec 11 2 5	
	ACT THE REAL PROPERTY.	13,4		Out-O	,	***

Reid Middleton

728 134th Street SW - Suite 200
Everett, Washington 98204
Ph: 425 741-3800
Fax: 425 741-3900

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Legend				11-6
		Mu/(Vudv)	0.08	
		7	1.0	#5 Bars or smaller
		Vn (kips) upperbound	115	TMS 402-13, Eq. 9-22
		Vn (kips) upperbound		TMS 402-13, Eq. 9-23
		Vnm (kip)	75.0	TM5 402-13, Sec 9.3.4.1.2.1
Grid 520 between £220 & £	205	Vn (kip)	75.0	TMS 402-13, Equation 9-21
		Holdown Anchor Rod As (in^2)	0.31	At one wall end
810	Table 11-2(a)	(a (in)	2.4	
729	TMS 402-13, Sec 4.2.2.2.1	Distance from Edge of Wall to Rod (in)	4	
1053	Table 11-1	d (in)	80	
40		Mn (kip*ft)	107	
52		(Ve (kip)	1.8	
29000		Shear vs. Flexure Control	Reserve Country:	
125		An (in^2)	672	
7		f (psi)	8.0	
600			88	
		Carrier and Controlled	100	
			Determine mulactors Tabl	- 11-6
		fae/Ime		
				Total Vertical Reinforcement
				CONTROL DESIGNATION.
				and the second s
		257/101111		Total Vertical Reinforcement
		- Indiana - Indi		
35		p <sub>s</sub> lye/ime	0.049	
40		m-factor	6,3	
1011.2	BSE-1E	m-factor restriction	7	
93		m-factor used	6.3	
7				
0.0	Holdown Force From Wall Above		Deformation Control De	CRS
0.0	The test of the second	Shear DCR		
LS		Moment DCR	018	
	111	THE PROPERTY OF THE PARTY OF TH		
General Calculation			Force Control DCRs	
3.5		Shear DCR		
0.8	Super-imposed DI. @ Top of Wall	Moment DCR		
0.6				
0.4		Ou	t-Of-Plane Capacity TMS 402-	13, Sec 9.3.5
5.4	tg. 7-1			
			0.7	
	1 1 Z			
		(wu tob.st)	5,4	
		-		
0.0	About Centroid of Wall	Out-Of-Plane Demana		
Control and Control of Control		Z Z		ASCE 41-13, Table 7-2, LS
	The same of the sa			
				Full Wall Height
	Eq. 7-34			Elevation Wall Unit Weight
				ASCE 41-13, Eq. 7-13
456,7				ASCE 41-13, Eq. 7-14
		Mu,o (kip*tt)	631	
-Bound Vertical Compressive Str	ngth	n	19/3	
			-8	
1	Table 6-1	tsp (in)		
0,559	Table 6-1 Weak Axis Radius of Gyration	c (in)	2.4	TM5 402-13, Eq. 9-35
1 0.859 129		c (in) leff = lcr (in^4)	0.4: 240	TM5 402-13, Eq. 9-35 TM5 402-13, Eq. 9-34
0,559		c (in)	2.4	
1 0,559 179 106	Weak Axis Radius of Gyration	c (in) leff = Icr (in^4)	2/4 210 192	TM5 402-13, Eq. 9-34 TM5 402-13, Eq. 9-33
1 0,859 129 106 105	Weak Axis Radius of Gyration TMS 402-13, Eq. 9-19, Eq. 9-20	c (in)  telf = (cr (in^4))  Pe (kips)  \P	0.4 340 392 1.030	TM5 402-13, Eq. 9-34 TM5 402-13, Eq. 9-33 TM5 402-13, Eq. 9-32
0,559 129 106 106 2	Weak Axis Radius of Gyration	c (in) leff = tcr (in^4) Pe (kips)	2/4 210 192	TM5 402-13, Eq. 9-34 TM5 402-13, Eq. 9-33
1 0,859 129 106 105	Weak Axis Radius of Gyration TMS 402-13, Eq. 9-19, Eq. 9-20	c (in)  telf = (cr (in^4))  Pe (kips)  \P	0.4 340 392 1.030	TMS 402-13, Eq. 9-34 TMS 402-13, Eq. 9-33 TMS 402-13, Eq. 9-32 TMS 402-13, Eq. 9-33
	General Inputs Grid 520 between 5220 & 62 \$70 \$10 \$10 729 1053 40 \$52 20000 1125 7 6,000 8 114 20 20 235 0 0 14 35 40 1011,2 93 7 6,00 0 0 115 40 1011,2 93 7 0,00 0 0 115 General Calculation 35 0,8	General Inputs  Grid \$20 between \$120 & £205  \$10  \$10  \$10  \$10  \$10  \$10\$  \$10  \$29  \$10\$  \$40  \$52  \$29000  \$155  \$7  \$6.00  \$8  \$14  \$20  \$25  \$0  \$0  \$0  \$0  \$14  \$20  \$25  \$0  \$0  \$0  \$14  \$20  \$25  \$0  \$0  \$0  \$14  \$25  \$0  \$0  \$14  \$25  \$0  \$0  \$15  \$16  \$11  \$17  \$18  \$18  \$18  \$19  \$19  \$19  \$19  \$19	MulfVoldy  Y	Mul/Woldy    0.08

Reid Middleton

728 134th Street SW - Suite 200
Everett, Washington 98204
Ph: 425 741-3800
Fax: 425 741-3900

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	Legend	- Po		Determine FC vs DC To	able 11-6
nput			Mu/(Vudv)	0.08	
alculated			Υ	1.0	#5 Bars or smaller
CR/Check			Vn (kips) upperbound	115	TM5 402-13, Eq. 9-22
			Vn (kips) upperbound		TMS 402-13, Eq. 9-23
	General Inputs		Vnm (kip)	75.1	TM5 402-13, Sec 9.3.4.1.2.1
Ner ID	Grid \$70 between £220 & £	205	Vn (kip)	75.1	TM5 402-13, Equation 9-21
ocation/Gridline	520		Holdown Anchor Rod As (in^2)	0.31	At one wall end
"m (psi)	810	Table 11-2(a)	a (in)	2.4	
Em (ksi)	729	TMS 402-13, Sec 4.7.2.2.1	Distance from Edge of Wall to Rod (in)	4	
fme (psi)	1053	Table 11-1	d (in)	80	
y (ksi)	40		Mn (kip*ft)	111	
lye (ksi)	52		Ve (kip)	10	
Es (ksi)	29000		Shear vs. Flexure Control	Herore Control	
Masonry Denisty (pcf)	125		An (in^2)	-672	
Nominal Pier Length (ft)	7		f <sub>at</sub> (psi)	10.3	
Pier Height (H)	6.00	_	Shear vs. Force Controlled	40.0	
Wall thickness (in)			Shear vs. Force Controlled		
	28		1	And Continued to the Control of the	CERCIAE W
Roof Trib (SF)			1	Determine m-factors 1	0010 11-6
Roof DL (psf)	20		fae/fme	0.010	
Roof St (psf)	25		L/helf	1,17	
Mezz Trib (SF)			As (in^2)	0.31	Total Vertical Reinforcement
Mezz DL (psf)	0		ρ.	0.00046	
Mezz LL (psf)	0		Av (in^2)	0.3	Total Vertical Reinforcement
2nd FLR Trib (SF)	28	l)	Ph	0.0005	
2nd FLH Ot (psf)	35	<u> </u>	p <sub>s</sub> tye/lme	0.049	
2nd FLR LL (psf)	40		m-factor	7,3	
Shearline Tot Shear (kips)	1572.6	BSE-2E	m-factor restriction	7	
Shearline Tot Length (ft)	93	BSC-SC	m-factor used	7.0	
	7		[m-ractor used	7.0	
Applicable Wall Trib Length (ft) Seismic Axial Load (kips)	0.0	Holdown Force From Wall Above	1		1 2 2 2
Holdown to Wall Centroid (ft)	0.0	Holoowix Force From Wall Addie	S 000	Deformation Contro	TOCAS .
	CP CP		Shear DCR	- 14	
10, LS, CP	- O		Moment DCR	9.91	
			1	20022000	
rancial de de care esta esta esta esta esta esta esta est	General Calculation			Force Control Do	.ns
Wall Self-Weight (kips)	3.5		Shear DCR		
Dt (kips)	1.5	Super-imposed OL @ Top of Wall	Moment OCR		
LL (kips)	1,1		1		
St. (kips)	0.7			t-Of-Plane Capacity TMS 4	02-13, Sec 9.3.5
1.1(Q <sub>0</sub> + Q <sub>1</sub> +0.2*Q <sub>1</sub> )	6,9	Eq. 7-1	d (in)	4	
0.9(Q <sub>a</sub> )	4.5	Eq. 7-2	a (in)	0.4	
Shear/Unit Length (kip/ft)	16.9		Mn (kip*ft)	5.4	
Wall Shear (Q <sub>4</sub> ) (kips)	118 3677419				11
Mament Generated from Holdown (kip*fi		About Centroid of Wall	Out-Of-Shine Demand	C 7MS 402-13 Sec 0 2 S #	ASCE 41-13 Section 11.3.5->7.2.11
Commence of the commence of th	MM.	process sections of states	T CONTRACTOR DEMONS	1	ASCE 41-13, Table 7-2, CP
	Wall Demands		Sis, H	1.11	PART AL LO, TUDIE F. C, CF
(kips)	6,9	Eq. 7-34		14	Full Wall Height
) (k(p1)	4.5	tq. 7-34	h (ft)	100.0	Elevation Wall Unit Weight
		14.7:34	w (psf)	310.8	
/ (kips)	118,3677419		Fo*L (plf)		ASCE 41-13, Eq. 7-13
M (kip*ft)	710.2	_	Fp_min*t (plf)	70.0	ASCE 41-13, Eq. 7-14
	2 10070 227 - 7 17	-11	Mu_o (kip*ft)	7.61	
	lower-Bound Vertical Compressive Str		0	39.8	
	1	Table 6-1	tsp (in)	A	
(in)	0.566	Weak Axis Radius of Gyration	c (in)	0.4	TMS 402-13, Eq. 9-35
l/r	127		Jeff = (cr (in*4)	215	TMS 402-13, Eq. 9-34
n (kip)	109	TMS 402-13, Eq. 9-19, Eq. 9-20	Pe (kips)	299	TMS 402-13, Eq. 9-33
(Po (kip)	109		Ψ	1.024	TMS 402-13, Eq. 9-32
	2	ıs	9Mu,a (kip*ft)	7.80	TMS 402-13, Eq. 9-31
ic,	1.1		C. C. C. C. C. C. C. C. C. C. C. C. C. C	- Albert	
				a carat cara	
Q <sub>C</sub> *(Q <sub>I</sub> )/(IC1C2) (kip)	6.9			Out-Of-Plane DCR, Sec	11.3.3
DCH	8.06		Flexure DCR	0.3	

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	Legend			etermine FC vs DC Table	11-6
nput			Mu/(Vudv)	0.09	
Calculated			7	1.0	#5 Bars or smaller
OCR/Check			Vn (kips) upperbound	410	TM5 402-13, Eq. 9-22
			Vn (kips) upperbound	(4)	TMS 402-13, Eq. 9-23
	General Inputs		Vnm (kip)	275,2	TMS 402-13, Sec 9.3.4.1.2.1
Pier ID	Grid 520 between E220 & E	205	Vn (kip)	275.2	TMS 402-13, Equation 9-21
ocation/Gridline	\$20		Holdown Anchor Rod As (in^2)	0.31	At one wall end
ľm (psi)	810	Table 11-2(a)	a (in)	2.4	
Em (ksi)	729	TMS 402-13, Sec 4.2.2.2.1	Distance from Edge of Wall to Rod (in)	4	
fme (psi)	1053	Table 11-1	d (in)	296	
fy (ksi)	40		Mn (kip*ft)	1570	
(ye (ksi)	52		Ve (kip)	58	
Es (ksi)	29000		Shear vs. Flexure Control	Figure Control	
Masonry Denisty (pcf)	125		An (in^2)	2400	
Nominal Pier Length (ft)	25		f <sub>ae</sub> (psi)	26,4	
Pier Height (H)	27.00		Shear vs. Force Controlled	MA	
Wall thickness (in)	8				
Roaf Trib (SF)	50		0	etermine m-factors Table	11-6
Roof DL (psf)	20		fae/fme	0.025	
Roof St. (psf)	25	N	L/heff	0.93	
Mezz Trib (SF)	0		As (in^2)	2.17	Total Vertical Reinforcement
Mezz DL (psf)	0		ργ	0.00090	
Mezz LL (psf)	0		Av (in^2)	2.2	Total Vertical Reinforcement
and FLR Trib (SF)	0		Ph.	0.0008	
and FLR DL (psf)	35		p <sub>e</sub> tye/fme	0.086	
2nd FLR LL (psf)	40	005.15	m-factor	4.6	
hearline Tot Shear (kips)	392.5	BSE-1E	m-factor restriction	7	
Shearline Tot Length (ft)	112		m-factor used	4.6	
Applicable Wall Trib Length (ft)	25 0.0		-	2.4	12:
eismic Axial Load (kips)		Holdown Force From Wall Above		Deformation Control DC	RS
Holdown to Wall Centroid (ft)	0.0		Shear DCR	0.80	
O, LS, CP	LS		Moment DCR	0.57	
	General Calculation			Form Control DCD	
ALCOHOL SPANNING EMPLOY	General Calculation 99.3		ercon pen	Farce Control DCRs	
Wall Self-Weight (kips)	1.0	Control of the Contro	Shear DCR		
OL (kips)	0.0	Super-imposed DL @ Top of Wall	Moment DCR		
L (kips)				Non- Consulty Take 400	12.50.25
L (kips)	1.3			Plane Capacity TMS 402-1	3, 320 9.3.5
1(Q <sub>D</sub> + Q <sub>L</sub> +0.2*Q <sub>S</sub> )	63.3	Eq. 7-1	d (in)	4	
0.9(Q <sub>0</sub> )	51.5	Eq. 7-2	a (in)	0.8	
hear/Unit Length (kip/ft)	3.5		Mn (kip*ft)	41.7	
Wall Shear (Q <sub>L</sub> ) (kips)	87,61166714				
forment Generated from Holdown (kip*ft)	0,0	About Centroid of Wall	Out-Of-Plane Demands TM	S 402-13 Sec 9.3.5 & ASC	E 41-13 Section 11.3.5>7.2.11
		X	1.3	ASCE 41-13, Table 7-2, LS	
	Wall Demands		Sxs,1E	0.71	
(kips)	63.3	Eq. 7-34	h (ft)	14	Full Wall Height
(kips)	51.5	Eq. 7-34	w (psf)	1(6)/6	Elevation Wall Unit Weight
(kips)	87/61560744		Fp*L (plf)	223,0	ASCE 41-13, Eq. 7-13
f (kip*ft)	2365.5		Fp_min*L (plf)	325/9	ASCE 41-13, Eq. 7-14
			Mu,o (kip*ft)	22:61	
Lower-	Bound Vertical Compressive Str	ength	n	39.8	
	i	Table 6-1	tsp (in)	8	
(in)	9,752	Weak Axis Radius of Gyration	c (in)	1/0	TMS 402-13, Eq. 9-35
lr .	451		leff = Icr (in^4)	1357	TMS 402-13, Eq. 9-34
cs (kip)	-35	TMS 402-13, Eq. 9-19, Eq. 9-20	Pe (kips)	93	TMS 402-13, Eq. 9-33
P <sub>CL</sub> (kip)	35		w .	3.1.25	TMS 402-13, Eq. 9-32
Chubi	2	LS	ΨMu,o (kip*ft)	70(8)	TMS 402-13, Eq. 9-31
			Laura,o (kipati)	70.07	11W3 4UZ-13, EQ. 3-31
iC;	1.1			CALIFORNIA GIONES	St. 200
Q <sub>c</sub> +(Q <sub>c</sub> )/(JC1C2) (kip)	63.3		The second secon	ut-Of-Plane DCR, Sec 11.	3.5.3
DCR	1.65		Flexure DCR	0,8	

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#### ASCE 41-13 Reinforce

	Legend	
Input		
Calculated		
DCR/Check		
at In	General Inputs	or I
Pier ID Location/Gridline	Grid 520 between E220 & E2 520	05
f'm (psi)	810	Table 11-2(a)
Em (ksi)	729	TMS 402-13, Sec 4.2.2.2.1
fme (psi)	1053	Table 11-1
fy (ksi)	40	
fye (ksi)	52	
Es (ksi)	29000	
Masonry Denisty (pcf)	125	
Nominal Pier Length (ft)	25	
Pier Height (H)	27.00	
Wall thickness (in)	8	
Roof Trib (SF)	50	
Roof DL (psf)	20	
Roof St. (psf)	25	
Mezz Trib (SF)	0	
Mezz DL (psf)	0	
Mezz LL (psf)	0	Y
2nd FLR Trib (SF)	0	
2nd FLR DL (psf)	35	
2nd FLR I.I. (psf) Shearline Tot Shear (kips)	40	
Shearline Tot Shear (kips)	392.5	BSE-1E
Shearline Tot Length (ft) Applicable Wall Trib Length (ft)	112	
Applicable Wall Trib Length (ft)	25	
Seismic Axial Load (kips)	0.0	Holdown Force From Wall Above
Holdown to Wall Centroid (ft)	0.0	
10, 15, CP	LS	
	General Calculation	
Wall Self-Weight (kips)	56.3	
OL (kips)	1.0	Super-imposed DL @ Top of Wall
LL (kips)	0.0	
SL (kips)	1.3	
$1.1(Q_0 + Q_1 + 0.2^*Q_5)$	63.3	Eq. 7-1
0.9(Q <sub>0</sub> )	51.5	Eq. 7-2
Shear/Unit Length (kip/ft)	3,5	
Wall Shear (Q <sub>€</sub> ) (kips)	87.61160714	
Moment Generated from Holdown (kip*ft)	0.0	About Centroid of Wall
	Wall Demands	
P (kips)	63.3	Eq. 7-34
P (kips)	51.5	Eq. 7-34
V (kips)	87.61160714	
M (kip*ft)	2365.5	
Lower-Roy	and Vertical Compressive Stre	nath
K	1	Table 6-1
r (in)	0.752	Weak Axis Radius of Gyration
h/r	431	
P <sub>CL</sub> (kip)	35	TMS 402-13, Eq. 9-19, Eq. 9-20
KP <sub>CL</sub> (kip)	35	8
in El (mp)	2	LS
C <sub>1</sub> C <sub>2</sub>	1,1	
Q <sub>G</sub> +(Q <sub>E</sub> )/(JC1C2) (kip)		
	63,3	
DCR	1.83	

Permit Number: 19-05911

Reid Middleton

728 134th Street SW - Suite 200
Everett, Washington 98204
Ph; 425 741-3800
Fax: 425 741-3900

Client: Project. Project No:

Designed By:
Date:
Checked By:
Date: 900 Bldg 262019.034

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	Legend		Det	ermine FC vs DC Table	11-6
nput	11,9000		Mu/(Vodv)	0.05	
Calculated			Y	1.0	#5 Bars or smaller
DCR/Check			Vn (kips) upperbound	410	TM5 402-13, Eq. 9-22
			Vn (kips) upperbound		TMS 402-13, Eq. 9-23
General Inputs		Vnm (kip)	274.4	TMS 402-13, Sec 9.3.4.1.2.1	
Pier ID	Grid S20 between E220 & E	105	Vn (kip)	27/4.4	TMS 402-13, Equation 9-21
Location/Gridline	520		Holdown Anchor Rod As (in*2)	0.31	At one wall end
'm (psi)	810	Table 11-2(a)	a (in)	2.4	
Em (ksi)	729	TMS 402-13, Sec 4.2.2.2.1	Distance from Edge of Wall to Rod (in)	4	
fme (psi)	1053	Table 11-1	d (in)	296	
y (ksi)	40		Mn (kip*ft)	972	
ye (ksi)	52		Ve (kip)	69	
Es (ksi)	29000		Shear vs. Flexure Control	Fiecure Control	
Masonry Denisty (pcf)	125		An (in^2)	2400	
Nominal Pier Length (ft)	25		f <sub>se</sub> (psi)	13.9	
Pier Height (H)	14.00		Shear vs. Force Controlled	NA.	
Wall thickness (in)	8				_
Roof Trib (SF)	50		Dete	rmine m-factors Table	11-6
Roof DL (psf)	20		fae/fme	0.013	
Roof St. (psf)	25		L/heff	1.79	
Mezz Trib (SF)	0		As (in^2)	0.62	Total Vertical Reinforcement
Mezz DL (psf)	0		ρ.	0.00076	
	0		Av (in^2)	0.6	Total Vertical Reinforcement
Merz LL (psf)	0		Ph Ph	0.0005	Total Vertical richiorcement
and FLR Trib (SF)					
2nd FLR DL (psf)	35		ρ <sub>4</sub> fye/fme	0.036	
2nd FLR LL (psf)	40		m-factor	7.6	
Shearline Tot Shear (kips)	921.4	BSE-2E	m-factor restriction	7	
hearline Tot Length (ft)	112		m-factor used	7.0	
Applicable Wall Trib Length (ft)	75				
Seismic Axial Load (kips)	0.0	Holdown Force From Wall Above		eformation Control DC	Rs
Holdown to Wall Centroid (ft)	0.0		Shear DCR	9.11	
10, LS, CP	CP		Moment DCR	3.4)	
	General Calculation	- m	1	Force Control DCRs	
St. U.S. M. 184 John Mile A	29.2		Shear DCR	PORCE CONTION DEAS	
Wall Self-Weight (kips)	1.0	A CONTRACTOR OF THE PARTY OF TH	Moment DCR		
DL (kips)	20	Super-imposed DL @ Top of Wall	[Moment DCR	_	
L (kips)	1.3		0.4.0686	ne Capacity TMS 402-1	11 Fac 0 3 E
St. (kips)					3, 500 9.3.5
1.1(Q <sub>n</sub> + Q <sub>t</sub> +0.2*Q <sub>s</sub> )	83.5	Eq. 7-1	d (in)	4	
0.9(Q <sub>0</sub> )	27,2	Eq. 7-2	a (in)	0.3	
Shear/Unit Length (kip/ft)	2.2		Mn (kip*ft)	45.7	
Wall Shear (Q <sub>r</sub> ) (kips)	205,6696429				
Moment Generated from Holdown (kip*ft)	0.0	About Centroid of Wall	Out-Of-Plane Demands TMS 4	02-13 Sec 9.3.5 & ASC	£ 41-13 Section 11.3.5>7.2.11
		We want to be a second	x	1	ASCE 41-13, Table 7-2, CP
	Wall Demands		Sxs,1E	1.11	
(kips)	39.5	Eq. 7-34	h (ft)	14	Full Wall Height
(kips)	27/2	Eq. 7-34	w (psf)	100/0	Elevation Wall Unit Weight
(Rips)	205,5005429		Fp*L(pif)	-2010/0	ASCE 41-13, Eq. 7-13
A (kip*ft)	2970.4		Fp_min*t (pif)	250:0	ASCE 41-13, Eq. 7-14
20005-2001			Mu,o (kip*ft)	27/20	
Lower-	Bound Vertical Compressive Str	ength	n	\$9.8	
	1	Table 6-1	tsp (in)	to the	
(in)	0.534	Weak Axis Radius of Gyration	c (in)	(7)/4	TMS 402-13, Eq. 9-35
le .	315		teff = icr (in^4)	364	TM5 402-13, Eq. 9-34
g (kip)	63	TMS 402-13, Eq. 9-19, Eq. 9-20	Pe (kips)	4774	TM5 402-13, Eq. 9-33
P <sub>CL</sub> (kip)	63	AND THE PROPERTY OF THE PARTY O	Ψ'	1,3197	TMS 402-13, Eq. 9-32
LCI (IVIN)		15			
	2	LS	ΨMu,o (kip*ft)	38.63	TMS 402-13, Eq. 9-31
C <sub>1</sub> C <sub>2</sub>	1,1				
Q <sub>G</sub> +(Q <sub>E</sub> )/(JC1C2) (kip)	33.5		Out-	Of-Plane DCR, Sec 11.	3.5.3
DCR	444		Flexure DCR	-0.0	

728 134th Street SW - Suite 200 Everett, Washington 98204 Ph: 425 741-3800 Fax: 425 741-3900

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 RFM
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	Legend		De	termine FC vs DC Table	11-6
input			Mu/(Vudv)	0.03	
Calculated			y y	1,0	#5 Bars or smaller
DCR/Check			Vn (kips) upperbound	656	TMS 402-13, Eq. 9-22
3330,031,030			Vn (kips) upperbound		TMS 402-13, Eq. 9-23
	General Inputs		Vnm (kip)	443.0	TMS 402-13, Sec 9.3.4.1.2.1
Pier ID	Grid S60		Vn (kip)	443.0	TMS 402-13, Equation 9-21
Location/Gridline	560		Holdown Anchor Rod As (in^2)	0.31	At one wall end
f'm (psi)	810	Table 11-2(a)	a (in)	2.4	THE STILL HUIT CHIL
Em (ksi)	729	TMS 402-13, Sec 4,2.2.2.1	Distance from Edge of Wall to Rod (in)	4	
(me (psi)	1053	Table 11-1	d (in)	476	
y (ksi)	40	radic 11-1	Mn (kip*ft)	2309	
(ye (ksi)	52		Ve (kip)	165	
ye (ksi) Es (ksi)	29000		Shear vs. Flexure Control	105	
			An (in^2)	PHIXWE LORING	
Masonry Denisty (pcf)	125			3840	
Nominal Pier Length (ft)	40		f <sub>ae</sub> (psi)	15.7	
Pier Height (H)	14.00		Shear vs. Force Controlled	MA	
Wall thickness (in)	8				
Roof Trib (SF)	80		Det	termine m-factors Table	11-6
Roof DL (psf)	20		fae/fme	0.015	
Roof SL (psf)	25		L/heff	2.86	
Mezz Trib (SF)	0		As (in^2)	0.61	Total Vertical Reinforcement
Mezz DL (psf)	0		Py	0.00016	
Mezz LL (psf)	0		Av (in^2)	0.6	Total Vertical Reinforcement
2nd FLR Trib (SF)	80		Ph.	0.0005	TOTAL VEHICLE NEW MENTALING
and FLR DL (psf)	35		ρ <sub>s</sub> fye/fme	0.030	
end FLR LL (psf)	40		m-factor	6,7	
hearline Tot Shear (kips)	211.6	85E-1E	m-factor restriction	7	
Shearline Tot Length (ft)	40		m-factor used	6.7	
Applicable Wall Trib Length (ft)	40				
Seismic Axial Load (kips)	0.0	Holdown Force From Wall Above		Deformation Control DC	Rs
foldown to Wall Centroid (ft)	0.0		Shear DCR	0.07	
O, LS, CP	LS		Moment DCR	0.18	
A. D. S.			- California		
	General Calculation			Force Control DCRs	
Vall Self-Weight (kips)	46.7		Shear DCR		
DL (kips)	4.4	Super-imposed DL @ Top of Wall	Moment DCR	441	
L (kips)	3.2	Super mithodes as C 14th at 14th	Thinks and the same of the sam		
L (kips)	2.0		Out-Of-RI	ane Capacity TMS 402-1	12 Car 0 2 5
.1(Q <sub>0</sub> + Q <sub>1</sub> +0.2*Q <sub>1</sub> )	60.1	Eq. 7-1	d (in)	4	15, 500 5.3.5
.9(Q <sub>0</sub> )	46.0	Eq. 7-2	a (in)	0,3	
hear/Unit Length (kip/ft)	5.3		Mn (kip*ft)	22.7	
Vall Shear (Q <sub>t</sub> ) (kips)	211,6				
foment Generated from Holdown (kip*ft)	0,0	About Centroid of Wall	Out-Of-Plane Demands TMS	402-13 Sec 9.3.5 & ASC	E 41-13 Section 11.3.5>7.2.11
Notice Section (1991) (1992) (			7	1,3	ASCE 41-13, Table 7-2, LS
	Wall Demands		Sxs,1E	0.71	
(kips)	60.1	Eq. 7-34	h (ft)	14	Full Wall Height
(kips)	46,0	Eq. 7-34	w (psf)	100.0	Elevation Wall Unit Weight
(kips)	211.6		Fp*L(plf)	1476.8	ASCE 41-13, Eq. 7-13
(kip*ft)	2962.4		Fp_min*L (plf)	520.0	ASCE 41-13, Eq. 7-14
Tob 14	2352.4		Mu,o (kip*ft)	36.18	77.13, 64.7.14
·#302	ver-Bound Vertical Compressive S	tranath	The state of the s	39.8	
Low			ten final		
0.1/	1	Table 6-1	tsp (in)	8	THE 102 IS 5 0 25
(in)	0.496	Weak Axis Radius of Gyration	c (in)	0.3	TMS 402-13, Eq. 9-35
/r	339		leff = Icr (in^4)	944	TMS 402-13, Eq. 9-34
cı (kip)	86	TMS 402-13, Eq. 9-19, Eq. 9-20	Pe (kips)	241	TMS 402-13, Eq. 9-33
P <sub>CL</sub> (kip)	86		Ψ	1.333	TMS 402-13, Eq. 9-32
	2	ıs	ΨMu,o (kip*ft)	48.24	TMS 402-13, Eq. 9-31
ις,	1.1	17/4	Land Control of the C		
			1	. 0/01 000 0	
1 <sub>0</sub> +(Q <sub>E</sub> )/(JCIC2) (kip)	60.1			t-Of-Plane DCR, Sec 11.	5,2,3
DCR	0.70		Flexure DCR	1.0	

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#### ASCE 41-13 Reinforce

	Legend	
Input		
Calculated	2-31	
DCR/Check		
	-	
Pier ID	General Inputs Grid S60	
Location/Gridline	\$60	
I'm (psi)	810	Table 11-2(a)
Em (ksi)	729	TMS 402-13, Sec 4.2.2.2.1
fme (psi)	1053	Table 11-1
fy (ksi)	40	7000 11-1
fye (ksi)	52	
Es (ksi)	29000	
Masonry Denisty (pcf)	125	
Nominal Pier Length (ft)	40	
Pier Height (H)	14.00	
Wall thickness (in)	8	
Roof Trib (SF)	80	
Roof DL (psf)	20	
Roof SL (psf)	25	
Mezz Trib (SF)	0	
Mezz DL (psf)	0	
Mezz LL (psf)	0	
2nd FLR Trib (SF)	80	
	35	
2nd FLR DL (psf)		
2nd FLR LL (psf)	40	N. F. T. F.
Shearline Tot Shear (kips)	211.6	BSE-1E
Shearline Tot Length (ft)	40	
Applicable Wall Trib Length (ft) Seismic Axial Load (kips)	0.0	Holdown Force From Wali Above
Holdown to Wall Centroid (ft)	0.0	Holdown Force Fight Wall Above
IO, LS, CP	LS	
10, 10, 0		
	General Calculation	
Wall Self-Weight (kips)	46.7	
DL (kips)	4,4	Super-imposed DL @ Top of Wall
LL (kips)	3.2	
SL (kips)	.2.0	
1.1(Q <sub>0</sub> + Q <sub>1</sub> +0.2*Q <sub>5</sub> )	60,1	Eq. 7-1
0.9(Q <sub>D</sub> )	46/3	Eq. 7-2
Shear/Unit Length (kip/ft)	5.3	
Wall Shear (Q <sub>L</sub> ) (kips)	212,5	- T
Moment Generated from Holdown (kip*ft)	:079	About Centroid of Wall
montest deliciated iron madown (kg/ kg		Production of Hon
	Wall Demands	
P (kips)	60.2	Eq. 7-34
P (kips)	450	Eq. 7-34
V (kips)	20176	
M (kip*ft)	2052.4	
	d Vertical Compressive S	
K	1 0.400	Table 6-1
r (in)	0.496	Weak Axis Radius of Gyration
h/r	339	THE 402 42 Ft 0 40 Ft 0 22
P <sub>CL</sub> (kip)	86	TMS 402-13, Eq. 9-19, Eq. 9-20
KP <sub>CL</sub> (kip)	86	
)	2	LŠ
C <sub>1</sub> C <sub>3</sub>	1.1	
Q <sub>0</sub> +(Q <sub>4</sub> )/(JC1C2) (kip)	60,1	
DCR	0.70	

728 134th Street SW - Suite 200 Everett, Washington 9820 Ph: 425 741-3800 Fax: 425 741-3900

Client Project: Project No: 
 RFM
 Designed By:

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 Date:

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	Legend			rmine FC vs DC Table 11	-6
nput	130-280		Mu/(Vudv)	0.03	
alculated			ly.	1.0	#5 Bars or smaller
DCR/Check			Vn (kips) upperbound	656	TM5 402-13, Eq. 9-22
			Vn (kips) upperbound		TMS 402-13, Eq. 9-23
NV SUS	General Inputs		Vom (kip)	443.0	TMS 402-13, Sec 9.3.4.1.2.1
Pier IO	Grid 560		Vn (kip)	443,0	TMS 402-13, Equation 9-21
ocation/Gridline	560		Holdown Anchor Rod As (in^2)	0.31	At one wall end
'm (psi)	810	Table 11-2(a)	a (in)	2,6	
im (ksi)	729	TMS 402-13, Sec 4.2.2.2.1	Distance from Edge of Wall to Rod (in)		
me (psi)	1053	Table 11-1	d (in)	476	
y (ksi)	40		Mn (kip*ft)	2309	
ye (ksi)	52		Ve (kip)	165	
's (ksi)	29000		Shear vs. Flexure Control	Maxing Control	
Masonry Denisty (pcf)	125		An (in^2)	3840	
fominal Pier Length (ft)	40		f <sub>se</sub> (psi)	15.7	
ler Height (H)	14.00		Shear vs. Force Controlled	NA.	
Vall thickness (in)	8		Is a		
toof Trib (SF)	80		Deter	rmine m-factors Table 11	1-6
toof DL (psf)	20		fae/fme	0.015	
toof SL (psf)	25		L/heff	2.86	
Mezz Trib (SF)	0		As (in^2)	0.93	Total Vertical Reinforcement
Aezz Dt. (psf)	0	_	p.	0.00024	
Mezz LL (psf)	0		Av (in^2)	0.9	Total Vertical Reinforcement
nd FLR Trib (SF)	80			0.0007	Total Vertical Reinforcement
CANADA CONTRACTOR CONT			Ps		
nd FLR DL (psf)	35		ρ <sub>k</sub> fye/fme	0.046	
nd FLR LL (psf)	40		m-factor	7.5	
hearline Tot Shear (kips)	329.2	BSE-2E	m-factor restriction	7	
hearline Tot Length (ft)	40		m-factor used	7.0	
pplicable Wall Trib Length (ft)	40				
eismic Axial Load (kips)	0.0	Holdown Force From Wall Above		formation Control DCRs	
foldown to Wall Centroid (ft)	0.0		Shear DCR	0.11	
O, LS, CP	CP		Moment DCR	0,29	
			3 2		
	General Calculation			Force Control DCRs	
Vall Self-Weight (kips)	46.7		Shear DCR		
OL (kips)	4.4	Super-imposed DL @ Top of Wall	Mament DCR		N _
L (kips)	3.2				
l, (kips)	2.0		Out-Of-Plan	e Capacity TMS 402-13,	Sec 9.3.5
1(Q <sub>0</sub> + Q <sub>4</sub> +0.2*Q <sub>5</sub> )	60.1	Eq. 7-1	d (in)	4	
.9(Q <sub>n</sub> )	46,0	Eq. 7-2	a (in)	0.3	
hear/Unit Length (kip/ft)	0.2	NG T. C	Mn (kip*ft)	26.5	
/all Shear (Q <sub>e</sub> ) (klps)	329.7		pain (kep-re)	400	
		William Control of the Control of th			
loment Generated from Holdown (kip*ft)	0,0	About Centroid of Wall	Out-Of-Plane Demands TMS 40		
			7 2	1	ASCE 41-13, Table 7-2, CP
	Wali Demands	Tes 19510	5xs,1E	1,11	Lauren de la company
(kips)	60.1	Eq. 7-34	h (ft)	14	Full Wall Height
(kips)	46.0	Eq. 7-34	w (psf)	100.0	Elevation Wall Unit Weight
(kips)	329.2		Fp*L (plf)	1776.0	ASCE 41-13, Eq. 7-13
(kip*ft)	4508.8		Fp_min*L (pif)	400.0	ASCE 41-13, Eq. 7-14
			Mu,o (kip*ft)	43.51	
Lower-Boun	d Vertical Compressive S		n	39.8	
	1	Table 6-1	tsp (in)	8	
in)	0.532	Weak Axis Radius of Gyration	c (in)	0.4	TMS 402-13, Eq. 9-35
·	316		leff = icr (in^4)	1087	TM5 402-13, Eq. 9-34
(kip)	99	TMS 402-13, Eq. 9-19, Eq. 9-20	Pe (kips)	277	TM5 402-13, Eq. 9-33
(kip)	99		Ψ	1,277	TMS 402-13, Eq. 9-32
	2	ıs	ΨMu,o (kip*ft)	55.58	TMS 402-13, Eq. 9-31
ıC <sub>2</sub>	1.1		Comments of the Comments of th	ACCOUNT.	A CONTRACTOR OF THE PARTY OF TH
6+(Qc)/(IC1C2) (kip)	60,1				
	60.1		Out-0	of-Plane DCR, Sec 11.3.5.	3

Reid Middleton

728 134th Street SW - Suite 200
Everett, Washington 98204
Ph: 425 741-3800
Fax: 425 741-3900

Client: Project: Project No:

Designed By:
Date:
Checked By:
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	Legend		Det	ermine FC vs DC Table 11-6	4
nput			Mu/(Vudv)	0.08	
Calculated			7	1.0	#5 Bars or smaller
DCR/Check			Vn (kips) upperbound	246	TMS 402-13, Eq. 9-22
			Vn (kips) upperbound		TMS 402-13, Eq. 9-23
	General Inputs		Vnm (kip)	162.5	TMS 402-13, Sec 9.3.4.1.2.1
Pier ID	Grid S60		Vn (kip)	162.5	TM5 402-13, Equation 9-21
ocation/Gridline	S60		Holdown Anchor Rod As (in^2)	0.31	At one wall end
'm (psi)	810	Table 11-2(a)	a (in)	2.4	
Em (ksi)	729	TMS 402-13, Sec 4.2.2.2.1	Distance from Edge of Wall to Rod (in)	4	
me (psi)	1053	Table 11-1	d (in)	176	
ly (ksi)	40		Mn (kip*ft)	431	
(ve (ksi)	52		Ve (kip)	31	
Es (ksi)	29000		Shear vs. Flexure Control	Fligure Control	
Masonry Denisty (pcf)	125		An (in^2)	1440	
Nominal Pier Length (ft)	15		f <sub>ae</sub> (psi)	14.9	
Pler Height (H)	14,00		Shear vs. Force Controlled	- 64	
Wall thickness (in)	8		1734		
Roof Trib (SF)	80			rmine m-factors Table 11-	6
Roof DL (psf)	20		fae/fme	0.014	
Roof SL (psf)	25		L/heff	1.07	4
Mezz Trlb (SF)	0		As (in^2)	0,31	Total Vertical Reinforcement
Mezz DL (psf)	0		$\rho_{\rm s}$	0.00022	
Mezz LL (psf)	0		Av (in^2)	0.3	Total Vertical Reinforcement
2nd FLR Trib (SF)	0		Ph.	0.0002	
end FLR DL (psf)	35		p <sub>e</sub> tye/fme	0.022	
and FLR LL (psf)	40		m-factor	6.7	
Shearline Tot Shear (kips)	102,4	8SE-1E	m-factor restriction	7	
Shearline Tot Length (ft)	33	DOC-1E	m-factor used	6.7	
Applicable Wall Trib Length (ft)	15		Interest used	4677	
Seismic Axial Load (kips)	0.0	Holdown Force From Wall Above	1	formation Control DCRs	
foldown to Wall Centroid (ft)	0.0	Note and the second second	Shear DCR	non-	
O, 15, CP	LS		Moment DCR	0.25	
ay toy at			Control of the contro		
	General Calculation		1	Force Control DCRs	
Wall Self-Weight (kips)	17.5		Shear DCR	TOTAL COMPONENTS	
OL (kips)	1.5	Super-imposed DL @ Top of Wall	Moment DCR		
L (kips)	.00				
	2.0		Gut-Of-Plan	e Capacity TMS 402-13. Se	10 9.3.5
L (kips)	2.0	Fo. 7-1		ne Capacity TMS 402-13, So	ec 9,3.5
ik (kips) .1(Q <sub>D</sub> + Q <sub>L</sub> +0.2*Q <sub>S</sub> )	21.5	Eq. 7-1	d (in)	4	ec 9,3.5
ii. (kips) I. 1(Q <sub>D</sub> + Q <sub>L</sub> +0,2*Q <sub>S</sub> ) 0.9(Q <sub>D</sub> )	21.5 17.2	Eq. 7-1 Eq. 7-2	d (in) a (in)	4 0/3	ec 9,3.5
ii. (kips) 1.1(Q <sub>D</sub> + Q <sub>L</sub> +0.2*Q <sub>S</sub> ) 0.9(Q <sub>D</sub> ) ihear/Unit Length (kip/ft)	21.5 17.2 3.1		d (in)	4	ec 9,3.5
i. (kips) -1(Q <sub>0</sub> + Q <sub>1</sub> + 0.2 * Q <sub>2</sub> ) -9(Q <sub>0</sub> ) -9(Q <sub>0</sub> )	21.5 17.2 3,1 45.945/5055	Eq. 7-2	d (in) a (in) Mn (kip*ft)	4 0.3 9.5	
i. (kips) -1(Q <sub>0</sub> + Q <sub>1</sub> + 0.2 * Q <sub>2</sub> ) -9(Q <sub>0</sub> ) -9(Q <sub>0</sub> )	21.5 17.2 3.1		d (in) a (in)	4 0.3 9.5 02-13 Sec 9.3.5 & ASCE 41-	-13 Section 11.3.5>7.2.11
i, (kips)  -1(Q <sub>0</sub> + Q <sub>1</sub> +0.2 * Q <sub>2</sub> )  -9(Q <sub>0</sub> )	21.5 27.2 3.1 45.54575055 0.0	Eq. 7-2	d (in) a (in) btn (kip*ft)  Out-Of-Plane Demands TMS 4	4 0.3 9.5 02-13 Sec 9.3.5 & ASCE 41- 1.3	
i. (kips)  -1(Q <sub>1</sub> + Q <sub>2</sub> +0.2*Q <sub>2</sub> )  -1(Q <sub>2</sub> + Q <sub>3</sub> +0.2*Q <sub>2</sub> )  -19(Q <sub>3</sub> )	21.5 17.2 3.1 45.945/5055 0.0 Wall Demands	Eq. 7-2 About Centroid of Wall	d (in) a (in) Mn (kip*ft)  Out-Of-Plane Demands TMS 4  X  Sxx, 1E	4 0.3 9.5 02-13 Sec 9.3.5 & ASCE 41- 1.3 0.71	23 Section 11.3.5>7.2.11 ASCE 41-13, Table 7-2, LS
i. (kips)  .1(Q <sub>0</sub> + Q <sub>1</sub> +0.2*Q <sub>0</sub> )  .9(Q <sub>0</sub> )  .9(Q <sub>0</sub> )  Wall Shear (Q <sub>1</sub> ) (kips)  doment Generated from Holdown (kip*ft)	21.5 27.2 3.1 45.949-5055 0.0 Wall Demands 21.5	Eq. 7-2  About Centroid of Wall  Eq. 7-34	d (in) a (in) Mn (kip*ft)  Out-Of-Plane Demands TMS 4/ X Sxs, 1E h (ft)	4 0,3 9,5 02-13 Sec 9.3.5 & ASCE 41- 1.3 0,71 14	13 Section 11.3.5->7.2.11 ASCE 41-13, Table 7-2, LS Full Wall Height
L (kips)  L(Q <sub>0</sub> + Q <sub>1</sub> + Q <sub>2</sub> + Q <sub>2</sub> )  J(Q <sub>0</sub> )  hear/Unit Length (kip/ft)  Vall Shear (Q <sub>1</sub> ) (kips)  Anment Generated from Holdown (kip*ft)  (kips)	21.5 27.2 3.1 48.545/5055 0.03 Wall Demands 21.5 17.2	Eq. 7-2 About Centroid of Wall	d (in)   a (in)   thin (kip*ft)   Out-Of-Plane Demands TMS 4/2   Sxx, 1E   h (ft)   W (pst)	4 0,3 9,5 02-13 Sec 9.3.5 & ASCE 41- 1.3 0.71 14 301.0	-13 Section 11.3.5>7.2.11 ASCE 41-13, Table 7-2, LS Full Wall Height Elevation Wall Unit Weight
i, (kips)  1.1(Q <sub>0</sub> + Q <sub>1</sub> +0.2*Q <sub>0</sub> )  1.9(Q <sub>0</sub> )  Shear/Unit Length (kip/ft)  Nall Shear (Q <sub>1</sub> ) (kips)  Moment Generated from Holdown (kip*ft)  (kips)  (kips)	21.5 17.2 3.1 45.545*5455 0.0 Wall Demands 21.5 17.7 46.54545455	Eq. 7-2  About Centroid of Wall  Eq. 7-34	d (in)   a (in)	4 0,3 9,5 07-13 Sec 9,3,5 & ASCE 41- 1.3 0,71 14 1,93,0 553,0	-13 Section 11.3.5>7.2.11 ASCE 41-13, Table 7-2, LS Full Wall Height Elevation Wall Unit Weight ASCE 41-13, Eq. 7-13
L (kips)  L(Q <sub>0</sub> + Q <sub>1</sub> +0.2*Q <sub>0</sub> )  J9(Q <sub>0</sub> )  hear/Unit Length (kip/ft)  Vall Shear (Q <sub>1</sub> ) (kips)  foment Generated from Holdown (kip*ft)  (kips)  (kips)	21.5 27.2 3.1 48.545/5055 0.03 Wall Demands 21.5 17.2	Eq. 7-2  About Centroid of Wall  Eq. 7-34	d (in)   a (in)       Mn (kip*ft)       Out-Of-Plane Demands TMS 4    Xxx,1E     h (it)     w (pst)       Fp _min*L(plt)       Fp _min*L(plt)	4 0,3 9,5 9,5 02-13 Sec 9,3.5 & ASCE 41- 1,3 0,71 14 1,910 533,0 195,0	-13 Section 11.3.5>7.2.11 ASCE 41-13, Table 7-2, LS Full Wall Height Elevation Wall Unit Weight
L (kips)  1(Q <sub>0</sub> + Q <sub>1</sub> + Q <sub>2</sub> + Q <sub>2</sub> )  9(Q <sub>0</sub> )  hear/Unit Length (kip/ft)  vall Shear (Q <sub>1</sub> ) (kips)  toment Generated from Holdown (kip*ft)  (kips)  (kips)  (kips)  (kips)	21.5 27.2 3.1 48.545/5055 0.3 Wall Demands 21.5 17.2 46.545455 651.6	Eq. 7-2  About Centroid of Wall  Eq. 7-34  Eq. 7-34	d (in)   a (in)	4 0,3 9,5 9,5 1.3 0,71 14 1.0 10,0 533,0 125,0 13,57	13 Section 11.3.5>7.2.11 ASCE 41-13, Table 7-2, LS Full Wall Height Elevation Wall Unit Weight ASCE 41-13, Eq. 7-13
L (kips)  1(Q <sub>0</sub> + Q <sub>1</sub> + Q <sub>2</sub> + Q <sub>2</sub> )  9(Q <sub>0</sub> )  hear/Unit Length (kip/ft)  vall Shear (Q <sub>1</sub> ) (kips)  toment Generated from Holdown (kip*ft)  (kips)  (kips)  (kips)  (kips)	21.5 17.2 3.1 45.545*5455 0.0 Wall Demands 21.5 17.2 46.5454545 651.6	Eq. 7-2  About Centroid of Wall  Eq. 7-34  Eq. 7-34	d (in)   a (in)	4 0,3 9,5 07-13 Sec 9,3,5 & ASCE 41- 1.3 0,71 14 1,03,0 553,0 125,0 13,57 5,0,6	13 Section 11.3.5>7.2.11 ASCE 41-13, Table 7-2, LS Full Wall Height Elevation Wall Unit Weight ASCE 41-13, Eq. 7-13
L (kips)  L(Q <sub>0</sub> + Q <sub>1</sub> + Q <sub>2</sub> + Q <sub>2</sub> )  9(Q <sub>0</sub> ) hear/Unit Length (kip/ft)  Vall Shear (Q <sub>1</sub> ) (kips) foment Generated from Holdown (kip*ft)  (kips) (kips) (kips) (kips) (kips) (kips)	21.5 27.2 3.1 45.545°5455 0.0 Wall Demands 21.5 17.2 46.545455 651.6 Bound Vertical Compressive Stri	Eq. 7-2  About Centroid of Wall  Eq. 7-34  Eq. 7-34  Table 6-1	d (in)   a (in)       Mn (kip*ft)     Out-Of-Plane Demands TMS 4	4 0,3 9,5 9,5 02-13 Sec 9,3.5 & ASCE 41- 1,3 0,71 14 3,910 5,83,0 19,50 13,57 5,96 8	23 Section 11.3.5>7.2.11 ASCE 41-13, Table 7-2, LS Full Wall Height Elevation Wall Unit Weight ASCE 41-13, Eq. 7-13 ASCE 41-13, Eq. 7-14
i, (kips)  1(Q <sub>0</sub> + Q <sub>1</sub> + Q <sub>2</sub> + Q <sub>2</sub> )  9(Q <sub>0</sub> )  hear/Unit Length (kip/ft)  Vall Shear (Q <sub>1</sub> ) (kips)  doment Generated from Holdown (kip*ft)  (kips)  (kips)  (kips)  (kips)  (kips)  (kips)	21.5 27.2 3.1 45.345°5455 0.0 Wall Demands 21.5 17.2 46.34545455 651.6 -Bound Vertical Compressive Stri	Eq. 7-2  About Centroid of Wall  Eq. 7-34  Eq. 7-34	d (in)   a (in)	4 0.3 9.5 9.5 02-13 Sec 9.3.5 & ASCE 41- 1.3 0.71 14 1910 533.0 125.0 13.57 59.6 8	13 Section 11.3.5>7.2.11  ASCE 41-13, Table 7-2, LS  Full Wall Height Elevation Wall Unit Weight ASCE 41-13, Eq. 7-13  ASCE 41-13, Eq. 7-14  TMS 402-13, Eq. 9-35
i, (kips)  i.(Q <sub>0</sub> + Q <sub>1</sub> +0.2*Q <sub>0</sub> )  i.(Q <sub>0</sub> + Q <sub>1</sub> +0.2*Q <sub>0</sub> )  hear/Unit Length (kip/ft)  vall Shear (Q <sub>0</sub> ) (kips)  foment Generated from Holdown (kip*ft)  (kips)  (kips)  (kips)  (kips)  (kips)  (kips)  (kips)	21.5 17.2 3.1 48.545*5\SS 6.0 Wall Demands 21.5 17.2 46.5454545 651.6 -Bound Vertical Compressive Str. 1 0.522 322	Eq. 7-2  About Centroid of Wall  Eq. 7-34  Eq. 7-34  Eq. 7-34  Table 6-1  Weak Axis Radius of Gyration	d (in)   a (in)   htn (kip*ft)	4 0,3 9,5 02-13 Sec 9,3,5 & ASCE 41- 1,3 0,71 14 1,03(0 553.0 125.0 125.7 50.6 8 6,4 3,92	13 Section 11.3.5>7.2.11 ASCE 41-13, Table 7-2, LS Full Wall Height Elevation Wall Unit Weight ASCE 41-13, Eq. 7-13 ASCE 41-13, Eq. 7-14 TMS 402-13, Eq. 9-35 TMS 402-13, Eq. 9-34
(kips)	21.5 57.2 3.1 48.545/5\55 6.0 Wall Demands 21.5 17.2 46.5454545 651.6 -Bound Vertical Compressive Str. 0.522 322 36	Eq. 7-2  About Centroid of Wall  Eq. 7-34  Eq. 7-34  Table 6-1	d (in)   a (in)	4 0,3 9,5 9,5 1.3 0,71 14 191,0 533,0 195,0 12,57 12,65 3 6,4 3,92 1,00 1,	13 Section 11.3.5>7.2.11 ASCE 41-13, Table 7-2, LS Full Wall Height Elevation Wall Unit Weight ASCE 41-13, Eq. 7-13 ASCE 41-13, Eq. 7-14 TMS 402-13, Eq. 9-35
	21.5 17.2 3.1 48.545*5\SS 6.0 Wall Demands 21.5 17.2 46.5454545 651.6 -Bound Vertical Compressive Str. 1 0.522 322	Eq. 7-2  About Centroid of Wall  Eq. 7-34  Eq. 7-34  Eq. 7-34  Table 6-1  Weak Axis Radius of Gyration	d (in)   a (in)   htn (kip*ft)	4 0,3 9,5 02-13 Sec 9,3,5 & ASCE 41- 1,3 0,71 14 1,03(0 553.0 125.0 125.7 50.6 8 6,4 3,92	13 Section 11.3.5->7.2.11 ASCE 41-13, Table 7-2, LS Full Wall Height Elevation Wall Unit Weight ASCE 41-13, Eq. 7-13 ASCE 41-13, Eq. 7-14 TMS 402-13, Eq. 9-35 TMS 402-13, Eq. 9-34
L (kips)	21.5 57.2 3.1 48.545/5\55 6.0 Wall Demands 21.5 17.2 46.5454545 651.6 -Bound Vertical Compressive Str. 0.522 322 36	Eq. 7-2  About Centroid of Wall  Eq. 7-34  Eq. 7-34  Eq. 7-34  Table 6-1  Weak Axis Radius of Gyration	d (in)   a (in)   htn (kip*ft)	4 0,3 9,5 9,5 1.3 0,71 14 191,0 533,0 195,0 12,57 12,65 3 6,4 3,92 1,00 1,	13 Section 11.3.5>7.2.11  ASCE 41-13, Table 7-2, LS  Full Wall Height Elevation Wall Unit Weight ASCE 41-13, Eq. 7-13  ASCE 41-13, Eq. 7-14  TMS 402-13, Eq. 9-35 TMS 402-13, Eq. 9-33 TMS 402-13, Eq. 9-33
ik (kips)  L1(Qs + Qt +0.2*Qg)  J3(Qg)  Shear/Unit Length (bip/fit)  Wall Shear (Qg) (kips)  Moment Generated from Holdown (kip*fit)  (kips)	21.5 27.2 3.1 48.545/5055 0.3 Wall Demands 21.5 17.2 46.545455 651.6  Bound Vertical Compressive Str. 1,522 322 326 36	Eq. 7-2  About Centroid of Wall  Eq. 7-34  Eq. 7-34  Table 6-1  Weak Axis Radius of Gyration  TMS 402-13, Eq. 9-19, Eq. 9-20	d (in)   a (in)     Mn (kip*ft)     Out-Of-Piane Demands TMS 4    Xx, 1E   h (ft)     w (pst)     Fp*L (plt)     Fp, min*L (plt)     Mu, o ikip*ft)     n     tsp (in)     c (in)     teff = kr (in*4)     Pe (kips)     Ψ	4 0.3 9.5 9.5 8 ASCE 41- 1.3 0.71 14 4 0.910 1553.0 1557 12.57 8 0.4 392 100 0.275	13 Section 31.3.5>7.2.11  ASCE 41-13, Table 7-2, LS  Full Wall Height Elevation Wall Unit Weight ASCE 41-13, Eq. 7-14  TMS 402-13, Eq. 9-35  TMS 402-13, Eq. 9-34  TMS 402-13, Eq. 9-33
ik (kips)  1.1(Q <sub>1</sub> + Q <sub>1</sub> + 0.2 * Q <sub>0</sub> )  9.9(Q <sub>0</sub> )  Shear/Unit Length (kip/ft)  Wall Shear (Q <sub>1</sub> ) (kips)  Moment Generated from Holdown (kip*ft)  P (kips)  (kips)  (kips)  (kips)	21.5 17.2 3.1 48.545°545'5 0.0 Wall Demands 21.5 17.2 46.54545455 651.6  Bound Vertical Compressive Str. 1 0.522 322 36 36 36	Eq. 7-2  About Centroid of Wall  Eq. 7-34  Eq. 7-34  Table 6-1  Weak Axis Radius of Gyration  TMS 402-13, Eq. 9-19, Eq. 9-20	d (in)   a (in)     Mn (kip*ft)	4 0.3 9.5 9.5 8 ASCE 41- 1.3 0.71 14 4 0.910 1553.0 1557 12.57 8 0.4 392 100 0.275	13 Section 11.3.5->7.2.11 ASCE 41-13, Table 7-2, LS Full Wall Height Elevation Wall Unit Weight ASCE 41-13, Eq. 7-13 ASCE 41-13, Eq. 7-14  TMS 402-13, Eq. 9-35 TMS 402-13, Eq. 9-32 TMS 402-13, Eq. 9-32 TMS 402-13, Eq. 9-32 TMS 402-13, Eq. 9-32

728 134th Street SW Suite 200 Everett, Washington 98204 Ph: 425 741-3800 Fax: 425 741-3900

Client: Project Project No: 
 RFM
 Designed By:

 900 8ldg
 Date:

 262019.034
 Date:

12/18/2019

	Legend		Dete	rmine FC vs DC Table	11-6
Input			Mu/(Vudv)	0.08	
Calculated			7	1.0	#5 Bars or smaller
DCR/Check			Vn (kips) upperbound	246	TMS 402-13, Eq. 9-22
			Vn (kips) upperbound	280	TMS 402-13, Eq. 9-23
	General Inputs		Vnm (kip)	162.5	TMS 402-13, Sec 9.3.4.1.2.1
Pier ID	Grid S60		Vn (kip)	162.5	TMS 402-13, Equation 9-21
Location/Gridline	\$60		Holdown Anchor Rod As (in^2)	0.31	At one wall end
'm (psi)	810	Table 11-2(a)	a (in)	2,4	
Em (ksi)	729	TMS 402-13, Sec 4.2.2.2.1	Distance from Edge of Wall to Rod (in)	4	
fme (psi)	1053	Table 11-1	d (in)	17.0	
y (ksi)	40		Mn (kip*ft)	451	
ye (ksi)	52		Ve (kip)	31	
Es (ksi)	29000		Shear vs. Flexure Control	Recure Control	
Masonry Denisty (pcf)	125		An (in^2)	1440	
Nominal Pier Length (ft)	15		f., (psi)	14.9	
Pier Height (H)	14.00		Shear vs. Force Controlled	N/A	
Wall thickness (in)	8		Contract Con		
Roof Trib (SF)	80		Dete	mine m-factors Table	11.6
Roof DL (psf)	20		fae/fme	0.014	
Roaf SL (pif)	25		L/heff	1.07	
Mezz Trib (SF)	0		As (in^2)	0.62	Total Vertical Reinforcement
Mezz DL (psf)	0		ρ.	0.00043	The state of the s
	0		Av (in^2)	0.6	Total Vertical Reinforcement
Mezz LL (psf)			-	- AND THE REAL PROPERTY AND THE PERTY AND TH	lotal vertical Reinforcement
2nd FLR Trib (SF)	0		Ph.	0.0005	
and FLR OL (psf)	35		p <sub>e</sub> fye/fme	0.041	
and FLR LL (psf)	40		m-factor	7,3	
Shearline Tot Shear (kips)	159.3	85E-2E	m-factor restriction	7	
hearline Tot Length (ft)	33		m-factor used	7.0	
Applicable Wall Trib Length (ft)	15				
seismic Axial Load (kips)	0.0	Holdown Force From Wall Above	De	formation Control Do	CR s
Holdown to Wall Centroid (ft)	0.0		Shear DCR	0.09	
O, LS, CP	CP		Moment DCR	0.34	
	General Calculation			Force Control DCRs	
Wall Self-Weight (kips)	17.5		Shear DCR		
OL (kips)	1.6	Super-imposed DL @ Top of Wall	Moment DCR		
L (kips)	9.0	The second secon			
Ł (kips)	2.0		Out-Of-Plan	e Capacity TMS 402-	13, Sec 9.3.5
.1(Q <sub>0</sub> + Q <sub>1</sub> +0.2*Q <sub>1</sub> )	21.5	Eq. 7-1	d (in)	4	
0.9(Q <sub>0</sub> )	17.2	Eq. 7-2	a (in)	0.4	
hear/Unit Length (kip/ft)	4.8		Mn (kip*ft)	13.3	
Wall Shear (Q <sub>c</sub> ) (kips)	72.40909091		Constitution 1		
Moment Generated from Holdown (kip*ft)	0.0	About Centroid of Wall	Cost Of Plans Demands TMS 45	7. 12 Car 0 2 C B ACC	E 41-13 Section 11.3.5>7.2.11
Moment Generated from Hollown (kip 'tt)	0.0	About Centrold of Wall	Out-Of-Plane Demanas IIVIS 40	1	ASCE 41-13, Table 7-2, CP
	Wall Demands		Sxs,1E	1.11	P.S.C. 417 13, 14010 7-2, Gr.
(Block	21.5	Eq. 7-34	b (ft)	14	Full Wall Height
(kips)	27.2	Eq. 7-34	w (psf)	1,00.0	Elevation Wall Unit Weight
(kips)	72.00909/01	CQ. 7/39	Fp*L (plf)	666.0	ASCE 41-13, Eq. 7-13
	1013.7		Fp min*L (pif)	\$50.0	ASCE 41-13, Eq. 7-14
å (kip*ft)	1910/		Mu <sub>s</sub> o (kip*ft)	56.52	Dock To 199 MILITAR
James Bar	and Vertical Compressive St	renath	] (a	39,3	
tower-Bot	ina vertical compressive St	Table 6-1	tsp (in)	8	
(in)	0/601	Weak Axis Radius of Gyration	c (in)	0.5	TMS 402-13, Eq. 9-35
	250	reak Azis nadius di Gyraddii	leff = lcr (in/4)	520	TMS 402-13, Eq. 9-34
fr.		THE MALE S. C. L. C. L.			The state of the s
a (kip)	49	TM5 402-13, Eq. 9-19, Eq. 9-20	Pe (kips)	150	TMS 402-13, Eq. 9-33
P <sub>CL</sub> (kip)	448		Ψ	0.028	TMS 402-13, Eq. 9-32
	2	LS	ΨMu,o (kip*ft)	100/477	TMS 402-13, Eq. 9-31
(C)	1.1				
02+(Q1)/()C1C2) (kip)	21.5		Out-t	Of-Plane DCR, Sec 11.	3.5.3

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	Legend		De	termine FC vs DC Table 11	-6
nput			Mu/(Vudv)	0.09	
alculated			7	1.0	#5 Bars or smaller
CR/Check			Vn (kips) upperbound	98	TMS 402-13, Eq. 9-22
			Vn (kips) upperbound		TMS 402-13, Eq. 9-23
	General Inputs		Vnm (kip)	63.9	TMS 402-13, Sec 9.3.4.1.2.1
ier ID	Grid S70 between £175 & I	160	Vn (kip)	63.9	TMS 402-13, Equation 9-21
ocation/Gridline	\$70		Holdown Anchor Rod As (in^2)	0.31	At one wall end
m (psi)	810	Table 11-2(a)	a (in)	2.4	The state of the s
m (ksi)	729	TMS 402-13, Sec 4.2.2.2.1	Distance from Edge of Wall to Rod (in)	4	
ne (psi)	1053	Table 11-1	d (in)	168:	
(ksi)	40	radie 11-1	Mn (kip*ft)	87	
ye (ksi)	52		Ve (kip)	15	
s (ksi)	29000				
			Shear vs. Flexure Control	Flexure Control	
lasonry Denisty (pcf)	125		An (in^2)	326	
ominal Pier Length (ft)	6		f <sub>an</sub> (psi)	8.0	
er Height (H)	6,00		Shear vs. Force Controlled	NA.	
fall thickness (in)	8				
oof Trib (SF)	12		Dete	ermine m-factors Table 11	1-6
oof DL (psf)	20		fae/fme	0.008	
pof SL (psf)	25		L/heff	1.00	
lezz Trib (SF)	0		As (in^2)	0.31	Total Vertical Reinforcemen
ezz DL (psf)	0		D <sub>v</sub>	0.00054	
lezz LL (psf)	0		Av (in^2)	0.3	Total Vertical Reinforcemen
	12				Total Vertical Reinforcemen
nd FLR Trib (SF)			Ph .	0.0005	
nd FLR DL (psf)	35		p <sub>e</sub> fye/fme	0.053	
nd FLR LL (psf)	40		m-factor	6.1	
nearline Tot Shear (kips)	755.5	BSE-1E	m-factor restriction	7	
nearline Tot Length (ft)	105		m-factor used	6.1	
pplicable Wall Trib Length (ft)	6		8	1/4	
eismic Axial Load (kips)	0.0	Holdown Force From Wall Above	0	eformation Control DCRs	
oldown to Wall Centroid (ft)	0.0		Shear DCR	0.11	
), LS, CP	LS		Mament DCR	0.48	
Anna Anna			- London Control		
	General Calculation		1	Force Control DCRs	
all Self-Weight (kips)	3.6		Shear DCR	Torce common dens	
L (kips)	6.7	Super-imposed DL @ Top of Wall	Moment DCR		_
(kips)	3.5	Super-imposed by a rop of wan	[Moment OCK		_
(kips)	0/3		0.4.0686	ne Capacity TMS 402-13,	r 225
					sec 9.3.5
1(Q <sub>b</sub> + Q <sub>i</sub> +0.2*Q <sub>5</sub> )	416	Eq. 7-1	d (in)	4	
9(Q <sub>0</sub> )	3.3	Eq. 7-2	a (in)	0.4	
near/Unit Length (kip/ft)	7.2		Mn (kip*ft)	5.0	
all Shear (Q <sub>c</sub> ) (kips)	45.17142857				
oment Generated from Holdown (kip*ft)	0.0	About Centroid of Wall	Out-Of-Plane Demands TMS 4	102-13 Sec 9.3.5 & ASCF 4	1-13 Section 11.3.5>7.2.11
CONTROL OF THE PROPERTY OF THE	109	LANDON STATEMENT MADE	y vitaginas rais	1.3	ASCE 41-13, Table 7-2, LS
	Wall Demands		Sxs,1E	0.71	7.2c. 41-13, Table 7-2, LS
kips)	Wall Demanas	Eq. 7-34	h (ft)	14	Gull Mall Halish
kips)		Eq. 7-34 Eq. 7-34			Full Wall Height
	3,3 43,474,02857	Eq. 7-34	w (psf)	100/0	Elevation Wall Unit Weight
(kips)		<del></del>	Fp*L (plf)	201/5	ASCE 41-13, Eq. 7-13
(kip*ft)	249/0		Fp_min*L (plf)	786	ASCE 41-13, Eq. 7-14
	72 77 77 77	_:	Mu,o (kip*ft)	5.43	
Low	er-Bound Vertical Compressive St		in .	55.8	
	1	Table 6-1	tsp (in)	4	
n)	0.587	Weak Axis Radius of Gyration	c (in)	0.5	TMS 402-13, Eq. 9-35
	123		teff = lcr (in^4)	193	TMS 402-13, Eq. 9-34
(kip)	100	TMS 402-13, Eq. 9-19, Eq. 9-20	Pe (kips)	2/AG	TMS 402-13, Eq. 9-33
a (kip)	100		Ψ	1.017	TMS 402-13, Eq. 9-32
G. N. P.	2	LS			
•		Lis	ΨMu,o (kip*ft)	5.52	TMS 402-13, Eq. 9-31
C <sub>2</sub>	1.1		· ·		
;+(Q <sub>f</sub> )/(IC1C2) (kip)	4,6		Out-	Of-Plane DCR, Sec 11.3.5.	3
IR .	0.05		Flexure DCR	0.5	

728 134th Street SW - Suite 200 Everett, Washington 98204 Ph: 425 741-3800 Fax: 425 741-3900

Client: Project: 900 Bldg

Project No:

# ASCE 41-13 Reinforce

262019.034

	Legend	
Input		
Calculated		V
DCR/Check		
	General Inputs	
Pier ID	Grid 570 between E175 & E160	T
Location/Gridline	\$70	
f'm (psi)	810	Table 11-2(a)
Em (ksi)	729	TMS 402-13, Sec 4,2.2.2.1
fme (psi)	1053	Table 11-1
fy (ksi)	40	
fye (ksi)	52	
Es (ksi)	29000	-
Masonry Denisty (pcf)	125	
Nominal Pier Length (ft)	6	
Pier Height (H)	6.00	<u> </u>
Wall thickness (in)	8	
Roof Trib (SF)	12	
Roof DL (psf)	20	
Roof SL (psf)	25	
Roof SL (psf) Mezz Trib (SF)	0	· ·
Mezz DL (psf)	0	-
Wezz LL (psf)	0	
2nd FLR Trib (SF)		
	12	
2nd FLR DL (psf)	35	
2nd FLR LL (psf)	40	
Shearline Tot Shear (kips)	755.5	BSE-1E
shearline Tot Length (ft)	105	
Applicable Wall Trib Length (ft)	6	
Seismic Axial Load (kips)	0.0	Holdown Force From Wall Above
foldown to Wall Centroid (ft)	0.0	
O, LS, CP	LS	
	General Calculation	
Wall Self-Weight (kips)	3.0	
DL (kips)	0.7	Super-imposed DL @ Top of Wall
L (kips)	0.5	
il (kips)	0.3	
.1(Q <sub>0</sub> + Q <sub>4</sub> +0.2*Q <sub>5</sub> )	4.6	Eq. 7-1
).9(Q <sub>0</sub> )	3.3	Eq. 7-2
hear/Unit Length (kip/ft)	7.2	
	43,17142857	
Wall Shear (Q <sub>ε</sub> ) (kips)		About Contained . Charle
Moment Generated from Holdown (kip*ft)	0.0	About Centroid of Wall
	Wall Demands	
(kips)	4.6	Eq. 7-34
(kips)	3.3	Eq. 7-34
/ (kips)	43.17142857	
M (kip*ft)	259.0	
A DOUGLA SEE	-11/	1L
	nd Vertical Compressive Streng	
	1	Table 6-1
(in)	0.587	Weak Axis Radius of Gyration
de la la la la la la la la la la la la la	123	THE 403 40 F. C. C. C.
CL (kip)	100	TMS 402-13, Eq. 9-19, Eq. 9-20
P <sub>CL</sub> (kip)	100	, la
	2	LS
,C <sub>2</sub>	1,1	
Q <sub>0</sub> +(Q <sub>2</sub> )/(3C1C2) (kip)	4,6	
DCR	0.05	

Permit Number: 19-05911

Reid Middleton

728 134th Street SW Suite 200
Everett, Washington 98204
Ph: 425 741-3800
Fax: 425 741-3900

Project No:

RFM 900 Bldg Designed By: Date:
Checked By:
Date: 262019.034

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	Legend			mine FC vs DC Table 1.	-6
nput			Mu/(Vudv)	0:09	
Calculated			7	1,0	#5 Bars or smaller
DCR/Check			Vn (kips) upperbound	98	TMS 402-13, Eq. 9-22
-0.034 / E.S. (0.000)			Vn (kips) upperbound		TM5 402-13, Eq. 9-23
No. Charles	General Inputs	- P	Vnm (kip)	63.9	TMS 402-13, Sec 9.3.4.1.2.1
Pier ID	Grid S70 between E175 &	160	Vn (kip)	63.9	TMS 402-13, Equation 9-21
Location/Gridline	\$70		Holdown Anchor Rod As (in^2)	0.31	At one wall end
°m (psi)	810	Table 11-2(a)	a (in)	2.4	
(ksi)	729	TMS 402-13, Sec 4.2.2.2.1	Distance from Edge of Wall to Rod (in)	4	
me (psi)	1053	Table 11-1	d (in)	<u>@B</u>	
X (kat)	40		Mn (kip*ft)	47	
ye (ksi)	52		Ve (kip)	15	
s (ksi)	29000		Shear vs. Flexure Control	Harring Control	
Masonry Denisty (pcf)	125		An (in^2)	526	
iominal Pier Length (ft)	- 6		f.,, (psi)	20	
Pier Height (H)	6.00		Shear vs. Force Controlled	MA	
Wall thickness (in)	8				
Roof Trib (SF)	12			nine m-factors Table 1	1-6
Roof DL (psf)	20		fae/fme	0.008	
toof SL (psf)	25		L/heff	1.00	
Mezz Trib (SF)	0		As (in^2)	0.31	Total Vertical Reinforcemen
Mezz DL (pst)	0		ρ,	0.00054	
flezz LL (psf)	0		Av (in^2)	0.3	Total Vertical Reinforcemen
nd FLR Trib (SF)	12		Ph	0.0005	
nd FLR DL (psf)	35		p <sub>a</sub> fye/fme	0.053	
nd FLR LL (psf)	40		m-factor	7,2	
hearline Tot Shear (kips)	1174,9	BSE-2E	m-factor restriction	7	
hearline Tot Length (ft)	105		m-factor used	7.0	
pplicable Wall Trib Length (ft)	6				11
eismic Axial Load (kips)	0.0	Holdown Force From Wall Above	Def	ormation Control DCR	
foldown to Wall Centroid (ft)	0.0		Shear DCR	0.15	
O, LS, CP	CP		Moment OCR	0.55	
			The street		
	General Calculation			Force Control DCRs	
Vall Self-Weight (kips)	3,0		Shear DCR		
)L (kips)	0.7	Super-imposed DL @ Top of Wall	Moment DCR		
L (kips)	0.5				
L (kips)	0,3		Out-Of-Plane	Capacity TMS 402-13,	Sec 9.3.5
.1(Q <sub>0</sub> + Q <sub>1</sub> +0.2 *Q <sub>2</sub> )	4.6	Eq. 7-1	d (in)	4	
9(Q <sub>0</sub> )	3.3	Eq. 7-2	a (in)	0:4	
hear/Unit Length (kip/ft)	11.2		Mn (kip*ft)	5.0	
/all Shear (Q <sub>e</sub> ) (kips)	67.13714286		Compagnition 1	- are	
forment Generated from Holdown (kip*ft)	0.0	ALCOHOL VIEW PROPERTY	Out-Of-Plane Demands TMS 402		
loment Generated from Holdown (kip*ft)	0.0	About Centroid of Wall	Out-Of-Plane Demanas 1MS 402	1	ASCE 41-13, Table 7-2, CP
	Wall Demands		Sxs,1£	1.11	ASCI: 41-13, 180le 7-2, CP
(kips)	4.6	Eq. 7-34	h (ft)	14	Full Wall Height
(kips)	3.3	Eq. 7-34	w (psf)	1000	Elevation Wall Unit Weight
(kips)	67,13714286	14,734	Fp*L (pit)	286.4	ASCE 41-13, Eq. 7-13
(kip*ft)	402.8	_	Fp_min*L (plf)	\$1000A	ASCE 41-13, Eq. 7-14
1036 VM	407.0		Mu,o (kip*ft)	6.52	CARL 41-13, Eq. 7-14
famas	Bound Vertical Compressive St.	enath	The state of the s	30:8	<del>-    </del>
LOWET	1	Table 6-1	tsp (in)	#### (In	
in)	0.587	Weak Axis Radius of Gyration	c (in)	03	TMS 402-13, Eq. 9-35
'r	123	recast Aus nedius di Gyration	leff = lcr (in^4)	418	TMS 402-13, Eq. 9-34
(kip)	100	TMS 403.13 En 0.10 En 0.20		275	
	1,000	TMS 402-13, Eq. 9-19, Eq. 9-20	Pe (kips)		TMS 402-13, Eq. 9-33
P <sub>cL</sub> (klp)	100		Ψ	0.0177	TM5 402-13, Eq. 9-32
	2	LS	ΨMu <sub>.</sub> o (kip*ft)	0.64	TMS 402-13, Eq. 9-31
1C <sub>2</sub>	1.1				
<sub>6</sub> +(Q <sub>c</sub> )/(JC1C2) (kip)	4.6		Out-O	Plane DCR, Sec 11.3.	.3

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	Legend		Del	termine FC vs DC Table	11-6
nput			Mu/(Vudv)	0.08	
Calculated			7	1.0	#5 Bars or smaller
DCR/Check			Vn (kips) upperbound	492	TMS 402-13, Eq. 9-22
			Vn (kips) upperbound		TMS 402-13, Eq. 9-23
	General Inputs		Vnm (kip)	332.4	TM5 402-13, Sec 9.3.4.1.2.1
Pier ID	Grid S70 between E175 & E16	0	Vn (kip)	332.4	TMS 402-13, Equation 9-21
Location/Gridline	\$70		Holdown Anchor Rod As (in^2)	0.31	At one wall end
ľm (psi)	810	Table 11-2(a)	a (in)	2.4	
Em (ksi)	729	TMS 402-13, Sec 4.2.2.2.1	Distance from Edge of Wall to Rod (in)	4	
fme (psi)	1053	Table 11-1	d (in)	356	
fy (ksi)	40		Mn (kip*ft)	2195	
fye (ksi)	52		Ve (kip)	81	
Es (ksi)	29000		Shear vs. Flexure Control	Flaxury Control	The state of the s
Masonry Denisty (pcf)	125		An (in^2)	2880	
Nominal Pier Length (ft)	30		f <sub>ee</sub> (psi)	26.4	
Pier Height (H)	27.00		Shear vs. Force Controlled	AA:	
Wall thickness (in)	8				
Roof Trib (SF)	60		Dete	ermine m-factors Table	11-6
Roof DL (psf)	20		fae/fme	0.025	· ·
Roof SL (psf)	25		L/heff	1.11	
Mezz Trib (SF)	0		As (in^2)	2,48	Total Vertical Reinforcement
Mezz DL (psf)	0		ρ <sub>v</sub>	0.00086	
Mezz LL (psf)	0		Av (in^2)	2.5	Total Vertical Reinforcement
2nd FLR Trib (SF)	0		Ph	0.0010	
2nd FLR DL (psf)	35		ρ <sub>ε</sub> fye/fme	0.090	
2nd FLR LL (psf)	40		m-factor	4.9	
Shearline Tot Shear (kips)	268.8	BSE-1E	m-factor restriction	7	
Shearline Tot Length (ft)	72	pac-1c	m-factor restriction	4.9	
Applicable Wall Trib Length (ft)	30		[m-ractor used	4/3	
Seismic Axial Load (kips)	0.0	Holdown Force From Wall Above		eformation Control DC	9-
Holdown to Wall Centroid (ft)	0.0	Roldown Force From Wall Above	Shear DCR	0.07	ns
IO, LS, CP	LS	_	Moment DCR	0.07	
10, 13, 4			I Mullett OCK	9.68	
	General Calculation		1 1	Force Control DCRs	
Wall Self-Weight (kips)	67.5		Shear DCR		
DL (kips)	1.2	Super-imposed DL @ Top of Wall	Moment DCR		
LL (kips)	Ø/D		Charles and the charles are th		
SL (kips)	1.5		Out-Of-Pla	ne Capacity TMS 402-1	3. Sec 9.3.5
1.1(Q <sub>0</sub> + Q <sub>1</sub> +0.2*Q <sub>2</sub> )	75.9	Eq. 7-1	d (in)	4	
0.9(Q <sub>0</sub> )	61.3	Eq. 7-2	a (in)	0.8	
		index.e.	- International Control of the Contr	48,6	
Shear/Unit Length (kip/ft)	3.7	-	Mn (kip*ft)	48.0	
Wall Shear (Q <sub>c</sub> ) (kips)	212				//
Moment Generated from Holdown (kip*ft)	0/0	About Centroid of Wall	Out-Of-Plane Demands TMS		41-13 Section 11.3.5>7.2.11
	COP WE COP TO SERVICE OF THE SERVICE		_ x	1.3	ASCE 41-13, Table 7-2, LS
- W	Wall Demands	2 22	Sxs,1E	0.71	
P (kips)	75.9	Eq. 7-34	h (ft)	14	Full Wall Height
P (kips)	61.8	Eg. 7-34	w (psf)	100.0	Elevation Wall Unit Weight
/ (kips)	112		Fp*L (plf)	1107.5	ASCE 41-13, Eq. 7-13
M (kip*ft)	3014.0	<del>-</del> 4	Fp_min*L (plf)	20030	ASCE 41-13, Eq. 7-14
4000		S.Co.E.	Mu,o (kip*ft)	27.14	<del>-</del>
Low	ver-Bound Vertical Compressive Stren		l n	29.0	<del>-</del>
Section 1	1	Table 6-1	tsp (in)	6	TA 10 103 13 F
(in)	0/74/5	Weak Axis Radius of Gyration	c (in)	(1/2)	TMS 402-13, Eq. 9-35
s/r	495		teff = Icr (in^4)	1660	TMS 402-13, Eq. 9-34
P <sub>CL</sub> (kip)	441	TMS 402-13, Eq. 9-19, Eq. 9-20	Pe (kips)	210	TMS 402-13, Eq. 9-33
(P <sub>CL</sub> (kip)	24		Ψ	3.248	TMS 402-13, Eq. 9-32
	2	LS	ΨMu,o (kip*ft)	8002	TMS 402-13, Eq. 9-31
L <sub>1</sub> C <sub>3</sub>	1.1				
Q <sub>G</sub> +(Q <sub>k</sub> )/(JC1C2) (kip)	75.9		T Court	-Of-Plane DCR, Sec 11.3	1.5.3
DCR	1.86		Flexure DCR	0.9	
ZWD.	1 4.00		Trievale avin	M(Q)	

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	Legend			Determine FC vs DC Table 11-	6
nput	10000000		Mu/(Vudv)	0.04	
Calculated			γ	1.0	#S Bars or smaller
CR/Check			Vn (kips) upperbound	492	TMS 402-13, Eq. 9-22
			Vn (kips) upperbound	100	TMS 402-13, Eq. 9-23
	General Inputs		Vnm (kip)	330.4	TMS 402-13, Sec 9.3.4.1.2.1
Pier ID	Grid 570 between £175 &	E160	Vn (kip)	330,4	TMS 402-13, Equation 9-21
ocation/Gridline	570		Holdown Anchor Rod As (in^2)	0.31	At one wall end
ľm (psi)	810	Table 11-2(a)	a (in)	2.4	
Em (ksi)	729	TMS 402-13, Sec 4.2.2.2.1	Distance from Edge of Wall to Rod (in)	4	
(me (psi)	1053	Table 11-1	<u>d (in)</u>	356	
ý (ksi)	40		Mn (kip*ft)	1330	
ye (ksi)	52		Ve (kip)	95	
Es (ksi)	29000		Shear vs. Flexure Control	Florane Control	
Masonry Denisty (pcf)	125		An (in^2)	2880	
Nominal Pier Length (ft)	30		f <sub>ae</sub> (psi)	13.9	
Pier Height (H)	14.00		Shear vs. Force Controlled	N/A	
Vall thickness (in)	8				
Roof Trib (SF)	60			Determine m-factors Table 11	-6
Roof DL (psf)	20		fae/fme	0.013	
Roof SL (psf)	25		L/heff	2.14	
Mezz Trib (SF)	0		As (in^2)	2.48	Total Vertical Reinforcement
Aezz DL (psf)	0		Pw	0.00086	
Mezz LL (psf)	0		Av (in^2)	2.5	Total Vertical Reinforcement
nd FLR Trib (SF)	0		ρ <sub>k</sub>	0.0018	
nd FLR DL (psf)	35		ρ <sub>s</sub> fye/Ime	0.134	
and FLR LL (psf)	40		m-factor	5.7	
hearline Tot Shear (kips)	729	BSE-2E	m-factor restriction	7	
hearline Tot Length (ft)	72		m-factor used	5.7	
applicable Wall Trib Length (ft)	30				
eismic Axial Load (kips)	0.0	Holdown Force From Wall Above		Deformation Control DCRs	17
foldown to Wall Centroid (ft)	0.0		Shear DCR	0.16	
O, LS, CP	CP		Moment DCR	9.56	
	General Calculation			Force Control DCRs	
Vall Self-Weight (kips)	35.0		Shear DCR		
OL (kips)	4.2	Super-imposed DL @ Top of Wall	Moment DCR		
L (kips)	(0.0)		4 2		
L (kips)	1.5			-Plane Capacity TMS 402-13, 5	ec 9.3.5
.1(Q <sub>0</sub> + Q <sub>t</sub> +0.2*Q <sub>5</sub> )	Z0,2	Eq. 7-1	d (in)	4	
.9(Q <sub>0</sub> )	32.6	Eq. 7-2	a (in)	0.6	
hear/Unit Length (kip/ft)	10.1		Mn (kip*ft)	40.6	
Vall Shear (Q <sub>€</sub> ) (kips)	303,75				
foment Generated from Holdown (kip*ft)	0.0	About Centroid of Wall	Out-Of-Plane Demands TI	MS 402-13 Sec 9.3.5 & ASCE 41	-13 Section 11.3.5->7.2.11
***			x	1	ASCE 41-13, Table 7-2, CP
	Wall Demands		Sxs,1E	1.11	
(kips)	40.2	Eq. 7-34	h (ft)	14	Full Wall Height
(kips)	32.6	Eq. 7-34	w (psf)	100.0	Elevation Wall Unit Weight
(kips)	303.75		Fp*L (plf)	1332.0	ASCE 41-13, Eq. 7-13
f (kip*ft)	4252.5		Fp_min*L (plf)	300.0	ASCE 41-13, Eq. 7-14
			Mu,o (kip*ft)	32.63	
Lower	-Bound Vertical Compressive S	trength	n	39,8	
	11	Table 6-1	tsp (in)	8	
in)	0.706	Weak Axis Radius of Gyration	c (in)	0.7	TMS 402-13, Eq. 9-35
r	238		leff = lcr (in^4)	1437	TMS 402-13, Eq. 9-34
(kip)	136	TMS 402-13, Eq. 9-19, Eq. 9-20	Pe (kips)	366	TMS 402-13, Eq. 9-33
P <sub>CL</sub> (kip)	136		Ψ	1.123	TMS 402-13, Eq. 9-32
/M.J., 2.17.	2	ıs	ΨMu,o (kip*ft)	36.65	TMS 402-13, Eq. 9-31
ic,	1.1		L. May My M	30.03	1002 404 437 Eq. 2°31
TO STATE OF THE ST			+ -		
g+(Q <sub>E</sub> )/(JC1C2) (kip)	40.2			Out-Of-Plane DCR, Sec 11.3.5.	5
OCR	0.30		Flexure DCR	0.6	

Reid Middleton

728 134th Street SW - Suite 200
Everett, Washington 98204
Ph; 425 741-3800
Fax: 425 741-3900

Client: Project: Project No: 900 Bldg Designed By:
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	Legend			Determine FC vs DC Table	e 11-6
Input			Mu/(Vudv)	0.08	
Calculated			7	1.0	MS Bars or smaller
DCR/Check			Vn (kips) upperbound	246	TMS 402-13, Eq. 9-22
			Vn (kips) upperbound		TMS 402-13, Eq. 9-23
	General Inputs		Vnm (kip)	162.5	TMS 402-13, Sec 9.3.4.1.2.1
Pier ID	Grid \$75 either wall		Vn (kip)	162.5	TMS 402-13, Equation 9-21
Location/Gridline	575		Holdown Anchor Rod As (in^2)	0.31	At one wall end
f'm (psi)	810	Table 11-2(a)	a (in)	2.4	
Em (kil)	729	TMS 402-13, Sec 4.2.2.2.1	Distance from Edge of Wall to Rod (in)	4	
fme (psi)	1053	Table 11-1	d (in)	1.76	
fy (ksi)	40		Mn (kip*ft)	432	
fye (ksi)	52		Ve (kip)	31	
Es (ksi)	29000		Shear vs. Flexure Control	Flaxury Control	
Masonry Denisty (pcf)	125		An (in^2)	1#40	
Nominal Pier Length (ft)	15		f <sub>ee</sub> (psi)	15.7	
Pier Height (H)	14.00		Shear vs. Force Controlled	HA	
Wall thickness (in)	8		Contract Amount Contract Contr		
Roaf Trib (SF)	30			Determine m-factors Tabi	ie 11-6
Roof DL (psf)	20		fae/fme	0.015	
Roof SL (psf)	25		L/heff	1.07	
Mezz Trib (SF)	0	_	As (in^2)	0.31	Total Vertical Reinforcement
Mezz DL (psf)	0		lo.	0.00022	1 See Land Control of
					VICTOR STATE
Mezz LL (psf)	0		Av (in^2)	0.3	Total Vertical Reinforcement
2nd FLR Trib (SF)	30	i	Ph	0.0002	
2nd FLR DL (psf)	35		ρ <sub>a</sub> fye/fme	0.022	
2nd FLR LL (psf)	40		m-factor	6,7	
Shearline Tot Shear (kips)	674.6	BSE-1E	m-factor restriction	7	
Shearline Tot Length (ft)	60		m-factor used	6,7	
Applicable Wall Trib Length (ft)	15	<u> </u>			
Seismic Axial Load (kips)	0.0	Holdown Force From Wall Above		Deformation Control D	ICRs
Holdown to Wall Centroid (ft)	0.0		Shear DCR	0.15	
IO, LS, CP	LS		Moment DCR	0.93	
		*	211 128		-
	General Calculation			Force Control DCRs	
Wall Self-Weight (kips)	17.5		Shear DCR		
DL (kips)	1:7	Super-imposed DL @ Top of Wall	Moment DCR		
LL (kips)	1,2		- (boxesiano o o o o o o o o o o o o o o o o o o		
St (kips)	0.8		Ou	t-Of-Plane Capacity TMS 402-	13, Sec 9.3.5
1.1(Q <sub>0</sub> + Q <sub>i</sub> +0.2*Q <sub>i</sub> )	22.6	Eq. 7-1	d (in)	4	
0.9(Q <sub>0</sub> )	17/2	Eq. 7-2	a (in)	0.3	
		Cq. 7*2			
Shear/Unit Length (kip/ft)	11.2		Mn (kip*ft)	9.5	<b>1</b>
Wall Shear (Q₂) (kips)	168.65		2		
Moment Generated from Holdown (kip*ft)	0.0	About Centroid of Wall	Out-Of-Plane Demand		CE 41-13 Section 11.3.5>7.2.11
			X	1.3	ASCE 41-13, Table 7-2, LS
	Wall Demands		Sxs,1E	0.71	
P (kips)	22.6	Eq. 7-34	h (ft)	14	Full Wall Height
P (kips)	17.2	Eq. 7-34	w (psf)	1600	Elevation Wall Unit Weight
V (kips)	168.65		Fp*L (pif)	553.8	ASCE 41-13, Eq. 7-13
M (kip*ft)	2361.1		Fp_min*L (plf)	1950	ASCE 41-13, Eq. 7-14
·			Mu <sub>s</sub> o (kip*ft)	13/67	
* Lower-E	Iound Vertical Compressive Stre		n	20.5	
(	1	Table 6-1	tsp (in)	- 2	
(in)	0/321	Weak Axis Radius of Gyration	c (in)	<b>200</b>	TMS 402-13, Eq. 9-35
n/r	B23		leff = lcr (in^4)	201	TMS 402-13, Eq. 9-34
Po (kip)	25	TMS 402-13, Eq. 9-19, Eq. 9-20	Pe (kips)	150	TMS 402-13, Eq. 9-33
(Pa (kip)	95	The second secon	T W	0.205	TM5 402-13, Eq. 9-32
regen manakh	2	ıs	ΨMu,o (kip*ft)	17.54	TMS 402-13, Eq. 9-31
			Casalato keb. id	1//34	1103 402-13, 14. 3-31
c,c,	1.1			2000-2000-000-000-000-000-00-00-00-00-00	
Q <sub>a</sub> +(Q <sub>r</sub> )/(JC1C2) (Np)	22.6			Out-Of-Plane DCR, Sec 11	.3.5.3
DCR	0.43		Flexure OCR	0.0	

Reid Middleton

128 134th Street SW Sorte 200

Everett, Washington 98204

Ph: 425 741-3800

Fax: 425 741-3900

Client: Project: Project No:

Designed By:
Date:
Checked By:
Date: 900 Bldg 262019.034

12/18/2019

	Legend			Determine FC vs DC 1	Table 11-6
Input			Mu/(Vudv)	0.08	
Calculated			7.	1.0	N5 Bars or smaller
DCR/Check			Vn (kips) upperbound	246	TMS 402-13, Eq. 9-22
			Vn (kips) upperbound		TMS 402-13, Eq. 9-23
	General Inputs		Vnm (kip)	164.0	TMS 402-13, Sec 9 3.4,1.2.1
Pier ID	Grid 575 either wall		Vn (kip)	164.0	TMS 402-13, Equation 9-21
Location/Gridline	575		Holdown Anchor Rod As (in^2)	0.31	At one wall end
f'm (psi)	810	Table 11-2(a)	a (in)	2.4	
Em (ksi)	729	TMS 402-13, Sec 4.2.2.2.1	Distance from Edge of Wall to Rod (in)	4	
fme (psi)	1053	Table 11-1	d (in)	176	
fy (ksi)	40	THORE XX 4	Mn (kip*ft)	518	
fye (ksi)	52		Ve (kip)	37	
Es (ksi)	29000	Test .	Shear vs. Flexure Control	Flacture Constrol	
Masonry Denisty (pcf)	125	-	An (in^2)	1440	
Nominal Pier Length (ft)					
Name of the Control o	15		f <sub>se</sub> (psi)	24.8	
Pier Height (H)	14.00		Shear vs. Force Controlled	NA.	
Wall thickness (in)	8				
Roof Trib (SF)	150			Determine m-factors	Table 11-6
Roof DL (psf)	20	47	fae/fme	0.024	
Roof SL (psf)	25		L/heff	1.07	
Mezz Trib (SF)	0		As (in^2)	0.62	Total Vertical Reinforcement
Mezz DL (psf)	0		Py	0.00043	
Mezz LL (psf)	0		Av (in^2)	0.6	Total Vertical Reinforcement
2nd FLR Trib (SF)	150		Ox.	0.0005	Committee and the committee of the commi
			1 1		
2nd FLR DL (psf)	35		ρ <sub>ε</sub> fye/fme	0.014	
2nd FLR LL (psf)	40		m-factor	7.1	
Shearline Tot Shear (kips)	1049.1	BSE-2E	m-factor restriction	8	
Shearline Tot Length (ft)	60		m-factor used	7.1	
Applicable Wall Trib Length (ft)	-15				
Seismic Axial Load (kips)	0.0	Holdown Force From Wall Above		Deformation Contr	ol OCRs
Holdown to Wall Centroid (ft)	0.0	AND THE PROPERTY OF THE PROPER	Shear OCR	0.23	
10, L5, CP	CP		Moment DCR	1/90	
			49		
	General Calculation			Force Control D	CRs
Wall Self-Weight (kips)	177.5		Shear DCR		
DL (kips)	23	Super-imposed DL @ Top of Wall	Mament DCR		
LL (kips)	6.0		- Introduction		
SL (kips)	2.8		Out	Of-Plane Capacity TMS	402-13. Sec 9.3.5
1.1(Q <sub>0</sub> + Q <sub>4</sub> +0.2*Q <sub>5</sub> )	30,8	Eq. 7-1	d (in)	4	
0.9(Q <sub>0</sub> )		THE STATE OF THE S	- Invoice -		
	13.2	Eq. 7-2	a (in)	0.5	
Shear/Unit Length (kip/ft)	17.5		Mn (kip*ft)	15.0	
Wall Shear (Q <sub>r</sub> ) (klps)	262.275		1. 12		
Moment Generated from Holdown (kip*ft)	0.0	About Centroid of Wall	Out-Of-Plane Demands	s TMS 402-13 Sec 9.3.5 &	ASCE 41-13 Section 11.3.5>7.2.11
			X	1	ASCE 41-13, Table 7-2, CP
	Wall Demands		Sxs,28	1.11	
(kips)	35,8	Eq. 7-34	h (ft)	14	Full Wall Height
P (kips)	23:2	Eq. 7-34	w (psf)	100.0	Elevation Wall Unit Weight
(kips)	262.275	A Section 1	Fp*L (plf)	556.0	ASCE 41-13, Eq. 7-13
/ (kip*ft)	3671.9		Fp_min*L (plf)	150/D	ASCE 41-13, Eq. 7-14
UANUF		-114-	Mu <sub>s</sub> o (kip*ft)	55.82	LEGISLAND SHILLS
Lawer-Ro	und Vertical Compressive Stre	nath	1 10	39/0	
	1	Table 6-1	tsp (in)	9	
(in)	0.619	Weak Axis Radius of Gyration	c (in)	DIS.	TMS 402-13, Eq. 9-35
ht.	271	Treas Auto nations of Gyracion	leff = icr (in^4)	552	TMS 402-13, Eq. 9-34
		71 5 103 13 5- 0 10 5- 0 22			
'a (kip)	51	TMS 402-13, Eq. 9-19, Eq. 9-20	Pe (kips)	593	TM5 402-13, Eq. 9-33
(P <sub>CL</sub> (kip)	51		Ψ	1,340	TMS 402-13, Eq. 9-32
	2	LS	ΨMu,o (kip*ft)	21.87	TMS 402-13, Eq. 9-31
1C2	1,1		tenness distribution and		Harran Alland to Balanca
	35.8			Out Of Name Oct Co.	
Q <sub>6</sub> +(Q <sub>f</sub> )/(IC1C2) (kip)	23.0			Out-Of-Plane DCR, Se	£ 11.3.3.3
DCR	0.70		Flexure DCR	0.7	

728 134th Street SW - Suite 200 Everett, Washington 98204 Ph: 425 741-3800 Fax: 425 741-3900

Client: Project: Project No: 
 RFM
 Designed By:

 900 Bidg
 Date:

 Checked By:
 Checked By:

 262019.034
 Date:

JJ 12/18/2019

	Legend		Deta	ermine FC vs DC Table 1	1-6
input			Mu/(Vudv)	0.15	
Calculated			7	1.0	#5 Bars or smaller
DCR/Check			Vn (kips) upperbound	131	TMS 402-13, Eq. 9-22
			Vn (kips) upperbound		TMS 402-13, Eq. 9-23
	General Inputs	1.00	Vnm (kip)	83.8	TM5 402-13, Sec 9.3.4.1.2.1
Pier ID	Grid 575 either wall		Vn (kip)	83.8	TMS 402-13, Equation 9-21
ocation/Gridline	\$75		Holdown Anchor Rod As (in^2)	0.31	At one wall end
'm (psi)	810	Table 11-2(a)	a (in)	2.4	
m (ksi)	729	TMS 402-13, Sec 4.2.2.2.1	Distance from Edge of Wall to Rod (in)	4	
me (psi)	1053	Table 11-1	d (in)	92	
y (ksi)	40		Mn (kip*ft)	160	
ye (ksi)	52		Ve (kip)	11	
s (ksi)	29000		Shear vs. Flexure Control	Figure Control	
lasonry Denisty (pcf)	125		An (in^2)	768	
ominal Pier Length (ft)	8		f <sub>ac</sub> (psi)	13.9	
ier Height (H)	14.00		Shear vs. Force Controlled	NA.	
/all thickness (in)	8		Sitear vs. Force controlled		
oof Trib (SF)	16		Date	mine m-factors Table 1	1.6
oof DL (psf)	20		fae/Ime	0.013	
oof SL (psf)	25		L/heff	0.57	
lezz Trib (SF)	0		As (in^2)	0.31	Total Vertical Reinforcement
fezz DL (psf)	0		100,000	0.00040	issui verticai nemorcement
Annual Margh	0		- Inv	- I was said to be a second to the second to	Tarat Vication 6
Mezz LL (psf)			Av (in^2)	0.3	Total Vertical Reinforcement
nd FLR Trib (SF)	0		Ph	0.0002	
nd FLR DL (psf)	35		ρ <sub>ε</sub> fye/fme	0.031	
nd FLR LL (psf)	40		m-factor	5.6	
hearline Tot Shear (kips)	326.4	BSE-1E	m-factor restriction	7	
hearline Tot Length (ft)	98		m-factor used	\$.6	
pplicable Wall Trib Length (ft)	8				
eismic Axial Load (kips)	0.0	Holdown Force From Wall Above	De	formation Control DCR:	
oldown to Wall Centroid (ft)	0.0		Shear DCR	0.06	
), LS, CP	LS		Moment DCR	0.42	
			N N		
	General Calculation			Force Control DCRs	
/all Self-Weight (kips)	23		Shear DCR		
	Dia.	Super-imposed DL @ Top of Wall	Moment DCR		
L (kips)			100000000000000000000000000000000000000		
	(0:0)				
(kips)	0.0 64		Out-Of-Plan	e Capacity TMS 402-13,	Sec 9.3.5
L (kips) L (kips)		Eq. 7-1		e Capacity TMS 402-13,	Sec 9.3.5
L(kips) L(kips) .1(Q <sub>0</sub> + Q <sub>1</sub> +0.2*Q <sub>5</sub> )	9:4 19.7		d (in)	4	Sec 9.3.5
. (kips) . (kips) 1.(Q <sub>0</sub> + Q <sub>1</sub> +0.2*Q <sub>5</sub> ) 9(Q <sub>0</sub> )	9.4 19.7 3.7	Eq. 7-1 Eq. 7-2	d (in) a (in)	0.4	Sec 9.3.5
(kips) (kips) (kips) ((kips) ((Q <sub>0</sub> + Q <sub>1</sub> + 0.2 * Q <sub>3</sub> ) ((Q <sub>0</sub> ) ((Q <sub>0</sub> ) ((q <sub>0</sub> ))	04 10.7 €.7 3.3		d (in)	4	Sec 9.3.5
$\{kips\}$ $\{kips\}$ $\{Q_0 + Q_1 + 0.2 \cdot Q_2\}$ $\{Q_0\}$ $\{Q_0\}$ $\{q_0\}$ $\{q_0\}$ $\{q_1\}$ $\{q_1\}$ $\{q_1\}$ $\{q_2\}$ $\{q_1\}$	9.4 19.7 3.7	Eq. 7-2	d (in) a (in) Mn (kip*ft)	4 0,4 6.7	
(kips) (kips) 1(Q <sub>0</sub> + Q <sub>1</sub> + 0.2*Q <sub>2</sub> ) 9(Q <sub>0</sub> ) 9(Q <sub>0</sub> ) 1(Q <sub>0</sub> + Q <sub>1</sub> + 0.2*Q <sub>2</sub> ) 1(Q <sub>0</sub> + Q <sub>1</sub> + Q <sub>2</sub> ) 1(Q <sub>0</sub> + Q <sub>1</sub> + Q <sub>2</sub> ) 1(Q <sub>0</sub> + Q <sub>1</sub> + Q <sub>2</sub> ) 1(Q <sub>0</sub> + Q <sub>1</sub> + Q <sub>2</sub> ) 1(Q <sub>0</sub> + Q <sub>1</sub> + Q <sub>2</sub> ) 1(Q <sub>0</sub> + Q <sub>1</sub> + Q <sub>2</sub> ) 1(Q <sub>0</sub> + Q <sub>1</sub> + Q <sub>2</sub> ) 1(Q <sub>0</sub> + Q <sub>2</sub> + Q <sub>2</sub> ) 1(Q <sub>0</sub> + Q <sub>1</sub> + Q <sub>2</sub> ) 1(Q <sub>0</sub> + Q <sub>2</sub> + Q <sub>2</sub> ) 1(Q <sub>0</sub> + Q <sub>1</sub> + Q <sub>2</sub> ) 1(Q <sub>0</sub> + Q <sub>2</sub> + Q <sub>2</sub> ) 1(Q <sub>0</sub> + Q <sub>1</sub> + Q <sub>2</sub> ) 1(Q <sub>0</sub> + Q <sub>2</sub> + Q <sub>2</sub> ) 1(Q <sub>0</sub> + Q <sub>1</sub> + Q <sub>2</sub> ) 1(Q <sub>0</sub> + Q <sub>2</sub> + Q <sub>2</sub> ) 1(Q <sub>0</sub> + Q <sub>1</sub> + Q <sub>2</sub> ) 1(Q <sub>0</sub> + Q <sub>2</sub> + Q <sub>2</sub> ) 1(Q <sub>0</sub> + Q <sub>2</sub> + Q <sub>2</sub> ) 1(Q <sub>0</sub> + Q <sub>2</sub> + Q <sub>2</sub> ) 1(Q <sub>0</sub> + Q <sub>2</sub> + Q <sub>2</sub> ) 1(Q <sub>0</sub> + Q <sub>2</sub> + Q <sub>2</sub> ) 1(Q <sub>0</sub> + Q <sub>2</sub> + Q <sub>2</sub> ) 1(Q <sub>0</sub> + Q <sub>2</sub> + Q <sub>2</sub> ) 1(Q <sub>0</sub> + Q <sub>2</sub> + Q <sub>2</sub> ) 1(Q <sub>0</sub> + Q <sub>2</sub> + Q <sub>2</sub> ) 1(Q <sub>0</sub> + Q <sub>2</sub> + Q <sub>2</sub> ) 1(Q <sub>0</sub> + Q <sub>2</sub> + Q <sub>2</sub> ) 1(Q <sub>0</sub> + Q <sub>2</sub> + Q <sub>2</sub> ) 1(Q <sub>0</sub> + Q <sub>2</sub> + Q <sub>2</sub> ) 1(Q <sub>0</sub> + Q <sub>2</sub> + Q <sub>2</sub> ) 1(Q <sub>0</sub> + Q <sub>2</sub> + Q <sub>2</sub> ) 1(Q <sub>0</sub> + Q <sub>2</sub> + Q <sub>2</sub> ) 1(Q <sub>0</sub> + Q <sub>2</sub> + Q <sub>2</sub> ) 1(Q <sub>0</sub> + Q <sub>2</sub> + Q <sub>2</sub> ) 1(Q <sub>0</sub> + Q <sub>2</sub> + Q <sub>2</sub> ) 1(Q <sub>0</sub> + Q <sub>2</sub> + Q <sub>2</sub> ) 1(Q <sub>0</sub> + Q <sub>2</sub> + Q <sub>2</sub> ) 1(Q <sub>0</sub> + Q <sub>2</sub> + Q <sub>2</sub> ) 1(Q <sub>0</sub> + Q <sub>2</sub> + Q <sub>2</sub> ) 1(Q <sub>0</sub> + Q <sub>2</sub> + Q <sub>2</sub> + Q <sub>2</sub> ) 1(Q <sub>0</sub> + Q <sub>2</sub> + Q <sub>2</sub> + Q <sub>2</sub> ) 1(Q <sub>0</sub> + Q <sub>2</sub> ) 1(Q <sub>0</sub> + Q <sub>2</sub> + Q	04 10.7 €.7 3.3		d (in) a (in)	4 0.4 6.7 02-13 Sec 9,3.5 & ASCE 4	11-13 Section 11,3.5>7.2.11
L (kips) (kips) $1(Q_0 + Q_L + 0.2^*Q_{\tilde{S}})$ $9(Q_0)$ $1(Q_0 + Q_L + 0.2^*Q_{\tilde{S}})$ $1(Q_0 + Q_L + 0.2^*Q_{\tilde{S}})$ $1(Q_0)$ $1(Q_0 + Q_L + Q$	0.4 19.7 8.7 3.3 2.04-29705	Eq. 7-2	d (in) a (in) Mn (kip*ft)  Out-Of-Plane Demands TMS 40	4 0.4 6.7 02-13 Sec 9.3.5 & ASCE 4	
$ \begin{array}{l} (kips) \\ (kips) \\ I(Q_0 + Q_1 + 0.2^*Q_3) \\ I(Q_0)	0.4 10.7 8.7 3.3 20.04-29705 0.0	Eq. 7-2 About Centroid of Wall	d (in) a (in) Mn (kip*ft)  Out-Of-Plane Demands TMS 40 X Sxs,1E	4 0.4 6.7 02-13 Sec 9.3.5 & ASCE 4 1.3 0.71	11-13 Section 11.3.5>7.2.11 ASCE 41-13, Table 7-2, LS
$\{kips\}$ $\{kips\}$ $\{Q_0 + Q_1 + Q_2 + Q_3\}$ $\{Q_0\}$ $\{Q_0\}$ $\{q_0\}$	#34 10.7 \$3.3 3.3 20.04.99705 Wall Demands 10.7	Eq. 7-2 About Centroid of Wall Eq. 7-34	d (in) a (in) Mn (kip*ft)  Out-Of-Plane Demands TMS 40 X Sxs,1E h (ft)	4 0.4 6.7 02-13 Sec 9.3.5 & ASCE 4 1.3 0.71 14	II-13 Section 11,3.5>7.2.11 ASCE 41-13, Table 7-2, LS Full Wall Height
(kips) (kips) $1(Q_0 + Q_1 + Q_2 + Q_3)$ $9(Q_0)$ Pear/Unit Length (kip/ft)  (all Shear (Q_1) (kips)  (oment Generated from Holdown (kip*ft)  (kips) (kips)	#0.4 #0.77 #0.7 #0.3 #0.04.89/65 #0.0 Wall Demands #0.7 6.7	Eq. 7-2 About Centroid of Wall	d (in) a (in) Mn (kip*ft)  Dut-Of-Plane Demands TMS 40  X  Sxs, 1E h (ft) w (psf)	4 0.4 6.7 12-13 Sec 9.3.5 & ASCE 4 1.3 0.71 14 100.0	II-13 Section 11,3.5->7.2.11 ASCE 41-13, Table 7-2, LS Full Wall Height Elevation Wall Unit Weight
L (kips) ( (kips) ( (kips) ( (kips) ( (kips) ( (kips) ( (kips) ( (kips) ( (kips) ( (kips) ( (kips) ( (kips) ( (kips) ( (kips) ( (kips) ( (kips) ( (kips) ( (kips) ( (kips)	### ##################################	Eq. 7-2 About Centroid of Wall Eq. 7-34	d (in) a (in) Mn (kip*ft)  Out-Of-Plane Demands TMS 40  X  Sxs, 1E h (ft) w (pst) Fp*L (pift)	4 0.4 6.7 92-13 Sec 9.3.5 & ASCE 4 1.3 0.71 14 100.0 295.4	II-13 Section 11.3.5->7.2.11 ASCE 41-13, Table 7-2, LS Full Wall Height Elevation Wall Unit Weight ASCE 41-13, Eq. 7-13
(kips) (kips) (kips) ((Q <sub>0</sub> + Q <sub>1</sub> + 9.2 * Q <sub>3</sub> ) ((Q <sub>0</sub> ) ((Q <sub>0</sub> ) ((Q <sub>0</sub> ) ((Q <sub>0</sub> ) ((kips)	#0.4 #0.77 #0.7 #0.3 #0.04.89/65 #0.0 Wall Demands #0.7 6.7	Eq. 7-2 About Centroid of Wall Eq. 7-34	d (in) a (in) Mn (kip*ft)  Out-Of-Plane Demands TMS 40  X Sxs,1E h (ft) w (psf) Fp*L (plf) Fp min*L (plf)	4 0.4 6.7 22-13 Sec 9.3.5 & ASCE 4 1.3 0.71 14 100.0 295.4 104.0	II-13 Section 11,3.5->7.2.11 ASCE 41-13, Table 7-2, LS Full Wall Height Elevation Wall Unit Weight
(kips) (kips) (kips) (lQ <sub>0</sub> + Q <sub>L</sub> +0.2*Q <sub>S</sub> ) (lQ <sub>0</sub> ) ear/Unit Length (kip/ft) all Shear (Q <sub>L</sub> ) (kips) oment Generated from Holdown (kip*ft) kips) kips) kips) kips) (kip*ft)	#34 10.77 \$3 3.3 20.04.99/05 5.6 Wall Demands 10.7 5.7 20.04.99/06 373.0	Eq. 7-2  About Centroid of Wall  Eq. 7-34 Eq. 7-34	d (in) a (in) Mn (kip*ft)  Out-Of-Plane Demands TMS 40  X. Sxs, 1E h (ft) w (psf) Fp*L (plf) Fp min*L (plf) Mu,o (kip*ft)	4 0.4 6.7 72-13 Sec 9.3.5 & ASCE 4 1.3 0.71 14 100.0 295.4 104.0 7.24	II-13 Section 11.3.5->7.2.11 ASCE 41-13, Table 7-2, LS Full Wall Height Elevation Wall Unit Weight ASCE 41-13, Eq. 7-13
(kips) (kips) (kips) (t(Q <sub>0</sub> + Q <sub>L</sub> +0.2*Q <sub>S</sub> ) (t(Q <sub>0</sub> ) + Q <sub>L</sub> +0.2*Q <sub>S</sub> ) ear/Unit Length (kip/ft) all Shear (Q <sub>L</sub> ) (kips) oment Generated from Holdown (kip*ft) kips) kips) kips) kips) (kip*ft)	#0.4 #0.7 #0.7 #0.3 #0.4-89766 #0.7 #0.7 #0.7 #0.7 #0.857766 #0.9000 Output State Stat	Eq. 7-2  About Centrold of Wall  Eq. 7-34  Eq. 7-34	d (in) a (in) Mn (kip*ft)  Out-Of-Plane Demands TMS 40  X  Sxs,1E h (ft) w (psf) Fp*L (plf) Fp _ min*L (plf) Mu_o (kip*ft) n	4 0.4 6.7 12-13 Sec 9.3.5 & ASCE 4 1.3 0.71 14 100.0 295.4 104.0 7.24 39.8	II-13 Section 11.3.5->7.2.11 ASCE 41-13, Table 7-2, LS Full Wall Height Elevation Wall Unit Weight ASCE 41-13, Eq. 7-13
(kips) (kips) (kips) ((Q <sub>0</sub> + Q <sub>1</sub> + 9.2*Q <sub>3</sub> ) ((Q <sub>0</sub> ) ((Q <sub>0</sub> ) ((Q <sub>0</sub> ) ((Q <sub>0</sub> ) ((kips)	#3.4 #3.7 #3.7 #3.3 #3.4 #3.429765 #5.0 Wall Demands #5.7 #5.7 #5.45456766 #323.0 ound Vertical Compressive Stri	Eq. 7-2  About Centroid of Wall  Eq. 7-34  Eq. 7-34  Table 6-1	d (in) a (in) Mn (kip*ft)  Out-Of-Plane Demands TMS 40  X  Sxs, 1E h (ft) w (ps1) Fp*t (pif) Fp _min*t (pif) Mu,o (kip*ft) n  tsp (in)	4 0.4 6.7 02-13 Sec 9.3.5 & ASCE 4 1.3 0.71 14 100.0 295.4 104.0 7.24 39.8 8	11-13 Section 11.3.5->7.2.11 ASCE 41-13, Table 7-2, LS Full Wall Height Elevation Wall Unit Weight ASCE 41-13, Eq. 7-13 ASCE 41-13, Eq. 7-14
(kips) (kips)  ((iQ <sub>0</sub> + Q <sub>1</sub> + 0.2*Q <sub>3</sub> )  ((Q <sub>0</sub> + Q <sub>1</sub> + 0.2*Q <sub>3</sub> )  ((Q <sub>0</sub> + Q <sub>1</sub> + 0.2*Q <sub>3</sub> )  ((Q <sub>0</sub> + Q <sub>1</sub> + Q <sub>2</sub> )  ((a) Shear (Q <sub>1</sub> ) (kips)  ((a) Shear (Q <sub>1</sub> ) (kips)  ((a) Shear (Q <sub>1</sub> ) (kips)  ((b) Shear (Q <sub>1</sub> ) (kips)  ((c) Shear (Q <sub>1</sub> ) (kips)  ((	### 19.7  ### 3.3  ##	Eq. 7-2  About Centrold of Wall  Eq. 7-34  Eq. 7-34	d (in) a (in) Win (kip*ft)  Out-Of-Plane Demands TMS 40  X Sxs,1E h (ft) w (ps!) Fp*L (pif) Fp _min*L (pif) Mu,o (kip*ft) n tsp (in) c (in)	4 0.4 5.7 22-13 Sec 9.3.5 & ASCE 4 1.3 0.71 14 100.0 295.4 104.0 7.24 39.8 8	II-13 Section 11.3.5>7.2.11  ASCE 41-13, Table 7-2, LS  Full Wall Height Elevation Wall Unit Weight ASCE 41-13, Eq. 7-13  ASCE 41-13, Eq. 7-14  TMS 402-13, Eq. 9-35
(kips) (kips) ((kips) ((kips) ((Q <sub>0</sub> + Q <sub>1</sub> + Q <sub>2</sub> + Q <sub>3</sub> ) ((Q <sub>0</sub> + Q <sub>1</sub> + Q <sub>2</sub> + Q <sub>3</sub> ) ((Q <sub>0</sub> + Q <sub>1</sub> + Q <sub>2</sub> ) ((all Shear (Q <sub>4</sub> ) (kips) ((kips)	### ##################################	Eq. 7-2  About Centroid of Wall  Eq. 7-34  Eq. 7-34  ength Table 6-1  Weak Axis Radius of Gyration	d (in) a (in) A (in) Mn (kip*ft)  **Dut-Of-Plane Demands TMS 40  X  Sxs,1E h (ft) w (psf) Fp*L (plf) Fp_min*L (plf) Mu_o (kip*ft) n  tsp (in) c (in) leff = (cr (in^4)	4 0.4 6.7 72-13 Sec 9.3.5 & ASCE 4 1.3 0.71 14 100.0 295.4 104.0 7.24 39.8 8 8 0.5 265	II-13 Section 11,3.5->7.2.11 ASCE 41-13, Table 7-2, LS Full Wall Height Elevation Wall Unit Weight ASCE 41-13, Eq. 7-13 ASCE 41-13, Eq. 7-14 TMS 402-13, Eq. 9-35 TMS 402-13, Eq. 9-34
(kips) (kips) (kips) (kips) ((Q <sub>0</sub> + Q <sub>1</sub> + 0.2 * Q <sub>3</sub> ) ((Q <sub>0</sub>	### 10.74 ### 10.77 ### 3.3 ### 3.3 ### 20.04.29/66 #### 10.77 ### 6.5.77 ### 6.5.5.72 #### 20.0000 #### 20.0000 #### 20.000000 #### 20.00000000000000000000000000000000	Eq. 7-2  About Centroid of Wall  Eq. 7-34  Eq. 7-34  Table 6-1	d (in) a (in) A (in) Mn (kip*ft)   Out-Of-Plane Demands TMS 40  X  Sxs, 1E h (ft) w (psf) Fp*L (plf) Fp min*L (plf) Mu,o (kip*ft) n  tsp (in) leff = (cr (in*4) Pe (kips)	4 0.4 5.7 22-13 Sec 9.3.5 & ASCE 4 1.3 0.71 14 100.0 295.4 104.0 7.24 39.8 8	II-13 Section 11.3.5>7.2.11  ASCE 41-13, Table 7-2, LS  Full Wall Height Elevation Wall Unit Weight ASCE 41-13, Eq. 7-13  ASCE 41-13, Eq. 7-14  TMS 402-13, Eq. 9-35
(kips) (kips) (kips) (kips) (lQ <sub>0</sub> + Q <sub>1</sub> + Q <sub>2</sub> * Q <sub>3</sub> ) (lQ <sub>0</sub> ) (logar/Unit Length (kip/ft) (lall Shear (Q <sub>2</sub> ) (kips) (loment Generated from Holdown (kip*ft) (kips) (kips) (kips) (kips) (kips) (kip*ft)  Lower-Bo	### ##################################	Eq. 7-2  About Centroid of Wall  Eq. 7-34  Eq. 7-34  ength Table 6-1  Weak Axis Radius of Gyration	d (in) a (in) A (in) Mn (kip*ft)  **Dut-Of-Plane Demands TMS 40  X  Sxs,1E h (ft) w (psf) Fp*L (plf) Fp_min*L (plf) Mu_o (kip*ft) n  tsp (in) c (in) leff = (cr (in^4)	4 0.4 6.7 72-13 Sec 9.3.5 & ASCE 4 1.3 0.71 14 100.0 295.4 104.0 7.24 39.8 8 8 0.5 265	II-13 Section 11,3.5->7.2.11 ASCE 41-13, Table 7-2, LS Full Wall Height Elevation Wall Unit Weight ASCE 41-13, Eq. 7-13 ASCE 41-13, Eq. 7-14 TMS 402-13, Eq. 9-35 TMS 402-13, Eq. 9-34
(kips) (kips) (kips) (kips) (lQ <sub>0</sub> + Q <sub>1</sub> + 0.2 * Q <sub>3</sub> ) (lQ <sub>0</sub> + Q <sub>1</sub> + 0.2 * Q <sub>3</sub> ) (lQ <sub>0</sub> + Q <sub>1</sub> + Q <sub>2</sub> ) (lQ <sub>0</sub> + Q <sub>1</sub> + Q <sub>2</sub> ) (lQ <sub>2</sub> + Q <sub>3</sub> ) (lQ <sub>1</sub> + Q <sub>2</sub> ) (lQ <sub>2</sub> + Q <sub>3</sub> ) (lQ <sub>2</sub> + Q <sub>3</sub> ) (lQ <sub>3</sub> + Q <sub>3</sub>	### 10.74 ### 10.77 ### 3.3 ### 3.3 ### 20.04.29/66 #### 10.77 ### 6.5.77 ### 6.5.5.72 #### 20.0000 #### 20.0000 #### 20.000000 #### 20.00000000000000000000000000000000	Eq. 7-2  About Centroid of Wall  Eq. 7-34  Eq. 7-34  ength Table 6-1  Weak Axis Radius of Gyration	d (in) a (in) A (in) Mn (kip*ft)  Out-Of-Plane Demands TMS 40  X  Sxs,1E h (ft) w (pst) Fp*L (pif) Fp min*L (pif) Mu,o (kip*ft) n  tsp (in) c (in) leff = icr (in*4) Pe (kips) y	4 0.4 6.7 12-13 Sec 9.3.5 & ASCE 4 1.3 0.71 14 100.0 295.4 104.0 7.24 39.8 8 0.5 265 68	II-13 Section 11.3.5->7.2.11  ASCE 41-13, Table 7-2, LS  Full Wall Height Elevation Wall Unit Weight ASCE 41-13, Eq. 7-13  ASCE 41-13, Eq. 7-14  TMS 402-13, Eq. 9-35  TMS 402-13, Eq. 9-34  TMS 402-13, Eq. 9-33  TMS 402-13, Eq. 9-32
. (kips) ((kips) ((kip	### 19.4	Eq. 7-2  About Centroid of Wall  Eq. 7-34  Eq. 7-34  Table 6-1  Weak Axis Radius of Gyration  TMS 402-13, Eq. 9-19, Eq. 9-20	d (in) a (in) A (in) Mn (kip*ft)   Out-Of-Plane Demands TMS 40  X  Sxs, 1E h (ft) w (psf) Fp*L (plf) Fp min*L (plf) Mu,o (kip*ft) n  tsp (in) leff = (cr (in*4) Pe (kips)	4 0.4 6.7 02-13 Sec 9.3.5 & ASCE 4 1.3 0.71 14 100.0 295.4 104.0 7.24 39.8 8 0.5 68 1.188	II-13 Section 11.3.5->7.2.11  ASCE 41-13, Table 7-2, LS  Full Wall Height Elevation Wall Unit Weight ASCE 41-13, Eq. 7-13  ASCE 41-13, Eq. 7-14  TMS 402-13, Eq. 9-35  TMS 402-13, Eq. 9-34  TMS 402-13, Eq. 9-34
L (kips) L (kips) L (kips) L (kips) (J(Q <sub>0</sub> + Q <sub>1</sub> + 0.2 * Q <sub>3</sub> ) 9(Q <sub>0</sub> ) hear/Unit Length (kip/ft) //all Shear (Q <sub>0</sub> ) (kips) foment Generated from Holdown (kip*ft) (kips)	#0.4 #0.7 #0.7 #0.3 #0.4.89766 #0.6 #0.6 #0.7 #0.7 #0.6459786 #0.250 #0.000	Eq. 7-2  About Centroid of Wall  Eq. 7-34  Eq. 7-34  Table 6-1  Weak Axis Radius of Gyration  TMS 402-13, Eq. 9-19, Eq. 9-20	d (in) a (in) a (in) Mn (kip*ft)  Out-Of-Plane Demands TMS 40  X  Sxs, 1E h (ft) w (ps1) Fp*L (pif) Fp _min*L (pif) Mu,o (kip*ft) n tsp (in) c (in) leff = tcr (in*4) Pe (kips)  Y  **Mu,o (kip*ft)	4 0.4 6.7 02-13 Sec 9.3.5 & ASCE 4 1.3 0.71 14 100.0 295.4 104.0 7.24 39.8 8 0.5 68 1.188	II-13 Section 11.3.5->7.2.11 ASCE 41-13, Table 7-2, LS Full Wall Height Elevation Wall Unit Weight ASCE 41-13, Eq. 7-13 ASCE 41-13, Eq. 7-14  TMS 402-13, Eq. 9-35 TMS 402-13, Eq. 9-34 TMS 402-13, Eq. 9-32 TMS 402-13, Eq. 9-32 TMS 402-13, Eq. 9-31

728 134th Street SW - Suite 200 Everett, Washington 98204 Ph: 425 741-3800 Fax: 425 741-3900 Client: Project: Project No: JJ 12/18/2019

	Legend		De	termine FC vs DC Table 11-6	
Input			Mu/(Vudv)	0.15	
Calculated			у	1.0	#5 Bars or smaller
DCR/Check			Vn (kips) upperbound	131	TMS 402-13, Eq. 9-22
			Vn (kips) upperbound		TMS 402-13, Eq. 9-23
	General Inputs		Vnm (kip)	83.8	TMS 402-13, Sec 9.3.4.1.2.1
Pier ID	Grid 575 either wall		Vn (kip)	83.8	TMS 402-13, Equation 9-21
ocation/Gridline	575		Holdown Anchor Rod As (in^2)	0.31	At one wall end
'm (psi)	810	Table 11-2(a)	a (in)	2.4	
(ksi)	729	TMS 402-13, Sec 4.2.2.2.1	Distance from Edge of Wall to Rod (in)	4	1
me (psi)	1053	Table 11-1	d (in)	92	
y (ksi)	40		Mn (kip*ft)	160	
ye (ksi)	52		Ve (kip)	11	
s (ksi)	29000		Shear vs. Flexure Control	Flexure Control	
Masonry Denisty (pcf)	125		An (in^2)	768	
Vorninal Pier Length (ft)	8		f <sub>au</sub> (psi)	13.9	
ier Height (H)	14.00		Shear vs. Force Controlled	NA:	
Vall thickness (in)	8				
oof Trib (SF)	16			ermine m-factors Table 11-6	
oof DL (psf)	20		fae/fme	0.013	
oof SL (psf)	25		L/heff	0.57	MACH AND AND AND AND AND AND AND AND AND AND
Aezz Trib (SF)	0		As (in^2)	0.31	Total Vertical Reinforcement
dezz DL (psf)	0		ρ,	0.00040	
dezz LL (psf)	0		Av (in^2)	0.3	Total Vertical Reinforcement
nd FLR Trib (SF)	0		Ph.	0.0002	
nd FLR DL (psf)	35		p <sub>e</sub> fye/fme	0.031	
nd FLR LL (psf)	40		m-factor	6.9	
hearline Tot Shear (kips)	507.6	BSE-2E	m-factor restriction	7	
hearline Tot Length (ft)	98	Date at	m-factor used	6.9	
Applicable Wall Trib Length (ft)	8		in races apea	0.5	
eismic Axial Load (kips)	0.0	Holdown Force From Wall Above		Deformation Control DCRs	
foldown to Wall Centroid (ft)	0.0	110000011130111301113011111111111111111	Shear DCR	9.07	
O, LS, CP	CP		Moment DCR	0.51	
				711	
	General Calculation			Force Control DCRs	
Vall Self-Weight (kips)	93		Shear DCR		
DL (kips)	0.3	Super-imposed DL @ Top of Wall	Moment DCR		
L (kips)	(8-0)		- Note that the same that the		
L (kips)	10.4		Out-Of-Pl	one Capacity TMS 402-13, Se	c 9.3.5
.1(Q <sub>0</sub> + Q <sub>1</sub> +0.2*Q <sub>5</sub> )	46.7	Eq. 7-1	d (in)	4	
.9(Q <sub>n</sub> )	3.7	Eq. 7-2	a (in)	0.4	
hear/Unit Length (kip/ft)	5.2	388.00	Mn (kip*ft)	6.7	
Vall Shear (Q <sub>E</sub> ) (kips)	41,19678199		Low Wile 10	noy.	
The second secon	92.9	About Control of Util	0.4 0/0 0. 1	403 13 Coa 0 3 C 0 4000 44	12 Continu 11 2 C . 2 2 4
forment Generated from Holdown (kip*ft)	55.00	About Centroid of Wall	Out-Of-Plane Demands TMS		ASCE 41-13, Table 7-2, CP
	Walt Downson		X Sxs,1E	1.11	ASCC 41-13, 100le 7-2, CP
(hime)	Wall Demands	Fo. 2.24			Cult Mail Malaba
(kips)	1.7 H.7	Eq. 7-34	h (ft)	14	Full Wall Height
(kips)	40,48673469	Eq. 7-34	w (psf)	100.0 355.2	Elevation Wall Unit Weight
(kips)	95,486,73469 980.1		Fp*L (plf)		ASCE 41-13, Eq. 7-13 ASCE 41-13, Eq. 7-14
(kip*ft)	380 L		Fp_min*L(pit)	80.0 8.70	ASCE 41-13, Eq. /-14
Course	Bound Vertical Compressive St.	reaath	Mu <sub>s</sub> o (kip*ft)	39.8	
Lower	Bound Vertical Compressive St	Table 6-1	ten (in)	8	
in	0)548	Weak Axis Radius of Gyration	tsp (in)	0.5	TMS 402-13, Eq. 9-35
in)	250	AAGRA WARD WRITING OF CALLICUL	c (in) leff = Icr (in^4)	265	TMS 402-13, Eq. 9-35
r man		TAKE 403 43 F- 0 40 F- 0 22			
(kip)	-24	TMS 402-13, Eq. 9-19, Eq. 9-20	Pe (kips)	68	TMS 402-13, Eq. 9-33
P <sub>Cs</sub> (kip)	24		Ψ	1.188	TMS 402-13, Eq. 9-32
	2	LS	*PMu,o (kip*ft)	10.34	TMS 402-13, Eq. 9-31
ic,	1.1				
	2.70		120		0
Q+(Q <sub>1</sub> )/(JC1C2) (kip)	10.7		Out	-Of-Plane DCR, Sec 11.3.5.3	

Client RFM Project 900 BLDG

Design by TOT

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Date

Project No. 262019.034

CONC. SW CHECK

GRID S 40

LU- 16ft t= 8110 #5@ D"O.C. EA WAY

BSE-1E(LS) = 326.4 K 674.6 K

BSE-DE (CP) = 507,6 1049.14

h = 14 -0" fc = fc = 4000 psi fy = fy = 60,000 psi

fice = 1.5. 4000psi = 6000psi

fye = 1,25. 60,000psi = 75,000psi

Vuo (BSE-1E) = 674.6k Muo (BSE-1E) = 9,444.4 K-FT

Vuo (BSE-JE) = 1049.1K Mud(BSE-JE) = 14,687.4 K-FT

Acv = (16'·12"/4) × 8" = 1536102

hw/1w = 28/16' = 1.75 & = 2.5 S=1.0

PE = (0,31 x 2)/121N/81N = 0.0065

Vn = 1536, N2 [ 25.1. V 6000151 +0.0065(75,000ps: ]

= 1,046.2kips (10) Acp J&c = 10.1536, 2 VEODE = 1,189.8Kips

VEE = Un = 1,046.2K

DCRV (BSE-1E) = 674.62 - 0.64

D(R U (BSE-2E) = 1049,1K = 1,00

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RFM

Project 980 BLDG

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DCRm = Mus/McE

TRIB AREA = (10A × 16ft) = 160ft

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Project 900 BLL6,

Design by **JDJ**Date **13** - 19 - 19

Sheet \_\_\_\_\_ of \_

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CONC. SW GRID E 100 Lw=161 tw= 8" (2)#5012"o.c. EA WAY BSE-1= (LS) = 595,2K BSEDE (CA) = 925.64 h = 14'.0" fd = fc = 4000psi fg1 = fg = 60,000psi fce = 1.5. 4000 psi = 6000psi fire = 1,25.60,000psi = 75,000psl VUD (BS E-1E) = 595,2k MUD (BSE-1E) = 8332,8 K-FT VUDIBSE-ZE) = 925.6K MUD(BSE-ZE) = 12,958.4K-FT Acu = (16' · 12"/4) x 8" = 15361N2 hw/1 = 14/6' = 0,875 de = 3,0 L=1.0 PE = (0,31x2)/12,N/8,N = 0,0065 Un = 1536, No [ 3.0.1. 1600ps: + 0.0065 (75,000ps:)] = 1,105.7K (10) ACP VFZ = 10.1536m2 VEOCOST = 1189.8K VCE = Un = 1105.7K DCRU (BSE-1E) = 595.2K = 0,54

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DCRV (BSE-2E) = 925.6k = 0,84

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Date

DCRM = Mub/MeB

Pg = 1.1(Qb + QL + Qs) PG = 0.9.Qb

TRIB AREA = 160ft<sup>2</sup>

Qb = 31.2L

QL = 1.6k

QS = 0

PGMIN = 1.1 (31,2K + 1.6K) = 36.1K PGMAK = 0.9(31,2K) = 28.1K

 $\phi_{IN}_{n} = 7232 \, k\text{-FT} \quad (PER SPCOL w/# 60 12'0.c.)$   $D(Rm (BSE-1E) = \frac{8332.8 k\text{-FT} = 2}{7232 \, k\text{-FT}} = 0.58$   $D(Rm (BSE-2E) = \frac{12.958.4 k\text{-FT} = 2.5}{7232 \, k\text{-PT}} = 0.72$ 

OK

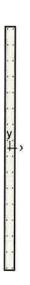
:. USE 2- CURTAINS OF #6 012" ...

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spColumn v6.00

Computer program for the Strength Design of Reinforced Concrete Sections
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	Factored Loads and Moments with Corresponding Capacities	. 5
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	ist of Figures	
Fig	jure 1: Column section	4

### 1. General Information

File Name	untitled.col	
Project	900 BLDG	
Column	SW S40	
Engineer	JDJ	
Code	ACI 318-14	
Bar Set	ASTM A615	
Units	English	
Run Option	Investigation	
Run Axis	X - axis	
Slenderness	Not Considered	
Column Type	Structural	

## 2. Material Properties

#### 2.1. Concrete

Туре	Standard
f <sub>c</sub>	4 ksi
E <sub>c</sub>	3605 ksi
f <sub>c</sub>	3.4 ksi
ε <sub>υ</sub>	0.003 in/i
β <sub>1</sub>	0.85

#### 2.2. Steel

Туре	Standard
f <sub>y</sub>	75 ksi
Es	29000 ksi
Ε <sub>yl</sub>	0.00258621 in/i

#### 3. Section

#### 3.1. Shape and Properties

Туре	Rectangular	
Width	8	in
Depth	192	in
Ag	1536	in <sup>2</sup>
l <sub>x</sub>	4.71859e+006	in <sup>4</sup>
l <sub>y</sub>	8192	in <sup>4</sup>
r <sub>x</sub>	55.4256	in
Г <sub>у</sub>	2.3094	in
X <sub>o</sub>	0	in
Yo	0	in

#### 3.2. Section Figure

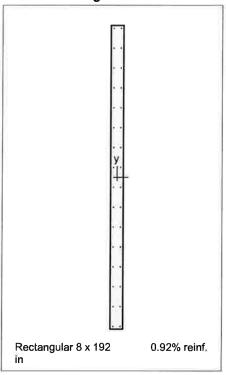


Figure 1: Column section

### 4. Reinforcement

#### 4.1. Bar Set: ASTM A615

Bar	Diameter	Area	Bar	Diameter	Агеа	Bar	Diameter	Area
	in	in²		in	in <sup>2</sup>		in	in <sup>2</sup>
#3	0.38	0.11	#4	0.50	0.20	#5	0.63	0.31
#6	0.75	0.44	#7	0.88	0.60	#8	1.00	0.79
#9	1.13	1.00	#10	1.27	1.27	#11	1.41	1.56
#14	1.69	2.25	#18	2.26	4.00			

#### 4.2. Confinement and Factors

Confinement type	Other
For #10 bars or less	#3 ties
For larger bars	#4 ties
9	
Capacity Reduction Factors	
Axial compression, (a)	1
Tension controlled φ, (b)	1
Compression controlled $\phi$ , (c)	1

#### 4.3. Arrangement

Pattern	Equal spacing	
Bar layout	Rectangular	
Cover to	Transverse bars	
Clear cover	1	in
Bars	32 #6	

Total steel area, A <sub>s</sub>	14.08 in <sup>2</sup>
Rho	0.92 %
Minimum clear spacing	3.75 in

(Note: Rho < 1.0%)

5. Factored Loads and Moments with Corresponding Capacities

No	Pu	M <sub>ux</sub>	фМ <sub>пх</sub>	φM <sub>n</sub> /M <sub>u</sub>	NA Depth	d <sub>t</sub> Depth	ει	ф
	kip	k-ft	k-ft		in	in		
1	36.10	5875.00	7409.54	1.261	31.20	190.25	0.01529	1.000

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Sheet of

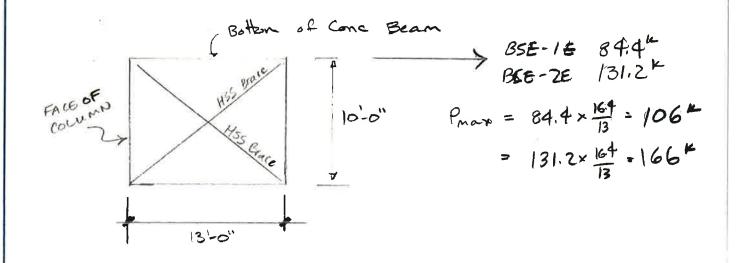
Design by SES

Date 12/20/19

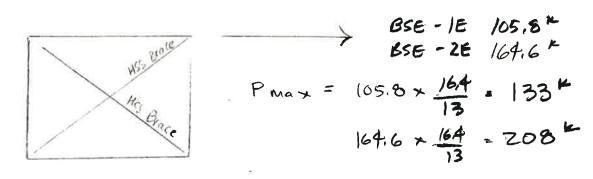
Checked by

Date

# BRACED FRAME - GRID S75



# BRACED FRAME - GRID EO



Damage (entra) (BSE-IE) m = 2.5 tension, 2.5 comp Limited Safety (BSE-ZE) m = 4.8 tension, 4.8 comp Expected brace strugth  $\frac{HSS}{44}\frac{44}{4}=66^{R}$  compression  $66\times m = 2.5 = 166^{R} > 133^{R}$  okay  $66\times m = 4.8 = 317^{R} > 208^{R}$  okay