3H Details and Evaluation Results of Seismic Category 1 Structures

The information in this appendix of the reference ABWR DCD, including all subsections, tables, and figures is incorporated by reference with the following departures and supplement.

STD DEP T1 2.15-1

STP DEP T1 5.0-1

STD DEP 1.8-1

STD DEP 3H-1

STP DEP Admin

3H.1 Reactor Building

3H.1.4.2 Site Design Parameters

STP DEP T1 5.0-1

(1) Soil Parameters:

—Minimum static bearing capacity demand: Š718.20 kPa

—In addition for the load combinations involving seismic/dynamic loads, the dynamic bearing capacity demand shall also be met.

—Minimum shear wave velocity: ~~305 m/s~~(See FSAR Subsections 2.5S.4.4 and 2.5S.4.7)

—Poisson's Ratio: 0.30 to 0.38

—Unit Weight: 1.9 to 2.2 t/m^3

(3) ~~Maximum~~ Design Basis *Flood Level*

~~—0.305 m~~ 182.9 cm *~~below~~* above *grade*

(9) Maximum Rainfall

*—Design rainfall is ~~493~~*503 mm/h. *Roof parapets are furnished with scuppers to supplement roof drains, or are designed without parapets so that excessive ponding of water cannot occur. Such roof design meets the provision of ASCE 7-88 Section 8.*

3H.1.4.4.3 Liner Plate

STD DEP 3H-1

- *Liner plate for RCCV in the wetted area shall be stainless steel conforming to ASME SA-240, Type 304L.*
- *Liner plate for the RCCV in the non-wetted area shall be 6.35 mm thick and conform to ASME SA-516 GR. 70.*
- *Liner Anchors: ~~ASTM A-633 GR. C~~* ASME SA-36.
- *Stainless steel cladding to conform to ASME SA-264.*

3H.1.5.2 Foundation Soil Springs

STP DEP T1 5.0-1

The foundation soil is represented by soil springs. The spring constants for rocking and translations are determined based on the following soil parameters:

- *Shear wave velocity ~~305 m/s~~*(See FSAR Subsections 2.5S.4.4 and 2.5S.4.7)
- *Unit weight ~~1.92 t/m^3~~* 121 pcf (1.94 t/m^3) to 140 pcf (2.24 t/m^3)
- *Shear modulus ~~1.8 x 10^4 t/m^3~~* 3,011 ksf (1.47x10^4 t/m^2) to 9,324 ksf (9.55x10^4 t/m^2)
- *Poisson's Ratio ~~0.38~~* 0.46 to 0.48

The calculated vertical spring constant under the mat foundation of the Reactor Building (RB) for STP site conditions ranges from 132 kips/ft^3 to 288 kips/ft^3 with 197 kips/ft^3 for best estimate case. The calculated horizontal spring constant for the STP site conditions ranges from 94 kips/ft^3 to 211 kips/ft^3 with minimum of 141 kips/ft^3 for best estimate case. The potential degree of variability is indicated by the spread of values from lower range to upper range. The soil properties used to compute these spring constants are strain-compatible and were developed from the site response analyses described in Section 2.5S.2.5. Soil depths for the vertical and horizontal mode spring calculations are 2500 ft and 1300 ft, respectively. Soil layers at depths greater than these depths were ignored due to their insignificant contribution to the spring values.

The calculated STP site-specific soil spring constants are higher than the soil spring constants used for the standard design. Higher soil spring constants at the STP site will result in mat design forces smaller than those used for the ABWR standard design. Therefore, the standard ABWR mat design is adequate for the STP site.

3H.1.6 Site Specific Structural Evaluation

The following site specific supplement addresses the structural evaluation of the site specific design parameters for STP 3 & 4.

As documented in Section 3.3 the ABWR Standard Plant Reactor Building (RB) wind loads, and tornado loads bound these site parameters for STP 3 & 4.

As documented in Subsections 2.5S.4.4 and 2.4S.4.7, the shear wave velocity at STP 3&4 site varies both horizontally in a soil stratum and vertically with elevation, and is lower than the 1,000 ft/sec minimum stated in the DCD. A site specific soil-structure interation (SSI) analysis has been performed using the measured values of shear wave velocity, with appropriate variation to represent the variability at the site, and site specific SSE, to demonstrate that the results of the site-specific SSI are bounded by the standard plant results included in the DCD. This SSI analysis is described in Appendix 3A.

The foundation spring constants for mat design are based on settlement calculations. In the development of settlement estimates, the representative shear wave velocity value for intervals within a soil column is only one input used in the derivation of the elastic modulus for layers within that column. Since this derived elastic modulus value is first adjusted for strain and then weighted with estimated values derived from either SPT tests (for garanular material) or undrained shear strength tests (for cohesive soils) the effect of variability of shear wave velocity upon settlement calculations is significantly attenuated.

Impact of shear wave velocity on foundation spring constants and mat design is described in Section 3H.1.5.2 where it is concluded that the standard ABWR mat design is adequate for the STP site.

As documented in Subsection 3.4, the STP 3 & 4 site has a design basis flood elevation that is 182.9 cm (6 ft) above grade. This results in an increase in the flood level over what was used in the ABWR Standard Plant, however the load due to the revised flood level on the exterior above and below grade RB walls is less than the ABWR Standard Plant RB seismic load, hence it doesn't affect the Standard Plant RB structural design. Increased flood level also increases the buoyancy force resulting in a revised flotation factor of safety of 2.24. This factor exceeds required factor of safety of 1.1.

The factor of safety against floatation has been calculated and is shown in revised Table 3H.1-23.

Therefore the STP 3 & 4 RB utilizing the Standard Plant design is structurally adequate.

3H.2 Control Building

STP DEP T1 5.0-1

3H.2.4.2.1 Soil Parameters

Minimum shear wave velocity:	~~*305 m/s*~~See FSAR Subsections 2.5S4.4 and 2.5S.4.7
Poisson ratio:	*0.3 to 0.38*
Unit weight	*1.9 to 2.2 t/m^3*
Liquefaction potential:	*None*
Minimum Static Soil Bearing Capacity Demand:	*Š 718.20 KPa*

3H.2.4.2.3 Design Basis Flood Level

Design basis *flood level is at ~~0.305m~~* 182.9 cm *~~below~~* above *grade level*.

3H.2.4.2.5 Maximum Rainfall

Design rainfall is ~~493~~ 503 *mm/h. Roof parapets are furnished with scuppers to supplement roof drains, or are designed without parapets so that excessive ponding of water cannot occur. Such roof design meets the provision of ASCE 7-88 Section 8.*

3H.2.4.3.1.4 Lateral Soil Pressures (H and H')

The following parameters are used in the computation of lateral soil pressures:

Dry unit weight:	*1.9 to 2.2 t/m^3*
Shear wave velocity:	~~*305 m/s*~~ See FSAR Subsections 2.5S.4.4 and 2.5S.4.7
Internal friction angle:	*30° to 40°*

3H.2.6 Site Specific Structural Evaluation

The following site specific supplement addresses the structural evaluation of the site specific design parameters for STP 3 & 4.

As documented in Subsection 3.3, the ABWR Standard Plant Control Building (CB), wind loads, and tornado loads bound these site specific parameters for STP 3 & 4.

As documented in Subsections 2.5S.4.4 and 2.5S.4.7, the shear wave velocity at STP 3&4 site varies both horizontally in a soil stratum and vertically with elevation, and is lower than the 1,000 ft/sec minimum stated in the DCD. A site specific soil-structure interaction (SSI) analysis has been performed using the measured values of shear wave velocity, with appropriate variation to represent the variability at the site, and site specfic SSE, to demonstrate that the results of the site-specific SSI are bounded by the standard plant results included in the DCD. This SSI analysis is described in Appendix 3A.

At-rest seismic lateral earth pressure on the Control Building exterior walls are determined using the method described in Section 2.5S.4.10.5.2. In this method, the at-rest seismic lateral earth pressure computation will utilize site-specific shear wave velocity. The impact of site-specific shear wave velocity on the design of exterior walls is expected to be insignificant because their designs are controlled by the combination of requirements for in-plane and out-of-plane loads. The at-rest seismic lateral earth pressure only affects the out-of-plane loads. Also, the at-rest pressure includes the effect of hydrostatic load, surcharge load etc, in addition to the dynamic pressure caused by the earthquake.

As noted in Section 2.5S.4.10.5.4, actual surcharge loads, structural fill properties, and final configurations of structures are not known at this time. Final earth pressure calculations are prepared at the project detailed design stage based on the actual design conditions at each structure, on a case-by-case basis. STP commits to include the final earth pressure calculations, including actual surcharge loads, structural fill properties, and final configuration of structures, following completion of the project detailed design in an update to the FSAR in accordance with 10CFR 50.71(e) (COM 2.5S-3).

As documented in Subsection 3.4, the STP 3 & 4 site has a basis flood elevation that is 182.9 cm (6 ft) above grade. This results in an increase in the flood level over what was used in the ABWR Standard Plant, however the load due to the revised flood level on the exterior above and below grade CB walls is less than the ABWR Standard Plant seismic load, hence it does not affect the Standard Plant CB structural design. Increased flood level also increases the buoyancy force resulting in a revised flotation factor of safety of 1.3. This factor exceeds required factor of safety of 1.1.

The factor of safety against floatation has been calculated and is shown in revised Table 3H.2-5.

Therefore the STP 3 & 4 CB utilizing the Standard Plant design is structurally adequate.

3H.3 Radwaste Building

This section of the reference ABWR DCD including all subsections, figures, and tables is replaced completely. This is due to departures taken in the design of the liquid and solid radioactive waste system.

STD DEP T1 2.15-1
STD DEP 11.2-1
STD DEP 11.4-1
STD DEP 3.8-1

The Radwaste Building is a reinforced concrete structure located about 20 feet west of the Reactor building. It is designed in accordance with the requirements of RG 1.143. Also, since the above grade height of this building exceeds the distance to the Reactor Building, to ensure that the integrity of the Reactor Building is maintained, the

Radwaste Building design shall satisfy II/I requirements (i.e. it can not collapse or come in contact with the Reactor Building under SSE and tornado loads).

The RWB is classified as RW-IIb (Hazardous) in accordance with RG 1.143.

The analysis and design of the Radwaste building are based on the following:

A) Criteria for Design Basis:

- Design basis analysis and design are per requirements of Revision 2 of RG 1.143 for RW-IIb classification.
- Loads, load combinations, codes & standards, and capacity criteria are in accordance with Tables 1, 2, 3, and 4 of RG 1.143.
- Design of structural components is per ACI 349-97 and AISC/N690 (1984).
- Earthquake loading is per ASCE 7-95 Category III.

B) Criteria for II/I evaluation:

- The II/I evaluations are performed for both SSE and Tornado.
- The II/I evaluations are based on elastic design.
- The seismic response spectra are the envelop of 0.3g RG 1.60 response spectra and the resulting SSE response spectra at the foundation level of the Radwaste Building considering the effect of presence of the Reactor Building when subjected to site-specific SSE. This satisfies the requirement noted in item (3) of DCD Tier 2 Section 3.7.2.8.
- Tornado design parameters will be those for the Standard Plant Seismic Category I structures (i.e. 300 mph tornado).

3H.3.1 Objective and Scope

The scope of this subsection is to document the structural design and analysis of the Radwaste Building (RWB) for STP Units 3 & 4. The RWB is a not a Seismic Category I structure. The RWB is classified as RW-IIb (Hazardous) for STP 3 & 4 site per Section 5 of Regulatory Guide (RG) 1.143 Revision 2 and designed to meet or exceed applicable requirements of RG 1.143 Revision 2. Although, the RWB is classified as RW-IIb, it is designed conservatively for earthquake, tornado and wind loadings based on the requirements for RW-IIa classification. Design for other loads is based on the requirements for RW-IIb classification.

Due to its close proximity to safety-related seismic category I structures, the RWB structure is also designed to meet Seismic II/I requirements to ensure that the building does not collapse on the nearby safety-related buildings.

3H.3.2 Summary

The following are the major summary conclusions on the design and analysis of the Radwaste Building:

- The provided concrete reinforcement listed in Tables 3H.3-3 and 3H.3-4 meet the requirements of the design codes and standards listed in Section 3H.3.4.
- The provided structural steel listed in Table 3H.3-5 meets the requirements of the design codes and standards listed in Section 3H.3.4.
- The factors of safety against flotation, sliding, and overturning of the structure under various loading combinations are higher than the required minimum factors of safety as shown in Table 3H.6-14.

3H.3.3 Structural Description

The Radwaste Building (RWB) for each STP unit houses the liquid and solid radwaste treatment and storage facilities, and radwaste processing and handling areas. The RWB is a reinforced concrete structure consisting of walls and slabs supported by a mat foundation. Liquid radwaste storage tanks are housed inside concrete cubicles located below grade at basement level. These cubicles are lined with steel liner plates to eliminate migration of any liquid outside the concrete cubicles. Metal decking supported by steel framing is used as form work to support the slabs during construction.

3H.3.4 Structural Design Criteria

3H.3.4.1 Design Codes and Standards

The RWB is designed to meet the design requirements of RG 1.143 Revision 2 and also satisfy the Seismic II/I requirements that it does not collapse on the adjacent safety related structures in the proximity of the RWB under seismic and tornado loadings. The following codes, standards, and regulatory documents are applicable for the design of the RWB.

- ASCE 4-98, “Seismic Analysis of Safety-Related Nuclear Structures and Commentary”
- ACI 349-97, “Code Requirements for Nuclear Safety-Related Concrete Structures and Commentary”
- ANSI/AISC N690, 1984 “Specifications for the Design, Fabrication and Erection of Steel Safety-Related Structures for Nuclear Facilities”
- AWS D1.1 “Steel Structural Welding Code”, 2000
- ASCE 7-95, “Minimum Design Loads for Buildings and Other Structures”

- NRC RG 1.143, “Design Guidance for Radioactive Waste Management Systems, Structures, and Components Installed in Light-Water-Cooled Nuclear Power Plants,” Rev. 2, November 2001
- NUREG-0800 SRP 3.3.2, “Tornado Loadings,” Rev. 2, July 1981
- NRC RG 1.142, “Safety-Related Concrete Structures for Nuclear Power Plants (Other Than Reactor Vessels and Containments),” Rev 2, November 2001
- NRC RG 1.76, “Design-Basis Tornado and Tornado Missiles for Nuclear Power Plants,” Rev 1, March 2007.

3H.3.4.2 Site Design Parameters

3H.3.4.2.1 Soil Parameters

- Poisson’s ratio (above groundwater).. 0.42
- Poisson’s ratio (below groundwater).. 0.47
- Unit Weight (moist)..120 pcf
- Unit Weight (saturated)..140 pcf
- Liquefaction potential ....None
- Static Soil Bearing Capacity Factor of Safety.. ≥ 9.3
- Dynamic Soil Bearing Capacity Factor of Safety.. ≥ 6.5

3H.3.4.2.2 Design Ground Water Level

Design groundwater level is at elevation 32 feet MSL, as shown in DCD, Tier 1, Table 5.0. This value bounds the groundwater elevations discussed in Section 2.4S.12.

3H.3.4.2.3 Design Flood Level

Design flood level is 33 feet MSL, as shown in DCD, Tier 1, Table 5.0. This flood level is above the level derived from ASCE 7-95 (RG 1.143 requirement) for the STP 3 & 4 site.

3H.3.4.2.4 Maximum Snow Load

Roof snow load is 50 psf (2.39 kPa) as shown in DCD Tier 1 Table 5.0. This snow load is above the value derived from ASCE 7-95 (RG 1.143 requirement) for the STP 3 & 4 site. This load is not combined with normal roof live load.

3H.3.4.2.5 Maximum Rainfall

Design rainfall is 19.4 in/hr (50.3 cm/hr) as shown in COLA Part 2 Tier 1 Table 5.0. This load is not combined with normal roof live load.

3H.3.4.3 Design Load and Load Combinations

The RWB is not subjected to any accident temperature or pressure loading.

3H.3.4.3.1 Normal Loads

Normal loads are those that are encountered during normal plant startup, operation, and shutdown.

3H.3.4.3.1.1 Dead Loads (D)

Dead loads include the weight of the structure, permanent equipment, and other permanent static loads. An additional 50 psf (2.39 kPa) uniform load is considered to account for dead loads due to piping, raceways, grating, and HVAC duct work.

3H.3.4.3.1.2 Live Loads (L)

Live loads include floor and roof area live loads, movable loads, and laydown loads. A minimum normal floor live load of 200 psf (9.6 kPa) is considered for all floors of the RWB. A normal live load of 50 psf (2.39 kPa) is considered for the roof. The floor area live load shall be omitted from areas occupied by equipment whose weight is included in the dead load.

For the computation of global seismic loads, the live load is limited to the expected live load present during normal plant operation which is defined as 25% of the normal floor and roof live loads. However, design of local elements such as beams and slabs is based on consideration of full normal live load.

3H.3.4.3.1.3 Snow Loads

The normal roof snow load is 50 psf. This load is not combined with normal roof live load.

3H.3.4.3.1.4 Lateral Soil Pressures (H)

Lateral soil pressures are calculated using the following soil properties.

- Unit weight (moist):.. 120 pcf (1.92 t/m^3)
- Unit weight (saturated): ....140 pcf (2.24 t/m^3)
- Internal friction angle: ....30°
- Poisson's ratio (above groundwater)... 0.42
- Poisson's ratio (below groundwater) 0.47

Figure 3H.3-1 shows the at-rest lateral soil pressures. Figure 3H.3-2 shows the dynamic at-rest lateral soil pressures. Figure 3H.3-3 shows the active lateral earth pressures. Figure 3H.3-4 shows the passive lateral earth pressures.

3H.3.4.3.2 Severe Environmental Load

Severe environmental loads consist of loads generated by wind and earthquake.

3H.3.4.3.2.1 Wind Load (W)

The following parameters are used in the computation of the wind loads.

- Basic wind speed (50 year recurrence interval, 3-second gust)................ 126 mph (203 km/h), as shown in Table 2.0-2. This value envelops the value derived from ASCE 7-95 (RG 1.143 requirement) for STP 3 & 4 site.
- Exposure: ....D
- Importance factor: 1.15
- Velocity pressure exposure coefficient per ASCE 7 Table 6-3, but ≥ 0.87
- Topographic factor 1.0
- Wind directionality factor 1.0

Wind loads are calculated in accordance with the provisions of Chapter 6 of ASCE 7-95.

3H.3.4.3.2.2 Earthquake (E_o)

The earthquake loads are those due to one-half of the Safe Shutdown Earthquake (SSE) defined in DCD Tier 1, Table 5.0. This corresponds to the Regulatory Guide 1.60 response spectra anchored to 0.15g. The earthquake loads are applied in all three orthogonal directions. The total structural response is predicted by combining the applicable maximum co-directional responses by the square root of the sum of the squares (SRSS) method.

3H.3.4.3.2.3 Flood Load (FL)

The flood level is at 33 feet MSL, as stated in Section 3H.3.4.2.3 above.

3H.3.4.3.3 Extreme Environmental Load

Extreme environmental loads consist of loads generated by tornado.

3H.3.4.3.3.1 Tornado Loads

The tornado load effects consist of wind pressure, differential pressure, and tornado generated missile loads. The tornado parameters are as follows:

- Tornado parameters are equal to three-fifths of the Region 1 tornado parameters defined in Table 1 of RG 1.76, Rev. 1. The Region 1 maximum tornado wind speed and pressure drop per Table 1 of RG 1.76, Rev. 1 are 230 mph and 1.2 psi, respectively. Three-fifths of 230 mph equals 138 mph and three-fifths of 1.2 psi equals 0.72 psi.

- Tornado missile parameters are in accordance with Table 2 of RG 1.143 Revision 2 for RW-IIa classification

3H.3.4.3.4 Load Combinations

3H.3.4.3.4.1 Notations

S	=	Normal allowable stress for allowable stress design method
U	=	Required strength for strength design method
D	=	Dead load
F	=	Load due to weight and pressure of fluid with well-defined density and controllable maximum height
FL	=	Hydrostatic and hydrodynamic load due to flood
L	=	Live load
R_o	=	Piping and equipment reaction under normal operating condition (excluding dead load, thermal expansion and seismic)
T_o	=	Normal operating thermal expansion loads from piping and equipment
T_b	=	Upset thermal expansion loads from piping and equipment
H	=	Lateral soil pressure and groundwater effects
H'	=	Lateral soil pressure and groundwater effects, including dynamic effects
W	=	Wind load
W_t	=	Total tornado load, including missile effects
E_o	=	Earthquake load

3H.3.4.3.4.2 Structural Steel Load Combinations

$$S = D + L + F + H + R_o + T_o$$

$$1.33S = D + L + F + H + R_o + T_b$$

$$1.33S = D + L + F + H + R_o + T_o + W$$

$$1.33S = D + L + F + H' + R_o + T_o + E_o$$

$$1.33S = D + L + F + H + R_o + T_o + FL$$

$$1.6S = D + L + F + H + R_o + T_o + W_t$$

For the computation of global seismic loads, the live load is limited to the expected live load present during normal plant operation which is defined as 25% of the normal floor and roof live loads. However, design of local elements such as beams and slabs is based on consideration of full normal live load.

3H.3.4.3.5.3 Reinforced Concrete Load Combinations

$U = 1.4D + 1.7L + 1.4F + 1.7H + 1.7R_o + 1.7T_o$

$U = 1.4D + 1.7L + 1.4F + 1.7H + 1.7R_o + 1.7T_b$

$U = 1.4D + 1.7L + 1.4F + 1.7H + 1.7R_o + 1.7T_o + 1.7W$

$U = 1.4D + 1.7L + 1.4F + 1.7H' + 1.7R_o + 1.7T_o + 1.7E_o$

$U = D + L + F + H + R_o + T_o + FL$

$U = D + L + F + H + R_o + T_o + W_t$

For the computation of global seismic loads, the live load is limited to the expected live load present during normal plant operation which is defined as 25% of the normal floor and roof live loads. However, design of local elements such as beams and slabs is based on consideration of full normal live load

3H.3.4.4 Materials

Structural materials used in the design of RWB are as follows:

3H.3.4.4.1 Reinforced Concrete

Concrete conforms to the requirements of ACI 349. Its design properties are:

- Compressive strength .... 4.0 ksi (27.6 MPa)
- Modulus of elasticity .... 3,597 ksi (24.8 GPa)
- Shear modulus .... 1,537 ksi (10.6 GPa)
- Poisson’s ratio 0.17

3H.3.4.4.2 Reinforcement

Deformed billet steel reinforcing bars are considered in the design. Reinforcement conforms to the requirements of ASTM A615. Its design properties are:

- Yield strength .... 60 ksi (414 MPa)
- Tensile strength .... 90 ksi (621 MPa)

3H.3.4.4.3 Structural Steel

High strength, low-alloy structural steel conforming to ASTM A572, Grade 50 is considered in the design for wide-flange sections. The steel design properties are:

- Yield strength .... 50 ksi (345 MPa)
- Tensile strength .... 65 ksi (448 MPa)

3H.3.4.4.4 Steel Grating

Bearing bars conforming to ASTM A1011 are considered in the design. The design property is:

- Yield strength .... 30 to 50 ksi (207 to 345 MPa)

3H.3.4.4.5 Anchor Bolts

Material for anchor bolts conforms to the requirements of ASTM F1554, Grade 36. Its design properties are:

- Yield strength .... 36 ksi (248 MPa)
- Tensile strength .... 58 ksi (400 MPa)

3H.3.5 Structural Design and Analysis Summary

3H.3.5.1 Seismic Analysis

The seismic analysis of the RWB is performed using a fixed base stick model. The structure is represented by a lumped-mass model consisting of structural masses lumped at selected nodes which are connected by massless elements representing the stiffness properties of the shear walls between the nodes. The building masses are lumped at elevations where the building weights are concentrated such as the floors and roof.

For modeling reinforced concrete shear wall elements, the shear walls in each particular vibration direction are identified. The stiffness of a shear wall along its length consists of a combination of its shear stiffness and its flexural stiffness, both of which are calculated individually and combined to obtain the stiffness of the wall.

The input motion of the seismic analysis is the Regulatory Guide 1.60 response spectra for 0.15g.

The RWB seismic design loads are shown in Table 3H.3-1. The RWB structural frequencies are shown in Table 3H.3-2.

3H.3.5.2 Analysis and Design

The analysis and design of the RWB is performed using a SAP2000 3D finite element model with shell and frame elements, as shown in Figures 3H.3-5 through 3H.3-7. Per Table 1 of RG 1.143 Revision 2, all concrete and steel designs are in accordance with the ACI 349-97 and ANSI/AISC N690, 1984 code requirements, respectively. Also, for II/I design, the structure is conservatively designed to remain elastic.

The forces and moments at critical locations in the Radwaste Building along with the provided longitudinal and transverse reinforcement are included in Table 3H.3-3 for the exterior walls and Table 3H.3-4 for the basemat, roof slab, and operating floor (elevation 35’-0”) slab. Figures 3H.3-8 through 3H.3-27 show the location of the reinforcement zones listed in Table 3H.3-3 for the exterior walls. Figures 3H.3-28 through 3H.3-42 show the location of the reinforcement zones listed in Table 3H.3-4 for the basemat, roof slab, and operating floor slab.

The structural steel member sizes, critical forces, safety margins, and governing load combinations for the operating floor beams, roof truss members, and roof purlins are shown in Table 3H.3-5. The layout of the operating floor steel beams is shown in Figures 3H.3-43 through 3H.3-46. The layout of the roof truss members and roof purlins are shown in Figure 3H.3-47. The typical east-west spanning truss and typical north-south spanning truss are shown in Figures 3H.3-48 and 3H.3-49, respectively.

3H.3.5.3 Seismic II/I Evaluation

The seismic II/I evaluation for the RWB is performed to ensure that the RWB will not collapse on the nearby Category I structures. The structure is conservatively designed to remain elastic for this evaluation. The earthquake input used at the foundation level is the envelope of 0.3g RG 1.60 response spectrum and the induced acceleration response spectrum due to site-specific SSE that is determined from an SSI analysis which accounts for the impact of the nearby Reactor Building (RB). In this SSI analysis, five interaction nodes at the depth corresponding to the bottom elevation of the RWB foundation are added to the three dimensional SSI model of the RB. These five interaction nodes correspond to the four corners and the center of the RWB foundation. The average response of these five interaction nodes is enveloped with the 0.3g RG 1.60 spectra to determine the SSE input at the foundation level.

For tornado parameters, including the missiles, the same parameters as those defined in DCD Tier 1 Table 5.0 are used. For flood, the extreme flood level of 40 ft (12.2 m) MSL with maximum hydrodynamic force of 44 psf is used, which is caused by the Main Coolant Reservoir dike breach.

The II/I stability evaluations for sliding and overturning are performed using the site-specific SSE and other site-specific parameters such as soil properties.

3H.5 Structural Analysis Reports

STD DEP T1 2.15-1

3H.5.3 Structural Analysis Report for the Reactor Building~~,~~ and Control Building ~~*and Radwaste Building Substructure (Including Seismic Category 1 Tunnels)*~~ (Including Seismic Category I Tunnels)

3H.5.4 Structural Analysis Report For the Reactor Building~~,~~ and Control Building ~~*and Radwaste Building*~~ Foundation

3H.5.5 Structural Analysis Report For The Radwaste Building (Including Radwaste Tunnels) and TheTurbine Building

STD DEP 1.8-1

STD DEP T1 2.15-1

For material properties and dimensions, assess compliance of the as-built structure with design requirements in the International Building Code (IBC)~~*Uniform Building Code (UBC)*~~ for the Turbine Building and Regulatory Guide 1.143 for the Radwaste Building (including Radwaste Tunnels) *and in the Table 3.2-1 and paragraph 3.7.3.16.*

Construction deviations and design changes will be assessed to determine appropriate disposition.

This disposition will be accepted "as-is," provided the following acceptance criteria are met:

- *The structural design meets the acceptance criteria and load combinations of the* IBC~~*UBC*~~ *code* for the Turbine Building and Regulatory Guide 1.143 for the Radwaste Building (including Radwaste Tunnels)*.*

The RW/B (including Radwaste Tunnels) and *T/B* ~~*is*~~are *not classified as* ~~*a*~~ *Seismic Category 1 structures. However, the buildings* ~~*is*~~are *designed such that damage to safety-related functions does not occur under seismic loads corresponding to the safe shutdown earthquake (SSE) ground acceleration.*

3H.5.6 Structural Analysis Report For The Ultimate Heat Sink/ Reactor Service Water Pump House Structure, Reactor Service Water Piping Tunnel and Diesel Generator Fuel Oil Storage Vault

A structural analysis report will be prepared. It will document the following activities associated to the construction materials and as-built dimensions of the structures:

(1) Review of construction records for material properties used in construction (i.e., in-process testing of concrete properties and procurement specifications for structural steel and reinforcing bars).

(2) Inspection of as-built structure dimensions.

For material properties and dimensions, assess compliance of the as-built structure with design requirements in the Subsection 3H.6 and in the detail design documents.

Construction deviations and design changes will be assessed to determine appropriate disposition.

This disposition will be accepted "as-is," provided the following acceptance criteria are met:

- The structural design meets the acceptance criteria and load combinations of Appendix 3H, Section 3H.6.
- The dynamic responses (i.e., spectra, shear forces, axial forces and moments) of the as-built structure are bounded by the spectra in Appendix 3H, Section 3H.6.

Depending upon the extent of the deviation or design changes, compliance with the acceptance criteria can be determined by either:

(a) Analyses or evaluations of construction deviations and design changes, or

(b) The design basis analyses will be repeated using the as-built condition.

3H.6 Site-Specific Seismic Category I Structures

The following site-specific supplement addresses site specific Seismic Category I structures.

3H.6.1 Objective and Scope

The objective of this appendix is to describe the structural analysis and design of the STP 3 & 4 site-specific seismic Category I structures that are identified below.

(1) Ultimate Heat Sink (UHS) for each unit consists of a water retaining basin with enclosed cooling towers situated above the basin and a Reactor Service Water (RSW) pump house that is integral with the UHS basin.

(2) RSW piping tunnel for each unit.

(3) Diesel Generator Fuel Oil Storage Vault for each unit.

The details of analysis and design for Items (1) and (2) are provided in Sections 3H.6.3 through 3H.6-6. The details for Item (3) are provided in Section 3H.6.7.

3H.6.2 Summary

For the design of the UHS basin and the pump house of each unit, the seismic effects were determined by performing a soil-structure interaction (SSI) analysis, as described in Subsection 3H.6.5. The free-field ground response spectra used in the analysis are described in Subsection 3H.6.5.1.1.1. The resulting seismic loads were used in combination with other applicable loads to develop designs of the structures. Hydrodynamic effects of the water in the basin were considered. The following results are presented in tables and figures, as indicated.

- Natural frequencies (Table 3H.6-3).
- Seismic accelerations (Table 3H.6-4).
- Seismic displacements (Table 3H.6-4).
- Floor response spectra (Figures 3H.6-16 through 3H.6-39).
- Factors of safety against sliding, overturning, and flotation (Table 3H.6-5).

- Combined forces and moments at critical locations in the structures along with required and provided rebar (Tables 3H.6-7 through 3H.6-9 and Figures 3H.6-51 through 3H.6-136).
- Lateral soil pressures for design (Figures 3H.6-41 through 3H.6-44)
- Lateral soil pressures for stability evaluation (Figures 3H.6-45 through 3H.6-50)
- Tornado evaluation results (Table 3H.6-10)

The final combined responses are used to evaluate the designs against the following criteria:

- Stresses in concrete and reinforcement are less than the allowable stresses in accordance with the applicable codes listed in Subsection 3H.6.4.1.
- The factors of safety against flotation, sliding, and overturning of the structures under various loading combinations are higher than the required minimum values identified in Subsection 3H.6.4.5.
- The calculated static and dynamic soil bearing pressures/displacements are less than the allowable values.
- The thickness of the roof slabs and exterior walls are more than the minimum required to preclude penetration, perforation, or spalling resulting from impact of design basis tornado missiles. In addition, the passage of tornado missiles through openings in the roof slabs and exterior walls is prevented by the use of missile-proof covers and doors, or the trajectory of missiles through ventilation openings is limited by labyrinth walls configured to prevent safety-related substructures and components from being impacted.

The RSW piping tunnel seismic analysis has been performed using an equivalent static approach, as discussed in Section 3H.6.5.3.

3H.6.3 Structural Descriptions

The site-specific Seismic Category I structures at STP 3 & 4 consist of one set of the following for each unit: UHS basin, enclosed UHS cooling towers located on top of the basin, RSW pump house contiguous with and adjacent to the UHS basin, and buried RSW piping tunnels and access shafts to the tunnels (see Figures 1.2-34 through 1.2-36). Each UHS basin and RSW pump house has a 10-ft (3.05-m) thick foundation mat and are connected at a common wall; and the RSW piping tunnels extend from the pump house to the Control Buildings. Each of these structures is described in more detail in the following subsections.

3H.6.3.1 Ultimate Heat Sink Basin

The UHS basin is a rectangular reinforced concrete structure with inner dimensions of 280 ft (85.34 m) by 132 ft (40.23 m) and serves as the reservoir for the RSW system. The walls of the basin are 6 ft (1.83 m) thick and extend from an elevation of 97.5 ft

(29.72 m) MSL down to an elevation of 14 ft (4.27 m) MSL. The walls are braced by buttresses spaced at a maximum of 50 ft (15.24 m) and are supported on a 312 ft (95.10 m) by 164 ft (49.99 m) by 10 ft (3.05 m) thick mat foundation, poured on a lean concrete mud mat. The mud mat is poured directly on the in-situ soil. Each UHS includes three independent divisions of mechanical cooling towers, with two dedicated cooling towers in each division . The pump house is contiguous with the UHS basin and its walls extend from an elevation of -18 ft (-5.49 m) MSL to an elevation of 50 ft (15.24 m) MSL.

As noted in Subsection 9.2.5.5.2, the seepage loss estimated during the 30 days of operation following a design basis accident, with no makeup available, is within the acceptance criteria for standard hydrostatic test HST-025, as defined in ACI 350.1.

3H.6.3.2 Ultimate Heat Sink Cooling Tower Enclosures

The cooling tower enclosure for each unit is a reinforced concrete structure housing the equipment used to cool the water for the RSW system. The enclosure is located above the UHS basin and is supported by reinforced concrete columns anchored to the basin mat foundation. The enclosure is 292 ft (89.0 m) long by 52 ft (15.85 m) wide and extends from the top of the UHS basin walls to elevation 153 ft (46.63 m) MSL. Each enclosure is divided into six compartments or cells, with each compartment housing a fan and associated equipment. Openings are provided at the base of each compartment to allow for the flow of water. Each compartment includes a common basin at the base of the structure, air intake, and substructures and components used to cool the water (fill, drift eliminators, spray system piping and nozzles, and the associated concrete support beams). The air intakes for each compartment are located at the bottom of the enclosures and are configured to eliminate the trajectory of tornado missiles into the enclosures, thereby preventing damage to safety-related components. In addition, each compartment includes a reinforced concrete fan deck that supports the fan and the associated motor. Finally, heavy steel grating, which is supported by structural steel beams, is installed at the top of each compartment. This grating allows for the passage of air out of the compartment and prevents the intrusion of tornado wind-borne missiles.

3H.6.3.3 Reactor Service Water Pump Houses

The two RSW pump houses are reinforced concrete structures that are continguous with the UHS basins and house the RSW pumps (six pumps per pump house, with three RSW divisions, and two pumps per division) and their associated auxiliaries. Each set of pumps extracts water for the RSW system from the basin. The operating floor of each pump house is divided into three separate rooms (one per RSW division), each containing two pump drivers and associated equipment, including self-cleaning strainers. There is also an access tunnel through which the RSW system piping is routed to and from the corresponding control building.

The exterior walls of each pump house and the interior walls dividing the pump bay are integral with the UHS basin walls. The pump bay for each pump house measures approximately 44 ft (13.41 m) by 72 ft (21.95 m) in plan with the top of the bay slab being located at elevation -18ft (-5.49 m). The operating floor is at elevation 14 ft (4.27

m) and measures 138 ft (42.06 m) by 72 ft (21.95 m) in plan. Covered openings are provided in the roof of each pump house, which is located at elevation 50 ft (15.24 m), to allow for the removal of the six pumps.

3H.6.3.4 Reactor Service Water Piping Tunnels

The three RSW piping tunnels, one for each RSW division, are reinforced concrete structures configured in a stacked arrangement. The tunnel is 17’-0” (5.18 m) wide and has an overall height of 40’-0” (12.2 m) high. They extend from each pump room to the control building. The three tunnels are separated by reinforced concrete slabs, which serve to isolate the supply and return lines and associated equipment for each of the three divisions. Access to the tunnels from the surface, for inspections and maintenance activities, is provided by reinforced concrete personnel access shafts. The interfaces between the tunnels and the pump houses and control buildings are configured to allow relative movement between the tunnels and structures.

3H.6.4 Structural Design Criteria

3H.6.4.1 Design Codes and Standards

- Code Requirements for Nuclear Safety-Related Concrete Structures (ACI 349), as supplemented by RG 1.142
- Code Requirements for Environmental Engineering Concrete Structures (ACI 350)
- American National Standard Specification for the Design, Fabrication, and Erection of Steel Safety-Related Structures for Nuclear Facilities (ANSI/AISC N690)
- Tightness Testing of Environmental Engineering Concrete Structures (ACI 350.1)
- Minimum Design Loads for Buildings and Other Structures (ASCE/SEI 7)
- Seismic Analysis of Safety-Related Nuclear Structures and Commentary (ASCE 4)
- Structural Welding Code – Steel (AWS D1.1)
- Regulatory Guide 1.76, Design Basis Tornado and Tornado Missiles for Nuclear Power Plants
- Regulatory Guide 1.61 – Damping Values for Seismic Design of Nuclear Power Plants

3H.6.4.2 Site Design Parameters

3H.6.4.2.1 Soil Parameters

- Poisson’s ratio (above groundwater):.. 0.42
- Poisson’s ratio (below groundwater): 0.47

- Unit weight (moist):..120 pcf (1.92 t/m^3)
- Unit weight (saturated): ....140 pcf (2.24 t/m^3)
- Liquefaction potential: ....None
- Static Soil Bearing Capacity: .... See FSAR Subsection 2.5S.4.10
- *Dynamic Soil Bearing Capacity:......................... See FSAR Subsection 2.5S.4.10

3H.6.4.2.2 Design Groundwater Level

Design groundwater level is at elevation 28 (8.53 meters) MSL. This elevation bounds the groundwater elevation defined in FSAR Subsection 2.4S.12.

3H.6.4.2.3 Design Flood Level

Design flood basis level is at 12.2 meters MSL. This elevation is defined in Subsection 2.4S.2.2.

3H.6.4.2.4 Maximum Snow Load

Normal roof snow load is 6.6 psf. Extreme roof snow load is 13.2 psf.

3H.6.4.2.5 Maximum Rainfall

Design rainfall is 19.8 in/hr (503 mm/hour) in accordance with Subsection 2.3S.1.3.4. The roof of each pump house is designed without parapets so that excessive ponding of water cannot occur. Such roof design meets the provisions of RG 1.102.

3H.6.4.3 Design Loads and Load Combinations

3H.6.4.3.1 Normal Loads

Normal loads are those that are encountered during normal plant startup, operation, and shutdown.

3H.6.4.3.1.1 Dead Loads (D)

Dead loads include the weight of the structure, permanent equipment, and other permanent static loads. An additional 50 psf (2.39 kPa) uniform load is considered to account for dead loads due to piping, raceways, grating, and HVAC duct work.

3H.6.4.3.1.2 Live Loads (L and L_o)

Live loads include floor and roof area loads, movable loads, and laydown loads. The only areas of the site-specific Category I structures requiring consideration of a live load are the floors of RSW Tunnels and the operating floor and roof of the pump houses. While a normal live load of 200 psf (9.6 kPa) is defined for the floors of RSW Tunnels and the operating floor of pump houses, a live load of 50 psf (2.4 kPa) is defined for the roof of pump houses.

For the computation of global seismic loads, the live load is limited to the expected live load present during normal plant operation, L_o. This load has been defined as 25% of the operating floor and roof live loads. However, design of local elements such as beams and slabs is based on consideration of full normal live load.

3H.6.4.3.1.3 Snow Loads

The normal roof snow load is 6.6 psf.

3H.6.4.3.1.4 Lateral Soil Pressures (H)

Lateral soil pressures are calculated using the following soil properties.

- Unit weight (moist):..120 pcf (1.92 t/m^3)
- Unit weight (saturated): ....140 pcf (2.24 t/m^3)
- Internal friction angle: ....30°
- Poisson's ratio (above groundwater)... 0.42
- Poisson's ratio (below groundwater) 0.47

The calculated lateral soil pressures are presented in figures as indicated:

- Lateral soil pressures for design of UHS/RSW Pump House: Figures 3H.6-41 through 3H.6-43.
- Lateral Soil pressures for design of RSW Piping Tunnels: Figures 3H.6-44.
- Lateral soil pressures for stability evaluation of UHS/RSW Pump House: Figures 3H.6-45 through 3H.6-50.

3H.6.4.3.1.5 Thermal Loads (T_o)

The RSW piping tunnels are not subjected to any thermal loads. Thermal gradient loads and thermal axial loads are applied to the UHS/RSW Pump House finite element model for six (6) separate thermal conditions.

The following temperature values are applicable to all six (6) thermal conditions:

- Reference concrete placement temperature ....60°F
- Soil temperature ....70°F
- Pump house inside air temperature..90°F

The basin water temperature and the outside air temperature for the six (6) thermal conditions are as follows:

(1) Winter – Accident Basin Water Temperature

- Basin water temperature ....95°F
- Outside air temperature..24°F

(2) Winter – Minimum Basin Water Temperature

- Basin water temperature ....50°F
- Outside air temperature..24°F

(3) Winter - Typical Operating Temperatures

- Basin water temperature ....55°F
- Outside air temperature..45°F

This thermal condition is applicable only for the basin basemat and basin walls below the 71 ft maximum water level with ACI 350-01 durability factors. Per Section 9.2.7 of ACI 350-01, estimation of contraction, expansion, and temperature change should be based on realistic assessment of such effects occurring in service. Section R.9.2.7 of ACI 350-01 specifically states that the term “realistic assessment” is used to indicate the most probable values rather than the upper bound values.

(4) Summer - Accident Basin Water Temperature

- Basin water temperature ....95°F
- Outside air temperature..90°F

(5) Summer – Minimum Basin Water Temperature

- Basin water temperature ....60°F
- Outside air temperature..90°F

(6) Summer – Typical Operating Temperatures

- Basin water temperature ....95°F
- Outside air temperature..90°F

This thermal condition is applicable only for the basin basemat and basin walls below the 71 ft maximum water level with ACI 350-01 durability factors. Conservatively, the summer accident temperatures are considered as the typical summer operating temperatures.

3H.6.4.3.1.6 Hydrostatic Loads(F)

This load is only applicable to UHS/RSW Pump House. The hydrostatic load due to water inside the UHS basin is conservatively calculated considering the maximum water height of 71 ft above the top of the UHS basin basemat. The maximum hydrostatic pressure is 4.43 ksf at the top of UHS basin basemat elevation.

3H.6.4.3.2 Severe Environmental Load

The severe environmental load considered in the design is that generated by wind. The following parameters are used in the computation of the wind loads:

- Basic wind speed (100 year recurrence interval, 3-second gust):............. 134 mph (215 km/h)
- Exposure: C
- Importance factor: 1.15
- Velocity pressure exposure coefficient as per ASCE 7 Table 6-3, but ≥ 0.87
- Topographic factor 1.0
- Wind directionality factor 1.0

Wind loads will be calculated in accordance with the provisions of Chapter 6 of ASCE 7.

3H.6.4.3.3 Extreme Environmental Load

Extreme environmental loads consist of loads generated by the tornado, extreme snow load, flooding and safe shutdown earthquake (SSE).

3H.6.4.3.3.1 Tornado Loads (Wt)

The following tornado load effects are considered in the design:

- Wind speed .... (W_w)
- Differential pressure .... (W_p)
- Missile impact.. (W_m)

Parameters used in computation of tornado loads are as follows (see Tables 1 and 2 of RG 1.76, for Region II):

- Maximum wind speed:... 200 mph (322 km/h)
- Maximum rotational speed: .... 160 mph (257 km/h)
- Maximum translational speed:.. 40 mph (64 km/h)
- Radius of maximum rotational speed: .... 150 ft (45.7 m)
- Differential pressure: .... 0.9 psi (6.2 kPa)

- Pressure differential rate: ....0.4 psi/s (2.8 kPa/s)
- Missile spectrum:... (See Table 2 of RG 1.76)

(1) Tornado Wind Pressure (W_w)

With the exception of the RSW piping tunnel, which does not require the consideration of a tornado wind pressure, tornado wind pressures are computed using the procedure described in Chapter 6 of ASCE 7, in conjunction with the maximum wind speed defined above and the following parameters:

- Importance factor 1.15
- Velocity pressure exposure coefficient.. 0.87
- Topographic factor 1.0
- Wind directionality factor 1.0

(2) Tornado Differential Pressure (W_p)

The designs of the UHS basin, UHS cooling tower, and the RSW piping tunnel do not require the consideration of a tornado differential pressure. RSW pump house and RSW piping tunnel access shafts are evaluated for the specified differential pressure.

(3) Tornado Missile Impact (W_m)

All structures are evaluated for the effects of missile impact.

Tornado missile impact effects on the UHS basin and cooling tower enclosures, RSW pump houses, and RSW tunnels including access shafts are evaluated for the following two conditions:

(a) For concrete barriers, local damage in terms of penetration, perforation, and spalling, is evaluated using the TM 5-855-1 formula (Reference 3H.6-1). For steel barriers, local damage prediction is performed using the Ballistic Research Laboratory (BRL) formula (Reference 3H.6-2).

(b) Global overall damage evaluations are performed in accordance with Revision 3 of SRP 3.5.3. In these evaluations, the tornado loads (i.e. W_t) to be included in combination with other applicable loads are per combination $W_t = W_w + 0.5W_p + W_m$.

For any critical missile hit location considered, the structure is analyzed for the resulting equivalent static load due to tornado missile impact in conjunction with tornado wind pressure and 50% of tornado differential pressure. The resulting induced forces and moments from this analysis are combined with the induced forces and moments due to other applicable loads within the load combination to determine the total demand for design of the structural elements.

(4) Tornado Load Combinations

Tornado load effects are combined as follows:

$$W_t = W_p$$
$$W_t = W_w + 0.5W_p + W_m$$

3H.6.4.3.3.2 Safe Shutdown Earthquake Loads (E')

The SSE loads are applied in three mutually orthogonal directions— two horizontal directions and the vertical direction. The total structural response is predicted by combining the applicable maximum co-directional responses in accordance with RG 1.92.

The SSE loads are based on seismic analysis using the ground motion response spectra defined in Subsection 3H.6.5.1.1.1. The loads consist of vertical forces, horizontal forces, torsional moments, and overturning moments.

The SSE induced loads also include the hydrodynamic effect of the water in the UHS basin. This hydrodynamic effect was calculated based on the methodology included in Section 3.1.6.3 of ASCE 4 and TID 7024, referenced in the commentary section of ASCE 4.

3H.6.4.3.3.3 Lateral Soil Pressures Including the Effects of SSE (H')

The calculated lateral soil pressures including the effects of SSE are presented in figures as indicated:

- Lateral soil pressures for design of UHS/RSW Pump House: Figures 3H.6-41 through 3H.6-43.
- Lateral Soil pressures for design of RSW Piping Tunnels: Figures 3H.6-44.
- Lateral soil pressures for stability evaluation of UHS/RSW Pump House: Figures 3H.6-45 through 3H.6-50.

3H.6.4.3.3.4 Extreme Environmental Flood (FL)

The design basis flood level is 40.0 ft MSL, in accordance with Subsections 2.4S.2.2 and 3H.6.4.2.3. The flood water unit weight is conservatively considered as 80 pcf to account for minor debris in the flood water. The maximum hydrodynamic force due to design basis flood is 44 psf. The maximum pressure on the UHS/RSW Pump House due to the design basis flood is 0.524 ksf at grade level (34.0 ft MSL).

3H.6.4.3.3.5 Extreme Snow Load (S_E)

Per FSAR Section 2.3S.1.3.4, the ground snow load for both normal winter precipitation event and extreme frozen winter precipitation is 5.5 psf. ISG-7 provides guidance for converting the ground snow load to roof snow load using methodology provided in ASCE 7-05. ASCE 7-05 utilizes an exposure factor (C_e), a thermal factor (C_t), and an importance factor (I) as multipliers for converting ground snow load to roof snow load using Equation 7-1 in Section 7.3. ISG-7 also provides recommended values for these three coefficients to be used in Equation 7-1. As noted in ISG-7, pages 9 and 10, the coefficients to be used in Equation 7-1 of ASCE 7-05 are (C_e=1.1), (C_t=1.0), and (I=1.2). Using these values for the coefficients in Equation 7-1 of ASCE 7-05, and the limitation for minimum value provided in Section 7.3 of ASCE 7-05, the roof snow load is determined to be 6.6 psf, corresponding to a ground snow load of 5.5 psf.

Per ISG-7, the extreme winter precipitation shall be the larger of the following two cases:

Case 1: Normal winter precipitation + Extreme frozen winter precipitation

Case 2: Normal winter precipitation + Extreme liquid winter precipitation

Per FSAR Section 2.3S.1.3.4, the extreme liquid winter precipitation is 34 inches (or 177 psf). Assuming that both the roof drains and scuppers are clogged, Case 1 will yield a loading of 6.6 + 6.6 = 13.2 psf and Case 2 will yield a loading of 6.6 + 177 = 183.6 psf. However, since the roofs of site-specific structures are designed without parapets (see Section 3H.6.4.2.5), for site-specific Category I structures, the extreme winter precipitation can not exceed Case 1 loading of 13.2 psf

3H.6.4.3.3.6 Accident Temperature (T_a)

UHS Basin Water temperature (95°F) during accident condition.

3H.6.4.3.4 Load Combinations

The load combinations and structural acceptance criteria used to evaluate the site-specific Category I concrete structures are consistent with the provisions of ACI 349, as supplemented by RG 1.142 as well as ACI 350. Loads T_a, R_a, P_a, and E_o, as defined in ACI 349, are not applicable to the evaluation of the site-specific seismic Category I structures and are not included in the load combinations defined below.

3H.6.4.3.4.1 Notation

S = Allowable stress for allowable stress design method

U = Required strength for strength design method

D = Dead load

F = Hydrostatic load

L = Live load

L_o = Live load concurrent with SSE

FL = Static and dynamic effects due to extreme environmental flood

S_E = Extreme snow load

H = Lateral soil pressure and groundwater effects

H' = Lateral soil pressure and groundwater effects, including dynamic effects of SSE

W = Wind load

Wt = Tornado load

E' = SSE load, including associated hydrodynamic loads

R_o = Piping and equipment reactions

T_o = Internal moments and forces caused by temperature distributions

T_a = Accident temperature

3H.6.4.3.4.2 Structural Steel Load Combinations

$S = D + L + H + F + R_o + T_o$

$S = D + L + W + R_o + H + F + T_o$

$1.6S = D + L + Wt + H + R_o + F + T_o$

$1.6S = D + L + FL + H + R_o + F + T_o$

$1.6S = D + L + E' + H' + R_o + F + T_o$

$1.6S = D + L + S_E + R_o + H + F + T_o$

For the computation of global seismic loads the live load is limited to the expected live load present during normal plant operation which is defined as 25% of the operating floor and roof live loads. However, design of local elements such as beams and slabs is based on consideration of full normal live load.

3H.6.4.3.4.3 Reinforced Concrete Load Combinations

$U = 1.4D + 1.4F + 1.7L + 1.7H + 1.7\ R_o$

$U = 1.4D + 1.4F + 1.7L + 1.7H + 1.7W + 1.7\ R_o$

$U = D + F + L + H + T_a + E'$

$U = D + F + L + H + T_o + R_o + W_t$

$U = D + F + L + H' + T_o + R_o + E'$

$U = 1.05D + 1.05F + 1.3L + 1.3H + 1.2T_o + 1.3R_o$

$U = 1.05D + 1.05F + 1.3L + 1.3H + 1.3W + 1.2T_o + 1.3R_o$

$U = D + F + L + H + T_o + R_o + FL$

$U = D + F + L + H + T_o + R_o + S_E$

For the computation of global seismic loads the live load is limited to the expected live load present during normal plant operation which is defined as 25% of the operating floor and roof live loads. However, design of local elements such as beams and slabs is based on consideration of full normal live load.

3H.6.4.3.4.4 ACI 350 Reinforced Concrete Load Combinations for UHS Basin Design

ACI 350 requirements are applicable to portions of environmental engineering concrete structures where durability, liquid-tightness, or similar serviceability are considerations. Therefore, the ACI 350 requirements and load combinations listed in this section are applicable only to the UHS basemat and basin walls below the maximum water level elevation.

Per ACI 350, although fluid densities and heights are usually well known, the load factor for fluid loads should be taken as 1.7 as part of the concept of environmental durability and long-term serviceability. ACI 350 states that the required strength from ACI 350 load combinations shall be multiplied by the following environment durability factors:

- Flexural strength.. 1.3
- Axial tension (including hoop tension)... 1.65
- Excess shear strength carried by shear reinforcement..................................... 1.3

In addition to the reinforced concrete load combinations listed in Section 3H.6.4.3.4.3, the UHS basemat and basin walls below the maximum water level elevation are also designed for the load combinations listed below with ACI 350 durability factors applied. Except durability factors need not be applied for the hydrostatic leak-tightness testing condition, which is a temporary loading where environmental durability and long term serviceability are not required. The hydrostatic leak-tightness testing load combination uses a load factor of 1.4 on the fluid load because it is not a long-term serviceability condition that requires a load factor of 1.7. Per ACI 350, durability factors need not be applied to load combinations that include earthquake loads. As stated in Section 3H.6.4.3.1.5, the design thermal loads used in ACI 350 load combinations should be based on most probable temperature values, rather than the upper bound temperature values.

U = 1.4D + 1.7F + 1.7L + 1.7H

U = 1.4D + 1.7F + 1.7L + 1.7H + 1.7W

U = 1.4D + 1.4F + 1.7W (Hydrostatic leak-tightness testing)

U = 1.4D + 1.7F + 1.4 T_o + 1.3H

3H.6.4.4 Materials

Structural materials used in the design of the site-specific Category I structures are as follows:

3H.6.4.4.1 Reinforced Concrete

Concrete conforms to the requirements of ACI 349. Its design properties are:

- Compressive strength .... 4.0 ksi (27.6 MPa)
- Modulus of elasticity .... 3,597 ksi (24.8 GPa)
- Shear modulus .... 1,537 ksi (10.6 GPa)
- Poisson's ratio 0.17

3H.6.4.4.2 Reinforcement

Deformed billet steel reinforcing bars are considered in the design. Reinforcement conforms to the requirements of ASTM A615. Its design properties are:

- Yield strength .... 60 ksi (414 MPa)
- Tensile strength .... 90 ksi (621 MPa)

3H.6.4.4.3 Structural Steel

High strength, low-alloy structural steel conforming to ASTM A572, Grade 50 is considered in the design. The steel design properties are:

- Yield strength .... 50 ksi (345 MPa)
- Tensile strength .... 65 ksi (448 MPa)

3H.6.4.4.4 Steel Grating

Bearing bars conforming to ASTM A1011 are considered in the design. The design property is:

- Yield strength .... 30 to 50 ksi (207 to 345 MPa)

3H.6.4.4.5 Anchor Bolts

Material for anchor bolts conforms to the requirements of ASTM F1554, Grade 36. Its design properties are:

- Yield strength .... 36 ksi (248 MPa)
- Tensile strength.. 58 ksi (400 MPa)

3H.6.4.5 Stability Requirements

The following minimum factors of safety are required against overturning, sliding, and flotation:

Load Combination	Overturning	Sliding	Flotation
D + F'	–	–	1.1
D + H + W	1.5	1.5	–
D + H + W_t	1.1	1.1	–
D + H' + E'	1.1	1.1	–

Loads D, H, H', W, W_t, and E' are defined in Subsection 3H.6.4.3.4.1. F' is the buoyant force corresponding to the flood water level.

3H.6.5 Seismic Analysis

3H.6.5.1 Seismic Design Parameters

3H.6.5.1.1 Design Ground Motion

3H.6.5.1.1.1 Design Response Spectra

Site-specific horizontal and vertical ground motion response spectra (GMRS) for the SSE are developed for the STP 3 & 4 site. The development of these spectra is documented in Subsection 2.5S.2.

For the seismic analysis of the site-specific structures, free field ground surface response spectra (Input Spectra) were developed, in the horizontal and vertical directions, by modifying the 0.13g Regulatory Guide 1.60 response spectra. The Input Spectra are the same as the 0.13g Regulatory Guide 1.60 spectra for frequencies equal to and higher than 2.5 Hz for the horizontal spectrum, and 3.5 Hz for the vertical spectrum. For frequencies lower than 2.5 Hz for the horizontal spectrum, and 3.5 Hz for the vertical spectrum, the Regulatory Guide spectra were increased to envelop the GMRS. These Input Spectra are defined as the site specific design SSE spectra (see Section 3.7.1) and were developed to meet the following requirements:

a. The Input Spectra shall envelop the GMRS. See Figures 3H.6-1 and 3H.6-2 showing that the Input Spectrum envelops the GMRS in the horizontal and vertical directions, respectively.

b. When a deconvolution analysis is performed in the SHAKE program with the Input Spectrum applied at the free field ground surface, the resulting response spectrum at the outcrop of each Seismic Category I foundation will envelop the foundation input response spectrum (FIRS) developed using the same probabilistic approach and model which was used to develop the GMRS. A detailed description of the seismic wave transmission of the site, and the procedure used to calculate the GMRS, which is the same for the development of FIRS, is provided in FSAR Sections 2.5S.2.5 and 2.5S.2.6, respectively. See Figures 3H.6-3 through 3H.6-11 for a comparison of the outcrop response spectra, resulting from the application of the time histories consistent with the Input Spectra at the free field ground surface in SHAKE, and the FIRS for the UHS basin, RSW tunnel, and RSW pump house foundations, in the two horizontal and vertical directions. These figures show that the FIRS are enveloped by the foundation outcrop spectra in all cases.

c. The response spectrum at the SHAKE outcrop of each Seismic Category I foundation envelops a broad band spectrum anchored at 0.1g. This is the minimum requirement as stated in SRP 3.7.1 and Appendix S to 10 CFR 50, “Earthquake Engineering Criteria for Nuclear Power Plants”. The broad band spectrum used in our analysis is conservatively defined as the Regulatory Guide 1.60 spectrum anchored at 0.1g. See Figures 3H.6-3 through 3H.6-11, which demonstrate that this requirement is met for the UHS basin, RSW tunnel, and RSW pump house foundations, in the two horizontal and vertical directions.

It should be noted that the embedment depths shown in Section 3H.6.5.1.3 for the RSW Pump House and RSW Piping Tunnel are based on the current design. For the SSI analysis of UHS/RSW Pump House these elevations were used. However, the comparisons shown in Figures 3H.6-3 through 3H.6-11 are at elevations based on the design when the FIRS were developed. Although there is some difference in these elevations, from the review of Figures 3H.6-3 through 3H.6-11, and Figures 3A-233 through 3A-250 in Appendix 3A, it is evident that the requirements stated in (b) and (c) above are met for a wide range of elevations, starting from the deepest embedment of the Reactor Building to the shallowest embedment of the UHS Basin. Therefore, it is concluded that these two requirements are also met for the current embedment depths for the RSW Pump House and RSW Piping Tunnel, shown in Section 3H.6.5.1.3.

3H.6.5.1.1.2 Design Time Histories

Synthetic acceleration time histories consistent with the Input Spectra defined and discussed in Subsection 3H.6.5.1.1.1 were developed, using the 1952 Taft Earthquake Time Histories as seed, for use as input to the seismic analysis. A single set of time histories (two horizontal and one vertical) was developed satisfying the enveloping requirements of Option 1, Approach 2 of SRP 3.7.1, Section II (Acceptance Criteria), Revision 3. Per paragraph 2(d) of Approach 2, in lieu of the power spectrum density requirement, the requirement that the computed 5% damped response spectrum of the Synthetic time history does not exceed the target response spectrum at any frequency by more than 30% was met. In the time history method of analysis, the two horizontal and the vertical time histories were applied separately (not applied simultaneously) and the maximum responses were combined using the square-root-of-the-sum-of-the-squares (SRSS) or the 100-40-40 percent spatial combination rule. Therefore, per Regulatory Guide 1.92, Revision 2, statistical independence of the three time histories (cross-correlation coefficient requirement) is not required.

Figures 3H.6-12 through 3H.6-14 show the comparison of the response spectrum for the Synthetic time history, the Input Spectrum, and 1.3 times the Input Spectrum, in the two horizontal and vertical directions. The response spectra of synthetic time histories were calculated for comparison with target spectra at 275 frequency points with spacing as shown in Tables 3H.6-2d through 3H.6-2f. As shown in Tables 3H.6-2d through 3H.6-2f, the 5% damped response spectra of the synthetic time histories do not fall more than 10% below the target response spectrum at any frequency.

The time step and duration of the synthetic time histories are 0.005 seconds and 22 seconds, respectively. When the time histories are input in SSI analysis using SASSI2000 program, trailing zeros are added at the end of 22 seconds to yield a total duration of 40.96 seconds (the time step of trailing zeros is also 0.005 seconds).

The duration of the time histories for Arias Intensity to rise from 5% to 75% is 11.2 seconds for the two horizontal design time histories and 12.2 seconds for the vertical design time history. For the characteristic earthquake time history this duration is calculated to be 20 to 45 seconds. The shorter duration for the design time histories is acceptable because:

(a) The SRP requires that synthetic time histories be derived from recorded time histories from recorded earthquakes. Strong motion recorded earthquake with a 20 – 45 seconds duration of the time histories for Arias Intensity to rise from 5% to 75% are not readily available to be used for the seed time histories to generate the synthetic time histories.

(b) The time histories are being used for linear elastic analyses. For linear analysis, the duration of the time histories is not critical provided the duration is comparable to recorded strong motion earthquakes and the time history spectra closely matches the target response spectra. For the design time histories, the duration is consistent with the Taft Earthquake and the time history closely matches the target response spectra.

For the characteristic earthquake V/A is calculated as 52 to115 cm/sec/g and AD/V^2 is calculated as 2.03 to 5.28. For the design time histories, the V/A is 230, 288, and 167 cm/sec/g for the two horizontal and the vertical time histories respectively and the AD/V^2 values are 2.08, 1.89, and 3.02 respectively. This variation between the design time histories and the characteristic earthquake is due to the conservative design response spectra described in Section 3H.6.5.1.1.1. The design response spectra is a 0.13g RG 1.60 spectra with enhanced low frequency content to account for the very deep soil site. The comparison of the V/A and the AD/V^2 value of the characteristic earthquake and the conservative design response spectra shows that the design response spectra has a higher energy (greater maximum Velocity).

3H.6.5.1.2 Percentage of Critical Damping Values

The percentages of critical damping values considered in the seismic analysis for site-specific seismic Category I structures and associated systems and components are the same as listed in DCD Table 3.7-1. The damping values are the same as in Regulatory Guides 1.61 and 1.84, except for the cable trays and conduits, as explained in DCD Section 3.7.1.3. The OBE damping values were used for the generation of in-structure response spectra (ISRS).

The strain-compatible, soil-damping values considered in the seismic analysis are discussed in Subsection 3H.6.5.2.4.

3H.6.5.1.3 Supporting Media for Seismic Category I Structures

Soil conditions at the STP 3 & 4 site are described in Subsection 2.5S.4. The soil at the site extends down several thousand feet and consists of alternating layers of clay, silt, and sand. Soil layering characteristics, geophysical shear wave velocity, unit weight, and Poisson's ratio are included in Table 2.5S.4-27. Based on the site groundwater conditions described in Section 2.4S.12, the groundwater elevation of approximately 8 ft below grade was used in computing soil properties for the SSI analysis.

The SASSI2000 soil model, for the UHS basin and RSW pump house, included soil down to a minimum of two times the maximum plan dimension of the building below the basemat. The bottom boundary of the model was considered to have an elastic half space condition.

The characteristic dimensions of the above grade site-specific seismic Category I structures are summarized below:

Structure	Embedment Depth to Bottom of Foundation Mat [1]	Maximum Height[1]	Base Dimensions
UHS Basin	32 ft (9.75 m)	95.5 ft (29.1 m)	312 ft (95.10 m) x 164 ft (49.99 m) x 10 ft (3.05 m) thick foundation
UHS Cooling Towers	[2]	151 ft (46.0 m)	N/A
RSW Pump Houses Pump Bays	64 ft (19.5 m)	80 ft (24.4 m)	94 ft (28.65 m) x 170 ft (51.82 m)
RSW Piping Tunnel	44 ft (13.4 m)	42 ft (12.8 m) [3]	17 ft (5.2 m) wide

[1] As measured from the bottom of the foundation mudmat.
[2] Located above the basin and supported on columns.

[3] The access shafts for the tunnels extends to a maximum height of approximately 66 ft above the bottom of the foundation mudmat.

3H.6.5.2 Seismic System Analysis

The following Subsections 3H.6.5.2.1 through 3H.6.5.2.14 describe the seismic analysis of the UHS and RSW pump house structures. Subsection 3H.6.5.3 describes the seismic analysis of the RSW piping tunnel.

3H.6.5.2.1 Seismic Analysis Methods

The seismic analysis of the UHS basin and RSW pump house structures was performed using a frequency-domain time history analysis as described in DCD Appendix 3A using SASSI2000. Analyses were performed for three orthogonal (two horizontal and one vertical) directions and account for the translational, rocking, and torsional responses of the structures and foundations.

3H.6.5.2.2 Natural Frequencies and Responses

The natural frequencies up to 33 Hz for the UHS/RSW Pump House are presented in Table 3H.6-3. Accelerations and displacements at key locations are provided in Table 3H.6-4. The SSE loads at select locations are provided in Table 3H.6-4a. Response spectra at the major equipment elevations and support points are provided in Figures 3H.6-16 through 3H.6-39. Combined forces and moments at critical locations, along with required and provided reinforcements, are provided in Tables 3H.6-7 through 3H.6 9.

The analysis of RSW Piping Tunnels is presented in Section 3H.6.6.2.2.

3H.6.5.2.3 Procedures for Analytical Modeling

The seismic analysis of the UHS basin and enclosed cooling tower as well as RSW pump house for each unit was performed using a three-dimensional finite element model presented in Figure 3H.6-40. The material properties for concrete elements of the model are presented in Section 3H.6.4.4.1. Uncracked concrete section was used for member stiffness. Another case with cracked concrete section properties was analyzed. The section modulus of the cracked concrete was based on 50% of the uncracked section modulus. For structural steel elements the Young's Modulus of $29x10_6$ psi and Poisson's ratio of 0.3 was used. The model consists primarily of plate elements that represent the reinforced concrete walls, buttresses, and foundation as well as the walls and slabs of the basin, cooling towers, and pump house. Beam elements were used to represent concrete columns and beams. Finally, solid elements were used to represent the basin and pump houses house basemat. The floor and wall flexibility was modeled in the finite element model. The model mesh size is detailed enough to model the principal features of the structure and transmit frequencies of at least 33 Hz. The analysis was performed in the frequency domain as described in DCD Appendix 3A. The input time histories were defined at a time step of 0.005 seconds. The same time step was used for generation of the in-structure response spectra..

The mass of the structures was represented primarily by the density of the plate, beam, and solid elements comprising the model. The dead load of the structures and major equipment (fans and pumps) was included along with a 50 psf load to account for the attached piping, grating, electrical cable trays and conduits, HVAC duct work etc., as described in Section 3H.6.4.3.1.1. In addition, as described in Section 3H.6.4.3.1.2, 25% of the floor live load was also included. The damping values consistent with Regulatory Guide 1.61 were used as described in Section 3H.6.5.1.2. The impulsive water mass was calculated using the procedure described in Commentary Subsection C3.5.4 of ASCE 4-98, and was included in the model.

3H.6.5.2.4 Soil-Structure Interaction

Soil-structure interaction (SSI) effects were accounted for by the use of the SASSI2000 computer program in conjunction with time histories described in Subsection 3H.6.5.1.1.2 and the structural model described in Subsection 3H.6.5.2.3 and shown in Figure 3H.6-15. The input ground motion time histories described in Section 3H.6.5.1.1.2 were applied at the finished grade in the free field. SASSI2000 implicitly considers transmitting boundaries in the formulation of impedance calculation. SASSI2000 sub-structuring method was used and no boundary condition besides the standard SASSI2000 elastic half space at the bottom of the site soil layering was used. The SASSI2000 analysis addresses the embedment of the structure, groundwater effects, the layering of the soil, and variations of the strain-dependent soil properties. A separate SSI analysis for effects of side soil-wall separation during the seismic event was performed using the method in Section 3.3.1.9 of ASCE 4-98. Results of this analysis were enveloped with other SSI analyses.

The strain-compatible soil shear wave velocity and damping values for the SSI analysis were obtained from the same site response analysis which was used to develop the GMRS, as described in Section 2.5S.2.5. The seismic site response analysis was conducted using P-SHAKE computer program, which also provided the strain-compatible soil properties for the SSI analysis. A set of mean strain-compatible shear wave velocity and damping profiles along with the associated standard deviations was calculated. The calculated mean properties and associated standard deviations were used to develop the best estimate (BE), upper bound (UB), and lower bound (LB) profiles. While the BE profile is the mean profile, the UB and LB profiles are the median +/- one standard deviation, respectively, maintaining the minimum variation of 1.5 on soil shear modulus, per the guidance provided in SRP 3.7.2. The corresponding compression wave velocity profiles were calculated using the shear wave velocity and the Poisson's ratio. The resulting strain-compatible properties for the three profiles, which were used in the SSI analysis, are presented in Table 3H.6-1. The soil layer thicknesses used in the SSI model were sufficiently small to transmit frequency up to 33 Hz for mean soil properties.

The layer thicknesses used for both in-situ soil and back fill soil, in the SSI model, were modified from those shown in Tables 3H.6-1 and 3H.6-2 to have thicknesses sufficiently small enough to conservatively transmit frequencies up to 33 Hz for the corresponding mean soil properties. Tables 3H.6-1a, b, and c provide the actual layer thicknesses, along with the strain-compatible soil properties data and passing frequency values for the three in-situ soil profiles, i.e., mean, upper bound, and lower bound, respectively. Similar data for the backfill are provided in Tables 3H.6-2a, b, and c. The layer thicknesses, H, were computed using the following equation:

$$H = V_s/(5*F_{t-s})$$

where V_s is the shear wave velocity and F_{t-s} is the transmittal frequency.

In the SSI model, the layer thicknesses used for the mean soil case were also used for the lower bound in-situ and back fill soil. Based on the above equation, the transmittal frequencies for the lower bound soil layers are 26 Hz or higher. ASCE 4-98, Section 3.3.3.5 recommends that "The cutoff frequency may be taken as twice the highest dominant frequency of the coupled soil-structure system for the direction under consideration, but not less than 10 Hz." The dominant frequency of coupled soil-structure system has been calculated using the procedure recommended in ASCE 4-98, Section 3.3.3.5. Based on this calculation the highest frequency of the coupled soil-structure system is less than 6 Hz. Thus, the cutoff frequency is required to be at least 12 Hz. The lower bound soil model's lowest transmittal frequency of 26 Hz is larger than the required 12 Hz, and therefore is acceptable.

In order to account for the backfill placed adjacent to the walls, an additional set of SSI analyses was performed by modeling the backfill as the soil horizon above the foundation level in the SASSI2000 model. The soil layer thicknesses used for the back fill were sufficiently small to transmit the required frequencies as explained in the above paragraph. The responses obtained from this set of SSI analyses and the analyses using in-situ soil as the horizon were enveloped.

The following properties were used for the backfill to obtain shear wave and compression wave velocities, and damping ratios used in the SSI analysis:

- Unit Weight:..120 pcf (1,922 kg/m^3)
- Compaction: ....95% Modified Proctor
- Poisson's Ratio:.............................0.42 above water table, 0.47 below water table

Based on the physical properties of the backfill described above, its strain compatible dynamic soil properties are estimated using the following steps:

(1) Determine SSE compatible soil shear strains in the backfill

It is assumed that the strains in the backfill are same as in the surrounding soil (in-situ soil). This assumption is reasonable because the extent of the backfill is small as compared to the surrounding soil and the primary motion of the backfill will be about the same as the surrounding soil. The strain in the in-situ soil is calculated using the following steps:

(a) The ratio G / Gmax for an in-situ stratum is calculated using the mean strain compatible shear wave velocity ($V_{-\ strain}$) in layers (from Table 3H.6 1) within the stratum and the average field measured shear wave velocity (V_{-field}, from Table 2.5S.4-27) in the following equation:

$$G / Gmax = [V_{-\ strain} \ / \ V_{-field}\ ]^2$$

(b) Using the shear modulus degradation curve (see Table 2.5S.4-32) of the soil stratum and the above calculated G / Gmax ratio, the SSE induced shear strain is calculated for the stratum.

(c) An average value of shear strain is calculated for the entire backfill depth by averaging the strain values for all the strata.

(2) Determine the strain compatible shear modulus and damping values of the backfill

The backfill is granular soil compacted to 95% Modified Proctor (85% relative density). Based on this, shear modulus degradation curve for the 85% relative density sand from Earthquake Engineering Research Center (EERC) Report 70–10 (Soil Moduli and Damping Factors for Dynamic Response Analysis, by Seed and Idriss) is used for calculating the strain compatible shear modulus, for the strain calculated in Step 1. The strain compatible shear modulus of the backfill , $G_{backfill}$ is calculated using the following equation:

$$G_{backfill} = 1000\ K_2\ \sigma_m^{1/2}\ psf \qquad \text{(EERC Report 70-10)}$$

Where the coefficient K_2 is from the EERC Report 70-10 degradation curve for the calculated shear strain, and σ_m is the effective mean principal stress in the soil.

The damping value of the backfill is estimated using the sand strain dependent damping curve provided in EERC Report 70-10.

The above strain compatible shear modulus is the best estimate values (G_m). To consider the variability in shear modulus values, the lower bound (G_{LB}) and upper bound (G_{UB}) values are calculated using SRP Section 3.7.2 criteria.

$$G_{LB} = G_m / 1.5$$

$$G_{UB} = 1.5 \times G_m$$

The corresponding strain compatible shear wave velocities (V_S) and compression wave velocities (V_P) are calculated using the general equations:

$V_S = [G / \rho]^{1/2}$ where G is the shear modulus and ρ is the mass density of soil.

$V_P = V_S [(2 - 2 v) / (1- 2 v)]^{1/2}$

Where, v is the Poisson's Ratio values equal to 0.42 and 0.47 for the backfill above groundwater and below groundwater table, respectively.

The strain-compatible shear wave and compression wave velocities, and damping ratios calculated as above are used in the three backfill models (mean, upper bound, and lower bound) are shown in Table 3H.6-2.

3H.6.5.2.5 Development of In-Structure Response Spectra

In-structure response spectra (ISRS), shown in Figures 3H.6-16 through 3H.6-39 were developed as part of the SSI analysis in accordance with RG 1.122. The ISRS in a given direction was obtained by combining the three ISRS in that direction (developed from the separate analyses of the three directions of input motion) by the square-root-of-the-sum-of-the-squares (SRSS) method. The frequency increment for the calculation of ISRS was either smaller than or the same as provided in Table 1 of Regulatory Guide 1.122. The ISRS were broadened by ±15% based on the guidance provided in Regulatory Guide 1.122. See Section 3H.6.5.2.9 for the treatment of the effects due to concrete cracking.

3H.6.5.2.6 Three Components of Earthquake Motion

Separate analyses were performed in three orthogonal (two horizontal and one vertical) directions. Total structural responses (accelerations, displacements, and forces) were calculated by combining the co-directional responses as described in Subsection 3H.6.5.1.1.2.

3H.6.5.2.7 Combination of Modal Responses

Since a frequency-domain seismic analysis was performed, there were no modal responses to be combined.

3H.6.5.2.8 Interaction of Non-Category I Structures with Category I SSCs

There are no non-Category I structures near the site-specific seismic Category I structures. Consequently, there is no interaction between non-Category I and the site-specific seismic Category I structures.

3H.6.5.2.9 Effects of Parameter Variations on Floor Responses

The soil property variation described in Subsection 3H.6.5.2.4 is accounted for in the generation of the ISRS. In addition, the impact of variations in the input parameters to the seismic analysis is accounted for by broadening the FRS in accordance with RG 1.122. To account for concrete cracking, in addition to other uncertainties, the ISRS are developed with structural properties based on cracked concrete stiffness and the mean soil properties. These spectra are enveloped with the spectra from the uncracked analysis and, then, widened by ±15% to obtain final ISRS for use in design.

3H.6.5.2.10 Use of Equivalent Vertical Static Factors

Since a separate seismic analysis was performed for the vertical direction, equivalent static factors were not used to define the vertical seismic responses.

3H.6.5.2.11 Methods Used to Account for Torsional Effects

Inherent torsion (i.e. torsion resulting from eccentricity between the locations of the center of mass and the center of rigidity) is accounted for in the seismic analysis. Note that the structural model in the SSI analysis of the UHS/RSW pump house is a detailed 3-D finite element model which incorporates torsional degrees of freedom and eccentricities. The SSI analysis does not account for accidental torsion.

The accidental torsion is computed in accordance with the SRP Acceptance Criteria 3.7.2.II.11 considering an additional eccentricity of ±5% of the maximum building dimension for both horizontal directions. The magnitude and location of the eccentricities in the two horizontal directions are determined separately at each floor elevation. The induced member forces due to this accidental torsion are obtained from static analysis of the structure and are added to the induced forces due to other applicable loads whether the analysis predicts positive or negative results (i.e. absolute sum).

3H.6.5.2.12 Comparison of Responses

Since only a frequency-domain analysis is performed, comparison of responses is presented.

3H.6.5.2.13 Analysis Procedure for Damping

The SSI analysis accounts for the structural and soil-damping described in Subsection 3H.6.5.1.2.

3H.6.5.2.14 Determination of Seismic Overturning Moments and Sliding Forces for Seismic Category I Structures

The evaluation of seismic overturning moments and sliding accounts for the simultaneous application of seismic forces in three directions using 100%, 40%, 40% combination rule as shown below:

±100% X-excitation ±40% Y-excitation +40% Z-excitation
±40% X-excitation ±100% Y-excitation +40% Z-excitation

(Note: X & Y are horizontal axes and Z is vertical axis. Positive Z is upward.
Also, ±40% X-excitation ±40% Y-excitation ±100% Z-excitation is not critical.)

The resisting forces and moments due to dead load are calculated using a reduction factor of 0.90. Resisting forces and moments due to soil are based on at-rest soil pressure. The friction coefficients used for the sliding evaluation are 0.30 under the RSW Pump House and 0.40 under the UHS Basin. See Figure 3H.6-137 for formulations used for calculation of factors of safety against sliding and overturning.

The calculated stability safety factors for the UHS/RSW Pump House are provided in Table 3H.6-5.

3H.6.5.2.15 Plant Shutdown Criteria

The plant shutdown criteria described in DCD Section 3.7.4.4 will be used based on the site-specific SSE response spectra shown in Figures 3.7-1a and 3.7-2a.

3H.6.5.2.16 Seismic Category I Substructures

Analysis and design of site-specific Seismic Category I substructures (e.g., platforms, support frame structures, buried piping, tunnels, etc.) are in accordance with DCD Tier 2 Section 3.7.3, except that the site-specific SSE is used as seismic input. There is no site-specific Seismic Category I above ground tank at STP 3 & 4.

3H.6.5.3 Seismic Analysis of RSW Piping Tunnels

The seismic analysis of the RSW piping tunnel was performed using a 2-dimensional SSI model of the tunnel section. In order to account for the effect of the adjacent Reactor Building on the input motion to be used for the SSI analysis, the site-specific design time history described in Section 3H.6.5.1.1.2 was amplified by 15%. The OBE damping (4%) was used for the analysis and in-structure response spectra generation. The analysis was performed for the upper-bound, mean, and lower-bound soil conditions. The in-structure response spectra at the base slab and all three levels of the tunnel were enveloped and broadened by 15% to obtain the horizontal and vertical response spectra presented in Figures 3H.6-138 and 3H.6-139 for the RSW tunnel design. The traveling wave effects during a seismic event that are acting on the structure have been considered per Section 3.5.2.1 of ASCE 4-98.

3H.6.6 Structural Analysis and Design Summary

3H.6.6.1 Analytical Models

The structural analysis and design of the UHS basin and the RSW pump house was performed using a finite element model (FEM). The FEM model is shown in Figure 3H.6-40. The analysis for the seismic loads was performed using equivalent static loads and the induced forces due to the X, Y, and Z seismic excitations were combined using the SRSS method of combination. For the portions of the UHS basin where liquid-tightness is required (i.e., exterior walls and basemat of the basin), in addition to satisfying ACI 349 strength requirements, the required strength was increased by the environmental durability factors noted in Subsection 3H.6.4.3.4.3 per Section 9.2.8 of ACI 350-01. Detailed stability evaluations were performed for sliding, overturning, and flotation. For sliding and overturning evaluations, the 100%, 40%, 40% rule was used for consideration of the X, Y, and Z seismic excitations.

3H.6.6.2 Analytical Approach

3H.6.6.2.1 UHS Basin, UHS Cooling Tower Enclosure, and RSW Pump House

The analysis described in Subsection 3H.6.6.1 considers the following loads, combined in accordance with Subsection 3H.6.4.3.4:

- Dead and live loads on the UHS basin, UHS cooling tower enclosures, and RSW pump houses as specified in Subsection 3H.6.4.3.1, plus the weight of the UHS cooling tower fill, equipment and commodities in the RSW pump house.
- Hydrostatic and hydrodynamic (impulsive and convective) loads corresponding to the water in the basin, and on the walls and the piers of the UHS basin. The hydrodynamic loads are calculated in accordance with Subsection C3.5.4 of ASCE 4 and meet the guidance provided in SRP 3.7.3, Acceptance Criterion 14.
- Specifically the "Housner method" described in TID-7024 is used to determine the hydrodynamic impulsive and convective masses.
- The impulsive masses are applied to the walls of the UHS Soil-Structure Interaction (SSI) model. Therefore, the horizontal impulsive-mode spectral acceleration is based on consideration of the flexibility of the tank.
- The seismically induced hydrodynamic pressures on the tank walls are determined by the modal and spatial combination methods outlined in SRP Section 3.7.2 including the effects of soil-structure interaction.
- Since the fundamental sloshing (convective) frequency is so low (0.135 cycles per second in the N-S direction and 0.078 cycles per s oly
- econd in the E-W direction), the convective mass is not included in the SSI model but is considered in the design by employing the spectral acceleration of the horizontal convective frequency at 0.5 percent damping.
- The hydrodynamic pressure is added to the hydrostatic pressure to account for the induced tension and compression forces on basin walls in the design.
- At-rest lateral soil pressure on the walls of the UHS basin and RSW pump houses.
- Hydrostatic pressures on the walls of the UHS basin and RSW pump houses due to groundwater.
- Dynamic lateral soil pressures on the walls of the UHS basin and RSW pump houses due to an SSE, calculated using the methodology defined in Subsection 3.5.3.2.2 of ASCE 4.
- Surcharge pressure of 300 psf (14.4 kPa) applied to the access road to the UHS basin and RSW pump houses.

- SSE forces corresponding to the weight of the structures being acted on by the accelerations established by the SSI analysis.
- Wind loads on the UHS basin, UHS cooling tower enclosures, and RSW pump houses calculated as indicated in Subsection 3H.6.4.3.2.
- Tornado wind and pressure loads on the UHS basin, UHS cooling tower enclosures, and RSW pump houses calculated as specified in Subsection 3H.6.4.3.3.1.
- The design flood loads on the RSW pump houses and tunnels are as stated in Subsection 3H.6.4.2.3.

3H.6.6.2.2 RSW Piping Tunnels

The individual components of the RSW Piping Tunnels (roof slab, intermediate slabs, base mat and walls) have out-of-plane frequency in excess of 33 Hz and their out-of-plane seismic loads are determined using a conservative acceleration of 0.21g which exceeds the maximum Zero Period Acceleration (ZPA) of response spectra Figures 3H.6-138 and 3H.6-139. Manual calculations are used for the analysis and design of individual components of the RSW Piping Tunnels (roof slab, intermediate slab, base mat, walls) considering all applicable loads and load combinations including dead load, live load, earth pressure loads, wind and tornado loads, SSE seismic loads, internal flood loads and external flood loads.

In general the walls and slabs are designed as one-way slabs with walls spanning in the vertical direction and the slabs spanning in the East-West direction (normal to the tunnel axis). All connections are conservatively considered pinned except for those connecting to the base mat, which are considered fixed. The resulting moments and shears from this simplified analysis along with any induced axial tension or compression due to dead load and/or reactions from adjoining elements are used to determine the required rebar in accordance with the requirements of ACI 349-97. Table 3H.6-6 provides the design summary for RSW Piping Tunnels.

The tensile axial strain on the RSW Tunnel due to Safe Shutdown Earthquake (SSE) wave propagation is determined based on the equations and commentary outlined in Section 3.5.2.1 of ASCE 4-98. Equation 3.5-1 of ASCE 4-98 is used to compute the axial strain. As this equation gives the upper bound, Equation 3.5-2 from Section 3.5.2.1.2 of ASCE 4-98 is conservatively neglected.

The maximum curvature is computed based on Equation 3.5-3 in Section 3.5.2.1.3 of ASCE 4 98. The maximum curvature is then converted into additional axial strain by multiplying the curvature by the distance from the centroid of the RSW Piping Tunnels to the extreme fiber of the RSW Tunnel. For these computations, the following parameters are considered:

- Rayleigh waves with apparent wave velocity of 3,000 ft/sec (as recommended in appendix C3.5.2.1 of ASCE 4-98)

- Conservative ground acceleration of 0.21g
- Maximum ground velocity of 10.08 in/sec (which is based on 48 in/sec per 1.0g ground acceleration)
- Dead load of the tunnel walls and the soil above the tunnel.
- Live load of 200 psf (9.6 kPa) applied to the floor of the tunnels.
- At-rest lateral soil pressure on the tunnel walls.
- Hydrostatic pressures on the tunnel walls due to groundwater.
- Dynamic lateral soil pressures on the tunnel walls due to an SSE calculated using the methodology defined in Subsection 3.5.3.2.2 of ASCE 4. Lateral soil pressures used for design of RSW Piping Tunnels are presented in Figure 3H.6-44.
- Surcharge pressure of 500 psf (23.9 kPa) applied to the ground above the tunnels.
- SSE forces corresponding to the weight of the tunnels being acted on by the accelerations established by the SSI analysis.

The tensile axial strain and strain due to maximum curvature are conservatively added together to obtain the actual strain in the longitudinal direction of the RSW Tunnel. The actual strain is then compared to the cracking strain of concrete and maximum allowable strain of the reinforcing. The maximum computed tensile axial strain is 2.9 x 10^{-4} in/in which is about 14% of the rebar yield strain of 2.069 x 10^{-3} in/in. This analysis considered the loads identified below, combined in accordance with Subsection 3H.6.4.3.4.

3H.6.6.3 Structural Design

The strength design criteria defined in ACI 349 as supplemented by RG 1.142 as well as ACI 350 (note: ACI 350 is applicable only to the exterior walls below the 71 ft maximum water level and basemat of UHS basin), was used to design the reinforced concrete elements making up the UHS basin and cooling tower enclosures as well as the RSW pump houses and piping tunnels. Concrete with a compressive strength of 4.0 ksi (27.6 MPa) and reinforcing steel with a yield strength of 60 ksi (414 MPa) are considered in the design.

3H.6.6.3.1 UHS Basin/UHS Cooling Tower/RSW Pump House Concrete Wall and Slab Design

The design forces and provided reinforcement for UHS basin, UHS cooling tower, and RSW pump house walls and slabs are shown in Tables 3H.6-7 and 3H.6-8. Each face and each direction of each wall and slab has a corresponding longitudinal reinforcement zone figure. Each wall and slab also has a corresponding transverse shear reinforcement zone figure when transverse shear reinforcement is required. The reinforcement zone figures (Figures 3H.6-51 through 3H.6-136) show the various zones used to define the provided reinforcement based on the finite element analysis results. Actual provided reinforcement, based on final rebar layout, may exceed the reported provided reinforcement and the zones with higher reinforcement may be extended beyond their reported zone boundaries.

The shell forces from every element for every load combination in the finite element analysis were evaluated to determine the provided reinforcement in each reinforcement zone. For each reinforcement zone, the following out-of-plane moment and axial force couples with the corresponding load combination are reported in Tables 3H.6-7 and 3H.6-8:

- The maximum tension axial force with the corresponding moment acting simultaneously from the same load combination.
- The maximum compression axial force with the corresponding moment acting simultaneously from the same load combination.
- The maximum moment that has a corresponding axial tension acting simultaneously in the same load combination.
- The maximum moment that has a corresponding axial compression in the same load combination.

For each reinforcement zone, the following in-plane and transverse shears with the corresponding load combination are reported in Tables 3H.6-7 and 3H.6-8:

- The in-plane shear is the maximum average in-plane shear along a plane that crosses the longitudinal reinforcement zone.
- The transverse shear is the maximum average transverse shear along a plane in that transverse reinforcement zone.

The provided longitudinal reinforcing for each face and each direction is determined based on the out-of-plane moments, axial forces, and in-plane shears occurring simultaneously for every load combination.

The provided transverse shear reinforcing (as required) is determined based on the transverse shears and axial forces perpendicular to the shear plane occurring simultaneously for every load combination. The UHS basin and RSW pump house basemats were also evaluated for punching shear at critical locations under buttresses and columns.

The forces in the structure caused by differential settlements due to the flexibility of the basin and pump house basemats and supporting soil were accounted for through the use of foundation soil springs in the finite element model. The soil spring stiffness values used in the finite element model were based on the calculated soil subgrade modulus, which is a function of the foundation settlement.

The UHS basin basemat is supported by area springs with the following uniform spring constants in the finite element model:

Vertical springs (with static loads) .... 30 kips/ft/ft^2

Vertical springs (with seismic loads) .... 80 kips/ft/ft^2

North-south springs (with static and seismic loads) .... 33 kips/ft/ft^2

East-west springs (with static and seismic loads) .... 30 kips/ft/ft^2

The RSW pump house basemat is supported by area springs with the following uniform spring constants in the finite element model:

Vertical springs (with static loads) .... 60 kips/ft/ft^2

Vertical springs (with seismic loads) .... 170 kips/ft/ft^2

North-south springs (with static and seismic loads) .... 112 kips/ft/ft^2

East-west springs (with static and seismic loads) .... 104 kips/ft/ft^2

The RSW pump house operating floor and roof were designed with composite steel beams and concrete slabs for vertical loading. The composite beams span in the east-west direction with the concrete slab designed as spanning one-way between the composite beams. The operating floor and roof slabs also act as diaphragms to transfer lateral loads. The provided reinforcing for the operating floor and roof slabs is reported in Table 3H.6-8.

3H.6.6.3.2 UHS Basin Beam and Column Design

The beams and columns in the UHS basin were represented with frame elements in the finite element model. The frame forces for every load combination in the finite element model were evaluated to determine the provided reinforcement for each beam and column in Table 3H.6-9. For each beam and column, the following forces and the corresponding load combination are reported in Table 3H.6-9:

- The maximum axial compression force with the corresponding biaxial bending moments (M2 and M3) acting simultaneously from the same load combination.
- The maximum axial tension force with the corresponding biaxial bending moments (M2 and M3) acting simultaneously from the same load combination. Note that the columns do not have an axial tension case.
- The maximum M2 bending moment with the corresponding M3 bending moment and axial force acting simultaneously from the same load combination.
- The maximum M3 bending moment with the corresponding M2 bending moment and axial force acting simultaneously from the same load combination.
- The maximum shear V2.
- The maximum shear V3.

- The maximum torsion.

The provided longitudinal reinforcing in Table 3H.6.9 is determined based on the axial force, biaxial moments (M2 and M3), and torsion. The provided stirrup reinforcing is determined based on the axial force, shears (V2 and V3), and torsion.

3H.6.6.4 Foundations

The foundations for the UHS basin, cooling towers, and pump house consist of a reinforced concrete mat and a lean concrete mud mat supported on undisturbed soil. The RSW piping tunnels, which extend from each pump house to the corresponding control building locations, are provided with flexible connections at the building interfaces that prevent any potential movement of the buildings from creating forces or moments in the tunnels.

The loads and load combinations considered in the design of the common foundation mat are as defined in Subsection 3H.6.4.3. The design is in accordance with the strength design criteria defined in ACI 349 as supplemented by RG 1.142 as well as ACI 350, and considered concrete with a compressive strength of 4.0 ksi (27.6 MPa) and reinforcing steel with a yield strength of 60 ksi (414 MPa).

To prevent seepage of groundwater through the common foundation or through the walls of the basin and pump houses, a waterproofing membrane is applied to the exposed concrete surface of the mudmat. In addition, a waterproof membrane is installed on the walls up to one foot below grade, with a water proof coating being applied from that level up to the flood level. While, as indicated in FSAR Subsection 3.8.6.1, the waterproofing of the mudmat will not reduce the ability of the foundation to transfer horizontal shear forces to the underlying soil, the waterproof membrane will protect the walls from any possible deleterious effects from aggressive groundwater. To prevent seepage of groundwater into the tunnels, a waterproof membrane is used.

3H.6.6.5 Stability Evaluations

The factors of safety of the combined UHS basin and RSW pump house and RSW Piping tunnel against sliding, overturning, and flotation are provided in Table 3H.6-5.

3H.6.7 Diesel Generator Fuel Oil Storage Vaults (DGFOSV)

The Diesel Generator Fuel Oil Storage Vaults (DGFOSV) are reinforced concrete structures, located below grade with an access room above grade. The DGFOSV house fuel oil tanks and transfer pumps. The DGFOSV are buried in the structural back-fill. The embedment depth to the bottom of the 2 ft thick mudmat is approximately 45 ft, the maximum height from the bottom of the mudmat is approximately 61 ft, and the basemat dimensions are approximately 81.5 ft by 48 ft. Properties of the backfill are described in Section 3H.6.5.2.4. A 3-dimensional SAP2000 response spectrum analysis was used to obtain the SSE design forces due to structure inertia. The seismic induced dynamic soil pressures on DGFOSV walls and roof were computed using the method of ASCE 4-98, Subsection 3.5.3.2.

Two DGFOSV are located about 50 feet away from the south face of the Reactor Building (RB), which is a heavy multistory structure. The third DGFOSV is located approximately 38 feet away from the north face of the Reactor Service Water (RSW) Pump House. Considering the soil profile at the STP Units 3 & 4 site, the induced acceleration at the foundation level of the DGFOSV during a safe-shutdown earthquake (SSE) event may be amplified due to their close proximity to the RB (for the two) or the RSW Pump House (for the third). To establish the input motion for the soil-structure interaction (SSI) analysis of the DGFOSV, considering the impact of the nearby heavy RB (for the two) and RSW Pump House (for the third) structures, an analysis as described below was performed.

Five interaction nodes at the ground surface and five at the depth corresponding to the bottom elevation of the DGFOSV foundations are added to the three dimensional SSI SASSI2000 model of the RB for obtaining free field responses for the two DGFOSV close to the RB. These five nodes correspond to the four corners and the center of the DGFOSV. This RB SSI model is analyzed for the STP site-specific SSE. For each of these two DGFOSV, first an average of the spectra at five nodes at the surface and foundation each is calculated and then envelope of the two average spectra is calculated. A similar SSI analysis is performed for the third DGFOSV close to the RSW Pump House. Finally, the envelope of the envelope average spectra for the three DGFOSV and the 0.3g Regulatory Guide 1.60 response spectrum is used as the input response spectrum for the SSI analysis of the DGFOSV. The DGFOSV and the equipment and components inside the vault are designed using the results of the SSI analysis.

The comparison of response spectra (the minimum required 0.1g Regulatory Guide 1.60 spectra, the FIRS, and the deconvolved SHAKE outcrop spectra) at the foundation level of the DGFOSV is presented in Figures 3H.6-11d through 3H.6-11L. As can be seen from these figures, the deconvolved SHAKE outcrop spectra envelop the minimum required spectra and FIRS for the three sets of soil properties.

The applicable codes, standards, and specifications from Section 3H.6.4 are used for analysis and design of the DGFOSV.

The DGFOSV are designed to the applicable loads and load combinations specified in Section 3H.6.4.

The settlement information on the DGFOSV is included in Section 2.5S.4.10.

The forces and moments at critical locations in the DGFOSV along with the provided longitudinal and transverse reinforcement are included in Table 3H.6-11 in conjunction with Figures 3H.6-140 through 3H.6-208.

The calculated factors of safety against sliding, overturning, and flotation for the DGFOSV are included in Table 3H.6-12.

The tornado missile impact evaluation results for the DGFOSV are included in Table 3H.6-13.

3H.6.8 Seismic Gaps at the Interface of Site-Specific Seismic Category I Structures and the Adjoining Structures

The joints (i.e. separation gaps) at the interface of site-specific seismic category I structures (Reactor Service Water Tunnels and Diesel Generator Fuel Oil Storage Vaults) with the adjoining structures (Control Buildings, Reactor Service Water Pump Houses, and Diesel Generator Fuel Oil Tunnels) are designed to accommodate the expected movements without transmitting significant forces. These separation gaps are sized at least 50% larger than the absolute sum of the maximum calculated displacements due to seismic movements and long term settlement. The joint material used as flexible filler will be polyurethane foam impregnated with a waterproofing sealing compound, or a similar material, capable of being compressed to 1/3 of its thickness without subjecting the structures to more than a negligible pressure of about seven psi.

Table 3H.6.15 provides summary of the required and provided gaps at the interface of site-specific seismic category I structures with adjoining structures.

3H.6.9 References

3H.6-1 US Department of Army, Fundamentals of Protective Design for Conventional Weapons, TM 5-855-1, November 1986.

3H.6-2 C. R Russell, “Reactor Safeguards,” published by MacMillian, New York, 1962.

Table 3H.1-23 Factors of Safety for Foundation Stability*

	Overturning		Sliding		Floatation	
Load Combination	Req'd.	Actual	Req'd.	Actual	Req'd.	Actual
D + F'					*1.1*	~~*2.43*~~ **2.24**
$D + L_o + F + H + E_{ss}$	*1.1*	*490*	*1.1*	*1.11*		

Here:

F = Buoyant Forces from Design Ground Water (0.61m Below Grade)

F' = Buoyant Forces from Design Basis Flood (~~0.3m Below~~ 1.83m Above Grade)

H = Lateral Soil Pressure

L_o *= Live Load Acting During an Earthquake (Zero Live Load is Considered).*

E_{ss} *= SSE Load*

D = Dead Load

** Based on the calculation for shear forces due to tornado loads, it was found that it is less than 10% of the shear forces due to the seismic effects. Hence it was concluded that the load combinations comprising of wind and tornado loadings will not be the governing load combinations for the evaluation of overturning and sliding effects of the R/B stability and therefore, were not evaluated.*

Table 3H.2-5 Stability Evaluation–Factors of Safety

Load Combination	Overturning		Sliding		Flotation	
	Required	Actual	Required	Actual	Required	Actual
D+F'	-	-	-	-	*1.1*	~~*1.42*~~ **1.30**
D+F+H+W	*1.5*	*2.79*	*1.5*	*2.74*	-	-
$D+F+H+W_t$	*1.1*	*2.66*	*1.1*	*2.69*	-	-
$D+L_o+F+H'+E'$**	*1.1*	*123**	*1.1*	*1.14*	-	-

* *Based on the energy technique*

** *Zero live load is considered.*

F' = Buoyant Forces from Design Basis Flood (1.83m Above Grade)

Table 3H.3-1 Radwaste Building Design Seismic Loads

Wall	Elevation (ft)	In-Plane Forces(1) 1/2 SSE (0.15g) (kips)	In-Plane Moments(1) 1/2 SSE (0.15g) (kips-ft)
North Wall	95’-0”	5963	0
	35’-0”	4133	351845
	(-)11’-0”	9328	770605
South Wall	95’-0”	5351	0
	35’-0”	2888	315719
	(-)11’-0”	7186	635566
East Wall	95’-0”	4555	0
	35’-0”	3276	268725
	(-)11’-0”	7282	595912
West Wall	95’-0”	5481	0
	35’-0”	4362	323390
	(-)11’-0”	9125	732302

Vertical Direction: Maximum Acceleration	
Elevation (ft)	Acceleration (g)
(-)11’-0”	0.150
35’-0”	0.151
95’-0”	0.331

Notes:

(1) The forces and moments reported are the maximum calculated for all time steps. Therefore, the summation of the forces at Elevation 35’-0” and Elevation 95’-0” is not equal to the force at Elevation (-)11’-0”.

Table 3H.3-2 Natural Frequencies of the Radwaste Building - Fixed Base Condition

Mode No.	Frequency (Hz)	Direction
1	2.60	Vertical
2	8.44	Vertical
3	9.10	North-South
4	10.84	East-West
5	12.39	East-West
6	15.48	North-South
7	18.40	East-West
8	23.01	North-South
9	23.95	Vertical
10	27.90	Vertical

Table 3H.3-3 Results of Radwaste Building Concrete Wall Design

Location	Face	Direction	Reinforcement Layout Drawing Number (1)	Thickness (ft)	Reinforcement Zone Number (2)	Maximum Forces (3)	Element	Longitudinal Reinforcement Design Loads – Axial and Flexure Loads – Load Combination	Axial (4) (kips / ft)	Flexure (4) (ft-kips / ft)	In-Plane Shear Loads – Load Combination	In-plane (5) Shear (kips / ft)	Longitudinal Reinforcement Provided (in^2/ ft)	Transverse Shear Design Loads – Load Combination	Transverse Shear (6) Reinforcement Design Loads (kips / ft)	Transverse Shear (7) Reinforcement Provided (in^2/ft^2)	Remarks
North Wall	Near Side	Horizontal	3H 3-8	3	1-H-L	Max Tension w/ corresponding moment	34365	1.4D + 1.7L + 1.7H' + 1.7Eo	239	-28	1.4D + 1.7L + 1.7H' + 1.7Eo	91	3.12	-	-	-	
						Max Compression w/ corresponding moment	34322	1.4D + 1.7L + 1.7H' + 1.7Eo	-323	-20							
						Max Moment with axial tension	30238	1.4D + 1.7L + 1.7H' + 1.7Eo	1	-244							
						Max Moment with axial compression	26461	D + L + H' + E'	-205	-378							
					2-H-L	Max Tension w/ corresponding moment	29155	1.4D + 1.7L + 1.7H' + 1.7Eo	69	-58	1.4D + 1.7L + 1.7H' + 1.7Eo	130	1.56	-	-	-	
						Max Compression w/ corresponding moment	29147	1.4D + 1.7L + 1.7H' + 1.7Eo	-128	-46							
						Max Moment with axial tension	30183	1.4D + 1.7L + 1.7H' + 1.7Eo	14	-174							
						Max Moment with axial compression	30183	1.4D + 1.7L + 1.7H' + 1.7Eo	-12	-174							
					3-H-L	Max Tension w/ corresponding moment	28574	1.4D + 1.7L + 1.7H' + 1.7Eo	117	-49	1.4D + 1.7L + 1.7H' + 1.7Eo	130	3.12	-	-	-	
						Max Compression w/ corresponding moment	26429	1.4D + 1.7L + 1.7H' + 1.7Eo	-288	-233							
						Max Moment with axial tension	26429	1.4D + 1.7L + 1.7H' + 1.7Eo	5	-274							
						Max Moment with axial compression	26429	1.4D + 1.7L + 1.7H' + 1.7Eo	-242	-316							
				4	4-H-L	Max Tension w/ corresponding moment	23487	D + L + H' + E'	28	-460	1.4D + 1.7L + 1.7H' + 1.7Eo	133	6.24	-	-	-	
						Max Compression w/ corresponding moment	14749	D + L + H' + E'	-119	-191							
						Max Moment with axial tension	23487	D + L + H' + E'	7	-534							
						Max Moment with axial compression	12522	D + L + H' + E'	-66	-749							
					5-H-L	Max Tension w/ corresponding moment	23478	1.4D + 1.7L + 1.7H' + 1.7Eo	158	-61	1.4D + 1.7L + 1.7H' + 1.7Eo	133	3.12	-	-	-	
						Max Compression w/ corresponding moment	34327	1.4D + 1.7L + 1.7H' + 1.7Eo	-280	-11							
						Max Moment with axial tension	22248	1.4D + 1.7L + 1.7H' + 1.7Eo	4	-93							
						Max Moment with axial compression	23474	D + L + H' + E'	-171	-294							
					6-H-L	Max Tension w/ corresponding moment	23472	1.4D + 1.7L + 1.7H' + 1.7Eo	84	-301	1.4D + 1.7L + 1.7H' + 1.7Eo	119	10.92	-	-	-	
						Max Compression w/ corresponding moment	22807	1.4D + 1.7L + 1.7H' + 1.7Eo	-213	-545							
						Max Moment with axial tension	23472	D + L + H' + E'	16	-912							
						Max Moment with axial compression	23472	D + L + H' + E'	-163	-1025							
					7-H-L	Max Tension w/ corresponding moment	16716	1.4D + 1.7L + 1.7H' + 1.7Eo	40	-147	1.4D + 1.7L + 1.7H' + 1.7Eo	133	6.24	-	-	-	
						Max Compression w/ corresponding moment	16716	1.4D + 1.7L + 1.7H' + 1.7Eo	-175	-479							
						Max Moment with axial tension	11710	D + L + H' + E'	13	-670							
						Max Moment with axial compression	16716	D + L + H' + E'	-117	-727							
				5.5	8-H-L	Max Tension w/ corresponding moment	6477	1.4D + 1.7L + 1.7H' + 1.7Eo	15	-82	1.4D + 1.7L + 1.7H' + 1.7Eo	127	9.36	-	-	-	
						Max Compression w/ corresponding moment	8972	D + L + H' + E'	-452	-1165							
						Max Moment with axial tension	8957	1.4D + 1.7L + 1.7H' + 1.7Eo	1	-300							
						Max Moment with axial compression	8972	D + L + H' + E'	-305	-1428							
					9-H-L	Max Tension w/ corresponding moment	2787	1.4D + 1.7L + 1.7H' + 1.7Eo	69	-70	1.4D + 1.7L + 1.7H' + 1.7Eo	157	6.24	-	-	-	
						Max Compression w/ corresponding moment	5570	D + L + H' + E'	-174	-1045							
						Max Moment with axial tension	2772	D + L + H' + E'	5	-483							
						Max Moment with axial compression	5570	D + L + H' + E'	-173	-1052							

Table 3H.3-3 Results of Radwaste Building Concrete Wall Design (Continued)

Location	Face	Direction	Reinforcement Layout Drawing Number (1)	Thickness (ft)	Reinforcement Zone Number (2)	Maximum Forces (3)	Element	Longitudinal Reinforcement Design Loads					Longitudinal Reinforcement Provided (in^2/ ft)	Transverse Shear Design Loads		Transverse Shear (7) Reinforcement Provided (in^2/ft^2)	Remarks
								Axial and Flexure Loads			In-Plane Shear Loads						
								Load Combination	Axial (4) (kips / ft)	Flexure (4) (ft-kips / ft)	Load Combination	In-plane (5) Shear (kips / ft)		Load Combination	Transverse Shear (6) Reinforcement Design Loads (kips / ft)		
North Wall	Near Side	Horizontal	3H.3-8	4	10-H-L	Max Tension w/ corresponding moment	11709	D + L + H' + E'	156	-346	1.4D + 1.7L + 1.7H' + 1.7Eo	133	6.24				
						Max Compression w/ corresponding moment	21365	1.4D + 1.7L + 1.7H' + 1.7Eo	-108	-289							
						Max Moment with axial tension	19506	D + L + H' + E'	0	-700							
						Max Moment with axial compression	19506	D + L + H' + E'	-29	-700							
				5.5	11-H-L	Max Tension w/ corresponding moment	8956	1.4D + 1.7L + 1.7H' + 1.7Eo	33	-205	1.4D + 1.7L + 1.7H' + 1.7Eo	127	6.24				
						Max Compression w/ corresponding moment	8956	1.4D + 1.7L + 1.7H' + 1.7Eo	-132	-808							
						Max Moment with axial tension	8956	1.4D + 1.7L + 1.7H + 1.7W	5	-361							
						Max Moment with axial compression	8956	D + L + H' + E'	-107	-1004							
				4	12-H-L	Max Tension w/ corresponding moment	23438	1.4D + 1.7L + 1.7H' + 1.7Eo	103	-190	1.4D + 1.7L + 1.7H' + 1.7Eo	133	4.68	-	-	-	
						Max Compression w/ corresponding moment	23438	1.4D + 1.7L + 1.7H' + 1.7Eo	-235	-247							
						Max Moment with axial tension	12474	D + L + H' + E'	0	-411							
						Max Moment with axial compression	13635	D + L + H' + E'	-91	-441							
					13-H-L	Max Tension w/ corresponding moment	11706	D + L + H' + E'	43	-116	1.4D + 1.7L + 1.7H' + 1.7Eo	133	3.12	-	-	-	
						Max Compression w/ corresponding moment	22231	1.4D + 1.7L + 1.7H' + 1.7Eo	-120	-127							
						Max Moment with axial tension	11706	D + L + H' + E'	43	-116							
						Max Moment with axial compression	22242	D + L + H' + E'	-42	-164							
					14-H-L	Max Tension w/ corresponding moment	23440	1.4D + 1.7L + 1.7H' + 1.7Eo	113	-384	1.4D + 1.7L + 1.7H' + 1.7Eo	114	6.24	-	-	-	
						Max Compression w/ corresponding moment	23440	1.4D + 1.7L + 1.7H' + 1.7Eo	-353	-449							
						Max Moment with axial tension	23440	1.4D + 1.7L + 1.7H' + 1.7Eo	39	-431							
						Max Moment with axial compression	23440	1.4D + 1.7L + 1.7H' + 1.7Eo	-277	-535							
					15-H-L	Max Tension w/ corresponding moment	23431	1.4D + 1.7L + 1.7H' + 1.7Eo	60	-88	1.4D + 1.7L + 1.7H' + 1.7Eo	114	3.12	-	-	-	
						Max Compression w/ corresponding moment	23431	1.4D + 1.7L + 1.7H' + 1.7Eo	-129	-125							
						Max Moment with axial tension	23424	1.4D + 1.7L + 1.7H' + 1.7Eo	0	-157							
						Max Moment with axial compression	20084	D + L + H' + E'	-76	-308							
				5.5	16-H-L	Max Tension w/ corresponding moment	8952	1.4D + 1.7L + 1.7H' + 1.7Eo	26	-59	1.4D + 1.7L + 1.7H' + 1.7Eo	127	4.68	-	-	-	
						Max Compression w/ corresponding moment	8902	D + L + H' + E'	-354	-301							
						Max Moment with axial tension	8941	1.4D + 1.7L + 1.7H + 1.7W	0	-209							
						Max Moment with axial compression	7183	D + L + H' + E'	-177	-845							
					17-H-L	Max Tension w/ corresponding moment	2716	1.4D + 1.7L + 1.7H' + 1.7Eo	61	-79	1.4D + 1.7L + 1.7H' + 1.7Eo	157	6.24	-	-	-	
						Max Compression w/ corresponding moment	2716	1.4D + 1.7L + 1.7H' + 1.7Eo	-166	-272							
						Max Moment with axial tension	2771	D + L + H' + E'	2	-433							
						Max Moment with axial compression	4498	D + L + H' + E'	-156	-650							
				3	18-H-L	Max Tension w/ corresponding moment	36068	1.4D + 1.7L + 1.7H' + 1.7Eo	220	-120	1.4D + 1.7L + 1.7H' + 1.7Eo	58	3.12	-	-	-	
						Max Compression w/ corresponding moment	36068	1.4D + 1.7L + 1.7H' + 1.7Eo	-431	-114							
						Max Moment with axial tension	36131	1.4D + 1.7L + 1.7H' + 1.7Eo	193	-206							
						Max Moment with axial compression	36131	1.4D + 1.7L + 1.7H' + 1.7Eo	-181	-206							

Table 3H.3-3 Results of Radwaste Building Concrete Wall Design (Continued)

Location	Face	Direction	Reinforcement Layout Drawing Number (1)	Thickness (ft)	Reinforcement Zone Number (2)	Maximum Forces (3)	Element	Longitudinal Reinforcement Design Loads — Axial and Flexure Loads: Load Combination	Axial (4) (kips / ft)	Flexure (4) (ft-kips / ft)	In-Plane Shear Loads: Load Combination	In-plane (5) Shear (kips / ft)	Longitudinal Reinforcement Provided (in^2/ft)	Transverse Shear Design Loads: Load Combination	Transverse Shear (6) Reinforcement Design Loads (kips / ft)	Transverse Shear (7) Reinforcement Provided (in^2/ft^2)	Remarks
North Wall	Near Side	Vertical	3H 3-9	3	1-V-L	Max Tension w/ corresponding moment	34324	1.4D + 1.7L + 1.7H' + 1.7Eo	187	-21	1.4D + 1.7L + 1.7H' + 1.7Eo	106	3.12	-	-	-	
						Max Compression w/ corresponding moment	34324	1.4D + 1.7L + 1.7H' + 1.7Eo	-466	-7							
						Max Moment with axial tension	27520	1.4D + 1.7L + 1.7H' + 1.7Eo	25	-219							
						Max Moment with axial compression	29969	1.4D + 1.7L + 1.7H	-133	-258							
					2-V-L	Max Tension w/ corresponding moment	34322	1.4D + 1.7L + 1.7H' + 1.7Eo	127	-16	1.4D + 1.7L + 1.7H' + 1.7Eo	267	4.68	-	-	-	
						Max Compression w/ corresponding moment	34323	1.4D + 1.7L + 1.7H' + 1.7Eo	-359	-16							
						Max Moment with axial tension	26461	D + L + H' + E'	28	-270							
						Max Moment with axial compression	26461	D + L + H' + E'	-184	-270							
					3-V-L	Max Tension w/ corresponding moment	26444	1.4D + 1.7L + 1.7H' + 1.7Eo	107	-345	1.4D + 1.7L + 1.7H' + 1.7Eo	70	6.24	-	-	-	
						Max Compression w/ corresponding moment	26444	1.4D + 1.7L + 1.7H	-152	-120							
						Max Moment with axial tension	26444	1.4D + 1.7L + 1.7H' + 1.7Eo	27	-378							
						Max Moment with axial compression	26444	1.4D + 1.7L + 1.7H' + 1.7Eo	-89	-378							
					4-V-L	Max Tension w/ corresponding moment	26437	D + L + H' + E'	66	-497	1.4D + 1.7L + 1.7H' + 1.7Eo	74	7.80	-	-	-	
						Max Compression w/ corresponding moment	26436	1.4D + 1.7L + 1.7H	-170	-190							
						Max Moment with axial tension	26436	1.4D + 1.7L + 1.7H' + 1.7Eo	32	-578							
						Max Moment with axial compression	26436	1.4D + 1.7L + 1.7H' + 1.7Eo	-53	-578							
					5-V-L	Max Tension w/ corresponding moment	26435	1.4D + 1.7L + 1.7H' + 1.7Eo	29	-404	1.4D + 1.7L + 1.7H' + 1.7Eo	73	6.24	-	-	-	
						Max Compression w/ corresponding moment	27221	1.4D + 1.7L + 1.7H	-183	-9							
						Max Moment with axial tension	26435	1.4D + 1.7L + 1.7H' + 1.7Eo	29	-404							
						Max Moment with axial compression	26435	1.4D + 1.7L + 1.7H' + 1.7Eo	-88	-444							
					6-V-L	Max Tension w/ corresponding moment	26405	1.4D + 1.7L + 1.7H' + 1.7Eo	133	-40	1.4D + 1.7L + 1.7H' + 1.7Eo	83	6.24	-	-	-	
						Max Compression w/ corresponding moment	26405	1.4D + 1.7L + 1.7H' + 1.7Eo	-355	-10							
						Max Moment with axial tension	26418	1.4D + 1.7L + 1.7H' + 1.7Eo	23	-357							
						Max Moment with axial compression	26418	1.4D + 1.7L + 1.7H' + 1.7Eo	-112	-357							

Table 3H.3-3 Results of Radwaste Building Concrete Wall Design (Continued)

Location	Face	Direction	Reinforcement Layout Drawing Number (1)	Thickness (ft)	Reinforcement Zone Number (2)	Maximum Forces (3)	Element	Longitudinal Reinforcement Design Loads: Axial and Flexure Loads: Load Combination	Axial (4) (kips / ft)	Flexure (4) (ft-kips / ft)	In-Plane Shear Loads: Load Combination	In-plane (5) Shear (kips / ft)	Longitudinal Reinforcement Provided (in^2/ ft)	Transverse Shear Design Loads: Load Combination	Transverse Shear (6) Reinforcement Design Loads (kips / ft)	Transverse Shear (7) Reinforcement Provided (in^2/ft^2)	Remarks
North Wall	Near Side	Vertical	3H.3-9	4	7-V-L	Max Tension w/ corresponding moment	11725	1.4D + 1.7L + 1.7H' + 1.7Eo	138	-66	1.4D + 1.7L + 1.7H' + 1.7Eo	139	4.68	-	-	-	
						Max Compression w/ corresponding moment	11724	1.4D + 1.7L + 1.7H' + 1.7Eo	-447	-86							
						Max Moment with axial tension	23487	D + L + H' + E'	11	-196							
						Max Moment with axial compression	23487	1.4D + 1.7L + 1.7H' + 1.7Eo	-240	-212							
					8-V-L	Max Tension w/ corresponding moment	23479	1.4D + 1.7L + 1.7H' + 1.7Eo	87	-38	1.4D + 1.7L + 1.7H' + 1.7Eo	183	3.12	-	-	-	
						Max Compression w/ corresponding moment	11719	1.4D + 1.7L + 1.7H' + 1.7Eo	-273	0							
						Max Moment with axial tension	23481	1.4D + 1.7L + 1.7H' + 1.7Eo	7	-73							
						Max Moment with axial compression	23481	1.4D + 1.7L + 1.7H' + 1.7Eo	-222	-73							
					9-V-L	Max Tension w/ corresponding moment	34327	1.4D + 1.7L + 1.7H' + 1.7Eo	108	-64	1.4D + 1.7L + 1.7H' + 1.7Eo	213	4.68	-	-	-	
						Max Compression w/ corresponding moment	34326	1.4D + 1.7L + 1.7H' + 1.7Eo	-407	-9							
						Max Moment with axial tension	22809	D + L + H' + E'	16	-168							
						Max Moment with axial compression	22809	D + L + H' + E'	-214	-168							
					10-V-L	Max Tension w/ corresponding moment	23471	1.4D + 1.7L + 1.7H' + 1.7Eo	104	-562	1.4D + 1.7L + 1.7H' + 1.7Eo	233	7.80	-	-	-	
						Max Compression w/ corresponding moment	11710	1.4D + 1.7L + 1.7H' + 1.7Eo	-318	-54							
						Max Moment with axial tension	23472	D + L + H' + E'	47	-777							
						Max Moment with axial compression	23472	D + L + H' + E'	-211	-777							
					11-V-L	Max Tension w/ corresponding moment	21627	1.4D + 1.7L + 1.7H' + 1.7Eo	81	-71	1.4D + 1.7L + 1.7H' + 1.7Eo	144	4.68	-	-	-	
						Max Compression w/ corresponding moment	11705	1.4D + 1.7L + 1.7H' + 1.7Eo	-358	-42							
						Max Moment with axial tension	22805	D + L + H' + E'	28	-317							
						Max Moment with axial compression	23468	1.4D + 1.7L + 1.7H' + 1.7Eo	-245	-479							
					12-V-L	Max Tension w/ corresponding moment	16710	1.4D + 1.7L + 1.7H' + 1.7Eo	53	-58	1.4D + 1.7L + 1.7H' + 1.7Eo	163	3.12	-	-	-	
						Max Compression w/ corresponding moment	14466	1.4D + 1.7L + 1.7H' + 1.7Eo	-312	-10							
						Max Moment with axial tension	16710	D + L + H' + E'	17	-212							
						Max Moment with axial compression	16709	1.4D + 1.7L + 1.7H' + 1.7Eo	-295	-279							
					13-V-L	Max Tension w/ corresponding moment	23455	D + L + H' + E'	44	-337	1.4D + 1.7L + 1.7H' + 1.7Eo	225	6.24	-	-	-	
						Max Compression w/ corresponding moment	11696	1.4D + 1.7L + 1.7H' + 1.7Eo	-288	-12							
						Max Moment with axial tension	23456	D + L + H' + E'	4	-403							
						Max Moment with axial compression	23451	1.4D + 1.7L + 1.7H' + 1.7Eo	-169	-514							
					14-V-L	Max Tension w/ corresponding moment	23448	D + L + H' + E'	63	-531	1.4D + 1.7L + 1.7H' + 1.7Eo	228	7.80	-	-	-	
						Max Compression w/ corresponding moment	11685	1.4D + 1.7L + 1.7H' + 1.7Eo	-286	-53							
						Max Moment with axial tension	23448	1.4D + 1.7L + 1.7H' + 1.7Eo	5	-700							
						Max Moment with axial compression	23447	1.4D + 1.7L + 1.7H' + 1.7Eo	-90	-724							
					15-V-L	Max Tension w/ corresponding moment	23441	1.4D + 1.7L + 1.7H' + 1.7Eo	67	-589	1.4D + 1.7L + 1.7H' + 1.7Eo	177	6.24	-	-	-	
						Max Compression w/ corresponding moment	11679	1.4D + 1.7L + 1.7H' + 1.7Eo	-320	-34							
						Max Moment with axial tension	23441	1.4D + 1.7L + 1.7H' + 1.7Eo	24	-675							
						Max Moment with axial compression	23441	1.4D + 1.7L + 1.7H' + 1.7Eo	-170	-715							
					16-V-L	Max Tension w/ corresponding moment	23439	1.4D + 1.7L + 1.7H' + 1.7Eo	105	-203	1.4D + 1.7L + 1.7H' + 1.7Eo	220	9.36	-	-	-	
						Max Compression w/ corresponding moment	23439	1.4D + 1.7L + 1.7H' + 1.7Eo	-331	-334							
						Max Moment with axial tension	23440	1.4D + 1.7L + 1.7H' + 1.7Eo	2	-826							
						Max Moment with axial compression	23440	1.4D + 1.7L + 1.7H' + 1.7Eo	-192	-891							

Table 3H.3-3 Results of Radwaste Building Concrete Wall Design (Continued)

Location	Face	Direction	Reinforcement Layout Drawing Number (1)	Thickness (ft)	Reinforcement Zone Number (2)	Maximum Forces (3)	Element	Longitudinal Reinforcement Design Loads – Axial and Flexure Loads – Load Combination	Axial (4) (kips / ft)	Flexure (4) (ft-kips / ft)	In-Plane Shear Loads – Load Combination	In-plane (5) Shear (kips / ft)	Longitudinal Reinforcement Provided (in^2/ ft)	Transverse Shear Design Loads – Load Combination	Transverse Shear (6) Reinforcement Design Loads (kips / ft)	Transverse Shear (7) Reinforcement Provided (in^2/ft^2)	Remarks
North Wall	Near Side	Vertical	3H.3-9	4	17-V-L	Max Tension w/ corresponding moment	11678	1.4D + 1.7L + 1.7H' + 1.7Eo	52	-49	1.4D + 1.7L + 1.7H' + 1.7Eo	220	4.68	-	-	-	
						Max Compression w/ corresponding moment	11678	1.4D + 1.7L + 1.7H' + 1.7Eo	-283	-45							
						Max Moment with axial tension	11677	1.4D + 1.7L + 1.7H' + 1.7Eo	3	-117							
						Max Moment with axial compression	14439	1.4D + 1.7L + 1.7H' + 1.7Eo	-165	-155							
					18-V-L	Max Tension w/ corresponding moment	23438	1.4D + 1.7L + 1.7H' + 1.7Eo	101	-228	1.4D + 1.7L + 1.7H' + 1.7Eo	193	6.24	-	-	-	
						Max Compression w/ corresponding moment	23438	1.4D + 1.7L + 1.7H' + 1.7Eo	-326	-373							
						Max Moment with axial tension	23433	1.4D + 1.7L + 1.7H' + 1.7Eo	1	-389							
						Max Moment with axial compression	23433	1.4D + 1.7L + 1.7H' + 1.7Eo	-145	-407							
					19-V-L	Max Tension w/ corresponding moment	11671	1.4D + 1.7L + 1.7H' + 1.7Eo	39	-45	1.4D + 1.7L + 1.7H' + 1.7Eo	176	3.12	-	-	-	
						Max Compression w/ corresponding moment	11671	1.4D + 1.7L + 1.7H' + 1.7Eo	-263	-43							
						Max Moment with axial tension	20662	D + L + H' + E'	16	-74							
						Max Moment with axial compression	20666	1.4D + 1.7L + 1.7H' + 1.7Eo	-144	-91							
					20-V-L	Max Tension w/ corresponding moment	23432	D + L + H' + E'	72	-386	1.4D + 1.7L + 1.7H' + 1.7Eo	176	7.80	-	-	-	
						Max Compression w/ corresponding moment	11669	1.4D + 1.7L + 1.7H' + 1.7Eo	-279	-78							
						Max Moment with axial tension	23431	1.4D + 1.7L + 1.7H' + 1.7Eo	4	-565							
						Max Moment with axial compression	23431	1.4D + 1.7L + 1.7H' + 1.7Eo	-67	-572							
					21-V-L	Max Tension w/ corresponding moment	11656	1.4D + 1.7L + 1.7H' + 1.7Eo	133	-67	1.4D + 1.7L + 1.7H' + 1.7Eo	200	6.24	-	-	-	
						Max Compression w/ corresponding moment	11654	1.4D + 1.7L + 1.7H' + 1.7Eo	-487	-183							
						Max Moment with axial tension	23423	1.4D + 1.7L + 1.7H' + 1.7Eo	1	-392							
						Max Moment with axial compression	23428	1.4D + 1.7L + 1.7H' + 1.7Eo	-193	-454							
				5.5	22-V-L	Max Tension w/ corresponding moment	8972	1.4D + 1.7L + 1.7H' + 1.7Eo	200	-88	1.4D + 1.7L + 1.7H' + 1.7Eo	178	6.24	-	-	-	
						Max Compression w/ corresponding moment	8972	1.4D + 1.7L + 1.7H' + 1.7Eo	-695	-124							
						Max Moment with axial tension	6488	D + L + H' + E'	1	-255							
						Max Moment with axial compression	6489	D + L + H' + E'	-469	-290							
					23-V-L	Max Tension w/ corresponding moment	2787	1.4D + 1.7L + 1.7H' + 1.7Eo	420	-193	1.4D + 1.7L + 1.7H' + 1.7Eo	178	10.92	-	-	-	
						Max Compression w/ corresponding moment	2787	1.4D + 1.7L + 1.7H' + 1.7Eo	-841	-342							
						Max Moment with axial tension	2780	D + L + H' + E'	40	-1333							
						Max Moment with axial compression	2780	D + L + H' + E'	-261	-1333							
					24-V-L	Max Tension w/ corresponding moment	2716	1.4D + 1.7L + 1.7H' + 1.7Eo	384	-235	1.4D + 1.7L + 1.7H' + 1.7Eo	223	9.36	-	-	-	
						Max Compression w/ corresponding moment	2716	1.4D + 1.7L + 1.7H' + 1.7Eo	-801	-282							
						Max Moment with axial tension	17268	D + L + H' + E'	39	-1213							
						Max Moment with axial compression	17268	D + L + H' + E'	-250	-1213							

Table 3H.3-3 Results of Radwaste Building Concrete Wall Design (Continued)

Location	Face	Direction	Reinforcement Layout Drawing Number (1)	Thickness (ft)	Reinforcement Zone Number (2)	Maximum Forces (3)	Element	Longitudinal Reinforcement Design Loads: Axial and Flexure Loads: Load Combination	Axial (4) (kips / ft)	Flexure (4) (ft-kips / ft)	In-Plane Shear Loads: Load Combination	In-plane (5) Shear (kips / ft)	Longitudinal Reinforcement Provided (in^2/ ft)	Transverse Shear Design Loads: Load Combination	Transverse Shear (6) Reinforcement Design Loads (kips / ft)	Transverse Shear (7) Reinforcement Provided (in^2/ft^2)	Remarks
North Wall	Near Side	Vertical	3H.3-9	3	25-V-L	Max Tension w/ corresponding moment	36131	1.4D + 1.7L + 1.7H' + 1.7Eo	108	-190	1.4D + 1.7L + 1.7H' + 1.7Eo	94	4.68	-	-	-	
						Max Compression w/ corresponding moment	36068	1.4D + 1.7L + 1.7H' + 1.7Eo	-296	-154							
						Max Moment with axial tension	36131	1.4D + 1.7L + 1.7H' + 1.7Eo	64	-227							
						Max Moment with axial compression	36131	1.4D + 1.7L + 1.7H' + 1.7Eo	-152	-227							
					26-V-L	Max Tension w/ corresponding moment	26428/ 26429	1.4D + 1.7L + 1.7H' + 1.7Eo	115	-610	1.4D + 1.7L + 1.7H' + 1.7Eo	66	12.87	-	-	-	(8), (9)
						Max Compression w/ corresponding moment	26428/ 26429	1.4D + 1.7L + 1.7H' + 1.7Eo	-325	-700							
						Max Moment with axial tension	26428/ 26429	1.4D + 1.7L + 1.7H' + 1.7Eo	39	-723							
						Max Moment with axial compression	26428/ 26429	1.4D + 1.7L + 1.7H' + 1.7Eo	-291	-724							
					27-V-L	Max Tension w/ corresponding moment	26422	1.4D + 1.7L + 1.7H' + 1.7Eo	254	-546	1.4D + 1.7L + 1.7H' + 1.7Eo	76	12.87	-	-	-	(8), (9)
						Max Compression w/ corresponding moment	28574	1.4D + 1.7L + 1.7H' + 1.7Eo	-531	-243							
						Max Moment with axial tension	26422	1.4D + 1.7L + 1.7H' + 1.7Eo	158	-549							
						Max Moment with axial compression	26422	1.4D + 1.7L + 1.7H' + 1.7Eo	-338	-549							
					28-V-L	Max Tension w/ corresponding moment	26429/ 26430	1.4D + 1.7L + 1.7H' + 1.7Eo	59	-447	1.4D + 1.7L + 1.7H' + 1.7Eo	73	9.36	-	-	-	(8)
						Max Compression w/ corresponding moment	27219	1.4D + 1.7L + 1.7H	-221	-93							
						Max Moment with axial tension	26429/ 26430	1.4D + 1.7L + 1.7H' + 1.7Eo	14	-553							
						Max Moment with axial compression	26429/ 26430	1.4D + 1.7L + 1.7H' + 1.7Eo	-134	-567							
					29-V-L	Max Tension w/ corresponding moment	26684	D + L + H' + E'	70	-367	1.4D + 1.7L + 1.7H' + 1.7Eo	81	9.36	-	-	-	
						Max Compression w/ corresponding moment	27210	1.4D + 1.7L + 1.7H	-211	-92							
						Max Moment with axial tension	26421	1.4D + 1.7L + 1.7H' + 1.7Eo	38	-486							
						Max Moment with axial compression	26421	1.4D + 1.7L + 1.7H' + 1.7Eo	-133	-489							
	Far side	Horizontal	3H.3-10	3	1-H-L	Max Tension w/ corresponding moment	34365	1.4D + 1.7L + 1.7H' + 1.7Eo	292	20	1.4D + 1.7L + 1.7H' + 1.7Eo	130	3.12	-	-	-	
						Max Compression w/ corresponding moment	26429	1.4D + 1.7L + 1.7H' + 1.7Eo	-288	116							
						Max Moment with axial tension	32070	1.4D + 1.7L + 1.7H' + 1.7Eo	14	324							
						Max Moment with axial compression	32070	1.4D + 1.7L + 1.7H' + 1.7Eo	-78	324							
					2-H-L	Max Tension w/ corresponding moment	26467	1.4D + 1.7L + 1.7H' + 1.7Eo	317	86	1.4D + 1.7L + 1.7H' + 1.7Eo	91	6.24	-	-	-	
						Max Compression w/ corresponding moment	34322	1.4D + 1.7L + 1.7H' + 1.7Eo	-513	31							
						Max Moment with axial tension	26467	D + L + H' + E'	243	234							
						Max Moment with axial compression	26467	D + L + H' + E'	-31	234							

Table 3H.3-3 Results of Radwaste Building Concrete Wall Design (Continued)

Location	Face	Direction	Reinforcement Layout Drawing Number (1)	Thickness (ft)	Reinforcement Zone Number (2)	Maximum Forces (3)	Element	Longitudinal Reinforcement Design Loads					Longitudinal Reinforcement Provided (in^2/ ft)	Transverse Shear Design Loads		Transverse Shear (7) Reinforcement Provided (in^2/ft^2)	Remarks
								Axial and Flexure Loads			In-Plane Shear Loads						
								Load Combination	Axial (4) (kips / ft)	Flexure (4) (ft-kips / ft)	Load Combination	In-plane (5) Shear (kips / ft)		Load Combination	Transverse Shear (6) Reinforcement Design Loads (kips / ft)		
North Wall	Far side	Horizontal	3H.3-10	4	3-H-L	Max Tension w/ corresponding moment	23478	1.4D + 1.7L + 1.7H' + 1.7Eo	158	175	1.4D + 1.7L + 1.7H' + 1.7Eo	133	6.24	-	-	-	
						Max Compression w/ corresponding moment	34326	D + L + H' + E'	-281	103							
						Max Moment with axial tension	23478	D + L + H' + E'	2	545							
						Max Moment with axial compression	23478	D + L + H' + E'	-152	545							
					4-H-L	Max Tension w/ corresponding moment	23440	1.4D + 1.7L + 1.7H' + 1.7Eo	113	317	1.4D + 1.7L + 1.7H' + 1.7Eo	114	4.68	-	-	-	
						Max Compression w/ corresponding moment	23440	1.4D + 1.7L + 1.7H' + 1.7Eo	-353	167							
						Max Moment with axial tension	23440	1.4D + 1.7L + 1.7H' + 1.7Eo	104	326							
						Max Moment with axial compression	23440	1.4D + 1.7L + 1.7H' + 1.7Eo	-43	326							
					5-H-L	Max Tension w/ corresponding moment	23434	1.4D + 1.7L + 1.7H' + 1.7Eo	101	58	1.4D + 1.7L + 1.7H' + 1.7Eo	133	3.12	-	-	-	
						Max Compression w/ corresponding moment	11657	D + L + H' + E'	-184	155							
						Max Moment with axial tension	21599	1.4D + 1.7L + 1.7H' + 1.7Eo	35	118							
						Max Moment with axial compression	13244	D + L + H' + E'	-102	247							
				5.5	6-H-L	Max Tension w/ corresponding moment	2787	1.4D + 1.7L + 1.7H' + 1.7Eo	65	21	1.4D + 1.7L + 1.7H' + 1.7Eo	157	6.24	-	-	-	
						Max Compression w/ corresponding moment	8970	D + L + H' + E'	-191	228							
						Max Moment with axial tension	8963	1.4D + 1.7L + 1.7H' + 1.7Eo	6	233							
						Max Moment with axial compression	8963	D + L + H' + E'	-70	1018							
					7-H-L	Max Tension w/ corresponding moment	8952	1.4D + 1.7L + 1.7H' + 1.7Eo	26	31	1.4D + 1.7L + 1.7H' + 1.7Eo	127	3.12	-	-	-	
						Max Compression w/ corresponding moment	8942	1.4D + 1.7L + 1.7H' + 1.7Eo	-123	37							
						Max Moment with axial tension	8941	1.4D + 1.7L + 1.7H' + 1.7Eo	15	108							
						Max Moment with axial compression	5544	D + L + H' + E'	-88	254							
					8-H-L	Max Tension w/ corresponding moment	2716	1.4D + 1.7L + 1.7H' + 1.7Eo	58	30	1.4D + 1.7L + 1.7H' + 1.7Eo	157	4.68	-	-	-	
						Max Compression w/ corresponding moment	8174	1.4D + 1.7L + 1.7H' + 1.7Eo	-163	94							
						Max Moment with axial tension	8936	1.4D + 1.7L + 1.7H' + 1.7Eo	4	430							
						Max Moment with axial compression	8937	D + L + H' + E'	-58	545							
					9-H-L	Max Tension w/ corresponding moment	8902	1.4D + 1.7L + 1.7H + 1.7W	21	77	1.4D + 1.7L + 1.7H' + 1.7Eo	127	3.12	-	-	-	
						Max Compression w/ corresponding moment	8902	D + L + H' + E'	-266	185							
						Max Moment with axial tension	8913	1.4D + 1.7L + 1.7H + 1.7W	0	195							
						Max Moment with axial compression	8139	D + L + H' + E'	-164	491							
				3	10-H-L	Max Tension w/ corresponding moment	36068	1.4D + 1.7L + 1.7H' + 1.7Eo	220	119	1.4D + 1.7L + 1.7H' + 1.7Eo	58	3.12	-	-	-	
						Max Compression w/ corresponding moment	36068	1.4D + 1.7L + 1.7H' + 1.7Eo	-431	116							
						Max Moment with axial tension	36076	1.4D + 1.7L + 1.7H' + 1.7Eo	68	238							
						Max Moment with axial compression	36076	1.4D + 1.7L + 1.7H' + 1.7Eo	-25	238							

Table 3H.3-3 Results of Radwaste Building Concrete Wall Design (Continued)

Location	Face	Direction	Reinforcement Layout Drawing Number (1)	Thickness (ft)	Reinforcement Zone Number (2)	Maximum Forces (3)	Element	Longitudinal Reinforcement Design Loads: Axial and Flexure Loads: Load Combination	Axial (4) (kips / ft)	Flexure (4) (ft-kips / ft)	In-Plane Shear Loads: Load Combination	In-plane (5) Shear (kips / ft)	Longitudinal Reinforcement Provided (in^2/ ft)	Transverse Shear Design Loads: Load Combination	Transverse Shear (6) Reinforcement Design Loads (kips / ft)	Transverse Shear (7) Reinforcement Provided (in^2/ft^2)	Remarks
North Wall	Far side	Vertical	3H.3-11	3	1-V-L	Max Tension w/ corresponding moment	27568	1.4D + 1.7L + 1.7H' + 1.7Eo	180	24	1.4D + 1.7L + 1.7H' + 1.7Eo	106	3.12	-	-	-	
						Max Compression w/ corresponding moment	27568	1.4D + 1.7L + 1.7H' + 1.7Eo	-586	41							
						Max Moment with axial tension	26445	1.4D + 1.7L + 1.7H' + 1.7Eo	32	314							
						Max Moment with axial compression	26445	1.4D + 1.7L + 1.7H' + 1.7Eo	-90	314							
					2-V-L	Max Tension w/ corresponding moment	34324	1.4D + 1.7L + 1.7H' + 1.7Eo	187	44	1.4D + 1.7L + 1.7H' + 1.7Eo	267	4.68	-	-	-	
						Max Compression w/ corresponding moment	34324	1.4D + 1.7L + 1.7H' + 1.7Eo	-633	10							
						Max Moment with axial tension	26460	1.4D + 1.7L + 1.7H' + 1.7Eo	49	222							
						Max Moment with axial compression	26460	1.4D + 1.7L + 1.7H' + 1.7Eo	-126	222							
					3-V-L	Max Tension w/ corresponding moment	32324	1.4D + 1.7L + 1.7H' + 1.7Eo	89	255	1.4D + 1.7L + 1.7H' + 1.7Eo	73	6.24	-	-	-	
						Max Compression w/ corresponding moment	32059	1.4D + 1.7L + 1.7H' + 1.7Eo	-175	418							
						Max Moment with axial tension	32328	1.4D + 1.7L + 1.7H' + 1.7Eo	47	441							
						Max Moment with axial compression	32328	1.4D + 1.7L + 1.7H' + 1.7Eo	-19	441							
					4-V-L	Max Tension w/ corresponding moment	32316	1.4D + 1.7L + 1.7H' + 1.7Eo	104	256	1.4D + 1.7L + 1.7H' + 1.7Eo	74	7.80	-	-	-	
						Max Compression w/ corresponding moment	32053	1.4D + 1.7L + 1.7H' + 1.7Eo	-187	421							
						Max Moment with axial tension	32316	1.4D + 1.7L + 1.7H' + 1.7Eo	56	440							
						Max Moment with axial compression	32316	1.4D + 1.7L + 1.7H' + 1.7Eo	-38	440							
					5-V-L	Max Tension w/ corresponding moment	26437	D + L + H' + E'	66	353	1.4D + 1.7L + 1.7H' + 1.7Eo	74	6.24	-	-	-	
						Max Compression w/ corresponding moment	27221	1.4D + 1.7L + 1.7H	-190	48							
						Max Moment with axial tension	26436	1.4D + 1.7L + 1.7H' + 1.7Eo	9	414							
						Max Moment with axial compression	26436	1.4D + 1.7L + 1.7H' + 1.7Eo	-76	414							
					6-V-L	Max Tension w/ corresponding moment	32312	1.4D + 1.7L + 1.7H' + 1.7Eo	104	239	1.4D + 1.7L + 1.7H' + 1.7Eo	79	6.24	-	-	-	
						Max Compression w/ corresponding moment	32049	1.4D + 1.7L + 1.7H' + 1.7Eo	-188	407							
						Max Moment with axial tension	32315	1.4D + 1.7L + 1.7H' + 1.7Eo	55	436							
						Max Moment with axial compression	32315	1.4D + 1.7L + 1.7H' + 1.7Eo	-35	436							
					7-V-L	Max Tension w/ corresponding moment	32306	1.4D + 1.7L + 1.7H' + 1.7Eo	108	269	1.4D + 1.7L + 1.7H' + 1.7Eo	94	7.80	-	-	-	
						Max Compression w/ corresponding moment	32043	1.4D + 1.7L + 1.7H' + 1.7Eo	-188	424							
						Max Moment with axial tension	32306	1.4D + 1.7L + 1.7H' + 1.7Eo	57	453							
						Max Moment with axial compression	32306	1.4D + 1.7L + 1.7H' + 1.7Eo	-32	453							
					8-V-L	Max Tension w/ corresponding moment	32302	1.4D + 1.7L + 1.7H' + 1.7Eo	92	262	1.4D + 1.7L + 1.7H' + 1.7Eo	83	6.24	-	-	-	
						Max Compression w/ corresponding moment	32040	1.4D + 1.7L + 1.7H' + 1.7Eo	-184	418							
						Max Moment with axial tension	32302	1.4D + 1.7L + 1.7H' + 1.7Eo	48	436							
						Max Moment with axial compression	32302	1.4D + 1.7L + 1.7H' + 1.7Eo	-35	436							
					9-V-L	Max Tension w/ corresponding moment	26415	1.4D + 1.7L + 1.7H' + 1.7Eo	30	217	1.4D + 1.7L + 1.7H' + 1.7Eo	83	6.24	-	-	-	
						Max Compression w/ corresponding moment	27207	1.4D + 1.7L + 1.7H	-170	61							
						Max Moment with axial tension	26418	1.4D + 1.7L + 1.7H' + 1.7Eo	14	275							
						Max Moment with axial compression	26418	1.4D + 1.7L + 1.7H' + 1.7Eo	-120	275							

Table 3H.3-3 Results of Radwaste Building Concrete Wall Design (Continued)

Location	Face	Direction	Reinforcement Layout Drawing Number (1)	Thickness (ft)	Reinforcement Zone Number (2)	Maximum Forces (3)	Element	Longitudinal Reinforcement Design Loads: Axial and Flexure Loads: Load Combination	Axial (4) (kips / ft)	Flexure (4) (ft-kips / ft)	In-Plane Shear Loads: Load Combination	In-plane (5) Shear (kips / ft)	Longitudinal Reinforcement Provided (in^2/ ft)	Transverse Shear Design Loads: Load Combination	Transverse Shear (6) Reinforcement Design Loads (kips / ft)	Transverse Shear (7) Reinforcement Provided (in^2/ft^2)	Remarks
North Wall	Far side	Vertical	3H.3-11	4	10-V-L	Max Tension w/ corresponding moment	11725	1.4D + 1.7L + 1.7H' + 1.7Eo	138	52	1.4D + 1.7L + 1.7H' + 1.7Eo	233	6.24	-	-	-	
						Max Compression w/ corresponding moment	11724	1.4D + 1.7L + 1.7H' + 1.7Eo	-447	10							
						Max Moment with axial tension	12512	D + L + H' + E'	13	385							
						Max Moment with axial compression	12512	D + L + H' + E'	-217	385							
					11-V-L	Max Tension w/ corresponding moment	21364	1.4D + 1.7L + 1.7H' + 1.7Eo	72	19	1.4D + 1.7L + 1.7H' + 1.7Eo	163	3.12	-	-	-	
						Max Compression w/ corresponding moment	11705	1.4D + 1.7L + 1.7H' + 1.7Eo	-358	81							
						Max Moment with axial tension	19504	D + L + H' + E'	14	206							
						Max Moment with axial compression	19504	1.4D + 1.7L + 1.7H' + 1.7Eo	-253	207							
					12-V-L	Max Tension w/ corresponding moment	23455	D + L + H' + E'	44	138	1.4D + 1.7L + 1.7H' + 1.7Eo	225	6.24	-	-	-	
						Max Compression w/ corresponding moment	11693	1.4D + 1.7L + 1.7H' + 1.7Eo	-318	103							
						Max Moment with axial tension	11694	1.4D + 1.7L + 1.7H' + 1.7Eo	3	402							
						Max Moment with axial compression	11694	1.4D + 1.7L + 1.7H' + 1.7Eo	-184	560							
					13-V-L	Max Tension w/ corresponding moment	11692	1.4D + 1.7L + 1.7H' + 1.7Eo	41	31	1.4D + 1.7L + 1.7H' + 1.7Eo	158	3.12	-	-	-	
						Max Compression w/ corresponding moment	11687	1.4D + 1.7L + 1.7H' + 1.7Eo	-335	117							
						Max Moment with axial tension	11688	1.4D + 1.7L + 1.7H' + 1.7Eo	6	222							
						Max Moment with axial compression	11688	D + L + H' + E'	-196	268							
					14-V-L	Max Tension w/ corresponding moment	23441	1.4D + 1.7L + 1.7H' + 1.7Eo	67	447	1.4D + 1.7L + 1.7H' + 1.7Eo	228	6.24	-	-	-	
						Max Compression w/ corresponding moment	11679	1.4D + 1.7L + 1.7H' + 1.7Eo	-346	35							
						Max Moment with axial tension	23441	1.4D + 1.7L + 1.7H' + 1.7Eo	25	481							
						Max Moment with axial compression	23441	1.4D + 1.7L + 1.7H' + 1.7Eo	-126	513							
					15-V-L	Max Tension w/ corresponding moment	23439	1.4D + 1.7L + 1.7H' + 1.7Eo	105	138	1.4D + 1.7L + 1.7H' + 1.7Eo	220	7.80	-	-	-	
						Max Compression w/ corresponding moment	23439	1.4D + 1.7L + 1.7H' + 1.7Eo	-331	34							
						Max Moment with axial tension	23440	1.4D + 1.7L + 1.7H' + 1.7Eo	12	532							
						Max Moment with axial compression	23440	1.4D + 1.7L + 1.7H' + 1.7Eo	-124	533							
					16-V-L	Max Tension w/ corresponding moment	11678	1.4D + 1.7L + 1.7H' + 1.7Eo	52	46	1.4D + 1.7L + 1.7H' + 1.7Eo	220	4.68	-	-	-	
						Max Compression w/ corresponding moment	11678	1.4D + 1.7L + 1.7H' + 1.7Eo	-342	54							
						Max Moment with axial tension	14439	1.4D + 1.7L + 1.7H' + 1.7Eo	2	134							
						Max Moment with axial compression	11677	1.4D + 1.7L + 1.7H' + 1.7Eo	-196	282							
					17-V-L	Max Tension w/ corresponding moment	23438	1.4D + 1.7L + 1.7H' + 1.7Eo	101	159	1.4D + 1.7L + 1.7H' + 1.7Eo	193	4.68	-	-	-	
						Max Compression w/ corresponding moment	11676	1.4D + 1.7L + 1.7H' + 1.7Eo	-333	48							
						Max Moment with axial tension	23431	1.4D + 1.7L + 1.7H' + 1.7Eo	8	201							
						Max Moment with axial compression	11669	1.4D + 1.7L + 1.7H' + 1.7Eo	-144	265							
					18-V-L	Max Tension w/ corresponding moment	11663	1.4D + 1.7L + 1.7H' + 1.7Eo	62	49	1.4D + 1.7L + 1.7H' + 1.7Eo	139	3.12	-	-	-	
						Max Compression w/ corresponding moment	11663	1.4D + 1.7L + 1.7H' + 1.7Eo	-360	40							
						Max Moment with axial tension	11664	D + L + H' + E'	3	224							
						Max Moment with axial compression	11664	D + L + H' + E'	-204	224							
					19-V-L	Max Tension w/ corresponding moment	11656	1.4D + 1.7L + 1.7H' + 1.7Eo	133	55	1.4D + 1.7L + 1.7H' + 1.7Eo	200	4.68	-	-	-	
						Max Compression w/ corresponding moment	11654	1.4D + 1.7L + 1.7H' + 1.7Eo	-487	38							
						Max Moment with axial tension	11661	1.4D + 1.7L + 1.7H' + 1.7Eo	7	190							
						Max Moment with axial compression	11661	1.4D + 1.7L + 1.7H' + 1.7Eo	-234	259							

Table 3H.3-3 Results of Radwaste Building Concrete Wall Design (Continued)

Location	Face	Direction	Reinforcement Layout Drawing Number (1)	Thickness (ft)	Reinforcement Zone Number (2)	Maximum Forces (3)	Element	Longitudinal Reinforcement Design Loads: Axial and Flexure Loads: Load Combination	Axial (4) (kips / ft)	Flexure (4) (ft-kips / ft)	In-Plane Shear Loads: Load Combination	In-plane (5) Shear (kips / ft)	Longitudinal Reinforcement Provided (in^2/ft)	Transverse Shear Design Loads: Load Combination	Transverse Shear (6) Reinforcement Design Loads (kips / ft)	Transverse Shear (7) Reinforcement Provided (in^2/ft^2)	Remarks
North Wall	Far side	Vertical	3H.3-11	5.5	20-V-L	Max Tension w/ corresponding moment	2787	1.4D + 1.7L + 1.7H' + 1.7Eo	420	25	1.4D + 1.7L + 1.7H' + 1.7Eo	217	7.80	-	-	-	
						Max Compression w/ corresponding moment	2787	1.4D + 1.7L + 1.7H' + 1.7Eo	-700	111							
						Max Moment with axial tension	8961	D + L + H' + E'	35	706							
						Max Moment with axial compression	8961	D + L + H' + E'	-266	714							
					21-V-L	Max Tension w/ corresponding moment	2716	1.4D + 1.7L + 1.7H' + 1.7Eo	384	57	1.4D + 1.7L + 1.7H' + 1.7Eo	223	6.24	-	-	-	
						Max Compression w/ corresponding moment	2716	1.4D + 1.7L + 1.7H' + 1.7Eo	-801	54							
						Max Moment with axial tension	5545	D + L + H' + E'	18	443							
						Max Moment with axial compression	5544	D + L + H' + E'	-305	467							
				3	22-V-L	Max Tension w/ corresponding moment	36131	1.4D + 1.7L + 1.7H' + 1.7Eo	108	203	1.4D + 1.7L + 1.7H' + 1.7Eo	94	4.68	-	-	-	
						Max Compression w/ corresponding moment	36068	1.4D + 1.7L + 1.7H' + 1.7Eo	-296	185							
						Max Moment with axial tension	36131	1.4D + 1.7L + 1.7H' + 1.7Eo	29	263							
						Max Moment with axial compression	36131	1.4D + 1.7L + 1.7H' + 1.7Eo	-186	263							
					23-V-L	Max Tension w/ corresponding moment	26428/ 26429	1.4D + 1.7L + 1.7H' + 1.7Eo	115	498	1.4D + 1.7L + 1.7H' + 1.7Eo	66	12.87	-	-	-	(8),(9)
						Max Compression w/ corresponding moment	26428/ 26429	1.4D + 1.7L + 1.7H' + 1.7Eo	-325	492							
						Max Moment with axial tension	26428/ 26429	1.4D + 1.7L + 1.7H' + 1.7Eo	80	555							
						Max Moment with axial compression	26428/ 26429	1.4D + 1.7L + 1.7H' + 1.7Eo	-209	555							
					24-V-L	Max Tension w/ corresponding moment	26422	1.4D + 1.7L + 1.7H' + 1.7Eo	254	385	1.4D + 1.7L + 1.7H' + 1.7Eo	76	12.87	-	-	-	(8),(9)
						Max Compression w/ corresponding moment	28574	1.4D + 1.7L + 1.7H' + 1.7Eo	-531	283							
						Max Moment with axial tension	26422	1.4D + 1.7L + 1.7H' + 1.7Eo	91	417							
						Max Moment with axial compression	26422	1.4D + 1.7L + 1.7H' + 1.7Eo	-405	417							
					25-V-L	Max Tension w/ corresponding moment	26429/ 26430	1.4D + 1.7L + 1.7H' + 1.7Eo	59	338	1.4D + 1.7L + 1.7H' + 1.7Eo	69	9.36	-	-	-	(8)
						Max Compression w/ corresponding moment	27219	1.4D + 1.7L + 1.7H	-221	60							
						Max Moment with axial tension	26429/ 26430	1.4D + 1.7L + 1.7H' + 1.7Eo	35	420							
						Max Moment with axial compression	26429/ 26430	1.4D + 1.7L + 1.7H' + 1.7Eo	-114	434							
					26-V-L	Max Tension w/ corresponding moment	26684	D + L + H' + E'	70	263	1.4D + 1.7L + 1.7H' + 1.7Eo	81	9.36	-	-	-	
						Max Compression w/ corresponding moment	26421	1.4D + 1.7L + 1.7H	-218	117							
						Max Moment with axial tension	26421	1.4D + 1.7L + 1.7H' + 1.7Eo	45	363							
						Max Moment with axial compression	26421	1.4D + 1.7L + 1.7H' + 1.7Eo	-84	363							
	-	Horizontal Plane	3H.3-12	5.5	1-H-T	-	-	-	-	-	-	-	-	D + L + H' + E'	149	0.4 (#4@6)	-
				5.5	2-H-T	-	-	-	-	-	-	-	-	D + L + H' + E'	156	0.4 (#4@6)	-
				3	3-H-T	-	-	-	-	-	-	-	-	1.4D + 1.7L + 1.7H' + 1.7Eo	101	0.62 (#5@6)	-
		Vertical Plane	3H.3-12	5.5	1-V-T	-	-	-	-	-	-	-	-	D + L + H' + E'	130	0.2 (#4@12)	-
				5.5	2-V-T	-	-	-	-	-	-	-	-	D + L + H' + E'	172	0.4 (#4@6)	-
				4	3-V-T	-	-	-	-	-	-	-	-	D + L + H' + E'	85	0.2 (#4@12)	-
				4	4-V-T	-	-	-	-	-	-	-	-	D + L + H' + E'	117	0.4 (#4@6)	-
				3	5-V-T	-	-	-	-	-	-	-	-	D + L + H' + E'	69	0.2 (#4@12)	-

Table 3H.3-3 Results of Radwaste Building Concrete Wall Design (Continued)

Location	Face	Direction	Reinforcement Layout Drawing Number (1)	Thickness (ft)	Reinforcement Zone Number (2)	Maximum Forces (3)	Element	Longitudinal Reinforcement Design Loads: Axial and Flexure Loads: Load Combination	Axial (4) (kips / ft)	Flexure (4) (ft-kips / ft)	In-Plane Shear Loads: Load Combination	In-plane (5) Shear (kips / ft)	Longitudinal Reinforcement Provided (in^2/ ft)	Transverse Shear Design Loads: Load Combination	Transverse Shear (6) Reinforcement Design Loads (kips / ft)	Transverse Shear (7) Reinforcement Provided (in^2/ft^2)	Remarks
South Wall	Near Side	Horizontal	3H.3-13	3	1-H-L	Max Tension w/ corresponding moment	28431	1.4D + 1.7L + 1.7H' + 1.7Eo	126	-50	1.4D + 1.7L + 1.7H' + 1.7Eo	121	3.12	-	-	-	
						Max Compression w/ corresponding moment	28431	1.4D + 1.7L + 1.7H' + 1.7Eo	-273	-50							
						Max Moment with axial tension	26246	1.4D + 1.7L + 1.7H' + 1.7Eo	10	-314							
						Max Moment with axial compression	26238	1.4D + 1.7L + 1.7H' + 1.7Eo	-222	-329							
				4	2-H-L	Max Tension w/ corresponding moment	23290	1.4D + 1.7L + 1.7H' + 1.7Eo	86	-75	1.4D + 1.7L + 1.7H' + 1.7Eo	143	3.12	-	-	-	
						Max Compression w/ corresponding moment	21455	1.4D + 1.7L + 1.7H' + 1.7Eo	-171	-53							
						Max Moment with axial tension	21461	1.4D + 1.7L + 1.7H' + 1.7Eo	19	-197							
						Max Moment with axial compression	21462	1.4D + 1.7L + 1.7H' + 1.7Eo	-89	-248							
					3-H-L	Max Tension w/ corresponding moment	23273	1.4D + 1.7L + 1.7H' + 1.7Eo	22	-212	1.4D + 1.7L + 1.7H' + 1.7Eo	143	4.68	-	-	-	
						Max Compression w/ corresponding moment	11511	D + L + H' + E'	-125	-273							
						Max Moment with axial tension	23273	D + L + H' + E'	1	-267							
						Max Moment with axial compression	14536	D + L + H' + E'	-78	-441							
				5.5	4-H-L	Max Tension w/ corresponding moment	2287	1.4D + 1.7L + 1.7H' + 1.7Eo	58	-59	1.4D + 1.7L + 1.7H' + 1.7Eo	156	6.24	-	-	-	
						Max Compression w/ corresponding moment	8472	D + L + H' + E'	-443	-568							
						Max Moment with axial tension	2287	D + L + H' + E'	9	-402							
						Max Moment with axial compression	6754	D + L + H' + E'	-124	-845							
				4	5-H-L	Max Tension w/ corresponding moment	23295	1.4D + 1.7L + 1.7H' + 1.7Eo	140	-271	1.4D + 1.7L + 1.7H' + 1.7Eo	121	6.24	-	-	-	
						Max Compression w/ corresponding moment	23297	1.4D + 1.7L + 1.7H' + 1.7Eo	-329	-362							
						Max Moment with axial tension	23305	1.4D + 1.7L + 1.7H' + 1.7Eo	8	-621							
						Max Moment with axial compression	23305	1.4D + 1.7L + 1.7H' + 1.7Eo	-90	-668							
				5.5	6-H-L	Max Tension w/ corresponding moment	8486	1.4D + 1.7L + 1.7H' + 1.7Eo	26	-60	1.4D + 1.7L + 1.7H' + 1.7Eo	134	3.12	-	-	-	
						Max Compression w/ corresponding moment	8485	1.4D + 1.7L + 1.7H' + 1.7Eo	-134	-21							
						Max Moment with axial tension	8512	1.4D + 1.7L + 1.7H' + 1.7Eo	1	-131							
						Max Moment with axial compression	6003	D + L + H' + E'	-72	-425							
					7-H-L	Max Tension w/ corresponding moment	2289	1.4D + 1.7L + 1.7H' + 1.7Eo	33	-48	1.4D + 1.7L + 1.7H' + 1.7Eo	156	4.68	-	-	-	
						Max Compression w/ corresponding moment	2289	1.4D + 1.7L + 1.7H' + 1.7Eo	-122	-173							
						Max Moment with axial tension	2289	1.4D + 1.7L + 1.7H' + 1.7Eo	0	-180							
						Max Moment with axial compression	2289	D + L + H' + E'	-78	-220							
				4	8-H-L	Max Tension w/ corresponding moment	23315	1.4D + 1.7L + 1.7H' + 1.7Eo	76	-439	1.4D + 1.7L + 1.7H' + 1.7Eo	135	4.68	-	-	-	
						Max Compression w/ corresponding moment	23315	1.4D + 1.7L + 1.7H' + 1.7Eo	-200	-493							
						Max Moment with axial tension	23315	1.4D + 1.7L + 1.7H' + 1.7Eo	36	-465							
						Max Moment with axial compression	12367	D + L + H' + E'	-86	-553							
					9-H-L	Max Tension w/ corresponding moment	11553	D + L + H' + E'	73	-94	1.4D + 1.7L + 1.7H' + 1.7Eo	143	6.24	-	-	-	
						Max Compression w/ corresponding moment	11559	1.4D + 1.7L + 1.7H' + 1.7Eo	-162	-4							
						Max Moment with axial tension	11561	D + L + H' + E'	13	-381							
						Max Moment with axial compression	11570	D + L + H' + E'	-92	-580							

Table 3H.3-3 Results of Radwaste Building Concrete Wall Design (Continued)

Location	Face	Direction	Reinforcement Layout Drawing Number (1)	Thickness (ft)	Reinforcement Zone Number (2)	Maximum Forces (3)	Element	Longitudinal Reinforcement Design Loads: Axial and Flexure Loads: Load Combination	Axial (4) (kips / ft)	Flexure (4) (ft-kips / ft)	In-Plane Shear Loads: Load Combination	In-plane (5) Shear (kips / ft)	Longitudinal Reinforcement Provided (in^2/ft)	Transverse Shear Design Loads: Load Combination	Transverse Shear (6) Reinforcement Design Loads (kips / ft)	Transverse Shear (7) Reinforcement Provided (in^2/ft^2)	Remarks
South Wall	Near Side	Horizontal	3H.3-13	5.5	10-H-L	Max Tension w/ corresponding moment	2346	1.4D + 1.7L + 1.7H' + 1.7Eo	62	-82	1.4D + 1.7L + 1.7H' + 1.7Eo	156	6.24	-	-	-	
						Max Compression w/ corresponding moment	8531	D + L + H' + E'	-484	-755							
						Max Moment with axial tension	2346	1.4D + 1.7L + 1.7H' + 1.7Eo	1	-359							
						Max Moment with axial compression	8531	D + L + H' + E'	-353	-1148							
				3	11-H-L	Max Tension w/ corresponding moment	34156	1.4D + 1.7L + 1.7H' + 1.7Eo	233	-142	1.4D + 1.7L + 1.7H' + 1.7Eo	67	3.12	-	-	-	
						Max Compression w/ corresponding moment	34156	1.4D + 1.7L + 1.7H' + 1.7Eo	-451	-145							
						Max Moment with axial tension	34162	1.4D + 1.7L + 1.7H' + 1.7Eo	65	-207							
						Max Moment with axial compression	34162	1.4D + 1.7L + 1.7H' + 1.7Eo	-59	-207							
		Vertical	3H.3-14	3	1-V-L	Max Tension w/ corresponding moment	26214	1.4D + 1.7L + 1.7H' + 1.7Eo	104	-45	1.4D + 1.7L + 1.7H' + 1.7Eo	79	3.12	-	-	-	
						Max Compression w/ corresponding moment	26214	1.4D + 1.7L + 1.7H' + 1.7Eo	-240	-62							
						Max Moment with axial tension	26219	1.4D + 1.7L + 1.7H' + 1.7Eo	20	-217							
						Max Moment with axial compression	26219	1.4D + 1.7L + 1.7H' + 1.7Eo	-150	-217							
					2-V-L	Max Tension w/ corresponding moment	34164	1.4D + 1.7L + 1.7H' + 1.7Eo	109	-218	1.4D + 1.7L + 1.7H' + 1.7Eo	95	4.68	-	-	-	
						Max Compression w/ corresponding moment	34156	1.4D + 1.7L + 1.7H' + 1.7Eo	-300	-182							
						Max Moment with axial tension	30330	1.4D + 1.7L + 1.7H' + 1.7Eo	18	-275							
						Max Moment with axial compression	30330	1.4D + 1.7L + 1.7H' + 1.7Eo	-65	-275							
					3-V-L	Max Tension w/ corresponding moment	26220	1.4D + 1.7L + 1.7H' + 1.7Eo	50	-200	1.4D + 1.7L + 1.7H' + 1.7Eo	88	6.24	-	-	-	
						Max Compression w/ corresponding moment	26220	1.4D + 1.7L + 1.7H' + 1.7Eo	-206	-190							
						Max Moment with axial tension	26228	1.4D + 1.7L + 1.7H' + 1.7Eo	14	-460							
						Max Moment with axial compression	26228	1.4D + 1.7L + 1.7H' + 1.7Eo	-120	-482							
					4-V-L	Max Tension w/ corresponding moment	26238/ 26239	1.4D + 1.7L + 1.7H' + 1.7Eo	28	-481	1.4D + 1.7L + 1.7H' + 1.7Eo	72	9.36	-	-	-	(8)
						Max Compression w/ corresponding moment	27076	1.4D + 1.7L + 1.7H	-208	-90							
						Max Moment with axial tension	26238/ 26239	1.4D + 1.7L + 1.7H' + 1.7Eo	20	-536							
						Max Moment with axial compression	26238/ 26239	1.4D + 1.7L + 1.7H' + 1.7Eo	-155	-567							
					5-V-L	Max Tension w/ corresponding moment	26229	D + L + H' + E'	28	-442	1.4D + 1.7L + 1.7H' + 1.7Eo	86	9.36	-	-	-	
						Max Compression w/ corresponding moment	27377	1.4D + 1.7L + 1.7H	-198	-82							
						Max Moment with axial tension	26229	1.4D + 1.7L + 1.7H' + 1.7Eo	9	-505							
						Max Moment with axial compression	26229	1.4D + 1.7L + 1.7H' + 1.7Eo	-121	-506							
					6-V-L	Max Tension w/ corresponding moment	26584	1.4D + 1.7L + 1.7H' + 1.7Eo	89	-19	1.4D + 1.7L + 1.7H' + 1.7Eo	127	3.12	-	-	-	
						Max Compression w/ corresponding moment	26584	1.4D + 1.7L + 1.7H' + 1.7Eo	-274	-20							
						Max Moment with axial tension	31135	1.4D + 1.7L + 1.7H' + 1.7Eo	6	-236							
						Max Moment with axial compression	26563	1.4D + 1.7L + 1.7H' + 1.7Eo	-107	-244							
					7-V-L	Max Tension w/ corresponding moment	26257	D + L + H' + E'	51	-409	1.4D + 1.7L + 1.7H' + 1.7Eo	68	6.24	-	-	-	
						Max Compression w/ corresponding moment	26256	1.4D + 1.7L + 1.7H	-187	-144							
						Max Moment with axial tension	26256	1.4D + 1.7L + 1.7H' + 1.7Eo	25	-481							
						Max Moment with axial compression	26256	1.4D + 1.7L + 1.7H' + 1.7Eo	-128	-486							

Table 3H.3-3 Results of Radwaste Building Concrete Wall Design (Continued)

Location	Face	Direction	Reinforcement Layout Drawing Number (1)	Thickness (ft)	Reinforcement Zone Number (2)	Maximum Forces (3)	Element	Longitudinal Reinforcement Design Loads					Longitudinal Reinforcement Provided (in^2/ ft)	Transverse Shear Design Loads		Transverse Shear (7) Reinforcement Provided (in^2/ft^2)	Remarks
								Axial and Flexure Loads			In-Plane Shear Loads						
								Load Combination	Axial (4) (kips / ft)	Flexure (4) (ft-kips / ft)	Load Combination	In-plane (5) Shear (kips / ft)		Load Combination	Transverse Shear (6) Reinforcement Design Loads (kips / ft)		
South Wall	Near Side	Vertical	3H.3-14	4	8-V-L	Max Tension w/ corresponding moment	23273	1.4D + 1.7L + 1.7H' + 1.7Eo	116	-93	1.4D + 1.7L + 1.7H' + 1.7Eo	106	4.68	-	-	-	
						Max Compression w/ corresponding moment	11512	1.4D + 1.7L + 1.7H' + 1.7Eo	-380	-98							
						Max Moment with axial tension	23273	1.4D + 1.7L + 1.7H' + 1.7Eo	7	-204							
						Max Moment with axial compression	23273	1.4D + 1.7L + 1.7H' + 1.7Eo	-279	-204							
					9-V-L	Max Tension w/ corresponding moment	11513	1.4D + 1.7L + 1.7H' + 1.7Eo	111	-82	1.4D + 1.7L + 1.7H' + 1.7Eo	130	3.12	-	-	-	
						Max Compression w/ corresponding moment	11513	1.4D + 1.7L + 1.7H' + 1.7Eo	-405	-89							
						Max Moment with axial tension	11513	1.4D + 1.7L + 1.7H' + 1.7Eo	3	-138							
						Max Moment with axial compression	23275	1.4D + 1.7L + 1.7H' + 1.7Eo	-259	-151							
					10-V-L	Max Tension w/ corresponding moment	23295	1.4D + 1.7L + 1.7H' + 1.7Eo	100	-229	1.4D + 1.7L + 1.7H' + 1.7Eo	152	4.68	-	-	-	
						Max Compression w/ corresponding moment	23295	1.4D + 1.7L + 1.7H' + 1.7Eo	-337	-425							
						Max Moment with axial tension	23290	1.4D + 1.7L + 1.7H' + 1.7Eo	8	-446							
						Max Moment with axial compression	23289	1.4D + 1.7L + 1.7H' + 1.7Eo	-172	-461							
					11-V-L	Max Tension w/ corresponding moment	23296	1.4D + 1.7L + 1.7H' + 1.7Eo	100	-169	1.4D + 1.7L + 1.7H' + 1.7Eo	133	7.80	-	-	-	
						Max Compression w/ corresponding moment	23296	1.4D + 1.7L + 1.7H' + 1.7Eo	-337	-339							
						Max Moment with axial tension	23297	D + L + H' + E'	7	-722							
						Max Moment with axial compression	23297	1.4D + 1.7L + 1.7H' + 1.7Eo	-235	-812							
					12-V-L	Max Tension w/ corresponding moment	11554	1.4D + 1.7L + 1.7H' + 1.7Eo	44	-58	1.4D + 1.7L + 1.7H' + 1.7Eo	204	6.24	-	-	-	
						Max Compression w/ corresponding moment	16494	1.4D + 1.7L + 1.7H' + 1.7Eo	-258	-174							
						Max Moment with axial tension	23304	1.4D + 1.7L + 1.7H' + 1.7Eo	5	-622							
						Max Moment with axial compression	23304	1.4D + 1.7L + 1.7H' + 1.7Eo	-152	-690							
					13-V-L	Max Tension w/ corresponding moment	11560	1.4D + 1.7L + 1.7H' + 1.7Eo	57	-70	1.4D + 1.7L + 1.7H' + 1.7Eo	169	4.68	-	-	-	
						Max Compression w/ corresponding moment	11560	1.4D + 1.7L + 1.7H' + 1.7Eo	-304	-75							
						Max Moment with axial tension	23319	D + L + H' + E'	3	-237							
						Max Moment with axial compression	23319	D + L + H' + E'	-151	-271							
					14-V-L	Max Tension w/ corresponding moment	11561	1.4D + 1.7L + 1.7H' + 1.7Eo	62	-64	1.4D + 1.7L + 1.7H' + 1.7Eo	197	6.24	-	-	-	
						Max Compression w/ corresponding moment	11561	1.4D + 1.7L + 1.7H' + 1.7Eo	-301	-59							
						Max Moment with axial tension	23323	D + L + H' + E'	10	-278							
						Max Moment with axial compression	23323	1.4D + 1.7L + 1.7H' + 1.7Eo	-121	-288							
					15-V-L	Max Tension w/ corresponding moment	11562	1.4D + 1.7L + 1.7H' + 1.7Eo	73	-86	1.4D + 1.7L + 1.7H' + 1.7Eo	292	7.80	-	-	-	
						Max Compression w/ corresponding moment	11562	1.4D + 1.7L + 1.7H' + 1.7Eo	-321	-137							
						Max Moment with axial tension	23324	D + L + H' + E'	2	-284							
						Max Moment with axial compression	23324	1.4D + 1.7L + 1.7H' + 1.7Eo	-128	-294							
					16-V-L	Max Tension w/ corresponding moment	11570	1.4D + 1.7L + 1.7H' + 1.7Eo	129	-115	1.4D + 1.7L + 1.7H' + 1.7Eo	236	6.24	-	-	-	
						Max Compression w/ corresponding moment	11569	1.4D + 1.7L + 1.7H' + 1.7Eo	-464	-164							
						Max Moment with axial tension	14327	D + L + H' + E'	4	-368							
						Max Moment with axial compression	14327	D + L + H' + E'	-240	-368							

Table 3H.3-3 Results of Radwaste Building Concrete Wall Design (Continued)

Location	Face	Direction	Reinforcement Layout Drawing Number (1)	Thickness (ft)	Reinforcement Zone Number (2)	Maximum Forces (3)	Element	Longitudinal Reinforcement Design Loads: Axial and Flexure Loads: Load Combination	Axial (4) (kips / ft)	Flexure (4) (ft-kips / ft)	In-Plane Shear Loads: Load Combination	In-plane (5) Shear (kips / ft)	Longitudinal Reinforcement Provided (in^2/ ft)	Transverse Shear Design Loads: Load Combination	Transverse Shear (6) Reinforcement Design Loads (kips / ft)	Transverse Shear (7) Reinforcement Provided (in^2/ft^2)	Remarks
South Wall	Near Side	Vertical	3H 3-14	5.5	17-V-L	Max Tension w/ corresponding moment	2287	1.4D + 1.7L + 1.7H' + 1.7Eo	375	-224	1.4D + 1.7L + 1.7H' + 1.7Eo	158	6.24	-	-	-	
						Max Compression w/ corresponding moment	2287	1.4D + 1.7L + 1.7H' + 1.7Eo	-826	-245							
						Max Moment with axial tension	2292	D + L + H' + E'	19	-874							
						Max Moment with axial compression	2292	D + L + H' + E'	-266	-874							
					18-V-L	Max Tension w/ corresponding moment	2346	1.4D + 1.7L + 1.7H' + 1.7Eo	401	-250	1.4D + 1.7L + 1.7H' + 1.7Eo	303	9.36	-	-	-	
						Max Compression w/ corresponding moment	2346	1.4D + 1.7L + 1.7H' + 1.7Eo	-825	-415							
						Max Moment with axial tension	2343	D + L + H' + E'	19	-817							
						Max Moment with axial compression	2343	D + L + H' + E'	-278	-817							
				3	19-V-L	Max Tension w/ corresponding moment	26230/ 26231	D + L + H' + E'	114	-537	1.4D + 1.7L + 1.7H' + 1.7Eo	80	12.87	-	-	-	(8),(9)
						Max Compression w/ corresponding moment	28431	1.4D + 1.7L + 1.7H' + 1.7Eo	-528	-274							
						Max Moment with axial tension	26230/ 26231	1.4D + 1.7L + 1.7H' + 1.7Eo	107	-617							
						Max Moment with axial compression	26230/ 26231	1.4D + 1.7L + 1.7H' + 1.7Eo	-110	-617							
					20-V-L	Max Tension w/ corresponding moment	26237/ 26238	1.4D + 1.7L + 1.7H' + 1.7Eo	93	-805	1.4D + 1.7L + 1.7H' + 1.7Eo	66	12.87	-	-	-	(8),(9)
						Max Compression w/ corresponding moment	26237/ 26238	1.4D + 1.7L + 1.7H' + 1.7Eo	-310	-861							
						Max Moment with axial tension	26237/ 26238	1.4D + 1.7L + 1.7H' + 1.7Eo	29	-856							
						Max Moment with axial compression	26237/ 26238	1.4D + 1.7L + 1.7H' + 1.7Eo	-310	-861							
					21-V-L	Max Tension w/ corresponding moment	26245/ 26246	1.4D + 1.7L + 1.7H' + 1.7Eo	18	-516	1.4D + 1.7L + 1.7H' + 1.7Eo	72	9.36	-	-	-	(8),(9)
						Max Compression w/ corresponding moment	26245/ 26246	1.4D + 1.7L + 1.7H	-154	-178							
						Max Moment with axial tension	26245/ 26246	1.4D + 1.7L + 1.7H' + 1.7Eo	2	-637							
						Max Moment with axial compression	26245/ 26246	1.4D + 1.7L + 1.7H' + 1.7Eo	-120	-642							
	Far side	Horizontal	3H 3-15	3	1-H-L	Max Tension w/ corresponding moment	28431	1.4D + 1.7L + 1.7H' + 1.7Eo	126	46	1.4D + 1.7L + 1.7H' + 1.7Eo	121	3.12	-	-	-	
						Max Compression w/ corresponding moment	28431	1.4D + 1.7L + 1.7H' + 1.7Eo	-273	46							
						Max Moment with axial tension	31889	1.4D + 1.7L + 1.7H' + 1.7Eo	57	302							
						Max Moment with axial compression	31889	1.4D + 1.7L + 1.7H' + 1.7Eo	-107	302							
					2-H-L	Max Tension w/ corresponding moment	32171	1.4D + 1.7L + 1.7H' + 1.7Eo	125	59	1.4D + 1.7L + 1.7H' + 1.7Eo	45	6.24	-	-	-	
						Max Compression w/ corresponding moment	32171	1.4D + 1.7L + 1.7H' + 1.7Eo	-201	64							
						Max Moment with axial tension	31900	1.4D + 1.7L + 1.7H' + 1.7Eo	59	351							
						Max Moment with axial compression	31900	1.4D + 1.7L + 1.7H' + 1.7Eo	-184	351							
				4	3-H-L	Max Tension w/ corresponding moment	23290	1.4D + 1.7L + 1.7H' + 1.7Eo	86	75	1.4D + 1.7L + 1.7H' + 1.7Eo	143	3.12	-	-	-	
						Max Compression w/ corresponding moment	11568	D + L + H' + E'	-203	154							
						Max Moment with axial tension	23278	D + L + H' + E'	1	186							
						Max Moment with axial compression	11516	D + L + H' + E'	-162	292							

Table 3H.3-3 Results of Radwaste Building Concrete Wall Design (Continued)

Location	Face	Direction	Reinforcement Layout Drawing Number (1)	Thickness (ft)	Reinforcement Zone Number (2)	Maximum Forces (3)	Element	Longitudinal Reinforcement Design Loads: Axial and Flexure Loads: Load Combination	Axial (4) (kips / ft)	Flexure (4) (ft-kips / ft)	In-Plane Shear Loads: Load Combination	In-plane (5) Shear (kips / ft)	Longitudinal Reinforcement Provided (in^2/ ft)	Transverse Shear Design Loads: Load Combination	Transverse Shear (6) Reinforcement Design Loads (kips / ft)	Transverse Shear (7) Reinforcement Provided (in^2/ft^2)	Remarks
South Wall	Far side	Horizontal	3H.3-15	5.5	4-H-L	Max Tension w/ corresponding moment	4072	1.4D + 1.7L + 1.7H' + 1.7Eo	23	64	1.4D + 1.7L + 1.7H' + 1.7Eo	134	4.68	-	-	-	
						Max Compression w/ corresponding moment	7708	D + L + H' + E'	-163	40							
						Max Moment with axial tension	8476	D + L + H' + E'	7	611							
						Max Moment with axial compression	8477	D + L + H' + E'	-55	627							
				4	5-H-L	Max Tension w/ corresponding moment	23295	1.4D + 1.7L + 1.7H' + 1.7Eo	140	214	1.4D + 1.7L + 1.7H' + 1.7Eo	121	6.24	-	-	-	
						Max Compression w/ corresponding moment	23297	1.4D + 1.7L + 1.7H' + 1.7Eo	-329	223							
						Max Moment with axial tension	23305	1.4D + 1.7L + 1.7H' + 1.7Eo	34	477							
						Max Moment with axial compression	23305	1.4D + 1.7L + 1.7H' + 1.7Eo	-35	477							
				5.5	6-H-L	Max Tension w/ corresponding moment	8514	1.4D + 1.7L + 1.7H' + 1.7Eo	32	23	1.4D + 1.7L + 1.7H' + 1.7Eo	134	3.12	-	-	-	
						Max Compression w/ corresponding moment	7751	1.4D + 1.7L + 1.7H' + 1.7Eo	-211	60							
						Max Moment with axial tension	8518	1.4D + 1.7L + 1.7H + 1.7W	18	191							
						Max Moment with axial compression	7762	D + L + H' + E'	-119	456							
					7-H-L	Max Tension w/ corresponding moment	2346	1.4D + 1.7L + 1.7H' + 1.7Eo	60	44	1.4D + 1.7L + 1.7H' + 1.7Eo	156	4.68	-	-	-	
						Max Compression w/ corresponding moment	2345	1.4D + 1.7L + 1.7H' + 1.7Eo	-162	222							
						Max Moment with axial tension	2289	1.4D + 1.7L + 1.7H' + 1.7Eo	0	157							
						Max Moment with axial compression	3086	D + L + H' + E'	-105	391							
					8-H-L	Max Tension w/ corresponding moment	4126	1.4D + 1.7L + 1.7H' + 1.7Eo	30	92	1.4D + 1.7L + 1.7H' + 1.7Eo	134	4.68	-	-	-	
						Max Compression w/ corresponding moment	7765	D + L + H' + E'	-234	61							
						Max Moment with axial tension	6046	1.4D + 1.7L + 1.7H' + 1.7Eo	3	123							
						Max Moment with axial compression	8529	D + L + H' + E'	-123	548							
				3	9-H-L	Max Tension w/ corresponding moment	34156	1.4D + 1.7L + 1.7H' + 1.7Eo	233	139	1.4D + 1.7L + 1.7H' + 1.7Eo	67	3.12	-	-	-	
						Max Compression w/ corresponding moment	34156	1.4D + 1.7L + 1.7H' + 1.7Eo	-451	145							
						Max Moment with axial tension	34162	1.4D + 1.7L + 1.7H' + 1.7Eo	85	231							
						Max Moment with axial compression	34162	1.4D + 1.7L + 1.7H' + 1.7Eo	-39	231							

Table 3H.3-3 Results of Radwaste Building Concrete Wall Design (Continued)

Location	Face	Direction	Reinforcement Layout Drawing Number (1)	Thickness (ft)	Reinforcement Zone Number (2)	Maximum Forces (3)	Element	Longitudinal Reinforcement Design Loads: Axial and Flexure Loads: Load Combination	Axial (4) (kips / ft)	Flexure (4) (ft-kips / ft)	In-Plane Shear Loads: Load Combination	In-plane (5) Shear (kips / ft)	Longitudinal Reinforcement Provided (in^2/ ft)	Transverse Shear Design Loads: Load Combination	Transverse Shear (6) Reinforcement Design Loads (kips / ft)	Transverse Shear (7) Reinforcement Provided (in^2/ft^2)	Remarks
South Wall	Far side	Vertical	3H.3-16	3	1-V-L	Max Tension w/ corresponding moment	26214	1.4D + 1.7L + 1.7H' + 1.7Eo	104	64	1.4D + 1.7L + 1.7H' + 1.7Eo	79	3.12	-	-	-	
						Max Compression w/ corresponding moment	26214	1.4D + 1.7L + 1.7H' + 1.7Eo	-240	68							
						Max Moment with axial tension	32147	1.4D + 1.7L + 1.7H' + 1.7Eo	11	259							
						Max Moment with axial compression	31885	1.4D + 1.7L + 1.7H' + 1.7Eo	-26	273							
					2-V-L	Max Tension w/ corresponding moment	32152	1.4D + 1.7L + 1.7H' + 1.7Eo	83	279	1.4D + 1.7L + 1.7H' + 1.7Eo	86	6.24	-	-	-	
						Max Compression w/ corresponding moment	31890	1.4D + 1.7L + 1.7H' + 1.7Eo	-136	411							
						Max Moment with axial tension	32152	1.4D + 1.7L + 1.7H' + 1.7Eo	37	434							
						Max Moment with axial compression	32152	1.4D + 1.7L + 1.7H' + 1.7Eo	-23	434							
					3-V-L	Max Tension w/ corresponding moment	32162	1.4D + 1.7L + 1.7H' + 1.7Eo	103	322	1.4D + 1.7L + 1.7H' + 1.7Eo	95	9.36	-	-	-	
						Max Compression w/ corresponding moment	31900	1.4D + 1.7L + 1.7H' + 1.7Eo	-184	528							
						Max Moment with axial tension	32162	1.4D + 1.7L + 1.7H' + 1.7Eo	53	544							
						Max Moment with axial compression	32162	1.4D + 1.7L + 1.7H' + 1.7Eo	-34	544							
					4-V-L	Max Tension w/ corresponding moment	34164	1.4D + 1.7L + 1.7H' + 1.7Eo	109	257	1.4D + 1.7L + 1.7H' + 1.7Eo	95	4.68	-	-	-	
						Max Compression w/ corresponding moment	34156	1.4D + 1.7L + 1.7H' + 1.7Eo	-300	212							
						Max Moment with axial tension	30067	1.4D + 1.7L + 1.7H' + 1.7Eo	1	370							
						Max Moment with axial compression	30067	1.4D + 1.7L + 1.7H' + 1.7Eo	-91	371							
					5-V-L	Max Tension w/ corresponding moment	26229	D + L + H' + E'	28	346	1.4D + 1.7L + 1.7H' + 1.7Eo	88	6.24	-	-	-	
						Max Compression w/ corresponding moment	27377	1.4D + 1.7L + 1.7H	-195	37							
						Max Moment with axial tension	26229	1.4D + 1.7L + 1.7H' + 1.7Eo	15	399							
						Max Moment with axial compression	26229	1.4D + 1.7L + 1.7H' + 1.7Eo	-86	399							
					6-V-L	Max Tension w/ corresponding moment	26239	1.4D + 1.7L + 1.7H' + 1.7Eo	31	381	1.4D + 1.7L + 1.7H' + 1.7Eo	72	7.80	-	-	-	
						Max Compression w/ corresponding moment	27076	1.4D + 1.7L + 1.7H	-209	57							
						Max Moment with axial tension	26239	1.4D + 1.7L + 1.7H' + 1.7Eo	23	397							
						Max Moment with axial compression	26239	1.4D + 1.7L + 1.7H' + 1.7Eo	-129	397							
					7-V-L	Max Tension w/ corresponding moment	26821	D + L + H' + E'	15	251	1.4D + 1.7L + 1.7H' + 1.7Eo	72	9.36	-	-	-	
						Max Compression w/ corresponding moment	26818	1.4D + 1.7L + 1.7H	-160	58							
						Max Moment with axial tension	26821	1.4D + 1.7L + 1.7H' + 1.7Eo	10	326							
						Max Moment with axial compression	26821	1.4D + 1.7L + 1.7H' + 1.7Eo	-95	331							
					8-V-L	Max Tension w/ corresponding moment	26245/ 26246	1.4D + 1.7L + 1.7H' + 1.7Eo	18	408	1.4D + 1.7L + 1.7H' + 1.7Eo	72	9.36	-	-	-	(8),(9)
						Max Compression w/ corresponding moment	26555	1.4D + 1.7L + 1.7H	-161	74							
						Max Moment with axial tension	26245/ 26246	1.4D + 1.7L + 1.7H' + 1.7Eo	2	504							
						Max Moment with axial compression	26245/ 26246	1.4D + 1.7L + 1.7H' + 1.7Eo	-108	515							
					9-V-L	Max Tension w/ corresponding moment	32179	1.4D + 1.7L + 1.7H' + 1.7Eo	85	304	1.4D + 1.7L + 1.7H' + 1.7Eo	74	6.24	-	-	-	
						Max Compression w/ corresponding moment	31915	1.4D + 1.7L + 1.7H' + 1.7Eo	-176	488							
						Max Moment with axial tension	32178	1.4D + 1.7L + 1.7H' + 1.7Eo	46	498							
						Max Moment with axial compression	32178	1.4D + 1.7L + 1.7H' + 1.7Eo	-31	498							
					10-V-L	Max Tension w/ corresponding moment	26584	1.4D + 1.7L + 1.7H' + 1.7Eo	89	22	1.4D + 1.7L + 1.7H' + 1.7Eo	127	3.12	-	-	-	
						Max Compression w/ corresponding moment	26584	1.4D + 1.7L + 1.7H' + 1.7Eo	-274	23							
						Max Moment with axial tension	26256	1.4D + 1.7L + 1.7H' + 1.7Eo	21	379							
						Max Moment with axial compression	26256	1.4D + 1.7L + 1.7H' + 1.7Eo	-88	379							

Table 3H.3-3 Results of Radwaste Building Concrete Wall Design (Continued)

Location	Face	Direction	Reinforcement Layout Drawing Number (1)	Thickness (ft)	Reinforcement Zone Number (2)	Maximum Forces (3)	Element	Longitudinal Reinforcement Design Loads: Axial and Flexure Loads: Load Combination	Axial (4) (kips / ft)	Flexure (4) (ft-kips / ft)	In-Plane Shear Loads: Load Combination	In-plane Shear (5) (kips / ft)	Longitudinal Reinforcement Provided (in^2/ ft)	Transverse Shear Design Loads: Load Combination	Transverse Shear (6) Reinforcement Design Loads (kips / ft)	Transverse Shear (7) Reinforcement Provided (in^2/ft^2)	Remarks
South Wall	Far side	Vertical	3H.3-16	3	11-V-L	Max Tension w/ corresponding moment	26257	D + L + H' + E'	51	323	1.4D + 1.7L + 1.7H' + 1.7Eo	68	6.24	-	-	-	
						Max Compression w/ corresponding moment	26257	1.4D + 1.7L + 1.7H	-180	68							
						Max Moment with axial tension	26257	1.4D + 1.7L + 1.7H' + 1.7Eo	23	369							
						Max Moment with axial compression	26257	1.4D + 1.7L + 1.7H' + 1.7Eo	-86	369							
				4	12-V-L	Max Tension w/ corresponding moment	23273	1.4D + 1.7L + 1.7H' + 1.7Eo	116	69	1.4D + 1.7L + 1.7H' + 1.7Eo	152	3.12	-	-	-	
						Max Compression w/ corresponding moment	11513	1.4D + 1.7L + 1.7H' + 1.7Eo	-407	11							
						Max Moment with axial tension	23295	1.4D + 1.7L + 1.7H' + 1.7Eo	62	206							
						Max Moment with axial compression	23295	1.4D + 1.7L + 1.7H' + 1.7Eo	-188	206							
					13-V-L	Max Tension w/ corresponding moment	23296	1.4D + 1.7L + 1.7H' + 1.7Eo	100	153	1.4D + 1.7L + 1.7H' + 1.7Eo	137	6.24	-	-	-	
						Max Compression w/ corresponding moment	22631	1.4D + 1.7L + 1.7H' + 1.7Eo	-315	105							
						Max Moment with axial tension	23297	1.4D + 1.7L + 1.7H' + 1.7Eo	43	509							
						Max Moment with axial compression	23297	1.4D + 1.7L + 1.7H' + 1.7Eo	-154	509							
					14-V-L	Max Tension w/ corresponding moment	11554	1.4D + 1.7L + 1.7H' + 1.7Eo	44	24	1.4D + 1.7L + 1.7H' + 1.7Eo	204	6.24	-	-	-	
						Max Compression w/ corresponding moment	11553	1.4D + 1.7L + 1.7H' + 1.7Eo	-243	22							
						Max Moment with axial tension	23315	1.4D + 1.7L + 1.7H' + 1.7Eo	17	429							
						Max Moment with axial compression	23315	1.4D + 1.7L + 1.7H' + 1.7Eo	-107	433							
					15-V-L	Max Tension w/ corresponding moment	11560	1.4D + 1.7L + 1.7H' + 1.7Eo	57	37	1.4D + 1.7L + 1.7H' + 1.7Eo	169	3.12	-	-	-	
						Max Compression w/ corresponding moment	11560	1.4D + 1.7L + 1.7H' + 1.7Eo	-304	29							
						Max Moment with axial tension	12354	D + L + H' + E'	5	123							
						Max Moment with axial compression	13538	D + L + H' + E'	-169	124							
					16-V-L	Max Tension w/ corresponding moment	14595	1.4D + 1.7L + 1.7H' + 1.7Eo	100	22	1.4D + 1.7L + 1.7H' + 1.7Eo	292	4.68	-	-	-	
						Max Compression w/ corresponding moment	14594	1.4D + 1.7L + 1.7H' + 1.7Eo	-377	51							
						Max Moment with axial tension	14591	1.4D + 1.7L + 1.7H' + 1.7Eo	1	118							
						Max Moment with axial compression	14591	1.4D + 1.7L + 1.7H' + 1.7Eo	-250	118							
					17-V-L	Max Tension w/ corresponding moment	11570	1.4D + 1.7L + 1.7H' + 1.7Eo	129	66	1.4D + 1.7L + 1.7H' + 1.7Eo	292	6.24	-	-	-	
						Max Compression w/ corresponding moment	11570	1.4D + 1.7L + 1.7H' + 1.7Eo	-455	6							
						Max Moment with axial tension	11566	D + L + H' + E'	53	344							
						Max Moment with axial compression	11566	D + L + H' + E'	-213	344							

Table 3H.3-3 Results of Radwaste Building Concrete Wall Design (Continued)

Location	Face	Direction	Reinforcement Layout Drawing Number (1)	Thickness (ft)	Reinforcement Zone Number (2)	Maximum Forces (3)	Element	Longitudinal Reinforcement Design Loads: Axial and Flexure Loads: Load Combination	Axial (4) (kips / ft)	Flexure (4) (ft-kips / ft)	In-Plane Shear Loads: Load Combination	In-plane (5) Shear (kips / ft)	Longitudinal Reinforcement Provided (in^2/ ft)	Transverse Shear Design Loads: Load Combination	Transverse Shear (6) Reinforcement Design Loads (kips / ft)	Transverse Shear (7) Reinforcement Provided (in^2/ft^2)	Remarks
South Wall	Far side	Vertical	3H 3-16	5.5	18-V-L	Max Tension w/ corresponding moment	2287	1.4D + 1.7L + 1.7H' + 1.7Eo	375	34	1.4D + 1.7L + 1.7H' + 1.7Eo	126	6.24	-	-	-	
						Max Compression w/ corresponding moment	2287	1.4D + 1.7L + 1.7H' + 1.7Eo	-826	180							
						Max Moment with axial tension	6760	D + L + H' + E'	24	688							
						Max Moment with axial compression	6760	D + L + H' + E'	-268	718							
					19-V-L	Max Tension w/ corresponding moment	2330	1.4D + 1.7L + 1.7H' + 1.7Eo	132	48	1.4D + 1.7L + 1.7H' + 1.7Eo	229	4.68	-	-	-	
						Max Compression w/ corresponding moment	3097	1.4D + 1.7L + 1.7H' + 1.7Eo	-398	83							
						Max Moment with axial tension	6761	D + L + H' + E'	20	711							
						Max Moment with axial compression	6761	D + L + H' + E'	-261	738							
					20-V-L	Max Tension w/ corresponding moment	2346	1.4D + 1.7L + 1.7H' + 1.7Eo	401	42	1.4D + 1.7L + 1.7H' + 1.7Eo	303	9.36	-	-	-	
						Max Compression w/ corresponding moment	8531	1.4D + 1.7L + 1.7H' + 1.7Eo	-763	173							
						Max Moment with axial tension	7762	D + L + H' + E'	21	671							
						Max Moment with axial compression	7762	D + L + H' + E'	-255	671							
				3	21-V-L	Max Tension w/ corresponding moment	26230/ 26231	D + L + H' + E'	114	421	1.4D + 1.7L + 1.7H' + 1.7Eo	80.07193	12.87	-	-	-	(8),(9)
						Max Compression w/ corresponding moment	28431	1.4D + 1.7L + 1.7H' + 1.7Eo	-528	312							
						Max Moment with axial tension	26230/ 26231	1.4D + 1.7L + 1.7H' + 1.7Eo	17	488							
						Max Moment with axial compression	26230/ 26231	1.4D + 1.7L + 1.7H' + 1.7Eo	-201	488							
					22-V-L	Max Tension w/ corresponding moment	26237/ 26238	1.4D + 1.7L + 1.7H' + 1.7Eo	93	671	1.4D + 1.7L + 1.7H' + 1.7Eo	67.06475	12.87	-	-	-	(8),(9)
						Max Compression w/ corresponding moment	26237/ 26238	1.4D + 1.7L + 1.7H' + 1.7Eo	-310	631							
						Max Moment with axial tension	26237/ 26238	1.4D + 1.7L + 1.7H' + 1.7Eo	90	672							
						Max Moment with axial compression	26237/ 26238	1.4D + 1.7L + 1.7H' + 1.7Eo	-211	672							
	-	Horizontal Plane	3H 3-17	5.5	1-H-T	-	-	-	-	-	-	-	-	D + L + H' + E'	121	0.2 (#4@12)	-
				5.5	2-H-T	-	-	-	-	-	-	-	-	D + L + H' + E'	135	0.31 (#5@12)	-
				5.5	3-H-T	-	-	-	-	-	-	-	-	D + L + H' + E'	170	0.4 (#4@6)	-
				4	4-H-T	-	-	-	-	-	-	-	-	D + L + H' + E'	63	0.2 (#4@12)	-
				3	5-H-T	-	-	-	-	-	-	-	-	1.4D + 1.7L + 1.7H' + 1.7Eo	114	0.62 (#5@6)	-
		Vertical Plane	3H 3-17	5.5	1-V-T	-	-	-	-	-	-	-	-	D + L + H' + E'	134	0.2 (#4@12)	-
				4	2-V-T	-	-	-	-	-	-	-	-	D + L + H' + E'	71	0.2 (#4@12)	-
				5.5	3-V-T	-	-	-	-	-	-	-	-	D + L + H' + E'	140	0.31 (#5@12)	-
East Wall	Near Side	Horizontal	3H 3-18	3	1-H-L	Max Tension w/ corresponding moment	29324	1.4D + 1.7L + 1.7H' + 1.7Eo	202	-18	1.4D + 1.7L + 1.7H' + 1.7Eo	119	1.56	-	-	-	
						Max Compression w/ corresponding moment	29324	1.4D + 1.7L + 1.7H' + 1.7Eo	-154	-27							
						Max Moment with axial tension	34105	1.4D + 1.7L + 1.7H' + 1.7Eo	13	-112							
						Max Moment with axial compression	34105	1.4D + 1.7L + 1.7H' + 1.7Eo	-13	-112							

Table 3H.3-3 Results of Radwaste Building Concrete Wall Design (Continued)

Location	Face	Direction	Reinforcement Layout Drawing Number (1)	Thickness (ft)	Reinforcement Zone Number (2)	Maximum Forces (3)	Element	Longitudinal Reinforcement Design Loads: Axial and Flexure Loads: Load Combination	Axial (4) (kips / ft)	Flexure (4) (ft-kips / ft)	In-Plane Shear Loads: Load Combination	In-plane (5) Shear (kips / ft)	Longitudinal Reinforcement Provided (in^2/ ft)	Transverse Shear Design Loads: Load Combination	Transverse Shear (6) Reinforcement Design Loads (kips / ft)	Transverse Shear (7) Reinforcement Provided (in^2/ft^2)	Remarks
East Wall	Near Side	Horizontal	3H.3-18	4	2-H-L	Max Tension w/ corresponding moment	23407	1.4D + 1.7L + 1.7H' + 1.7Eo	32	-77	1.4D + 1.7L + 1.7H' + 1.7Eo	160	3.12	-	-	-	
						Max Compression w/ corresponding moment	14402	D + L + H' + E'	-160	-71							
						Max Moment with axial tension	21491	1.4D + 1.7L + 1.7H' + 1.7Eo	3	-134							
						Max Moment with axial compression	20002	D + L + H' + E'	-70	-304							
					3-H-L	Max Tension w/ corresponding moment	11572	1.4D + 1.7L + 1.7H' + 1.7Eo	13	-59	1.4D + 1.7L + 1.7H' + 1.7Eo	176	6.24	-	-	-	
						Max Compression w/ corresponding moment	12369	D + L + H' + E'	-111	-284							
						Max Moment with axial tension	14597	1.4D + 1.7L + 1.7H' + 1.7Eo	4	-103							
						Max Moment with axial compression	14597	D + L + H' + E'	-104	-417							
				5	4-H-L	Max Tension w/ corresponding moment	2348	1.4D + 1.7L + 1.7H' + 1.7Eo	58	-44	1.4D + 1.7L + 1.7H' + 1.7Eo	179	7.80	-	-	-	
						Max Compression w/ corresponding moment	7768	D + L + H' + E'	-255	-1001							
						Max Moment with axial tension	2348	D + L + H' + E'	0	-392							
						Max Moment with axial compression	6815	D + L + H' + E'	-242	-1018							
				4	5-H-L	Max Tension w/ corresponding moment	23408	1.4D + 1.7L + 1.7H' + 1.7Eo	57	-115	1.4D + 1.7L + 1.7H' + 1.7Eo	176	4.68	-	-	-	
						Max Compression w/ corresponding moment	14411	D + L + H' + E'	-164	-196							
						Max Moment with axial tension	23411	1.4D + 1.7L + 1.7H' + 1.7Eo	10	-244							
						Max Moment with axial compression	23411	D + L + H' + E'	-43	-276							
					6-H-L	Max Tension w/ corresponding moment	13592	1.4D + 1.7L + 1.7H' + 1.7Eo	6	-25	1.4D + 1.7L + 1.7H' + 1.7Eo	156	3.12	-	-	-	
						Max Compression w/ corresponding moment	11576	D + L + H' + E'	-212	-146							
						Max Moment with axial tension	13592	1.4D + 1.7L + 1.7H' + 1.7Eo	0	-40							
						Max Moment with axial compression	11576	D + L + H' + E'	-176	-299							
				5	7-H-L	Max Tension w/ corresponding moment	2352	1.4D + 1.7L + 1.7H' + 1.7Eo	48	-34	1.4D + 1.7L + 1.7H' + 1.7Eo	179	4.68	-	-	-	
						Max Compression w/ corresponding moment	8537	D + L + H' + E'	-263	-262							
						Max Moment with axial tension	2352	1.4D + 1.7L + 1.7H' + 1.7Eo	1	-175							
						Max Moment with axial compression	8890	D + L + H' + E'	-243	-501							
				3	8-H-L	Max Tension w/ corresponding moment	31192	1.4D + 1.7L + 1.7H' + 1.7Eo	295	-42	1.4D + 1.7L + 1.7H' + 1.7Eo	61	3.12	-	-	-	
						Max Compression w/ corresponding moment	31192	1.4D + 1.7L + 1.7H' + 1.7Eo	-240	-68							
						Max Moment with axial tension	29351	1.4D + 1.7L + 1.7H' + 1.7Eo	178	-89							
						Max Moment with axial compression	29351	1.4D + 1.7L + 1.7H' + 1.7Eo	-187	-89							
					9-H-L	Max Tension w/ corresponding moment	32281	1.4D + 1.7L + 1.7H' + 1.7Eo	115	-258	1.4D + 1.7L + 1.7H' + 1.7Eo	119	3.12	-	-	-	
						Max Compression w/ corresponding moment	32281	1.4D + 1.7L + 1.7H' + 1.7Eo	-134	-214							
						Max Moment with axial tension	32281	1.4D + 1.7L + 1.7H' + 1.7Eo	27	-297							
						Max Moment with axial compression	32281	1.4D + 1.7L + 1.7H' + 1.7Eo	-39	-297							
				4	10-H-L	Max Tension w/ corresponding moment	23415	D + L + H' + E'	28	-441	1.4D + 1.7L + 1.7H' + 1.7Eo	176	7.80	-	-	-	
						Max Compression w/ corresponding moment	11651	D + L + H' + E'	-268	-361							
						Max Moment with axial tension	23415	D + L + H' + E'	10	-551							
						Max Moment with axial compression	16659	D + L + H' + E'	-146	-698							

Table 3H.3-3 Results of Radwaste Building Concrete Wall Design (Continued)

Location	Face	Direction	Reinforcement Layout Drawing Number (1)	Thickness (ft)	Reinforcement Zone Number (2)	Maximum Forces (3)	Element	Longitudinal Reinforcement Design Loads: Axial and Flexure Loads: Load Combination	Axial (4) (kips / ft)	Flexure (4) (ft-kips / ft)	In-Plane Shear Loads: Load Combination	In-plane (5) Shear (kips / ft)	Longitudinal Reinforcement Provided (in^2/ ft)	Transverse Shear Design Loads: Load Combination	Transverse Shear (6) Reinforcement Design Loads (kips / ft)	Transverse Shear (7) Reinforcement Provided (in^2/ft^2)	Remarks
East Wall	Near Side	Horizontal	3H 3-18	5	11-H-L	Max Tension w/ corresponding moment	2715	1.4D + 1.7L + 1.7H' + 1.7Eo	61	-62	1.4D + 1.7L + 1.7H' + 1.7Eo	179	9.36	-	-	-	
						Max Compression w/ corresponding moment	8895	D + L + H' + E'	-339	-695							
						Max Moment with axial tension	2715	1.4D + 1.7L + 1.7H' + 1.7Eo	3	-372							
						Max Moment with axial compression	8135	D + L + H' + E'	-271	-1223							
					12-H-L	Max Tension w/ corresponding moment	2705	1.4D + 1.7L + 1.7H' + 1.7Eo	43	-39	1.4D + 1.7L + 1.7H' + 1.7Eo	179	6.24	-	-	-	
						Max Compression w/ corresponding moment	4486	D + L + H' + E'	-185	-122							
						Max Moment with axial tension	2686	1.4D + 1.7L + 1.7H + 1.7W	1	-128							
						Max Moment with axial compression	4468	D + L + H' + E'	-146	-465							
		Vertical	3H 3-19	3	1-V-L	Max Tension w/ corresponding moment	32281	1.4D + 1.7L + 1.7H' + 1.7Eo	276	-109	1.4D + 1.7L + 1.7H' + 1.7Eo	85	3.12	-	-	-	
						Max Compression w/ corresponding moment	26393	1.4D + 1.7L + 1.7H' + 1.7Eo	-363	-30							
						Max Moment with axial tension	26306	D + L + H' + E'	8	-207							
						Max Moment with axial compression	26306	1.4D + 1.7L + 1.7H' + 1.7Eo	-230	-275							
				4	2-V-L	Max Tension w/ corresponding moment	11572	1.4D + 1.7L + 1.7H' + 1.7Eo	161	-35	1.4D + 1.7L + 1.7H' + 1.7Eo	141	3.12	-	-	-	
						Max Compression w/ corresponding moment	11576	1.4D + 1.7L + 1.7H' + 1.7Eo	-555	-81							
						Max Moment with axial tension	23342	D + L + H' + E'	2	-206							
						Max Moment with axial compression	23342	1.4D + 1.7L + 1.7H' + 1.7Eo	-281	-235							
				5	3-V-L	Max Tension w/ corresponding moment	2715	1.4D + 1.7L + 1.7H' + 1.7Eo	382	-63	1.4D + 1.7L + 1.7H' + 1.7Eo	267	9.36	-	-	-	
						Max Compression w/ corresponding moment	2715	1.4D + 1.7L + 1.7H' + 1.7Eo	-767	-272							
						Max Moment with axial tension	2547	D + L + H' + E'	3	-1086							
						Max Moment with axial compression	2531	D + L + H' + E'	-197	-1099							
				3	4-V-L	Max Tension w/ corresponding moment	26375	1.4D + 1.7L + 1.7H' + 1.7Eo	38	-59	1.4D + 1.7L + 1.7H' + 1.7Eo	85	4.68	-	-	-	
						Max Compression w/ corresponding moment	26310	1.4D + 1.7L + 1.7H' + 1.7Eo	-229	-265							
						Max Moment with axial tension	33710	D + L + H' + E'	5	-270							
						Max Moment with axial compression	33710	1.4D + 1.7L + 1.7H' + 1.7Eo	-114	-349							
				4	5-V-L	Max Tension w/ corresponding moment	11653	1.4D + 1.7L + 1.7H' + 1.7Eo	185	-43	1.4D + 1.7L + 1.7H' + 1.7Eo	187	4.68	-	-	-	
						Max Compression w/ corresponding moment	11651	1.4D + 1.7L + 1.7H' + 1.7Eo	-533	-112							
						Max Moment with axial tension	14356	D + L + H' + E'	31	-363							
						Max Moment with axial compression	23373	1.4D + 1.7L + 1.7H' + 1.7Eo	-236	-398							
				3	6-V-L	Max Tension w/ corresponding moment	32279	1.4D + 1.7L + 1.7H' + 1.7Eo	273	-97	1.4D + 1.7L + 1.7H' + 1.7Eo	78	4.68	-	-	-	
						Max Compression w/ corresponding moment	32279	1.4D + 1.7L + 1.7H' + 1.7Eo	-274	-76							
						Max Moment with axial tension	32279	1.4D + 1.7L + 1.7H' + 1.7Eo	48	-103							
						Max Moment with axial compression	32279	1.4D + 1.7L + 1.7H' + 1.7Eo	-24	-103							
	Far side	Horizontal	3H 3-20	3	1-H-L	Max Tension w/ corresponding moment	29324	1.4D + 1.7L + 1.7H' + 1.7Eo	202	48	1.4D + 1.7L + 1.7H' + 1.7Eo	119	1.56	-	-	-	
						Max Compression w/ corresponding moment	29324	1.4D + 1.7L + 1.7H' + 1.7Eo	-154	36							
						Max Moment with axial tension	28551	1.4D + 1.7L + 1.7H' + 1.7Eo	2	137							
						Max Moment with axial compression	28551	1.4D + 1.7L + 1.7H' + 1.7Eo	-19	137							

Table 3H.3-3 Results of Radwaste Building Concrete Wall Design (Continued)

Location	Face	Direction	Reinforcement Layout Drawing Number (1)	Thickness (ft)	Reinforcement Zone Number (2)	Maximum Forces (3)	Element	Longitudinal Reinforcement Design Loads: Axial and Flexure Loads: Load Combination	Axial (4) (kips / ft)	Flexure (4) (ft-kips / ft)	In-Plane Shear Loads: Load Combination	In-plane (5) Shear (kips / ft)	Longitudinal Reinforcement Provided (in^2/ ft)	Transverse Shear Design Loads: Load Combination	Transverse Shear (6) Reinforcement Design Loads (kips / ft)	Transverse Shear (7) Reinforcement Provided (in^2/ft^2)	Remarks
East Wall	Far side	Horizontal	3H 3-20	4	2-H-L	Max Tension w/ corresponding moment	23408	1.4D + 1.7L + 1.7H' + 1.7Eo	57	78	1.4D + 1.7L + 1.7H' + 1.7Eo	160	3.12	-	-	-	
						Max Compression w/ corresponding moment	14665	D + L + H' + E'	-152	29							
						Max Moment with axial tension	23408	1.4D + 1.7L + 1.7H' + 1.7Eo	41	96							
						Max Moment with axial compression	15402	D + L + H' + E'	-84	295							
					3-H-L	Max Tension w/ corresponding moment	14597	1.4D + 1.7L + 1.7H + 1.7W	16	30	1.4D + 1.7L + 1.7H' + 1.7Eo	160	6.24	-	-	-	
						Max Compression w/ corresponding moment	14601	D + L + H' + E'	-104	61							
						Max Moment with axial tension	14601	1.4D + 1.7L + 1.7H' + 1.7Eo	4	71							
						Max Moment with axial compression	14605	D + L + H' + E'	-85	375							
					4-H-L	Max Tension w/ corresponding moment	14334	1.4D + 1.7L + 1.7H + 1.7W	16	27	1.4D + 1.7L + 1.7H' + 1.7Eo	176	4.68	-	-	-	
						Max Compression w/ corresponding moment	11576	D + L + H' + E'	-176	183							
						Max Moment with axial tension	14338	1.4D + 1.7L + 1.7H' + 1.7Eo	3	60							
						Max Moment with axial compression	13561	D + L + H' + E'	-101	313							
				5	5-H-L	Max Tension w/ corresponding moment	2715	1.4D + 1.7L + 1.7H' + 1.7Eo	61	18	1.4D + 1.7L + 1.7H' + 1.7Eo	179	4.68	-	-	-	
						Max Compression w/ corresponding moment	8537	D + L + H' + E'	-230	131							
						Max Moment with axial tension	3149	1.4D + 1.7L + 1.7H' + 1.7Eo	1	71							
						Max Moment with axial compression	8591	D + L + H' + E'	-160	414							
				3	6-H-L	Max Tension w/ corresponding moment	31192	1.4D + 1.7L + 1.7H' + 1.7Eo	295	81	1.4D + 1.7L + 1.7H' + 1.7Eo	61	3.12	-	-	-	
						Max Compression w/ corresponding moment	31192	1.4D + 1.7L + 1.7H' + 1.7Eo	-240	82							
						Max Moment with axial tension	29351	1.4D + 1.7L + 1.7H' + 1.7Eo	232	125							
						Max Moment with axial compression	29351	1.4D + 1.7L + 1.7H' + 1.7Eo	-132	125							
					7-H-L	Max Tension w/ corresponding moment	32281	1.4D + 1.7L + 1.7H' + 1.7Eo	115	198	1.4D + 1.7L + 1.7H' + 1.7Eo	75	3.12	-	-	-	
						Max Compression w/ corresponding moment	32281	1.4D + 1.7L + 1.7H' + 1.7Eo	-134	221							
						Max Moment with axial tension	34107	1.4D + 1.7L + 1.7H' + 1.7Eo	9	278							
						Max Moment with axial compression	34107	1.4D + 1.7L + 1.7H' + 1.7Eo	-22	278							
		Vertical	3H 3-21	3	1-V-L	Max Tension w/ corresponding moment	29589	1.4D + 1.7L + 1.7H' + 1.7Eo	139	43	1.4D + 1.7L + 1.7H' + 1.7Eo	76	3.12	-	-	-	
						Max Compression w/ corresponding moment	26586	1.4D + 1.7L + 1.7H' + 1.7Eo	-272	33							
						Max Moment with axial tension	26605	D + L + H' + E'	1	143							
						Max Moment with axial compression	26612	1.4D + 1.7L + 1.7H' + 1.7Eo	-154	215							
				4	2-V-L	Max Tension w/ corresponding moment	15473	1.4D + 1.7L + 1.7H' + 1.7Eo	101	8	1.4D + 1.7L + 1.7H' + 1.7Eo	187	3.12	-	-	-	
						Max Compression w/ corresponding moment	15394	1.4D + 1.7L + 1.7H' + 1.7Eo	-394	79							
						Max Moment with axial tension	15402	1.4D + 1.7L + 1.7H' + 1.7Eo	20	168							
						Max Moment with axial compression	15402	D + L + H' + E'	-295	199							
					3-V-L	Max Tension w/ corresponding moment	11653	1.4D + 1.7L + 1.7H' + 1.7Eo	185	17	1.4D + 1.7L + 1.7H' + 1.7Eo	187	4.68	-	-	-	
						Max Compression w/ corresponding moment	11576	1.4D + 1.7L + 1.7H' + 1.7Eo	-474	45							
						Max Moment with axial tension	11614	D + L + H' + E'	26	453							
						Max Moment with axial compression	11614	D + L + H' + E'	-194	453							

Table 3H.3-3 Results of Radwaste Building Concrete Wall Design (Continued)

Location	Face	Direction	Reinforcement Layout Drawing Number (1)	Thickness (ft)	Reinforcement Zone Number (2)	Maximum Forces (3)	Element	Longitudinal Reinforcement Design Loads: Axial and Flexure Loads: Load Combination	Axial (4) (kips / ft)	Flexure (4) (ft-kips / ft)	In-Plane Shear Loads: Load Combination	In-plane (5) Shear (kips / ft)	Longitudinal Reinforcement Provided (in^2/ ft)	Transverse Shear Design Loads: Load Combination	Transverse Shear (6) Reinforcement Design Loads (kips / ft)	Transverse Shear (7) Reinforcement Provided (in^2/ft^2)	Remarks
East Wall	Far side	Vertical	3H 3-21	5	4-V-L	Max Tension w/ corresponding moment	2715	1.4D + 1.7L + 1.7H' + 1.7Eo	382	59	1.4D + 1.7L + 1.7H' + 1.7Eo	244	7.80	-	-	-	
						Max Compression w/ corresponding moment	2348	1.4D + 1.7L + 1.7H' + 1.7Eo	-748	81							
						Max Moment with axial tension	6938	D + L + H' + E'	20	749							
						Max Moment with axial compression	6938	D + L + H' + E'	-268	761							
				3	5-V-L	Max Tension w/ corresponding moment	30930	1.4D + 1.7L + 1.7H' + 1.7Eo	172	184	1.4D + 1.7L + 1.7H' + 1.7Eo	85	3.12	-	-	-	
						Max Compression w/ corresponding moment	29615	1.4D + 1.7L + 1.7H' + 1.7Eo	-302	56							
						Max Moment with axial tension	30920	1.4D + 1.7L + 1.7H' + 1.7Eo	42	265							
						Max Moment with axial compression	30920	1.4D + 1.7L + 1.7H' + 1.7Eo	-224	265							
					6-V-L	Max Tension w/ corresponding moment	26381	D + L + H' + E'	172	81	1.4D + 1.7L + 1.7H' + 1.7Eo	67	1.56	-	-	-	
						Max Compression w/ corresponding moment	26391	1.4D + 1.7L + 1.7H' + 1.7Eo	-281	6							
						Max Moment with axial tension	29617	1.4D + 1.7L + 1.7H' + 1.7Eo	22	180							
						Max Moment with axial compression	26643	1.4D + 1.7L + 1.7H' + 1.7Eo	-155	211							
					7-V-L	Max Tension w/ corresponding moment	26393	1.4D + 1.7L + 1.7H' + 1.7Eo	91	15	1.4D + 1.7L + 1.7H' + 1.7Eo	78	3.12	-	-	-	
						Max Compression w/ corresponding moment	26393	1.4D + 1.7L + 1.7H' + 1.7Eo	-363	8							
						Max Moment with axial tension	34107	D + L + H' + E'	3	126							
						Max Moment with axial compression	34107	1.4D + 1.7L + 1.7H' + 1.7Eo	-89	140							
					8-V-L	Max Tension w/ corresponding moment	26396	1.4D + 1.7L + 1.7H' + 1.7Eo	90	14	1.4D + 1.7L + 1.7H' + 1.7Eo	48	1.56	-	-	-	
						Max Compression w/ corresponding moment	26396	1.4D + 1.7L + 1.7H' + 1.7Eo	-361	8							
						Max Moment with axial tension	34110	1.4D + 1.7L + 1.7H' + 1.7Eo	2	110							
						Max Moment with axial compression	34110	1.4D + 1.7L + 1.7H' + 1.7Eo	-73	110							
					9-V-L	Max Tension w/ corresponding moment	32281	1.4D + 1.7L + 1.7H' + 1.7Eo	276	100	1.4D + 1.7L + 1.7H' + 1.7Eo	78	4.68	-	-	-	
						Max Compression w/ corresponding moment	32281	1.4D + 1.7L + 1.7H' + 1.7Eo	-278	74							
						Max Moment with axial tension	32279	1.4D + 1.7L + 1.7H' + 1.7Eo	48	120							
						Max Moment with axial compression	32279	1.4D + 1.7L + 1.7H' + 1.7Eo	-24	120							
	-	Horizontal Plane	3H 3-22	5	1-H-T	-	-	-	-	-	-	-	-	D + L + H' + E'	100	0.2 (#4@12)	-
				5	2-H-T	-	-	-	-	-	-	-	-	D + L + H' + E'	191	0.62 (#5@6)	-
				4	3-H-T	-	-	-	-	-	-	-	-	D + L + H' + E'	82	0.2 (#4@12)	-
				4	4-H-T	-	-	-	-	-	-	-	-	D + L + H' + E'	109	0.4 (#4@6)	-
		Vertical Plane	3H 3-22	5	1-V-T	-	-	-	-	-	-	-	-	D + L + H' + E'	118	0.2 (#4@12)	-
				5	2-V-T	-	-	-	-	-	-	-	-	D + L + H' + E'	127	0.31 (#5@12)	-
				4	3-V-T	-	-	-	-	-	-	-	-	D + L + H' + E'	65	0.2 (#4@12)	-
West Wall	Near Side	Horizontal	3H 3-23	3	1-H-L	Max Tension w/ corresponding moment	32204	1.4D + 1.7L + 1.7H' + 1.7Eo	113	-184	1.4D + 1.7L + 1.7H' + 1.7Eo	107	3.12	-	-	-	
						Max Compression w/ corresponding moment	32243	1.4D + 1.7L + 1.7H' + 1.7Eo	-95	-174							
						Max Moment with axial tension	31152	1.4D + 1.7L + 1.7H' + 1.7Eo	24	-208							
						Max Moment with axial compression	31152	1.4D + 1.7L + 1.7H' + 1.7Eo	-41	-208							

Table 3H.3-3 Results of Radwaste Building Concrete Wall Design (Continued)

Location	Face	Direction	Reinforcement Layout Drawing Number (1)	Thickness (ft)	Reinforcement Zone Number (2)	Maximum Forces (3)	Element	Longitudinal Reinforcement Design Loads					Longitudinal Reinforcement Provided (in^2/ ft)	Transverse Shear Design Loads		Transverse Shear (7) Reinforcement Provided (in^2/ft^2)	Remarks
								Axial and Flexure Loads			In-Plane Shear Loads						
								Load Combination	Axial (4) (kips / ft)	Flexure (4) (ft-kips / ft)	Load Combination	In-plane (5) Shear (kips / ft)		Load Combination	Transverse Shear (6) Reinforcement Design Loads (kips / ft)		
West Wall	Near Side	Horizontal	3H.3-23	4	2-H-L	Max Tension w/ corresponding moment	23343	1.4D + 1.7L + 1.7H' + 1.7Eo	163	-38	1.4D + 1.7L + 1.7H' + 1.7Eo	143	4.68	-	-	-	
						Max Compression w/ corresponding moment	11573	D + L + H' + E'	-391	-428							
						Max Moment with axial tension	11571	D + L + H' + E'	1	-265							
						Max Moment with axial compression	13167	D + L + H' + E'	-116	-557							
				5	3-H-L	Max Tension w/ corresponding moment	8532	D + L + H' + E'	194	-845	1.4D + 1.7L + 1.7H' + 1.7Eo	164	6.24	-	-	-	
						Max Compression w/ corresponding moment	8534	D + L + H' + E'	-335	-788							
						Max Moment with axial tension	8532	D + L + H' + E'	146	-878							
						Max Moment with axial compression	8663	D + L + H' + E'	-72	-895							
		Vertical	3H.3-24	3	1-V-L	Max Tension w/ corresponding moment	32243	1.4D + 1.7L + 1.7H' + 1.7Eo	8	-308	1.4D + 1.7L + 1.7H' + 1.7Eo	90	4.68	-	-	-	
						Max Compression w/ corresponding moment	32243	1.4D + 1.7L + 1.7H' + 1.7Eo	-50	-389							
						Max Moment with axial tension	32243	D + L + H' + E'	1	-310							
						Max Moment with axial compression	32243	1.4D + 1.7L + 1.7H' + 1.7Eo	-50	-390							
					2-V-L	Max Tension w/ corresponding moment	26402	1.4D + 1.7L + 1.7H' + 1.7Eo	134	-39	1.4D + 1.7L + 1.7H' + 1.7Eo	90	3.12	-	-	-	
						Max Compression w/ corresponding moment	26402	1.4D + 1.7L + 1.7H' + 1.7Eo	-356	-39							
						Max Moment with axial tension	32258	D + L + H' + E'	1	-247							
						Max Moment with axial compression	32258	1.4D + 1.7L + 1.7H' + 1.7Eo	-44	-305							
				4	3-V-L	Max Tension w/ corresponding moment	11571	1.4D + 1.7L + 1.7H' + 1.7Eo	249	-97	1.4D + 1.7L + 1.7H' + 1.7Eo	212	4.68	-	-	-	
						Max Compression w/ corresponding moment	11573	1.4D + 1.7L + 1.7H' + 1.7Eo	-733	-316							
						Max Moment with axial tension	23385	D + L + H' + E'	4	-375							
						Max Moment with axial compression	23385	D + L + H' + E'	-127	-411							
					4-V-L	Max Tension w/ corresponding moment	22694	D + L + H' + E'	73	-18	1.4D + 1.7L + 1.7H' + 1.7Eo	212	6.24	-	-	-	
						Max Compression w/ corresponding moment	12396	1.4D + 1.7L + 1.7H' + 1.7Eo	-303	-52							
						Max Moment with axial tension	23359	D + L + H' + E'	24	-362							
						Max Moment with axial compression	23359	1.4D + 1.7L + 1.7H' + 1.7Eo	-77	-385							
				5	5-V-L	Max Tension w/ corresponding moment	3508	1.4D + 1.7L + 1.7H' + 1.7Eo	271	-46	1.4D + 1.7L + 1.7H' + 1.7Eo	204	6.24	-	-	-	
						Max Compression w/ corresponding moment	3144	1.4D + 1.7L + 1.7H' + 1.7Eo	-669	-118							
						Max Moment with axial tension	3400	D + L + H' + E'	16	-392							
						Max Moment with axial compression	3400	D + L + H' + E'	-175	-405							
					6-V-L	Max Tension w/ corresponding moment	2711	1.4D + 1.7L + 1.7H' + 1.7Eo	351	-86	1.4D + 1.7L + 1.7H' + 1.7Eo	204	9.36	-	-	-	
						Max Compression w/ corresponding moment	2347	1.4D + 1.7L + 1.7H' + 1.7Eo	-755	-249							
						Max Moment with axial tension	2582	D + L + H' + E'	0	-762							
						Max Moment with axial compression	2582	D + L + H' + E'	-182	-778							

Table 3H.3-3 Results of Radwaste Building Concrete Wall Design (Continued)

Location	Face	Direction	Reinforcement Layout Drawing Number (1)	Thickness (ft)	Reinforcement Zone Number (2)	Maximum Forces (3)	Element	Longitudinal Reinforcement Design Loads					Longitudinal Reinforcement Provided (in^2/ ft)	Transverse Shear Design Loads		Transverse Shear (7) Reinforcement Provided (in^2/ft^2)	Remarks
								Axial and Flexure Loads			In-Plane Shear Loads						
								Load Combination	Axial (4) (kips / ft)	Flexure (4) (ft-kips / ft)	Load Combination	In-plane (5) Shear (kips / ft)		Load Combination	Transverse Shear (6) Reinforcement Design Loads (kips / ft)		
West Wall	Far side	Horizontal	3H.3-25	3	1-H-L	Max Tension w/ corresponding moment	32204	1.4D + 1.7L + 1.7H' + 1.7Eo	113	129	1.4D + 1.7L + 1.7H' + 1.7Eo	71	3.12	-	-	-	
						Max Compression w/ corresponding moment	32243	1.4D + 1.7L + 1.7H' + 1.7Eo	-95	96							
						Max Moment with axial tension	32204	1.4D + 1.7L + 1.7H' + 1.7Eo	96	134							
						Max Moment with axial compression	32204	1.4D + 1.7L + 1.7H' + 1.7Eo	-57	134							
					2-H-L	Max Tension w/ corresponding moment	31978	1.4D + 1.7L + 1.7H' + 1.7Eo	53	66	1.4D + 1.7L + 1.7H' + 1.7Eo	73	1.56	-	-	-	
						Max Compression w/ corresponding moment	31978	1.4D + 1.7L + 1.7H' + 1.7Eo	-81	75							
						Max Moment with axial tension	31152	1.4D + 1.7L + 1.7H' + 1.7Eo	28	169							
						Max Moment with axial compression	31152	1.4D + 1.7L + 1.7H' + 1.7Eo	-37	169							
					3-H-L	Max Tension w/ corresponding moment	26287	1.4D + 1.7L + 1.7H' + 1.7Eo	91	72	1.4D + 1.7L + 1.7H' + 1.7Eo	107	3.12	-	-	-	
						Max Compression w/ corresponding moment	26287	1.4D + 1.7L + 1.7H' + 1.7Eo	-81	60							
						Max Moment with axial tension	29574	1.4D + 1.7L + 1.7H' + 1.7Eo	17	136							
						Max Moment with axial compression	29574	1.4D + 1.7L + 1.7H' + 1.7Eo	-19	136							
				4	4-H-L	Max Tension w/ corresponding moment	23361	1.4D + 1.7L + 1.7H' + 1.7Eo	34	23	1.4D + 1.7L + 1.7H' + 1.7Eo	143	3.12	-	-	-	
						Max Compression w/ corresponding moment	11650	D + L + H' + E'	-225	170							
						Max Moment with axial tension	11625	1.4D + 1.7L + 1.7H + 1.7W	2	142							
						Max Moment with axial compression	11625	D + L + H' + E'	-70	303							
					5-H-L	Max Tension w/ corresponding moment	23343	1.4D + 1.7L + 1.7H' + 1.7Eo	163	181	1.4D + 1.7L + 1.7H' + 1.7Eo	143	6.24	-	-	-	
						Max Compression w/ corresponding moment	23343	1.4D + 1.7L + 1.7H' + 1.7Eo	-107	149							
						Max Moment with axial tension	23343	1.4D + 1.7L + 1.7H' + 1.7Eo	103	242							
						Max Moment with axial compression	23343	1.4D + 1.7L + 1.7H' + 1.7Eo	-71	242							
					6-H-L	Max Tension w/ corresponding moment	11571	1.4D + 1.7L + 1.7H' + 1.7Eo	27	9	1.4D + 1.7L + 1.7H' + 1.7Eo	132	4.68	-	-	-	
						Max Compression w/ corresponding moment	11650	D + L + H' + E'	-225	170							
						Max Moment with axial tension	11625	1.4D + 1.7L + 1.7H + 1.7W	2	142							
						Max Moment with axial compression	11625	D + L + H' + E'	-70	303							
				5	7-H-L	Max Tension w/ corresponding moment	2711	1.4D + 1.7L + 1.7H' + 1.7Eo	53	14	1.4D + 1.7L + 1.7H' + 1.7Eo	164	4.68	-	-	-	
						Max Compression w/ corresponding moment	8891	D + L + H' + E'	-238	157							
						Max Moment with axial tension	8730	1.4D + 1.7L + 1.7H' + 1.7Eo	5	104							
						Max Moment with axial compression	8604	D + L + H' + E'	-174	500							

Table 3H.3-3 Results of Radwaste Building Concrete Wall Design (Continued)

Location	Face	Direction	Reinforcement Layout Drawing Number (1)	Thickness (ft)	Reinforcement Zone Number (2)	Maximum Forces (3)	Element	Longitudinal Reinforcement Design Loads: Axial and Flexure Loads: Load Combination	Axial (4) (kips / ft)	Flexure (4) (ft-kips / ft)	In-Plane Shear Loads: Load Combination	In-plane (5) Shear (kips / ft)	Longitudinal Reinforcement Provided (in^2/ ft)	Transverse Shear Design Loads: Load Combination	Transverse Shear (6) Reinforcement Design Loads (kips / ft)	Transverse Shear (7) Reinforcement Provided (in^2/ft^2)	Remarks
West Wall	Far side	Vertical	3H.3-26	3	1-V-L	Max Tension w/ corresponding moment	26929	1.4D + 1.7L + 1.7H' + 1.7Eo	110	30	1.4D + 1.7L + 1.7H' + 1.7Eo	73	1.56	-	-	-	
						Max Compression w/ corresponding moment	26929	1.4D + 1.7L + 1.7H' + 1.7Eo	-275	35							
						Max Moment with axial tension	26918	1.4D + 1.7L + 1.7H' + 1.7Eo	1	128							
						Max Moment with axial compression	26918	1.4D + 1.7L + 1.7H' + 1.7Eo	-118	128							
					2-V-L	Max Tension w/ corresponding moment	26848	1.4D + 1.7L + 1.7H' + 1.7Eo	98	24	1.4D + 1.7L + 1.7H' + 1.7Eo	90	3.12	-	-	-	
						Max Compression w/ corresponding moment	26856	1.4D + 1.7L + 1.7H' + 1.7Eo	-224	13							
						Max Moment with axial tension	26890	1.4D + 1.7L + 1.7H' + 1.7Eo	2	192							
						Max Moment with axial compression	26890	1.4D + 1.7L + 1.7H' + 1.7Eo	-54	219							
					3-V-L	Max Tension w/ corresponding moment	26402	1.4D + 1.7L + 1.7H' + 1.7Eo	134	18	1.4D + 1.7L + 1.7H' + 1.7Eo	90	4.68	-	-	-	
						Max Compression w/ corresponding moment	26402	1.4D + 1.7L + 1.7H' + 1.7Eo	-356	16							
						Max Moment with axial tension	26344	1.4D + 1.7L + 1.7H' + 1.7Eo	5	299							
						Max Moment with axial compression	26344	1.4D + 1.7L + 1.7H' + 1.7Eo	-57	309							
				4	4-V-L	Max Tension w/ corresponding moment	11571	1.4D + 1.7L + 1.7H' + 1.7Eo	249	137	1.4D + 1.7L + 1.7H' + 1.7Eo	212	4.68	-	-	-	
						Max Compression w/ corresponding moment	11573	1.4D + 1.7L + 1.7H' + 1.7Eo	-680	90							
						Max Moment with axial tension	11625	D + L + H' + E'	3	301							
						Max Moment with axial compression	11599	D + L + H' + E'	-246	392							
					5-V-L	Max Tension w/ corresponding moment	11585	1.4D + 1.7L + 1.7H' + 1.7Eo	81	62	1.4D + 1.7L + 1.7H' + 1.7Eo	161	6.24	-	-	-	
						Max Compression w/ corresponding moment	11585	1.4D + 1.7L + 1.7H' + 1.7Eo	-322	81							
						Max Moment with axial tension	11592	D + L + H' + E'	22	272							
						Max Moment with axial compression	11592	D + L + H' + E'	-214	280							

Table 3H.3-3 Results of Radwaste Building Concrete Wall Design (Continued)

Location	Face	Direction	Reinforcement Layout Drawing Number (1)	Thickness (ft)	Reinforcement Zone Number (2)	Maximum Forces (3)	Element	Longitudinal Reinforcement Design Loads – Axial and Flexure Loads – Load Combination	Axial (4) (kips / ft)	Flexure (4) (ft-kips / ft)	Longitudinal Reinforcement Design Loads – In-Plane Shear Loads – Load Combination	In-plane (5) Shear (kips / ft)	Longitudinal Reinforcement Provided (in^2/ ft)	Transverse Shear Design Loads – Load Combination	Transverse Shear (6) Reinforcement Design Loads (kips / ft)	Transverse Shear (7) Reinforcement Provided (in^2/ft^2)	Remarks
West Wall	Far side	Vertical	3H.3-26	5	6-V-L	Max Tension w/ corresponding moment	2711	1.4D + 1.7L + 1.7H' + 1.7Eo	351	75	1.4D + 1.7L + 1.7H' + 1.7Eo	146	7.80	-	-	-	
						Max Compression w/ corresponding moment	2711	1.4D + 1.7L + 1.7H' + 1.7Eo	-672	59							
						Max Moment with axial tension	5489	D + L + H' + E'	16	235							
						Max Moment with axial compression	5489	D + L + H' + E'	-369	236							
					7-V-L	Max Tension w/ corresponding moment	4482	1.4D + 1.7L + 1.7H' + 1.7Eo	151	30	1.4D + 1.7L + 1.7H' + 1.7Eo	204	4.68	-	-	-	
						Max Compression w/ corresponding moment	3497	1.4D + 1.7L + 1.7H' + 1.7Eo	-507	190							
						Max Moment with axial tension	6284	D + L + H' + E'	1	341							
						Max Moment with axial compression	6247	D + L + H' + E'	-186	369							
					8-V-L	Max Tension w/ corresponding moment	3205	1.4D + 1.7L + 1.7H' + 1.7Eo	94	27	1.4D + 1.7L + 1.7H' + 1.7Eo	153	6.24	-	-	-	
						Max Compression w/ corresponding moment	3205	1.4D + 1.7L + 1.7H' + 1.7Eo	-376	179							
						Max Moment with axial tension	5196	D + L + H' + E'	8	340							
						Max Moment with axial compression	5196	D + L + H' + E'	-200	340							
					9-V-L	Max Tension w/ corresponding moment	2350	1.4D + 1.7L + 1.7H' + 1.7Eo	231	64	1.4D + 1.7L + 1.7H' + 1.7Eo	177	4.68	-	-	-	
						Max Compression w/ corresponding moment	2350	1.4D + 1.7L + 1.7H' + 1.7Eo	-620	26							
						Max Moment with axial tension	5185	D + L + H' + E'	15	270							
						Max Moment with axial compression	5185	D + L + H' + E'	-226	270							
					10-V-L	Max Tension w/ corresponding moment	2347	1.4D + 1.7L + 1.7H' + 1.7Eo	341	74	1.4D + 1.7L + 1.7H' + 1.7Eo	137	7.80	-	-	-	
						Max Compression w/ corresponding moment	2347	1.4D + 1.7L + 1.7H' + 1.7Eo	-725	53							
						Max Moment with axial tension	8534	1.4D + 1.7L + 1.7H' + 1.7Eo	4	218							
						Max Moment with axial compression	8534	1.4D + 1.7L + 1.7H' + 1.7Eo	-251	218							
	-	Horizontal Plane	3H.3-27	5	1-H-T	-	-	-	-	-	-	-	-	D + L + H' + E'	139	0.4 (#4@6)	-
		Vertical Plane	3H.3-27	5	1-V-T	-	-	-	-	-	-	-	-	D + L + H' + E'	110	0.2 (#4@12)	-
				4	2-V-T	-	-	-	-	-	-	-	-	D + L + H' + E'	69	0.2 (#4@12)	-

Notes:

(1) The reinforcement layout drawings show the various zones used to define the minimum reinforcement that will be provided based on finite element analysis results. Actual provided reinforcement based on final rebar layout and including development length may exceed the reported provided reinforcement and the zones with higher reinforcement may be extended beyond their reported boundaries. The dimensions in the reinforcement drawings are based on the dimensions of the 2D SAP2000 shell elements, which are modeled at the centerline of the walls and slabs. Therefore, the reinforcement drawing dimensions do not match actual building dimensions.

(2) Each reinforcement layout drawing is divided into reinforcement zones. The reinforcement zone naming convention is as follows: "H" = horizontal, "V" = vertical, "L" = longitudinal reinforcement, "T" = transverse reinforcement. For slabs, vertical corresponds to North-South direction and horizontal corresponds to East-West Direction.

(3) The maximum tension and compression axial forces are provided with the corresponding moment from the same load combination. The maximum moment that has a corresponding tension in the same load combination and the maximum moment that has a corresponding compression in the same load combination are also provided. For zones where either axial tension or axial compression does not occur for any load combination, dashes are input into the corresponding cell.

(4) Negative axial load is compression and positive axial load is tension. Negative moment applies tension to the top face of the shell element and positive moment applies tension to the bottom face of the shell element. For walls or slabs where the same reinforcement is provided on both faces, the moment is shown as absolute value. The axial and flexural loads reported in the table are the average of the 2 node pairs that form the 4 edges of the critical rectangular shell element. If the 2 node pairs on the shell element edges parallel to the reinforcement direction do not satisfy P&M interaction criteria, then only the 2 node pairs on the shell element edges perpendicular to the reinforcement direction are used for design (effective width considered).

(5) The reported in-plane shear is the maximum average in-plane shear along a plane that crosses the longitudinal reinforcement zone.

(6) The reported transverse shear is the maximum average transverse shear along a plane in that transverse reinforcement zone.

(7) In areas where horizontal and vertical transverse shear zones overlap, the total transverse shear reinforcement to be supplied in the overlapping area is the sum of the transverse reinforcement required from the horizontal and vertical zones.

(8) For certain areas of the structure, the standard element post-processing methods were too conservative. For such cases, detailed manual design was performed and the design forces determined by the detailed manual design are provided in the table.

(9) The longitudinal reinforcement shown is required to be tied.

(10) The reported forces are from the FEM analysis. The provided longitudinal reinforcement includes additional reinforcement required due to manual one-way design calculations.

(11) The reported axial and in-plane forces are from the FEM analysis. The reported flexural forces are from manual one-way design calculations.

(12) The reported transverse shear reinforcement is the required ties for transverse shear in beam band region.

Table 3H.3-4 Results of Radwaste Building Concrete Slab Design

Location	Face	Direction	Reinforcement Layout Drawing Number (1)	Thickness (ft)	Reinforcement Zone Number (2)	Maximum Forces (3)	Element	Longitudinal Reinforcement Design Loads: Axial and Flexure Loads: Load Combination	Axial (4) (kips / ft)	Flexure (4) (ft-kips / ft)	In-Plane Shear Loads: Load Combination	In-plane (5) Shear (kips / ft)	Longitudinal Reinforcement Provided (in^2/ ft)	Transverse Shear Design Loads: Load Combination	Transverse Shear (6) Reinforcement Design Loads (kips / ft)	Transverse Shear (7) Reinforcement Provided (in^2/ft^2)	Remarks
Basemat	Near Side	Horizontal	3H.3-28	12	1-H-L	Max Tension w/ corresponding moment	26159	1.4D + 1.7L + 1.7H' + 1.7Eo	191	-706	1.4D + 1.7L + 1.7H' + 1.7Eo	96	7.80	-	-	-	
						Max Compression w/ corresponding moment	26186	1.4D + 1.7L + 1.7H' + 1.7Eo	-237	-248							
						Max Moment with axial tension	26185	1.4D + 1.7L + 1.7H' + 1.7Eo	115	-1986							
						Max Moment with axial compression	26185	1.4D + 1.7L + 1.7H' + 1.7Eo	-35	-1986							
					2-H-L	Max Tension w/ corresponding moment	29870	D + L + H' + E'	69	-578	1.4D + 1.7L + 1.7H' + 1.7Eo	96	6.24	-	-	-	
						Max Compression w/ corresponding moment	813	1.4D + 1.7L + 1.7H' + 1.7Eo	-88	-8							
						Max Moment with axial tension	32403	1.4D + 1.7L + 1.7H' + 1.7Eo	12	-862							
						Max Moment with axial compression	32403	1.4D + 1.7L + 1.7H' + 1.7Eo	-14	-862							
					3-H-L	Max Tension w/ corresponding moment	737	1.4D + 1.7L + 1.7H' + 1.7Eo	81	-615	1.4D + 1.7L + 1.7H' + 1.7Eo	96	3.12	-	-	-	
						Max Compression w/ corresponding moment	1073	1.4D + 1.7L + 1.7H' + 1.7Eo	-164	-117							
						Max Moment with axial tension	277	1.4D + 1.7L + 1.7H' + 1.7Eo	1	-1609							
						Max Moment with axial compression	371	1.4D + 1.7L + 1.7H' + 1.7Eo	-45	-1624							
					4-H-L	Max Tension w/ corresponding moment	27348	1.4D + 1.7L + 1.7H' + 1.7Eo	214	-1676	1.4D + 1.7L + 1.7H' + 1.7Eo	96	6.24	-	-	-	
						Max Compression w/ corresponding moment	27347	1.4D + 1.7L + 1.7H' + 1.7Eo	-354	-1086							
						Max Moment with axial tension	27789	1.4D + 1.7L + 1.7H' + 1.7Eo	70	-2095							
						Max Moment with axial compression	27789	1.4D + 1.7L + 1.7H' + 1.7Eo	-107	-2095							

Table 3H.3-4 Results of Radwaste Building Concrete Slab Design (Continued)

Location	Face	Direction	Reinforcement Layout Drawing Number (1)	Thickness (ft)	Reinforcement Zone Number (2)	Maximum Forces (3)	Element	Longitudinal Reinforcement Design Loads: Axial and Flexure Loads: Load Combination	Axial (4) (kips / ft)	Flexure (4) (ft-kips / ft)	In-Plane Shear Loads: Load Combination	In-plane (5) Shear (kips / ft)	Longitudinal Reinforcement Provided (in^2/ ft)	Transverse Shear Design Loads: Load Combination	Transverse Shear (6) Reinforcement Design Loads (kips / ft)	Transverse Shear (7) Reinforcement Provided (in^2/ft^2)	Remarks
Basemat	Near Side	Vertical	3H.3-29	12	1-V-L	Max Tension w/ corresponding moment	27828	1.4D + 1.7L + 1.7H' + 1.7Eo	250	-1882	1.4D + 1.7L + 1.7H' + 1.7Eo	87	9.36	-	-	-	
						Max Compression w/ corresponding moment	27828	1.4D + 1.7L + 1.7H' + 1.7Eo	-368	-781							
						Max Moment with axial tension	27828	1.4D + 1.7L + 1.7H' + 1.7Eo	173	-2239							
						Max Moment with axial compression	27828	1.4D + 1.7L + 1.7H' + 1.7Eo	-87	-2239							
					2-V-L	Max Tension w/ corresponding moment	30927	D + L + H' + E'	119	-1023	D + L + H' + E'	50	4.68	-	-	-	
						Max Compression w/ corresponding moment	32362	D + L + H' + E'	-132	-437							
						Max Moment with axial tension	29870	1.4D + 1.7L + 1.7H' + 1.7Eo	93	-1815							
						Max Moment with axial compression	29870	1.4D + 1.7L + 1.7H' + 1.7Eo	-42	-1815							
					3-V-L	Max Tension w/ corresponding moment	777	1.4D + 1.7L + 1.7H' + 1.7Eo	130	-1209	1.4D + 1.7L + 1.7H' + 1.7Eo	49	3.12	-	-	-	
						Max Compression w/ corresponding moment	777	D + L + H' + E'	-285	-562							
						Max Moment with axial tension	831	1.4D + 1.7L + 1.7H' + 1.7Eo	14	-1470							
						Max Moment with axial compression	831	1.4D + 1.7L + 1.7H' + 1.7Eo	-42	-1470							
					4-V-L	Max Tension w/ corresponding moment	28049	D + L + H' + E'	143	-135	D + L + H' + E'	50	4.68	-	-	-	
						Max Compression w/ corresponding moment	28579	D + L + H' + E'	-152	-590							
						Max Moment with axial tension	27906	1.4D + 1.7L + 1.7H' + 1.7Eo	97	-1758							
						Max Moment with axial compression	27906	1.4D + 1.7L + 1.7H' + 1.7Eo	-41	-1758							
					5-V-L	Max Tension w/ corresponding moment	880	1.4D + 1.7L + 1.7H' + 1.7Eo	125	-1310	D + L + H' + E'	50	4.68	-	-	-	
						Max Compression w/ corresponding moment	879	D + L + H' + E'	-317	-275							
						Max Moment with axial tension	880	1.4D + 1.7L + 1.7H' + 1.7Eo	93	-1575							
						Max Moment with axial compression	880	1.4D + 1.7L + 1.7H' + 1.7Eo	-114	-1575							
					6-V-L	Max Tension w/ corresponding moment	1260	1.4D + 1.7L + 1.7H' + 1.7Eo	107	-340	1.4D + 1.7L + 1.7H' + 1.7Eo	36	3.12	-	-	-	
						Max Compression w/ corresponding moment	881	D + L + H' + E'	-171	-411							
						Max Moment with axial tension	881	1.4D + 1.7L + 1.7H' + 1.7Eo	54	-1349							
						Max Moment with axial compression	881	1.4D + 1.7L + 1.7H' + 1.7Eo	-78	-1349							
					7-V-L	Max Tension w/ corresponding moment	29849	1.4D + 1.7L + 1.7H' + 1.7Eo	226	-651	1.4D + 1.7L + 1.7H' + 1.7Eo	91	9.36	-	-	-	
						Max Compression w/ corresponding moment	27790	1.4D + 1.7L + 1.7H' + 1.7Eo	-336	-517							
						Max Moment with axial tension	32371	1.4D + 1.7L + 1.7H' + 1.7Eo	143	-2095							
						Max Moment with axial compression	32371	1.4D + 1.7L + 1.7H' + 1.7Eo	-73	-2095							
					8-V-L	Max Tension w/ corresponding moment	778	1.4D + 1.7L + 1.7H' + 1.7Eo	132	-1164	1.4D + 1.7L + 1.7H' + 1.7Eo	40	4.68	-	-	-	
						Max Compression w/ corresponding moment	778	D + L + H' + E'	-283	-523							
						Max Moment with axial tension	778	1.4D + 1.7L + 1.7H' + 1.7Eo	87	-1455							
						Max Moment with axial compression	778	1.4D + 1.7L + 1.7H' + 1.7Eo	-116	-1455							

Table 3H.3-4 Results of Radwaste Building Concrete Slab Design (Continued)

Location	Face	Direction	Reinforcement Layout Drawing Number (1)	Thickness (ft)	Reinforcement Zone Number(2)	Maximum Forces(3)	Element	Longitudinal Reinforcement Design Loads: Axial and Flexure Loads: Load Combination	Axial (4) (kips / ft)	Flexure (4) (ft-kips / ft)	In-Plane Shear Loads: Load Combination	In-plane (5) Shear (kips / ft)	Longitudinal Reinforcement Provided (in^2/ ft)	Transverse Shear Design Loads: Load Combination	Transverse Shear (6) Reinforcement Design Loads (kips / ft)	Transverse Shear (7) Reinforcement Provided (in^2/ft^2)	Remarks
Basemat	Far side	Horizontal	3H-3-30	12	1-H-L	Max Tension w/ corresponding moment	26159	1.4D + 1.7L + 1.7H' + 1.7Eo	200	214	1.4D + 1.7L + 1.7H' + 1.7Eo	96	9.36	-	-	-	
						Max Compression w/ corresponding moment	26186	1.4D + 1.7L + 1.7H' + 1.7Eo	-307	1876							
						Max Moment with axial tension	26185	1.4D + 1.7L + 1.7H' + 1.7Eo	27	4473							
						Max Moment with axial compression	26185	1.4D + 1.7L + 1.7H' + 1.7Eo	-181	4482							
					2-H-L	Max Tension w/ corresponding moment	896	1.4D + 1.7L + 1.7H' + 1.7Eo	160	620	1.4D + 1.7L + 1.7H' + 1.7Eo	96	4.68	-	-	-	
						Max Compression w/ corresponding moment	755	D + L + H' + E'	-127	833							
						Max Moment with axial tension	1177	1.4D + 1.7L + 1.7H' + 1.7Eo	7	2204							
						Max Moment with axial compression	1177	D + L + H' + E'	-4	1983							
					3-H-L	Max Tension w/ corresponding moment	662	1.4D + 1.7L + 1.7H' + 1.7Eo	111	520	1.4D + 1.7L + 1.7H' + 1.7Eo	96	3.12	-	-	-	
						Max Compression w/ corresponding moment	813	D + L + H' + E'	-101	215							
						Max Moment with axial tension	54	1.4D + 1.7L + 1.7H' + 1.7Eo	8	1521							
						Max Moment with axial compression	54	1.4D + 1.7L + 1.7H' + 1.7Eo	-1	1381							
					4-H-L	Max Tension w/ corresponding moment	39	1.4D + 1.7L + 1.7H' + 1.7Eo	154	671	1.4D + 1.7L + 1.7H' + 1.7Eo	96	6.24	-	-	-	
						Max Compression w/ corresponding moment	1073	D + L + H' + E'	-220	728							
						Max Moment with axial tension	416	1.4D + 1.7L + 1.7H' + 1.7Eo	1	3223							
						Max Moment with axial compression	557	1.4D + 1.7L + 1.7H' + 1.7Eo	-89	3403							
					5-H-L	Max Tension w/ corresponding moment	27348	1.4D + 1.7L + 1.7H' + 1.7Eo	214	1379	1.4D + 1.7L + 1.7H' + 1.7Eo	96	9.36	-	-	-	
						Max Compression w/ corresponding moment	27347	1.4D + 1.7L + 1.7H' + 1.7Eo	-515	1306							
						Max Moment with axial tension	29849	1.4D + 1.7L + 1.7H' + 1.7Eo	55	3850							
						Max Moment with axial compression	27347	1.4D + 1.7L + 1.7H' + 1.7Eo	-299	4528							
					6-H-L	Max Tension w/ corresponding moment	604	1.4D + 1.7L + 1.7H' + 1.7Eo	60	32	1.4D + 1.7L + 1.7H' + 1.7Eo	31	7.80	-	-	-	
						Max Compression w/ corresponding moment	604	1.4D + 1.7L + 1.7H' + 1.7Eo	-162	1278							
						Max Moment with axial tension	604	D + L + H' + E'	17	2558							
						Max Moment with axial compression	604	1.4D + 1.7L + 1.7H' + 1.7Eo	-122	3483							

Table 3H.3-4 Results of Radwaste Building Concrete Slab Design (Continued)

Location	Face	Direction	Reinforcement Layout Drawing Number (1)	Thickness (ft)	Reinforcement Zone Number (2)	Maximum Forces (3)	Element	Longitudinal Reinforcement Design Loads: Axial and Flexure Loads: Load Combination	Axial (4) (kips / ft)	Flexure (4) (ft-kips / ft)	In-Plane Shear Loads: Load Combination	In-plane (5) Shear (kips / ft)	Longitudinal Reinforcement Provided (in^2/ ft)	Transverse Shear Design Loads: Load Combination	Transverse Shear (6) Reinforcement Design Loads (kips / ft)	Transverse Shear (7) Reinforcement Provided (in^2/ft^2)	Remarks
Basemat	Far side	Vertical	3H.3-31	12	1-V-L	Max Tension w/ corresponding moment	26186	1.4D + 1.7L + 1.7H' + 1.7Eo	241	1674	1.4D + 1.7L + 1.7H' + 1.7Eo	87	9.36	-	-	-	
						Max Compression w/ corresponding moment	26186	1.4D + 1.7L + 1.7H' + 1.7Eo	-395	982							
						Max Moment with axial tension	26186	1.4D + 1.7L + 1.7H' + 1.7Eo	35	4571							
						Max Moment with axial compression	26186	1.4D + 1.7L + 1.7H' + 1.7Eo	-237	4588							
					2-V-L	Max Tension w/ corresponding moment	26178	1.4D + 1.7L + 1.7H' + 1.7Eo	74	552	1.4D + 1.7L + 1.7H' + 1.7Eo	87	4.68	-	-	-	
						Max Compression w/ corresponding moment	26172	D + L + H' + E'	-46	380							
						Max Moment with axial tension	26179	1.4D + 1.7L + 1.7H' + 1.7Eo	19	1479							
						Max Moment with axial compression	10307	1.4D + 1.7L + 1.7H' + 1.7Eo	0	1049							
					3-V-L	Max Tension w/ corresponding moment	26158	1.4D + 1.7L + 1.7H' + 1.7Eo	247	1915	1.4D + 1.7L + 1.7H' + 1.7Eo	87	9.36	-	-	-	
						Max Compression w/ corresponding moment	26158	1.4D + 1.7L + 1.7H' + 1.7Eo	-493	1058							
						Max Moment with axial tension	26158	1.4D + 1.7L + 1.7H' + 1.7Eo	24	3813							
						Max Moment with axial compression	26158	1.4D + 1.7L + 1.7H' + 1.7Eo	-288	4739							
					4-V-L	Max Tension w/ corresponding moment	27828	1.4D + 1.7L + 1.7H' + 1.7Eo	250	1765	1.4D + 1.7L + 1.7H' + 1.7Eo	58	10.92	-	-	-	
						Max Compression w/ corresponding moment	27828	1.4D + 1.7L + 1.7H' + 1.7Eo	-487	1170							
						Max Moment with axial tension	27828	1.4D + 1.7L + 1.7H' + 1.7Eo	8	5061							
						Max Moment with axial compression	27828	1.4D + 1.7L + 1.7H' + 1.7Eo	-312	5113							
					5-V-L	Max Tension w/ corresponding moment	32367	D + L + H' + E'	191	32	1.4D + 1.7L + 1.7H' + 1.7Eo	72	7.80	-	-	-	
						Max Compression w/ corresponding moment	32364	1.4D + 1.7L + 1.7H' + 1.7Eo	-325	502							
						Max Moment with axial tension	1268	1.4D + 1.7L + 1.7H' + 1.7Eo	7	3769							
						Max Moment with axial compression	1267	1.4D + 1.7L + 1.7H' + 1.7Eo	-132	3979							
					6-V-L	Max Tension w/ corresponding moment	885	1.4D + 1.7L + 1.7H' + 1.7Eo	136	324	1.4D + 1.7L + 1.7H' + 1.7Eo	72	6.24	-	-	-	
						Max Compression w/ corresponding moment	879	1.4D + 1.7L + 1.7H' + 1.7Eo	-353	440							
						Max Moment with axial tension	880	1.4D + 1.7L + 1.7H' + 1.7Eo	48	2308							
						Max Moment with axial compression	880	1.4D + 1.7L + 1.7H' + 1.7Eo	-267	2863							
					7-V-L	Max Tension w/ corresponding moment	29586	1.4D + 1.7L + 1.7H' + 1.7Eo	153	702	1.4D + 1.7L + 1.7H' + 1.7Eo	72	9.36	-	-	-	
						Max Compression w/ corresponding moment	73	1.4D + 1.7L + 1.7H' + 1.7Eo	-366	2483							
						Max Moment with axial tension	27906	1.4D + 1.7L + 1.7H' + 1.7Eo	18	3974							
						Max Moment with axial compression	7	1.4D + 1.7L + 1.7H' + 1.7Eo	-208	4158							
					8-V-L	Max Tension w/ corresponding moment	29849	1.4D + 1.7L + 1.7H' + 1.7Eo	226	2324	1.4D + 1.7L + 1.7H' + 1.7Eo	91	10.92	-	-	-	
						Max Compression w/ corresponding moment	27790	1.4D + 1.7L + 1.7H' + 1.7Eo	-373	639							
						Max Moment with axial tension	27347	1.4D + 1.7L + 1.7H' + 1.7Eo	80	4705							
						Max Moment with axial compression	27347	1.4D + 1.7L + 1.7H' + 1.7Eo	-109	4705							
					9-V-L	Max Tension w/ corresponding moment	26234	1.4D + 1.7L + 1.7H' + 1.7Eo	99	1365	1.4D + 1.7L + 1.7H' + 1.7Eo	34	6.24	-	-	-	
						Max Compression w/ corresponding moment	26808	1.4D + 1.7L + 1.7H' + 1.7Eo	-30	284							
						Max Moment with axial tension	26807	1.4D + 1.7L + 1.7H' + 1.7Eo	29	2300							
						Max Moment with axial compression	26808	1.4D + 1.7L + 1.7H' + 1.7Eo	-4	2221							
					10-V-L	Max Tension w/ corresponding moment	26233	1.4D + 1.7L + 1.7H' + 1.7Eo	90	1333	1.4D + 1.7L + 1.7H' + 1.7Eo	34	4.68	-	-	-	
						Max Compression w/ corresponding moment	26196	1.4D + 1.7L + 1.7H' + 1.7Eo	-54	373							
						Max Moment with axial tension	26775	1.4D + 1.7L + 1.7H' + 1.7Eo	39	1890							
						Max Moment with axial compression	26775	1.4D + 1.7L + 1.7H' + 1.7Eo	-6	1269							

Table 3H.3-4 Results of Radwaste Building Concrete Slab Design (Continued)

Location	Face	Direction	Reinforcement Layout Drawing Number (1)	Thickness (ft)	Reinforcement Zone Number (2)	Maximum Forces (3)	Element	Longitudinal Reinforcement Design Loads					Longitudinal Reinforcement Provided (in^2/ ft)	Transverse Shear Design Loads		Transverse Shear (7) Reinforcement Provided (in^2/ft^2)	Remarks
								Axial and Flexure Loads			In-Plane Shear Loads						
								Load Combination	Axial (4) (kips / ft)	Flexure (4) (ft-kips / ft)	Load Combination	In-plane (5) Shear (kips / ft)		Load Combination	Transverse Shear (6) Reinforcement Design Loads (kips / ft)		
Basemat	Far side	Vertical	3H.3-31	12	11-V-L	Max Tension w/ corresponding moment	26191	1.4D + 1.7L + 1.7H' + 1.7Eo	109	957	1.4D + 1.7L + 1.7H' + 1.7Eo	34	6.24	-	-	-	
						Max Compression w/ corresponding moment	26191	1.4D + 1.7L + 1.7H' + 1.7Eo	-34	465							
						Max Moment with axial tension	26274	1.4D + 1.7L + 1.7H' + 1.7Eo	31	2620							
						Max Moment with axial compression	32712	1.4D + 1.7L + 1.7H' + 1.7Eo	-3	2071							
	-	Horizontal Plane	3H.3-32	12	1-H-T	-	-	-	-	-	-	-	-	1.4D + 1.7L + 1.7H' + 1.7Eo	315	0.31 (#5@12)	-
		Vertical Plane	3H.3-32	12	1-V-T	-	-	-	-	-	-	-	-	1.4D + 1.7L + 1.7H' + 1.7Eo	305	0.31 (#5@12)	-

Table 3H.3-4 Results of Radwaste Building Concrete Slab Design (Continued)

Location	Face	Direction	Reinforcement Layout Drawing Number [1]	Thickness (ft)	Reinforcement Zone Number [2]	Maximum Forces [3]	Element	Longitudinal Reinforcement Design Loads: Axial and Flexure Loads: Load Combination	Axial [4] (kips / ft)	Flexure [4] (ft-kips / ft)	In-Plane Shear Loads: Load Combination	In-plane [5] Shear (kips / ft)	Longitudinal Reinforcement Provided (in^2/ ft)	Transverse Shear Design Loads: Load Combination	Transverse Shear [6] Reinforcement Design Loads (kips / ft)	Transverse Shear [7] Reinforcement Provided (in^2/ft^2)	Remarks
El. 35'-0"	Near Side	Horizontal	3H 3-33	4	1-H-L	Max Tension w/ corresponding moment	35290	1.4D + 1.7L + 1.7H' + 1.7Eo	184	-217	1.4D + 1.7L + 1.7H' + 1.7Eo	180	3.12	-	-	-	
						Max Compression w/ corresponding moment	36218	1.4D + 1.7L + 1.7H' + 1.7Eo	-323	-222							
						Max Moment with axial tension	36606	1.4D + 1.7L + 1.7H' + 1.7Eo	59	-422							
						Max Moment with axial compression	36764	1.4D + 1.7L + 1.7H' + 1.7Eo	-71	-504							
					2-H-L	Max Tension w/ corresponding moment	35350	1.4D + 1.7L + 1.7H' + 1.7Eo	240	-390	1.4D + 1.7L + 1.7H' + 1.7Eo	151	6.24	-	-	-	
						Max Compression w/ corresponding moment	35330	1.4D + 1.7L + 1.7H' + 1.7Eo	-150	-410							
						Max Moment with axial tension	35339	1.4D + 1.7L + 1.7H' + 1.7Eo	80	-784							
						Max Moment with axial compression	35339	1.4D + 1.7L + 1.7H' + 1.7Eo	-83	-784							
					3-H-L	Max Tension w/ corresponding moment	35287	1.4D + 1.7L + 1.7H' + 1.7Eo	320	-370	1.4D + 1.7L + 1.7H' + 1.7Eo	151	6.24	-	-	-	
						Max Compression w/ corresponding moment	35283	1.4D + 1.7L + 1.7H' + 1.7Eo	-399	-604							
						Max Moment with axial tension	35282	1.4D + 1.7L + 1.7H' + 1.7Eo	126	-740							
						Max Moment with axial compression	35282	1.4D + 1.7L + 1.7H' + 1.7Eo	-204	-740							
					4-H-L	Max Tension w/ corresponding moment	34207	1.4D + 1.7L + 1.7H' + 1.7Eo	391	-612	1.4D + 1.7L + 1.7H' + 1.7Eo	180	9.36	-	-	-	
						Max Compression w/ corresponding moment	34207	1.4D + 1.7L + 1.7H' + 1.7Eo	-514	-617							
						Max Moment with axial tension	34208	1.4D + 1.7L + 1.7H' + 1.7Eo	271	-1006							
						Max Moment with axial compression	34208	1.4D + 1.7L + 1.7H' + 1.7Eo	-382	-1006							
					5-H-L	Max Tension w/ corresponding moment	36145	1.4D + 1.7L + 1.7H' + 1.7Eo	239	-498	1.4D + 1.7L + 1.7H' + 1.7Eo	166	6.24	-	-	-	
						Max Compression w/ corresponding moment	36145	1.4D + 1.7L + 1.7H' + 1.7Eo	-358	-540							
						Max Moment with axial tension	36763	1.4D + 1.7L + 1.7H' + 1.7Eo	2	-674							
						Max Moment with axial compression	36763	1.4D + 1.7L + 1.7H' + 1.7Eo	-98	-681							
					6-H-L	Max Tension w/ corresponding moment	35810	1.4D + 1.7L + 1.7H' + 1.7Eo	280	-242	1.4D + 1.7L + 1.7H' + 1.7Eo	281	4.68	-	-	-	
						Max Compression w/ corresponding moment	35810	1.4D + 1.7L + 1.7H' + 1.7Eo	-409	-262							
						Max Moment with axial tension	34217	1.4D + 1.7L + 1.7H' + 1.7Eo	57	-557							
						Max Moment with axial compression	34217	1.4D + 1.7L + 1.7H' + 1.7Eo	-127	-557							
					7-H-L	Max Tension w/ corresponding moment	37817	1.4D + 1.7L + 1.7H' + 1.7Eo	251	-350	1.4D + 1.7L + 1.7H' + 1.7Eo	100	6.24	-	-	-	
						Max Compression w/ corresponding moment	37818	1.4D + 1.7L + 1.7H' + 1.7Eo	-345	-373							
						Max Moment with axial tension	37844	1.4D + 1.7L + 1.7H' + 1.7Eo	59	-814							
						Max Moment with axial compression	37844	1.4D + 1.7L + 1.7H' + 1.7Eo	-273	-814							
					8-H-L	Max Tension w/ corresponding moment	37852	1.4D + 1.7L + 1.7H' + 1.7Eo	455	-689	1.4D + 1.7L + 1.7H' + 1.7Eo	137	7.80	-	-	-	
						Max Compression w/ corresponding moment	37852	1.4D + 1.7L + 1.7H' + 1.7Eo	-639	-670							
						Max Moment with axial tension	38122	1.4D + 1.7L + 1.7H' + 1.7Eo	7	-758							
						Max Moment with axial compression	38122	1.4D + 1.7L + 1.7H' + 1.7Eo	-155	-758							
					9-H-L	Max Tension w/ corresponding moment	37878	1.4D + 1.7L + 1.7H' + 1.7Eo	329	-353	1.4D + 1.7L + 1.7H' + 1.7Eo	114	6.24	-	-	-	
						Max Compression w/ corresponding moment	37878	1.4D + 1.7L + 1.7H' + 1.7Eo	-474	-294							
						Max Moment with axial tension	38142	1.4D + 1.7L + 1.7H' + 1.7Eo	11	-642							
						Max Moment with axial compression	38142	1.4D + 1.7L + 1.7H' + 1.7Eo	-263	-642							

Table 3H.3-4 Results of Radwaste Building Concrete Slab Design (Continued)

Location	Face	Direction	Reinforcement Layout Drawing Number (1)	Thickness (ft)	Reinforcement Zone Number(2)	Maximum Forces(3)	Element	Longitudinal Reinforcement Design Loads					Longitudinal Reinforcement Provided (in^2/ ft)	Transverse Shear Design Loads		Transverse Shear (7) Reinforcement Provided (in^2/ft^2)	Remarks
								Axial and Flexure Loads			In-Plane Shear Loads						
								Load Combination	Axial (4) (kips / ft)	Flexure (4) (ft-kips / ft)	Load Combination	In-plane (5) Shear (kips / ft)		Load Combination	Transverse Shear (6) Reinforcement Design Loads (kips / ft)		
El. 35'-0"	Near Side	Horizontal	3H 3-33	5	10-H-L	Max Tension w/ corresponding moment	38193	1.4D + 1.7L + 1.7H' + 1.7Eo	453	-178	1.4D + 1.7L + 1.7H' + 1.7Eo	219	6.24	-	-	-	
						Max Compression w/ corresponding moment	38193	1.4D + 1.7L + 1.7H' + 1.7Eo	-590	-52							
						Max Moment with axial tension	37772	1.4D + 1.7L + 1.7H' + 1.7Eo	91	-876							
						Max Moment with axial compression	37772	1.4D + 1.7L + 1.7H' + 1.7Eo	-137	-876							
				2	11-H-L	Max Tension w/ corresponding moment	34590	1.4D + 1.7L + 1.7H' + 1.7Eo	112	-8	1.4D + 1.7L + 1.7H' + 1.7Eo	27	3.12	-	-	-	
						Max Compression w/ corresponding moment	34590	1.4D + 1.7L + 1.7H' + 1.7Eo	-129	-8							
						Max Moment with axial tension	34571	1.4D + 1.7L + 1.7H' + 1.7Eo	14	-45							
						Max Moment with axial compression	34571	1.4D + 1.7L + 1.7H' + 1.7Eo	-57	-62							
					12-H-L	Max Tension w/ corresponding moment	34652	1.4D + 1.7L + 1.7H' + 1.7Eo	63	-11	D + L + H' + E'	37	1.56	-	-	-	
						Max Compression w/ corresponding moment	34672	D + L + H' + E'	-173	-20							
						Max Moment with axial tension	34985	1.4D + 1.7L + 1.7H' + 1.7Eo	2	-32							
						Max Moment with axial compression	34798	D + L + H' + E'	-152	-40							
					13-H-L	Max Tension w/ corresponding moment	34556	1.4D + 1.7L + 1.7H' + 1.7Eo	16	-15	D + L + H' + E'	37	3.12	-	-	-	
						Max Compression w/ corresponding moment	34546	D + L + H' + E'	-54	-35							
						Max Moment with axial tension	34557	D + L + H' + E'	3	-59							
						Max Moment with axial compression	34557	D + L + H' + E'	-26	-59							
				4	14-H-L	Max Tension w/ corresponding moment	36130	1.4D + 1.7L + 1.7H' + 1.7Eo	427	-134	1.4D + 1.7L + 1.7H' + 1.7Eo	92	6.24	-	-	-	
						Max Compression w/ corresponding moment	36130	1.4D + 1.7L + 1.7H' + 1.7Eo	-591	-319							
						Max Moment with axial tension	36144	1.4D + 1.7L + 1.7H' + 1.7Eo	122	-585							
						Max Moment with axial compression	36144	1.4D + 1.7L + 1.7H' + 1.7Eo	-193	-585							
					15-H-L	Max Tension w/ corresponding moment	37893	1.4D + 1.7L + 1.7H' + 1.7Eo	496	-336	1.4D + 1.7L + 1.7H' + 1.7Eo	81	6.24	-	-	-	
						Max Compression w/ corresponding moment	37893	1.4D + 1.7L + 1.7H' + 1.7Eo	-821	-488							
						Max Moment with axial tension	37893	1.4D + 1.7L + 1.7H' + 1.7Eo	61	-623							
						Max Moment with axial compression	37893	1.4D + 1.7L + 1.7H' + 1.7Eo	-357	-623							
					16-H-L	Max Tension w/ corresponding moment	38230	1.4D + 1.7L + 1.7H' + 1.7Eo	627	-593	1.4D + 1.7L + 1.7H' + 1.7Eo	231	9.36	-	-	-	
						Max Compression w/ corresponding moment	37838	1.4D + 1.7L + 1.7H' + 1.7Eo	-823	-1005							
						Max Moment with axial tension	38230	1.4D + 1.7L + 1.7H' + 1.7Eo	483	-1015							
						Max Moment with axial compression	38230	1.4D + 1.7L + 1.7H' + 1.7Eo	-664	-1015							
				2	17-H-L	Max Tension w/ corresponding moment	25335	1.4D + 1.7L + 1.7H' + 1.7Eo	109	-46	1.4D + 1.7L + 1.7H' + 1.7Eo	94	4.68	-	-	-	(10)
						Max Compression w/ corresponding moment	25335	1.4D + 1.7L + 1.7H' + 1.7Eo	-259	-76							
						Max Moment with axial tension	39029	1.4D + 1.7L + 1.7H' + 1.7Eo	61	-133							
						Max Moment with axial compression	39029	1.4D + 1.7L + 1.7H' + 1.7Eo	-15	-133							

Table 3H.3-4 Results of Radwaste Building Concrete Slab Design (Continued)

Location	Face	Direction	Reinforcement Layout Drawing Number (1)	Thickness (ft)	Reinforcement Zone Number (2)	Maximum Forces (3)	Element	Longitudinal Reinforcement Design Loads: Axial and Flexure Loads: Load Combination	Axial (4) (kips / ft)	Flexure (4) (ft-kips / ft)	In-Plane Shear Loads: Load Combination	In-plane (5) Shear (kips / ft)	Longitudinal Reinforcement Provided (in^2/ft)	Transverse Shear Design Loads: Load Combination	Transverse Shear (6) Reinforcement Design Loads (kips / ft)	Transverse Shear (7) Reinforcement Provided (in^2/ft^2)	Remarks
El. 35'-0"	Near Side	Vertical	3H.3-34	4	1-V-L	Max Tension w/ corresponding moment	35815	1.4D + 1.7L + 1.7H' + 1.7Eo	440	-194	1.4D + 1.7L + 1.7H' + 1.7Eo	125	6.24	-	-	-	
						Max Compression w/ corresponding moment	35815	1.4D + 1.7L + 1.7H' + 1.7Eo	-511	-131							
						Max Moment with axial tension	34312	1.4D + 1.7L + 1.7H' + 1.7Eo	44	-650							
						Max Moment with axial compression	34312	1.4D + 1.7L + 1.7H' + 1.7Eo	-160	-650							
					2-V-L	Max Tension w/ corresponding moment	35290	1.4D + 1.7L + 1.7H' + 1.7Eo	146	-379	1.4D + 1.7L + 1.7H' + 1.7Eo	92	9.36	-	-	-	
						Max Compression w/ corresponding moment	37023	D + L + H' + E'	-288	-476							
						Max Moment with axial tension	35290	1.4D + 1.7L + 1.7H' + 1.7Eo	115	-967							
						Max Moment with axial compression	35290	1.4D + 1.7L + 1.7H' + 1.7Eo	-145	-967							
					3-V-L	Max Tension w/ corresponding moment	34191	1.4D + 1.7L + 1.7H' + 1.7Eo	435	-575	1.4D + 1.7L + 1.7H' + 1.7Eo	93	9.36	-	-	-	
						Max Compression w/ corresponding moment	35933	D + L + H' + E'	-862	-336							
						Max Moment with axial tension	34198	1.4D + 1.7L + 1.7H' + 1.7Eo	94	-996							
						Max Moment with axial compression	34198	1.4D + 1.7L + 1.7H' + 1.7Eo	-161	-996							
					4-V-L	Max Tension w/ corresponding moment	36126	1.4D + 1.7L + 1.7H' + 1.7Eo	217	-82	1.4D + 1.7L + 1.7H' + 1.7Eo	96	10.92	-	-	-	
						Max Compression w/ corresponding moment	36126	1.4D + 1.7L + 1.7H' + 1.7Eo	-305	-84							
						Max Moment with axial tension	35289	1.4D + 1.7L + 1.7H' + 1.7Eo	130	-986							
						Max Moment with axial compression	35289	1.4D + 1.7L + 1.7H' + 1.7Eo	-168	-986							
					5-V-L	Max Tension w/ corresponding moment	37141	1.4D + 1.7L + 1.7H' + 1.7Eo	217	-403	1.4D + 1.7L + 1.7H' + 1.7Eo	96	9.36	-	-	-	
						Max Compression w/ corresponding moment	37141	1.4D + 1.7L + 1.7H' + 1.7Eo	-410	-508							
						Max Moment with axial tension	36794	1.4D + 1.7L + 1.7H' + 1.7Eo	104	-826							
						Max Moment with axial compression	36794	1.4D + 1.7L + 1.7H' + 1.7Eo	-198	-826							
					6-V-L	Max Tension w/ corresponding moment	35951	1.4D + 1.7L + 1.7H' + 1.7Eo	221	-131	1.4D + 1.7L + 1.7H' + 1.7Eo	92	10.92	-	-	-	
						Max Compression w/ corresponding moment	34202	1.4D + 1.7L + 1.7H' + 1.7Eo	-260	-635							
						Max Moment with axial tension	34202	D + L + H' + E'	137	-1088							
						Max Moment with axial compression	34202	D + L + H' + E'	-162	-1088							
					7-V-L	Max Tension w/ corresponding moment	35793	1.4D + 1.7L + 1.7H' + 1.7Eo	547	-194	1.4D + 1.7L + 1.7H' + 1.7Eo	89	7.80	-	-	-	
						Max Compression w/ corresponding moment	35807	1.4D + 1.7L + 1.7H' + 1.7Eo	-677	-100							
						Max Moment with axial tension	35983	1.4D + 1.7L + 1.7H' + 1.7Eo	358	-413							
						Max Moment with axial compression	35983	1.4D + 1.7L + 1.7H' + 1.7Eo	-428	-413							
					8-V-L	Max Tension w/ corresponding moment	36148	1.4D + 1.7L + 1.7H' + 1.7Eo	276	-184	1.4D + 1.7L + 1.7H' + 1.7Eo	119	10.92	-	-	-	
						Max Compression w/ corresponding moment	36266	1.4D + 1.7L + 1.7H' + 1.7Eo	-449	-388							
						Max Moment with axial tension	35272	1.4D + 1.7L + 1.7H' + 1.7Eo	99	-1032							
						Max Moment with axial compression	35272	1.4D + 1.7L + 1.7H' + 1.7Eo	-202	-1032							
					9-V-L	Max Tension w/ corresponding moment	37838	1.4D + 1.7L + 1.7H' + 1.7Eo	200	-105	1.4D + 1.7L + 1.7H' + 1.7Eo	125	6.24	-	-	-	
						Max Compression w/ corresponding moment	37838	1.4D + 1.7L + 1.7H' + 1.7Eo	-326	-183							
						Max Moment with axial tension	37845	1.4D + 1.7L + 1.7H' + 1.7Eo	17	-564							
						Max Moment with axial compression	37845	1.4D + 1.7L + 1.7H' + 1.7Eo	-197	-604							
					10-V-L	Max Tension w/ corresponding moment	37849	1.4D + 1.7L + 1.7H' + 1.7Eo	318	-401	1.4D + 1.7L + 1.7H' + 1.7Eo	125	9.36	-	-	-	
						Max Compression w/ corresponding moment	37849	1.4D + 1.7L + 1.7H' + 1.7Eo	-587	-304							
						Max Moment with axial tension	38120	1.4D + 1.7L + 1.7H' + 1.7Eo	124	-939							
						Max Moment with axial compression	38120	1.4D + 1.7L + 1.7H' + 1.7Eo	-208	-939							

Table 3H.3-4 Results of Radwaste Building Concrete Slab Design (Continued)

Location	Face	Direction	Reinforcement Layout Drawing Number (1)	Thickness (ft)	Reinforcement Zone Number(2)	Maximum Forces(3)	Element	Longitudinal Reinforcement Design Loads: Axial and Flexure Loads: Load Combination	Axial (4) (kips / ft)	Flexure (4) (ft-kips / ft)	In-Plane Shear Loads: Load Combination	In-plane (5) Shear (kips / ft)	Longitudinal Reinforcement Provided (in^2/ ft)	Transverse Shear Design Loads: Load Combination	Transverse Shear (6) Reinforcement Design Loads (kips / ft)	Transverse Shear (7) Reinforcement Provided (in^2/ft^2)	Remarks
El. 35'-0"	Near Side	Vertical	3H.3-34	4	11-V-L	Max Tension w/ corresponding moment	38230	1.4D + 1.7L + 1.7H' + 1.7Eo	362	-208	1.4D + 1.7L + 1.7H' + 1.7Eo	209	10.92	-	-	-	
						Max Compression w/ corresponding moment	38119	1.4D + 1.7L + 1.7H' + 1.7Eo	-390	-629							
						Max Moment with axial tension	37809	1.4D + 1.7L + 1.7H' + 1.7Eo	128	-1017							
						Max Moment with axial compression	37809	1.4D + 1.7L + 1.7H' + 1.7Eo	-134	-1017							
				5	12-V-L	Max Tension w/ corresponding moment	38187	1.4D + 1.7L + 1.7H' + 1.7Eo	493	-152	1.4D + 1.7L + 1.7H' + 1.7Eo	160	14.04	-	-	-	
						Max Compression w/ corresponding moment	38187	1.4D + 1.7L + 1.7H' + 1.7Eo	-573	-167							
						Max Moment with axial tension	37763	1.4D + 1.7L + 1.7H' + 1.7Eo	454	-1970							
						Max Moment with axial compression	37763	1.4D + 1.7L + 1.7H' + 1.7Eo	-524	-1970							
					13-V-L	Max Tension w/ corresponding moment	38289	1.4D + 1.7L + 1.7H' + 1.7Eo	371	-138	1.4D + 1.7L + 1.7H' + 1.7Eo	158	7.80	-	-	-	
						Max Compression w/ corresponding moment	38293	D + L + H' + E'	-484	-65							
						Max Moment with axial tension	38521	1.4D + 1.7L + 1.7H' + 1.7Eo	26	-929							
						Max Moment with axial compression	38521	1.4D + 1.7L + 1.7H' + 1.7Eo	-192	-948							
				4	14-V-L	Max Tension w/ corresponding moment	36144	1.4D + 1.7L + 1.7H' + 1.7Eo	358	-104	1.4D + 1.7L + 1.7H' + 1.7Eo	89	6.24	-	-	-	
						Max Compression w/ corresponding moment	36144	1.4D + 1.7L + 1.7H' + 1.7Eo	-505	-135							
						Max Moment with axial tension	36528	1.4D + 1.7L + 1.7H' + 1.7Eo	16	-516							
						Max Moment with axial compression	36528	1.4D + 1.7L + 1.7H' + 1.7Eo	-78	-516							
					15-V-L	Max Tension w/ corresponding moment	36061/ 36062	1.4D + 1.7L + 1.7H' + 1.7Eo	446	-675	1.4D + 1.7L + 1.7H' + 1.7Eo	96	20.80	-	-	-	(8),(9)
						Max Compression w/ corresponding moment	36061/ 36062	1.4D + 1.7L + 1.7H' + 1.7Eo	-558	-1053							
						Max Moment with axial tension	34207/ 34208	1.4D + 1.7L + 1.7H' + 1.7Eo	319	-2085							
						Max Moment with axial compression	34207/ 34208	1.4D + 1.7L + 1.7H' + 1.7Eo	-483	-2085							
					16-V-L	Max Tension w/ corresponding moment	35810/ 35812	1.4D + 1.7L + 1.7H' + 1.7Eo	570	-573	1.4D + 1.7L + 1.7H' + 1.7Eo	119	21.10	-	-	-	(8),(9)
						Max Compression w/ corresponding moment	35810/ 35812	1.4D + 1.7L + 1.7H' + 1.7Eo	-708	-497							
						Max Moment with axial tension	34217/ 34218	1.4D + 1.7L + 1.7H' + 1.7Eo	432	-2005							
						Max Moment with axial compression	34217/ 34218	1.4D + 1.7L + 1.7H' + 1.7Eo	-612	-2005							
				2	17-V-L	Max Tension w/ corresponding moment	34573	1.4D + 1.7L + 1.7H' + 1.7Eo	57	-35	D + L + H' + E'	34	3.12	-	-	-	(10)
						Max Compression w/ corresponding moment	34575	D + L + H' + E'	-97	-11							
						Max Moment with axial tension	34573	1.4D + 1.7L + 1.7H' + 1.7Eo	23	-54							
						Max Moment with axial compression	34573	1.4D + 1.7L + 1.7H' + 1.7Eo	-65	-54							
					18-V-L	Max Tension w/ corresponding moment	34679	1.4D + 1.7L + 1.7H' + 1.7Eo	61	-15	D + L + H' + E'	28	1.56	-	-	-	(10)
						Max Compression w/ corresponding moment	34649	D + L + H' + E'	-95	-3							
						Max Moment with axial tension	34858	1.4D + 1.7L + 1.7H' + 1.7Eo	5	-29							
						Max Moment with axial compression	34513	D + L + H' + E'	-17	-32							

Table 3H.3-4 Results of Radwaste Building Concrete Slab Design (Continued)

Location	Face	Direction	Reinforcement Layout Drawing Number (1)	Thickness (ft)	Reinforcement Zone Number (2)	Maximum Forces (3)	Element	Longitudinal Reinforcement Design Loads – Axial and Flexure Loads – Load Combination	Axial (4) (kips / ft)	Flexure (4) (ft-kips / ft)	In-Plane Shear Loads – Load Combination	In-plane (5) Shear (kips / ft)	Longitudinal Reinforcement Provided (in^2/ ft)	Transverse Shear Design Loads – Load Combination	Transverse Shear (6) Reinforcement Design Loads (kips / ft)	Transverse Shear (7) Reinforcement Provided (in^2/ft^2)	Remarks
El. 35'-0"	Near Side	Vertical	3H.3-34	4	19-V-L	Max Tension w/ corresponding moment	37824	1.4D + 1.7L + 1.7H' + 1.7Eo	207	-930	1.4D + 1.7L + 1.7H' + 1.7Eo	149	18.72	-	-	-	(9)
						Max Compression w/ corresponding moment	38231	1.4D + 1.7L + 1.7H' + 1.7Eo	-446	-64							
						Max Moment with axial tension	37824	1.4D + 1.7L + 1.7H' + 1.7Eo	143	-1389							
						Max Moment with axial compression	37824	1.4D + 1.7L + 1.7H' + 1.7Eo	-322	-1389							
					20-V-L	Max Tension w/ corresponding moment	35282	1.4D + 1.7L + 1.7H' + 1.7Eo	356	-536	1.4D + 1.7L + 1.7H' + 1.7Eo	96	18.72	-	-	-	(9)
						Max Compression w/ corresponding moment	35282	1.4D + 1.7L + 1.7H' + 1.7Eo	-441	-679							
						Max Moment with axial tension	35282	1.4D + 1.7L + 1.7H' + 1.7Eo	291	-1900							
						Max Moment with axial compression	35282	1.4D + 1.7L + 1.7H' + 1.7Eo	-410	-1900							
					21-V-L	Max Tension w/ corresponding moment	35273	1.4D + 1.7L + 1.7H' + 1.7Eo	433	-868	1.4D + 1.7L + 1.7H' + 1.7Eo	119	18.72	-	-	-	(9)
						Max Compression w/ corresponding moment	35273	1.4D + 1.7L + 1.7H' + 1.7Eo	-545	-940							
						Max Moment with axial tension	35273	1.4D + 1.7L + 1.7H' + 1.7Eo	324	-1735							
						Max Moment with axial compression	35273	1.4D + 1.7L + 1.7H' + 1.7Eo	-475	-1735							
					22-V-L	Max Tension w/ corresponding moment	35265	1.4D + 1.7L + 1.7H' + 1.7Eo	268	-721	1.4D + 1.7L + 1.7H' + 1.7Eo	105	18.72	-	-	-	(9)
						Max Compression w/ corresponding moment	35265	1.4D + 1.7L + 1.7H' + 1.7Eo	-358	-865							
						Max Moment with axial tension	35265	1.4D + 1.7L + 1.7H' + 1.7Eo	210	-1268							
						Max Moment with axial compression	35265	1.4D + 1.7L + 1.7H' + 1.7Eo	-333	-1268							
				2	23-V-L	Max Tension w/ corresponding moment	39029	1.4D + 1.7L + 1.7H' + 1.7Eo	36	-8	D + L + H' + E'	34	4.68	-	-	-	(10)
						Max Compression w/ corresponding moment	25335	D + L + H' + E'	-101	-41							
						Max Moment with axial tension	38998	1.4D + 1.7L + 1.7H' + 1.7Eo	6	-50							
						Max Moment with axial compression	25335	1.4D + 1.7L + 1.7H' + 1.7Eo	-80	-50							

Table 3H.3-4 Results of Radwaste Building Concrete Slab Design (Continued)

Location	Face	Direction	Reinforcement Layout Drawing Number [(1)]	Thickness (ft)	Reinforcement Zone Number[(2)]	Maximum Forces[(3)]	Element	Longitudinal Reinforcement Design Loads: Axial and Flexure Loads: Load Combination	Axial [(4)] (kips / ft)	Flexure [(4)] (ft-kips / ft)	In-Plane Shear Loads: Load Combination	In-plane [(5)] Shear (kips / ft)	Longitudinal Reinforcement Provided (in^2/ ft)	Transverse Shear Design Loads: Load Combination	Transverse Shear [(6)] Reinforcement Design Loads (kips / ft)	Transverse Shear [(7)] Reinforcement Provided (in^2/ft^2)	Remarks
El. 35'-0"	Far side	Horizontal	3H.3-35	4	1-H-L	Max Tension w/ corresponding moment	35350	1.4D + 1.7L + 1.7H' + 1.7Eo	240	165	1.4D + 1.7L + 1.7H' + 1.7Eo	180	3.12	-	-	-	
						Max Compression w/ corresponding moment	37105	1.4D + 1.7L + 1.7H' + 1.7Eo	-336	162							
						Max Moment with axial tension	35318	1.4D + 1.7L + 1.7H' + 1.7Eo	92	377							
						Max Moment with axial compression	35318	1.4D + 1.7L + 1.7H' + 1.7Eo	-89	377							
					2-H-L	Max Tension w/ corresponding moment	35330	1.4D + 1.7L + 1.7H' + 1.7Eo	202	287	1.4D + 1.7L + 1.7H' + 1.7Eo	101	6.24	-	-	-	
						Max Compression w/ corresponding moment	35330	1.4D + 1.7L + 1.7H' + 1.7Eo	-150	369							
						Max Moment with axial tension	35339	1.4D + 1.7L + 1.7H' + 1.7Eo	81	521							
						Max Moment with axial compression	35339	1.4D + 1.7L + 1.7H' + 1.7Eo	-82	521							
					3-H-L	Max Tension w/ corresponding moment	35287	1.4D + 1.7L + 1.7H' + 1.7Eo	320	356	1.4D + 1.7L + 1.7H' + 1.7Eo	151	6.24	-	-	-	
						Max Compression w/ corresponding moment	35283	1.4D + 1.7L + 1.7H' + 1.7Eo	-399	545							
						Max Moment with axial tension	35282	1.4D + 1.7L + 1.7H' + 1.7Eo	130	750							
						Max Moment with axial compression	35282	1.4D + 1.7L + 1.7H' + 1.7Eo	-200	750							
					4-H-L	Max Tension w/ corresponding moment	34207	1.4D + 1.7L + 1.7H' + 1.7Eo	391	608	1.4D + 1.7L + 1.7H' + 1.7Eo	180	9.36	-	-	-	
						Max Compression w/ corresponding moment	34207	1.4D + 1.7L + 1.7H' + 1.7Eo	-514	593							
						Max Moment with axial tension	34208	1.4D + 1.7L + 1.7H' + 1.7Eo	225	1006							
						Max Moment with axial compression	34208	1.4D + 1.7L + 1.7H' + 1.7Eo	-428	1006							
					5-H-L	Max Tension w/ corresponding moment	37817	1.4D + 1.7L + 1.7H' + 1.7Eo	251	334	1.4D + 1.7L + 1.7H' + 1.7Eo	100	6.24	-	-	-	
						Max Compression w/ corresponding moment	37818	1.4D + 1.7L + 1.7H' + 1.7Eo	-345	224							
						Max Moment with axial tension	38402	1.4D + 1.7L + 1.7H' + 1.7Eo	31	619							
						Max Moment with axial compression	38402	1.4D + 1.7L + 1.7H' + 1.7Eo	-162	619							
					6-H-L	Max Tension w/ corresponding moment	37852	1.4D + 1.7L + 1.7H' + 1.7Eo	455	655	1.4D + 1.7L + 1.7H' + 1.7Eo	137	7.80	-	-	-	
						Max Compression w/ corresponding moment	37852	1.4D + 1.7L + 1.7H' + 1.7Eo	-639	666							
						Max Moment with axial tension	37853	1.4D + 1.7L + 1.7H' + 1.7Eo	288	716							
						Max Moment with axial compression	37853	1.4D + 1.7L + 1.7H' + 1.7Eo	-613	716							
					7-H-L	Max Tension w/ corresponding moment	37878	1.4D + 1.7L + 1.7H' + 1.7Eo	329	316	1.4D + 1.7L + 1.7H' + 1.7Eo	114	6.24	-	-	-	
						Max Compression w/ corresponding moment	37878	1.4D + 1.7L + 1.7H' + 1.7Eo	-474	359							
						Max Moment with axial tension	37854	1.4D + 1.7L + 1.7H' + 1.7Eo	142	475							
						Max Moment with axial compression	37854	1.4D + 1.7L + 1.7H' + 1.7Eo	-266	475							
				5	8-H-L	Max Tension w/ corresponding moment	38193	1.4D + 1.7L + 1.7H' + 1.7Eo	453	240	1.4D + 1.7L + 1.7H' + 1.7Eo	219	6.24	-	-	-	
						Max Compression w/ corresponding moment	38193	1.4D + 1.7L + 1.7H' + 1.7Eo	-590	330							
						Max Moment with axial tension	37772	1.4D + 1.7L + 1.7H' + 1.7Eo	108	806							
						Max Moment with axial compression	37772	1.4D + 1.7L + 1.7H' + 1.7Eo	-120	806							

Table 3H.3-4 Results of Radwaste Building Concrete Slab Design (Continued)

Location	Face	Direction	Reinforcement Layout Drawing Number [1]	Thickness (ft)	Reinforcement Zone Number [2]	Maximum Forces [3]	Element	Longitudinal Reinforcement Design Loads: Axial and Flexure Loads: Load Combination	Axial [4] (kips / ft)	Flexure [4] (ft-kips / ft)	In-Plane Shear Loads: Load Combination	In-plane [5] Shear (kips / ft)	Longitudinal Reinforcement Provided (in^2/ ft)	Transverse Shear Design Loads: Load Combination	Transverse Shear [6] Reinforcement Design Loads (kips / ft)	Transverse Shear [7] Reinforcement Provided (in^2/ft^2)	Remarks
El. 35'-0"	Far side	Horizontal	3H.3-35	2	9-H-L	Max Tension w/ corresponding moment	34590	1.4D + 1.7L + 1.7H' + 1.7Eo	112	12	1.4D + 1.7L + 1.7H' + 1.7Eo	94	3.12	-	-	-	(10)
						Max Compression w/ corresponding moment	25335	D + L + H' + E'	-247	7							
						Max Moment with axial tension	39021	1.4D + 1.7L + 1.7H' + 1.7Eo	23	60							
						Max Moment with axial compression	34576	1.4D + 1.7L + 1.7H' + 1.7Eo	-131	70							
					10-H-L	Max Tension w/ corresponding moment	34652	1.4D + 1.7L + 1.7H' + 1.7Eo	63	7	D + L + H' + E'	37	1.56	-	-	-	
						Max Compression w/ corresponding moment	34652	D + L + H' + E'	-124	10							
						Max Moment with axial tension	34557	1.4D + 1.7L + 1.7H' + 1.7Eo	14	34							
						Max Moment with axial compression	34557	1.4D + 1.7L + 1.7H' + 1.7Eo	-17	34							
				4	11-H-L	Max Tension w/ corresponding moment	36145	1.4D + 1.7L + 1.7H' + 1.7Eo	239	495	1.4D + 1.7L + 1.7H' + 1.7Eo	166	6.24	-	-	-	
						Max Compression w/ corresponding moment	36145	1.4D + 1.7L + 1.7H' + 1.7Eo	-358	419							
						Max Moment with axial tension	35273	1.4D + 1.7L + 1.7H' + 1.7Eo	121	553							
						Max Moment with axial compression	35273	1.4D + 1.7L + 1.7H' + 1.7Eo	-177	553							
					12-H-L	Max Tension w/ corresponding moment	35810	1.4D + 1.7L + 1.7H' + 1.7Eo	280	258	1.4D + 1.7L + 1.7H' + 1.7Eo	281	4.68	-	-	-	
						Max Compression w/ corresponding moment	35810	1.4D + 1.7L + 1.7H' + 1.7Eo	-409	208							
						Max Moment with axial tension	34217	1.4D + 1.7L + 1.7H' + 1.7Eo	98	532							
						Max Moment with axial compression	34217	1.4D + 1.7L + 1.7H' + 1.7Eo	-86	532							
					13-H-L	Max Tension w/ corresponding moment	36130	1.4D + 1.7L + 1.7H' + 1.7Eo	427	68	1.4D + 1.7L + 1.7H' + 1.7Eo	92	4.68	-	-	-	
						Max Compression w/ corresponding moment	36144	D + L + H' + E'	-562	68							
						Max Moment with axial tension	36138	1.4D + 1.7L + 1.7H' + 1.7Eo	95	399							
						Max Moment with axial compression	36138	1.4D + 1.7L + 1.7H' + 1.7Eo	-123	399							
					14-H-L	Max Tension w/ corresponding moment	37893	1.4D + 1.7L + 1.7H' + 1.7Eo	496	301	1.4D + 1.7L + 1.7H' + 1.7Eo	81	6.24	-	-	-	
						Max Compression w/ corresponding moment	37893	1.4D + 1.7L + 1.7H' + 1.7Eo	-821	134							
						Max Moment with axial tension	37893	1.4D + 1.7L + 1.7H' + 1.7Eo	173	399							
						Max Moment with axial compression	37893	1.4D + 1.7L + 1.7H' + 1.7Eo	-245	399							
					15-H-L	Max Tension w/ corresponding moment	38230	1.4D + 1.7L + 1.7H' + 1.7Eo	627	512	1.4D + 1.7L + 1.7H' + 1.7Eo	231	6.24	-	-	-	
						Max Compression w/ corresponding moment	37838	D + L + H' + E'	-772	157							
						Max Moment with axial tension	38224	1.4D + 1.7L + 1.7H' + 1.7Eo	58	696							
						Max Moment with axial compression	38224	1.4D + 1.7L + 1.7H' + 1.7Eo	-123	696							

Table 3H.3-4 Results of Radwaste Building Concrete Slab Design (Continued)

Location	Face	Direction	Reinforcement Layout Drawing Number (1)	Thickness (ft)	Reinforcement Zone Number (2)	Maximum Forces (3)	Element	Longitudinal Reinforcement Design Loads: Axial and Flexure Loads: Load Combination	Axial (4) (kips / ft)	Flexure (4) (ft-kips / ft)	In-Plane Shear Loads: Load Combination	In-plane (5) Shear (kips / ft)	Longitudinal Reinforcement Provided (in^2/ ft)	Transverse Shear Design Loads: Load Combination	Transverse Shear (6) Reinforcement Design Loads (kips / ft)	Transverse Shear (7) Reinforcement Provided (in^2/ft^2)	Remarks
El. 35'-0"	Far side	Vertical	3H.3-36	4	1-V-L	Max Tension w/ corresponding moment	35815	1.4D + 1.7L + 1.7H' + 1.7Eo	440	185	1.4D + 1.7L + 1.7H' + 1.7Eo	125	6.24	-	-	-	
						Max Compression w/ corresponding moment	37849	1.4D + 1.7L + 1.7H' + 1.7Eo	-587	424							
						Max Moment with axial tension	35293	1.4D + 1.7L + 1.7H' + 1.7Eo	87	592							
						Max Moment with axial compression	35293	1.4D + 1.7L + 1.7H' + 1.7Eo	-109	592							
					2-V-L	Max Tension w/ corresponding moment	36501	1.4D + 1.7L + 1.7H' + 1.7Eo	138	99	1.4D + 1.7L + 1.7H' + 1.7Eo	116	4.68	-	-	-	
						Max Compression w/ corresponding moment	36285	D + L + H' + E'	-235	117							
						Max Moment with axial tension	35299	1.4D + 1.7L + 1.7H' + 1.7Eo	58	385							
						Max Moment with axial compression	37503	1.4D + 1.7L + 1.7H' + 1.7Eo	-167	431							
					3-V-L	Max Tension w/ corresponding moment	34191	1.4D + 1.7L + 1.7H' + 1.7Eo	435	605	1.4D + 1.7L + 1.7H' + 1.7Eo	93	9.36	-	-	-	
						Max Compression w/ corresponding moment	35933	D + L + H' + E'	-862	244							
						Max Moment with axial tension	34198	1.4D + 1.7L + 1.7H' + 1.7Eo	122	921							
						Max Moment with axial compression	34198	1.4D + 1.7L + 1.7H' + 1.7Eo	-133	921							
					4-V-L	Max Tension w/ corresponding moment	34200/ 34201	1.4D + 1.7L + 1.7H' + 1.7Eo	181	1113	1.4D + 1.7L + 1.7H' + 1.7Eo	92	12.48	-	-	-	(8)
						Max Compression w/ corresponding moment	34200/ 34201	1.4D + 1.7L + 1.7H' + 1.7Eo	-227	921							
						Max Moment with axial tension	34200/ 34201	1.4D + 1.7L + 1.7H' + 1.7Eo	181	1113							
						Max Moment with axial compression	34200/ 34201	1.4D + 1.7L + 1.7H' + 1.7Eo	-197	1113							
					5-V-L	Max Tension w/ corresponding moment	36126	1.4D + 1.7L + 1.7H' + 1.7Eo	217	75	1.4D + 1.7L + 1.7H' + 1.7Eo	96	9.36	-	-	-	
						Max Compression w/ corresponding moment	36126	1.4D + 1.7L + 1.7H' + 1.7Eo	-305	34							
						Max Moment with axial tension	35289	1.4D + 1.7L + 1.7H' + 1.7Eo	144	929							
						Max Moment with axial compression	35289	1.4D + 1.7L + 1.7H' + 1.7Eo	-154	929							
					6-V-L	Max Tension w/ corresponding moment	35793	1.4D + 1.7L + 1.7H' + 1.7Eo	547	182	1.4D + 1.7L + 1.7H' + 1.7Eo	89	7.80	-	-	-	
						Max Compression w/ corresponding moment	35807	1.4D + 1.7L + 1.7H' + 1.7Eo	-677	260							
						Max Moment with axial tension	35983	1.4D + 1.7L + 1.7H' + 1.7Eo	354	365							
						Max Moment with axial compression	35983	1.4D + 1.7L + 1.7H' + 1.7Eo	-432	365							
					7-V-L	Max Tension w/ corresponding moment	36148	1.4D + 1.7L + 1.7H' + 1.7Eo	276	183	1.4D + 1.7L + 1.7H' + 1.7Eo	119	10.92	-	-	-	
						Max Compression w/ corresponding moment	36148	1.4D + 1.7L + 1.7H' + 1.7Eo	-372	200							
						Max Moment with axial tension	35272	1.4D + 1.7L + 1.7H' + 1.7Eo	140	884							
						Max Moment with axial compression	35272	1.4D + 1.7L + 1.7H' + 1.7Eo	-161	884							
					8-V-L	Max Tension w/ corresponding moment	38230	1.4D + 1.7L + 1.7H' + 1.7Eo	362	256	1.4D + 1.7L + 1.7H' + 1.7Eo	209	9.36	-	-	-	
						Max Compression w/ corresponding moment	38230	1.4D + 1.7L + 1.7H' + 1.7Eo	-410	79							
						Max Moment with axial tension	38120	1.4D + 1.7L + 1.7H' + 1.7Eo	88	644							
						Max Moment with axial compression	38120	1.4D + 1.7L + 1.7H' + 1.7Eo	-244	644							
				5	9-V-L	Max Tension w/ corresponding moment	38187	1.4D + 1.7L + 1.7H' + 1.7Eo	493	141	1.4D + 1.7L + 1.7H' + 1.7Eo	160	15.60	-	-	-	
						Max Compression w/ corresponding moment	38187	1.4D + 1.7L + 1.7H' + 1.7Eo	-573	159							
						Max Moment with axial tension	37763	1.4D + 1.7L + 1.7H' + 1.7Eo	445	2057							
						Max Moment with axial compression	37763	1.4D + 1.7L + 1.7H' + 1.7Eo	-533	2057							

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Table 3H.3-4 Results of Radwaste Building Concrete Slab Design (Continued)

Location	Face	Direction	Reinforcement Layout Drawing Number [1]	Thickness (ft)	Reinforcement Zone Number[2]	Maximum Forces[3]	Element	Longitudinal Reinforcement Design Loads: Axial and Flexure Loads: Load Combination	Axial [4] (kips / ft)	Flexure [4] (ft-kips / ft)	In-Plane Shear Loads: Load Combination	In-plane [5] Shear (kips / ft)	Longitudinal Reinforcement Provided (in^2/ ft)	Transverse Shear Design Loads: Load Combination	Transverse Shear [6] Reinforcement Design Loads (kips / ft)	Transverse Shear [7] Reinforcement Provided (in^2/ft^2)	Remarks
El. 35'-0"	Far side	Vertical	3H.3-36	4	10-V-L	Max Tension w/ corresponding moment	37809/ 38391/ 38352	1.4D + 1.7L + 1.7H' + 1.7Eo	161	463	1.4D + 1.7L + 1.7H' + 1.7Eo	165	10.92	-	-	-	(8)
						Max Compression w/ corresponding moment	37809/ 38391/ 38352	D + L + H' + E'	-262	694							
						Max Moment with axial tension	37809/ 38391/ 38352	1.4D + 1.7L + 1.7H' + 1.7Eo	12	833							
						Max Moment with axial compression	37809/ 38391/ 38352	1.4D + 1.7L + 1.7H' + 1.7Eo	-198	833							
				5	11-V-L	Max Tension w/ corresponding moment	38289	1.4D + 1.7L + 1.7H' + 1.7Eo	371	155	1.4D + 1.7L + 1.7H' + 1.7Eo	160	6.24	-	-	-	
						Max Compression w/ corresponding moment	38293	D + L + H' + E'	-484	154							
						Max Moment with axial tension	37764	1.4D + 1.7L + 1.7H' + 1.7Eo	159	770							
						Max Moment with axial compression	37764	1.4D + 1.7L + 1.7H' + 1.7Eo	-181	770							
				4	12-V-L	Max Tension w/ corresponding moment	36061/ 36062	1.4D + 1.7L + 1.7H' + 1.7Eo	446	728	1.4D + 1.7L + 1.7H' + 1.7Eo	96	20.80	-	-	-	(8),(9)
						Max Compression w/ corresponding moment	36061/ 36062	1.4D + 1.7L + 1.7H' + 1.7Eo	-558	892							
						Max Moment with axial tension	34207/ 34208	1.4D + 1.7L + 1.7H' + 1.7Eo	384	1963							
						Max Moment with axial compression	34207/ 34208	1.4D + 1.7L + 1.7H' + 1.7Eo	-418	1963							
					13-V-L	Max Tension w/ corresponding moment	35810/ 35812	1.4D + 1.7L + 1.7H' + 1.7Eo	570	613	1.4D + 1.7L + 1.7H' + 1.7Eo	119	21.10	-	-	-	(8),(9)
						Max Compression w/ corresponding moment	35810/ 35812	1.4D + 1.7L + 1.7H' + 1.7Eo	-708	669							
						Max Moment with axial tension	34217/ 34218	1.4D + 1.7L + 1.7H' + 1.7Eo	502	1941							
						Max Moment with axial compression	34217/ 34218	1.4D + 1.7L + 1.7H' + 1.7Eo	-543	1941							
				2	14-V-L	Max Tension w/ corresponding moment	34831	1.4D + 1.7L + 1.7H' + 1.7Eo	60	4	D + L + H' + E'	34	1.56	-	-	-	(10)
						Max Compression w/ corresponding moment	34821	D + L + H' + E'	-114	7							
						Max Moment with axial tension	34576	1.4D + 1.7L + 1.7H' + 1.7Eo	2	48							
						Max Moment with axial compression	34576	1.4D + 1.7L + 1.7H' + 1.7Eo	-89	71							
				4	15-V-L	Max Tension w/ corresponding moment	38231	1.4D + 1.7L + 1.7H' + 1.7Eo	335	498	1.4D + 1.7L + 1.7H' + 1.7Eo	149	18.72	-	-	-	(9)
						Max Compression w/ corresponding moment	38231	1.4D + 1.7L + 1.7H + 1.7W	-344	285							
						Max Moment with axial tension	37824	1.4D + 1.7L + 1.7H' + 1.7Eo	204	843							
						Max Moment with axial compression	37824	1.4D + 1.7L + 1.7H' + 1.7Eo	-262	843							
					16-V-L	Max Tension w/ corresponding moment	35282	1.4D + 1.7L + 1.7H' + 1.7Eo	356	580	1.4D + 1.7L + 1.7H' + 1.7Eo	96	18.72	-	-	-	(9)
						Max Compression w/ corresponding moment	35282	1.4D + 1.7L + 1.7H' + 1.7Eo	-441	518							
						Max Moment with axial tension	35282	1.4D + 1.7L + 1.7H' + 1.7Eo	336	1838							
						Max Moment with axial compression	35282	1.4D + 1.7L + 1.7H' + 1.7Eo	-365	1838							
					17-V-L	Max Tension w/ corresponding moment	35273	1.4D + 1.7L + 1.7H' + 1.7Eo	433	931	1.4D + 1.7L + 1.7H' + 1.7Eo	119	18.72	-	-	-	(9)
						Max Compression w/ corresponding moment	35273	1.4D + 1.7L + 1.7H' + 1.7Eo	-545	809							
						Max Moment with axial tension	35273	1.4D + 1.7L + 1.7H' + 1.7Eo	377	1600							
						Max Moment with axial compression	35273	1.4D + 1.7L + 1.7H' + 1.7Eo	-422	1600							
					18-V-L	Max Tension w/ corresponding moment	35265	1.4D + 1.7L + 1.7H' + 1.7Eo	268	768	1.4D + 1.7L + 1.7H' + 1.7Eo	105	18.72	-	-	-	(9)
						Max Compression w/ corresponding moment	35265	1.4D + 1.7L + 1.7H' + 1.7Eo	-358	712							
						Max Moment with axial tension	35265	1.4D + 1.7L + 1.7H' + 1.7Eo	253	1143							
						Max Moment with axial compression	35265	1.4D + 1.7L + 1.7H' + 1.7Eo	-290	1143							

Table 3H.3-4 Results of Radwaste Building Concrete Slab Design (Continued)

Location	Face	Direction	Reinforcement Layout Drawing Number (1)	Thickness (ft)	Reinforcement Zone Number(2)	Maximum Forces(3)	Element	Longitudinal Reinforcement Design Loads: Axial and Flexure Loads: Load Combination	Axial (4) (kips / ft)	Flexure (4) (ft-kips / ft)	In-Plane Shear Loads: Load Combination	In-plane (5) Shear (kips / ft)	Longitudinal Reinforcement Provided (in^2/ ft)	Transverse Shear Design Loads: Load Combination	Transverse Shear (6) Reinforcement Design Loads (kips / ft)	Transverse Shear (7) Reinforcement Provided (in^2/ft^2)	Remarks
El. 35'-0"	-	Horizontal Plane	3H.3-37a	4	1-H-T	-	-	-	-	-	-	-	-	1.4D + 1.7L + 1.7H' + 1.7Eo	93	0.2 (#4@12)	-
				4	2-H-T	-	-	-	-	-	-	-	-	1.4D + 1.7L + 1.7H' + 1.7Eo	139	0.62 (#5@6)	-
				4	3-H-T	-	-	-	-	-	-	-	-	1.4D + 1.7L + 1.7H' + 1.7Eo	156	0.88 (#6@6)	-
				4	4-H-T	-	-	-	-	-	-	-	-	1.4D + 1.7L + 1.7H' + 1.7Eo	104	0.31 (#5@12)	-
				4	5-H-T	-	-	-	-	-	-	-	-	1.4D + 1.7L + 1.7H' + 1.7Eo	119	0.4 (#4@6)	-
				5	6-H-T	-	-	-	-	-	-	-	-	1.4D + 1.7L + 1.7H' + 1.7Eo	129	0.31 (#5@12)	-
				4	7-H-T	-	-	-	-	-	-	-	-	1.4D + 1.7L + 1.7H' + 1.7Eo	311	24 #6 ties	(12)
		Vertical Plane	3H.3-37b	4	1-V-T	-	-	-	-	-	-	-	-	1.4D + 1.7L + 1.7H' + 1.7Eo	106	0.31 (#5@12)	-
				4	2-V-T	-	-	-	-	-	-	-	-	1.4D + 1.7L + 1.7H' + 1.7Eo	77	0.2 (#4@12)	-
				4	3-V-T	-	-	-	-	-	-	-	-	1.4D + 1.7L + 1.7H' + 1.7Eo	89	0.4 (#4@6)	-
				5	4-V-T	-	-	-	-	-	-	-	-	1.4D + 1.7L + 1.7H' + 1.7Eo	60	0.2 (#4@12)	-
				5	5-V-T	-	-	-	-	-	-	-	-	1.4D + 1.7L + 1.7H' + 1.7Eo	94	0.2 (#4@12)	-
Roof	Near Side	Horizontal	3H.3-38	1	1-H-L	Max Tension, Max Moment	-	1.4D + 1.7L + 1.7H' + 1.7Eo	29	0	1.4D + 1.7L + 1.7H' + 1.7Eo	59	1.58	-	-	-	(11)
		Horizontal	3H.3-38	1	2-H-L	Max Tension, Max Moment	-	1.4D + 1.7L + 1.7H' + 1.7Eo	29	0	1.4D + 1.7L + 1.7H' + 1.7Eo	59	1.58	-	-	-	(11)
		Vertical	3H.3-39	1	1-V-L	Max Tension, Max Moment	-	1.4D + 1.7L + 1.7H' + 1.7Eo	34	-14	1.4D + 1.7L + 1.7H' + 1.7Eo	64	1.58	-	-	-	(11)
		Vertical	3H.3-39	1	2-V-L	Max Tension, Max Moment	-	1.4D + 1.7L + 1.7H' + 1.7Eo	34	-34	1.4D + 1.7L + 1.7H' + 1.7Eo	64	2.00	-	-	-	(11)
	Far side	Horizontal	3H.3-40	1	1-H-L	Max Tension, Max Moment	-	1.4D + 1.7L + 1.7H' + 1.7Eo	29	0	1.4D + 1.7L + 1.7H' + 1.7Eo	59	1.58	-	-	-	(11)
		Horizontal	3H.3-40	1	2-H-L	Max Tension, Max Moment	-	1.4D + 1.7L + 1.7H' + 1.7Eo	29	0	1.4D + 1.7L + 1.7H' + 1.7Eo	59	1.58	-	-	-	(11)
		Vertical	3H.3-41	1	1-V-L	Max Tension, Max Moment	-	1.4D + 1.7L + 1.7H' + 1.7Eo	34	14	1.4D + 1.7L + 1.7H' + 1.7Eo	64	1.58	-	-	-	(11)
		Vertical	3H.3-41	1	2-V-L	Max Tension, Max Moment	-	1.4D + 1.7L + 1.7H' + 1.7Eo	34	34	1.4D + 1.7L + 1.7H' + 1.7Eo	64	2.00	-	-	-	(11)
	-	Horizontal Plane	3H.3-42	1	1-H-T	-	-	-	-	-	-	-	-	1.4D + 1.7L + 1.7H' + 1.7Eo	11	0.2 (#4@12)	-
				1	2-H-T	-	-	-	-	-	-	-	-	1.4D + 1.7L + 1.7H' + 1.7Eo	17	0.31 (#5@12)	-
		Vertical Plane	3H.3-42	1	1-V-T	-	-	-	-	-	-	-	-	1.4D + 1.7L + 1.7H' + 1.7Eo	10	0.2 (#4@12)	-
				1	2-V-T	-	-	-	-	-	-	-	-	1.4D + 1.7L + 1.7H' + 1.7Eo	9	0.31 (#5@12)	-
				1	3-V-T	-	-	-	-	-	-	-	-	1.4D + 1.7L + 1.7H' + 1.7Eo	26	0.4 (#4@6)	-

Notes:

(1) The reinforcement layout drawings show the various zones used to define the minimum reinforcement that will be provided based on finite element analysis results. Actual provided reinforcement based on final rebar layout and including development length may exceed the reported provided reinforcement and the zones with higher reinforcement may be extended beyond their reported boundaries. The dimensions in the reinforcement drawings are based on the dimensions of the 2D SAP2000 shell elements, which are modeled at the centerline of the walls and slabs. Therefore, the reinforcement drawing dimensions do not match actual building dimensions.

(2) Each reinforcement layout drawing is divided into reinforcement zones. The reinforcement zone naming convention is as follows: "H" = horizontal, "V" = vertical, "L" = longitudinal reinforcement, "T" = transverse reinforcement. For slabs, vertical corresponds to North-South direction and horizontal corresponds to East-West Direction.

(3) The maximum tension and compression axial forces are provided with the corresponding moment from the same load combination. The maximum moment that has a corresponding tension in the same load combination and the maximum moment that has a corresponding compression in the same load combination are also provided. For zones where either axial tension or axial compression does not occur for any load combination, dashes are input into the corresponding cell.

(4) Negative axial load is compression and positive axial load is tension. Negative moment applies tension to the top face of the shell element and positive moment applies tension to the bottom face of the shell element. For walls or slabs where the same reinforcement is provided on both faces, the moment is shown as absolute value. The axial and flexural loads reported in the table are the average of the 2 node pairs that form the 4 edges of the critical rectangular shell element. If the 2 node pairs on the shell element edges parallel to the reinforcement direction do not satisfy P&M interaction criteria, then only the 2 node pairs on the shell element edges perpendicular to the reinforcement direction are used for design (effective width considered).

(5) The reported in-plane shear is the maximum average in-plane shear along a plane that crosses the longitudinal reinforcement zone.

(6) The reported transverse shear is the maximum average transverse shear along a plane in that transverse reinforcement zone.

(7) In areas where horizontal and vertical transverse shear zones overlap, the total transverse shear reinforcement to be supplied in the overlapping area is the sum of the transverse reinforcement required from the horizontal and vertical zones.

(8) For certain areas of the structure, the standard element post-processing methods were too conservative. For such cases, detailed manual design was performed and the design forces determined by the detailed manual design are provided in the table.

(9) The longitudinal reinforcement shown is required to be tied.

(10) The reported forces are from the FEM analysis. The provided longitudinal reinforcement includes additional reinforcement required due to manual one-way design calculations.

(11) The reported axial and in-plane forces are from the FEM analysis. The reported flexural forces are from manual one-way design calculations.

(12) The reported transverse shear reinforcement is the required ties for transverse shear in beam band region.

Table 3H.3-5 Summary of Structural Steel Design

Elevation 35'-0" Floor Steel Beams					
Location[6]	Figure Number	Size[2,3,4]	Safety Margin = Capacity/Demand	Max. Moment (kip-ft)	Governing Load Combination[5]
Elevation 35'-0" Formwork Steel Beams	3H.3-43 3H.3-44 3H.3-45 3H.3-46	W10X54	2.0	81.7	D+L
		W14X193	1.4	565.8	D+L
		W14X283	1.7	700.4	D+L
Elevation 35'-0" Composite Steel Beams		W14x82	1.3	629.3	D+L+E'
		W36x210	1.2	4607.3	D+L+E'
		W36x231	1.1	5496.0	D+L+E'
		W36x247	1.6	3964.6	D+L+E'

Roof Truss Members					
Location	Figure Number	Size[2,3,4]	Safety Margin = Capacity/Demand	Max. Axial Load[1] (kip)	Governing Load Combination[5]
North-South Spanning Truss Top Chord Member	3H.3-47 3H.3-49	W14X120	1.6 1.6	705.0 -962.0	D+L+E' D+L+E'
North-South Spanning Truss Bottom Chord Member		W14X311	1.4 4.3	2161.0 -908.0	D+L+E' D+E'
North-South Spanning Truss Outer Diagonal Members		W12X136	1.4 4.5	910.0 -329.0	D+L+E' D+E'
North-South Spanning Truss Outer Vertical Members		2L8X8X1	2.6 1.3	241.0 -667.0	D+E' D+L+E'
North-South Spanning Truss Inner Diagonal Members		2L8X6X3/4LLBB	1.4 3.7	284.0 -139.0	D+L+E' D+E'
North-South Spanning Truss Inner Vertical Members		2L5X5X1/2	2.0 1.3	91.0 -185.0	D+E' D+L+E'
North-South Spanning Truss Lateral Bracing Members		2L8X4X1LLBB	1.1 1.1	386.0 -316.0	D+L+E' D+L+E'
East-West Spanning Truss Top Chord Member	3H.3-47 3H.3-48	2L5X5X1/2	3.8 1.9	47.0 -152.0	0.9D+E' D+L+E'
East-West Spanning Truss Bottom Chord Member		2L8X4X1LLBB	1.4 7.1	316.0 -94.0	D+L+E' 0.9D+E'
East-West Spanning Truss Outer Diagonal Members		L8X8X7/8	1.3 8.3	208.0 -51.0	D+L+E' 0.9D+E'
East-West Spanning Truss Outer Vertical Members		L6X6X1/2	3.3 1.3	35.0 -143.0	D+L+E' D+L+E'
East-West Spanning Truss Inner Diagonal Members		L4X4X3/8	4.3 11.1	14.0 -7.0	D+L+E' 0.9D+E'
East-West Spanning Truss Inner Vertical Members		L6X6X1/2	5.0 2.9	23.0 -63.0	0.9D+E' D+L+E'
East-West Spanning Truss Lateral Bracing Members		L5X5X3/8	3.8 2.6	18.0 -21.0	D+L+E' D+L+E'

Roof Purlins						
Location	Figure Number	Size[2,3,4]	Safety Margin = Capacity/Demand	Max. Axial Load[1] (kip)	Max. Moment[7] (kip-ft)	Governing Load Combination[5]
North-South Spanning Roof Purlins	3H.3-47	W12X210	1.3	-1299.3	-13.2	D+L+E'
East-West Spanning Roof Purlins		W8X67	1.8	-269.6	-2.5	D+L+E'

Notes:

1. Positive axial load is tension and negative axial load is compression.
2. W-shapes : ASTM A572 Gr. 50 (Fy = 50ksi)
3. Angles and Double Angles : ASTM A36 Gr. 36 (Fy = 36ksi)
4. Member sizes reported are based on analysis results.
   Actual member sizes used will have the same or greater capacity, but size and shape may vary based on connection design requirements.
5. E_o is the design basis earthquake load (1/2 SSE). E' is the II/I earthquake load (SSE).
6. The steel beams located between column lines W7-W8 and WA-WE are required for concrete formwork only. Once the concrete cures, the concrete alone is designed for all design basis loading. The formwork steel will remain in-place unless commodity routing required the formwork steel to be removed.
7. Maximum moment for governing load combination is based on bending about the minor-axis.

Table 3H.6-1 Strain-Compatible Soil Properties Used in SSI Analysis

Soil Layers			Lower Bound			Mean			Upper Bound		
Layer No.	Thickness (ft)	Unit Weight (kcf)	S-Wave Vel. (ft/sec)	P-Wave Vel. (ft/sec)	Damping (%)	S-Wave Vel. (ft/sec)	P-Wave Vel. (ft/sec)	Damping (%)	S-Wave Vel. (ft/sec)	P-Wave Vel. (ft/sec)	Damping (%)
1	4.00	0.124	419.1	1128.4	1.6698	548.1	1475.9	1.2224	677.2	1823.4	0.7749
2	5.00	0.124	474.4	1277.4	1.9487	600.1	1615.8	1.4113	735.0	1979.0	0.8738
3	5.00	0.124	470.6	2399.5	2.1614	596.5	3041.5	1.5678	730.5	3725.1	0.9743
4	5.00	0.124	470.0	2396.7	2.3119	599.2	3055.2	1.6698	733.8	3741.9	1.0277
5	5.00	0.124	466.9	2380.6	2.4295	598.3	3050.9	1.7540	732.8	3736.6	1.0785
6	5.00	0.121	578.1	2947.9	2.8987	730.0	3722.5	2.0647	894.1	4559.1	1.2307
7	5.00	0.121	581.3	2964.2	3.0535	733.4	3739.4	2.1657	898.2	4579.8	1.2778
8	5.00	0.122	606.6	3093.0	2.1873	778.2	3968.1	1.4972	953.1	4859.9	0.8072
9	5.00	0.122	602.2	3070.6	2.3098	774.6	3949.6	1.5804	948.7	4837.3	0.8509
10	5.00	0.122	598.1	3049.7	2.4308	771.2	3932.2	1.6566	944.5	4816.0	0.8824
11	5.00	0.122	600.0	3059.2	2.5321	771.9	3935.9	1.7154	945.4	4820.4	0.8986
12	5.00	0.122	719.8	3670.5	2.2554	924.5	4714.1	1.6695	1132.3	5000.0	1.0836
13	5.00	0.122	720.6	3674.4	2.2824	925.0	4716.5	1.6893	1132.9	5000.0	1.0962
14	5.00	0.122	719.8	3670.4	2.3079	924.3	4712.9	1.7112	1132.0	5000.0	1.1145
15	5.00	0.122	719.1	3666.7	2.3275	923.6	4709.5	1.7260	1131.2	5000.0	1.1245
16	5.00	0.123	827.3	4218.4	2.0584	1013.2	5000.0	1.4280	1241.0	5215.9	0.7975
17	5.00	0.123	825.7	4210.5	2.1082	1011.3	5000.0	1.4603	1238.6	5206.1	0.8123
18	5.00	0.123	824.2	4202.7	2.1636	1009.5	5000.0	1.4988	1236.3	5196.6	0.8340
19	5.00	0.123	822.8	4195.2	2.2125	1007.7	5000.0	1.5321	1234.1	5187.3	0.8516
20	5.00	0.125	850.3	4335.6	2.2666	1041.4	5000.0	1.6792	1275.4	5360.8	1.0917
21	5.00	0.125	849.9	4333.5	2.2780	1040.9	5000.0	1.6904	1274.8	5358.3	1.1027
22	5.00	0.125	849.5	4331.5	2.2969	1040.4	5000.0	1.7027	1274.2	5355.8	1.1085
23	5.00	0.125	874.5	4459.3	2.0113	1085.2	5000.0	1.4063	1329.1	5586.6	0.8014
24	5.00	0.125	873.3	4452.8	2.0424	1084.2	5000.0	1.4290	1327.9	5581.2	0.8157
25	5.00	0.125	872.1	4446.7	2.0761	1083.2	5000.0	1.4485	1326.6	5576.1	0.8209
26	7.00	0.125	914.5	4663.0	2.3111	1120.0	5000.0	1.6966	1371.7	5765.6	1.0822
27	7.00	0.125	914.0	4660.8	2.3253	1119.5	5000.0	1.7081	1371.1	5762.9	1.0909
28	7.00	0.125	911.5	4647.8	2.3428	1117.8	5000.0	1.7197	1369.1	5754.5	1.0966

Table 3H.6-1 Strain-Compatible Soil Properties Used in SSI Analysis (Continued)

Soil Layers			Lower Bound			Mean			Upper Bound		
Layer No.	Thickness (ft)	Unit Weight (kcf)	S-Wave Vel. (ft/sec)	P-Wave Vel. (ft/sec)	Damping (%)	S-Wave Vel. (ft/sec)	P-Wave Vel. (ft/sec)	Damping (%)	S-Wave Vel. (ft/sec)	P-Wave Vel. (ft/sec)	Damping (%)
29	7.00	0.125	910.9	4644.9	2.3545	1117.4	5000.0	1.7287	1368.5	5751.9	1.1029
30	7.00	0.125	910.4	4642.2	2.3693	1116.9	5000.0	1.7403	1367.9	5749.4	1.1114
31	5.00	0.125	883.7	4506.2	2.2271	1102.4	5000.0	1.5420	1350.1	5674.8	0.8568
32	5.00	0.125	881.5	4494.7	2.2467	1101.0	5000.0	1.5575	1348.4	5667.5	0.8683
33	5.00	0.125	880.6	4490.3	2.2764	1100.2	5000.0	1.5770	1347.4	5663.6	0.8775
34	9.00	0.125	919.6	4689.0	2.3842	1126.3	5000.0	1.7519	1379.4	5797.7	1.1196
35	9.00	0.125	919.1	4686.8	2.3984	1125.7	5000.0	1.7608	1378.7	5795.0	1.1231
36	9.00	0.125	922.5	4703.8	2.4066	1129.8	5000.0	1.7673	1383.7	5816.1	1.1281
37	9.00	0.125	922.8	4705.5	2.4195	1130.2	5000.0	1.7795	1384.2	5818.2	1.1394
38	9.00	0.125	919.2	4687.1	2.4362	1125.8	5000.0	1.7917	1378.8	5795.4	1.1472
39	9.00	0.124	921.5	4698.6	2.4066	1146.4	5000.0	1.7870	1404.0	5901.3	1.1674
40	9.00	0.124	931.4	4749.0	2.4129	1157.6	5000.0	1.7862	1417.8	5959.3	1.1595
41	5.00	0.127	986.2	5000.0	2.2903	1222.6	5138.7	1.5360	1497.4	6293.7	0.7818
42	5.00	0.127	985.7	5000.0	2.2989	1222.1	5136.6	1.5447	1496.7	6291.0	0.7905
43	5.00	0.127	985.1	5000.0	2.3165	1221.6	5134.5	1.5554	1496.1	6288.4	0.7943
44	5.00	0.127	984.6	5000.0	2.3275	1221.1	5132.4	1.5619	1495.5	6285.9	0.7963
45	5.00	0.127	984.0	5000.0	2.3410	1220.6	5130.4	1.5697	1494.9	6283.4	0.7984
46	5.00	0.125	1025.7	5000.0	2.3496	1256.3	5280.3	1.7372	1538.6	6467.1	1.1247
47	15.00	0.127	1010.5	5000.0	2.1171	1237.7	5202.1	1.5316	1515.8	6371.2	0.9461
48	11.80	0.123	1034.4	5000.0	2.3607	1266.9	5324.9	1.7527	1551.6	6521.6	1.1447
49	11.80	0.123	1034.0	5000.0	2.3685	1266.4	5323.0	1.7581	1551.0	6519.3	1.1477
50	11.80	0.123	1033.7	5000.0	2.3815	1266.0	5321.2	1.7665	1550.5	6517.1	1.1516
51	11.80	0.123	1037.2	5000.0	2.3948	1270.3	5339.2	1.7726	1555.8	6539.1	1.1505
52	11.80	0.123	1036.9	5000.0	2.4048	1269.9	5337.6	1.7792	1555.3	6537.2	1.1536
53	17.00	0.128	1252.4	5264.0	1.8381	1575.1	6620.6	1.2897	1929.1	8108.5	0.7413
54	8.00	0.123	1301.7	5471.3	2.1463	1607.2	6755.4	1.6064	1968.4	8273.7	1.0664
55	16.50	0.128	1310.3	5507.2	1.7999	1604.7	6744.9	1.2702	1965.4	8260.8	0.7405
56	16.50	0.128	1309.5	5503.9	1.8246	1603.7	6740.8	1.2855	1964.2	8255.8	0.7465

Table 3H.6-1 Strain-Compatible Soil Properties Used in SSI Analysis (Continued)

Soil Layers			Lower Bound			Mean			Upper Bound		
Layer No.	Thickness (ft)	Unit Weight (kcf)	S-Wave Vel. (ft/sec)	P-Wave Vel. (ft/sec)	Damping (%)	S-Wave Vel. (ft/sec)	P-Wave Vel. (ft/sec)	Damping (%)	S-Wave Vel. (ft/sec)	P-Wave Vel. (ft/sec)	Damping (%)
57	8.00	0.123	1290.5	5424.1	2.2004	1580.5	6643.2	1.6357	1935.7	8136.2	1.0711
58	19.00	0.128	1156.1	5000.0	2.0671	1417.2	5956.7	1.4716	1735.7	7295.4	0.8761
59	15.00	0.123	995.4	5000.0	2.5251	1219.2	5124.3	1.8573	1493.2	6276.0	1.1895
60	15.00	0.123	995.2	5000.0	2.5283	1218.9	5123.3	1.8597	1492.8	6274.7	1.1910
61	8.00	0.128	970.0	4946.2	2.6235	1188.1	5000.0	1.8389	1455.1	6115.9	1.0543
62	18.00	0.123	990.9	5000.0	2.5359	1213.6	5101.1	1.8669	1486.4	6247.5	1.1980
63	18.00	0.123	990.6	5000.0	2.5391	1213.3	5099.7	1.8706	1486.0	6245.8	1.2021
64	18.00	0.123	999.5	5000.0	2.5358	1224.1	5145.1	1.8672	1499.2	6301.4	1.1986
65	18.00	0.123	1196.2	5027.7	2.0970	1465.0	6157.6	1.4997	1794.2	7541.5	0.9024
66	14.60	0.123	1172.4	5000.0	2.3353	1435.9	6035.4	1.7343	1758.6	7391.8	1.1332
67	14.60	0.123	1172.2	5000.0	2.3381	1435.6	6034.3	1.7362	1758.3	7390.5	1.1343
68	14.60	0.123	1172.0	5000.0	2.3411	1435.4	6033.3	1.7397	1758.0	7389.2	1.1382
69	14.60	0.123	1171.8	5000.0	2.3468	1435.2	6032.3	1.7427	1757.7	7388.0	1.1386
70	14.60	0.123	1171.7	5000.0	2.3531	1435.0	6031.5	1.7455	1757.5	7387.0	1.1379
71	45.50	0.129	1378.7	5065.8	0.9127	1688.6	6204.3	0.5883	2068.1	7598.6	0.2639
72	45.50	0.129	1378.7	5065.8	0.9127	1688.6	6204.3	0.5883	2068.1	7598.6	0.2639
73	100.00	0.128	1388.7	5102.3	0.9127	1700.8	6249.0	0.5883	2083.0	7653.4	0.2639
74	100.00	0.128	1388.7	5102.3	0.9127	1700.8	6249.0	0.5883	2083.0	7653.4	0.2639
75	100.00	0.130	1533.0	5084.5	0.9127	1877.6	6227.2	0.5883	2299.5	7626.7	0.2639
76	100.00	0.130	1533.0	5084.5	0.9127	1877.6	6227.2	0.5883	2299.5	7626.7	0.2639
77	100.00	0.130	1667.2	5529.4	0.9127	2041.9	6772.1	0.5883	2500.8	8294.1	0.2639
78	100.00	0.130	1667.2	5093.3	0.9127	2041.9	6238.0	0.5883	2500.8	7640.0	0.2639
79	100.00	0.130	1735.4	5301.6	0.9127	2125.4	6493.1	0.5883	2603.0	7952.4	0.2639
80	100.00	0.130	1735.4	5301.6	0.9127	2125.4	6493.1	0.5883	2603.0	7952.4	0.2639
81	100.00	0.130	1870.7	5338.3	0.9127	2291.2	6538.0	0.5883	2806.1	8007.4	0.2639
82	100.00	0.130	1870.7	5338.3	0.9127	2291.2	6538.0	0.5883	2806.1	8007.4	0.2639
83	100.00	0.130	1912.1	5456.3	0.9127	2341.8	6682.6	0.5883	2868.1	8184.4	0.2639
84	100.00	0.130	1912.1	5148.5	0.9127	2341.8	6305.6	0.5883	2868.1	7722.7	0.2639

Table 3H.6-1 Strain-Compatible Soil Properties Used in SSI Analysis (Continued)

Soil Layers			Lower Bound			Mean			Upper Bound		
Layer No.	Thickness (ft)	Unit Weight (kcf)	S-Wave Vel. (ft/sec)	P-Wave Vel. (ft/sec)	Damping (%)	S-Wave Vel. (ft/sec)	P-Wave Vel. (ft/sec)	Damping (%)	S-Wave Vel. (ft/sec)	P-Wave Vel. (ft/sec)	Damping (%)
85	100.00	0.135	2042.5	5499.7	0.9127	2501.6	6735.7	0.5883	3063.8	8249.6	0.2639
86	100.00	0.135	2051.1	5522.8	0.9127	2512.1	6764.0	0.5883	3076.7	8284.2	0.2639
87	100.00	0.135	2259.9	5786.1	0.9127	2767.8	7086.5	0.5883	3389.8	8679.2	0.2639
88	100.00	0.135	2259.9	5786.1	0.9127	2767.8	7086.5	0.5883	3389.8	8679.2	0.2639
89	100.00	0.135	2402.8	6152.0	0.9127	2942.8	7534.6	0.5883	3604.1	9228.0	0.2639
90	100.00	0.135	2402.8	5885.6	0.9127	2942.8	7208.3	0.5883	3604.1	8828.3	0.2639
91	100.00	0.140	2402.8	5885.6	0.9127	2942.8	7208.3	0.5883	3604.1	8828.3	0.2639
92	100.00	0.140	2409.5	5902.0	0.9127	2951.0	7228.5	0.5883	3614.3	8853.1	0.2639
93	100.00	0.140	2496.3	5878.5	0.9127	3057.3	7199.6	0.5883	3744.4	8817.7	0.2639
94	100.00	0.140	2496.3	5878.5	0.9127	3057.3	7199.6	0.5883	3744.4	8817.7	0.2639
95	100.00	0.140	2531.9	5962.2	0.9127	3100.9	7302.2	0.5883	3797.8	8943.3	0.2639
96	100.00	0.140	2531.9	5755.0	0.9127	3100.9	7048.4	0.5883	3797.8	8632.5	0.2639
97	100.00	0.140	2789.2	6340.0	0.9127	3416.1	7764.8	0.5883	4183.8	9509.9	0.2639
98	100.00	0.140	2789.2	6340.0	0.9127	3416.1	7764.8	0.5883	4183.8	9509.9	0.2639
99	100.00	0.140	3055.6	6726.6	0.9127	3742.3	8238.4	0.5883	4583.4	10089.9	0.2639
100	100.00	0.140	3055.6	6726.6	0.9127	3742.3	8238.4	0.5883	4583.4	10089.9	0.2639
101	100.00	0.140	3144.4	6922.0	0.9127	3851.0	8477.7	0.5883	4716.5	10383.0	0.2639
102	100.00	0.140	3144.4	6722.9	0.9127	3851.0	8233.9	0.5883	4716.5	10084.4	0.2639
103	100.00	0.140	3245.3	6938.8	0.9127	3974.7	8498.3	0.5883	4868.0	10408.3	0.2639
104	100.00	0.140	3245.3	6938.8	0.9127	3974.7	8498.3	0.5883	4868.0	10408.3	0.2639
105	100.00	0.140	3280.1	6828.1	0.9127	4017.3	8362.7	0.5883	4920.2	10242.1	0.2639
106	100.00	0.140	3280.1	6828.1	0.9127	4017.3	8362.7	0.5883	4920.2	10242.1	0.2639
107	100.00	0.140	3280.1	6828.1	0.9127	4017.3	8362.6	0.5883	4920.1	10242.1	0.2639
108	100.00	0.140	3280.1	6661.9	0.9127	4017.3	8159.1	0.5883	4920.1	9992.8	0.2639
109	100.00	0.140	3337.8	6779.1	0.9127	4088.0	8302.7	0.5883	5006.7	10168.6	0.2639
110	100.00	0.140	3337.8	6779.1	0.9127	4088.0	8302.7	0.5883	5006.7	10168.6	0.2639
111	100.00	0.140	3395.5	6740.9	0.9127	4158.6	8255.9	0.5883	5093.3	10111.3	0.2639
112	100.00	0.140	3395.5	6740.9	0.9127	4158.6	8255.9	0.5883	5093.3	10111.3	0.2639

Table 3H.6-1 Strain-Compatible Soil Properties Used in SSI Analysis (Continued)

Soil Layers			Lower Bound			Mean			Upper Bound		
Layer No.	Thickness (ft)	Unit Weight (kcf)	S-Wave Vel. (ft/sec)	P-Wave Vel. (ft/sec)	Damping (%)	S-Wave Vel. (ft/sec)	P-Wave Vel. (ft/sec)	Damping (%)	S-Wave Vel. (ft/sec)	P-Wave Vel. (ft/sec)	Damping (%)
113	100.00	0.140	3425.0	6799.4	0.9127	4194.7	8327.6	0.5883	5137.5	10199.1	0.2639
114	100.00	0.140	3425.0	6657.0	0.9127	4194.7	8153.1	0.5883	5137.5	9985.5	0.2639
115	100.00	0.140	3609.5	7015.6	0.9127	4420.7	8592.3	0.5883	5414.2	10523.4	0.2639
116	100.00	0.140	3609.5	7015.6	0.9127	4420.7	8592.3	0.5883	5414.2	10523.4	0.2639
117	100.00	0.140	3815.4	7271.0	0.9127	4672.9	8905.1	0.5883	5723.2	10906.5	0.2639
118	100.00	0.140	3815.4	7271.0	0.9127	4672.9	8905.1	0.5883	5723.2	10906.5	0.2639
119	100.00	0.140	3828.5	7295.9	0.9127	4689.0	8935.6	0.5883	5742.8	10943.9	0.2639
120	100.00	0.140	3828.5	7162.5	0.9127	4689.0	8772.3	0.5883	5742.8	10743.8	0.2639
121	100.00	0.140	3995.3	7474.4	0.9127	4893.2	9154.3	0.5883	5992.9	11211.7	0.2639
122	100.00	0.140	3995.3	7474.4	0.9127	4893.2	9154.3	0.5883	5992.9	11211.7	0.2639
123	100.00	0.140	4042.3	7562.4	0.9127	4950.8	9262.1	0.5883	6063.4	11343.7	0.2639
124	100.00	0.140	4042.3	7562.4	0.9127	4950.8	9262.1	0.5883	6063.4	11343.7	0.2639
125	100.00	0.140	4057.2	7590.4	0.9127	4969.1	9296.2	0.5883	6085.8	11385.5	0.2639
126	100.00	0.140	4057.2	7590.4	0.9127	4969.1	9296.2	0.5883	6085.8	11385.5	0.2639
127	100.00	0.140	4064.5	7604.1	0.9127	4978.0	9313.0	0.5883	6096.8	11406.1	0.2639
128	100.00	0.140	4064.5	7604.1	0.9127	4978.0	9313.0	0.5883	6096.8	11406.1	0.2639
129	100.00	0.140	3997.4	7478.4	0.9127	4895.8	9159.2	0.5883	5996.1	11217.7	0.2639
130	100.00	0.140	3997.4	7478.4	0.9127	4895.8	9159.2	0.5883	5996.1	11217.7	0.2639
131	100.00	0.140	3779.9	7071.5	0.9127	4629.4	8660.8	0.5883	5669.8	10607.3	0.2639
132	100.00	0.140	3779.9	7071.5	0.9127	4629.4	8660.8	0.5883	5669.8	10607.3	0.2639
133	100.00	0.140	3164.0	5919.4	0.9127	3875.1	7249.7	0.5883	4746.1	8879.1	0.2639
134	100.00	0.140	3164.0	5919.4	0.9127	3875.1	7249.7	0.5883	4746.1	8879.1	0.2639
135	100.00	0.140	2974.8	5565.3	0.9127	3643.3	6816.0	0.5883	4462.1	8347.9	0.2639
136	100.00	0.140	2974.8	5565.3	0.9127	3643.3	6816.0	0.5883	4462.1	8347.9	0.2639
137	100.00	0.140	2942.9	5505.7	0.9127	3604.3	6743.0	0.5883	4414.4	8258.5	0.2639
138	100.00	0.140	2942.9	5505.7	0.9127	3604.3	6743.0	0.5883	4414.4	8258.5	0.2639
139	100.00	0.140	2914.5	5452.5	0.9127	3569.5	6677.9	0.5883	4371.7	8178.7	0.2639
140	100.00	0.140	2914.5	5452.5	0.9127	3569.5	6677.9	0.5883	4371.7	8178.7	0.2639

Table 3H.6-1 Strain-Compatible Soil Properties Used in SSI Analysis (Continued)

Soil Layers			Lower Bound			Mean			Upper Bound		
Layer No.	Thickness (ft)	Unit Weight (kcf)	S-Wave Vel. (ft/sec)	P-Wave Vel. (ft/sec)	Damping (%)	S-Wave Vel. (ft/sec)	P-Wave Vel. (ft/sec)	Damping (%)	S-Wave Vel. (ft/sec)	P-Wave Vel. (ft/sec)	Damping (%)
141	100.00	0.140	2914.5	5452.5	0.9127	3569.5	6677.9	0.5883	4371.7	8178.7	0.2639
142	100.00	0.140	2914.5	5452.5	0.9127	3569.5	6677.9	0.5883	4371.7	8178.7	0.2639
143	100.00	0.140	2875.7	5379.9	0.9127	3522.0	6589.1	0.5883	4313.6	8069.9	0.2639
144	100.00	0.140	2875.7	5379.9	0.9127	3522.0	6589.1	0.5883	4313.6	8069.9	0.2639
145	100.00	0.140	2875.9	5380.4	0.9127	3522.3	6589.6	0.5883	4313.9	8070.6	0.2639
146	100.00	0.140	2875.9	5380.4	0.9127	3522.3	6589.6	0.5883	4313.9	8070.6	0.2639

Table 3H.6-1a Layer Thicknesses and Strain Compatible In-Situ Soil Properties Used for the SSI Analysis (Mean)

Layer No.	Thickness (ft)	Top Elevation of Layer (ft)	Bottom Elevation of Layer (ft)	Unit Weight (kcf)	S-Wave Vel. (ft/sec)	P-Wave Vel. (ft/sec)	Damping (%)	Passing Freq. for S-Wave Vel. (Hz)
1	2.75	56.0	53.3	0.124	548.1	1475.9	1.22	39.9
2	3.25	53.3	50.0	0.124	579.0	1559.0	1.34	35.6
3	3.50	50.0	46.5	0.124	599.6	1731.8	1.43	34.3
4	3.50	46.5	43.0	0.124	596.5	3041.5	1.57	34.1
5	3.50	43.0	39.5	0.124	598.4	3051.3	1.64	34.2
6	3.50	39.5	36.0	0.124	598.9	3054.0	1.69	34.2
7	3.00	36.0	33.0	0.124	598.3	3050.9	1.75	39.9
8	3.00	33.0	30.0	0.122	680.1	3468.0	1.96	45.3
9	4.00	30.0	26.0	0.121	730.8	3726.7	2.09	36.5
10	2.00	26.0	24.0	0.121	733.4	3739.4	2.17	73.3
11	4.00	24.0	20.0	0.122	755.1	3850.4	1.83	37.8
12	4.00	20.0	16.0	0.122	777.3	3963.5	1.52	38.9
13	4.00	16.0	12.0	0.122	774.6	3949.6	1.58	38.7
14	4.00	12.0	8.0	0.122	771.2	3932.2	1.66	38.6
15	4.00	8.0	4.0	0.122	771.7	3935.0	1.70	38.6
16	5.00	4.0	-1.0	0.122	856.8	4368.6	1.69	34.3
17	5.00	-1.0	-6.0	0.122	924.8	4715.5	1.68	37.0
18	2.00	-6.0	-8.0	0.122	925.0	4716.5	1.69	92.5
19	5.50	-8.0	-13.5	0.122	924.2	4712.6	1.71	33.6
20	5.60	-13.5	-19.1	0.122	939.9	4763.9	1.67	33.6
21	6.10	-19.1	-25.2	0.123	1012.5	5000.0	1.44	33.2
22	6.10	-25.2	-31.3	0.123	1010.3	5000.0	1.48	33.1
23	6.10	-31.3	-37.4	0.123	1008.2	5000.0	1.52	33.1
24	6.10	-37.4	-43.5	0.125	1037.9	5000.0	1.58	34.0
25	6.30	-43.5	-49.8	0.125	1040.8	5000.0	1.69	33.0
26	6.40	-49.8	-56.2	0.125	1062.3	5000.0	1.55	33.2
27	6.50	-56.2	-62.7	0.125	1084.5	5000.0	1.42	33.4
28	6.60	-62.7	-69.3	0.125	1090.3	5000.0	1.28	33.0
29	6.75	-69.3	-76.1	0.125	1119.9	5000.0	1.70	33.2

Table 3H.6-1a Layer Thicknesses and Strain Compatible In-Situ Soil Properties Used for the SSI Analysis (Mean) (Continued)

Layer No.	Thickness (ft)	Top Elevation of Layer (ft)	Bottom Elevation of Layer (ft)	Unit Weight (kcf)	S-Wave Vel. (ft/sec)	P-Wave Vel. (ft/sec)	Damping (%)	Passing Freq. for S-Wave Vel. (Hz)
30	6.75	-76.1	-82.8	0.125	1119.3	5000.0	1.71	33.2
31	6.75	-82.8	-89.6	0.125	1117.8	5000.0	1.72	33.1
32	6.75	-89.6	-96.36	0.125	1117.4	5000.0	1.73	33.1
33	6.75	-96.3	-103.1	0.125	1116.8	5000.0	1.74	33.1
34	6.50	-103.1	-109.6	0.125	1102.1	5000.0	1.55	33.9
35	6.50	-109.6	-116.1	0.125	1100.6	5000.0	1.57	33.9
36	6.75	-116.1	-122.8	0.125	1118.6	5000.0	1.70	33.1
37	6.75	-122.8	-129.6	0.125	1126.1	5000.0	1.76	33.4
38	6.75	-129.6	-136.3	0.125	1125.9	5000.0	1.76	33.4
39	6.75	-136.3	-143.1	0.125	1129.8	5000.0	1.77	33.5
40	6.75	-143.1	-149.8	0.125	1130.1	5000.0	1.78	33.5
41	6.75	-149.8	-156.6	0.125	1128.5	5000.0	1.78	33.4
42	6.75	-156.6	-163.3	0.125	1126.7	5000.0	1.79	33.4
43	6.80	-163.3	-170.1	0.124	1146.4	5000.0	1.79	33.7
44	6.90	-170.1	-177.0	0.124	1154.5	5000.0	1.79	33.5
45	7.10	-177.0	-184.1	0.125	1185.1	5059.6	1.68	33.4
46	7.40	-184.1	-191.5	0.127	1222.2	5137.0	1.48	33.0
47	7.30	-191.5	-198.8	0.127	1221.4	5133.7	1.56	33.5
48	7.30	-198.8	-206.1	0.127	1221.2	5133.0	1.55	33.5
49	7.50	-206.1	-213.6	0.126	1249.8	5252.9	1.67	33.3
50	7.40	-213.6	-221.0	0.127	1237.7	5202.1	1.53	33.5
51	7.50	-221.0	-228.5	0.126	1247.3	5242.4	1.61	33.3
52	7.60	-228.5	-236.1	0.123	1266.9	5324.9	1.75	33.3
53	7.60	-236.1	-243.7	0.123	1266.5	5323.4	1.76	33.3
54	7.60	-243.7	-251.3	0.123	1266.3	5322.6	1.76	33.3
55	7.60	-251.3	-258.9	0.123	1266.0	5321.2	1.77	33.3
56	7.60	-258.9	-266.5	0.123	1268.9	5333.3	1.77	33.4
57	7.60	-266.5	-274.1	0.123	1270.3	5339.0	1.77	33.4
58	7.60	-274.1	-281.7	0.123	1269.9	5337.6	1.78	33.4

Table 3H.6-1a Layer Thicknesses and Strain Compatible In-Situ Soil Properties Used for the SSI Analysis (Mean) (Continued)

Layer No.	Thickness (ft)	Top Elevation of Layer (ft)	Bottom Elevation of Layer (ft)	Unit Weight (kcf)	S-Wave Vel. (ft/sec)	P-Wave Vel. (ft/sec)	Damping (%)	Passing Freq. for S-Wave Vel. (Hz)
59	8.70	-281.7	-290.4	0.126	1443.5	6067.4	1.48	33.2
60	9.50	-290.4	-299.9	0.128	1575.1	6620.6	1.29	33.2
61	9.50	-299.9	-309.4	0.124	1600.0	6725.1	1.54	33.7
62	9.50	-309.4	-318.9	0.128	1604.9	6745.6	1.29	33.8
63	9.50	-318.9	-328.4	0.128	1604.5	6744.1	1.27	33.8
64	9.50	-328.4	-337.9	0.128	1603.7	6740.8	1.29	33.8
65	9.50	-337.9	-347.4	0.126	1592.9	6695.2	1.45	33.5
66	8.90	-347.4	-356.3	0.126	1479.0	6216.6	1.54	33.2
67	8.50	-356.3	-364.8	0.128	1417.2	5956.7	1.47	33.3
68	8.10	-364.8	-372.9	0.126	1339.3	5629.3	1.61	33.1
69	7.30	-372.9	-380.2	0.123	1219.2	5124.3	1.86	33.4
70	7.30	-380.2	-387.5	0.123	1219.1	5124.0	1.86	33.4
71	7.30	-387.5	-394.8	0.123	1218.9	5123.3	1.86	33.4
72	7.30	-394.8	-402.1	0.124	1209.9	5087.2	1.85	33.1
73	7.20	-402.1	-409.3	0.127	1192.6	5018.0	1.84	33.1
74	7.30	-409.3	-416.6	0.123	1213.6	5101.1	1.87	33.2
75	7.30	-416.6	-423.9	0.123	1213.6	5101.1	1.87	33.2
76	7.30	-423.9	-431.2	0.123	1213.4	5100.1	1.87	33.2
77	7.30	-431.2	-438.5	0.123	1213.3.	5099.7	1.87	33.2
78	7.30	-438.5	-445.8	0.123	1215.9	5110.8	1.87	33.3
79	7.40	-445.8	-453.2	0.123	1224.1	5145.1	1.87	33.1
80	7.40	-453.2	-460.6	0.123	1224.1	5145.1	1.87	33.1
81	8.50	-460.6	-469.1	0.123	1419.0	5964.3	1.56	33.4
82	8.80	-469.1	-477.9	0.123	1465.0	6157.6	1.50	33.3
83	8.70	-477.9	-486.6	0.123	1442.8	6064.5	1.68	33.2
84	8.70	-477.9	-495.3	0.123	1435.9	6035.3	1.73	33.0
85	8.70	-495.3	-504.0	0.123	1435.6	6034.3	1.74	33.0
86	8.70	-504.0	-512.7	0.123	1435.5	6033.9	1.74	33.0
87	8.60	-512.7	-521.3	0.123	1435.4	6033.3	1.74	33.4

Table 3H.6-1a Layer Thicknesses and Strain Compatible In-Situ Soil Properties Used for the SSI Analysis (Mean) (Continued)

Layer No.	Thickness (ft)	Top Elevation of Layer (ft)	Bottom Elevation of Layer (ft)	Unit Weight (kcf)	S-Wave Vel. (ft/sec)	P-Wave Vel. (ft/sec)	Damping (%)	Passing Freq. for S-Wave Vel. (Hz)
88	8.60	-521.3	-529.9	0.123	1435.3	6032.6	1.74	33.4
89	8.60	-529.9	-538.5	0.123	1435.2	6032.3	1.74	33.4
90	8.60	-538.5	-547.1	0.123	1435.0	6031.5	1.75	33.4
91	9.10	-547.1	-556.2	0.125	1515.0	6091.2	1.34	33.3
92	10.20	-556.2	-566.4	0.129	1688.6	6204.3	0.59	33.1
93	10.20	-566.4	-576.6	0.129	1688.6	6204.3	0.59	33.1
94	10.20	-576.6	-586.8	0.129	1688.6	6204.3	0.59	33.1
95	10.20	-586.8	-597.0	0.129	1688.6	6204.3	0.59	33.1
96	10.20	-597.0	-607.2	0.129	1688.6	6204.3	0.59	33.1
97	10.20	-607.2	-617.4	0.129	1688.6	6204.3	0.59	33.1
98	10.20	-617.4	-627.6	0.129	1688.6	6204.3	0.59	33.1
99	10.20	-627.6	-637.8	0.129	1688.6	6204.3	0.59	33.1
100	10.20	-637.8	-648.0	0.129	1693.4	6221.8	0.59	33.2
Halfspace				0.129	1693.4	6221.8	0.588-	-

Table 3H.6-1b Layer Thicknesses and Strain Compatible In-Situ Soil Properties Used for the SSI Analysis (Upper Bound)

Layer No.	Thickness (ft)	Top Elevation of Layer (ft)	Bottom Elevation of Layer (ft)	Unit Weight (kcf)	S-Wave Vel. (ft/sec)	P-Wave Vel. (ft/sec)	Damping (%)	Passing Freq. for S-Wave Vel. (Hz)
1	2.75	56.0	53.3	0.124	677.2	1823.4	0.77	49.3
2	3.25	53.3	50.0	0.124	711.6	1916.1	0.84	43.8
3	3.50	50.0	46.5	0.124	734.4	2121.0	0.89	42.0
4	3.50	46.5	43.0	0.124	730.5	3725.1	0.97	41.7
5	3.50	43.0	39.5	0.124	732.9	3737.1	1.01	41.9
6	3.50	39.5	36.0	0.124	733.5	3740.4	1.04	41.9
7	3.00	36.0	33.0	0.124	732.8	3736.6	1.08	48.9
8	3.00	33.0	30.0	0.122	833.0	4247.5	1.18	55.5
9	4.00	30.0	26.0	0.121	895.1	4564.3	1.24	44.8
10	2.00	26.0	24.0	0.121	898.2	4579.8	1.28	89.8
11	4.00	24.0	20.0	0.122	924.8	4715.7	1.04	46.2
12	4.00	20.0	16.0	0.122	952.0	4854.2	0.82	47.6
13	4.00	16.0	12.0	0.122	948.7	4837.3	0.85	47.4
14	4.00	12.0	8.0	0.122	944.5	4816.0	0.88	47.2
15	4.00	8.0	4.0	0.122	945.2	4819.3	0.89	47.3
16	5.00	4.0	-1.0	0.122	1049.3	4926.6	1.01	42.0
17	5.00	-1.0	-6.0	0.122	1132.7	5000.0	1.09	45.3
18	2.00	-6.0	-8.0	0.122	1132.9	5000.0	1.10	113.3
19	5.50	-8.0	-13.5	0.122	1131.9	5000.0	1.12	41.2
20	5.60	-13.5	-19.1	0.122	1151.2	5041.0	1.06	41.1
21	6.10	-19.1	-25.2	0.123	1240.1	5212.4	0.80	40.7
22	6.10	-25.2	-31.3	0.123	1237.4	5201.0	0.82	40.6
23	6.10	-31.3	-37.4	0.123	1234.7	5189.9	0.85	40.5
24	6.10	-37.4	-43.5	0.125	1271.2	5343.0	1.05	41.7
25	6.30	-43.5	-49.8	0.125	1274.6	5357.6	1.10	40.5
26	6.40	-49.8	-56.2	0.125	1301.1	5468.8	0.95	40.7
27	6.50	-56.2	-62.7	0.125	1328.2	5582.7	0.81	40.9
28	6.60	-62.7	-69.3	0.125	1335.3	5612.7	0.84	40.5
29	6.75	-69.3	-76.1	0.125	1371.6	5765.2	1.08	40.6

Table 3H.6-1b Layer Thicknesses and Strain Compatible In-Situ Soil Properties Used for the SSI Analysis (Upper Bound) (Continued)

Layer No.	Thickness (ft)	Top Elevation of Layer (ft)	Bottom Elevation of Layer (ft)	Unit Weight (kcf)	S-Wave Vel. (ft/sec)	P-Wave Vel. (ft/sec)	Damping (%)	Passing Freq. for S-Wave Vel. (Hz)
30	6.75	-76.1	-82.8	0.125	1370.9	5761.9	1.09	40.6
31	6.75	-82.8	-89.6	0.125	1369.1	5754.3	1.10	40.6
32	6.75	-89.6	-96.3	0.125	1368.5	5751.8	1.10	40.5
33	6.75	-96.3.	-103.1	0.125	1367.8	5748.8	1.11	40.5
34	6.50	-103.1	-109.6	0.125	1349.7	5673.1	0.86	41.5
35	6.50	-109.6	-116.1	0.125	1347.9	5665.7	0.87	41.5
36	6.75	-116.1	-122.8	0.125	1370.0	5758.3	1.05	40.6
37	6.75	-122.8	-129.6	0.125	1379.1	5796.7	1.12	40.9
38	6.75	-129.6	-136.3	0.125	1378.9	5795.9	1.12	40.9
39	6.75	-136.3	-143.1	0.125	1383.7	5816.1	1.13	41.0
40	6.75	-143.1	-149.8	0.125	1384.1	5817.6	1.14	41.0
41	6.75	-149.8	-156.6	0.125	1382.2	5809.6	1.14	41.0
42	6.75	-156.6	-163.3	0.125	1379.9	5800.0	1.15	40.9
43	6.80	-163.3.	-170.1	0.124	1404.0	5901.3	1.17	41.3
44	6.90	-170.1	-177.0	0.124	1414.0	5943.2	1.16	41.0
45	7.10	-177.0	-184.1	0.125	1451.5	6100.8	0.99	40.9
46	7.40	-184.1	-191.5	0.127	1496.8	6291.5	0.82	40.5
47	7.30	-191.5	198.8	0.127	1495.9	6287.4	0.80	41.0
48	7.30	-198.8	-206.1	0.127	1495.7	6286.6	0.80	41.0
49	7.50	-206.1	-213.6	0.126	1530.6	6433.5	1.06	40.8
50	7.40	-213.6	-221.0	0.127	1515.8	6371.2	0.95	41.0
51	7.50	-221.0	-228.5	0.126	1527.5	6420.6	1.01	40.7
52	7.60	-228.5	-236.1	0.123	1551.6	6521.6	1.14	40.8
53	7.60	-236.1	-243.7	0.123	1551.1	6519.8	1.15	40.8
54	7.60	-243.7	-251.3	0.123	1550.9	6518.8	1.15	40.8
55	7.60	-251.3	-258.9	0.123	1550.5	6517.1	1.15	40.8
56	7.60	-258.9	-266.5	0.123	1554.1	6531.8	1.15	40.9
57	7.60	-266.5	-274.1	0.123	1555.7	6538.9	1.15	40.9
58	7.60	-274.1	-281.7	0.123	1555.3	6537.2	1.15	40.9

Table 3H.6-1b Layer Thicknesses and Strain Compatible In-Situ Soil Properties Used for the SSI Analysis (Upper Bound) (Continued)

Layer No.	Thickness (ft)	Top Elevation of Layer (ft)	Bottom Elevation of Layer (ft)	Unit Weight (kcf)	S-Wave Vel. (ft/sec)	P-Wave Vel. (ft/sec)	Damping (%)	Passing Freq. for S-Wave Vel. (Hz)
59	8.70	-281.7	-290.4	0.126	1767.9	7431.0	0.90	40.6
60	9.50	-290.4	-299.9	0.128	1929.1	8108.5	0.74	40.6
61	9.50	-299.9	-309.4	0.124	1959.6	8236.6	0.99	41.3
62	9.50	-309.4	-318.9	0.128	1965.6	8261.6	0.76	41.4
63	9.50	-318.9	-328.4	0.128	1965.2	8259.8	0.74	41.4
64	9.50	-328.4	-337.9	0.128	1964.2	8255.8	0.75	41.4
65	9.50	-337.9	-347.4	0.126	1950.9	8200.0	0.90	41.1
66	8.90	-347.4	-356.3	0.126	1811.4	7613.7	0.95	40.7
67	8.50	-356.3	-364.8	0.128	1735.7	7295.4	0.88	40.8
68	8.10	-364.8	-372.9	0.126	1640.3	6894.5	0.99	40.5
69	7.30	-372.9	-380.2	0.123	1493.2	6276.0	1.19	40.9
70	7.30	-380.2	-387.5	0.123	1493.1	6275.6	1.19	40.9
71	7.30	-387.5	-394.8	0.123	1492.8	6274.7	1.19	40.9
72	7.30	-394.8	-402.1	0.124	1481.8	6228.2	1.15	40.6
73	7.20	-402.1	-409.3	0.127	1460.7	6139.2	1.08	40.6
74	7.30	-409.3	-416.6	0.123	1486.4	6247.5	1.20	40.7
75	7.30	-416.6	-423.9	0.123	1486.4	6247.5	1.20	40.7
76	7.30	-423.9	-431.2	0.123	1486.1	6246.3	1.20	40.7
77	7.30	-431.2	-438.5	0.123	1486.0	6245.8	1.20	40.7
78	7.30	-438.5	-445.8	0.123	1489.2	6259.4	1.20	40.8
79	7.40	-445.8	-453.2	0.123	1499.2	6301.4	1.20	40.5
80	7.40	-453.2	-460.6	0.123	1499.2	6301.4	1.20	40.5
81	8.50	-460.6	-469.1	0.123	1737.9	7304.7	0.95	40.9
82	8.80	-469.1	-477.9	0.123	1794.2	7541.5	0.90	40.8
83	8.70	-477.9	-486.6	0.123	1767.1	7427.4	1.08	40.6
84	8.70	-486.6	-495.3	0.123	1758.6	7391.7	1.13	40.4
85	8.70	-495.3	-504.0	0.123	1758.3	7390.5	1.13	40.4
86	8.70	-504.0	-512.7	0.123	1758.2	7390.0	1.14	40.4
87	8.60	-512.7	-521.3	0.123	1758.0	7389.2	1.14	40.9

Table 3H.6-1b Layer Thicknesses and Strain Compatible In-Situ Soil Properties Used for the SSI Analysis (Upper Bound) (Continued)

Layer No.	Thickness (ft)	Top Elevation of Layer (ft)	Bottom Elevation of Layer (ft)	Unit Weight (kcf)	S-Wave Vel. (ft/sec)	P-Wave Vel. (ft/sec)	Damping (%)	Passing Freq. for S-Wave Vel. (Hz)
88	8.60	-521.3	-529.9	0.123	1757.8	7388.3	1.14	40.9
89	8.60	-529.9	-538.5	0.123	1757.7	7388.0	1.14	40.9
90	8.60	-538.5	-547.1	0.123	1757.5	7387.0	1.14	40.9
91	9.10	-547.1	-556.2	0.125	1855.5	7460.1	0.83	40.8
92	10.20	-556.2	-566.4	0.129	2068.1	7598.6	0.26	40.6
93	10.20	-566.4	-576.6	0.129	2068.1	7598.6	0.26	40.6
94	10.20	-576.6	-586.8	0.129	2068.1	7598.6	0.26	40.6
95	10.20	-586.8	-597.0	0.129	2068.1	7598.6	0.26	40.6
96	10.20	-597.0	-607.2	0.129	2068.1	7598.6	0.26	40.6
97	10.20	-607.2	-617.4	0.129	2068.1	7598.6	0.26	40.6
98	10.20	-617.4	-627.6	0.129	2068.1	7598.6	0.26	40.6
99	10.20	-627.6	-637.8	0.129	2068.1	7598.6	0.26	40.6
100	10.20	-637.8	-648.0	0.129	2073.9	7620.0	0.26	40.7
Halfspace				0.129	2073.9	7620.0	0.264	-

Table 3H.6-1c Layer Thicknesses and Strain Compatible In-Situ Soil Properties Used or the SSI Analysis (Lower Bound)

Layer No.	Thickness (ft)	Top Elevation of Layer (ft)	Bottom Elevation of Layer (ft)	Unit Weight (kcf)	S-Wave Vel. (ft/sec)	P-Wave Vel. (ft/sec)	Damping (%)	Passing Freq. for S-Wave Vel. (Hz)
1	2.75	56.0	53.3	0.124	419.1	1128.4	1.67	30.5
2	3.25	53.3	50.0	0.124	451.5	1215.7	1.84	27.8
3	3.50	50.0	46.5	0.124	473.9	1368.8	1.98	27.1
4	3.50	46.5	43.0	0.124	470.6	2399.5	2.16	26.9
5	3.50	43.0	39.5	0.124	470.2	2397.5	2.27	26.9
6	3.50	39.5	36.0	0.124	469.1	2392.1	2.35	26.8
7	3.00	36.0	33.0	0.124	466.9	2380.6	2.43	31.1
8	3.00	33.0	30.0	0.122	535.6	2731.0	2.74	35.7
9	4.00	30.0	26.0	0.121	578.9	2952.0	2.94	28.9
10	2.00	26.0	24.0	0.121	581.3	2964.2	3.05	58.1
11	4.00	24.0	20.0	0.122	593.7	3027.2	2.62	29.7
12	4.00	20.0	16.0	0.122	605.5	3087.4	2.22	30.3
13	4.00	16.0	12.0	0.122	602.2	3070.6	2.31	30.1
14	4.00	12.0	8.0	0.122	598.1	3049.7	2.43	29.9
15	4.00	8.0	4.0	0.122	599.5	3056.8	2.51	30.0
16	5.00	4.0	-1.0	0.122	666.6	3398.8	2.37	26.7
17	5.00	-1.0	-6.0	0.122	720.3	3672.8	2.27	28.8
18	2.00	-6.0	-8.0	0.122	720.6	3674.4	2.28	72.1
19	5.50	-8.0	-13.5	0.122	719.7	3670.1	2.31	26.2
20	5.60	-13.5	-19.1	0.122	738.1	3763.4	2.27	26.4
21	6.10	-19.1	-25.2	0.123	826.7	4215.5	2.08	27.1
22	6.10	-25.2	-31.3	0.123	824.9	4206.3	2.14	27.0
23	6.10	-31.3	-37.4	0.123	823.2	4197.3	2.20	27.0
24	6.10	-37.4	-43.5	0.125	847.5	4321.2	2.11	27.8
25	6.30	-43.5	-49.8	0.125	849.8	4332.9	2.28	27.0
26	6.40	-49.8	-56.2	0.125	861.8	4394.5	2.15	26.9
27	6.50	-56.2	-62.7	0.125	873.6	4454.6	2.03	26.9
28	6.60	-62.7	-69.3	0.125	880.2	4488.0	1.75	26.7
29	6.75	-69.3	-76.1	0.125	914.4	4662.7	2.31	27.1

Table 3H.6-1c Layer Thicknesses and Strain Compatible In-Situ Soil Properties Used or the SSI Analysis (Lower Bound) (Continued)

Layer No.	Thickness (ft)	Top Elevation of Layer (ft)	Bottom Elevation of Layer (ft)	Unit Weight (kcf)	S-Wave Vel. (ft/sec)	P-Wave Vel. (ft/sec)	Damping (%)	Passing Freq. for S-Wave Vel. (Hz)
30	6.75	-76.1	-82.8	0.125	913.7	4659.3	2.33	27.1
31	6.75	-82.8	-89.6	0.125	911.5	4647.6	2.34	27.0
32	6.75	-89.6	-96.3	0.125	910.9	4644.8	2.36	27.0
33	6.75	-96.3	-103.1	0.125	910.2	4641.2	2.37	27.0
34	6.50	-103.1	-109.6	0.125	883.2	4503.5	2.23	27.2
35	6.50	-109.6	-116.1	0.125	881.1	4492.6	2.26	27.1
36	6.75	-116.1	-122.8	0.125	908.0	4629.8	2.35	26.9
37	6.75	-122.8	-129.6	0.125	919.4	4688.2	2.39	27.2
38	6.75	-129.6	-136.3	0.125	919.3	4687.6	2.40	27.2
39	6.75	-136.3	-143.1	0.125	922.5	4703.8	2.41	27.3
40	6.75	-143.1	-149.8	0.125	922.7	4705.0	2.42	27.3
41	6.75	-149.8	-156.6	0.125	921.4	4698.5	2.43	27.3
42	6.75	-156.6	-163.3	0.125	919.3	4687.6	2.43	27.2
43	6.80	-163.3	-170.1	0.124	921.5	4698.6	2.41	27.1
44	6.90	-170.1	-177.0	0.124	928.7	4735.0	2.41	26.9
45	7.10	-177.0	-184.1	0.125	954.6	4855.4	2.36	26.9
46	7.40	-184.1	-191.5	0.127	985.8	5000.0	2.17	26.6
47	7.30	-191.5	-198.8	0.127	984.9	5000.0	2.32	27.0
48	7.30	-198.8	-206.1	0.127	984.7	5000.0	2.31	27.0
49	7.50	-206.1	-213.6	0.126	1020.4	5000.0	2.27	27.2
50	7.40	-213.6	-221.0	0.127	1010.5	5000.0	2.12	27.3
51	7.50	-221.0	-228.5	0.126	1018.3	5000.0	2.20	27.2
52	7.60	-228.5	-236.1	0.123	1034.4	5000.0	2.36	27.2
53	7.60	-236.1	-243.7	0.123	1034.1	5000.0	2.37	27.2
54	7.60	-243.7	-251.3	0.123	1033.9	5000.0	2.37	27.2
55	7.60	-251.3	-258.9	0.123	1033.7	5000.0	2.38	27.2
56	7.60	-258.9	-266.5	0.123	1036.0	5000.0	2.39	27.3
57	7.60	-266.5	-274.1	0.123	1037.2	5000.0	2.40	27.3
58	7.60	-274.1	-281.7	0.123	1036.9	5000.0	2.40	27.3

Table 3H.6-1c Layer Thicknesses and Strain Compatible In-Situ Soil Properties Used or the SSI Analysis (Lower Bound) (Continued)

Layer No.	Thickness (ft)	Top Elevation of Layer (ft)	Bottom Elevation of Layer (ft)	Unit Weight (kcf)	S-Wave Vel. (ft/sec)	P-Wave Vel. (ft/sec)	Damping (%)	Passing Freq. for S-Wave Vel. (Hz)
59	8.70	-281.7	-290.4	0.126	1160.9	5160.6	2.05	26.7
60	9.50	-290.4	-299.9	0.128	1252.4	5264.0	1.84	26.4
61	9.50	-299.9	-309.4	0.124	1290.5	5424.1	2.08	27.2
62	9.50	-309.4	-318.9	0.128	1309.8	5504.9	1.82	27.6
63	9.50	-318.9	-328.4	0.128	1310.1	5506.5	1.80	27.6
64	9.50	-328.4	-337.9	0.128	1309.5	5503.9	1.82	27.6
65	9.50	-337.9	-347.4	0.126	1300.6	5466.7	2.00	27.4
66	8.90	-347.4	-356.3	0.126	1206.9	5163.3	2.12	27.1
67	8.50	-356.3	-364.8	0.128	1156.1	5000.0	2.07	27.2
68	8.10	-364.8	-372.9	0.126	1092.9	5000.0	2.23	27.0
69	7.30	-372.9	-380.2	0.123	995.4	5000.0	2.53	27.3
70	7.30	-380.2	-387.5	0.123	995.3	5000.0	2.53	27.3
71	7.30	-387.5	-394.8	0.123	995.2	5000.0	2.53	27.3
72	7.30	-394.8	-402.1	0.124	987.8	4984.4	2.56	27.1
73	7.20	-402.1	-409.3	0.127	973.7	4955.8	2.61	27.0
74	7.30	-409.3	-416.6	0.123	990.9	5000.0	2.54	27.1
75	7.30	-416.6	-423.9	0.123	990.9	5000.0	2.54	27.1
76	7.30	-423.9	-431.2	0.123	990.7	5000.0	2.54	27.1
77	7.30	-431.2	-438.5	0.123	990.6	5000.0	2.54	27.1
78	7.30	-438.5	-445.8	0.123	992.8	5000.0	2.54	27.2
79	7.40	-445.8	-453.2	0.123	999.5	5000.0	2.54	27.0
80	7.40	-453.2	-460.6	0.123	999.5	5000.0	2.54	27.0
81	8.50	-460.6	-469.1	0.123	1158.6	5023.1	2.17	27.3
82	8.80	-469.1	-477.9	0.123	1196.2	5027.7	2.10	27.2
83	8.70	-477.9	-486.6	0.123	1178.1	5006.7	2.28	27.1
84	8.70	-486.6	-495.3	0.123	1172.4	5000.0	2.34	27.0
85	8.70	-495.3	-504.0	0123	1172.2	5000.0	2.34	26.9
86	8.70	-504.0	-512.7	0.123	1172.1	5000.0	2.34	26.9
87	8.60	-512.7	-521.3	0.123	1172.0	5000.0	2.34	27.3

Table 3H.6-1c Layer Thicknesses and Strain Compatible In-Situ Soil Properties Used or the SSI Analysis (Lower Bound) (Continued)

Layer No.	Thickness (ft)	Top Elevation of Layer (ft)	Bottom Elevation of Layer (ft)	Unit Weight (kcf)	S-Wave Vel. (ft/sec)	P-Wave Vel. (ft/sec)	Damping (%)	Passing Freq. for S-Wave Vel. (Hz)
88	8.60	-521.3	-529.9	0.123	1171.9	5000.0	2.35	27.3
89	8.60	-529.9	-538.5	0.123	1171.8	5000.0	2.35	27.3
90	8.60	-538.5	-547.1	0.123	1171.7	5000.0	2.35	27.2
91	9.10	-547.1	-556.2	0.125	1237.0	5022.9	1.85	27.2
92	10.20	-556.2	-566.4	0.129	1378.7	5065.8	0.91	27.0
93	10.20	-566.4	-576.6	0.129	1378.7	5065.8	0.91	27.0
94	10.20	-576.6	-586.8	0.129	1378.7	5065.8	0.91	27.0
95	10.20	-586.8	-597.0	0.129	1378.7	5065.8	0.91	27.0
96	10.20	-597.0	-607.2	0.129	1378.7	5065.8	0.91	27.0
97	10.20	-607.2	-617.4	0.129	1378.7	5065.8	0.91	27.0
98	10.20	-617.4	-627.6	0.129	1378.7	5065.8	0.91	27.0
99	10.20	-627.6	-637.8	0.129	1378.7	5065.8	0.91	27.0
100	10.20	-637.8	-648.0	0.129	1382.6	5080.1	0.91	27.1
Halfspace				0.129	1382.6	5080.1	0.913	-

Table 3H.6-2 Strain-Compatible Properties of Backfill Material

Soil Depth (ft)	Lower Bound Soil			Mean Soil			Upper Bound Soil		
	Vs (ft/sec)	Vp (ft/sec)	Damping (%)	Vs (ft/sec)	Vp (ft/sec)	Damping (%)	Vs (ft/sec)	Vp (ft/sec)	Damping (%)
0 to 8	449	1208	3	550	1480	2	673	1813	1
8 to 13	553	2323	3	677	2845	2	829	3485	1
13 to 18	586	2462	3	717	3015	2	879	3693	1
18 to 23	614	2580	3	752	3160	2	921	3870	1
23 to 28	639	2684	3	782	3288	2	958	4027	1
28 to 33	661	2778	3	809	3402	2	991	4166	1
33 to 38	681	2862	3	834	3506	2	1021	4294	1
38 to 43	699	2940	3	857	3601	2	1049	4410	1
43 to 48	717	3012	3	878	3689	2	1075	4518	1
48 to 53	733	3079	3	897	3771	2	1099	4619	1
53 to 58	748	3142	3	916	3849	2	1121	4714	1
58 to 63	762	3202	3	933	3922	2	1143	4803	1
63 to 68	775	3258	3	949	3991	2	1163	4888	1
68 to 73	788	3312	3	965	4056	2	1182	4968	1
73 to 78.25	800	3364	3	980	4120	2	1201	5046	1
78.25 to 83.25	812	3414	3	995	4182	2	1218	5121	1
83.25 to 88.25	823	3461	3	1009	4239	2	1235	5192	1
88.25 to 94.25	835	3510	3	1023	4299	2	1253	5266	1

Table 3H.6-2a Layer Thicknesses and Strain-Compatible Backfill Soil Properties Used for the SSI Analysis (Mean)

Layer No.	Thickness (ft)	Top Elevation of Layer (ft)	Bottom Elevation of Layer (ft)	Unit Weight (kcf)	S-Wave Vel. (ft/sec)	P-Wave Vel. (ft/sec)	Damping (%)	Passing Freq. for S-Wave Vel. (Hz)
1	2.75	56.0	53.3	0.120	550.0	1480.0	2.00	40.0
2	3.25	53.3	50.0	0.120	550.0	1480.0	2.00	33.8
3	3.50	50.0	46.5	0.120	598.1	1863.1	2.00	34.2
4	3.50	46.5	43.0	0.120	677.0	2845.0	2.00	38.7
5	3.50	43.0	39.5	0.120	717.0	3015.0	2.00	41.0
6	3.50	39.5	36.0	0.120	736.6	3096.2	2.00	42.1
7	3.00	36.0	33.0	0.120	752.0	3160.0	2.00	50.1
8	3.00	33.0	30.0	0.120	782.0	3288.0	2.00	52.1
9	4.00	30.0	26.0	0.120	795.3	3344.0	2.00	39.8
10	2.00	26.0	24.0	0.120	809.0	3402.0	2.00	80.9
11	4.00	24.0	20.0	0.120	827.6	3479.4	2.00	41.4
12	4.00	20.0	16.0	0.120	845.3	3552.9	2.00	42.3
13	4.00	16.0	12.0	0.120	862.2	3622.6	2.00	43.1
14	4.00	12.0	8.0	0.120	878.0	3689.0	2.00	43.9
15	4.00	8.0	4.0	0.120	897.0	3771.0	2.00	44.9
16	5.00	4.0	-1.0	0.120	912.1	3833.1	2.00	36.5
17	5.00	-1.0	-6.0	0.120	929.5	3907.2	2.00	37.2
18	2.00	-6.0	-8.0	0.120	940.9	3956.2	2.00	94.1

Table 3H.6-2b Layer Thicknesses and Strain-Compatible Backfill Soil Properties Used for the SSI Analysis (Upper Bound)

Layer No.	Thickness (ft)	Top Elevation of Layer (ft)	Bottom Elevation of Layer (ft)	Unit Weight (kcf)	S-Wave Vel. (ft/sec)	P-Wave Vel. (ft/sec)	Damping (%)	Passing Freq. for S-Wave Vel. (Hz)
1	2.75	56.0	53.3	0.120	673.0	1813.0	1.00	48.9
2	3.25	53.3	50.0	0.120	673.0	1813.0	1.00	41.1
3	3.50	50.0	46.5	0.120	732.0	2282.3	1.00	41.8
4	3.50	46.5	43.0	0.120	829.0	3485.0	1.00	47.4
5	3.50	43.0	39.5	0.120	879.0	3693.0	1.00	50.2
6	3.50	39.5	36.0	0.120	902.5	3792.1	1.00	51.6
7	3.00	36.0	33.0	0.120	921.0	3870.0	1.00	61.4
8	3.00	33.0	30.0	0.120	958.0	4027.0	1.00	63.9
9	4.00	30.0	26.0	0.120	974.2	4095.3	1.00	48.7
10	2.00	26.0	24.0	0.120	991.0	4166.0	1.00	99.1
11	4.00	24.0	20.0	0.120	1013.3	4261.3	1.00	50.7
12	4.00	20.0	16.0	0.120	1034.8	4351.2	1.00	51.7
13	4.00	16.0	12.0	0.120	1055.4	4436.5	1.00	52.8
14	4.00	12.0	8.0	0.120	1075.0	4518.0	1.00	53.8
15	4.00	8.0	4.0	0.120	1099.0	4619.0	1.00	55.0
16	5.00	4.0	-1.0	0.120	1116.5	4694.7	1.00	44.7
17	5.00	-1.0	-6.0	0.120	1138.5	4784.9	1.00	45.5
18	2.00	-6.0	-8.0	0.120	1152.9	4845.1	1.00	115.3

Table 3H.6-2c Layer Thicknesses and Strain-Compatible Backfill Soil Properties Used for the SSI Analysis (Lower Bound)

Layer No.	Thickness (ft)	Top Elevation of Layer (ft)	Bottom Elevation of Layer (ft)	Unit Weight (kcf)	S-Wave Vel. (ft/sec)	P-Wave Vel. (ft/sec)	Damping (%)	Passing Freq. for S-Wave Vel. (Hz)
1	2.75	56.0	53.3	0.120	449.0	1208.0	3.00	32.7
2	3.25	53.3	50.0	0.120	449.0	1208.0	3.00	27.6
3	3.50	50.0	46.5	0.120	488.4	1520.8	3.00	27.9
4	3.50	46.5	43.0	0.120	553.0	2323.0	3.00	31.6
5	3.50	43.0	39.5	0.120	586.0	2462.0	3.00	33.5
6	3.50	39.5	36.0	0.120	601.7	2528.1	3.00	34.4
7	3.00	36.0	33.0	0.120	614.0	2580.0	3.00	40.9
8	3.00	33.0	30.0	0.120	639.0	2684.0	3.00	42.6
9	4.00	30.0	26.0	0.120	649.8	2730.2	3.00	32.5
10	2.00	26.0	24.0	0.120	661.0	2778.0	3.00	66.1
11	4.00	24.0	20.0	0.120	675.9	2840.5	3.00	33.8
12	4.00	20.0	16.0	0.120	689.9	2900.5	3.00	34.5
13	4.00	16.0	12.0	0.120	703.4	2957.7	3.00	35.2
14	4.00	12.0	8.0	0.120	717.0	3012.0	3.00	35.9
15	4.00	8.0	4.0	0.120	733.0	3079.0	3.00	36.7
16	5.00	4.0	-1.0	0.120	745.0	3129.2	3.00	29.8
17	5.00	-1.0	-6.0	0.120	759.2	3189.8	3.00	30.4
18	2.00	-6.0	-8.0	0.120	768.4	3229.8	3.00	76.8

Table 3H.6-2d Comparison of Spectral Accelerations for Target 5% Damped Spectrum and Synthetic Time History Spectrum (E-W Time History)

Frequency (Hz)	Target Spectral Acceleration	Spectral Acceleration from Time History – (E-W)	Percentage Less than Target	Frequency (Hz)	Target Spectral Acceleration	Spectral Acceleration from Time History – (E-W)	Percentage Less than Target
0.1	0.0106	0.0119	-	0.224	0.0757	0.0777	-
0.102	0.0112	0.0123	-	0.229	0.08	0.0845	-
0.105	0.0119	0.0129	-	0.234	0.0846	0.0919	-
0.107	0.0126	0.0136	-	0.24	0.0895	0.0996	-
0.11	0.0133	0.0147	-	0.246	0.0947	0.107	-
0.112	0.014	0.016	-	0.251	0.0994	0.113	-
0.115	0.0148	0.0175	-	0.257	0.1014	0.1171	-
0.118	0.0157	0.0193	-	0.263	0.1034	0.1195	-
0.12	0.0166	0.0211	-	0.269	0.1055	0.1215	-
0.123	0.0176	0.0231	-	0.275	0.1076	0.1235	-
0.126	0.0186	0.025	-	0.282	0.1098	0.1255	-
0.129	0.0196	0.0268	-	0.288	0.112	0.1281	-
0.132	0.0208	0.0283	-	0.295	0.1142	0.1314	-
0.135	0.022	0.0295	-	0.302	0.1165	0.1344	-
0.138	0.0232	0.0302	-	0.309	0.1189	0.1349	-
0.141	0.0246	0.0305	-	0.316	0.1212	0.1318	-
0.145	0.026	0.0305	-	0.324	0.1237	0.1219	1.5%
0.148	0.0275	0.0303	-	0.331	0.1261	0.1329	-
0.151	0.0291	0.0302	-	0.339	0.1287	0.1436	-
0.155	0.0308	0.0305	1.0%	0.347	0.1313	0.1513	-
0.159	0.0326	0.0313	4.2%	0.355	0.1339	0.1573	-
0.162	0.0345	0.033	4.5%	0.363	0.1366	0.1606	-
0.166	0.0365	0.0354	3.1%	0.371	0.1393	0.1622	-
0.17	0.0385	0.0385	-	0.38	0.1421	0.1583	-
0.174	0.0408	0.042	-	0.389	0.145	0.1508	-
0.178	0.0431	0.0453	-	0.398	0.1479	0.1641	-
0.182	0.0457	0.0483	-	0.407	0.1509	0.1779	-
0.186	0.0483	0.0511	-	0.417	0.1539	0.1824	-

Table 3H.6-2d Comparison of Spectral Accelerations for Target 5% Damped Spectrum and Synthetic Time History Spectrum (E-W Time History) (Continued)

Frequency (Hz)	**Target Spectral Acceleration**	**Spectral Acceleration from Time History – (E-W)**	**Percentage Less than Target**	**Frequency (Hz)**	**Target Spectral Acceleration**	**Spectral Acceleration from Time History – (E-W)**	**Percentage Less than Target**
0.191	0.051	0.055	-	0.427	0.157	0.1842	-
0.195	0.054	0.059	-	0.436	0.1601	0.1897	-
0.2	0.0571	0.0622	-	0.447	0.1633	0.1956	-
0.204	0.0604	0.065	-	0.457	0.1666	0.1925	-
0.209	0.0639	0.0674	-	0.468	0.1699	0.1756	-
0.214	0.0676	0.07	-	0.479	0.1733	0.1889	-
0.219	0.0715	0.073	-	0.49	0.1768	0.2054	-
0.5	0.18	0.2133	-	1.096	0.268	0.3131	-
0.501	0.1802	0.2133	-	1.122	0.2712	0.306	-
0.513	0.1823	0.2061	-	1.148	0.2743	0.304	-
0.525	0.1845	0.194	-	1.175	0.2776	0.3014	-
0.537	0.1866	0.2049	-	1.202	0.2808	0.2998	-
0.55	0.1888	0.2104	-	1.23	0.2841	0.3034	-
0.562	0.191	0.2173	-	1.259	0.2874	0.3143	-
0.575	0.1933	0.2228	-	1.288	0.2908	0.3137	-
0.589	0.1956	0.2271	-	1.318	0.2942	0.3295	-
0.603	0.1979	0.2313	-	1.349	0.2977	0.3442	-
0.617	0.2002	0.2354	-	1.38	0.3012	0.3366	-
0.631	0.2025	0.2385	-	1.412	0.3047	0.3276	-
0.646	0.2049	0.2402	-	1.445	0.3083	0.3508	-
0.661	0.2073	0.2402	-	1.479	0.3119	0.3524	-
0.676	0.2097	0.2387	-	1.514	0.3156	0.3555	-
0.692	0.2122	0.2364	-	1.549	0.3193	0.3626	-
0.708	0.2147	0.2353	-	1.585	0.323	0.3688	-
0.724	0.2172	0.237	-	1.622	0.3268	0.3755	-
0.741	0.2198	0.2393	-	1.659	0.3307	0.377	-
0.759	0.2224	0.2429	-	1.698	0.3345	0.3599	-
0.776	0.225	0.2527	-	1.738	0.3385	0.3894	-
0.794	0.2276	0.2595	-	1.778	0.3425	0.3968	-

Table 3H.6-2d Comparison of Spectral Accelerations for Target 5% Damped Spectrum and Synthetic Time History Spectrum (E-W Time History) (Continued)

Frequency (Hz)	Target Spectral Acceleration	Spectral Acceleration from Time History – (E-W)	Percentage Less than Target	Frequency (Hz)	Target Spectral Acceleration	Spectral Acceleration from Time History – (E-W)	Percentage Less than Target
0.813	0.2303	0.2569	-	1.82	0.3465	0.3994	-
0.832	0.233	0.2622	-	1.862	0.3505	0.4027	-
0.851	0.2357	0.2669	-	1.905	0.3547	0.3804	-
0.871	0.2385	0.2702	-	1.95	0.3588	0.3969	-
0.891	0.2413	0.2711	-	1.995	0.363	0.4157	-
0.912	0.2441	0.2703	-	2.042	0.3673	0.42	-
0.933	0.247	0.2697	-	2.089	0.3716	0.4167	-
0.955	0.2499	0.2664	-	2.138	0.376	0.4158	-
0.977	0.2528	0.2605	-	2.188	0.3804	0.4123	-
1	0.2558	0.2614	-	2.239	0.3848	0.4421	-
1.023	0.2588	0.279	-	2.291	0.3894	0.442	-
1.047	0.2618	0.2846	-	2.344	0.3939	0.4312	-
1.071	0.2649	0.3019	-	2.399	0.3986	0.4344	-
2.455	0.4032	0.4561	-	5.249	0.3661	0.4155	-
2.5	0.407	0.458	-	5.371	0.3649	0.3992	-
2.512	0.4067	0.4548	-	5.495	0.3637	0.3969	-
2.571	0.4054	0.4526	-	5.624	0.3625	0.4013	-
2.63	0.4041	0.4573	-	5.754	0.3613	0.4031	-
2.692	0.4027	0.4499	-	5.889	0.3602	0.3971	-
2.754	0.4014	0.4415	-	6.024	0.359	0.3893	-
2.818	0.4001	0.437	-	6.165	0.3578	0.3906	-
2.884	0.3988	0.4532	-	6.309	0.3566	0.3964	-
2.952	0.3975	0.4547	-	6.456	0.3555	0.4052	-
3.02	0.3962	0.449	-	6.605	0.3543	0.3992	-
3.09	0.3949	0.4376	-	6.761	0.3531	0.3775	-
3.163	0.3936	0.4301	-	6.92	0.352	0.3885	-
3.236	0.3923	0.4464	-	7.077	0.3508	0.4094	-
3.311	0.391	0.4537	-	7.246	0.3497	0.4119	-
3.389	0.3897	0.4431	-	7.413	0.349	0.4112	-

Table 3H.6-2d Comparison of Spectral Accelerations for Target 5% Damped Spectrum and Synthetic Time History Spectrum (E-W Time History) (Continued)

Frequency (Hz)	Target Spectral Acceleration	Spectral Acceleration from Time History – (E-W)	Percentage Less than Target	Frequency (Hz)	Target Spectral Acceleration	Spectral Acceleration from Time History – (E-W)	Percentage Less than Target
3.467	0.3884	0.4255	-	7.587	0.347	0.4092	-
3.549	0.3872	0.434	-	7.764	0.346	0.3939	-
3.631	0.3859	0.4236	-	7.943	0.345	0.3753	-
3.715	0.3846	0.4266	-	8.13	0.344	0.3744	-
3.802	0.3834	0.4346	-	8.319	0.343	0.3821	-
3.891	0.3821	0.4275	-	8.511	0.342	0.3825	-
3.981	0.3809	0.416	-	8.711	0.341	0.3792	-
4.073	0.3796	0.4262	-	8.913	0.339	0.3773	-
4.168	0.3784	0.426	-	9.124	0.336	0.3774	-
4.266	0.3771	0.4199	-	9.328	0.33	0.3785	-
4.365	0.3759	0.4244	-	9.551	0.324	0.3648	-
4.466	0.3746	0.4249	-	9.775	0.319	0.3598	-
4.57	0.3734	0.421	-	10	0.314	0.3565	-
4.677	0.3722	0.4029	-	10.235	0.308	0.3522	-
4.787	0.371	0.4141	-	10.471	0.303	0.3331	-
4.897	0.3698	0.4194	-	10.718	0.298	0.3288	-
5	0.3687	0.4188	-	10.965	0.293	0.3356	-
5.013	0.3685	0.4181	-	11.223	0.288	0.324	-
5.128	0.3673	0.4196	-	11.481	0.283	0.3146	-
11.751	0.278	0.3073	-	25.707	0.1563	0.1683	-
12.019	0.274	0.2985	-	26.316	0.1537	0.1658	-
12.3	0.269	0.2821	-	26.882	0.1511	0.1622	-
12.594	0.265	0.3001	-	27.548	0.1485	0.1599	-
12.887	0.26	0.3014	-	28.169	0.146	0.1643	-
13.175	0.256	0.2846	-	28.818	0.1436	0.1656	-
13.495	0.252	0.2863	-	29.499	0.1412	0.1628	-
13.812	0.247	0.2711	-	30.211	0.1388	0.1631	-
14.124	0.243	0.2659	-	30.864	0.1365	0.1616	-
14.451	0.239	0.2621	-	31.646	0.1342	0.1585	-

Table 3H.6-2d Comparison of Spectral Accelerations for Target 5% Damped Spectrum and Synthetic Time History Spectrum (E-W Time History) (Continued)

Frequency (Hz)	Target Spectral Acceleration	Spectral Acceleration from Time History – (E-W)	Percentage Less than Target	Frequency (Hz)	Target Spectral Acceleration	Spectral Acceleration from Time History – (E-W)	Percentage Less than Target
14.793	0.235	0.2534	-	32.362	0.1319	0.1542	-
15.129	0.231	0.2577	-	33.113	0.13	0.1496	-
15.48	0.227	0.253	-	33.898	0.13	0.1454	-
15.848	0.223	0.251	-	34.722	0.13	0.1426	-
16.207	0.22	0.2464	-	35.461	0.13	0.1398	-
16.584	0.216	0.2412	-	36.364	0.13	0.1394	-
16.978	0.212	0.2305	-	37.175	0.13	0.1434	-
17.391	0.209	0.2316	-	38.023	0.13	0.1438	-
17.794	0.205	0.2273	-	38.911	0.13	0.1444	-
18.182	0.202	0.2253	-	39.841	0.13	0.143	-
18.622	0.198	0.2368	-	40.816	0.13	0.1419	-
19.048	0.195	0.2353	-	41.667	0.13	0.1428	-
19.493	0.1917	0.2275	-	42.735	0.13	0.1436	-
19.96	0.1884	0.2073	-	43.668	0.13	0.1449	-
20.408	0.1853	0.1903	-	44.643	0.13	0.1399	-
20.877	0.1821	0.1951	-	45.662	0.13	0.1425	-
21.368	0.1791	0.1997	-	46.729	0.13	0.1447	-
21.882	0.176	0.2008	-	47.847	0.13	0.1461	-
22.371	0.1731	0.1974	-	49.02	0.13	0.146	-
22.883	0.1702	0.2031	-	50.251	0.13	0.1454	-
23.419	0.1673	0.1967	-				-
23.981	0.1645	0.1908	-				-
24.57	0.1617	0.1788	-				-
25	0.1595	0.1709	-				-
25.126	0.159	0.1705	-				-

Table 3H.6-2e Comparison of Spectral Accelerations for Target 5% Damped Spectrum and Synthetic Time History Spectrum (N-S Time History)

Frequency (Hz)	Target Spectral Acceleration	Spectral Acceleration from Time History - (N-S)	Percentage Less than Target	Frequency (Hz)	Target Spectral Acceleration	Spectral Acceleration from Time History - (N-S)	Percentage Less than Target
0.1	0.0106	0.0111	-	0.224	0.0757	0.0801	-
0.102	0.0112	0.0121	-	0.229	0.08	0.08	-
0.105	0.0119	0.0133	-	0.234	0.0846	0.0864	-
0.107	0.0126	0.0145	-	0.24	0.0895	0.0916	-
0.11	0.0133	0.0158	-	0.246	0.0947	0.0933	1.5%
0.112	0.014	0.0173	-	0.251	0.0994	0.0981	1.3%
0.115	0.0148	0.0187	-	0.257	0.1014	0.1062	-
0.118	0.0157	0.0203	-	0.263	0.1034	0.1128	-
0.12	0.0166	0.0217	-	0.269	0.1055	0.1168	-
0.123	0.0176	0.0232	-	0.275	0.1076	0.1182	-
0.126	0.0186	0.025	-	0.282	0.1098	0.118	-
0.129	0.0196	0.0277	-	0.288	0.112	0.1189	-
0.132	0.0208	0.0303	-	0.295	0.1142	0.1235	-
0.135	0.022	0.0326	-	0.302	0.1165	0.1265	-
0.138	0.0232	0.0345	-	0.309	0.1189	0.1279	-
0.141	0.0246	0.036	-	0.316	0.1212	0.1294	-
0.145	0.026	0.037	-	0.324	0.1237	0.1342	-
0.148	0.0275	0.0374	-	0.331	0.1261	0.1387	-
0.151	0.0291	0.0374	-	0.339	0.1287	0.1429	-
0.155	0.0308	0.0375	-	0.347	0.1313	0.147	-
0.159	0.0326	0.0373	-	0.355	0.1339	0.1507	-
0.162	0.0345	0.0371	-	0.363	0.1366	0.154	-
0.166	0.0365	0.0369	-	0.371	0.1393	0.1569	-
0.17	0.0385	0.0373	3.2%	0.38	0.1421	0.1592	-
0.174	0.0408	0.0394	3.6%	0.389	0.145	0.1609	-
0.178	0.0431	0.0421	2.4%	0.398	0.1479	0.1621	-
0.182	0.0457	0.0457	-	0.407	0.1509	0.1628	-
0.186	0.0483	0.0502	-	0.417	0.1539	0.163	-

Table 3H.6-2e Comparison of Spectral Accelerations for Target 5% Damped Spectrum and Synthetic Time History Spectrum (N-S Time History) (Continued)

Frequency (Hz)	Target Spectral Acceleration	Spectral Acceleration from Time History - (N-S)	Percentage Less than Target	Frequency (Hz)	Target Spectral Acceleration	Spectral Acceleration from Time History - (N-S)	Percentage Less than Target
0.191	0.051	0.0557	-	0.427	0.157	0.1748	-
0.195	0.054	0.0617	-	0.436	0.1601	0.1886	-
0.2	0.0571	0.0668	-	0.447	0.1633	0.1903	-
0.204	0.0604	0.0702	-	0.457	0.1666	0.1804	-
0.209	0.0639	0.0708	-	0.468	0.1699	0.1804	-
0.214	0.0676	0.073	-	0.479	0.1733	0.1773	-
0.219	0.0715	0.0782	-	0.49	0.1768	0.1868	-
0.5	0.18	0.1939	-	1.096	0.268	0.2904	-
0.501	0.1802	0.1948	-	1.122	0.2712	0.2979	-
0.513	0.1823	0.2027	-	1.148	0.2743	0.3035	-
0.525	0.1845	0.2028	-	1.175	0.2776	0.3031	-
0.537	0.1866	0.2029	-	1.202	0.2808	0.3058	-
0.55	0.1888	0.2112	-	1.23	0.2841	0.313	-
0.562	0.191	0.1992	-	1.259	0.2874	0.3161	-
0.575	0.1933	0.2094	-	1.288	0.2908	0.3043	-
0.589	0.1956	0.218	-	1.318	0.2942	0.3225	-
0.603	0.1979	0.2219	-	1.349	0.2977	0.3322	-
0.617	0.2002	0.2257	-	1.38	0.3012	0.3329	-
0.631	0.2025	0.2263	-	1.412	0.3047	0.3266	-
0.646	0.2049	0.2249	-	1.445	0.3083	0.3396	-
0.661	0.2073	0.2251	-	1.479	0.3119	0.3465	-
0.676	0.2097	0.228	-	1.514	0.3156	0.3497	-
0.692	0.2122	0.2327	-	1.549	0.3193	0.3526	-
0.708	0.2147	0.2359	-	1.585	0.323	0.3577	-
0.724	0.2172	0.2348	-	1.622	0.3268	0.3644	-
0.741	0.2198	0.247	-	1.659	0.3307	0.3702	-
0.759	0.2224	0.2383	-	1.698	0.3345	0.3723	-
0.776	0.225	0.2463	-	1.738	0.3385	0.3694	-
0.794	0.2276	0.2468	-	1.778	0.3425	0.365	-

Table 3H.6-2e Comparison of Spectral Accelerations for Target 5% Damped Spectrum and Synthetic Time History Spectrum (N-S Time History) (Continued)

Frequency (Hz)	Target Spectral Acceleration	Spectral Acceleration from Time History - (N-S)	Percentage Less than Target	Frequency (Hz)	Target Spectral Acceleration	Spectral Acceleration from Time History - (N-S)	Percentage Less than Target
0.813	0.2303	0.2496	-	1.82	0.3465	0.3724	-
0.832	0.233	0.2574	-	1.862	0.3505	0.4028	-
0.851	0.2357	0.2647	-	1.905	0.3547	0.4082	-
0.871	0.2385	0.2705	-	1.95	0.3588	0.4003	-
0.891	0.2413	0.2718	-	1.995	0.363	0.3918	-
0.912	0.2441	0.2646	-	2.042	0.3673	0.393	-
0.933	0.247	0.2701	-	2.089	0.3716	0.4265	-
0.955	0.2499	0.2714	-	2.138	0.376	0.422	-
0.977	0.2528	0.2732	-	2.188	0.3804	0.4103	-
1	0.2558	0.279	-	2.239	0.3848	0.4202	-
1.023	0.2588	0.2851	-	2.291	0.3894	0.4271	-
1.047	0.2618	0.2907	-	2.344	0.3939	0.4331	-
1.071	0.2649	0.294	-	2.399	0.3986	0.4345	-
2.455	0.4032	0.4309	-	5.249	0.3661	0.4074	-
2.5	0.407	0.4462	-	5.371	0.3649	0.4083	-
2.512	0.4067	0.4494	-	5.495	0.3637	0.4079	-
2.571	0.4054	0.4537	-	5.624	0.3625	0.4027	-
2.63	0.4041	0.4421	-	5.754	0.3613	0.3928	-
2.692	0.4027	0.4258	-	5.889	0.3602	0.3905	-
2.754	0.4014	0.4424	-	6.024	0.359	0.3932	-
2.818	0.4001	0.4351	-	6.165	0.3578	0.3929	-
2.884	0.3988	0.4337	-	6.309	0.3566	0.3938	-
2.952	0.3975	0.445	-	6.456	0.3555	0.3905	-
3.02	0.3962	0.4484	-	6.605	0.3543	0.3839	-
3.09	0.3949	0.4447	-	6.761	0.3531	0.3916	-
3.163	0.3936	0.4247	-	6.92	0.352	0.3922	-
3.236	0.3923	0.4246	-	7.077	0.3508	0.3964	-
3.311	0.391	0.4452	-	7.246	0.3497	0.3951	-
3.389	0.3897	0.4372	-	7.413	0.349	0.3768	-

Table 3H.6-2e Comparison of Spectral Accelerations for Target 5% Damped Spectrum and Synthetic Time History Spectrum (N-S Time History) (Continued)

Frequency (Hz)	Target Spectral Acceleration	Spectral Acceleration from Time History - (N-S)	Percentage Less than Target	Frequency (Hz)	Target Spectral Acceleration	Spectral Acceleration from Time History - (N-S)	Percentage Less than Target
3.467	0.3884	0.4171	-	7.587	0.347	0.375	-
3.549	0.3872	0.4115	-	7.764	0.346	0.38	-
3.631	0.3859	0.428	-	7.943	0.345	0.3788	-
3.715	0.3846	0.425	-	8.13	0.344	0.3709	-
3.802	0.3834	0.4256	-	8.319	0.343	0.386	-
3.891	0.3821	0.4153	-	8.511	0.342	0.3889	-
3.981	0.3809	0.4184	-	8.711	0.341	0.3783	-
4.073	0.3796	0.4156	-	8.913	0.339	0.3706	-
4.168	0.3784	0.4101	-	9.124	0.336	0.3642	-
4.266	0.3771	0.4034	-	9.328	0.33	0.3599	-
4.365	0.3759	0.4171	-	9.551	0.324	0.359	-
4.466	0.3746	0.4159	-	9.775	0.319	0.3422	-
4.57	0.3734	0.4077	-	10	0.314	0.344	-
4.677	0.3722	0.4088	-	10.235	0.308	0.3423	-
4.787	0.371	0.4147	-	10.471	0.303	0.3321	-
4.897	0.3698	0.4036	-	10.718	0.298	0.3252	-
5	0.3687	0.3998	-	10.965	0.293	0.3213	-
5.013	0.3685	0.4018	-	11.223	0.288	0.3137	-
5.128	0.3673	0.4093	-	11.481	0.283	0.3232	-
11.751	0.278	0.3143	-	25.707	0.1563	0.1846	-
12.019	0.274	0.3016	-	26.316	0.1537	0.1887	-
12.3	0.269	0.2917	-	26.882	0.1511	0.1815	-
12.594	0.265	0.2816	-	27.548	0.1485	0.1703	-
12.887	0.26	0.2812	-	28.169	0.146	0.1643	-
13.175	0.256	0.2844	-	28.818	0.1436	0.1599	-
13.495	0.252	0.2854	-	29.499	0.1412	0.1563	-
13.812	0.247	0.2787	-	30.211	0.1388	0.1556	-
14.124	0.243	0.2722	-	30.864	0.1365	0.1554	-
14.451	0.239	0.2643	-	31.646	0.1342	0.1549	-

Table 3H.6-2e Comparison of Spectral Accelerations for Target 5% Damped Spectrum and Synthetic Time History Spectrum (N-S Time History) (Continued)

Frequency (Hz)	Target Spectral Acceleration	Spectral Acceleration from Time History - (N-S)	Percentage Less than Target	Frequency (Hz)	Target Spectral Acceleration	Spectral Acceleration from Time History - (N-S)	Percentage Less than Target
14.793	0.235	0.2558	-	32.362	0.1319	0.1553	-
15.129	0.231	0.2519	-	33.113	0.13	0.1548	-
15.48	0.227	0.2476	-	33.898	0.13	0.1538	-
15.848	0.223	0.2449	-	34.722	0.13	0.1529	-
16.207	0.22	0.2422	-	35.461	0.13	0.1517	-
16.584	0.216	0.2401	-	36.364	0.13	0.1506	-
16.978	0.212	0.2359	-	37.175	0.13	0.1501	-
17.391	0.209	0.2288	-	38.023	0.13	0.1502	-
17.794	0.205	0.2221	-	38.911	0.13	0.1505	-
18.182	0.202	0.2195	-	39.841	0.13	0.1502	-
18.622	0.198	0.2181	-	40.816	0.13	0.1502	-
19.048	0.195	0.2124	-	41.667	0.13	0.1499	-
19.493	0.1917	0.2048	-	42.735	0.13	0.1493	-
19.96	0.1884	0.1989	-	43.668	0.13	0.1491	-
20.408	0.1853	0.2104	-	44.643	0.13	0.1489	-
20.877	0.1821	0.2076	-	45.662	0.13	0.1485	-
21.368	0.1791	0.2035	-	46.729	0.13	0.1483	-
21.882	0.176	0.2014	-	47.847	0.13	0.1482	-
22.371	0.1731	0.1952	-	49.02	0.13	0.1482	-
22.883	0.1702	0.1882	-	50.251	0.13	0.148	-
23.419	0.1673	0.184	-				-
23.981	0.1645	0.1778	-				-
24.57	0.1617	0.1704	-				-
25	0.1595	0.1742	-				-
25.126	0.159	0.1767	-				-

Table 3H.6-2f Comparison of Spectral Accelerations for Target 5% Damped Spectrum and Synthetic Time History Spectrum (Vertical Time History)

Frequency (Hz)	Target Spectral Acceleration	Spectral Acceleration from Time History –V1	Percentage Less than Target	Frequency (Hz)	Target Spectral Acceleration	Spectral Acceleration from Time History –V1	Percentage Less than Target
0.1	0.0071	0.0101	-	0.224	0.0506	0.0534	-
0.102	0.0075	0.0108	-	0.229	0.0535	0.0552	-
0.105	0.0079	0.0115	-	0.234	0.0566	0.0582	-
0.107	0.0084	0.0123	-	0.24	0.0599	0.0617	-
0.11	0.0088	0.0129	-	0.246	0.0633	0.0652	-
0.112	0.0094	0.0135	-	0.251	0.0665	0.0683	-
0.115	0.0099	0.0141	-	0.257	0.068	0.071	-
0.118	0.0105	0.0146	-	0.263	0.0695	0.073	-
0.12	0.0111	0.0149	-	0.269	0.0711	0.0778	-
0.123	0.0117	0.0152	-	0.275	0.0727	0.0822	-
0.126	0.0124	0.0154	-	0.282	0.0744	0.0847	-
0.129	0.0131	0.016	-	0.288	0.0761	0.0845	-
0.132	0.0139	0.0166	-	0.295	0.0778	0.0812	-
0.135	0.0147	0.0173	-	0.302	0.0796	0.0854	-
0.138	0.0155	0.018	-	0.309	0.0814	0.0895	-
0.141	0.0164	0.0184	-	0.316	0.0832	0.0921	-
0.145	0.0174	0.0186	-	0.324	0.0851	0.0932	-
0.148	0.0184	0.0186	-	0.331	0.087	0.0935	-
0.151	0.0194	0.0195	-	0.339	0.089	0.0939	-
0.155	0.0206	0.0206	-	0.347	0.091	0.0959	-
0.159	0.0217	0.0222	-	0.355	0.0931	0.099	-
0.162	0.023	0.0236	-	0.363	0.0952	0.103	-
0.166	0.0243	0.0249	-	0.371	0.0974	0.1069	-
0.17	0.0257	0.026	-	0.38	0.0996	0.109	-
0.174	0.0272	0.0272	-	0.389	0.1018	0.1092	
0.178	0.0288	0.0287	0.35%	0.398	0.1041	0.1096	-
0.182	0.0305	0.0305	-	0.407	0.1065	0.1124	-
0.186	0.0322	0.0327	-	0.417	0.1089	0.1183	-
0.191	0.0341	0.0354	-	0.427	0.1114	0.1238	-

Table 3H.6-2f Comparison of Spectral Accelerations for Target 5% Damped Spectrum and Synthetic Time History Spectrum (Vertical Time History) (Continued)

Frequency (Hz)	Target Spectral Acceleration	Spectral Acceleration from Time History –V1	Percentage Less than Target	Frequency (Hz)	Target Spectral Acceleration	Spectral Acceleration from Time History –V1	Percentage Less than Target
0.195	0.0361	0.0385	-	0.436	0.1139	0.1264	-
0.2	0.0381	0.0418	-	0.447	0.1165	0.129	-
0.204	0.0404	0.0452	-	0.457	0.1191	0.1269	-
0.209	0.0427	0.0481	-	0.468	0.1218	0.1199	1.58%
0.214	0.0452	0.0506	-	0.479	0.1246	0.1203	3.57%
0.219	0.0478	0.0524	-	0.49	0.1274	0.1376	-
0.5	0.13	0.1467	-	1.096	0.2019	0.2192	-
0.501	0.1302	0.1473	-	1.122	0.2045	0.2209	-
0.513	0.1319	0.1506	-	1.148	0.2072	0.2163	-
0.525	0.1336	0.1484	-	1.175	0.2099	0.2277	-
0.537	0.1353	0.138	-	1.202	0.2126	0.2264	-
0.55	0.1371	0.1486	-	1.23	0.2154	0.229	-
0.562	0.1388	0.1578	-	1.259	0.2182	0.238	-
0.575	0.1407	0.1568	-	1.288	0.221	0.2453	-
0.589	0.1425	0.1451	-	1.318	0.2239	0.2505	-
0.603	0.1443	0.1558	-	1.349	0.2268	0.2532	-
0.617	0.1462	0.1615	-	1.38	0.2297	0.2529	-
0.631	0.1481	0.1624	-	1.412	0.2327	0.2504	-
0.646	0.15	0.1613	-	1.445	0.2357	0.2466	-
0.661	0.152	0.1599	-	1.479	0.2388	0.2494	-
0.676	0.154	0.1597	-	1.514	0.2419	0.2577	-
0.692	0.156	0.1632	-	1.549	0.245	0.2626	-
0.708	0.158	0.1774	-	1.585	0.2482	0.2612	-
0.724	0.16	0.1746	-	1.622	0.2514	0.263	-
0.741	0.1621	0.1669	-	1.659	0.2547	0.2671	-
0.759	0.1642	0.1656	-	1.698	0.258	0.2677	-
0.776	0.1663	0.1654	0.54%	1.738	0.2614	0.271	-
0.794	0.1685	0.169	-	1.778	0.2648	0.2946	-
0.813	0.1707	0.1762	-	1.82	0.2682	0.2794	-

Table 3H.6-2f Comparison of Spectral Accelerations for Target 5% Damped Spectrum and Synthetic Time History Spectrum (Vertical Time History) (Continued)

Frequency (Hz)	Target Spectral Acceleration	Spectral Acceleration from Time History –V1	Percentage Less than Target	Frequency (Hz)	Target Spectral Acceleration	Spectral Acceleration from Time History –V1	Percentage Less than Target
0.832	0.1729	0.1823	-	1.862	0.2717	0.2976	-
0.851	0.1752	0.19	-	1.905	0.2752	0.3047	-
0.871	0.1775	0.192	-	1.95	0.2788	0.2924	-
0.891	0.1798	0.1986	-	1.995	0.2824	0.3099	-
0.912	0.1821	0.1913	-	2.042	0.2861	0.3248	-
0.933	0.1845	0.2081	-	2.089	0.2898	0.3319	-
0.955	0.1868	0.205	-	2.138	0.2936	0.3319	-
0.977	0.1893	0.1905	-	2.188	0.2974	0.3102	-
1	0.1917	0.2056	-	2.239	0.3012	0.3101	-
1.023	0.1942	0.2134	-	2.291	0.3052	0.3294	-
1.047	0.1967	0.2171	-	2.344	0.3091	0.337	-
1.071	0.1993	0.2166	-	2.399	0.3131	0.335	-
2.455	0.3172	0.3366	-	5.249	0.3656	0.3918	-
2.5	0.3205	0.3425	-	5.371	0.3645	0.387	-
2.512	0.3213	0.3443	-	5.495	0.3633	0.3886	-
2.571	0.3255	0.3509	-	5.624	0.3621	0.396	-
2.63	0.3297	0.3536	-	5.754	0.3609	0.3873	-
2.692	0.334	0.3613	-	5.889	0.3598	0.3866	-
2.754	0.3384	0.367	-	6.024	0.3586	0.4048	-
2.818	0.3427	0.3586	-	6.165	0.3575	0.406	-
2.884	0.3472	0.3755	-	6.309	0.3563	0.4029	-
2.952	0.3517	0.3927	-	6.456	0.3552	0.3828	-
3.02	0.3563	0.3983	-	6.605	0.354	0.3716	-
3.09	0.3609	0.3991	-	6.761	0.3529	0.3809	-
3.163	0.3656	0.4006	-	6.92	0.3517	0.3851	-
3.236	0.3703	0.4073	-	7.077	0.3506	0.3867	-
3.311	0.3752	0.4222	-	7.246	0.3495	0.3685	-
3.389	0.38	0.4347	-	7.413	0.348	0.3488	-
3.467	0.385	0.4162	-	7.587	0.347	0.3884	-

Table 3H.6-2f Comparison of Spectral Accelerations for Target 5% Damped Spectrum and Synthetic Time History Spectrum (Vertical Time History) (Continued)

Frequency (Hz)	Target Spectral Acceleration	Spectral Acceleration from Time History –V1	Percentage Less than Target	Frequency (Hz)	Target Spectral Acceleration	Spectral Acceleration from Time History –V1	Percentage Less than Target
3.549	0.3863	0.3931	-	7.764	0.346	0.3934	-
3.631	0.385	0.419	-	7.943	0.345	0.3712	-
3.715	0.3838	0.4216	-	8.13	0.344	0.367	-
3.802	0.3825	0.4112	-	8.319	0.343	0.3804	-
3.891	0.3813	0.4072	-	8.511	0.342	0.3669	-
3.981	0.3801	0.3966	-	8.711	0.341	0.3589	-
4.073	0.3788	0.4033	-	8.913	0.339	0.3563	-
4.168	0.3776	0.4212	-	9.124	0.336	0.3603	-
4.266	0.3764	0.4112	-	9.328	0.33	0.3554	-
4.365	0.3752	0.3923	-	9.551	0.324	0.347	-
4.466	0.374	0.3998	-	9.775	0.319	0.3497	-
4.57	0.3728	0.4	-	10	0.314	0.3288	-
4.677	0.3716	0.4118	-	10.235	0.308	0.3309	-
4.787	0.3704	0.4134	-	10.471	0.303	0.3334	-
4.897	0.3692	0.3894	-	10.718	0.298	0.3315	-
5	0.3681	0.395	-	10.965	0.293	0.325	-
5.013	0.368	0.3967	-	11.223	0.288	0.3163	-
5.128	0.3668	0.3969	-	11.481	0.283	0.3117	-
11.751	0.278	0.2999	-	25.707	0.1563	0.1818	-
12.019	0.274	0.2913	-	26.316	0.1537	0.1875	-
12.3	0.269	0.2869	-	26.882	0.1511	0.1815	-
12.594	0.265	0.2927	-	27.548	0.1485	0.1748	-
12.887	0.26	0.2874	-	28.169	0.146	0.16	-
13.175	0.256	0.275	-	28.818	0.1436	0.1496	-
13.495	0.252	0.2691	-	29.499	0.1412	0.1518	-
13.812	0.247	0.259	-	30.211	0.1388	0.1547	-
14.124	0.243	0.2489	-	30.864	0.1365	0.1535	-
14.451	0.239	0.25	-	31.646	0.1342	0.1592	-
14.793	0.235	0.2586	-	32.362	0.1319	0.1541	-

Table 3H.6-2f Comparison of Spectral Accelerations for Target 5% Damped Spectrum and Synthetic Time History Spectrum (Vertical Time History) (Continued)

Frequency (Hz)	Target Spectral Acceleration	Spectral Acceleration from Time History –V1	Percentage Less than Target	Frequency (Hz)	Target Spectral Acceleration	Spectral Acceleration from Time History –V1	Percentage Less than Target
15.129	0.231	0.2559	-	33.113	0.13	0.1483	-
15.48	0.227	0.2509	-	33.898	0.13	0.143	-
15.848	0.223	0.2382	-	34.722	0.13	0.1367	-
16.207	0.22	0.2358	-	35.461	0.13	0.1336	-
16.584	0.216	0.239	-	36.364	0.13	0.1332	-
16.978	0.212	0.2318	-	37.175	0.13	0.1362	-
17.391	0.209	0.22	-	38.023	0.13	0.1393	-
17.794	0.205	0.2173	-	38.911	0.13	0.1423	-
18.182	0.202	0.2192	-	39.841	0.13	0.1447	-
18.622	0.198	0.2165	-	40.816	0.13	0.1461	-
19.048	0.195	0.2141	-	41.667	0.13	0.1425	-
19.493	0.1917	0.2073	-	42.735	0.13	0.1389	-
19.96	0.1884	0.2038	-	43.668	0.13	0.1358	-
20.408	0.1853	0.2047	-	44.643	0.13	0.1318	-
20.877	0.1821	0.2039	-	45.662	0.13	0.1332	-
21.368	0.1791	0.2043	-	46.729	0.13	0.1337	-
21.882	0.176	0.1998	-	47.847	0.13	0.1338	-
22.371	0.1731	0.1925	-	49.02	0.13	0.1341	-
22.883	0.1702	0.1813	-	50.251	0.13	0.1346	-
23.419	0.1673	0.175	-				-
23.981	0.1645	0.165	-				-
24.57	0.1617	0.169	-				-
25	0.1595	0.1752	-				-
25.126	0.159	0.1783	-				-

Table 3H.6-3 Dominant UHS and RSW Pump House Natural Frequencies

Dominant Modes in the Global X Direction				
		Mass Participation Ratios		
Mode	Frequency	UX	UY	UZ
	(Hz)	Unitless	Unitless	Unitless
1	2.1333	0.1708	0.0000	0.0000
177	14.6380	0.0624	0.0002	0.0006
106	9.5127	0.0369	0.0000	0.0000
105	9.3212	0.0289	0.0172	0.0001
78	7.2357	0.0250	0.0001	0.0000
128	11.2070	0.0199	0.0000	0.0000
76	7.1367	0.0186	0.0001	0.0000
108	9.7128	0.0128	0.0057	0.0016
126	11.0900	0.0126	0.0000	0.0000
113	10.2520	0.0115	0.0001	0.0001
175	14.5110	0.0110	0.0014	0.0015
110	9.9664	0.0082	0.0258	0.0011

Table 3H.6-3 Dominant UHS and RSW Pump House Natural Frequencies (Continued)

Dominant Modes in the Global Y Direction				
		Mass Participation Ratios		
Mode	**Frequency**	**UX**	**UY**	**UZ**
	(Hz)	**Unitless**	**Unitless**	**Unitless**
4	3.1868	0.0000	0.1540	0.0000
100	8.6950	0.0000	0.0333	0.0005
110	9.9664	0.0082	0.0258	0.0011
8	3.4590	0.0000	0.0245	0.0000
147	12.2000	0.0005	0.0242	0.0000
5	3.2757	0.0000	0.0203	0.0000
206	16.5550	0.0001	0.0200	0.0000
102	8.9222	0.0004	0.0197	0.0000
105	9.3212	0.0289	0.0172	0.0001
10	3.7385	0.0000	0.0114	0.0000
66	6.5724	0.0005	0.0109	0.0000
16	4.2676	0.0000	0.0106	0.0000

Table 3H.6-3 Dominant UHS and RSW Pump House Natural Frequencies (Continued)

Dominant Modes in the Global Z Direction				
		Mass Participation Ratios		
Mode	Frequency	UX	UY	UZ
	(Hz)	Unitless	Unitless	Unitless
116	10.7170	0.0000	0.0000	0.0447
120	10.8670	0.0006	0.0000	0.0107
307	21.5020	0.0000	0.0001	0.0067
121	10.8740	0.0001	0.0000	0.0043
99	8.6652	0.0001	0.0076	0.0042
298	20.7030	0.0002	0.0001	0.0041
323	22.2650	0.0000	0.0001	0.0037
131	11.3300	0.0001	0.0009	0.0033
363	24.9310	0.0002	0.0001	0.0032
273	19.4390	0.0001	0.0000	0.0030
203	16.3860	0.0008	0.0000	0.0027
184	15.2450	0.0005	0.0000	0.0026

Table 3H.6-4 Maximum Accelerations and Displacements for UHS and RSW Pump House

Description of Location	Elevation with Respect to Top of Pump House Mat	Maximum Acceleration (g)			Maximum Displacements Relative to Pump House Mat (inches)		
		E-W (X)	N-S (Y)	Vertical (Z)	E-W (X)	N-S (Y)	Vertical (Z)
Top of Pump House Mat	0	0.117	0.128	0.137	0.03	0.05	0.10
Pump House Operating Floor	32'-0"	0.122	0.140	0.541	0.07	0.09	0.11
Pump House Roof	68'-0"	0.121	0.149	0.417	0.09	0.17	0.11
Top of UHS Mat	32'-0"	0.125	0.144	0.133	0.12	0.14	0.12
Top of UHS Basin Walls	115'-6"	0.145	0.175	0.137	0.17	0.27	0.13
Bottom of Cooling Tower Walls	115'-6"	0.438	0.391	0.291	1.65	0.86	0.13
Mid-Level of Cooling Tower Walls	143'-3"	0.657	0.459	0.303	2.14	0.95	0.14
Top of Cooling Tower Walls	171'-0"	0.460	0.499	0.330	1.72	1.01	0.14

Table 3H.6-5 Factors of Safety Against Sliding, Overturning, and Flotation for UHS Basin and RSW Pump House

Load Combination	Calculated Safety Factor			Notes
	Overturning	Sliding	Flotation	
D + F’	---	---	1.8	2, 3
D + H + W	69.3	12.3	---	
D + H + Wt	49.7	8.9	---	
D + H + E’	2.27	1.12	---	3

Notes:

1)Loads D, H, W, Wt, and E’ are defined in Subsection 3H.6.4.3.4.1. F’ is the buoyant force corresponding to the design basis flood.

2) Reported safety factors are conservatively based on considering empty weight of the UHS Basin.

3) Coefficients of friction for sliding resistance are 0.3 under the RSW Pump House and 0.4 under the UHS Basin

Table 3H.6-6 Results of RSW Piping Tunnel Design

Location	Item	Thickness (ft)	Governing Load Combination	Design Moment (kip-ft/ft)	Design Shear (kip/ft)	Area of Reinforcement (in^2/ft)			
						Moment Reinforcement (1)		Shear Reinforcement	
						Required	Provided (both faces)	Required	Provided
Main Tunnel	Exterior Wall	3'-0"	1.4D+1.7L+1.4F+1.7H	136.47	21.95	1.16 (vertical)	1.27 (vertical)	None	None
	Roof Slab	3'-0"	1.4D+1.7L+1.4F+1.7H	55.13	11.14	0.7 (east-west)	0.79 (east-west)	None	None
	Interior Slab	2'-0"	D+Lo+F+H'+E' (2)	94.56	13.07	1.13 (east-west)	1.27 (east-west)	None	None
	Basemat	3'-0"	D+Lo+F+H'+E' (2)	123.82	19.08	0.97 (east-west)	1.00 (east-west)	None	None
North End of Main Tunnel (near Control Building)	Exterior Wall	3'-0"	1.4D+1.7L+1.4F+1.7H	324.37	34.23	2.19 (east-west)	2.25 (east-west)	None	None
	Interior Wall	2'-0"	D+Lo+F+H'+E' (2)	152.15	19.96	1.69 (east-west)	2.25 (east-west)	None	None
	Roof Slab	3'-0"	1.4D+1.7L+1.4F+1.7H	86.20	15.21	0.70 (east-west)	0.79 (east-west)	None	None
	Interior Slab	2'-0"	D+Lo+F+H'+E' (2)	135.92	17.98	1.49 (east-west)	2.25 (east-west)	None	None
	Basemat	3'-0"	1.4D+1.7L+1.4F+1.7H	70.40	28.26	0.36 (north-south)	0.79 (north-south)	None	None
			1.4D+1.7L+1.4F+1.7H	155.68	36.37	1.16 (east-west)	1.27 (east-west)	None	None
Main Tunnel (near Access Region 1)	Basemat	3'-0"	1.4D+1.7L+1.4F+1.7H	46.57	20.53	0.70 (north-south)	0.79 (north-south)	None	None

Table 3H.6-6 Results of RSW Piping Tunnel Design (Continued)

Location	Item	Thickness (ft)	Governing Load Combination	Design Moment (kip-ft/ft)	Design Shear (kip/ft)	Area of Reinforcement (in^2/ft)			
						Moment Reinforcement (1)		Shear Reinforcement	
						Required	Provided (both faces)	Required	Provided
Main Tunnel (near Access Region 2)	Exterior Wall	3'-0"	D+Lo+F+H'+E'	321.96	28.50	2.21 (vertical)	2.25 (vertical)	None	None
				214.84	28.50	1.40 (horizontal)	1.56 (horizontal)	None	None
	Basemat	6'-0"	D+Lo+F+H'+E' (2)	530.76	66.74	1.66 (east-west)	2.25 (east-west)	None	None
			1.4D+1.7L+1.4F+1.7H / D+Lo+F+H'+E' (2)	500.50	66.74	1.78 (north-south)	2.25 (north-south)	None	None
Main Tunnel (near Access Region 3) North of Pump House	Exterior Wall	3'-0"	1.4D+1.7L+1.4F+1.7H	147.60	21.99	1.16 (vertical)	1.56 (vertical)	None	None
	Roof Slab	3'-0"	1.4D+1.7L+1.4F+1.7H	344.29	36.51	2.56 (north-south)	4.00 (north-south)	None	None
	Interior Slab	2'-0"	D+Lo+F+H'+E' (2)	161.64	20.69	1.69 (north-south)	2.25 (north-south)	None	None
	Basemat	3'-0"	1.4D+1.7L+1.4F+1.7H	272.73	43.96	2.12 (north-south)	2.25 (north-south)	0.13	0.20

Notes:

1) Unless noted otherwise, the required reinforcement in the direction not reported in the table is controlled by the minimum required reinforcement. The minimum required reinforcement for 2'-0" thick and 3'-0" thick elements is 0.36 in^2/ft and 0.54 in^2/ft. For such casees the provided reinforcement is 0.79 in^2/ft.

2) The loading also includes loads due to internal flooding.

Table 3H.6-7 Results of UHS/RSW Pump House Concrete Wall Design

Location	Thickness (ft)	Face	Direction	Reinforcement Layout Drawing Number (1)	Reinforcement Zone Number (2)	Maximum Forces (3)	Element	Longitudinal Reinforcement Design Loads: Axial and Flexure Loads: Load Combination	Thermal Gradient Loading Condition	Axial (4) (kips / ft)	Flexure (4) (ft-kips / ft)	In-Plane Shear Loads: Load Combination	In-plane (5) Shear (kips / ft)	Longitudinal Reinforcement Provided (in^2/ ft)	Transverse Shear Design Loads: Load Combination	Transverse Shear (6) Reinforcement Design Loads (kips / ft)	Transverse Shear (7) Reinforcement Provided (in^2/ft^2)	Remarks
Pump House North Wall	6	North (outside)	Horizontal	3H.6-52	1-H-L	Max Tension w/ corresponding moment	3725	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	106	-7	D + F + L + H' + Ta + Ro +E'	52	1.56	-	-	-	
									Including Thermal Gradient	107	-228							
						Max Compression w/ corresponding moment	4075	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	-386	-125							
									Including Thermal Gradient	-386	-369							
						Max Moment with axial tension	3662	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	14	-167							
									Including Thermal Gradient	18	-376							
						Max Moment with axial compression	3652	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-116	-530							
									Including Thermal Gradient	-116	-736							
					2-H-L	Max Tension w/ corresponding moment	2915	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	293	-40	D + F + L + H' + Ta + Ro +E'	63	3.12	-	-	-	
									Including Thermal Gradient	286	-711							
						Max Compression w/ corresponding moment	3642	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	-446	-93							
									Including Thermal Gradient	-445	-341							
						Max Moment with axial tension	2921	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	178	-231							
									Including Thermal Gradient	178	-1078							
						Max Moment with axial compression	3658	1.4D + 1.7F +1.7L + 1.7H + 1.7W	Excluding Thermal Gradient	-71	-397							
									Including Thermal Gradient	-71	-397							
					3-H-L	Max Tension w/ corresponding moment	2923	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	485	-302	D + F + L + H' + Ta + Ro +E'	23	6.24	-	-	-	
									Including Thermal Gradient	426	-960							
						Max Compression w/ corresponding moment	2916	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-132	-1							
									Including Thermal Gradient	-129	-25							
						Max Moment with axial tension	2926	D + F + L + H + Ta + Ro +Wt	Excluding Thermal Gradient	294	-477							
									Including Thermal Gradient	263	-1107							
						Max Moment with axial compression	2926	D + F + L + H + Ta + Ro +Wt	Excluding Thermal Gradient	-7	-160							
									Including Thermal Gradient	-9	-129							
			Vertical	3H.6-53	1-V-L	Max Tension w/ corresponding moment	3668	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	128	-152	1.4D + 1.4To + 1.7F + 0.9H	102	3.12	-	-	-	
									Including Thermal Gradient	118	-443							
						Max Compression w/ corresponding moment	3644	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-512	-70							
									Including Thermal Gradient	-510	-277							
						Max Moment with corresponding axial tension	3696	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	3	-431							
									Including Thermal Gradient	0	-697							
						Max Moment with corresponding axial compression	5429	1.4D + 1.7F +1.7L + 1.7H + 1.7W	Excluding Thermal Gradient	-78	-742							
									Including Thermal Gradient	-78	-742							

Table 3H.6-7 Results of UHS/RSW Pump House Concrete Wall Design (Continued)

Location	Thickness (ft)	Face	Direction	Reinforcement Layout Drawing Number (1)	Reinforcement Zone Number (2)	Maximum Forces (3)	Element	Longitudinal Reinforcement Design Loads: Axial and Flexure Loads: Load Combination	Thermal Gradient Loading Condition	Axial (4) (kips / ft)	Flexure (4) (ft-kips / ft)	In-Plane Shear Loads: Load Combination	In-plane (5) Shear (kips / ft)	Longitudinal Reinforcement Provided (in^2/ ft)	Transverse Shear Design Loads: Load Combination	Transverse Shear (6) Reinforcement Design Loads (kips / ft)	Transverse Shear (7) Reinforcement Provided (in^2/ft^2)	Remarks
Pump House North Wall	6	North (outside)	Vertical	3H.6-53	2-V-L	Max Tension w/ corresponding moment	5570	1.4D + 1.7F +1.7L + 1.7H + 1.7W	Excluding Thermal Gradient	221	-187	1.4D + 1.4To + 1.7F + 0.9H	102	4.68	-	-	-	
									Including Thermal Gradient	221	-187							
						Max Compression w/ corresponding moment	5572	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	-404	-55							
									Including Thermal Gradient	-396	-305							
						Max Moment with axial tension	5569	1.4D + 1.7F +1.7L + 1.7H + 1.7W	Excluding Thermal Gradient	6	-545							
									Including Thermal Gradient	6	-545							
						Max Moment with axial compression	5541	1.4D + 1.7F +1.7L + 1.7H + 1.7W	Excluding Thermal Gradient	-41	-763							
									Including Thermal Gradient	-41	-763							
					3-V-L	Max Tension w/ corresponding moment	5586	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	331	-7	1.4D + 1.4To + 1.7F + 0.9H	102	6.24	-	-	-	
									Including Thermal Gradient	328	-424							
						Max Compression w/ corresponding moment	3654	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-214	-44							
									Including Thermal Gradient	-216	-251							
						Max Moment with axial tension	5583	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	40	-395							
									Including Thermal Gradient	35	-655							
						Max Moment with axial compression	5583	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-2	-347							
									Including Thermal Gradient	-5	-565							
		South (inside)	Horizontal	3H.6-54	1-H-L	Max Tension w/ corresponding moment	3673	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	110	49	D + F + L + H' + Ta + Ro +E'	63	1.56	-	-	-	
									Including Thermal Gradient	110	-194							
						Max Compression w/ corresponding moment	3642	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	-518	124							
									Including Thermal Gradient	-517	-124							
						Max Moment with axial tension	5592	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	17	143							
									Including Thermal Gradient	1	-159							
						Max Moment with axial compression	3644	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	-194	323							
									Including Thermal Gradient	-194	-201							
					2-H-L	Max Tension w/ corresponding moment	2904	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	302	82	D + F + L + H' + Ta + Ro +E'	25	3.12	-	-	-	
									Including Thermal Gradient	288	-673							
						Max Compression w/ corresponding moment	2947	D + F + L + H + Ta + Ro +Wt	Excluding Thermal Gradient	-228	22							
									Including Thermal Gradient	-69	-612							
						Max Moment with axial tension	2914	D + F + L + H + Ta + Ro +Wt	Excluding Thermal Gradient	135	309							
									Including Thermal Gradient	162	-477							
						Max Moment with axial compression	2935	D + F + L + H + Ta + Ro +Wt	Excluding Thermal Gradient	-16	278							
									Including Thermal Gradient	2	-373							

Table 3H.6-7 Results of UHS/RSW Pump House Concrete Wall Design (Continued)

Location	Thickness (ft)	Face	Direction	Reinforcement Layout Drawing Number (1)	Reinforcement Zone Number (2)	Maximum Forces (3)	Element	Longitudinal Reinforcement Design Loads: Axial and Flexure Loads: Load Combination	Thermal Gradient Loading Condition	Axial (4) (kips / ft)	Flexure (4) (ft-kips / ft)	In-Plane Shear Loads: Load Combination	In-plane (5) Shear (kips / ft)	Longitudinal Reinforcement Provided (in^2/ ft)	Transverse Shear Design Loads: Load Combination	Transverse Shear (6) Reinforcement Design Loads (kips / ft)	Transverse Shear (7) Reinforcement Provided (in^2/ft^2)	Remarks
Pump House North Wall	6	South (inside)	Horizontal	3H.6-54	3-H-L	Max Tension w/ corresponding moment	2902	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	335	122	D + F + L + H' + Ta + Ro +E'	25	4.68	-	-	-	
									Including Thermal Gradient	309	-712							
						Max Compression w/ corresponding moment	2942	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	-120	39							
									Including Thermal Gradient	-120	17							
						Max Moment with axial tension	2905	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	183	231							
									Including Thermal Gradient	181	-552							
						Max Moment with axial compression	2920	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-43	109							
									Including Thermal Gradient	-40	107							
			Vertical	3H.6-55	1-V-L	Max Tension w/ corresponding moment	5589	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	92	2	1.4D + 1.4To + 1.7F + 0.9H	100	1.56	-	-	-	
									Including Thermal Gradient	73	-461							
						Max Compression w/ corresponding moment	5571	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-278	144							
									Including Thermal Gradient	-275	-283							
						Max Moment with corresponding axial tension	5486	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	9	458							
									Including Thermal Gradient	10	246							
						Max Moment with corresponding axial compression	5486	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	-78	551							
									Including Thermal Gradient	-78	301							
					2-V-L	Max Tension w/ corresponding moment	3669	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	286	0	1.4D + 1.4To + 1.7F + 0.9H	102	3.12	-	-	-	
									Including Thermal Gradient	287	-417							
						Max Compression w/ corresponding moment	3642	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	-953	530							
									Including Thermal Gradient	-949	281							
						Max Moment with axial tension	4045	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	1	564							
									Including Thermal Gradient	-1	356							
						Max Moment with axial compression	4045	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	-169	779							
									Including Thermal Gradient	-171	535							
					3-V-L	Max Tension w/ corresponding moment	3662	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	318	3	1.4D + 1.4To + 1.7F + 0.9H	102	4.68	-	-	-	
									Including Thermal Gradient	317	-419							
						Max Compression w/ corresponding moment	5582	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-117	63							
									Including Thermal Gradient	-118	-269							
						Max Moment with axial tension	3662	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	287	12							
									Including Thermal Gradient	286	-425							
						Max Moment with axial compression	5582	1.4D + 1.7F +1.7L + 1.7H + 1.7W	Excluding Thermal Gradient	-15	116							
									Including Thermal Gradient	-15	116							
		-	Horizontal Plane	3H.6-56	1-H-T		-	-	-	-	-	-	-	-	1.4D + 1.7F +1.7L + 1.7H + 1.7W	92	0.11 (#3 @12)	
					2-H-T		-	-	-	-	-	-	-	-	1.4D + 1.7F +1.7L + 1.7H + 1.7W	90	0.11 (#3 @12)	

Table 3H.6-7 Results of UHS/RSW Pump House Concrete Wall Design (Continued)

Location	Thickness (ft)	Face	Direction	Reinforcement Layout Drawing Number (1)	Reinforcement Zone Number (2)	Maximum Forces (3)	Element	Longitudinal Reinforcement Design Loads						Longitudinal Reinforcement Provided (in^2/ ft)	Transverse Shear Design Loads		Transverse Shear (7) Reinforcement Provided (in^2/ft^2)	Remarks
								Axial and Flexure Loads				In-Plane Shear Loads						
								Load Combination	Thermal Gradient Loading Condition	Axial (4) (kips / ft)	Flexure (4) (ft-kips / ft)	Load Combination	In-plane (5) Shear (kips / ft)		Load Combination	Transverse Shear (6) Reinforcement Design Loads (kips / ft)		
Pump House East Wall	6	East (outside)	Horizontal	3H.6-57	1-H-L	Max Tension w/ corresponding moment	3234	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	330	-21	D + F + L + H' + Ta + Ro +E'	245	6.24	-	-	-	
									Including Thermal Gradient	355	-723							
						Max Compression w/ corresponding moment	8827	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	-606	-588							
									Including Thermal Gradient	-608	-833							
						Max Moment with axial tension	8829	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	188	-1011							
									Including Thermal Gradient	183	-1290							
						Max Moment with axial compression	8825	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-502	-962							
									Including Thermal Gradient	-503	-1163							
					2-H-L	Max Tension w/ corresponding moment	3222	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	1329	-568	D + F + L + H' + Ta + Ro +E'	211	9.36	-	-	-	
									Including Thermal Gradient	1367	-1190							
						Max Compression w/ corresponding moment	3222	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-914	-144							
									Including Thermal Gradient	-911	-111							
						Max Moment with axial tension	8881	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	69	-735							
									Including Thermal Gradient	71	-938							
						Max Moment with axial compression	8854	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-282	-819							
									Including Thermal Gradient	-288	-1026							
			Vertical	3H.6-58	1-V-L	Max Tension w/ corresponding moment	6540	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	164	-126	D + F + L + H' + Ta + Ro +E'	180	3.12	-	-	-	
									Including Thermal Gradient	165	-376							
						Max Compression w/ corresponding moment	6524	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-509	-76							
									Including Thermal Gradient	-507	-284							
						Max Moment with corresponding axial tension	3076	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	10	-394							
									Including Thermal Gradient	24	-780							
						Max Moment with corresponding axial compression	6405	1.4D + 1.7F +1.7L + 1.7H + 1.7W	Excluding Thermal Gradient	-199	-605							
									Including Thermal Gradient	-199	-605							
					2-V-L	Max Tension w/ corresponding moment	8829	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	401	-399	D + F + L + H' + Ta + Ro +E'	274	6.24	-	-	-	
									Including Thermal Gradient	401	-619							
						Max Compression w/ corresponding moment	8815	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-637	-124							
									Including Thermal Gradient	-627	-327							
						Max Moment with axial tension	8829	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	16	-1255							
									Including Thermal Gradient	17	-1524							
						Max Moment with axial compression	8829	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	-24	-1292							
									Including Thermal Gradient	-23	-1561							

Table 3H.6-7 Results of UHS/RSW Pump House Concrete Wall Design (Continued)

Location	Thickness (ft)	Face	Direction	Reinforcement Layout Drawing Number (1)	Reinforcement Zone Number (2)	Maximum Forces (3)	Element	Longitudinal Reinforcement Design Loads – Axial and Flexure Loads: Load Combination	Thermal Gradient Loading Condition	Axial (4) (kips / ft)	Flexure (4) (ft-kips / ft)	In-Plane Shear Loads: Load Combination	In-plane Shear (5) (kips / ft)	Longitudinal Reinforcement Provided (in^2/ ft)	Transverse Shear Design Loads: Load Combination	Transverse Shear Reinforcement Design Loads (6) (kips / ft)	Transverse Shear Reinforcement Provided (7) (in^2/ft^2)	Remarks
Pump House East Wall	6	East (outside)	Vertical	3H.6-58	3-V-L	Max Tension w/ corresponding moment	3222	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	735	-93	D + F + L + H' + Ta + Ro +E'	274	9.36	-	-	-	
									Including Thermal Gradient	732	-745							
						Max Compression w/ corresponding moment	8825	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-1054	-177							
									Including Thermal Gradient	-1061	-385							
						Max Moment with axial tension	8825	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	278	-1968							
									Including Thermal Gradient	280	-2151							
						Max Moment with axial compression	8825	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-486	-1968							
									Including Thermal Gradient	-484	-2151							
		West (inside)	Horizontal	3H.6-59	1-H-L	Max Tension w/ corresponding moment	3232	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	281	44	D + F + L + H' + Ta + Ro +E'	139	3.12	-	-	-	
									Including Thermal Gradient	285	-553							
						Max Compression w/ corresponding moment	8893	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-406	26							
									Including Thermal Gradient	-405	-213							
						Max Moment with axial tension	3087	D + F + L + H + Ta + Ro +Wt	Excluding Thermal Gradient	56	192							
									Including Thermal Gradient	64	-483							
						Max Moment with axial compression	3220	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-254	248							
									Including Thermal Gradient	-261	284							
					2-H-L	Max Tension w/ corresponding moment	8827	1.4D + 1.4F + 1.7W	Excluding Thermal Gradient	180	62	D + F + L + H' + Ta + Ro +E'	245	6.24	-	-	-	
									Including Thermal Gradient	180	62							
						Max Compression w/ corresponding moment	8813	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	-558	202							
									Including Thermal Gradient	-556	-46							
						Max Moment with axial tension	8881	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	21	278							
									Including Thermal Gradient	19	-110							
						Max Moment with axial compression	8881	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-355	502							
									Including Thermal Gradient	-365	276							
					3-H-L	Max Tension w/ corresponding moment	3222	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	849	308	D + F + L + H' + Ta + Ro +E'	101	6.24	-	-	-	
									Including Thermal Gradient	900	-429							
						Max Compression w/ corresponding moment	3222	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-1287	233							
									Including Thermal Gradient	-1275	271							
						Max Moment with axial tension	3222	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	308	626							
									Including Thermal Gradient	320	664							
						Max Moment with axial compression	3222	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-1271	626							
									Including Thermal Gradient	-1259	664							

Table 3H.6-7 Results of UHS/RSW Pump House Concrete Wall Design (Continued)

Location	Thickness (ft)	Face	Direction	Reinforcement Layout Drawing Number (1)	Reinforcement Zone Number (2)	Maximum Forces (3)	Element	Longitudinal Reinforcement Design Loads: Axial and Flexure Loads: Load Combination	Thermal Gradient Loading Condition	Axial (4) (kips / ft)	Flexure (4) (ft-kips / ft)	In-Plane Shear Loads: Load Combination	In-plane Shear (5) (kips / ft)	Longitudinal Reinforcement Provided (in^2/ ft)	Transverse Shear Design Loads: Load Combination	Transverse Shear (6) Reinforcement Design Loads (kips / ft)	Transverse Shear (7) Reinforcement Provided (in^2/ft^2)	Remarks
Pump House East Wall	6	West (inside)	Horizontal	3H.6-59	4-H-L	Max Tension w/ corresponding moment	3112	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	252	27	D + F + L + H' + Ta + Ro +E'	118	6.24	-	-	-	
									Including Thermal Gradient	213	-726							
						Max Compression w/ corresponding moment	3112	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-115	13							
									Including Thermal Gradient	-115	-27							
						Max Moment with axial tension	3121	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	128	155							
									Including Thermal Gradient	39	-967							
						Max Moment with axial compression	3112	1.4D + 1.7F +1.7L + 1.7H + 1.7W	Excluding Thermal Gradient	-31	49							
									Including Thermal Gradient	-31	49							
			Vertical	3H.6-60	1-V-L	Max Tension w/ corresponding moment	6552	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	318	3	D + F + L + H' + Ta + Ro +E'	180	3.12	-	-	-	
									Including Thermal Gradient	317	-407							
						Max Compression w/ corresponding moment	6520	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	-948	530							
									Including Thermal Gradient	-944	278							
						Max Moment with corresponding axial tension	6353	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	9	249							
									Including Thermal Gradient	7	39							
						Max Moment with corresponding axial compression	6520	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	-665	800							
									Including Thermal Gradient	-658	546							
					2-V-L	Max Tension w/ corresponding moment	8825	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	315	432	D + F + L + H' + Ta + Ro +E'	274	6.24	-	-	-	
									Including Thermal Gradient	291	207							
						Max Compression w/ corresponding moment	8825	1.4D + 1.7F +1.7L + 1.7H + 1.7W	Excluding Thermal Gradient	-1329	447							
									Including Thermal Gradient	-1329	447							
						Max Moment with axial tension	8825	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	17	1016							
									Including Thermal Gradient	-1	799							
						Max Moment with axial compression	8813	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	-746	1161							
									Including Thermal Gradient	-740	908							
					3-V-L	Max Tension w/ corresponding moment	3222	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	577	59	D + F + L + H' + Ta + Ro +E'	274	7.80	-	-	-	
									Including Thermal Gradient	583	-675							
						Max Compression w/ corresponding moment	3222	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-721	34							
									Including Thermal Gradient	-712	34							
						Max Moment with axial tension	3225	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	97	233							
									Including Thermal Gradient	103	-539							
						Max Moment with axial compression	3225	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-1	167							
									Including Thermal Gradient	4	-477							
		-	Horizontal Plane	3H.6-61	1-H-T		-	-	-	-	-	-	-	-	D + F + L + H' + Ta + Ro +E'	121	0.20 (#4 @12)	
			Vertical Plane	3H.6-61	1-V-T		-	-	-	-	-	-	-	-	D + F + L + H' + Ta + Ro +E'	112	0.11 (#3 @12)	

Table 3H.6-7 Results of UHS/RSW Pump House Concrete Wall Design (Continued)

Location	Thickness (ft)	Face	Direction	Reinforcement Layout Drawing Number (1)	Reinforcement Zone Number (2)	Maximum Forces (3)	Element	Longitudinal Reinforcement Design Loads – Axial and Flexure Loads – Load Combination	Thermal Gradient Loading Condition	Axial (4) (kips / ft)	Flexure (4) (ft-kips / ft)	In-Plane Shear Loads – Load Combination	In-plane (5) Shear (kips / ft)	Longitudinal Reinforcement Provided (in^2/ ft)	Transverse Shear Design Loads – Load Combination	Transverse Shear (6) Reinforcement Design Loads (kips / ft)	Transverse Shear (7) Reinforcement Provided (in^2/ft^2)	Remarks
Pump House South Wall	6	North (inside)	Horizontal	3H.6-62	1-H-L	Max Tension w/ corresponding moment	5606	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	238	-149	D + F + L + H' + Ta + Ro +E'	197	6.24	-	-	-	
									Including Thermal Gradient	236	114							
						Max Compression w/ corresponding moment	5774	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	-558	-82							
									Including Thermal Gradient	-556	168							
						Max Moment with axial tension	5606	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	54	-375							
									Including Thermal Gradient	54	-107							
						Max Moment with axial compression	5784	1.4D + 1.7F +1.7L + 1.7H + 1.7W	Excluding Thermal Gradient	-86	-523							
									Including Thermal Gradient	-86	-523							
					2-H-L	Max Tension w/ corresponding moment	5608	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	383	-204	D + F + L + H' + Ta + Ro +E'	170	9.36	-	-	-	
									Including Thermal Gradient	382	147							
						Max Compression w/ corresponding moment	5608	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-475	-92							
									Including Thermal Gradient	-477	286							
						Max Moment with axial tension	5608	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	187	-416							
									Including Thermal Gradient	185	-133							
						Max Moment with axial compression	5608	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-18	-342							
									Including Thermal Gradient	-20	-106							
			Vertical	3H.6-63	1-V-L	Max Tension w/ corresponding moment	-	-	Excluding Thermal Gradient	-	-	D + F + L + H' + Ta + Ro +E'	140	3.12	-	-	-	
									Including Thermal Gradient	-	-							
						Max Compression w/ corresponding moment	5608	1.4D + 1.7F +1.7L + 1.7H + 1.7W	Excluding Thermal Gradient	-558	-101							
									Including Thermal Gradient	-558	-101							
						Max Moment with corresponding axial tension	-	-	Excluding Thermal Gradient	-	0							
									Including Thermal Gradient	-	-							
						Max Moment with corresponding axial compression	5751	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-189	-528							
									Including Thermal Gradient	-193	-73							
					2-V-L	Max Tension w/ corresponding moment	5783	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	68	-4	D + F + L + H' + Ta + Ro +E'	155	6.24	-	-	-	
									Including Thermal Gradient	69	194							
						Max Compression w/ corresponding moment	5774	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	-1300	-13							
									Including Thermal Gradient	-1286	-10							
						Max Moment with corresponding axial tension	5783	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	9	-196							
									Including Thermal Gradient	9	275							
						Max Moment with corresponding axial compression	5774	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-715	-613							
									Including Thermal Gradient	-712	1							

Table 3H.6-7 Results of UHS/RSW Pump House Concrete Wall Design (Continued)

Location	Thickness (ft)	Face	Direction	Reinforcement Layout Drawing Number (1)	Reinforcement Zone Number (2)	Maximum Forces (3)	Element	Longitudinal Reinforcement Design Loads: Axial and Flexure Loads: Load Combination	Thermal Gradient Loading Condition	Axial (4) (kips / ft)	Flexure (4) (ft-kips / ft)	In-Plane Shear Loads: Load Combination	In-plane (5) Shear (kips / ft)	Longitudinal Reinforcement Provided (in^2/ ft)	Transverse Shear Design Loads: Load Combination	Transverse Shear (6) Reinforcement Design Loads (kips / ft)	Transverse Shear (7) Reinforcement Provided (in^2/ft^2)	Remarks
Pump House South Wall	6	North (inside)	Vertical	3H.6-63	3-V-L	Max Tension w/ corresponding moment	-	-	Excluding Thermal Gradient	-	-	D + F + L + H' + Ta + Ro +E'	155	6.24	-	-	-	
									Including Thermal Gradient	-	-							
						Max Compression w/ corresponding moment	5735	1.4D + 1.7F +1.7L + 1.7H + 1.7W	Excluding Thermal Gradient	-319	-48							
									Including Thermal Gradient	-319	-48							
						Max Moment with corresponding axial tension	-	-	Excluding Thermal Gradient	-	0							
									Including Thermal Gradient	-	-							
						Max Moment with corresponding axial compression	5735	1.4D + 1.7F +1.7L + 1.7H + 1.7W	Excluding Thermal Gradient	-252	-458							
									Including Thermal Gradient	-252	-458							
					4-V-L	Max Tension w/ corresponding moment	5782	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	75	-23	D + F + L + H' + Ta + Ro +E'	151	6.24	-	-	-	
									Including Thermal Gradient	79	233							
						Max Compression w/ corresponding moment	5607	1.4D + 1.7F +1.7L + 1.7H + 1.7W	Excluding Thermal Gradient	-784	-9							
									Including Thermal Gradient	-784	-9							
						Max Moment with corresponding axial tension	5784	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	15	-222							
									Including Thermal Gradient	15	252							
						Max Moment with corresponding axial compression	5784	1.4D + 1.7F +1.7L + 1.7H + 1.7W	Excluding Thermal Gradient	-375	-593							
									Including Thermal Gradient	-375	-593							
		South (outside)	Horizontal	3H.6-64	1-H-L	Max Tension w/ corresponding moment	5608	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	326	16	D + F + L + H' + Ta + Ro +E'	197	6.24	-	-	-	
									Including Thermal Gradient	324	238							
						Max Compression w/ corresponding moment	5597	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	-477	161							
									Including Thermal Gradient	-475	403							
						Max Moment with axial tension	5605	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	41	601							
									Including Thermal Gradient	42	830							
						Max Moment with axial compression	5720	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	-141	822							
									Including Thermal Gradient	-148	1043							
					2-H-L	Max Tension w/ corresponding moment	5783	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	101	191	D + F + L + H' + Ta + Ro +E'	197	9.36	-	-	-	
									Including Thermal Gradient	103	447							
						Max Compression w/ corresponding moment	5774	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	-520	138							
									Including Thermal Gradient	-517	382							
						Max Moment with axial tension	5784	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	1	902							
									Including Thermal Gradient	-9	1154							
						Max Moment with axial compression	5784	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	-5	902							
									Including Thermal Gradient	-15	1153							

Table 3H.6-7 Results of UHS/RSW Pump House Concrete Wall Design (Continued)

Location	Thickness (ft)	Face	Direction	Reinforcement Layout Drawing Number (1)	Reinforcement Zone Number (2)	Maximum Forces (3)	Element	Longitudinal Reinforcement Design Loads: Axial and Flexure Loads: Load Combination	Thermal Gradient Loading Condition	Axial (4) (kips / ft)	Flexure (4) (ft-kips / ft)	In-Plane Shear Loads: Load Combination	In-plane (5) Shear (kips / ft)	Longitudinal Reinforcement Provided (in^2/ ft)	Transverse Shear Design Loads: Load Combination	Transverse Shear (6) Reinforcement Design Loads (kips / ft)	Transverse Shear (7) Reinforcement Provided (in^2/ft^2)	Remarks
Pump House South Wall	6	South (outside)	Vertical	3H.6-65	1-V-L	Max Tension w/ corresponding moment	5783	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	93	60	D + F + L + H' + Ta + Ro +E'	139	3.12	-	-	-	
									Including Thermal Gradient	94	290							
						Max Compression w/ corresponding moment	5781	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-412	76							
									Including Thermal Gradient	-412	112							
						Max Moment with corresponding axial tension	5783	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	0	379							
									Including Thermal Gradient	0	570							
						Max Moment with corresponding axial compression	5783	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-210	384							
									Including Thermal Gradient	-210	576							
					2-V-L	Max Tension w/ corresponding moment	5603	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	13	104	D + F + L + H' + Ta + Ro +E'	151	6.24	-	-	-	
									Including Thermal Gradient	6	310							
						Max Compression w/ corresponding moment	5597	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-1105	32							
									Including Thermal Gradient	-1094	29							
						Max Moment with corresponding axial tension	5603	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	2	162							
									Including Thermal Gradient	-4	365							
						Max Moment with corresponding axial compression	5629	1.4D + 1.7F +1.7L + 1.7H + 1.7W	Excluding Thermal Gradient	-266	1033							
									Including Thermal Gradient	-266	1343							
					3-V-L	Max Tension w/ corresponding moment	5757	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	7	154	D + F + L + H' + Ta + Ro +E'	155	6.24	-	-	-	
									Including Thermal Gradient	2	335							
						Max Compression w/ corresponding moment	5775	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-495	219							
									Including Thermal Gradient	-494	422							
						Max Moment with corresponding axial tension	5757	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	1	499							
									Including Thermal Gradient	-4	680							
						Max Moment with corresponding axial compression	5757	1.4D + 1.7F +1.7L + 1.7H + 1.7W	Excluding Thermal Gradient	-257	1105							
									Including Thermal Gradient	-257	1437							
					4-V-L	Max Tension w/ corresponding moment	-	-	Excluding Thermal Gradient	-	-	D + F + L + H' + Ta + Ro +E'	135	6.24	-	-	-	
									Including Thermal Gradient	-	-							
						Max Compression w/ corresponding moment	5752	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-212	24							
									Including Thermal Gradient	-222	290							
						Max Moment with corresponding axial tension	-	-	Excluding Thermal Gradient	-	0							
									Including Thermal Gradient	-	-							
						Max Moment with corresponding axial compression	5752	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-188	238							
									Including Thermal Gradient	-186	397							

Table 3H.6-7 Results of UHS/RSW Pump House Concrete Wall Design (Continued)

Location	Thickness (ft)	Face	Direction	Reinforcement Layout Drawing Number (1)	Reinforcement Zone Number (2)	Maximum Forces (3)	Element	Longitudinal Reinforcement Design Loads: Axial and Flexure Loads: Load Combination	Thermal Gradient Loading Condition	Axial (4) (kips / ft)	Flexure (4) (ft-kips / ft)	In-Plane Shear Loads: Load Combination	In-plane (5) Shear (kips / ft)	Longitudinal Reinforcement Provided (in^2/ ft)	Transverse Shear Design Loads: Load Combination	Transverse Shear (6) Reinforcement Design Loads (kips / ft)	Transverse Shear (7) Reinforcement Provided (in^2/ft^2)	Remarks
Pump House South Wall	6	South (outside)	Vertical	3H.6-65	5-V-L	Max Tension w/ corresponding moment	5607	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	193	160	D + F + L + H' + Ta + Ro +E'	151	9.36	-	-	-	
									Including Thermal Gradient	199	402							
						Max Compression w/ corresponding moment	5607	1.4D + 1.7F +1.7L + 1.7H + 1.7W	Excluding Thermal Gradient	-850	2							
									Including Thermal Gradient	-850	2							
						Max Moment with corresponding axial tension	5605	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	28	219							
									Including Thermal Gradient	36	440							
						Max Moment with corresponding axial compression	5607	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	-248	298							
									Including Thermal Gradient	-256	517							
					6-V-L	Max Tension w/ corresponding moment	-	-	Excluding Thermal Gradient	-	-	D + F + L + H' + Ta + Ro +E'	143	12.00	-	-	-	
									Including Thermal Gradient	-	-							
						Max Compression w/ corresponding moment	5774	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-1220	1							
									Including Thermal Gradient	-1207	3							
						Max Moment with corresponding axial tension	-	-	Excluding Thermal Gradient	-	-							
									Including Thermal Gradient	-	-							
						Max Moment with corresponding axial compression	5774	1.4D + 1.7F +1.7L + 1.7H + 1.7W	Excluding Thermal Gradient	-274	533							
									Including Thermal Gradient	-274	533							
					7-V-L	Max Tension w/ corresponding moment	5784	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	443	176	D + F + L + H' + Ta + Ro +E'	143	12.00	-	-	-	
									Including Thermal Gradient	451	405							
						Max Compression w/ corresponding moment	5784	1.4D + 1.7F +1.7L + 1.7H + 1.7W	Excluding Thermal Gradient	-705	73							
									Including Thermal Gradient	-705	73							
						Max Moment with corresponding axial tension	5784	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	32	368							
									Including Thermal Gradient	32	564							
						Max Moment with corresponding axial compression	5784	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-216	368							
									Including Thermal Gradient	-216	564							
		-	Vertical Plane	3H.6-66	1-V-T		-	-	-	-	-	-	-	-	1.4D + 1.4To + 1.7F + 0.9H	117	0.11 (#3 @ 12)	
				3H.6-66	2-V-T		-	-	-	-	-	-	-	-	1.4D + 1.4To + 1.7F + 0.9H	141	0.20 (#4 @12)	
				3H.6-66	3-V-T		-	-	-	-	-	-	-	-	1.4D + 1.7F +1.7L + 1.7H + 1.7W	67	0.11 (#3 @12)	
				3H.6-66	4-V-T		-	-	-	-	-	-	-	-	1.4D + 1.4To + 1.7F + 0.9H	120	0.11 (#3 @12)	
				3H.6-66	5-V-T		-	-	-	-	-	-	-	-	1.4D + 1.4To + 1.7F + 0.9H	130	0.20 (#4 @12)	
				3H.6-66	6-V-T		-	-	-	-	-	-	-	-	1.4D + 1.4To + 1.7F + 0.9H	98	0.20 (#4 @12)	
				3H.6-66	7-V-T		-	-	-	-	-	-	-	-	1.4D + 1.4To + 1.7F + 0.9H	125	0.11 (#3 @12)	
			Horizontal Plane	3H.6-66	1-H-T		-	-	-	-	-	-	-	-	1.4D + 1.7F +1.7L + 1.7H + 1.7W	141	0.20 (#4 @12)	
				3H.6-66	2-H-T		-	-	-	-	-	-	-	-	1.4D + 1.4To + 1.7F + 0.9H	117	0.11 (#3 @12)	
				3H.6-66	3-H-T		-	-	-	-	-	-	-	-	1.4D + 1.7F +1.7L + 1.7H + 1.7W	146	0.20 (#4 @12)	
				3H.6-66	4-H-T		-	-	-	-	-	-	-	-	1.4D + 1.4To + 1.7F + 0.9H	96	0.11 (#3 @12)	
				3H.6-66	5-H-T		-	-	-	-	-	-	-	-	1.4D + 1.7F +1.7L + 1.7H + 1.7W	139	0.20 (#4 @12)	
				3H.6-66	6-H-T		-	-	-	-	-	-	-	-	1.4D + 1.4To + 1.7F + 0.9H	100	0.11 (#3@12)	

Table 3H.6-7 Results of UHS/RSW Pump House Concrete Wall Design (Continued)

Location	Thickness (ft)	Face	Direction	Reinforcement Layout Drawing Number (1)	Reinforcement Zone Number (2)	Maximum Forces (3)	Element	Longitudinal Reinforcement Design Loads – Axial and Flexure Loads – Load Combination	Thermal Gradient Loading Condition	Axial (4) (kips / ft)	Flexure (4) (ft-kips / ft)	In-Plane Shear Loads – Load Combination	In-plane (5) Shear (kips / ft)	Longitudinal Reinforcement Provided (in^2/ ft)	Transverse Shear Design Loads – Load Combination	Transverse Shear (6) Reinforcement Design Loads (kips / ft)	Transverse Shear (7) Reinforcement Provided (in^2/ft^2)	Remarks
Pump House West Wall	6	West (outside)	Horizontal	3H.6-67	1-H-L	Max Tension w/ corresponding moment	6333	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	109	-12	D + F + L + H' + Ta + Ro +E'	136	3.12	-	-	-	
									Including Thermal Gradient	109	-244							
						Max Compression w/ corresponding moment	9122	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	-460	-71							
									Including Thermal Gradient	-457	-315							
						Max Moment with axial tension	6153	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	4	-171							
									Including Thermal Gradient	7	-378							
						Max Moment with axial compression	9126	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	-180	-677							
									Including Thermal Gradient	-178	-914							
					2-H-L	Max Tension w/ corresponding moment	3275	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	418	-49	D + F + L + H' + Ta + Ro +E'	126	6.24	-	-	-	
									Including Thermal Gradient	399	-774							
						Max Compression w/ corresponding moment	9131	1.4D + 1.7F +1.7L + 1.7H + 1.7W	Excluding Thermal Gradient	-383	-134							
									Including Thermal Gradient	-383	-134							
						Max Moment with axial tension	9131	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	97	-508							
									Including Thermal Gradient	95	-702							
						Max Moment with axial compression	9132	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	-152	-757							
									Including Thermal Gradient	-156	-970							
					3-H-L	Max Tension w/ corresponding moment	3284	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	535	-35	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	114	9.36	-	-	-	
									Including Thermal Gradient	509	-966							
						Max Compression w/ corresponding moment	3289	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-162	-175							
									Including Thermal Gradient	-152	-176							
						Max Moment with axial tension	3290	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	147	-461							
									Including Thermal Gradient	129	-1367							
						Max Moment with axial compression	3289	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-103	-243							
									Including Thermal Gradient	-91	-227							
					4-H-L	Max Tension w/ corresponding moment	9138	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	972	-251	D + F + L + H' + Ta + Ro +E'	103	12.48	-	-	-	
									Including Thermal Gradient	963	-575							
						Max Compression w/ corresponding moment	9136	1.4D + 1.7F +1.7L + 1.7H + 1.7W	Excluding Thermal Gradient	-609	-198							
									Including Thermal Gradient	-609	-198							
						Max Moment with axial tension	9138	1.4D + 1.7F +1.7L + 1.7H + 1.7W	Excluding Thermal Gradient	9	-666							
									Including Thermal Gradient	9	-666							
						Max Moment with axial compression	9138	1.4D + 1.7F +1.7L + 1.7H + 1.7W	Excluding Thermal Gradient	-34	-660							
									Including Thermal Gradient	-34	-660							

Table 3H.6-7 Results of UHS/RSW Pump House Concrete Wall Design (Continued)

Location	Thickness (ft)	Face	Direction	Reinforcement Layout Drawing Number (1)	Reinforcement Zone Number (2)	Maximum Forces (3)	Element	Longitudinal Reinforcement Design Loads – Axial and Flexure Loads – Load Combination	Thermal Gradient Loading Condition	Axial (4) (kips / ft)	Flexure (4) (ft-kips / ft)	In-Plane Shear Loads – Load Combination	In-plane (5) Shear (kips / ft)	Longitudinal Reinforcement Provided (in^2/ ft)	Transverse Shear Design Loads – Load Combination	Transverse Shear (6) Reinforcement Design Loads (kips / ft)	Transverse Shear (7) Reinforcement Provided (in^2/ft^2)	Remarks
Pump House West Wall	6	West (outside)	Horizontal	3H.6-67	5-H-L	Max Tension w/ corresponding moment	3042	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	116	-108	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	81	4.50	-	-	-	
									Including Thermal Gradient	133	-119							
						Max Compression w/ corresponding moment	3030	D + F + L + H + Ta + Ro +Wt	Excluding Thermal Gradient	-206	-61							
									Including Thermal Gradient	-36	-499							
						Max Moment with axial tension	3030	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	12	-130							
									Including Thermal Gradient	183	-605							
						Max Moment with axial compression	3030	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-28	-130							
									Including Thermal Gradient	144	-605							
					6-H-L	Max Tension w/ corresponding moment	3279	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	469	-55	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	81	9.00	-	-	-	
									Including Thermal Gradient	453	-845							
						Max Compression w/ corresponding moment	3276	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-55	-4							
									Including Thermal Gradient	-32	-10							
						Max Moment with axial tension	3048	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	40	-100							
									Including Thermal Gradient	53	-108							
						Max Moment with axial compression	3072	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-25	-73							
									Including Thermal Gradient	-7	-78							
					7-H-L	Max Tension w/ corresponding moment	3291	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	1372	-365	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	81	13.50	-	-	-	
									Including Thermal Gradient	1422	-1182							
						Max Compression w/ corresponding moment	3291	1.4D + 1.7L + 1.7W	Excluding Thermal Gradient	-158	-18							
									Including Thermal Gradient	-158	-18							
						Max Moment with axial tension	3291	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	554	-597							
									Including Thermal Gradient	561	-1239							
						Max Moment with axial compression	3291	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-9	-244							
									Including Thermal Gradient	23	-205							
					8-H-L	Max Tension w/ corresponding moment	9134	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	533	-702	D + F + L + H' + Ta + Ro +E'	126	9.36	-	-	-	
									Including Thermal Gradient	520	-911							
						Max Compression w/ corresponding moment	9134	1.4D + 1.7F +1.7L + 1.7H + 1.7W	Excluding Thermal Gradient	-700	-116							
									Including Thermal Gradient	-700	-116							
						Max Moment with axial tension	9134	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	129	-824							
									Including Thermal Gradient	113	-1075							
						Max Moment with axial compression	9134	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	-125	-828							
									Including Thermal Gradient	-129	-1038							

Table 3H.6-7 Results of UHS/RSW Pump House Concrete Wall Design (Continued)

Location	Thickness (ft)	Face	Direction	Reinforcement Layout Drawing Number (1)	Reinforcement Zone Number (2)	Maximum Forces (3)	Element	Longitudinal Reinforcement Design Loads — Axial and Flexure Loads: Load Combination	Thermal Gradient Loading Condition	Axial (4) (kips / ft)	Flexure (4) (ft-kips / ft)	In-Plane Shear Loads: Load Combination	In-plane (5) Shear (kips / ft)	Longitudinal Reinforcement Provided (in^2/ ft)	Transverse Shear Design Loads: Load Combination	Transverse Shear (6) Reinforcement Design Loads (kips / ft)	Transverse Shear (7) Reinforcement Provided (in^2/ft^2)	Remarks
Pump House West Wall	6	West (outside)	Vertical	3H.6-68	1-V-L	Max Tension w/ corresponding moment	6157	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	332	-7	D + F + L + H' + Ta + Ro +E'	146	3.12	-	-	-	
									Including Thermal Gradient	328	-410							
						Max Compression w/ corresponding moment	9124	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-751	-16							
									Including Thermal Gradient	-741	-223							
						Max Moment with corresponding axial tension	6127	1.4D + 1.7F +1.7L + 1.7H + 1.7W	Excluding Thermal Gradient	13	-417							
									Including Thermal Gradient	13	-417							
						Max Moment with corresponding axial compression	6240	1.4D + 1.7F +1.7L + 1.7H + 1.7W	Excluding Thermal Gradient	-127	-592							
									Including Thermal Gradient	-127	-592							
					2-V-L	Max Tension w/ corresponding moment	3268	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	68	-310	D + F + L + H' + Ta + Ro +E'	143	4.68	-	-	-	
									Including Thermal Gradient	90	-665							
						Max Compression w/ corresponding moment	6344	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-78	-311							
									Including Thermal Gradient	-76	-644							
						Max Moment with axial tension	3073	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	16	-444							
									Including Thermal Gradient	30	-826							
						Max Moment with axial compression	6344	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	-66	-445							
									Including Thermal Gradient	-63	-845							
					3-V-L	Max Tension w/ corresponding moment	9134	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	1026	-1063	D + F + L + H' + Ta + Ro +E'	146	7.62	-	-	-	
									Including Thermal Gradient	1029	-1231							
						Max Compression w/ corresponding moment	9134	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-618	-18							
									Including Thermal Gradient	-625	-234							
						Max Moment with axial tension	9134	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	452	-1257							
									Including Thermal Gradient	456	-1470							
						Max Moment with axial compression	9134	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-39	-1131							
									Including Thermal Gradient	-36	-1308							

Table 3H.6-7 Results of UHS/RSW Pump House Concrete Wall Design (Continued)

Location	Thickness (ft)	Face	Direction	Reinforcement Layout Drawing Number (1)	Reinforcement Zone Number (2)	Maximum Forces (3)	Element	Longitudinal Reinforcement Design Loads: Axial and Flexure Loads: Load Combination	Thermal Gradient Loading Condition	Axial (4) (kips / ft)	Flexure (4) (ft-kips / ft)	In-Plane Shear Loads: Load Combination	In-plane (5) Shear (kips / ft)	Longitudinal Reinforcement Provided (in^2/ ft)	Transverse Shear Design Loads: Load Combination	Transverse Shear (6) Reinforcement Design Loads (kips / ft)	Transverse Shear (7) Reinforcement Provided (in^2/ft^2)	Remarks
Pump House West Wall	6	East (inside)	Horizontal	3H.6-69	1-H-L	Max Tension w/ corresponding moment	3061	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	316	43	D + F + L + H' + Ta + Ro +E'	136	3.12	-	-	-	
									Including Thermal Gradient	313	-657							
						Max Compression w/ corresponding moment	9122	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	-584	212							
									Including Thermal Gradient	-582	-38							
						Max Moment with axial tension	9046	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	7	231							
									Including Thermal Gradient	-1	-170							
						Max Moment with axial compression	9123	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	-276	319							
									Including Thermal Gradient	-275	-248							
					2-H-L	Max Tension w/ corresponding moment	3287	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	530	16	D + F + L + H' + Ta + Ro +E'	126	6.24	-	-	-	
									Including Thermal Gradient	492	-878							
						Max Compression w/ corresponding moment	9080	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-477	63							
									Including Thermal Gradient	-456	-209							
						Max Moment with axial tension	3290	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	24	281							
									Including Thermal Gradient	26	321							
						Max Moment with axial compression	3290	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-32	281							
									Including Thermal Gradient	-30	321							
					3-H-L	Max Tension w/ corresponding moment	9135	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	284	88	D + F + L + H' + Ta + Ro +E'	126	9.36	-	-	-	
									Including Thermal Gradient	274	-254							
						Max Compression w/ corresponding moment	9134	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-445	23							
									Including Thermal Gradient	-418	-243							
						Max Moment with axial tension	9135	1.4D + 1.4F + 1.7W	Excluding Thermal Gradient	1	167							
									Including Thermal Gradient	1	167							
						Max Moment with axial compression	9134	1.4D + 1.4F + 1.7W	Excluding Thermal Gradient	-159	196							
									Including Thermal Gradient	-159	196							
					4-H-L	Max Tension w/ corresponding moment	3060	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	197	5	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	81	4.50	-	-	-	
									Including Thermal Gradient	188	-700							
						Max Compression w/ corresponding moment	3030	D + F + L + H + Ta + Ro +Wt	Excluding Thermal Gradient	-201	48							
									Including Thermal Gradient	-206	75							
						Max Moment with axial tension	3030	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	7	156							
									Including Thermal Gradient	10	195							
						Max Moment with axial compression	3039	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	-92	172							
									Including Thermal Gradient	1	-691							

Table 3H.6-7 Results of UHS/RSW Pump House Concrete Wall Design (Continued)

Location	Thickness (ft)	Face	Direction	Reinforcement Layout Drawing Number (1)	Reinforcement Zone Number (2)	Maximum Forces (3)	Element	Longitudinal Reinforcement Design Loads						Longitudinal Reinforcement Provided (in^2/ ft)	Transverse Shear Design Loads		Transverse Shear (7) Reinforcement Provided (in^2/ft^2)	Remarks
								Axial and Flexure Loads				In-Plane Shear Loads						
								Load Combination	Thermal Gradient Loading Condition	Axial (4) (kips / ft)	Flexure (4) (ft-kips / ft)	Load Combination	In-plane (5) Shear (kips / ft)		Load Combination	Transverse Shear (6) Reinforcement Design Loads (kips / ft)		
Pump House West Wall	6	East (inside)	Horizontal	3H.6-69	5-H-L	Max Tension w/ corresponding moment	3291	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	1170	65	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	81	9.00	-	-	-	
									Including Thermal Gradient	1156	-898							
						Max Compression w/ corresponding moment	3291	1.4D + 1.7L + 1.7W	Excluding Thermal Gradient	-111	14							
									Including Thermal Gradient	-111	14							
						Max Moment with corresponding axial tension	3291	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	84	605							
									Including Thermal Gradient	88	656							
						Max Moment with corresponding axial compression	3291	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-62	605							
									Including Thermal Gradient	-58	656							
			Vertical	3H.6-70	1-V-L	Max Tension w/ corresponding moment	6161	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	291	0	D + F + L + H' + Ta + Ro +E'	109	1.56	-	-	-	
									Including Thermal Gradient	292	-372							
						Max Compression w/ corresponding moment	6125	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	-813	604							
									Including Thermal Gradient	-802	351							
						Max Moment with axial tension	6127	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	1	305							
									Including Thermal Gradient	-3	-156							
						Max Moment with axial compression	6125	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	-610	824							
									Including Thermal Gradient	-602	570							
					2-V-L	Max Tension w/ corresponding moment	6165	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	277	0	D + F + L + H' + Ta + Ro +E'	143	3.12	-	-	-	
									Including Thermal Gradient	278	-392							
						Max Compression w/ corresponding moment	9098	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-442	161							
									Including Thermal Gradient	-440	-252							
						Max Moment with axial tension	9066	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	2	431							
									Including Thermal Gradient	1	221							
						Max Moment with axial compression	9093	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	-169	643							
									Including Thermal Gradient	-169	391							
					3-V-L	Max Tension w/ corresponding moment	9138	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	561	169	D + F + L + H' + Ta + Ro +E'	146	6.24	-	-	-	
									Including Thermal Gradient	549	-154							
						Max Compression w/ corresponding moment	9122	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	-1290	882							
									Including Thermal Gradient	-1275	626							
						Max Moment with axial tension	9134	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	20	521							
									Including Thermal Gradient	15	313							
						Max Moment with axial compression	9122	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	-857	1273							
									Including Thermal Gradient	-851	1024							

Table 3H.6-7 Results of UHS/RSW Pump House Concrete Wall Design (Continued)

Location	Thickness (ft)	Face	Direction	Reinforcement Layout Drawing Number (1)	Reinforcement Zone Number (2)	Maximum Forces (3)	Element	Longitudinal Reinforcement Design Loads: Axial and Flexure Loads: Load Combination	Thermal Gradient Loading Condition	Axial (4) (kips / ft)	Flexure (4) (ft-kips / ft)	In-Plane Shear Loads: Load Combination	In-plane (5) Shear (kips / ft)	Longitudinal Reinforcement Provided (in^2/ ft)	Transverse Shear Design Loads: Load Combination	Transverse Shear (6) Reinforcement Design Loads (kips / ft)	Transverse Shear (7) Reinforcement Provided (in^2/ft^2)	Remarks
Pump House West Wall	6	East (inside)	Vertical	3H.6-70	4-V-L	Max Tension w/ corresponding moment	3291	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	714	104	D + F + L + H' + Ta + Ro +E'	146	9.36	-	-	-	
									Including Thermal Gradient	724	-804							
						Max Compression w/ corresponding moment	3291	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-346	82							
									Including Thermal Gradient	-335	87							
						Max Moment with axial tension	3288	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	156	186							
									Including Thermal Gradient	166	-568							
						Max Moment with axial compression	3291	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-346	114							
									Including Thermal Gradient	-335	119							
		-	Vertical Plane	3H.6-71	1-V-T		-	-	-	-	-	-	-	-	D + F + L + H' + Ta + Ro +E'	73	0.11 (#3 @12)	
				3H.6-71	2-V-T		-	-	-	-	-	-	-	-	1.4D + 1.4To + 1.7F + 0.9H	115	0.11 (#3 @12)	

Table 3H.6-7 Results of UHS/RSW Pump House Concrete Wall Design (Continued)

Location	Thickness (ft)	Face	Direction	Reinforcement Layout Drawing Number (1)	Reinforcement Zone Number (2)	Maximum Forces (3)	Element	Longitudinal Reinforcement Design Loads						Longitudinal Reinforcement Provided (in²/ ft)	Transverse Shear Design Loads		Transverse Shear (7) Reinforcement Provided (in²/ft²)	Remarks
								Axial and Flexure Loads				In-Plane Shear Loads						
								Load Combination	Thermal Gradient Loading Condition	Axial (4) (kips / ft)	Flexure (4) (ft-kips / ft)	Load Combination	In-plane (5) Shear (kips / ft)		Load Combination	Transverse Shear (6) Reinforcement Design Loads (kips / ft)		
Pump House Interior East Wall	4	East (top)	Horizontal	3H.6-72	1-H-L	Max Tension w/ corresponding moment	3261	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	147	-10	D + F + L + H' + Ta + Ro +E'	169	3.12	-	-	-	
									Including Thermal Gradient	153	-10							
						Max Compression w/ corresponding moment	8939	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-542	-73							
									Including Thermal Gradient	-537	-75							
						Max Moment with axial tension	7016	D + Pa + L + H	Excluding Thermal Gradient	3	-138							
									Including Thermal Gradient	3	-138							
						Max Moment with axial compression	6984	D + Pa + L + H	Excluding Thermal Gradient	-58	-202							
									Including Thermal Gradient	-58	-202							
					2-H-L	Max Tension w/ corresponding moment	3246	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	416	-34	D + F + L + H' + Ta + Ro +E'	86	4.68	-	-	-	
									Including Thermal Gradient	421	-33							
						Max Compression w/ corresponding moment	3246	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-560	-31							
									Including Thermal Gradient	-504	-27							
						Max Moment with axial tension	3246	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	113	-64							
									Including Thermal Gradient	115	-59							
						Max Moment with axial compression	3246	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-257	-64							
									Including Thermal Gradient	-256	-59							
			Vertical	3H.6-73	1-V-L	Max Tension w/ corresponding moment	3246	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	118	-6	D + F + L + H' + Ta + Ro +E'	158	3.12	-	-	-	
									Including Thermal Gradient	121	-6							
						Max Compression w/ corresponding moment	3246	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-479	-8							
									Including Thermal Gradient	-476	-7							
						Max Moment with corresponding axial tension	8941	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	23	-20							
									Including Thermal Gradient	30	-20							
						Max Moment with corresponding axial compression	6800	D + Pa + L + H	Excluding Thermal Gradient	-102	-329							
									Including Thermal Gradient	-102	-329							
		West (bottom)	Horizontal	3H.6-74	1-H-L	Max Tension w/ corresponding moment	3251	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	116	3	D + F + L + H' + Ta + Ro +E'	87	1.04	-	-	-	
									Including Thermal Gradient	117	3							
						Max Compression w/ corresponding moment	8941	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	-282	11							
									Including Thermal Gradient	-275	8							
						Max Moment with axial tension	7016	D + Pa + L + H	Excluding Thermal Gradient	8	113							
									Including Thermal Gradient	8	113							
						Max Moment with axial compression	7012	D + Pa + L + H	Excluding Thermal Gradient	-4	108							
									Including Thermal Gradient	-4	108							

Table 3H.6-7 Results of UHS/RSW Pump House Concrete Wall Design (Continued)

Location	Thickness (ft)	Face	Direction	Reinforcement Layout Drawing Number (1)	Reinforcement Zone Number (2)	Maximum Forces (3)	Element	Longitudinal Reinforcement Design Loads — Axial and Flexure Loads: Load Combination	Thermal Gradient Loading Condition	Axial (4) (kips / ft)	Flexure (4) (ft-kips / ft)	In-Plane Shear Loads: Load Combination	In-plane (5) Shear (kips / ft)	Longitudinal Reinforcement Provided (in^2/ ft)	Transverse Shear Design Loads: Load Combination	Transverse Shear (6) Reinforcement Design Loads (kips / ft)	Transverse Shear (7) Reinforcement Provided (in^2/ft^2)	Remarks
Pump House Interior East Wall	4	West (bottom)	Horizontal	3H.6-74	2-H-L	Max Tension w/ corresponding moment	3246	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	416	23	D + F + L + H' + Ta + Ro +E'	86	3.12	-	-	-	
									Including Thermal Gradient	421	23							
						Max Compression w/ corresponding moment	3246	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-560	31							
									Including Thermal Gradient	-504	35							
						Max Moment with axial tension	3246	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	223	47							
									Including Thermal Gradient	241	48							
						Max Moment with axial compression	3246	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-392	47							
									Including Thermal Gradient	-374	48							
				3H.6-74	3-H-L	Max Tension w/ corresponding moment	8939	D + Pa + L + H	Excluding Thermal Gradient	25	36	D + F + L + H' + Ta + Ro +E'	169	3.12	-	-	-	
									Including Thermal Gradient	25	36							
						Max Compression w/ corresponding moment	8925	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	-463	1							
									Including Thermal Gradient	-463	1							
						Max Moment with axial tension	8939	D + Pa + L + H	Excluding Thermal Gradient	25	36							
									Including Thermal Gradient	25	36							
						Max Moment with axial compression	6984	D + Pa + L + H	Excluding Thermal Gradient	-27	196							
									Including Thermal Gradient	-27	196							
			Vertical	3H.6-75	1-V-L	Max Tension w/ corresponding moment	3246	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	118	2	D + F + L + H' + Ta + Ro +E'	158	3.12	-	-	-	
									Including Thermal Gradient	121	2							
						Max Compression w/ corresponding moment	3246	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-479	4							
									Including Thermal Gradient	-476	5							
						Max Moment with corresponding axial tension	8941	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	6	63							
									Including Thermal Gradient	12	62							
						Max Moment with corresponding axial compression	6853	D + Pa + L + H	Excluding Thermal Gradient	-96	312							
									Including Thermal Gradient	-96	312							

Table 3H.6-7 Results of UHS/RSW Pump House Concrete Wall Design (Continued)

Location	Thickness (ft)	Face	Direction	Reinforcement Layout Drawing Number (1)	Reinforcement Zone Number (2)	Maximum Forces (3)	Element	Longitudinal Reinforcement Design Loads: Axial and Flexure Loads: Load Combination	Thermal Gradient Loading Condition	Axial (4) (kips / ft)	Flexure (4) (ft-kips / ft)	In-Plane Shear Loads: Load Combination	In-plane Shear (5) (kips / ft)	Longitudinal Reinforcement Provided (in^2/ ft)	Transverse Shear Design Loads: Load Combination	Transverse Shear (6) Reinforcement Design Loads (kips / ft)	Transverse Shear (7) Reinforcement Provided (in^2/ft^2)	Remarks
Pump House Interior West Wall	4	East (top)	Horizontal	3H.6-76	1-H-L	Max Tension w/ corresponding moment	3309	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	135	-4	D + F + L + H' + Ta + Ro +E'	150	3.12	-	-	-	
									Including Thermal Gradient	141	4							
						Max Compression w/ corresponding moment	9163	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-492	-20							
									Including Thermal Gradient	-500	-18							
						Max Moment with axial tension	6792	D + Pa + L + H	Excluding Thermal Gradient	7	-127							
									Including Thermal Gradient	7	-127							
						Max Moment with axial compression	6760	D + Pa + L + H	Excluding Thermal Gradient	-26	-199							
									Including Thermal Gradient	-26	-199							
					2-H-L	Max Tension w/ corresponding moment	3294	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	370	-8	D + F + L + H' + Ta + Ro +E'	84	4.68	-	-	-	
									Including Thermal Gradient	377	-8							
						Max Compression w/ corresponding moment	3294	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-487	-21							
									Including Thermal Gradient	-431	-27							
						Max Moment with axial tension	3297	D + Pa + L + H	Excluding Thermal Gradient	1	-41							
									Including Thermal Gradient	1	-41							
						Max Moment with axial compression	3294	D + Pa + L + H	Excluding Thermal Gradient	-18	-40							
									Including Thermal Gradient	-18	-40							
			Vertical	3H.6-77	1-V-L	Max Tension w/ corresponding moment	3294	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	99	-9	D + F + L + H' + Ta + Ro +E'	142	3.12	-	-	-	
									Including Thermal Gradient	102	-8							
						Max Compression w/ corresponding moment	9163	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	-470	-1							
									Including Thermal Gradient	-469	0							
						Max Moment with corresponding axial tension	9165	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	59	-49							
									Including Thermal Gradient	65	-46							
						Max Moment with corresponding axial compression	6576	D + Pa + L + H	Excluding Thermal Gradient	-96	-318							
									Including Thermal Gradient	-96	-318							

Table 3H.6-7Results of UHS/RSW Pump House Concrete Wall Design (Continued)

Location	Thickness (ft)	Face	Direction	Reinforcement Layout Drawing Number (1)	Reinforcement Zone Number (2)	Maximum Forces (3)	Element	Longitudinal Reinforcement Design Loads – Axial and Flexure Loads – Load Combination	Thermal Gradient Loading Condition	Axial (4) (kips / ft)	Flexure (4) (ft-kips / ft)	In-Plane Shear Loads – Load Combination	In-plane (5) Shear (kips / ft)	Longitudinal Reinforcement Provided (in²/ ft)	Transverse Shear Design Loads – Load Combination	Transverse Shear (6) Reinforcement Design Loads (kips / ft)	Transverse Shear (7) Reinforcement Provided (in²/ft²)	Remarks
Pump House Interior West Wall	4	West (bottom)	Horizontal	3H.6-78	1-H-L	Max Tension w/ corresponding moment	3299	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	98	1	D + F + L + H' + Ta + Ro +E'	78	1.04	-	-	-	
									Including Thermal Gradient	100	2							
						Max Compression w/ corresponding moment	9194	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	-289	12							
									Including Thermal Gradient	-294	11							
						Max Moment with axial tension	6792	D + Pa + L + H	Excluding Thermal Gradient	1	125							
									Including Thermal Gradient	1	125							
						Max Moment with axial compression	6788	D + Pa + L + H	Excluding Thermal Gradient	-5	122							
									Including Thermal Gradient	-5	122							
					2-H-L	Max Tension w/ corresponding moment	3294	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	370	39	D + F + L + H' + Ta + Ro +E'	150	3.12	-	-	-	
									Including Thermal Gradient	377	38							
						Max Compression w/ corresponding moment	9163	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-579	9							
									Including Thermal Gradient	-584	8							
						Max Moment with axial tension	3294	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	77	60							
									Including Thermal Gradient	82	55							
						Max Moment with axial compression	6760	D + Pa + L + H	Excluding Thermal Gradient	-57	198							
									Including Thermal Gradient	-57	198							
			Vertical	3H.6-79	1-V-L	Max Tension w/ corresponding moment	3169	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	12	8	D + F + L + H' + Ta + Ro +E'	87	1.56	-	-	-	
									Including Thermal Gradient	14	7							
						Max Compression w/ corresponding moment	3171	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-330	3							
									Including Thermal Gradient	-358	-6							
						Max Moment with axial tension	3170	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	0	15							
									Including Thermal Gradient	1	14							
						Max Moment with axial compression	6629	D + Pa + L + H	Excluding Thermal Gradient	-98	325							
									Including Thermal Gradient	-98	325							
					2-V-L	Max Tension w/ corresponding moment	3294	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	99	3	D + F + L + H' + Ta + Ro +E'	142	3.12	-	-	-	
									Including Thermal Gradient	102	2							
						Max Compression w/ corresponding moment	9163	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	-467	5							
									Including Thermal Gradient	-468	6							
						Max Moment with corresponding axial tension	9165	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	23	42							
									Including Thermal Gradient	28	39							
						Max Moment with corresponding axial compression	9205	D + Pa + L + H	Excluding Thermal Gradient	-115	238							
									Including Thermal Gradient	-115	238							

Table 3H.6-7 Results of UHS/RSW Pump House Concrete Wall Design (Continued)

Location	Thickness (ft)	Face	Direction	Reinforcement Layout Drawing Number (1)	Reinforcement Zone Number (2)	Maximum Forces (3)	Element	Longitudinal Reinforcement Design Loads: Axial and Flexure Loads: Load Combination	Thermal Gradient Loading Condition	Axial (4) (kips / ft)	Flexure (4) (ft-kips / ft)	In-Plane Shear Loads: Load Combination	In-plane (5) Shear (kips / ft)	Longitudinal Reinforcement Provided (in^2/ ft)	Transverse Shear Design Loads: Load Combination	Transverse Shear (6) Reinforcement Design Loads (kips / ft)	Transverse Shear (7) Reinforcement Provided (in^2/ft^2)	Remarks
Pump House Buttresses	6	North (Top) / South (Bottom)	Horizontal	3H.6-80	1-H-L	Max Tension w/ corresponding moment	13445	1.4D + 1.7F +1.7L + 1.7H + 1.7W	Excluding Thermal Gradient	108	28	1.4D + 1.7F +1.7L + 1.7H + 1.7W	168	3.12	-	-	-	
									Including Thermal Gradient	108	28							
						Max Compression w/ corresponding moment	13410	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	-289	31							
									Including Thermal Gradient	-286	31							
						Max Moment with axial tension	13445	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	32	199							
									Including Thermal Gradient	32	194							
						Max Moment with axial compression	13447	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-10	183							
									Including Thermal Gradient	-11	184							
					2-H-L	Max Tension w/ corresponding moment	13330	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	575	25	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	105	4.68	-	-	-	
									Including Thermal Gradient	756	28							
						Max Compression w/ corresponding moment	13461	1.4D + 1.7F +1.7L + 1.7H + 1.7W	Excluding Thermal Gradient	-308	16							
									Including Thermal Gradient	-308	16							
						Max Moment with axial tension	13461	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	115	140							
									Including Thermal Gradient	50	146							
						Max Moment with axial compression	13461	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-1	90							
									Including Thermal Gradient	18	93							
			Vertical	3H.6-81	1-V-L	Max Tension w/ corresponding moment	13349	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	306	13	D + F + L + H' + Ta + Ro +E'	73	3.12	-	-	-	
									Including Thermal Gradient	402	19							
						Max Compression w/ corresponding moment	13413	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	-313	104							
									Including Thermal Gradient	-300	106							
						Max Moment with corresponding axial tension	13359	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	66	312							
									Including Thermal Gradient	91	309							
						Max Moment with corresponding axial compression	13359	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-48	312							
									Including Thermal Gradient	-23	309							
					2-V-L	Max Tension w/ corresponding moment	13330	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	227	26	D + F + L + H' + Ta + Ro +E'	73	4.68	-	-	-	
									Including Thermal Gradient	244	24							
						Max Compression w/ corresponding moment	13461	1.4D + 1.7F +1.7L + 1.7H + 1.7W	Excluding Thermal Gradient	-90	13							
									Including Thermal Gradient	-90	13							
						Max Moment with axial tension	13461	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	99	62							
									Including Thermal Gradient	100	65							
						Max Moment with axial compression	13458	1.4D + 1.7F +1.7L + 1.7H + 1.7W	Excluding Thermal Gradient	-69	37							
									Including Thermal Gradient	-69	37							

Table 3H.6-7 Results of UHS/RSW Pump House Concrete Wall Design (Continued)

Location	Thickness (ft)	Face	Direction	Reinforcement Layout Drawing Number (1)	Reinforcement Zone Number (2)	Maximum Forces (3)	Element	Longitudinal Reinforcement Design Loads: Axial and Flexure Loads: Load Combination	Thermal Gradient Loading Condition	Axial (4) (kips / ft)	Flexure (4) (ft-kips / ft)	In-Plane Shear Loads: Load Combination	In-plane (5) Shear (kips / ft)	Longitudinal Reinforcement Provided (in^2/ ft)	Transverse Shear Design Loads: Load Combination	Transverse Shear (6) Reinforcement Design Loads (kips / ft)	Transverse Shear (7) Reinforcement Provided (in^2/ft^2)	Remarks
Pump House Buttresses	6	North (Top) / South (Bottom)	Vertical	3H.6-81	3-V-L	Max Tension w/ corresponding moment	13281	1.4D + 1.7F +1.7L + 1.7H + 1.7W	Excluding Thermal Gradient	511	58	D + F + L + H' + Ta + Ro +E'	73	4.68	-	-	-	
									Including Thermal Gradient	511	58							
						Max Compression w/ corresponding moment	13410	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	-663	188							
									Including Thermal Gradient	-640	191							
						Max Moment with axial tension	13385	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	41	468							
									Including Thermal Gradient	45	468							
						Max Moment with axial compression	13384	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-6	342							
									Including Thermal Gradient	-5	340							
UHS Basin North Wall	6	North (outside)	Horizontal	3H.6-82	1-H-L	Max Tension w/ corresponding moment	5895	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	219	-321	D + F + L + H' + Ta + Ro +E'	69	3.12	-	-	-	
									Including Thermal Gradient	210	-469							
						Max Compression w/ corresponding moment	6109	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	-540	-4							
									Including Thermal Gradient	-539	-481							
						Max Moment with axial tension	3939	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	18	-670							
									Including Thermal Gradient	16	-709							
						Max Moment with axial compression	3939	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-24	-670							
									Including Thermal Gradient	-26	-709							
					2-H-L	Max Tension w/ corresponding moment	5910	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	624	-66	D + F + L + H' + Ta + Ro +E'	69	6.24	-	-	-	
									Including Thermal Gradient	620	-226							
						Max Compression w/ corresponding moment	2992	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	-489	-284							
									Including Thermal Gradient	-486	-427							
						Max Moment with axial tension	5801	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	56	-997							
									Including Thermal Gradient	14	-1178							
						Max Moment with axial compression	5801	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-130	-997							
									Including Thermal Gradient	-172	-1178							
					3-H-L	Max Tension w/ corresponding moment	6235	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	1057	-95	D + F + L + H' + Ta + Ro +E'	29	9.36	-	-	-	
									Including Thermal Gradient	1025	334							
						Max Compression w/ corresponding moment	5873	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-285	-152							
									Including Thermal Gradient	-275	-262							
						Max Moment with axial tension	5857	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	483	-485							
									Including Thermal Gradient	457	-108							
						Max Moment with axial compression	6683	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-77	-448							
									Including Thermal Gradient	-71	-620							

Table 3H.6-7 Results of UHS/RSW Pump House Concrete Wall Design (Continued)

Location	Thickness (ft)	Face	Direction	Reinforcement Layout Drawing Number (1)	Reinforcement Zone Number (2)	Maximum Forces (3)	Element	Longitudinal Reinforcement Design Loads: Axial and Flexure Loads: Load Combination	Thermal Gradient Loading Condition	Axial (4) (kips / ft)	Flexure (4) (ft-kips / ft)	In-Plane Shear Loads: Load Combination	In-plane (5) Shear (kips / ft)	Longitudinal Reinforcement Provided (in^2/ ft)	Transverse Shear Design Loads: Load Combination	Transverse Shear (6) Reinforcement Design Loads (kips / ft)	Transverse Shear (7) Reinforcement Provided (in^2/ft^2)	Remarks
UHS Basin North Wall	6	North (outside)	Horizontal	3H.6-82	4-H-L	Max Tension w/ corresponding moment	3600	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	1344	-23	D + F + L + H' + Ta + Ro +E'	69	13.86	-	-	-	
									Including Thermal Gradient	1352	-148							
						Max Compression w/ corresponding moment	3600	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-481	-82							
									Including Thermal Gradient	-482	356							
						Max Moment with axial tension	5988	1.4D + 1.7F +1.7L + 1.7H + 1.7W	Excluding Thermal Gradient	6	-232							
									Including Thermal Gradient	6	-232							
						Max Moment with axial compression	5988	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	-200	-380							
									Including Thermal Gradient	-196	-885							
					5-H-L	Max Tension w/ corresponding moment	6045	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	526	-225	D + F + L + H' + Ta + Ro +E'	57	9.36	-	-	-	
									Including Thermal Gradient	519	-391							
						Max Compression w/ corresponding moment	6046	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-21	-109							
									Including Thermal Gradient	-19	-162							
						Max Moment with axial tension	6046	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	485	-315							
									Including Thermal Gradient	479	-473							
						Max Moment with axial compression	6046	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	-5	-207							
									Including Thermal Gradient	-1	-304							
					6-H-L	Max Tension w/ corresponding moment	3606	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	379	-82	D + F + L + H' + Ta + Ro +E'	69	9.36	-	-	-	
									Including Thermal Gradient	372	-182							
						Max Compression w/ corresponding moment	3608	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-324	-85							
									Including Thermal Gradient	-327	376							
						Max Moment with axial tension	3607	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	80	-419							
									Including Thermal Gradient	76	-504							
						Max Moment with axial compression	3366	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	-15	-382							
									Including Thermal Gradient	-16	-464							
			Vertical	3H.6-83	1-V-L	Max Tension w/ corresponding moment	6102	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	251	-146	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	187	3.12	-	-	-	
									Including Thermal Gradient	244	196							
						Max Compression w/ corresponding moment	3366	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	-309	-41							
									Including Thermal Gradient	-295	-87							
						Max Moment with axial tension	2992	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	74	-446							
									Including Thermal Gradient	78	-677							
						Max Moment with axial compression	2968	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	-73	-463							
									Including Thermal Gradient	-69	-689							

Table 3H.6-7 Results of UHS/RSW Pump House Concrete Wall Design (Continued)

Location	Thickness (ft)	Face	Direction	Reinforcement Layout Drawing Number (1)	Reinforcement Zone Number (2)	Maximum Forces (3)	Element	Longitudinal Reinforcement Design Loads: Axial and Flexure Loads: Load Combination	Thermal Gradient Loading Condition	Axial (4) (kips / ft)	Flexure (4) (ft-kips / ft)	In-Plane Shear Loads: Load Combination	In-plane (5) Shear (kips / ft)	Longitudinal Reinforcement Provided (in^2/ ft)	Transverse Shear Design Loads: Load Combination	Transverse Shear (6) Reinforcement Design Loads (kips / ft)	Transverse Shear (7) Reinforcement Provided (in^2/ft^2)	Remarks
UHS Basin North Wall	6	North (outside)	Vertical	3H.6-83	2-V-L	Max Tension w/ corresponding moment	4042	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	281	-3	D + F + L + H' + Ta + Ro +E'	138	4.68	-	-	-	
									Including Thermal Gradient	235	-617							
						Max Compression w/ corresponding moment	6109	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-328	-140							
									Including Thermal Gradient	-317	70							
						Max Moment with axial tension	6029	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	83	-394							
									Including Thermal Gradient	70	-927							
						Max Moment with axial compression	6029	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-76	-394							
									Including Thermal Gradient	-88	-927							
					3-V-L	Max Tension w/ corresponding moment	6101	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	543	-1	1.4D + 1.4To + 1.7F + 0.9H	258	6.24	-	-	-	
									Including Thermal Gradient	512	118							
						Max Compression w/ corresponding moment	5791	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	-547	-33							
									Including Thermal Gradient	-538	-489							
						Max Moment with corresponding axial tension	3016	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	42	-458							
									Including Thermal Gradient	47	-697							
						Max Moment with corresponding axial compression	5975	1.4D + 1.7F +1.7L + 1.7H + 1.7W	Excluding Thermal Gradient	-7	-407							
									Including Thermal Gradient	-7	-407							
					4-V-L	Max Tension w/ corresponding moment	3025	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	410	-41	1.4D + 1.4To + 1.7F + 0.9H	258	9.36	-	-	-	
									Including Thermal Gradient	412	-881							
						Max Compression w/ corresponding moment	2459	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	-401	-29							
									Including Thermal Gradient	-408	612							
						Max Moment with axial tension	5976	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	44	-476							
									Including Thermal Gradient	48	-795							
						Max Moment with axial compression	3022	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	-1	-405							
									Including Thermal Gradient	3	-671							

Table 3H.6-7 Results of UHS/RSW Pump House Concrete Wall Design (Continued)

Location	Thickness (ft)	Face	Direction	Reinforcement Layout Drawing Number (1)	Reinforcement Zone Number (2)	Maximum Forces (3)	Element	Longitudinal Reinforcement Design Loads: Axial and Flexure Loads: Load Combination	Thermal Gradient Loading Condition	Axial (4) (kips / ft)	Flexure (4) (ft-kips / ft)	In-Plane Shear Loads: Load Combination	In-plane (5) Shear (kips / ft)	Longitudinal Reinforcement Provided (in^2/ ft)	Transverse Shear Design Loads: Load Combination	Transverse Shear (6) Reinforcement Design Loads (kips / ft)	Transverse Shear (7) Reinforcement Provided (in^2/ft^2)	Remarks
UHS Basin North Wall	6	North (outside)	Vertical	3H.6-83	5-V-L	Max Tension w/ corresponding moment	3027	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	554	-374	1.4D + 1.4To + 1.7F + 0.9H	258	10.92	-	-	-	
									Including Thermal Gradient	549	-1241							
						Max Compression w/ corresponding moment	5998	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-458	-5							
									Including Thermal Gradient	-445	212							
						Max Moment with axial tension	6005	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	8	-512							
									Including Thermal Gradient	-13	-1123							
						Max Moment with axial compression	6005	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-2	-494							
									Including Thermal Gradient	-23	-1103							
					6-V-L	Max Tension w/ corresponding moment	6094	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	659	-49	D + F + L + H' + Ta + Ro +E'	250	9.36	-	-	-	
									Including Thermal Gradient	660	-928							
						Max Compression w/ corresponding moment	2861	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	-126	-1							
									Including Thermal Gradient	-147	220							
						Max Moment with axial tension	6094	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	41	-300							
									Including Thermal Gradient	12	-945							
						Max Moment with axial compression	2861	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-60	-290							
									Including Thermal Gradient	-67	147							
		South (inside)	Horizontal	3H.6-84	1-H-L	Max Tension w/ corresponding moment	5910	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	603	17	D + F + L + H' + Ta + Ro +E'	69	6.24	-	-	-	
									Including Thermal Gradient	599	-158							
						Max Compression w/ corresponding moment	6101	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	-710	347							
									Including Thermal Gradient	-705	-135							
						Max Moment with axial tension	5801	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	91	1066							
									Including Thermal Gradient	190	1502							
						Max Moment with axial compression	5801	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-95	1066							
									Including Thermal Gradient	3	1502							
					2-H-L	Max Tension w/ corresponding moment	6001	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	927	84	D + F + L + H' + Ta + Ro +E'	64	9.36	-	-	-	
									Including Thermal Gradient	889	429							
						Max Compression w/ corresponding moment	3001	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	-485	299							
									Including Thermal Gradient	-483	206							
						Max Moment with axial tension	6062	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	579	758							
									Including Thermal Gradient	571	559							
						Max Moment with axial compression	3003	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	-318	688							
									Including Thermal Gradient	-316	666							

Table 3H.6-7 Results of UHS/RSW Pump House Concrete Wall Design (Continued)

Location	Thickness (ft)	Face	Direction	Reinforcement Layout Drawing Number (1)	Reinforcement Zone Number (2)	Maximum Forces (3)	Element	Longitudinal Reinforcement Design Loads						Longitudinal Reinforcement Provided (in^2/ ft)	Transverse Shear Design Loads		Transverse Shear (7) Reinforcement Provided (in^2/ft^2)	Remarks
								Axial and Flexure Loads				In-Plane Shear Loads						
								Load Combination	Thermal Gradient Loading Condition	Axial (4) (kips / ft)	Flexure (4) (ft-kips / ft)	Load Combination	In-plane (5) Shear (kips / ft)		Load Combination	Transverse Shear (6) Reinforcement Design Loads (kips / ft)		
UHS Basin North Wall	6	South (inside)	Horizontal	3H.6-84	3-H-L	Max Tension w/ corresponding moment	5873	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	670	22	D + F + L + H' + Ta + Ro +E'	64	9.36	-	-	-	
									Including Thermal Gradient	645	375							
						Max Compression w/ corresponding moment	2980	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	-469	287							
									Including Thermal Gradient	-465	194							
						Max Moment with axial tension	2949	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	192	1031							
									Including Thermal Gradient	150	714							
						Max Moment with axial compression	2979	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	-264	784							
									Including Thermal Gradient	-261	755							
					4-H-L	Max Tension w/ corresponding moment	6094	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	673	486	D + F + L + H' + Ta + Ro +E'	69	9.36	-	-	-	
									Including Thermal Gradient	677	328							
						Max Compression w/ corresponding moment	2861	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	-363	241							
									Including Thermal Gradient	-367	38							
						Max Moment with axial tension	3641	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	1	1302							
									Including Thermal Gradient	45	1201							
						Max Moment with axial compression	3641	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	-22	1306							
									Including Thermal Gradient	8	1204							
					5-H-L	Max Tension w/ corresponding moment	6177	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	1079	176	D + F + L + H' + Ta + Ro +E'	69	12.48	-	-	-	
									Including Thermal Gradient	1047	531							
						Max Compression w/ corresponding moment	3606	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-319	59							
									Including Thermal Gradient	-318	480							
						Max Moment with corresponding axial tension	5998	1.4D + 1.7F +1.7L + 1.7H + 1.7W	Excluding Thermal Gradient	172	851							
									Including Thermal Gradient	172	851							
						Max Moment with corresponding axial compression	5998	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-33	657							
									Including Thermal Gradient	-34	1015							
					6-H-L	Max Tension w/ corresponding moment	3600	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	1394	22	D + F + L + H' + Ta + Ro +E'	69	14.04	-	-	-	
									Including Thermal Gradient	1403	-109							
						Max Compression w/ corresponding moment	6124	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	-529	181							
									Including Thermal Gradient	-529	-303							
						Max Moment with corresponding axial tension	3600	1.4D + 1.7F +1.7L + 1.7H + 1.7W	Excluding Thermal Gradient	45	269							
									Including Thermal Gradient	45	269							
						Max Moment with corresponding axial compression	3601	1.4D + 1.7F +1.7L + 1.7H + 1.7W	Excluding Thermal Gradient	-8	222							
									Including Thermal Gradient	-8	222							

Table 3H.6-7 Results of UHS/RSW Pump House Concrete Wall Design (Continued)

Location	Thickness (ft)	Face	Direction	Reinforcement Layout Drawing Number (1)	Reinforcement Zone Number (2)	Maximum Forces (3)	Element	Longitudinal Reinforcement Design Loads						Longitudinal Reinforcement Provided (in²/ ft)	Transverse Shear Design Loads		Transverse Shear (7) Reinforcement Provided (in²/ft²)	Remarks
								Axial and Flexure Loads				In-Plane Shear Loads						
								Load Combination	Thermal Gradient Loading Condition	Axial (4) (kips / ft)	Flexure (4) (ft-kips / ft)	Load Combination	In-plane (5) Shear (kips / ft)		Load Combination	Transverse Shear (6) Reinforcement Design Loads (kips / ft)		
UHS Basin North Wall	6	South (inside)	Vertical	3H.6-85	1-V-L	Max Tension w/ corresponding moment	2975	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	153	7	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	187	3.12	-	-	-	
									Including Thermal Gradient	142	-748							
						Max Compression w/ corresponding moment	3359	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-251	13							
									Including Thermal Gradient	-243	-43							
						Max Moment with axial tension	2480	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	15	316							
									Including Thermal Gradient	19	252							
						Max Moment with axial compression	2480	1.4D + 1.7F +1.7L + 1.7H + 1.7W	Excluding Thermal Gradient	-104	374							
									Including Thermal Gradient	-104	374							
					2-V-L	Max Tension w/ corresponding moment	5795	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	369	6	1.4D + 1.4To + 1.7F + 0.9H	258	6.24	-	-	-	
									Including Thermal Gradient	388	-671							
						Max Compression w/ corresponding moment	3607	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	-381	345							
									Including Thermal Gradient	-365	313							
						Max Moment with axial tension	3636	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	4	460							
									Including Thermal Gradient	0	498							
						Max Moment with axial compression	3636	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	-253	911							
									Including Thermal Gradient	-257	920							
					3-V-L	Max Tension w/ corresponding moment	3027	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	554	168	1.4D + 1.4To + 1.7F + 0.9H	258	9.36	-	-	-	
									Including Thermal Gradient	549	-749							
						Max Compression w/ corresponding moment	2469	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-533	13							
									Including Thermal Gradient	-537	143							
						Max Moment with axial tension	6005	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	1	489							
									Including Thermal Gradient	12	787							
						Max Moment with axial compression	6005	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-342	489							
									Including Thermal Gradient	-331	787							
					4-V-L	Max Tension w/ corresponding moment	6101	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	549	1	1.4D + 1.4To + 1.7F + 0.9H	258	9.36	-	-	-	
									Including Thermal Gradient	519	122							
						Max Compression w/ corresponding moment	6101	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	-1607	1283							
									Including Thermal Gradient	-1572	776							
						Max Moment with axial tension	6104	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	0	1524							
									Including Thermal Gradient	9	993							
						Max Moment with axial compression	6101	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	-1009	1830							
									Including Thermal Gradient	-985	1301							

Table 3H.6-7 Results of UHS/RSW Pump House Concrete Wall Design (Continued)

Location	Thickness (ft)	Face	Direction	Reinforcement Layout Drawing Number [1]	Reinforcement Zone Number [2]	Maximum Forces [3]	Element	Longitudinal Reinforcement Design Loads: Axial and Flexure Loads: Load Combination	Thermal Gradient Loading Condition	Axial [4] (kips / ft)	Flexure [4] (ft-kips / ft)	In-Plane Shear Loads: Load Combination	In-plane [5] Shear (kips / ft)	Longitudinal Reinforcement Provided (in^2/ ft)	Transverse Shear Design Loads: Load Combination	Transverse Shear [6] Reinforcement Design Loads (kips / ft)	Transverse Shear [7] Reinforcement Provided (in^2/ft^2)	Remarks
UHS Basin North Wall	6	South (inside)	Vertical	3H.6-85	1-V-L	Max Tension w/ corresponding moment	2975	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	153	7	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	187	3.12	-	-	-	
									Including Thermal Gradient	142	-748							
						Max Compression w/ corresponding moment	3359	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-251	13							
									Including Thermal Gradient	-243	-43							
						Max Moment with axial tension	2480	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	15	316							
									Including Thermal Gradient	19	252							
						Max Moment with axial compression	2480	1.4D + 1.7F +1.7L + 1.7H + 1.7W	Excluding Thermal Gradient	-104	374							
									Including Thermal Gradient	-104	374							
					2-V-L	Max Tension w/ corresponding moment	5795	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	369	6	1.4D + 1.4To + 1.7F + 0.9H	258	6.24	-	-	-	
									Including Thermal Gradient	388	-671							
						Max Compression w/ corresponding moment	3607	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	-381	345							
									Including Thermal Gradient	-365	313							
						Max Moment with axial tension	3636	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	4	460							
									Including Thermal Gradient	0	498							
						Max Moment with axial compression	3636	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	-253	911							
									Including Thermal Gradient	-257	920							
					3-V-L	Max Tension w/ corresponding moment	3027	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	554	168	1.4D + 1.4To + 1.7F + 0.9H	258	9.36	-	-	-	
									Including Thermal Gradient	549	-749							
						Max Compression w/ corresponding moment	2469	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-533	13							
									Including Thermal Gradient	-537	143							
						Max Moment with axial tension	6005	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	1	489							
									Including Thermal Gradient	12	787							
						Max Moment with axial compression	6005	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-342	489							
									Including Thermal Gradient	-331	787							
					4-V-L	Max Tension w/ corresponding moment	6101	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	549	1	1.4D + 1.4To + 1.7F + 0.9H	258	9.36	-	-	-	
									Including Thermal Gradient	519	122							
						Max Compression w/ corresponding moment	6101	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	-1607	1283							
									Including Thermal Gradient	-1572	776							
						Max Moment with axial tension	6104	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	0	1524							
									Including Thermal Gradient	9	993							
						Max Moment with axial compression	6101	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	-1009	1830							
									Including Thermal Gradient	-985	1301							

Table 3H.6-7 Results of UHS/RSW Pump House Concrete Wall Design (Continued)

Location	Thickness (ft)	Face	Direction	Reinforcement Layout Drawing Number (1)	Reinforcement Zone Number (2)	Maximum Forces (3)	Element	Longitudinal Reinforcement Design Loads: Axial and Flexure Loads: Load Combination	Thermal Gradient Loading Condition	Axial (4) (kips / ft)	Flexure (4) (ft-kips / ft)	In-Plane Shear Loads: Load Combination	In-plane (5) Shear (kips / ft)	Longitudinal Reinforcement Provided (in^2/ ft)	Transverse Shear Design Loads: Load Combination	Transverse Shear (6) Reinforcement Design Loads (kips / ft)	Transverse Shear (7) Reinforcement Provided (in^2/ft^2)	Remarks
UHS Basin North Wall	6	South (inside)	Vertical	3H.6-85	5-V-L	Max Tension w/ corresponding moment	6094	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	588	10	D + F + L + H' + Ta + Ro +E'	250	13.50	-	-	-	
									Including Thermal Gradient	588	-905							
						Max Compression w/ corresponding moment	3641	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	-374	1077							
									Including Thermal Gradient	-386	1020							
						Max Moment with axial tension	3641	1.4D + 1.7F +1.7L + 1.7H + 1.7W	Excluding Thermal Gradient	7	787							
									Including Thermal Gradient	7	787							
						Max Moment with axial compression	3641	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	-327	2045							
									Including Thermal Gradient	-337	1954							
					6-V-L	Max Tension w/ corresponding moment	4149	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	298	14	D + F + L + H' + Ta + Ro +E'	250	9.00	-	-	-	
									Including Thermal Gradient	197	-942							
						Max Compression w/ corresponding moment	3591	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	-196	31							
									Including Thermal Gradient	-209	29							
						Max Moment with axial tension	4148	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	41	293							
									Including Thermal Gradient	19	157							
						Max Moment with axial compression	4149	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-136	329							
									Including Thermal Gradient	-101	615							
					7-V-L	Max Tension w/ corresponding moment	5833	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	103	117	1.4D + 1.4To + 1.7F + 0.9H	105	6.24	-	-	-	
									Including Thermal Gradient	91	-844							
						Max Compression w/ corresponding moment	5833	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-80	64							
									Including Thermal Gradient	-77	318							
						Max Moment with axial tension	3952	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	50	124							
									Including Thermal Gradient	37	-800							
						Max Moment with axial compression	3953	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-46	122							
									Including Thermal Gradient	-43	348							
		-	Horizontal Plane	3H.6-86	1-H-T		-	-	-	-	-	-	-	-	1.4D+1.4To+1.7F+0.9H	151	0.31 (#5 @12)	
				3H.6-86	2-H-T		-	-	-	-	-	-	-	-	1.4D+1.4To+1.7F+0.9H	146	0.31 (#5 @12)	
				3H.6-86	3-H-T		-	-	-	-	-	-	-	-	1.4D+1.4To+1.7F+0.9H	128	0.31 (#5 @12)	
				3H.6-86	4-H-T		-	-	-	-	-	-	-	-	1.4D+1.4To+1.7F+0.9H	100	0.11 (#3 @12)	
				3H.6-86	5-H-T		-	-	-	-	-	-	-	-	1.4D+1.4To+1.7F+0.9H	96	0.11 (#3 @12)	
				3H.6-86	6-H-T		-	-	-	-	-	-	-	-	1.4D+1.4To+1.7F+0.9H	117	0.11 (#3 @12)	

Table 3H.6-7 Results of UHS/RSW Pump House Concrete Wall Design (Continued)

Location	Thickness (ft)	Face	Direction	Reinforcement Layout Drawing Number (1)	Reinforcement Zone Number (2)	Maximum Forces (3)	Element	Longitudinal Reinforcement Design Loads						Longitudinal Reinforcement Provided (in^2/ ft)	Transverse Shear Design Loads		Transverse Shear (7) Reinforcement Provided (in^2/ft^2)	Remarks
								Axial and Flexure Loads				In-Plane Shear Loads						
								Load Combination	Thermal Gradient Loading Condition	Axial (4) (kips / ft)	Flexure (4) (ft-kips / ft)	Load Combination	In-plane (5) Shear (kips / ft)		Load Combination	Transverse Shear (6) Reinforcement Design Loads (kips / ft)		
UHS Basin South Wall	6	South (outside)	Horizontal	3H.6-87	1-H-L	Max Tension w/ corresponding moment	3631	1.4D + 1.7F +1.7L + 1.7H + 1.7W	Excluding Thermal Gradient	287	-84	D + F + L + H' + Ta + Ro +E'	65	3.12	-	-	-	
									Including Thermal Gradient	287	-84							
						Max Compression w/ corresponding moment	1864	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	-541	-11							
									Including Thermal Gradient	-540	-488							
						Max Moment with axial tension	3528	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	24	-659							
									Including Thermal Gradient	22	-698							
						Max Moment with axial compression	3528	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-22	-659							
									Including Thermal Gradient	-24	-698							
					2-H-L	Max Tension w/ corresponding moment	4413	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	617	-22	D + F + L + H' + Ta + Ro +E'	54	6.24	-	-	-	
									Including Thermal Gradient	618	140							
						Max Compression w/ corresponding moment	2106	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	-550	-272							
									Including Thermal Gradient	-545	-414							
						Max Moment with axial tension	4318	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	62	-954							
									Including Thermal Gradient	20	-1133							
						Max Moment with axial compression	4318	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-122	-954							
									Including Thermal Gradient	-164	-1133							
					3-H-L	Max Tension w/ corresponding moment	4441	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	797	-70	D + F + L + H' + Ta + Ro +E'	15	7.80	-	-	-	
									Including Thermal Gradient	764	366							
						Max Compression w/ corresponding moment	4350	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-233	-152							
									Including Thermal Gradient	-223	-264							
						Max Moment with axial tension	4344	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	452	-528							
									Including Thermal Gradient	428	-151							
						Max Moment with axial compression	4479	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-142	-408							
									Including Thermal Gradient	-138	-584							
					4-H-L	Max Tension w/ corresponding moment	3685	1.4D + 1.7F +1.7L + 1.7H + 1.7W	Excluding Thermal Gradient	292	-129	D + F + L + H' + Ta + Ro +E'	32	6.24	-	-	-	
									Including Thermal Gradient	292	-129							
						Max Compression w/ corresponding moment	3664	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	-169	-18							
									Including Thermal Gradient	-164	-951							
						Max Moment with axial tension	3684	1.4D + 1.7F +1.7L + 1.7H + 1.7W	Excluding Thermal Gradient	215	-229							
									Including Thermal Gradient	215	-229							
						Max Moment with axial compression	3684	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	-129	-200							
									Including Thermal Gradient	-118	-294							

Table 3H.6-7 Results of UHS/RSW Pump House Concrete Wall Design (Continued)

Location	Thickness (ft)	Face	Direction	Reinforcement Layout Drawing Number (1)	Reinforcement Zone Number (2)	Maximum Forces (3)	Element	Longitudinal Reinforcement Design Loads – Axial and Flexure Loads – Load Combination	Thermal Gradient Loading Condition	Axial (4) (kips / ft)	Flexure (4) (ft-kips / ft)	In-Plane Shear Loads – Load Combination	In-plane (5) Shear (kips / ft)	Longitudinal Reinforcement Provided (in^2/ ft)	Transverse Shear Design Loads – Load Combination	Transverse Shear (6) Reinforcement Design Loads (kips / ft)	Transverse Shear (7) Reinforcement Provided (in^2/ft^2)	Remarks
UHS Basin South Wall	6	South (outside)	Vertical	3H.6-88	1-V-L	Max Tension w/ corresponding moment	2113	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	201	-27	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	122	3.12	-	-	-	
									Including Thermal Gradient	186	-741							
						Max Compression w/ corresponding moment	1843	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-341	-19							
									Including Thermal Gradient	-334	214							
						Max Moment with axial tension	1741	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	14	-455							
									Including Thermal Gradient	-2	-138							
						Max Moment with axial compression	2201	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	-135	-480							
									Including Thermal Gradient	-126	-715							
					2-V-L	Max Tension w/ corresponding moment	3664	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	281	-15	D + F + L + H' + Ta + Ro +E'	122	4.68	-	-	-	
									Including Thermal Gradient	237	-628							
						Max Compression w/ corresponding moment	1844	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-490	-1							
									Including Thermal Gradient	-475	128							
						Max Moment with axial tension	2137	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	1	-333							
									Including Thermal Gradient	5	-523							
						Max Moment with axial compression	2136	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	-40	-381							
									Including Thermal Gradient	-38	-643							
					3-V-L	Max Tension w/ max moment	1770/ 1771	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	N/A	N/A	D + F + L + H' + Ta + Ro +E'	154	6.24	-	-	-	(8)
									Including Thermal Gradient	333	66							
						Max Compression w/ corresponding moment	5	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	-532	-25							
									Including Thermal Gradient	-520	-324							
						Max Moment with axial tension	3528	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	173	-336							
									Including Thermal Gradient	95	-824							
						Max Moment with axial compression	2157	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	-51	-415							
									Including Thermal Gradient	-49	-647							
					4-V-L	Max Tension w/ corresponding moment	1880	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	661	-6	D + F + L + H' + Ta + Ro +E'	87	7.80	-	-	-	
									Including Thermal Gradient	621	71							
						Max Compression w/ corresponding moment	1755	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	-445	-53							
									Including Thermal Gradient	-429	-510							
						Max Moment with axial tension	1757	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	202	-262							
									Including Thermal Gradient	217	-625							
						Max Moment with axial compression	1755	1.4D + 1.7F +1.7L + 1.7H + 1.7W	Excluding Thermal Gradient	-1	-220							
									Including Thermal Gradient	-1	-220							

Table 3H.6-7 Results of UHS/RSW Pump House Concrete Wall Design (Continued)

Location	Thickness (ft)	Face	Direction	Reinforcement Layout Drawing Number (1)	Reinforcement Zone Number (2)	Maximum Forces (3)	Element	Longitudinal Reinforcement Design Loads: Axial and Flexure Loads: Load Combination	Thermal Gradient Loading Condition	Axial (4) (kips / ft)	Flexure (4) (ft-kips / ft)	In-Plane Shear Loads: Load Combination	In-plane Shear (5) (kips / ft)	Longitudinal Reinforcement Provided (in^2/ ft)	Transverse Shear Design Loads: Load Combination	Transverse Shear (6) Reinforcement Design Loads (kips / ft)	Transverse Shear (7) Reinforcement Provided (in^2/ft^2)	Remarks
UHS Basin South Wall	6	South (outside)	Vertical	3H.6-88	5-V-L	Max Tension w/ corresponding moment	1752	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	324	-49	1.4D + 1.4To + 1.7F + 0.9H	106	4.68	-	-	-	
									Including Thermal Gradient	310	143							
						Max Compression w/ corresponding moment	1754	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-353	-16							
									Including Thermal Gradient	-337	-268							
						Max Moment with corresponding axial tension	1758	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	41	-433							
									Including Thermal Gradient	24	-168							
						Max Moment with corresponding axial compression	2204	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	-142	-438							
									Including Thermal Gradient	-131	-704							
					6-V-L	Max Tension w/ corresponding moment	2193	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	113	-107	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	122	4.68	-	-	-	
									Including Thermal Gradient	103	-783							
						Max Compression w/ corresponding moment	1718	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-211	-99							
									Including Thermal Gradient	-212	149							
						Max Moment with axial tension	1740	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	11	-427							
									Including Thermal Gradient	-2	-337							
						Max Moment with axial compression	2197	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	-120	-451							
									Including Thermal Gradient	-113	-683							
					7-V-L	Max Tension w/ corresponding moment	4370	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	157	-64	D + F + L + H' + Ta + Ro +E'	84	4.68	-	-	-	
									Including Thermal Gradient	132	-782							
						Max Compression w/ corresponding moment	4369	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-124	-106							
									Including Thermal Gradient	-117	239							
						Max Moment with axial tension	4369	1.4D + 1.7F +1.7L + 1.7H + 1.7W	Excluding Thermal Gradient	15	-185							
									Including Thermal Gradient	9	-142							
						Max Moment with axial compression	4369	1.4D + 1.7F +1.7L + 1.7H + 1.7W	Excluding Thermal Gradient	-10	-185							
									Including Thermal Gradient	-10	-142							
					8-V-L	Max Tension w/ max moment	1770/ 1771	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	N/A	N/A	1.4D + 1.4To + 1.7F + 0.9H	104	6.24	-	-	-	(8)
									Including Thermal Gradient	333	66							
						Max Compression w/ corresponding moment	-	-	Excluding Thermal Gradient	-	-							
									Including Thermal Gradient	-	-							
						Max Moment with axial tension	1770/ 1771	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	N/A	N/A							
									Including Thermal Gradient	33	754							
						Max Moment with axial compression	-	-	Excluding Thermal Gradient	-	-							
									Including Thermal Gradient	-	-							

Table 3H.6-7 Results of UHS/RSW Pump House Concrete Wall Design (Continued)

Location	Thickness (ft)	Face	Direction	Reinforcement Layout Drawing Number (1)	Reinforcement Zone Number (2)	Maximum Forces (3)	Element	Longitudinal Reinforcement Design Loads: Axial and Flexure Loads: Load Combination	Thermal Gradient Loading Condition	Axial (4) (kips / ft)	Flexure (4) (ft-kips / ft)	In-Plane Shear Loads: Load Combination	In-plane (5) Shear (kips / ft)	Longitudinal Reinforcement Provided (in^2/ ft)	Transverse Shear Design Loads: Load Combination	Transverse Shear (6) Reinforcement Design Loads (kips / ft)	Transverse Shear (7) Reinforcement Provided (in^2/ft^2)	Remarks
UHS Basin South Wall	6	North (inside)	Horizontal	3H.6-89	1-H-L	Max Tension w/ corresponding moment	4473	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	681	77	D + F + L + H' + Ta + Ro +E'	65	6.24	-	-	-	
									Including Thermal Gradient	657	338							
						Max Compression w/ corresponding moment	1770	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	-728	378							
									Including Thermal Gradient	-721	-103							
						Max Moment with axial tension	4318	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	92	1115							
									Including Thermal Gradient	191	1552							
						Max Moment with axial compression	4318	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-92	1115							
									Including Thermal Gradient	7	1552							
					2-H-L	Max Tension w/ corresponding moment	4441	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	804	81	D + F + L + H' + Ta + Ro +E'	25	7.80	-	-	-	
									Including Thermal Gradient	770	394							
						Max Compression w/ corresponding moment	4505	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-276	671							
									Including Thermal Gradient	-155	939							
						Max Moment with axial tension	4505	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	104	1126							
									Including Thermal Gradient	142	1277							
						Max Moment with axial compression	4505	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-83	1126							
									Including Thermal Gradient	-44	1277							
					3-H-L	Max Tension w/ corresponding moment	2204	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	402	191	D + F + L + H' + Ta + Ro +E'	54	9.36	-	-	-	
									Including Thermal Gradient	397	-283							
						Max Compression w/ corresponding moment	2115	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	-558	323							
									Including Thermal Gradient	-554	229							
						Max Moment with axial tension	2215	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	173	1124							
									Including Thermal Gradient	146	801							
						Max Moment with axial compression	2068	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	-282	798							
									Including Thermal Gradient	-276	769							
					4-H-L	Max Tension w/ corresponding moment	2094	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	350	202	D + F + L + H' + Ta + Ro +E'	54	9.36	-	-	-	
									Including Thermal Gradient	344	-121							
						Max Compression w/ corresponding moment	2094	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	-550	291							
									Including Thermal Gradient	-545	197							
						Max Moment with axial tension	2092	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	266	753							
									Including Thermal Gradient	258	465							
						Max Moment with axial compression	2093	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	-398	718							
									Including Thermal Gradient	-392	699							

Table 3H.6-7 Results of UHS/RSW Pump House Concrete Wall Design (Continued)

Location	Thickness (ft)	Face	Direction	Reinforcement Layout Drawing Number (1)	Reinforcement Zone Number (2)	Maximum Forces (3)	Element	Longitudinal Reinforcement Design Loads — Axial and Flexure Loads				Longitudinal Reinforcement Design Loads — In-Plane Shear Loads		Longitudinal Reinforcement Provided (in^2/ ft)	Transverse Shear Design Loads		Transverse Shear (7) Reinforcement Provided (in^2/ft^2)	Remarks
								Load Combination	Thermal Gradient Loading Condition	Axial (4) (kips / ft)	Flexure (4) (ft-kips / ft)	Load Combination	In-plane (5) Shear (kips / ft)		Load Combination	Transverse Shear (6) Reinforcement Design Loads (kips / ft)		
UHS Basin South Wall	6	North (inside)	Vertical	3H.6-90	1-V-L	Max Tension w/ corresponding moment	2090	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	172	18	D + F + L + H' + Ta + Ro +E'	129	3.12	-	-	-	
									Including Thermal Gradient	153	-695							
						Max Compression w/ corresponding moment	2072	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-203	72							
									Including Thermal Gradient	-202	286							
						Max Moment with axial tension	4342	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	4	184							
									Including Thermal Gradient	2	62							
						Max Moment with axial compression	4342	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	0	184							
									Including Thermal Gradient	-2	62							
					2-V-L	Max Tension w/ corresponding moment	1759	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	415	21	D + F + L + H' + Ta + Ro +E'	154	6.24	-	-	-	
									Including Thermal Gradient	412	133							
						Max Compression w/ corresponding moment	24	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	-521	228							
									Including Thermal Gradient	-502	-456							
						Max Moment with corresponding axial tension	1380	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	73	330							
									Including Thermal Gradient	74	92							
						Max Moment with corresponding axial compression	24	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	-411	419							
									Including Thermal Gradient	-395	-123							
					3-V-L	Max Tension w/ corresponding moment	1753	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	617	2	D + F + L + H' + Ta + Ro +E'	154	9.36	-	-	-	(8)
									Including Thermal Gradient	597	162							
						Max Compression w/ max moment	1770/ 1771	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	N/A	N/A							
									Including Thermal Gradient	-898	1880							
						Max Moment with corresponding axial tension	1865	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	45	1137							
									Including Thermal Gradient	42	871							
						Max Moment with corresponding axial compression	1770/ 1771	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	N/A	N/A							
									Including Thermal Gradient	-898	1880							
					4-V-L	Max Tension w/ corresponding moment	1062	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	80	87	D + F + L + H' + Ta + Ro +E'	149	10.92	-	-	-	
									Including Thermal Gradient	87	-516							
						Max Compression w/ corresponding moment	1778	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-453	134							
									Including Thermal Gradient	-466	250							
						Max Moment with axial tension	1778	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	6	1025							
									Including Thermal Gradient	24	748							
						Max Moment with axial compression	1778	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	-258	1780							
									Including Thermal Gradient	-264	1296							

Table 3H.6-7 Results of UHS/RSW Pump House Concrete Wall Design (Continued)

Location	Thickness (ft)	Face	Direction	Reinforcement Layout Drawing Number (1)	Reinforcement Zone Number (2)	Maximum Forces (3)	Element	Longitudinal Reinforcement Design Loads: Axial and Flexure Loads: Load Combination	Thermal Gradient Loading Condition	Axial (4) (kips / ft)	Flexure (4) (ft-kips / ft)	In-Plane Shear Loads: Load Combination	In-plane (5) Shear (kips / ft)	Longitudinal Reinforcement Provided (in^2/ ft)	Transverse Shear Design Loads: Load Combination	Transverse Shear (6) Reinforcement Design Loads (kips / ft)	Transverse Shear (7) Reinforcement Provided (in^2/ft^2)	Remarks
UHS Basin South Wall	6	North (inside)	Vertical	3H.6-90	5-V-L	Max Tension w/ corresponding moment	2184	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	222	15	D + F + L + H' + Ta + Ro +E'	154	9.36	-	-	-	
									Including Thermal Gradient	210	-661							
						Max Compression w/ corresponding moment	2163	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-201	14							
									Including Thermal Gradient	-196	198							
						Max Moment with axial tension	4475	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	133	100							
									Including Thermal Gradient	104	-874							
						Max Moment with axial compression	2184	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	-38	85							
									Including Thermal Gradient	-35	102							
					6-V-L	Max Tension w/ corresponding moment	1755	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	535	2	1.4D + 1.4To + 1.7F + 0.9H	106	9.36	-	-	-	
									Including Thermal Gradient	534	137							
						Max Compression w/ corresponding moment	1755	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	-405	145							
									Including Thermal Gradient	-386	-483							
						Max Moment with axial tension	1754	1.4D + 1.7F +1.7L + 1.7H + 1.7W	Excluding Thermal Gradient	7	299							
									Including Thermal Gradient	7	299							
						Max Moment with axial compression	1754	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	-271	371							
									Including Thermal Gradient	-252	-259							
					7-V-L	Max Tension w/ corresponding moment	1481	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	162	48	D + F + L + H' + Ta + Ro +E'	154	6.24	-	-	-	
									Including Thermal Gradient	160	-424							
						Max Compression w/ corresponding moment	1196	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-306	214							
									Including Thermal Gradient	-311	342							
						Max Moment with axial tension	1611	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	66	356							
									Including Thermal Gradient	66	123							
						Max Moment with axial compression	993	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	-136	527							
									Including Thermal Gradient	-134	93							
					8-V-L	Max Tension w/ corresponding moment	3584	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	171	42	D + F + L + H' + Ta + Ro +E'	129	6.24	-	-	-	
									Including Thermal Gradient	139	-903							
						Max Compression w/ corresponding moment	4396	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-106	22							
									Including Thermal Gradient	-98	288							
						Max Moment with axial tension	3605	1.4D + 1.7F +1.7L + 1.7H + 1.7W	Excluding Thermal Gradient	5	72							
									Including Thermal Gradient	5	72							
						Max Moment with axial compression	3585	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-65	81							
									Including Thermal Gradient	-57	320							

Table 3H.6-7 Results of UHS/RSW Pump House Concrete Wall Design (Continued)

Location	Thickness (ft)	Face	Direction	Reinforcement Layout Drawing Number (1)	Reinforcement Zone Number (2)	Maximum Forces (3)	Element	Longitudinal Reinforcement Design Loads						Longitudinal Reinforcement Provided (in^2/ ft)	Transverse Shear Design Loads		Transverse Shear (7) Reinforcement Provided (in^2/ft^2)	Remarks
								Axial and Flexure Loads				In-Plane Shear Loads						
								Load Combination	Thermal Gradient Loading Condition	Axial (4) (kips / ft)	Flexure (4) (ft-kips / ft)	Load Combination	In-plane (5) Shear (kips / ft)		Load Combination	Transverse Shear (6) Reinforcement Design Loads (kips / ft)		
UHS Basin South Wall	6	North (inside)	Vertical	3H.6-90	9-V-L	Max Tension w/ corresponding moment	2069	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	197	39	D + F + L + H' + Ta + Ro +E'	149	9.36	-	-	-	
									Including Thermal Gradient	184	-661							
						Max Compression w/ corresponding moment	1066	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-246	46							
									Including Thermal Gradient	-242	53							
						Max Moment with axial tension	2070	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	81	118							
									Including Thermal Gradient	61	52							
						Max Moment with axial compression	1066	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	-93	126							
									Including Thermal Gradient	-94	-610							
					10-V-L	Max Tension w/ corresponding moment	3	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	497	12	D + F + L + H' + Ta + Ro +E'	98	9.36	-	-	-	
									Including Thermal Gradient	478	192							
						Max Compression w/ corresponding moment	3	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	-1054	240							
									Including Thermal Gradient	-1026	-254							
						Max Moment with axial tension	3	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	56	218							
									Including Thermal Gradient	37	504							
						Max Moment with axial compression	3	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	-812	690							
									Including Thermal Gradient	-789	204							
		-	Horizontal Plane	3H.6-91	1-H-T		-	-	-	-	-	-	-	-	1.4D+1.4To+1.7F+0.9H	155	0.31 (#5 @12)	
				3H.6-91	2-H-T		-	-	-	-	-	-	-	-	1.4D+1.4To+1.7F+0.9H	150	0.31 (#5 @12)	
				3H.6-91	3-H-T		-	-	-	-	-	-	-	-	1.4D+1.4To+1.7F+0.9H	148	0.31 (#5 @12)	
				3H.6-91	4-H-T		-	-	-	-	-	-	-	-	1.4D+1.4To+1.7F+0.9H	147	0.31 (#5 @12)	
				3H.6-91	5-H-T		-	-	-	-	-	-	-	-	1.4D+1.4To+1.7F+0.9H	148	0.31 (#5 @12)	
				3H.6-91	6-H-T		-	-	-	-	-	-	-	-	1.4D+1.4To+1.7F+0.9H	146	0.20 (#4 @12)	
UHS Basin East Wall	6	East (outside)	Horizontal	3H.6-92	1-H-L	Max Tension w/ corresponding moment	5221	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	146	-328	D + F + L + H' + Ta + Ro +E'	83	3.12	-	-	-	
									Including Thermal Gradient	131	-481							
						Max Compression w/ corresponding moment	2833	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	-523	-12							
									Including Thermal Gradient	-523	-489							
						Max Moment with axial tension	3935	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	27	-582							
									Including Thermal Gradient	24	-624							
						Max Moment with axial compression	3935	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-3	-582							
									Including Thermal Gradient	-7	-624							

Table 3H.6-7 Results of UHS/RSW Pump House Concrete Wall Design (Continued)

Location	Thickness (ft)	Face	Direction	Reinforcement Layout Drawing Number (1)	Reinforcement Zone Number (2)	Maximum Forces (3)	Element	Longitudinal Reinforcement Design Loads						Longitudinal Reinforcement Provided (in^2/ ft)	Transverse Shear Design Loads		Transverse Shear (7) Reinforcement Provided (in^2/ft^2)	Remarks
								Axial and Flexure Loads				In-Plane Shear Loads						
								Load Combination	Thermal Gradient Loading Condition	Axial (4) (kips / ft)	Flexure (4) (ft-kips / ft)	Load Combination	In-plane (5) Shear (kips / ft)		Load Combination	Transverse Shear (6) Reinforcement Design Loads (kips / ft)		
UHS Basin East Wall	6	East (outside)	Horizontal	3H.6-92	2-H-L	Max Tension w/ corresponding moment	5218	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	438	-66	D + F + L + H' + Ta + Ro +E'	70	6.24	-	-	-	
									Including Thermal Gradient	457	-150							
						Max Compression w/ corresponding moment	1991	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	-456	-288							
									Including Thermal Gradient	-451	-433							
						Max Moment with axial tension	5567	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	27	-1165							
									Including Thermal Gradient	-16	-1344							
						Max Moment with axial compression	5567	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-40	-1165							
									Including Thermal Gradient	-83	-1344							
					3-H-L	Max Tension w/ corresponding moment	4274	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	452	-100	D + F + L + H' + Ta + Ro +E'	44	9.36	-	-	-	
									Including Thermal Gradient	465	-195							
						Max Compression w/ corresponding moment	4286	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	-147	-198							
									Including Thermal Gradient	-152	-186							
						Max Moment with axial tension	4286	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	112	-591							
									Including Thermal Gradient	108	-595							
						Max Moment with axial compression	4286	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-141	-595							
									Including Thermal Gradient	-146	-587							
					4-H-L	Max Tension w/ max moment	5234/ 5235	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	N/A	N/A	D + F + L + H' + Ta + Ro +E'	44	15.60	-	-	-	(8)
									Including Thermal Gradient	694	416							
						Max Compression w/ max moment	5240/ 52414	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	N/A	N/A							
									Including Thermal Gradient	-308	1660							
						Max Moment with axial tension	5240/ 52414	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	N/A	N/A							
									Including Thermal Gradient	670	1982							
						Max Moment with axial compression	5240/ 52414	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	N/A	N/A							
									Including Thermal Gradient	-5	1747							

Table 3H.6-7 Results of UHS/RSW Pump House Concrete Wall Design (Continued)

Location	Thickness (ft)	Face	Direction	Reinforcement Layout Drawing Number (1)	Reinforcement Zone Number (2)	Maximum Forces (3)	Element	Longitudinal Reinforcement Design Loads						Longitudinal Reinforcement Provided (in²/ ft)	Transverse Shear Design Loads		Transverse Shear (7) Reinforcement Provided (in²/ft²)	Remarks
								Axial and Flexure Loads				In-Plane Shear Loads						
								Load Combination	Thermal Gradient Loading Condition	Axial (4) (kips / ft)	Flexure (4) (ft-kips / ft)	Load Combination	In-plane (5) Shear (kips / ft)		Load Combination	Transverse Shear (6) Reinforcement Design Loads (kips / ft)		
UHS Basin East Wall	6	East (outside)	Vertical	3H.6-93	1-V-L	Max Tension w/ corresponding moment	2794	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	304	-1	D + F + L + H' + Ta + Ro +E'	108	3.12	-	-	-	
									Including Thermal Gradient	320	-1							
						Max Compression w/ corresponding moment	2953	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-412	-142							
									Including Thermal Gradient	-397	133							
						Max Moment with corresponding axial tension	5256	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	28	-934							
									Including Thermal Gradient	32	-1141							
						Max Moment with corresponding axial compression	5256	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-6	-934							
									Including Thermal Gradient	-2	-1141							
					2-V-L	Max Tension w/ corresponding moment	2840	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	543	0	D + F + L + H' + Ta + Ro +E'	174	6.24	-	-	-	
									Including Thermal Gradient	512	83							
						Max Compression w/ corresponding moment	2832	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-571	-20							
									Including Thermal Gradient	-587	118							
						Max Moment with corresponding axial tension	4270	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	42	-1380							
									Including Thermal Gradient	41	-1596							
						Max Moment with corresponding axial compression	4270	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-114	-1380							
									Including Thermal Gradient	-115	-1596							
					3-V-L	Max Tension w/ corresponding moment	2825	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	688	0	D + F + L + H' + Ta + Ro +E'	174	9.36	-	-	-	
									Including Thermal Gradient	648	0							
						Max Compression w/ corresponding moment	2833	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-561	-253							
									Including Thermal Gradient	-535	6							
						Max Moment with corresponding axial tension	5242	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	76	-1730							
									Including Thermal Gradient	79	-1981							
						Max Moment with corresponding axial compression	5242	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-25	-1730							
									Including Thermal Gradient	-22	-1981							

Table 3H.6-7 Results of UHS/RSW Pump House Concrete Wall Design (Continued)

Location	Thickness (ft)	Face	Direction	Reinforcement Layout Drawing Number (1)	Reinforcement Zone Number (2)	Maximum Forces (3)	Element	Longitudinal Reinforcement Design Loads — Axial and Flexure Loads — Load Combination	Thermal Gradient Loading Condition	Axial (4) (kips / ft)	Flexure (4) (ft-kips / ft)	In-Plane Shear Loads — Load Combination	In-plane (5) Shear (kips / ft)	Longitudinal Reinforcement Provided (in^2/ ft)	Transverse Shear Design Loads — Load Combination	Transverse Shear (6) Reinforcement Design Loads (kips / ft)	Transverse Shear (7) Reinforcement Provided (in^2/ft^2)	Remarks
UHS Basin East Wall	6	East (outside)	Vertical	3H.6-93	4-V-L	Max Tension w/ corresponding moment	5235	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	277	-1013	D + F + L + H' + Ta + Ro +E'	174	13.86	-	-	-	
									Including Thermal Gradient	294	-1192							
						Max Compression w/ corresponding moment	5234	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-388	-1483							
									Including Thermal Gradient	-350	-1599							
						Max Moment with corresponding axial tension	3914	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	97	-1995							
									Including Thermal Gradient	90	-2158							
						Max Moment with corresponding axial compression	5240	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-213	-2464							
									Including Thermal Gradient	-192	-2633							
					5-V-L	Max Tension w/ corresponding moment	2434	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	167	-189	D + F + L + H' + Ta + Ro +E'	103	6.24	-	-	-	
									Including Thermal Gradient	167	-860							
						Max Compression w/ corresponding moment	2434	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-244	-217							
									Including Thermal Gradient	-244	196							
						Max Moment with corresponding axial tension	5255	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	0	-365							
									Including Thermal Gradient	-1	-1041							
						Max Moment with corresponding axial compression	5255	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-3	-365							
									Including Thermal Gradient	-5	-1040							
		West (inside)	Horizontal	3H.6-94	1-H-L	Max Tension w/ corresponding moment	2317	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	263	133	D + F + L + H' + Ta + Ro +E'	83	6.24	-	-	-	
									Including Thermal Gradient	254	-339							
						Max Compression w/ corresponding moment	2840	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	-714	352							
									Including Thermal Gradient	-709	-124							
						Max Moment with axial tension	2886	1.4D + 1.7F +1.7L + 1.7H + 1.7W	Excluding Thermal Gradient	89	774							
									Including Thermal Gradient	89	774							
						Max Moment with axial compression	3920	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-6	761							
									Including Thermal Gradient	0	722							
					2-H-L	Max Tension w/ corresponding moment	2439	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	394	533	D + F + L + H' + Ta + Ro +E'	70	9.36	-	-	-	
									Including Thermal Gradient	386	326							
						Max Compression w/ corresponding moment	3890	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	-347	79							
									Including Thermal Gradient	-345	-732							
						Max Moment with axial tension	2296	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	181	1111							
									Including Thermal Gradient	152	790							
						Max Moment with axial compression	3890	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-58	988							
									Including Thermal Gradient	-72	703							

Table 3H.6-7 Results of UHS/RSW Pump House Concrete Wall Design (Continued)

Location	Thickness (ft)	Face	Direction	Reinforcement Layout Drawing Number (1)	Reinforcement Zone Number (2)	Maximum Forces (3)	Element	Longitudinal Reinforcement Design Loads – Axial and Flexure Loads – Load Combination	Thermal Gradient Loading Condition	Axial (4) (kips / ft)	Flexure (4) (ft-kips / ft)	In-Plane Shear Loads – Load Combination	In-plane (5) Shear (kips / ft)	Longitudinal Reinforcement Provided (in^2/ ft)	Transverse Shear Design Loads – Load Combination	Transverse Shear (6) Reinforcement Design Loads (kips / ft)	Transverse Shear (7) Reinforcement Provided (in^2/ft^2)	Remarks
UHS Basin East Wall	6	West (inside)	Horizontal	3H.6-94	3-H-L	Max Tension w/ corresponding moment	2297	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	406	177	D + F + L + H' + Ta + Ro +E'	70	11.61	-	-	-	
									Including Thermal Gradient	400	-258							
						Max Compression w/ corresponding moment	2297	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-118	127							
									Including Thermal Gradient	-115	-158							
						Max Moment with axial tension	2294	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	326	995							
									Including Thermal Gradient	295	742							
						Max Moment with axial compression	2294	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-1	485							
									Including Thermal Gradient	9	823							
					4-H-L	Max Tension w/ max moment	5234/ 5235	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	N/A	N/A	D + F + L + H' + Ta + Ro +E'	44	18.00	-	-	-	(8)
									Including Thermal Gradient	694	416							
						Max Compression w/ max moment	5240/ 52414	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	N/A	N/A							
									Including Thermal Gradient	-308	1660							
						Max Moment with axial tension	5240/ 52414	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	N/A	N/A							
									Including Thermal Gradient	670	1982							
						Max Moment with axial compression	5240/ 52414	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	N/A	N/A							
									Including Thermal Gradient	-5	1747							
					5-H-L	Max Tension w/ corresponding moment	4274	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	449	109	D + F + L + H' + Ta + Ro +E'	44	9.36	-	-	-	
									Including Thermal Gradient	462	-142							
						Max Compression w/ corresponding moment	5210	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	-156	113							
									Including Thermal Gradient	-159	193							
						Max Moment with axial tension	5209	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	30	1273							
									Including Thermal Gradient	68	1424							
						Max Moment with axial compression	5209	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-37	1273							
									Including Thermal Gradient	1	1424							
					6-H-L	Max Tension w/ corresponding moment	2327	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	361	113	D + F + L + H' + Ta + Ro +E'	70	9.36	-	-	-	
									Including Thermal Gradient	350	-135							
						Max Compression w/ corresponding moment	2002	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	-443	331							
									Including Thermal Gradient	-437	241							
						Max Moment with axial tension	2004	1.4D + 1.7F +1.7L + 1.7H + 1.7W	Excluding Thermal Gradient	84	818							
									Including Thermal Gradient	84	818							
						Max Moment with axial compression	2377	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	-228	758							
									Including Thermal Gradient	-223	734							

Table 3H.6-7 Results of UHS/RSW Pump House Concrete Wall Design (Continued)

Location	Thickness (ft)	Face	Direction	Reinforcement Layout Drawing Number (1)	Reinforcement Zone Number (2)	Maximum Forces (3)	Element	Longitudinal Reinforcement Design Loads – Axial and Flexure Loads – Load Combination	Thermal Gradient Loading Condition	Axial (4) (kips / ft)	Flexure (4) (ft-kips / ft)	In-Plane Shear Loads – Load Combination	In-plane (5) Shear (kips / ft)	Longitudinal Reinforcement Provided (in^2/ ft)	Transverse Shear Design Loads – Load Combination	Transverse Shear (6) Reinforcement Design Loads (kips / ft)	Transverse Shear (7) Reinforcement Provided (in^2/ft^2)	Remarks
UHS Basin East Wall	6	West (inside)	Vertical	3H.6-95	1-V-L	Max Tension w/ corresponding moment	2441	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	328	6	D + F + L + H' + Ta + Ro +E'	135	4.68	-	-	-	
									Including Thermal Gradient	357	6							
						Max Compression w/ corresponding moment	1982	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-336	167							
									Including Thermal Gradient	-341	404							
						Max Moment with corresponding axial tension	5249	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	5	834							
									Including Thermal Gradient	6	891							
						Max Moment with corresponding axial compression	4291	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-149	837							
									Including Thermal Gradient	-147	705							
					2-V-L	Max Tension w/ corresponding moment	2631	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	417	27	D + F + L + H' + Ta + Ro +E'	174	6.24	-	-	-	
									Including Thermal Gradient	413	140							
						Max Compression w/ corresponding moment	2624	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	-450	456							
									Including Thermal Gradient	-433	-78							
						Max Moment with corresponding axial tension	5232	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	10	981							
									Including Thermal Gradient	9	1086							
						Max Moment with corresponding axial compression	2826	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	-244	1418							
									Including Thermal Gradient	-234	886							

Table 3H.6-7 Results of UHS/RSW Pump House Concrete Wall Design (Continued)

Location	Thickness (ft)	Face	Direction	Reinforcement Layout Drawing Number (1)	Reinforcement Zone Number (2)	Maximum Forces (3)	Element	Longitudinal Reinforcement Design Loads: Axial and Flexure Loads				Longitudinal Reinforcement Design Loads: In-Plane Shear Loads		Longitudinal Reinforcement Provided (in^2/ ft)	Transverse Shear Design Loads		Transverse Shear (7) Reinforcement Provided (in^2/ft^2)	Remarks
								Load Combination	Thermal Gradient Loading Condition	Axial (4) (kips / ft)	Flexure (4) (ft-kips / ft)	Load Combination	In-plane (5) Shear (kips / ft)		Load Combination	Transverse Shear (6) Reinforcement Design Loads (kips / ft)		
UHS Basin East Wall	6	West (inside)	Vertical	3H.6-95	3-V-L	Max Tension w/ corresponding moment	2825	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	720	1	D + F + L + H' + Ta + Ro +E'	174	9.36	-	-	-	
									Including Thermal Gradient	680	2							
						Max Compression w/ corresponding moment	2840	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	-1607	1352							
									Including Thermal Gradient	-1571	867							
						Max Moment with corresponding axial tension	2954	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	0	1517							
									Including Thermal Gradient	-9	1010							
						Max Moment with corresponding axial compression	2840	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	-1012	1863							
									Including Thermal Gradient	-990	1356							
					4-V-L	Max Tension w/ corresponding moment	2705	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	260	177	D + F + L + H' + Ta + Ro +E'	174	10.92	-	-	-	
									Including Thermal Gradient	299	-150							
						Max Compression w/ corresponding moment	2832	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-653	24							
									Including Thermal Gradient	-672	111							
						Max Moment with corresponding axial tension	2833	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	110	1351							
									Including Thermal Gradient	103	1087							
						Max Moment with corresponding axial compression	2833	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	-250	1754							
									Including Thermal Gradient	-260	1274							
					5-V-L	Max Tension w/ corresponding moment	5235	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	277	1255	D + F + L + H' + Ta + Ro +E'	174	10.74	-	-	-	
									Including Thermal Gradient	294	1032							
						Max Compression w/ corresponding moment	5234	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-339	33							
									Including Thermal Gradient	-302	-142							
						Max Moment with corresponding axial tension	4267	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	86	2248							
									Including Thermal Gradient	98	2109							
						Max Moment with corresponding axial compression	4267	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-178	2248							
									Including Thermal Gradient	-167	2109							
		-	Horizontal Plane	3H.6-96	1-H-T		-	-	-	-	-	-	-	-	D+F+L+H'+Ta+Ro+E'	84	0.11 (#3 @12)	
				3H.6-96	2-H-T		-	-	-	-	-	-	-	-	D+F+L+H'+Ta+Ro+E'	146	0.31 (#5 @12)	
				3H.6-96	3-H-T		-	-	-	-	-	-	-	-	D+F+L+H'+Ta+Ro+E'	84	0.11 (#3 @12)	
				3H.6-96	4-H-T		-	-	-	-	-	-	-	-	D+F+L+H'+Ta+Ro+E'	105	0.31 (#5 @12)	
				3H.6-96	5-H-T		-	-	-	-	-	-	-	-	D+F+L+H'+Ta+Ro+E'	118	0.31 (#5 @12)	
				3H.6-96	6-H-T		-	-	-	-	-	-	-	-	D+F+L+H'+Ta+Ro+E'	105	0.31 (#5 @12)	

Table 3H.6-7 Results of UHS/RSW Pump House Concrete Wall Design (Continued)

Location	Thickness (ft)	Face	Direction	Reinforcement Layout Drawing Number (1)	Reinforcement Zone Number (2)	Maximum Forces (3)	Element	Longitudinal Reinforcement Design Loads: Axial and Flexure Loads: Load Combination	Thermal Gradient Loading Condition	Axial (4) (kips / ft)	Flexure (4) (ft-kips / ft)	In-Plane Shear Loads: Load Combination	In-plane Shear (5) (kips / ft)	Longitudinal Reinforcement Provided (in^2/ ft)	Transverse Shear Design Loads: Load Combination	Transverse Shear Reinforcement Design Loads (kips / ft) (6)	Transverse Shear Reinforcement Provided (7) (in^2/ft^2)	Remarks
UHS Basin West Wall	6	West (outside)	Horizontal	3H.6-97	1-H-L	Max Tension w/ corresponding moment	2521	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	227	-331	D + F + L + H' + Ta + Ro +E'	75	3.12	-	-	-	
									Including Thermal Gradient	211	-474							
						Max Compression w/ corresponding moment	3862	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	-265	-448							
									Including Thermal Gradient	-255	-1229							
						Max Moment with axial tension	3485	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	12	-618							
									Including Thermal Gradient	8	-826							
						Max Moment with axial compression	3488	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-238	-682							
									Including Thermal Gradient	-229	-1321							
					2-H-L	Max Tension w/ corresponding moment	2329	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	598	-143	D + F + L + H' + Ta + Ro +E'	121	6.24	-	-	-	
									Including Thermal Gradient	597	-881							
						Max Compression w/ corresponding moment	2596	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	-546	-25							
									Including Thermal Gradient	-548	-517							
						Max Moment with axial tension	5203	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	25	-1123							
									Including Thermal Gradient	32	-1093							
						Max Moment with axial compression	3489	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-247	-1150							
									Including Thermal Gradient	-239	-1737							
					3-H-L	Max Tension w/ corresponding moment	2224	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	625	-361	D + F + L + H' + Ta + Ro +E'	115	9.36	-	-	-	
									Including Thermal Gradient	615	-481							
						Max Compression w/ corresponding moment	1967	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	-469	-289							
									Including Thermal Gradient	-463	-436							
						Max Moment with axial tension	5187	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	224	-924							
									Including Thermal Gradient	265	-1070							
						Max Moment with axial compression	5187	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-1	-839							
									Including Thermal Gradient	12	-876							
					4-H-L	Max Tension w/ max moment	5176/ 5177	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	N/A	N/A	D + F + L + H' + Ta + Ro +E'	109	14.04	-	-	-	(8)
									Including Thermal Gradient	639	428							
						Max Compression w/ max moment	5170 /5171	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	N/A	N/A							
									Including Thermal Gradient	-469	1714							
						Max Moment with axial tension	5176/ 5177	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	N/A	N/A							
									Including Thermal Gradient	626	1898							
						Max Moment with axial compression	5170 /5171	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	N/A	N/A							
									Including Thermal Gradient	-469	1714							

Table 3H.6-7 Results of UHS/RSW Pump House Concrete Wall Design (Continued)

Location	Thickness (ft)	Face	Direction	Reinforcement Layout Drawing Number (1)	Reinforcement Zone Number (2)	Maximum Forces (3)	Element	Longitudinal Reinforcement Design Loads: Axial and Flexure Loads: Load Combination	Thermal Gradient Loading Condition	Axial (4) (kips / ft)	Flexure (4) (ft-kips / ft)	In-Plane Shear Loads: Load Combination	In-plane (5) Shear (kips / ft)	Longitudinal Reinforcement Provided (in^2/ ft)	Transverse Shear Design Loads: Load Combination	Transverse Shear (6) Reinforcement Design Loads (kips / ft)	Transverse Shear (7) Reinforcement Provided (in^2/ft^2)	Remarks
UHS Basin West Wall	6	West (outside)	Horizontal	3H.6-97	5-H-L	Max Tension w/ corresponding moment	1975	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	291	-117	D + F + L + H' + Ta + Ro +E'	98	4.50	-	-	-	
									Including Thermal Gradient	279	-274							
						Max Compression w/ corresponding moment	1975	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	-310	-84							
									Including Thermal Gradient	-303	-199							
						Max Moment with axial tension	2279	1.4D + 1.7F +1.7L + 1.7H + 1.7W	Excluding Thermal Gradient	120	-444							
									Including Thermal Gradient	120	-444							
						Max Moment with axial compression	2263	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	-109	-326							
									Including Thermal Gradient	-101	-458							
					6-H-L	Max Tension w/ corresponding moment	1960	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	356	-155	D + F + L + H' + Ta + Ro +E'	98	9.00	-	-	-	
									Including Thermal Gradient	344	-309							
						Max Compression w/ corresponding moment	1969	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	-320	-412							
									Including Thermal Gradient	-313	-553							
						Max Moment with axial tension	1969	1.4D + 1.7F +1.7L + 1.7H + 1.7W	Excluding Thermal Gradient	111	-566							
									Including Thermal Gradient	111	-566							
						Max Moment with axial compression	1963	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	-270	-495							
									Including Thermal Gradient	-262	-636							
					7-H-L	Max Tension w/ corresponding moment	2223	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	690	-193	D + F + L + H' + Ta + Ro +E'	98	13.50	-	-	-	
									Including Thermal Gradient	676	-333							
						Max Compression w/ corresponding moment	2235	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	-228	-237							
									Including Thermal Gradient	-217	-361							
						Max Moment with axial tension	2229	1.4D + 1.7F +1.7L + 1.7H + 1.7W	Excluding Thermal Gradient	196	-500							
									Including Thermal Gradient	196	-500							
						Max Moment with axial compression	2226	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	-65	-456							
									Including Thermal Gradient	-46	-593							
			Vertical	3H.6-98	1-V-L	Max Tension w/ corresponding moment	1909	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	217	-74	D + F + L + H' + Ta + Ro +E'	80	3.12	-	-	-	
									Including Thermal Gradient	217	-320							
						Max Compression w/ corresponding moment	2326	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-420	-202							
									Including Thermal Gradient	-406	51							
						Max Moment with axial tension	3483	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	21	-688							
									Including Thermal Gradient	18	-1022							
						Max Moment with axial compression	3483	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-92	-688							
									Including Thermal Gradient	-94	-1022							

Table 3H.6-7 Results of UHS/RSW Pump House Concrete Wall Design (Continued)

Location	Thickness (ft)	Face	Direction	Reinforcement Layout Drawing Number (1)	Reinforcement Zone Number (2)	Maximum Forces (3)	Element	Longitudinal Reinforcement Design Loads: Axial and Flexure Loads: Load Combination	Thermal Gradient Loading Condition	Axial (4) (kips / ft)	Flexure (4) (ft-kips / ft)	In-Plane Shear Loads: Load Combination	In-plane (5) Shear (kips / ft)	Longitudinal Reinforcement Provided (in^2/ ft)	Transverse Shear Design Loads: Load Combination	Transverse Shear (6) Reinforcement Design Loads (kips / ft)	Transverse Shear (7) Reinforcement Provided (in^2/ft^2)	Remarks
UHS Basin West Wall	6	West (outside)	Vertical	3H.6-98	2-V-L	Max Tension w/ max moment	2617/ 2618	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	N/A	N/A	D + F + L + H' + Ta + Ro +E'	205	6.24	-	-	-	(8)
									Including Thermal Gradient	330	175							
						Max Compression w/ corresponding moment	2577	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	-639	-28							
									Including Thermal Gradient	-625	-483							
						Max Moment with corresponding axial tension	4238	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	33	-1367							
									Including Thermal Gradient	33	-1585							
						Max Moment with corresponding axial compression	4238	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-114	-1367							
									Including Thermal Gradient	-114	-1585							
					3-V-L	Max Tension w/ corresponding moment	2407	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	303	-275	D + F + L + H' + Ta + Ro +E'	205	10.74	-	-	-	
									Including Thermal Gradient	301	-534							
						Max Compression w/ corresponding moment	2606	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-464	-237							
									Including Thermal Gradient	-445	4							
						Max Moment with axial tension	3866	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	83	-1948							
									Including Thermal Gradient	76	-2110							
						Max Moment with axial compression	5176	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-218	-2406							
									Including Thermal Gradient	-197	-2574							
					4-V-L	Max Tension w/ corresponding moment	2596	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	696	-39	D + F + L + H' + Ta + Ro +E'	234	10.74	-	-	-	
									Including Thermal Gradient	701	110							
						Max Compression w/ corresponding moment	2596	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	-218	-2							
									Including Thermal Gradient	-235	-524							
						Max Moment with axial tension	2596	1.4D + 1.7F +1.7L + 1.7H + 1.7W	Excluding Thermal Gradient	3	-528							
									Including Thermal Gradient	3	-528							
						Max Moment with axial compression	2596	1.4D + 1.7F +1.7L + 1.7H + 1.7W	Excluding Thermal Gradient	-45	-622							
									Including Thermal Gradient	-45	-622							

Table 3H.6-7 Results of UHS/RSW Pump House Concrete Wall Design (Continued)

Location	Thickness (ft)	Face	Direction	Reinforcement Layout Drawing Number (1)	Reinforcement Zone Number (2)	Maximum Forces (3)	Element	Longitudinal Reinforcement Design Loads						Longitudinal Reinforcement Provided (in^2/ ft)	Transverse Shear Design Loads		Transverse Shear (7) Reinforcement Provided (in^2/ft^2)	Remarks
								Axial and Flexure Loads				In-Plane Shear Loads						
								Load Combination	Thermal Gradient Loading Condition	Axial (4) (kips / ft)	Flexure (4) (ft-kips / ft)	Load Combination	In-plane (5) Shear (kips / ft)		Load Combination	Transverse Shear (6) Reinforcement Design Loads (kips / ft)		
UHS Basin West Wall	6	East (inside)	Horizontal	3H.6-99	1-H-L	Max Tension w/ corresponding moment	5164	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	283	162	D + F + L + H' + Ta + Ro +E'	121	6.24	-	-	-	
									Including Thermal Gradient	268	-247							
						Max Compression w/ corresponding moment	2618	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	-732	354							
									Including Thermal Gradient	-726	-127							
						Max Moment with axial tension	3842	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	61	1034							
									Including Thermal Gradient	75	1336							
						Max Moment with axial compression	3842	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-15	992							
									Including Thermal Gradient	-16	962							
					2-H-L	Max Tension w/ corresponding moment	2236	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	468	128	D + F + L + H' + Ta + Ro +E'	115	9.36	-	-	-	
									Including Thermal Gradient	458	-132							
						Max Compression w/ corresponding moment	1976	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	-455	336							
									Including Thermal Gradient	-449	247							
						Max Moment with axial tension	4506	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	183	1149							
									Including Thermal Gradient	124	948							
						Max Moment with axial compression	3887	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-62	940							
									Including Thermal Gradient	-76	660							
					4-H-L	Max Tension w/ max moment	5176/ 5177	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	N/A	N/A	D + F + L + H' + Ta + Ro +E'	109	15.60	-	-	-	(8)
									Including Thermal Gradient	639	428							
						Max Compression w/ max moment	5170 /5171	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	N/A	N/A							
									Including Thermal Gradient	-469	1714							
						Max Moment with axial tension	5176/ 5177	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	N/A	N/A							
									Including Thermal Gradient	626	1898							
						Max Moment with axial compression	5170 /5171	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	N/A	N/A							
									Including Thermal Gradient	-469	1714							
					4-H-L	Max Tension w/ corresponding moment	2225	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	388	186	D + F + L + H' + Ta + Ro +E'	115	12.48	-	-	-	
									Including Thermal Gradient	379	-380							
						Max Compression w/ corresponding moment	2224	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-195	161							
									Including Thermal Gradient	-185	-235							
						Max Moment with axial tension	2225	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	45	204							
									Including Thermal Gradient	49	506							
						Max Moment with axial compression	2224	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-161	205							
									Including Thermal Gradient	-151	-247							

Table 3H.6-7 Results of UHS/RSW Pump House Concrete Wall Design (Continued)

Location	Thickness (ft)	Face	Direction	Reinforcement Layout Drawing Number (1)	Reinforcement Zone Number (2)	Maximum Forces (3)	Element	Longitudinal Reinforcement Design Loads – Axial and Flexure Loads – Load Combination	Thermal Gradient Loading Condition	Axial (4) (kips / ft)	Flexure (4) (ft-kips / ft)	In-Plane Shear Loads – Load Combination	In-plane (5) Shear (kips / ft)	Longitudinal Reinforcement Provided (in²/ ft)	Transverse Shear Design Loads – Load Combination	Transverse Shear (6) Reinforcement Design Loads (kips / ft)	Transverse Shear (7) Reinforcement Provided (in²/ft²)	Remarks
UHS Basin West Wall	6	East (inside)	Horizontal	3H.6-99	5-H-L	Max Tension w/ corresponding moment	2219	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	835	698	D + F + L + H' + Ta + Ro +E'	115	15.60	-	-	-	
									Including Thermal Gradient	867	446							
						Max Compression w/ corresponding moment	2221	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-184	188							
									Including Thermal Gradient	-176	-186							
						Max Moment with axial tension	2219	1.4D + 1.7F +1.7L + 1.7H + 1.7W	Excluding Thermal Gradient	364	1076							
									Including Thermal Gradient	364	1076							
						Max Moment with axial compression	2216	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	-89	946							
									Including Thermal Gradient	-72	895							
					6-H-L	Max Tension w/ corresponding moment	4520	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	389	166	D + F + L + H' + Ta + Ro +E'	44	9.36	-	-	-	
									Including Thermal Gradient	404	-188							
						Max Compression w/ corresponding moment	4520	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	-207	125							
									Including Thermal Gradient	-216	173							
						Max Moment with corresponding axial tension	4511	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	33	1241							
									Including Thermal Gradient	40	1283							
						Max Moment with corresponding axial compression	4511	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-35	1241							
									Including Thermal Gradient	-28	1283							
					7-H-L	Max Tension w/ corresponding moment	2329	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	940	750	D + F + L + H' + Ta + Ro +E'	75	13.86	-	-	-	
									Including Thermal Gradient	913	472							
						Max Compression w/ corresponding moment	2330	1.4D + 1.7L + 1.7W	Excluding Thermal Gradient	-55	3							
									Including Thermal Gradient	-55	3							
						Max Moment with corresponding axial tension	2329	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	591	1162							
									Including Thermal Gradient	540	946							
						Max Moment with corresponding axial compression	2329	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-13	959							
									Including Thermal Gradient	-6	1329							
					8-H-L	Max Tension w/ corresponding moment	5200	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	419	189	D + F + L + H' + Ta + Ro +E'	44	9.36	-	-	-	
									Including Thermal Gradient	424	266							
						Max Compression w/ corresponding moment	5200	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	-169	10							
									Including Thermal Gradient	-171	92							
						Max Moment with axial tension	5203	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	31	1235							
									Including Thermal Gradient	133	1665							
						Max Moment with axial compression	5203	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-33	1235							
									Including Thermal Gradient	69	1665							

Table 3H.6-7 Results of UHS/RSW Pump House Concrete Wall Design (Continued)

Location	Thickness (ft)	Face	Direction	Reinforcement Layout Drawing Number (1)	Reinforcement Zone Number (2)	Maximum Forces (3)	Element	Longitudinal Reinforcement Design Loads: Axial and Flexure Loads: Load Combination	Thermal Gradient Loading Condition	Axial (4) (kips / ft)	Flexure (4) (ft-kips / ft)	In-Plane Shear Loads: Load Combination	In-plane (5) Shear (kips / ft)	Longitudinal Reinforcement Provided (in^2/ ft)	Transverse Shear Design Loads: Load Combination	Transverse Shear (6) Reinforcement Design Loads (kips / ft)	Transverse Shear (7) Reinforcement Provided (in^2/ft^2)	Remarks
UHS Basin West Wall	6	East (inside)	Horizontal	3H.6-99	9-H-L	Max Tension w/ corresponding moment	2238	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	407	199	D + F + L + H' + Ta + Ro +E'	98	9.00	-	-	-	
									Including Thermal Gradient	395	-185							
						Max Compression w/ corresponding moment	1978	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	-300	463							
									Including Thermal Gradient	-295	412							
						Max Moment with axial tension	2293	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	173	1036							
									Including Thermal Gradient	145	717							
						Max Moment with axial compression	2244	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	-246	767							
									Including Thermal Gradient	-241	743							
					10-H-L	Max Tension w/ corresponding moment	2220	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	983	769	D + F + L + H' + Ta + Ro +E'	98	18.00	-	-	-	
									Including Thermal Gradient	952	542							
						Max Compression w/ corresponding moment	2226	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-99	155							
									Including Thermal Gradient	-86	-156							
						Max Moment with axial tension	2220	1.4D + 1.7F +1.7L + 1.7H + 1.7W	Excluding Thermal Gradient	701	1141							
									Including Thermal Gradient	701	1141							
						Max Moment with axial compression	2220	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-8	817							
									Including Thermal Gradient	17	818							
			Vertical	3H.6-100	1-V-L	Max Tension w/ corresponding moment	2577	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	444	18	D + F + L + H' + Ta + Ro +E'	234	6.24	-	-	-	
									Including Thermal Gradient	444	154							
						Max Compression w/ corresponding moment	2577	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	-567	117							
									Including Thermal Gradient	-550	-403							
						Max Moment with axial tension	5179	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	15	937							
									Including Thermal Gradient	18	991							
						Max Moment with axial compression	4239	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-192	1189							
									Including Thermal Gradient	-184	1004							
					2-V-L	Max Tension w/ corresponding moment	2596	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	577	53	D + F + L + H' + Ta + Ro +E'	234	9.36	-	-	-	(8)
									Including Thermal Gradient	576	166							
						Max Compression w/ max moment	2617/ 2618	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	N/A	N/A							
									Including Thermal Gradient	-881	1740							
						Max Moment with axial tension	2324	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	137	1517							
									Including Thermal Gradient	136	1009							
						Max Moment with axial compression	2617/ 2618	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	N/A	N/A							
									Including Thermal Gradient	-842	1750							

Table 3H.6-7 Results of UHS/RSW Pump House Concrete Wall Design (Continued)

Location	Thickness (ft)	Face	Direction	Reinforcement Layout Drawing Number (1)	Reinforcement Zone Number (2)	Maximum Forces (3)	Element	Longitudinal Reinforcement Design Loads – Axial and Flexure Loads – Load Combination	Thermal Gradient Loading Condition	Axial (4) (kips / ft)	Flexure (4) (ft-kips / ft)	In-Plane Shear Loads – Load Combination	In-plane (5) Shear (kips / ft)	Longitudinal Reinforcement Provided (in^2/ ft)	Transverse Shear Design Loads – Load Combination	Transverse Shear (6) Reinforcement Design Loads (kips / ft)	Transverse Shear (7) Reinforcement Provided (in^2/ft^2)	Remarks
UHS Basin West Wall	6	East (inside)	Vertical	3H.6-100	3-V-L	Max Tension w/ corresponding moment	5171	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	235	1229	D + F + L + H' + Ta + Ro +E'	205	10.74	-	-	-	
									Including Thermal Gradient	253	1008							
						Max Compression w/ corresponding moment	5171	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-370	499							
									Including Thermal Gradient	-377	594							
						Max Moment with axial tension	4235	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	63	2231							
									Including Thermal Gradient	76	2094							
						Max Moment with axial compression	4235	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-200	2231							
									Including Thermal Gradient	-188	2094							
					4-V-L	Max Tension w/ corresponding moment	2220	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	1026	96	D + F + L + H' + Ta + Ro +E'	234	13.86	-	-	-	
									Including Thermal Gradient	1010	-45							
						Max Compression w/ corresponding moment	2329	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-199	167							
									Including Thermal Gradient	-185	485							
						Max Moment with axial tension	2329	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	82	394							
									Including Thermal Gradient	75	229							
						Max Moment with axial compression	4506	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-27	390							
									Including Thermal Gradient	-47	209							
					5-V-L	Max Tension w/ corresponding moment	2407	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	303	259	D + F + L + H' + Ta + Ro +E'	205	10.92	-	-	-	
									Including Thermal Gradient	301	-150							
						Max Compression w/ corresponding moment	2607	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-587	11							
									Including Thermal Gradient	-563	13							
						Max Moment with axial tension	2607	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	107	1330							
									Including Thermal Gradient	105	1064							
						Max Moment with axial compression	2607	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	-218	1748							
									Including Thermal Gradient	-221	1265							
		-	Horizontal Plane	3H.6-101	1-H-T		-	-	-	-	-	-	-	-	D+F+L+H'+Ta+Ro+E'	82	0.11 (#3 @12)	
				3H.6-101	2-H-T		-	-	-	-	-	-	-	-	D+F+L+H'+Ta+Ro+E'	143	0.31 (#5 @12)	
				3H.6-101	3-H-T		-	-	-	-	-	-	-	-	D+F+L+H'+Ta+Ro+E'	63	0.11 (#3 @12)	
				3H.6-101	4-H-T		-	-	-	-	-	-	-	-	D+F+L+H'+Ta+Ro+E'	82	0.31 (#5 @12)	
				3H.6-101	5-H-T		-	-	-	-	-	-	-	-	D+F+L+H'+Ta+Ro+E'	115	0.31 (#5 @12)	
				3H.6-101	6-H-T		-	-	-	-	-	-	-	-	1.4D+1.4To+1.7F+0.9H	151	0.31 (#5 @12)	

Table 3H.6-7 Results of UHS/RSW Pump House Concrete Wall Design (Continued)

Location	Thickness (ft)	Face	Direction	Reinforcement Layout Drawing Number (1)	Reinforcement Zone Number (2)	Maximum Forces (3)	Element	Longitudinal Reinforcement Design Loads: Axial and Flexure Loads: Load Combination	Thermal Gradient Loading Condition	Axial (4) (kips / ft)	Flexure (4) (ft-kips / ft)	In-Plane Shear Loads: Load Combination	In-plane (5) Shear (kips / ft)	Longitudinal Reinforcement Provided (in^2/ ft)	Transverse Shear Design Loads: Load Combination	Transverse Shear (6) Reinforcement Design Loads (kips / ft)	Transverse Shear (7) Reinforcement Provided (in^2/ft^2)	Remarks
UHS Basin North-South Buttresses	6	East / West	Horizontal	3H.6-102	1-H-L	Max Tension w/ corresponding moment	7161	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	531	181	D + F + L + H' + Ta + Ro +E'	301	6.24	-	-	-	
									Including Thermal Gradient	528	205							
						Max Compression w/ corresponding moment	7536	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	-787	61							
									Including Thermal Gradient	-785	59							
						Max Moment with axial tension	7567	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	157	403							
									Including Thermal Gradient	178	403							
						Max Moment with axial compression	7530	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-143	412							
									Including Thermal Gradient	-161	411							
					2-H-L	Max Tension w/ corresponding moment	7803	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	815	10	D + F + L + H' + Ta + Ro +E'	301	9.36	-	-	-	
									Including Thermal Gradient	819	10							
						Max Compression w/ corresponding moment	7738	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	-338	58							
									Including Thermal Gradient	-337	58							
						Max Moment with axial tension	7717	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	20	536							
									Including Thermal Gradient	-50	533							
						Max Moment with axial compression	7717	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-36	536							
									Including Thermal Gradient	-106	533							
					3-H-L	Max Tension w/ corresponding moment	7788	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	1370	480	D + F + L + H' + Ta + Ro +E'	210	12.48	-	-	-	
									Including Thermal Gradient	1493	486							
						Max Compression w/ corresponding moment	7724	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-392	705							
									Including Thermal Gradient	-449	702							
						Max Moment with axial tension	7788	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	539	756							
									Including Thermal Gradient	483	757							
						Max Moment with axial compression	7788	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-280	756							
									Including Thermal Gradient	-336	757							
					4-H-L	Max Tension w/ corresponding moment	7057	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	298	25	D + F + L + H' + Ta + Ro +E'	301	9.36	-	-	-	
									Including Thermal Gradient	294	26							
						Max Compression w/ corresponding moment	7061	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	-841	2							
									Including Thermal Gradient	-852	1							
						Max Moment with axial tension	7153	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	4	154							
									Including Thermal Gradient	2	149							
						Max Moment with axial compression	7153	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	-342	434							
									Including Thermal Gradient	-348	443							

Table 3H.6-7 Results of UHS/RSW Pump House Concrete Wall Design (Continued)

Location	Thickness (ft)	Face	Direction	Reinforcement Layout Drawing Number (1)	Reinforcement Zone Number (2)	Maximum Forces (3)	Element	Longitudinal Reinforcement Design Loads – Axial and Flexure Loads – Load Combination	Thermal Gradient Loading Condition	Axial (4) (kips / ft)	Flexure (4) (ft-kips / ft)	In-Plane Shear Loads – Load Combination	In-plane (5) Shear (kips / ft)	Longitudinal Reinforcement Provided (in^2/ ft)	Transverse Shear Design Loads – Load Combination	Transverse Shear (6) Reinforcement Design Loads (kips / ft)	Transverse Shear (7) Reinforcement Provided (in^2/ft^2)	Remarks
UHS Basin North-South Buttresses	6	East / West	Horizontal	3H.6-102	5-H-L	Max Tension w/ corresponding moment	7417	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	533	178	D + F + L + H' + Ta + Ro +E'	187	12.48	-	-	-	
									Including Thermal Gradient	530	160							
						Max Compression w/ corresponding moment	7417	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-390	150							
									Including Thermal Gradient	-378	152							
						Max Moment with axial tension	7417	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	432	246							
									Including Thermal Gradient	441	230							
						Max Moment with axial compression	7417	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-34	246							
									Including Thermal Gradient	-24	230							
			Vertical	3H.6-103	1-V-L	Max Tension w/ corresponding moment	7151	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	542	297	D + F + L + H' + Ta + Ro +E'	192	6.24	-	-	-	
									Including Thermal Gradient	544	302							
						Max Compression w/ corresponding moment	7127	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-702	39							
									Including Thermal Gradient	-723	39							
						Max Moment with corresponding axial tension	7151	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	22	447							
									Including Thermal Gradient	20	451							
						Max Moment with corresponding axial compression	7151	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	-235	965							
									Including Thermal Gradient	-238	971							
					2-V-L	Max Tension w/ corresponding moment	7216	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	632	108	D + F + L + H' + Ta + Ro +E'	138	10.74	-	-	-	
									Including Thermal Gradient	640	108							
						Max Compression w/ corresponding moment	7207	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-762	116							
									Including Thermal Gradient	-781	117							
						Max Moment with corresponding axial tension	7031	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	83	337							
									Including Thermal Gradient	73	334							
						Max Moment with corresponding axial compression	7031	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-224	337							
									Including Thermal Gradient	-234	334							
					3-V-L	Max Tension w/ corresponding moment	7594	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	461	173	D + F + L + H' + Ta + Ro +E'	82	9.00	-	-	-	
									Including Thermal Gradient	544	174							
						Max Compression w/ corresponding moment	7782	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-546	62							
									Including Thermal Gradient	-445	69							
						Max Moment with corresponding axial tension	7788	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	33	526							
									Including Thermal Gradient	48	527							
						Max Moment with corresponding axial compression	7788	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-90	526							
									Including Thermal Gradient	-75	527							

Table 3H.6-7 Results of UHS/RSW Pump House Concrete Wall Design (Continued)

Location	Thickness (ft)	Face	Direction	Reinforcement Layout Drawing Number (1)	Reinforcement Zone Number (2)	Maximum Forces (3)	Element	Longitudinal Reinforcement Design Loads: Axial and Flexure Loads: Load Combination	Thermal Gradient Loading Condition	Axial (4) (kips / ft)	Flexure (4) (ft-kips / ft)	In-Plane Shear Loads: Load Combination	In-plane (5) Shear (kips / ft)	Longitudinal Reinforcement Provided (in^2/ ft)	Transverse Shear Design Loads: Load Combination	Transverse Shear (6) Reinforcement Design Loads (kips / ft)	Transverse Shear (7) Reinforcement Provided (in^2/ft^2)	Remarks
UHS Basin North-South Buttresses	6	East / West	Vertical	3H.6-103	4-V-L	Max Tension w/ corresponding moment	7061	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	1364	177	D + F + L + H' + Ta + Ro +E'	82	13.50	-	-	-	
									Including Thermal Gradient	1401	177							
						Max Compression w/ corresponding moment	7032	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-1474	172							
									Including Thermal Gradient	-1558	175							
						Max Moment with corresponding axial tension	7030	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	94	312							
									Including Thermal Gradient	97	304							
						Max Moment with corresponding axial compression	7030	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-373	312							
									Including Thermal Gradient	-370	304							
		-	Horizontal Plane	3H.6-104	1-H-T		-	-	-	-	-	-	-	-	D+F+L+H'+Ta+Ro+E'	17	0.11 (#3 @12)	
UHS Basin East-West Buttresses	6	North / South	Horizontal	3H.6-105	1-H-L	Max Tension w/ corresponding moment	7685	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	253	167	D + F + L + H' + Ta + Ro +E'	291	6.24	-	-	-	
									Including Thermal Gradient	235	165							
						Max Compression w/ corresponding moment	7673	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-468	180							
									Including Thermal Gradient	-428	174							
						Max Moment with axial tension	7679	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	50	382							
									Including Thermal Gradient	46	382							
						Max Moment with axial compression	7679	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-1	382							
									Including Thermal Gradient	-5	382							
					2-H-L	Max Tension w/ corresponding moment	7067	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	379	64	D + F + L + H' + Ta + Ro +E'	369	9.36	-	-	-	
									Including Thermal Gradient	368	62							
						Max Compression w/ corresponding moment	7065	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-862	40							
									Including Thermal Gradient	-884	43							
						Max Moment with axial tension	7480	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	64	274							
									Including Thermal Gradient	15	258							
						Max Moment with axial compression	7333	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-36	173							
									Including Thermal Gradient	-52	176							
					3-H-L	Max Tension w/ corresponding moment	7686	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	1250	406	D + F + L + H' + Ta + Ro +E'	252	10.92	-	-	-	
									Including Thermal Gradient	1094	404							
						Max Compression w/ corresponding moment	7674	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-2363	357							
									Including Thermal Gradient	-1999	352							
						Max Moment with axial tension	7681	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	425	464							
									Including Thermal Gradient	411	466							
						Max Moment with axial compression	7681	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-555	464							
									Including Thermal Gradient	-568	466							

Table 3H.6-7 Results of UHS/RSW Pump House Concrete Wall Design (Continued)

Location	Thickness (ft)	Face	Direction	Reinforcement Layout Drawing Number (1)	Reinforcement Zone Number (2)	Maximum Forces (3)	Element	Longitudinal Reinforcement Design Loads – Axial and Flexure Loads – Load Combination	Thermal Gradient Loading Condition	Axial (4) (kips / ft)	Flexure (4) (ft-kips / ft)	In-Plane Shear Loads – Load Combination	In-plane (5) Shear (kips / ft)	Longitudinal Reinforcement Provided (in^2/ ft)	Transverse Shear Design Loads – Load Combination	Transverse Shear (6) Reinforcement Design Loads (kips / ft)	Transverse Shear (7) Reinforcement Provided (in^2/ft^2)	Remarks
UHS Basin East-West Buttresses	6	North / South	Vertical	3H.6-106	1-V-L	Max Tension w/ corresponding moment	7315	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	525	145	D + F + L + H' + Ta + Ro +E'	355	9.36	-	-	-	
									Including Thermal Gradient	538	147							
						Max Compression w/ corresponding moment	7270	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-834	232							
									Including Thermal Gradient	-841	230							
						Max Moment with corresponding axial tension	7327	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	2	353							
									Including Thermal Gradient	-2	356							
						Max Moment with corresponding axial compression	7327	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-346	353							
									Including Thermal Gradient	-349	356							
					2-V-L	Max Tension w/ max moment	7066/ 7067	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	NA	NA	D + F + L + H' + Ta + Ro +E'	241	18.00	-	-	-	(8)
									Including Thermal Gradient	1383	231							
						Max Compression w/ corresponding moment	7065	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-2130	215							
									Including Thermal Gradient	-2311	233							
						Max Moment with corresponding axial tension	7065	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	1259	419							
									Including Thermal Gradient	1164	400							
						Max Moment with corresponding axial compression	7065	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-1393	419							
									Including Thermal Gradient	-1488	400							
					3-V-L	Max Tension w/ corresponding moment	7519	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	609	92	D + F + L + H' + Ta + Ro +E'	241	13.50	-	-	-	
									Including Thermal Gradient	599	89							
						Max Compression w/ corresponding moment	7489	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-841	141							
									Including Thermal Gradient	-810	134							
						Max Moment with corresponding axial tension	7524	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	117	147							
									Including Thermal Gradient	131	145							
						Max Moment with corresponding axial compression	7524	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-745	147							
									Including Thermal Gradient	-730	145							
		-	Horizontal Plane	3H.6-107	1-H-T		-	-	-	-	-	-	-	-	D+F+L+H'+Ta+Ro+E'	26	0.11 (#3 @12)	

Table 3H.6-7 Results of UHS/RSW Pump House Concrete Wall Design (Continued)

Location	Thickness (ft)	Face	Direction	Reinforcement Layout Drawing Number (1)	Reinforcement Zone Number (2)	Maximum Forces (3)	Element	Longitudinal Reinforcement Design Loads						Longitudinal Reinforcement Provided (in^2/ ft)	Transverse Shear Design Loads		Transverse Shear (7) Reinforcement Provided (in^2/ft^2)	Remarks
								Axial and Flexure Loads				In-Plane Shear Loads						
								Load Combination	Thermal Gradient Loading Condition	Axial (4) (kips / ft)	Flexure (4) (ft-kips / ft)	Load Combination	In-plane (5) Shear (kips / ft)		Load Combination	Transverse Shear (6) Reinforcement Design Loads (kips / ft)		
Cooling Tower North and South Fan Wall	2	North (outside)	Horizontal	3H.6-108	1-H-L	Max Tension w/ corresponding moment	1152	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	148	-32	D + F + L + H' + Ta + Ro +E'	24	3.12	-	-	-	
									Including Thermal Gradient	158	-32							
						Max Compression w/ corresponding moment	1246	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-139	-25							
									Including Thermal Gradient	-141	-25							
						Max Moment with axial tension	1167	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	19	-89							
									Including Thermal Gradient	20	-80							
						Max Moment with axial compression	1167	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-30	-89							
									Including Thermal Gradient	-29	-80							
					2-H-L	Max Tension w/ corresponding moment	589	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	460	-17	D + F + L + H' + Ta + Ro +E'	45	6.24	-	-	-	
									Including Thermal Gradient	483	-16							
						Max Compression w/ corresponding moment	530	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-284	-38							
									Including Thermal Gradient	-294	-39							
						Max Moment with axial tension	395	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	116	-175							
									Including Thermal Gradient	121	-176							
						Max Moment with axial compression	395	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-77	-175							
									Including Thermal Gradient	-72	-176							
					3-H-L	Max Tension w/ corresponding moment	580	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	1887	-62	D + F + L + H' + Ta + Ro +E'	45	112 (in2)	-	-	-	Tied Longitudinal Reinf. In bottom of wall
									Including Thermal Gradient	1902	-66							
						Max Compression w/ corresponding moment	523	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-1238	-76							
									Including Thermal Gradient	-1244	-73							
						Max Moment with axial tension	1128	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	68	-132							
									Including Thermal Gradient	66	-133							
						Max Moment with axial compression	1128	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-69	-132							
									Including Thermal Gradient	-71	-133							
			Vertical	3H.6-109	1-V-L	Max Tension w/ corresponding moment	522	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	133	-8	D + F + L + H' + Ta + Ro +E'	82	3.12	-	-	-	
									Including Thermal Gradient	128	-2							
						Max Compression w/ corresponding moment	735	1.4D + 1.7F +1.7L + 1.7H + 1.7W	Excluding Thermal Gradient	-276	-18							
									Including Thermal Gradient	-276	-18							
						Max Moment with corresponding axial tension	733	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	10	-38							
									Including Thermal Gradient	10	-39							
						Max Moment with corresponding axial compression	733	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-9	-38							
									Including Thermal Gradient	-10	-39							

Table 3H.6-7 Results of UHS/RSW Pump House Concrete Wall Design (Continued)

Location	Thickness (ft)	Face	Direction	Reinforcement Layout Drawing Number (1)	Reinforcement Zone Number (2)	Maximum Forces (3)	Element	Longitudinal Reinforcement Design Loads: Axial and Flexure Loads: Load Combination	Thermal Gradient Loading Condition	Axial (4) (kips / ft)	Flexure (4) (ft-kips / ft)	In-Plane Shear Loads: Load Combination	In-plane (5) Shear (kips / ft)	Longitudinal Reinforcement Provided (in^2/ ft)	Transverse Shear Design Loads: Load Combination	Transverse Shear (6) Reinforcement Design Loads (kips / ft)	Transverse Shear (7) Reinforcement Provided (in^2/ft^2)	Remarks
Cooling Tower North and South Fan Wall	2	North (outside)	Vertical	3H.6-109	2-V-L	Max Tension w/ corresponding moment	454	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	30	-24	D + F + L + H' + Ta + Ro +E'	46	1.27	-	-	-	
									Including Thermal Gradient	30	-25							
						Max Compression w/ corresponding moment	456	1.4D + 1.7F +1.7L + 1.7H + 1.7W	Excluding Thermal Gradient	-286	-25							
									Including Thermal Gradient	-286	-25							
						Max Moment with corresponding axial tension	453	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	10	-33							
									Including Thermal Gradient	9	-34							
						Max Moment with corresponding axial compression	327	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-233	-36							
									Including Thermal Gradient	-234	-37							
					3-V-L	Max Tension w/ corresponding moment	798	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	29	-19	D + F + L + H' + Ta + Ro +E'	37	1.56	-	-	-	
									Including Thermal Gradient	29	-20							
						Max Compression w/ corresponding moment	800	1.4D + 1.7F +1.7L + 1.7H + 1.7W	Excluding Thermal Gradient	-281	-25							
									Including Thermal Gradient	-281	-25							
						Max Moment with corresponding axial tension	797	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	11	-40							
									Including Thermal Gradient	10	-42							
						Max Moment with corresponding axial compression	797	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-11	-40							
									Including Thermal Gradient	-11	-42							
					4-V-L	Max Tension w/ corresponding moment	523	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	288	-62	D + F + L + H' + Ta + Ro +E'	82	6.24	-	-	-	
									Including Thermal Gradient	297	-67							
						Max Compression w/ corresponding moment	580	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-255	-46							
									Including Thermal Gradient	-259	-46							
						Max Moment with corresponding axial tension	523	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	288	-62							
									Including Thermal Gradient	297	-67							
						Max Moment with corresponding axial compression	523	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-67	-62							
									Including Thermal Gradient	-58	-67							
					5-V-L	Max Tension w/ corresponding moment	860	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	20	-41	D + F + L + H' + Ta + Ro +E'	39	2.83	-	-	-	
									Including Thermal Gradient	20	-39							
						Max Compression w/ corresponding moment	739	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-237	-81							
									Including Thermal Gradient	-237	-84							
						Max Moment with corresponding axial tension	739	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	3	-62							
									Including Thermal Gradient	2	-65							
						Max Moment with corresponding axial compression	739	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-203	-132							
									Including Thermal Gradient	-207	-135							

Table 3H.6-7 Results of UHS/RSW Pump House Concrete Wall Design (Continued)

Location	Thickness (ft)	Face	Direction	Reinforcement Layout Drawing Number (1)	Reinforcement Zone Number (2)	Maximum Forces (3)	Element	Longitudinal Reinforcement Design Loads						Longitudinal Reinforcement Provided (in^2/ ft)	Transverse Shear Design Loads		Transverse Shear (7) Reinforcement Provided (in^2/ft^2)	Remarks
								Axial and Flexure Loads				In-Plane Shear Loads						
								Load Combination	Thermal Gradient Loading Condition	Axial (4) (kips / ft)	Flexure (4) (ft-kips / ft)	Load Combination	In-plane (5) Shear (kips / ft)		Load Combination	Transverse Shear (6) Reinforcement Design Loads (kips / ft)		
Cooling Tower North and South Fan Wall	2	North (outside)	Vertical	3H.6-109	6-V-L	Max Tension w/ corresponding moment	796	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	21	-41	D + F + L + H' + Ta + Ro +E'	31	3.12	-	-	-	
									Including Thermal Gradient	21	-39							
						Max Compression w/ corresponding moment	796	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-233	-98							
									Including Thermal Gradient	-232	-101							
						Max Moment with corresponding axial tension	796	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	5	-65							
									Including Thermal Gradient	4	-68							
						Max Moment with corresponding axial compression	395	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-193	-124							
									Including Thermal Gradient	-198	-127							
					7-V-L	Max Tension w/ corresponding moment	1128	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	33	-36	D + F + L + H' + Ta + Ro +E'	72	4.68	-	-	-	
									Including Thermal Gradient	33	-35							
						Max Compression w/ corresponding moment	53	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-233	-67							
									Including Thermal Gradient	-238	-70							
						Max Moment with corresponding axial tension	587	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	7	-83							
									Including Thermal Gradient	9	-82							
						Max Moment with corresponding axial compression	587	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-192	-108							
									Including Thermal Gradient	-197	-111							
		South (inside)	Horizontal	3H.6-110	1-H-L	Max Tension w/ corresponding moment	1147	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	221	24	D + F + L + H' + Ta + Ro +E'	27	3.12	-	-	-	
									Including Thermal Gradient	234	24							
						Max Compression w/ corresponding moment	1246	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-139	14							
									Including Thermal Gradient	-141	15							
						Max Moment with axial tension	62	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	27	98							
									Including Thermal Gradient	39	101							
						Max Moment with axial compression	62	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-27	98							
									Including Thermal Gradient	-15	101							
					2-H-L	Max Tension w/ corresponding moment	589	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	460	49	D + F + L + H' + Ta + Ro +E'	45	6.24	-	-	-	
									Including Thermal Gradient	483	50							
						Max Compression w/ corresponding moment	530	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-284	24							
									Including Thermal Gradient	-294	24							
						Max Moment with axial tension	739	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	0	157							
									Including Thermal Gradient	-1	158							
						Max Moment with axial compression	651	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-68	159							
									Including Thermal Gradient	-70	160							

Table 3H.6-7 Results of UHS/RSW Pump House Concrete Wall Design (Continued)

Location	Thickness (ft)	Face	Direction	Reinforcement Layout Drawing Number (1)	Reinforcement Zone Number (2)	Maximum Forces (3)	Element	Longitudinal Reinforcement Design Loads						Longitudinal Reinforcement Provided (in^2/ ft)	Transverse Shear Design Loads		Transverse Shear (7) Reinforcement Provided (in^2/ft^2)	Remarks
								Axial and Flexure Loads				In-Plane Shear Loads						
								Load Combination	Thermal Gradient Loading Condition	Axial (4) (kips / ft)	Flexure (4) (ft-kips / ft)	Load Combination	In-plane (5) Shear (kips / ft)		Load Combination	Transverse Shear (6) Reinforcement Design Loads (kips / ft)		
Cooling Tower North and South Fan Wall	2	South (inside)	Horizontal	3H.6-110	3-H-L	Max Tension w/ corresponding moment	580	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	1887	46	D + F + L + H' + Ta + Ro +E'	45	112 (in2)	-	-	-	Tied Longitudinal Reinf. In bottom of wall
									Including Thermal Gradient	1902	41							
						Max Compression w/ corresponding moment	523	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-1238	90							
									Including Thermal Gradient	-1244	91							
						Max Moment with axial tension	523	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	39	123							
									Including Thermal Gradient	74	125							
						Max Moment with axial compression	587	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-70	119							
									Including Thermal Gradient	-75	119							
			Vertical	3H.6-111	1-V-L	Max Tension w/ corresponding moment	598	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	159	7	D + F + L + H' + Ta + Ro +E'	82	3.12	-	-	-	
									Including Thermal Gradient	161	9							
						Max Compression w/ corresponding moment	537	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-107	3							
									Including Thermal Gradient	-107	-4							
						Max Moment with corresponding axial tension	1129	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	25	33							
									Including Thermal Gradient	25	33							
						Max Moment with corresponding axial compression	1129	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-1	33							
									Including Thermal Gradient	-1	33							
					2-V-L	Max Tension w/ corresponding moment	454	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	30	13	D + F + L + H' + Ta + Ro +E'	46	1.27	-	-	-	
									Including Thermal Gradient	30	13							
						Max Compression w/ corresponding moment	456	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-275	15							
									Including Thermal Gradient	-278	15							
						Max Moment with corresponding axial tension	797	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	18	43							
									Including Thermal Gradient	19	43							
						Max Moment with corresponding axial compression	797	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-3	43							
									Including Thermal Gradient	-3	43							
					3-V-L	Max Tension w/ corresponding moment	523	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	288	51	D + F + L + H' + Ta + Ro +E'	82	6.24	-	-	-	
									Including Thermal Gradient	297	52							
						Max Compression w/ corresponding moment	580	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-255	53							
									Including Thermal Gradient	-259	55							
						Max Moment with corresponding axial tension	1135	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	207	61							
									Including Thermal Gradient	203	62							
						Max Moment with corresponding axial compression	1135	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-131	61							
									Including Thermal Gradient	-135	62							

Table 3H.6-7 Results of UHS/RSW Pump House Concrete Wall Design (Continued)

Location	Thickness (ft)	Face	Direction	Reinforcement Layout Drawing Number (1)	Reinforcement Zone Number (2)	Maximum Forces (3)	Element	Longitudinal Reinforcement Design Loads						Longitudinal Reinforcement Provided (in^2/ ft)	Transverse Shear Design Loads		Transverse Shear (7) Reinforcement Provided (in^2/ft^2)	Remarks
								Axial and Flexure Loads				In-Plane Shear Loads						
								Load Combination	Thermal Gradient Loading Condition	Axial (4) (kips / ft)	Flexure (4) (ft-kips / ft)	Load Combination	In-plane (5) Shear (kips / ft)		Load Combination	Transverse Shear (6) Reinforcement Design Loads (kips / ft)		
Cooling Tower North and South Fan Wall	2	South (inside)	Vertical	3H.6-111	4-V-L	Max Tension w/ corresponding moment	1128	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	33	45	D + F + L + H' + Ta + Ro +E'	72	4.12	-	-	-	
									Including Thermal Gradient	33	46							
						Max Compression w/ corresponding moment	53	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-233	42							
									Including Thermal Gradient	-238	41							
						Max Moment with corresponding axial tension	587	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	6	80							
									Including Thermal Gradient	8	81							
						Max Moment with corresponding axial compression	1128	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-158	101							
									Including Thermal Gradient	-156	103							
					5-V-L	Max Tension w/ corresponding moment	796	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	21	48	D + F + L + H' + Ta + Ro +E'	39	2.27	-	-	-	
									Including Thermal Gradient	21	49							
						Max Compression w/ corresponding moment	739	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-237	79							
									Including Thermal Gradient	-237	76							
						Max Moment with corresponding axial tension	796	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	8	74							
									Including Thermal Gradient	7	79							
						Max Moment with corresponding axial compression	860	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-199	116							
									Including Thermal Gradient	-197	117							
		-	Vertical Plane	3H.6-112	1-V-T		-	-	-	-	-	-	-	-	D+F+L+H'+Ta+Ro+E'	6	0.11 (#3 @12)	
				3H.6-112	2-V-T		-	-	-	-	-	-	-	-	D+F+L+H'+Ta+Ro+E'	6	0.11 (#3 @12)	

Table 3H.6-7 Results of UHS/RSW Pump House Concrete Wall Design (Continued)

Location	Thickness (ft)	Face	Direction	Reinforcement Layout Drawing Number (1)	Reinforcement Zone Number (2)	Maximum Forces (3)	Element	Longitudinal Reinforcement Design Loads – Axial and Flexure Loads – Load Combination	Thermal Gradient Loading Condition	Axial (4) (kips / ft)	Flexure (4) (ft-kips / ft)	In-Plane Shear Loads – Load Combination	In-plane (5) Shear (kips / ft)	Longitudinal Reinforcement Provided (in^2/ ft)	Transverse Shear Design Loads – Load Combination	Transverse Shear (6) Reinforcement Design Loads (kips / ft)	Transverse Shear (7) Reinforcement Provided (in^2/ft^2)	Remarks
Cooling Tower East Fan Wall	6	East (outside)	Horizontal	3H.6-113	1-H-L	Max Tension w/ corresponding moment	270	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	44	-204	D + F + L + H' + Ta + Ro +E'	34	1.56	-	-	-	
									Including Thermal Gradient	45	-197							
						Max Compression w/ corresponding moment	238	D + F + L + H + Ta + Ro +Wt	Excluding Thermal Gradient	-127	-41							
									Including Thermal Gradient	-127	-40							
						Max Moment with axial tension	289	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	14	-392							
									Including Thermal Gradient	14	-395							
						Max Moment with axial compression	289	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-12	-392							
									Including Thermal Gradient	-12	-395							
					2-H-L	Max Tension w/ corresponding moment	247	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	252	-199	D + F + L + H' + Ta + Ro +E'	44	6.24	-	-	-	
									Including Thermal Gradient	269	-245							
						Max Compression w/ corresponding moment	271	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-104	-460							
									Including Thermal Gradient	-110	-446							
						Max Moment with axial tension	247	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	170	-502							
									Including Thermal Gradient	184	-540							
						Max Moment with axial compression	271	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-4	-478							
									Including Thermal Gradient	-5	-481							
					3-H-L	Max Tension w/ corresponding moment	231	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	404	-983	D + F + L + H' + Ta + Ro +E'	44	7.80	-	-	-	
									Including Thermal Gradient	422	-921							
						Max Compression w/ corresponding moment	287	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-208	-1463							
									Including Thermal Gradient	-216	-1495							
						Max Moment with axial tension	287	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	4	-1646							
									Including Thermal Gradient	0	-1709							
						Max Moment with axial compression	287	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-112	-1646							
									Including Thermal Gradient	-117	-1709							
			Vertical	3H.6-114	1-V-L	Max Tension w/ corresponding moment	237	D + F + L + H + Ta + Ro +Wt	Excluding Thermal Gradient	46	-72	D + F + L + H' + Ta + Ro +E'	100	3.12	-	-	-	
									Including Thermal Gradient	47	-68							
						Max Compression w/ corresponding moment	291	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-111	-62							
									Including Thermal Gradient	-112	-69							
						Max Moment with corresponding axial tension	255	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	1	-364							
									Including Thermal Gradient	0	-537							
						Max Moment with corresponding axial compression	263	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-98	-508							
									Including Thermal Gradient	-98	-455							

Table 3H.6-7 Results of UHS/RSW Pump House Concrete Wall Design (Continued)

Location	Thickness (ft)	Face	Direction	Reinforcement Layout Drawing Number (1)	Reinforcement Zone Number (2)	Maximum Forces (3)	Element	Longitudinal Reinforcement Design Loads: Axial and Flexure Loads: Load Combination	Thermal Gradient Loading Condition	Axial (4) (kips / ft)	Flexure (4) (ft-kips / ft)	In-Plane Shear Loads: Load Combination	In-plane (5) Shear (kips / ft)	Longitudinal Reinforcement Provided (in²/ ft)	Transverse Shear Design Loads: Load Combination	Transverse Shear (6) Reinforcement Design Loads (kips / ft)	Transverse Shear (7) Reinforcement Provided (in²/ft²)	Remarks
Cooling Tower East Fan Wall	6	East (outside)	Vertical	3H.6-114	2-V-L	Max Tension w/ corresponding moment	234	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	70	-163	D + F + L + H' + Ta + Ro +E'	100	6.24	-	-	-	
									Including Thermal Gradient	71	-169							
						Max Compression w/ corresponding moment	290	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-176	-113							
									Including Thermal Gradient	-175	-108							
						Max Moment with corresponding axial tension	279	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	0	-1018							
									Including Thermal Gradient	-2	-965							
						Max Moment with corresponding axial compression	279	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-112	-1018							
									Including Thermal Gradient	-114	-965							
					3-V-L	Max Tension w/ corresponding moment	232	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	172	-941	D + F + L + H' + Ta + Ro +E'	100	9.36	-	-	-	
									Including Thermal Gradient	169	-934							
						Max Compression w/ corresponding moment	288	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-369	-260							
									Including Thermal Gradient	-362	35							
						Max Moment with corresponding axial tension	287	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	50	-2063							
									Including Thermal Gradient	42	-2004							
						Max Moment with corresponding axial compression	287	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-256	-2063							
									Including Thermal Gradient	-265	-2004							
		West (inside)	Horizontal	3H.6-115	1-H-L	Max Tension w/ corresponding moment	270	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	44	201	D + F + L + H' + Ta + Ro +E'	34	1.56	-	-	-	
									Including Thermal Gradient	45	207							
						Max Compression w/ corresponding moment	246	D + F + L + H + Ta + Ro +Wt	Excluding Thermal Gradient	-72	17							
									Including Thermal Gradient	-72	16							
						Max Moment with axial tension	289	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	1	322							
									Including Thermal Gradient	1	340							
						Max Moment with axial compression	289	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-30	322							
									Including Thermal Gradient	-30	340							
					2-H-L	Max Tension w/ corresponding moment	255	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	222	218	D + F + L + H' + Ta + Ro +E'	44	3.12	-	-	-	
									Including Thermal Gradient	234	168							
						Max Compression w/ corresponding moment	255	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-92	177							
									Including Thermal Gradient	-97	201							
						Max Moment with axial tension	232	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	13	548							
									Including Thermal Gradient	12	557							
						Max Moment with axial compression	232	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-59	564							
									Including Thermal Gradient	-58	686							

Table 3H.6-7 Results of UHS/RSW Pump House Concrete Wall Design (Continued)

Location	Thickness (ft)	Face	Direction	Reinforcement Layout Drawing Number (1)	Reinforcement Zone Number (2)	Maximum Forces (3)	Element	Longitudinal Reinforcement Design Loads						Longitudinal Reinforcement Provided (in^2/ ft)	Transverse Shear Design Loads		Transverse Shear (7) Reinforcement Provided (in^2/ft^2)	Remarks
								Axial and Flexure Loads				In-Plane Shear Loads						
								Load Combination	Thermal Gradient Loading Condition	Axial (4) (kips / ft)	Flexure (4) (ft-kips / ft)	Load Combination	In-plane (5) Shear (kips / ft)		Load Combination	Transverse Shear (6) Reinforcement Design Loads (kips / ft)		
Cooling Tower East Fan Wall	6	West (inside)	Horizontal	3H.6-115	3-H-L	Max Tension w/ corresponding moment	247	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	237	414	D + F + L + H' + Ta + Ro +E'	44	6.24	-	-	-	
									Including Thermal Gradient	251	380							
						Max Compression w/ corresponding moment	271	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-104	316							
									Including Thermal Gradient	-110	332							
						Max Moment with axial tension	247	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	21	444							
									Including Thermal Gradient	26	442							
						Max Moment with axial compression	247	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-73	418							
									Including Thermal Gradient	-78	424							
					4-H-L	Max Tension w/ corresponding moment	231	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	404	1813	D + F + L + H' + Ta + Ro +E'	44	10.92	-	-	-	
									Including Thermal Gradient	422	1890							
						Max Compression w/ corresponding moment	287	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-208	957							
									Including Thermal Gradient	-216	931							
						Max Moment with axial tension	231	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	80	2201							
									Including Thermal Gradient	91	2354							
						Max Moment with axial compression	231	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-46	1961							
									Including Thermal Gradient	-47	1991							
			Vertical	3H.6-116	1-V-L	Max Tension w/ corresponding moment	235	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	30	53	D + F + L + H' + Ta + Ro +E'	100	3.12	-	-	-	
									Including Thermal Gradient	32	55							
						Max Compression w/ corresponding moment	291	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-125	102							
									Including Thermal Gradient	-128	119							
						Max Moment with corresponding axial tension	248	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	0	813							
									Including Thermal Gradient	3	751							
						Max Moment with corresponding axial compression	247	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-96	956							
									Including Thermal Gradient	-94	834							
					2-V-L	Max Tension w/ corresponding moment	234	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	70	107	D + F + L + H' + Ta + Ro +E'	100	6.24	-	-	-	
									Including Thermal Gradient	71	102							
						Max Compression w/ corresponding moment	290	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-212	128							
									Including Thermal Gradient	-215	142							
						Max Moment with corresponding axial tension	240	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	5	993							
									Including Thermal Gradient	11	914							
						Max Moment with corresponding axial compression	239	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-147	1371							
									Including Thermal Gradient	-141	1248							

Table 3H.6-7 Results of UHS/RSW Pump House Concrete Wall Design (Continued)

Location	Thickness (ft)	Face	Direction	Reinforcement Layout Drawing Number (1)	Reinforcement Zone Number (2)	Maximum Forces (3)	Element	Longitudinal Reinforcement Design Loads: Axial and Flexure Loads: Load Combination	Thermal Gradient Loading Condition	Axial (4) (kips / ft)	Flexure (4) (ft-kips / ft)	In-Plane Shear Loads: Load Combination	In-plane (5) Shear (kips / ft)	Longitudinal Reinforcement Provided (in^2/ ft)	Transverse Shear Design Loads: Load Combination	Transverse Shear (6) Reinforcement Design Loads (kips / ft)	Transverse Shear (7) Reinforcement Provided (in^2/ft^2)	Remarks
Cooling Tower East Fan Wall	6	West (inside)	Vertical	3H.6-116	3-V-L	Max Tension w/ corresponding moment	232	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	172	532	D + F + L + H' + Ta + Ro +E'	100	10.74	-	-	-	
									Including Thermal Gradient	169	509							
						Max Compression w/ corresponding moment	288	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-450	74							
									Including Thermal Gradient	-446	28							
						Max Moment with corresponding axial tension	231	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	23	2785							
									Including Thermal Gradient	43	2650							
						Max Moment with corresponding axial compression	231	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-287	2785							
									Including Thermal Gradient	-267	2650							
Cooling Tower West Fan Wall	6	West (outside)	Horizontal	3H.6-117	1-H-L	Max Tension w/ corresponding moment	193	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	51	-209	D + F + L + H' + Ta + Ro +E'	34	1.56	-	-	-	
									Including Thermal Gradient	51	-216							
						Max Compression w/ corresponding moment	194	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-126	-40							
									Including Thermal Gradient	-126	-39							
						Max Moment with axial tension	195	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	15	-404							
									Including Thermal Gradient	17	-419							
						Max Moment with axial compression	196	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-23	-404							
									Including Thermal Gradient	-21	-419							
					2-H-L	Max Tension w/ corresponding moment	197	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	229	-189	D + F + L + H' + Ta + Ro +E'	44	6.24	-	-	-	
									Including Thermal Gradient	245	-235							
						Max Compression w/ corresponding moment	198	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-172	-269							
									Including Thermal Gradient	-178	-254							
						Max Moment with axial tension	199	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	115	-529							
									Including Thermal Gradient	128	-568							
						Max Moment with axial compression	200	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-112	-491							
									Including Thermal Gradient	-116	-485							
					3-H-L	Max Tension w/ corresponding moment	201	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	358	-141	D + F + L + H' + Ta + Ro +E'	44	7.80	-	-	-	
									Including Thermal Gradient	375	-79							
						Max Compression w/ corresponding moment	202	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-316	-1015							
									Including Thermal Gradient	-324	-1041							
						Max Moment with axial tension	203	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	64	-1449							
									Including Thermal Gradient	68	-1418							
						Max Moment with axial compression	204	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-140	-1632							
									Including Thermal Gradient	-144	-1695							

Table 3H.6-7 Results of UHS/RSW Pump House Concrete Wall Design (Continued)

Location	Thickness (ft)	Face	Direction	Reinforcement Layout Drawing Number (1)	Reinforcement Zone Number (2)	Maximum Forces (3)	Element	Longitudinal Reinforcement Design Loads: Axial and Flexure Loads: Load Combination	Thermal Gradient Loading Condition	Axial (4) (kips / ft)	Flexure (4) (ft-kips / ft)	In-Plane Shear Loads: Load Combination	In-plane (5) Shear (kips / ft)	Longitudinal Reinforcement Provided (in^2/ ft)	Transverse Shear Design Loads: Load Combination	Transverse Shear (6) Reinforcement Design Loads (kips / ft)	Transverse Shear (7) Reinforcement Provided (in^2/ft^2)	Remarks
Cooling Tower West Fan Wall	6	West (outside)	Vertical	3H.6-118	1-V-L	Max Tension w/ corresponding moment	205	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	47	-89	D + F + L + H' + Ta + Ro +E'	106	3.12	-	-	-	
									Including Thermal Gradient	47	-85							
						Max Compression w/ corresponding moment	206	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-114	-9							
									Including Thermal Gradient	-116	-4							
						Max Moment with corresponding axial tension	207	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	4	-204							
									Including Thermal Gradient	3	-202							
						Max Moment with corresponding axial compression	208	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-46	-209							
									Including Thermal Gradient	-47	-204							
					2-V-L	Max Tension w/ corresponding moment	209	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	73	-228	D + F + L + H' + Ta + Ro +E'	106	6.24	-	-	-	
									Including Thermal Gradient	74	-233							
						Max Compression w/ corresponding moment	210	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-197	-237							
									Including Thermal Gradient	-197	-298							
						Max Moment with corresponding axial tension	211	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	4	-892							
									Including Thermal Gradient	6	-883							
						Max Moment with corresponding axial compression	212	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-107	-1004							
									Including Thermal Gradient	-110	-952							
					3-V-L	Max Tension w/ corresponding moment	213	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	175	-1077	D + F + L + H' + Ta + Ro +E'	106	9.36	-	-	-	
									Including Thermal Gradient	173	-1114							
						Max Compression w/ corresponding moment	214	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-416	-1167							
									Including Thermal Gradient	-416	-1312							
						Max Moment with corresponding axial tension	215	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	24	-2029							
									Including Thermal Gradient	16	-1971							
						Max Moment with corresponding axial compression	216	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-244	-2029							
									Including Thermal Gradient	-252	-1971							
		East (inside)	Horizontal	3H.6-119	1-H-L	Max Tension w/ corresponding moment	217	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	51	225	D + F + L + H' + Ta + Ro +E'	34	1.56	-	-	-	
									Including Thermal Gradient	51	219							
						Max Compression w/ corresponding moment	218	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-69	21							
									Including Thermal Gradient	-69	20							
						Max Moment with axial tension	219	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	1	327							
									Including Thermal Gradient	0	345							
						Max Moment with axial compression	220	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-29	327							
									Including Thermal Gradient	-30	345							

Table 3H.6-7 Results of UHS/RSW Pump House Concrete Wall Design (Continued)

Location	Thickness (ft)	Face	Direction	Reinforcement Layout Drawing Number (1)	Reinforcement Zone Number (2)	Maximum Forces (3)	Element	Longitudinal Reinforcement Design Loads						Longitudinal Reinforcement Provided (in²/ ft)	Transverse Shear Design Loads		Transverse Shear (7) Reinforcement Provided (in²/ft²)	Remarks
								Axial and Flexure Loads				In-Plane Shear Loads						
								Load Combination	Thermal Gradient Loading Condition	Axial (4) (kips / ft)	Flexure (4) (ft-kips / ft)	Load Combination	In-plane (5) Shear (kips / ft)		Load Combination	Transverse Shear (6) Reinforcement Design Loads (kips / ft)		
Cooling Tower West Fan Wall	6	East (inside)	Horizontal	3H.6-119	2-H-L	Max Tension w/ corresponding moment	221	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	214	192	D + F + L + H' + Ta + Ro +E'	44	3.12	-	-	-	
									Including Thermal Gradient	227	158							
						Max Compression w/ corresponding moment	222	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-153	169							
									Including Thermal Gradient	-158	192							
						Max Moment with axial tension	223	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	14	540							
									Including Thermal Gradient	14	546							
						Max Moment with axial compression	224	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-57	576							
									Including Thermal Gradient	-57	700							
					3-H-L	Max Tension w/ corresponding moment	225	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	220	433	D + F + L + H' + Ta + Ro +E'	44	6.24	-	-	-	
									Including Thermal Gradient	233	399							
						Max Compression w/ corresponding moment	226	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-172	77							
									Including Thermal Gradient	-178	94							
						Max Moment with axial tension	227	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	74	464							
									Including Thermal Gradient	84	451							
						Max Moment with axial compression	228	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-34	447							
									Including Thermal Gradient	-30	442							
					4-H-L	Max Tension w/ corresponding moment	229	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	358	976	D + F + L + H' + Ta + Ro +E'	44	9.36	-	-	-	
									Including Thermal Gradient	375	1054							
						Max Compression w/ corresponding moment	230	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-263	928							
									Including Thermal Gradient	-270	902							
						Max Moment with axial tension	231	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	67	1333							
									Including Thermal Gradient	78	1485							
						Max Moment with axial compression	232	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-61	1253							
									Including Thermal Gradient	-62	1238							
					5-H-L	Max Tension w/ corresponding moment	233	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	358	1831	D + F + L + H' + Ta + Ro +E'	44	10.92	-	-	-	
									Including Thermal Gradient	374	1911							
						Max Compression w/ corresponding moment	234	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-316	438							
									Including Thermal Gradient	-324	408							
						Max Moment with axial tension	235	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	24	2216							
									Including Thermal Gradient	35	2372							
						Max Moment with axial compression	236	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-104	1966							
									Including Thermal Gradient	-106	2008							

Table 3H.6-7 Results of UHS/RSW Pump House Concrete Wall Design (Continued)

Location	Thickness (ft)	Face	Direction	Reinforcement Layout Drawing Number (1)	Reinforcement Zone Number (2)	Maximum Forces (3)	Element	Longitudinal Reinforcement Design Loads: Axial and Flexure Loads: Load Combination	Thermal Gradient Loading Condition	Axial (4) (kips / ft)	Flexure (4) (ft-kips / ft)	In-Plane Shear Loads: Load Combination	In-plane (5) Shear (kips / ft)	Longitudinal Reinforcement Provided (in^2/ ft)	Transverse Shear Design Loads: Load Combination	Transverse Shear (6) Reinforcement Design Loads (kips / ft)	Transverse Shear (7) Reinforcement Provided (in^2/ft^2)	Remarks
Cooling Tower West Fan Wall	6	East (inside)	Vertical	3H.6-120	1-V-L	Max Tension w/ corresponding moment	237	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	32	100	D + F + L + H' + Ta + Ro +E'	106	3.12	-	-	-	
									Including Thermal Gradient	34	93							
						Max Compression w/ corresponding moment	238	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-127	16							
									Including Thermal Gradient	-130	21							
						Max Moment with corresponding axial tension	239	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	5	759							
									Including Thermal Gradient	8	662							
						Max Moment with corresponding axial compression	240	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-90	958							
									Including Thermal Gradient	-88	836							
					2-V-L	Max Tension w/ corresponding moment	241	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	73	170	D + F + L + H' + Ta + Ro +E'	106	6.24	-	-	-	
									Including Thermal Gradient	74	165							
						Max Compression w/ corresponding moment	242	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-214	26							
									Including Thermal Gradient	-217	37							
						Max Moment with corresponding axial tension	243	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	1	994							
									Including Thermal Gradient	6	915							
						Max Moment with corresponding axial compression	244	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-158	1365							
									Including Thermal Gradient	-152	1243							
					3-V-L	Max Tension w/ corresponding moment	245	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	175	678	D + F + L + H' + Ta + Ro +E'	106	10.74	-	-	-	
									Including Thermal Gradient	173	698							
						Max Compression w/ corresponding moment	246	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-453	179							
									Including Thermal Gradient	-447	269							
						Max Moment with corresponding axial tension	247	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	2	2771							
									Including Thermal Gradient	23	2639							
						Max Moment with corresponding axial compression	248	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-337	2771							
									Including Thermal Gradient	-315	2639							

Table 3H.6-7 Results of UHS/RSW Pump House Concrete Wall Design (Continued)

Location	Thickness (ft)	Face	Direction	Reinforcement Layout Drawing Number (1)	Reinforcement Zone Number (2)	Maximum Forces (3)	Element	Longitudinal Reinforcement Design Loads – Axial and Flexure Loads – Load Combination	Thermal Gradient Loading Condition	Axial (4) (kips / ft)	Flexure (4) (ft-kips / ft)	In-Plane Shear Loads – Load Combination	In-plane (5) Shear (kips / ft)	Longitudinal Reinforcement Provided (in^2/ ft)	Transverse Shear Design Loads – Load Combination	Transverse Shear (6) Reinforcement Design Loads (kips / ft)	Transverse Shear (7) Reinforcement Provided (in^2/ft^2)	Remarks
Cooling Tower Internal Fan Wall	2	East / West	Horizontal	3H.6-121	1-H-L	Max Tension w/ corresponding moment	2428	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	35	5	D + F + L + H' + Ta + Ro +E'	19	1.00	-	-	-	
									Including Thermal Gradient	38	5							
						Max Compression w/ corresponding moment	2048	D + F + L + H + Ta + Ro +Wt	Excluding Thermal Gradient	-115	2							
									Including Thermal Gradient	-115	2							
						Max Moment with axial tension	2044	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	8	91							
									Including Thermal Gradient	8	91							
						Max Moment with axial compression	2044	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-11	91							
									Including Thermal Gradient	-11	91							
					2-H-L	Max Tension w/ corresponding moment	2427	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	87	6	D + F + L + H' + Ta + Ro +E'	23	4.00	-	-	-	
									Including Thermal Gradient	94	6							
						Max Compression w/ corresponding moment	2559	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-23	87							
									Including Thermal Gradient	-24	87							
						Max Moment with axial tension	1483	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	10	103							
									Including Thermal Gradient	10	103							
						Max Moment with axial compression	1483	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-16	103							
									Including Thermal Gradient	-16	103							
					3-H-L	Max Tension w/ max moment	2633/ 1450	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	332	122	D + F + L + H' + Ta + Ro +E'	38	5.00	-	-	-	(8)
									Including Thermal Gradient	N/A	N/A							
						Max Compression w/ max moment	2207/ 1450	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	124	122							
									Including Thermal Gradient	N/A	N/A							
						Max Moment with axial tension	N/A	N/A	Excluding Thermal Gradient	N/A	N/A							
									Including Thermal Gradient	N/A	N/A							
						Max Moment with axial compression	N/A	N/A	Excluding Thermal Gradient	N/A	N/A							
									Including Thermal Gradient	N/A	N/A							
			Vertical	3H.6-122	1-V-L	Max Tension w/ corresponding moment	2540	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	69	15	D + F + L + H' + Ta + Ro +E'	35	1.56	-	-	-	
									Including Thermal Gradient	74	15							
						Max Compression w/ corresponding moment	1599	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-328	23							
									Including Thermal Gradient	-334	23							
						Max Moment with corresponding axial tension	2073	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	7	60							
									Including Thermal Gradient	8	60							
						Max Moment with corresponding axial compression	2587	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-255	94							
									Including Thermal Gradient	-252	94							

Table 3H.6-7 Results of UHS/RSW Pump House Concrete Wall Design (Continued)

Location	Thickness (ft)	Face	Direction	Reinforcement Layout Drawing Number (1)	Reinforcement Zone Number (2)	Maximum Forces (3)	Element	Longitudinal Reinforcement Design Loads — Axial and Flexure Loads — Load Combination	Thermal Gradient Loading Condition	Axial (4) (kips / ft)	Flexure (4) (ft-kips / ft)	In-Plane Shear Loads — Load Combination	In-plane Shear (5) (kips / ft)	Longitudinal Reinforcement Provided (in^2/ft)	Transverse Shear Design Loads — Load Combination	Transverse Shear (6) Reinforcement Design Loads (kips / ft)	Transverse Shear (7) Reinforcement Provided (in^2/ft^2)	Remarks
Cooling Tower Internal Fan Wall	2	East / West	Vertical	3H.6-122	2-V-L	Max Tension w/ corresponding moment	1362	D + F + L + H + Ta + Ro +Wt	Excluding Thermal Gradient	13	1	D + F + L + H' + Ta + Ro +E'	27	3.12	-	-	-	
									Including Thermal Gradient	13	1							
						Max Compression w/ corresponding moment	1499	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-67	17							
									Including Thermal Gradient	-72	16							
						Max Moment with corresponding axial tension	1260	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	7	27							
									Including Thermal Gradient	2	26							
						Max Moment with corresponding axial compression	2043	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-54	40							
									Including Thermal Gradient	-58	40							
					3-V-L	Max Tension w/ corresponding moment	2557	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	53	12	D + F + L + H' + Ta + Ro +E'	27	4.68	-	-	-	
									Including Thermal Gradient	57	12							
						Max Compression w/ corresponding moment	1411	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-246	47							
									Including Thermal Gradient	-253	47							
						Max Moment with corresponding axial tension	2207	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	5	149							
									Including Thermal Gradient	4	148							
						Max Moment with corresponding axial compression	2207	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-193	149							
									Including Thermal Gradient	-194	148							

Notes:

(1) The reinforcement layout drawings show the various zones used to define the minimum reinforcement that will be provided based on finite element analysis results. Actual provided reinforcement based on final rebar layout may exceed the reported provided reinforcement and the zones with higher reinforcement may be extended beyond their reported boundaries.

(2) Each reinforcement layout drawing is divided into reinforcement zones. The reinforcement zone naming convention is as follows: "H" = horizontal, "V" = vertical, "L" = longitudinal reinforcement, "T" = transverse reinforcement.

(3) The maximum tension and compression axial forces are provided with the corresponding moment from the same load combination. The maximum moment that has a corresponding tension in the same load combination and the maximum moment that has a corresponding compression in the same load combination are also provided. For zones where either axial tension or axial compression does not occur for any load combination, dashes are input into the corresponding cell.

(4) Negative axial load is compression and positive axial load is tension. Negative moment applies tension to the top face of the shell element and positive moment applies tension to the bottom face of the shell element. For walls or slabs where the same reinforcement is provided on both faces, the moment is shown as absolute value.

(5) The reported in-plane shear is the maximum average in-plane shear along a plane that crosses the longitudinal reinforcement zone.

(6) The reported transverse shear is the maximum average transverse shear along a plane in that transverse reinforcement zone

(7) In areas where horizontal and vertical transverse shear zones overlap, the total transverse shear reinforcement to be supplied in the overlapping area is the sum of the transverse reinforcement required from the horizontal and vertical zones.

(8) For certain areas of the structure, the standard element post-processing methods were too conservative. For such cases, detailed manual design was performed and the design forces determined by the detailed manual design are provided in the table.

Table 3H.6-8 Results of UHS/RSW Pump House Concrete Slab Design

Location	Thickness (ft)	Face	Direction	Reinforcement Layout Drawing Number (1)	Reinforcement Zone Number (2)	Maximum Forces (3)	Element	Longitudinal Reinforcement Design Loads						Longitudinal Reinforcement Provided (in^2/ ft)	Transverse Shear Design Loads		Transverse Shear (7) Reinforcement Provided (in^2/ft^2)	Remarks
								Axial and Flexure Loads				In-Plane Shear Loads						
								Load Combination	Thermal Gradient Loading Condition	Axial (4) (kips / ft)	Flexure (4) (ft-kips / ft)	Load Combination	In-plane (5) Shear (kips / ft)		Load Combination	Transverse Shear (6) Reinforcement Design Loads (kips / ft)		
Pump House Foundation Mat	10	Top	East-West	3H.6-123	1-H-L	Max Tension w/ corresponding moment	13470	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	222	-9	D + F + L + H' + Ta + Ro +E'	25	3.12	-	-	-	
									Including Thermal Gradient	222	9							
						Max Compression w/ corresponding moment	10762	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	-851	-417							
									Including Thermal Gradient	-852	720							
						Max Moment with axial tension	13467	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	105	-1045							
									Including Thermal Gradient	105	-1044							
						Max Moment with axial compression	13467	1.4D + 1.7F +1.7L + 1.7H + 1.7W	Excluding Thermal Gradient	-9	-1305							
									Including Thermal Gradient	-9	-1305							
					2-H-L	Max Tension w/ corresponding moment	13646	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	25	-60	D + F + L + H' + Ta + Ro +E'	26	4.68	-	-	-	
									Including Thermal Gradient	25	-59							
						Max Compression w/ corresponding moment	10759	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	-509	-154							
									Including Thermal Gradient	-509	-191							
						Max Moment with axial tension	13631	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	3	-162							
									Including Thermal Gradient	3	-159							
						Max Moment with axial compression	13481	1.4D + 1.7F +1.7L + 1.7H + 1.7W	Excluding Thermal Gradient	-9	-318							
									Including Thermal Gradient	-9	-318							
			North-South	3H.6-124	1-V-L	Max Tension w/ corresponding moment	13467	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	146	-692	D + F + L + H' + Ta + Ro +E'	40	3.12	-	-	-	
									Including Thermal Gradient	146	-688							
						Max Compression w/ corresponding moment	10746	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	-825	-138							
									Including Thermal Gradient	-826	532							
						Max Moment with corresponding axial tension	13467	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	17	-1078							
									Including Thermal Gradient	17	-1078							
						Max Moment with corresponding axial compression	13467	1.4D + 1.7F +1.7L + 1.7H + 1.7W	Excluding Thermal Gradient	-10	-1341							
									Including Thermal Gradient	-10	-1341							
					2-V-L	Max Tension w/ corresponding moment	9614	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	111	-610	1.4D + 1.4To + 1.7F + 0.9H	178	6.24	-	-	-	
									Including Thermal Gradient	111	-607							
						Max Compression w/ corresponding moment	10810	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	-837	-150							
									Including Thermal Gradient	-837	536							
						Max Moment with axial tension	9614	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	16	-832							
									Including Thermal Gradient	16	-832							
						Max Moment with axial compression	9614	1.4D + 1.7F +1.7L + 1.7H + 1.7W	Excluding Thermal Gradient	-11	-1008							
									Including Thermal Gradient	-11	-1008							

Table 3H.6-8 Results of UHS/RSW Pump House Concrete Slab Design (Continued)

Location	Thickness (ft)	Face	Direction	Reinforcement Layout Drawing Number (1)	Reinforcement Zone Number (2)	Maximum Forces (3)	Element	Longitudinal Reinforcement Design Loads: Axial and Flexure Loads: Load Combination	Thermal Gradient Loading Condition	Axial (4) (kips / ft)	Flexure (4) (ft-kips / ft)	In-Plane Shear Loads: Load Combination	In-plane Shear (5) (kips / ft)	Longitudinal Reinforcement Provided (in^2/ ft)	Transverse Shear Design Loads: Load Combination	Transverse Shear Reinforcement Design Loads (6) (kips / ft)	Transverse Shear Reinforcement Provided (7) (in^2/ft^2)	Remarks
Pump House Foundation Mat	10	Bottom	East-West	3H.6-125	1-H-L	Max Tension w/ corresponding moment	13470	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	223	110	D + F + L + H' + Ta + Ro +E'	26	3.12	-	-	-	
									Including Thermal Gradient	222	114							
						Max Compression w/ corresponding moment	10761	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	-862	227							
									Including Thermal Gradient	-862	981							
						Max Moment with axial tension	10214	1.4D + 1.7F +1.7L + 1.7H + 1.7W	Excluding Thermal Gradient	3	1562							
									Including Thermal Gradient	3	1562							
						Max Moment with axial compression	10833	1.4D + 1.7F +1.7L + 1.7H + 1.7W	Excluding Thermal Gradient	-23	1585							
									Including Thermal Gradient	-23	1585							
					2-H-L	Max Tension w/ corresponding moment	9708	1.4D + 1.4F + 1.7W	Excluding Thermal Gradient	20	257	D + F + L + H' + Ta + Ro +E'	23	4.68	-	-	-	
									Including Thermal Gradient	20	257							
						Max Compression w/ corresponding moment	10771	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	-849	1110							
									Including Thermal Gradient	-850	1858							
						Max Moment with axial tension	10524	1.4D + 1.7F +1.7L + 1.7H + 1.7W	Excluding Thermal Gradient	1	1935							
									Including Thermal Gradient	1	1935							
						Max Moment with axial compression	10621	1.4D + 1.7F +1.7L + 1.7H + 1.7W	Excluding Thermal Gradient	-23	2079							
									Including Thermal Gradient	-23	2079							
			North-South	3H.6-126	1-V-L	Max Tension w/ corresponding moment	13467	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	146	117	1.4D + 1.4To + 1.7F + 0.9H	158	3.12	-	-	-	
									Including Thermal Gradient	146	116							
						Max Compression w/ corresponding moment	10806	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	-847	1020							
									Including Thermal Gradient	-848	1462							
						Max Moment with corresponding axial tension	10581	1.4D + 1.7F +1.7L + 1.7H + 1.7W	Excluding Thermal Gradient	39	1318							
									Including Thermal Gradient	39	1318							
						Max Moment with corresponding axial compression	10791	1.4D + 1.7F +1.7L + 1.7H + 1.7W	Excluding Thermal Gradient	-51	1559							
									Including Thermal Gradient	-51	1559							
					2-V-L	Max Tension w/ corresponding moment	9685	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	119	64	1.4D + 1.4To + 1.7F + 0.9H	178	6.24	-	-	-	
									Including Thermal Gradient	119	65							
						Max Compression w/ corresponding moment	10175	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	-828	216							
									Including Thermal Gradient	-829	903							
						Max Moment with axial tension	9659	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	40	464							
									Including Thermal Gradient	41	468							
						Max Moment with axial compression	9659	1.4D + 1.4F + 1.7W	Excluding Thermal Gradient	-59	671							
									Including Thermal Gradient	-59	671							

Table 3H.6-8 Results of UHS/RSW Pump House Concrete Slab Design (Continued)

Location	Thickness (ft)	Face	Direction	Reinforcement Layout Drawing Number (1)	Reinforcement Zone Number (2)	Maximum Forces (3)	Element	Longitudinal Reinforcement Design Loads: Axial and Flexure Loads: Load Combination	Thermal Gradient Loading Condition	Axial (4) (kips / ft)	Flexure (4) (ft-kips / ft)	In-Plane Shear Loads: Load Combination	In-plane (5) Shear (kips / ft)	Longitudinal Reinforcement Provided (in^2/ ft)	Transverse Shear Design Loads: Load Combination	Transverse Shear (6) Reinforcement Design Loads (kips / ft)	Transverse Shear (7) Reinforcement Provided (in^2/ft^2)	Remarks
Pump House Operating Floor	2	Top / Bottom	East-West	3H.6-127	1-H-L	Max Tension w/ corresponding moment	12501	D + Pa + L + H	Excluding Thermal Gradient	81	1	D + F + L + H' + Ta + Ro +E'	19	0.53	-	-	-	
									Including Thermal Gradient	81	1							
						Max Compression w/ corresponding moment	12401	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	-261	1							
									Including Thermal Gradient	-271	1							
						Max Moment with axial tension	12578	D + Pa + L + H	Excluding Thermal Gradient	20	4							
									Including Thermal Gradient	20	4							
						Max Moment with axial compression	12693	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-112	12							
									Including Thermal Gradient	-115	11							
					2-H-L	Max Tension w/ corresponding moment	13059	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	151	1	D + F + L + H' + Ta + Ro +E'	22	0.79	-	-	-	
									Including Thermal Gradient	154	1							
						Max Compression w/ corresponding moment	13105	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-312	0							
									Including Thermal Gradient	-308	0							
						Max Moment with axial tension	12993	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	1	10							
									Including Thermal Gradient	-2	9							
						Max Moment with axial compression	12996	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-103	15							
									Including Thermal Gradient	-105	9							
					3-H-L	Max Tension w/ corresponding moment	13126	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	110	2	1.4D + 1.4To + 1.7F + 0.9H	72	1.58	-	-	-	
									Including Thermal Gradient	112	1							
						Max Compression w/ corresponding moment	13098	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	-275	2							
									Including Thermal Gradient	-273	3							
						Max Moment with axial tension	13056	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	14	13							
									Including Thermal Gradient	17	10							
						Max Moment with axial compression	12690	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-90	16							
									Including Thermal Gradient	-94	10							
					4-H-L	Max Tension w/ corresponding moment	13134	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	202	2	1.4D + 1.4To + 1.7F + 0.9H	144	3.16	-	-	-	
									Including Thermal Gradient	203	3							
						Max Compression w/ corresponding moment	13134	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	-255	7							
									Including Thermal Gradient	-256	7							
						Max Moment with axial tension	13134	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	3	22							
									Including Thermal Gradient	2	22							
						Max Moment with axial compression	13046	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-43	22							
									Including Thermal Gradient	-40	21							

Table 3H.6-8 Results of UHS/RSW Pump House Concrete Slab Design (Continued)

Location	Thickness (ft)	Face	Direction	Reinforcement Layout Drawing Number [1]	Reinforcement Zone Number [2]	Maximum Forces [3]	Element	Longitudinal Reinforcement Design Loads – Axial and Flexure Loads – Load Combination	Thermal Gradient Loading Condition	Axial [4] (kips / ft)	Flexure [4] (ft-kips / ft)	In-Plane Shear Loads – Load Combination	In-plane [5] Shear (kips / ft)	Longitudinal Reinforcement Provided (in^2/ ft)	Transverse Shear Design Loads – Load Combination	Transverse Shear [6] Reinforcement Design Loads (kips / ft)	Transverse Shear [7] Reinforcement Provided (in^2/ft^2)	Remarks
Pump House Operating Floor	2	Top / Bottom	North-South	3H.6-128	1-V-L	Max Tension w/ corresponding moment	13094	1.4D + 1.4F + 1.7W	Excluding Thermal Gradient	49	6	1.4D + 1.4To + 1.7F + 0.9H	80	0.79	-	-	-	
									Including Thermal Gradient	49	6							
						Max Compression w/ corresponding moment	13131	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	-432	2							
									Including Thermal Gradient	-458	3							
						Max Moment with axial tension	13072	1.4D + 1.7F +1.7L + 1.7H + 1.7W	Excluding Thermal Gradient	0	12							
									Including Thermal Gradient	0	12							
						Max Moment with axial compression	13078	1.4D + 1.7F +1.7L + 1.7H + 1.7W	Excluding Thermal Gradient	-41	18							
									Including Thermal Gradient	-41	18							
					2-V-L	Max Tension w/ corresponding moment	13046	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	213	0	1.4D + 1.4To + 1.7F + 0.9H	99	1.58	-	-	-	
									Including Thermal Gradient	212	13							
						Max Compression w/ corresponding moment	13049	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	-447	3							
									Including Thermal Gradient	-472	5							
						Max Moment with axial tension	13046	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	195	18							
									Including Thermal Gradient	193	19							
						Max Moment with axial compression	13134	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-135	37							
									Including Thermal Gradient	-140	37							
					3-V-L	Max Tension w/ corresponding moment	13056	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	66	3	1.4D + 1.4To + 1.7F + 0.9H	98	3.16	-	-	-	
									Including Thermal Gradient	69	3							
						Max Compression w/ corresponding moment	13061	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	-210	0							
									Including Thermal Gradient	-220	1							
						Max Moment with axial tension	13056	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	55	8							
									Including Thermal Gradient	58	5							
						Max Moment with axial compression	12913	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-68	11							
									Including Thermal Gradient	-68	3							

Table 3H.6-8 Results of UHS/RSW Pump House Concrete Slab Design (Continued)

Location	Thickness (ft)	Face	Direction	Reinforcement Layout Drawing Number (1)	Reinforcement Zone Number (2)	Maximum Forces (3)	Element	Longitudinal Reinforcement Design Loads: Axial and Flexure Loads: Load Combination	Thermal Gradient Loading Condition	Axial (4) (kips / ft)	Flexure (4) (ft-kips / ft)	In-Plane Shear Loads: Load Combination	In-plane (5) Shear (kips / ft)	Longitudinal Reinforcement Provided (in^2/ ft)	Transverse Shear Design Loads: Load Combination	Transverse Shear (6) Reinforcement Design Loads (kips / ft)	Transverse Shear (7) Reinforcement Provided (in^2/ft^2)	Remarks
UHS Basin Mat	10	Top	East-West	3H.6-129	1-H-L	Max Tension w/ corresponding moment	12036	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	275	-58	1.4D + 1.4To + 1.7F + 0.9H	124	3.12	-	-	-	
									Including Thermal Gradient	282	-782							
						Max Compression w/ corresponding moment	11788	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	-1454	-519							
									Including Thermal Gradient	-1455	1233							
						Max Moment with axial tension	12120	1.4D + 1.7F +1.7L + 1.7H + 1.7W	Excluding Thermal Gradient	4	-1418							
									Including Thermal Gradient	4	-1418							
						Max Moment with axial compression	12120	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	-788	-1627							
									Including Thermal Gradient	-790	1037							
					2-H-L	Max Tension w/ corresponding moment	11956	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	555	-185	D + F + L + H' + Ta + Ro +E'	139	6.24	-	-	-	
									Including Thermal Gradient	558	-862							
						Max Compression w/ corresponding moment	11205	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	-1530	-295							
									Including Thermal Gradient	-1532	1459							
						Max Moment with axial tension	12107	1.4D + 1.7F +1.7L + 1.7H + 1.7W	Excluding Thermal Gradient	17	-2265							
									Including Thermal Gradient	17	-2265							
						Max Moment with axial compression	12107	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	-643	-2682							
									Including Thermal Gradient	-646	-1369							
					3-H-L	Max Tension w/ corresponding moment	12111	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	497	-1466	1.4D + 1.4To + 1.7F + 0.9H	124	9.36	-	-	-	
									Including Thermal Gradient	486	154							
						Max Compression w/ corresponding moment	12126	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	-1371	-547							
									Including Thermal Gradient	-1368	1384							
						Max Moment with axial tension	12109	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	375	-4082							
									Including Thermal Gradient	359	-2736							
						Max Moment with axial compression	12109	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	-6	-4055							
									Including Thermal Gradient	-13	-2685							
					4-H-L	Max Tension w/ corresponding moment	11764	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	800	-1687	1.4D + 1.4To + 1.7F + 0.9H	110	12.48	-	-	-	
									Including Thermal Gradient	781	-470							
						Max Compression w/ corresponding moment	11479	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	-1071	-109							
									Including Thermal Gradient	-1072	1199							
						Max Moment with axial tension	11498	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	705	-1803							
									Including Thermal Gradient	686	-582							
						Max Moment with axial compression	11498	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	-128	-1804							
									Including Thermal Gradient	-135	-589							

Table 3H.6-8 Results of UHS/RSW Pump House Concrete Slab Design (Continued)

Location	Thickness (ft)	Face	Direction	Reinforcement Layout Drawing Number (1)	Reinforcement Zone Number (2)	Maximum Forces (3)	Element	Longitudinal Reinforcement Design Loads – Axial and Flexure Loads – Load Combination	Thermal Gradient Loading Condition	Axial (4) (kips / ft)	Flexure (4) (ft-kips / ft)	In-Plane Shear Loads – Load Combination	In-plane (5) Shear (kips / ft)	Longitudinal Reinforcement Provided (in^2/ ft)	Transverse Shear Design Loads – Load Combination	Transverse Shear (6) Reinforcement Design Loads (kips / ft)	Transverse Shear (7) Reinforcement Provided (in^2/ft^2)	Remarks
UHS Basin Mat	10	Top	East-West	3H.6-129	5-H-L	Max Tension w/ max moment	12117/ 12115/ 12113	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	N/A	N/A	1.4D + 1.4To + 1.7F + 0.9H	113	15.60	-	-	-	(8)
									Including Thermal Gradient	1403	705							
						Max Compression w/ corresponding moment	12129	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	-1158	-255							
									Including Thermal Gradient	-1157	1204							
						Max Moment with axial tension	12112	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	10	-1814							
									Including Thermal Gradient	-1	744							
						Max Moment with axial compression	12112	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	-7	-1930							
									Including Thermal Gradient	-14	656							
					6-H-L	Max Tension w/ max moment	11960/ 11958/ 11512/ 11510	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	N/A	N/A	1.4D + 1.4To + 1.7F + 0.9H	117	15.60	-	-	-	(8)
									Including Thermal Gradient	648	2433							
						Max Compression w/ corresponding moment	11493	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	-1100	-116							
									Including Thermal Gradient	-1100	1196							
						Max Moment with axial tension	11960/ 11958/ 11512/ 11510	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	N/A	N/A							
									Including Thermal Gradient	470	2549							
						Max Moment with axial compression	11960/ 11958/ 11512/ 11510	1.4D + 1.7L + 1.7W	Excluding Thermal Gradient	N/A	N/A							
									Including Thermal Gradient	-30	183							
					7-H-L	Max Tension w/ max moment	13251/ 13250	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	N/A	N/A	D + F + L + H' + Ta + Ro +E'	31	9.36	-	-	-	(8)
									Including Thermal Gradient	789	310							
						Max Compression w/ max moment	13251/ 13250	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	N/A	N/A							
									Including Thermal Gradient	-344	762							
						Max Moment with axial tension	13251/ 13250	1.4D + 1.7F +1.7L + 1.7H + 1.7W	Excluding Thermal Gradient	N/A	N/A							
									Including Thermal Gradient	113	1586							
						Max Moment with axial compression	13251/ 13250	1.4D + 1.4F + 1.7W	Excluding Thermal Gradient	N/A	N/A							
									Including Thermal Gradient	-4	1415							
			North-South	3H.6-130	1-V-L	Max Tension w/ corresponding moment	13158	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	344	-148	1.4D + 1.4To + 1.7F + 0.9H	178	3.12	-	-	-	
									Including Thermal Gradient	347	-52							
						Max Compression w/ corresponding moment	11022	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	-1345	-114							
									Including Thermal Gradient	-1346	1339							
						Max Moment with corresponding axial tension	11997	1.4D + 1.7F +1.7L + 1.7H + 1.7W	Excluding Thermal Gradient	112	-1262							
									Including Thermal Gradient	112	-1262							
						Max Moment with corresponding axial compression	11997	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-74	-1473							
									Including Thermal Gradient	-72	-1722							

Table 3H.6-8 Results of UHS/RSW Pump House Concrete Slab Design (Continued)

Location	Thickness (ft)	Face	Direction	Reinforcement Layout Drawing Number (1)	Reinforcement Zone Number (2)	Maximum Forces (3)	Element	Longitudinal Reinforcement Design Loads: Axial and Flexure Loads: Load Combination	Thermal Gradient Loading Condition	Axial (4) (kips / ft)	Flexure (4) (ft-kips / ft)	In-Plane Shear Loads: Load Combination	In-plane (5) Shear (kips / ft)	Longitudinal Reinforcement Provided (in^2/ ft)	Transverse Shear Design Loads: Load Combination	Transverse Shear (6) Reinforcement Design Loads (kips / ft)	Transverse Shear (7) Reinforcement Provided (in^2/ft^2)	Remarks
UHS Basin Mat	10	Top	North-South	3H.6-130	2-V-L	Max Tension w/ corresponding moment	12087	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	590	-183	1.4D + 1.4To + 1.7F + 0.9H	143	6.24	-	-	-	
									Including Thermal Gradient	585	1407							
						Max Compression w/ corresponding moment	11493	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	-1359	-949							
									Including Thermal Gradient	-1361	1130							
						Max Moment with corresponding axial tension	12044	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	5	-1678							
									Including Thermal Gradient	7	-1951							
						Max Moment with corresponding axial compression	11980	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-60	-1724							
									Including Thermal Gradient	-59	-1989							
					3-V-L	Max Tension w/ corresponding moment	11396	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	602	-306	1.4D + 1.4To + 1.7F + 0.9H	143	9.36	-	-	-	
									Including Thermal Gradient	584	905							
						Max Compression w/ corresponding moment	11512	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	-1161	-1229							
									Including Thermal Gradient	-1164	848							
						Max Moment with corresponding axial tension	11958	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	85	-1856							
									Including Thermal Gradient	87	-2165							
						Max Moment with corresponding axial compression	11958	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-99	-1979							
									Including Thermal Gradient	-101	-1270							
					4-V-L	Max Tension w/ corresponding moment	13146	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	1213	-2539	D + F + L + H' + Ta + Ro +E'	45	12.48	-	-	-	
									Including Thermal Gradient	1078	-2700							
						Max Compression w/ corresponding moment	13146	1.4D + 1.7F +1.7L + 1.7H + 1.7W	Excluding Thermal Gradient	-997	-1870							
									Including Thermal Gradient	-997	-1870							
						Max Moment with corresponding axial tension	13146	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	779	-3278							
									Including Thermal Gradient	644	-3439							
						Max Moment with corresponding axial compression	13146	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	-161	-2353							
									Including Thermal Gradient	-171	-2381							
					5-V-L	Max Tension w/ corresponding moment	11317	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	2280	-2128	D + F + L + H' + Ta + Ro +E'	45	15.60	-	-	-	
									Including Thermal Gradient	2264	-189							
						Max Compression w/ corresponding moment	11334	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	-1093	-40							
									Including Thermal Gradient	-1093	1263							
						Max Moment with corresponding axial tension	11317	1.4D + 1.7F +1.7L + 1.7H + 1.7W	Excluding Thermal Gradient	384	-2518							
									Including Thermal Gradient	384	-2518							
						Max Moment with corresponding axial compression	11317	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-51	-1368							
									Including Thermal Gradient	-50	-1645							

Table 3H.6-8 Results of UHS/RSW Pump House Concrete Slab Design (Continued)

Location	Thickness (ft)	Face	Direction	Reinforcement Layout Drawing Number (1)	Reinforcement Zone Number (2)	Maximum Forces (3)	Element	Longitudinal Reinforcement Design Loads						Longitudinal Reinforcement Provided (in^2/ ft)	Transverse Shear Design Loads		Transverse Shear (7) Reinforcement Provided (in^2/ft^2)	Remarks
								Axial and Flexure Loads				In-Plane Shear Loads						
								Load Combination	Thermal Gradient Loading Condition	Axial (4) (kips / ft)	Flexure (4) (ft-kips / ft)	Load Combination	In-plane (5) Shear (kips / ft)		Load Combination	Transverse Shear (6) Reinforcement Design Loads (kips / ft)		
UHS Basin Mat	10	Top	North-South	3H.6-130	6-V-L	Max Tension w/ corresponding moment	11540	1.4D + 1.4F + 1.7W	Excluding Thermal Gradient	194	-172	1.4D + 1.4To + 1.7F + 0.9H	147	4.50	-	-	-	
									Including Thermal Gradient	194	-172							
						Max Compression w/ corresponding moment	11767	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	-956	-55							
									Including Thermal Gradient	-957	1358							
						Max Moment with corresponding axial tension	11544	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	17	-574							
									Including Thermal Gradient	19	-861							
						Max Moment with corresponding axial compression	11544	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-46	-574							
									Including Thermal Gradient	-45	-861							
					7-V-L	Max Tension w/ corresponding moment	11975	1.4D + 1.4F + 1.7W	Excluding Thermal Gradient	231	-378	1.4D + 1.4To + 1.7F + 0.9H	147	9.00	-	-	-	
									Including Thermal Gradient	231	-378							
						Max Compression w/ corresponding moment	11786	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	-899	-23							
									Including Thermal Gradient	-900	1290							
						Max Moment with corresponding axial tension	11975	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	12	-605							
									Including Thermal Gradient	15	-891							
						Max Moment with corresponding axial compression	11781	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	-262	-646							
									Including Thermal Gradient	-266	1326							
					8-V-L	Max Tension w/ corresponding moment	11981	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	1021	-1457	1.4D + 1.4To + 1.7F + 0.9H	147	13.50	-	-	-	
									Including Thermal Gradient	990	336							
						Max Compression w/ corresponding moment	11998	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	-920	-168							
									Including Thermal Gradient	-921	1206							
						Max Moment with corresponding axial tension	11981	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	12	-2958							
									Including Thermal Gradient	23	-3189							
						Max Moment with corresponding axial compression	11981	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-24	-2701							
									Including Thermal Gradient	-18	-2952							
					9-V-L	Max Tension w/ corresponding moment	11775	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	1849	-420	1.4D + 1.4To + 1.7F + 0.9H	147	18.00	-	-	-	
									Including Thermal Gradient	1829	842							
						Max Compression w/ corresponding moment	11788	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	-1111	-9							
									Including Thermal Gradient	-1111	1298							
						Max Moment with corresponding axial tension	11775	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	604	-1685							
									Including Thermal Gradient	596	48							
						Max Moment with corresponding axial compression	11775	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-449	-1091							
									Including Thermal Gradient	-451	143							

Table 3H.6-8 Results of UHS/RSW Pump House Concrete Slab Design (Continued)

Location	Thickness (ft)	Face	Direction	Reinforcement Layout Drawing Number (1)	Reinforcement Zone Number (2)	Maximum Forces (3)	Element	Longitudinal Reinforcement Design Loads – Axial and Flexure Loads – Load Combination	Thermal Gradient Loading Condition	Axial (4) (kips / ft)	Flexure (4) (ft-kips / ft)	In-Plane Shear Loads – Load Combination	In-plane Shear (5) (kips / ft)	Longitudinal Reinforcement Provided (in^2/ ft)	Transverse Shear Design Loads – Load Combination	Transverse Shear (6) Reinforcement Design Loads (kips / ft)	Transverse Shear (7) Reinforcement Provided (in^2/ft^2)	Remarks
UHS Basin Mat	10	Top	North-South	3H.6-130	10-V-L	Max Tension w/ corresponding moment	13251	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	580	-142	1.4D + 1.4To + 1.7F + 0.9H	184	8.00	-	-	-	
									Including Thermal Gradient	584	-114							
						Max Compression w/ corresponding moment	11912	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	-1063	-10							
									Including Thermal Gradient	-1063	1297							
						Max Moment with corresponding axial tension	13248	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	82	-682							
									Including Thermal Gradient	84	-672							
						Max Moment with corresponding axial compression	13251	1.4D + 1.7F +1.7L + 1.7H + 1.7W	Excluding Thermal Gradient	-144	-616							
									Including Thermal Gradient	-144	-616							
					11-V-L	Max Tension w/ corresponding moment	11906	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	676	-688	1.4D + 1.4To + 1.7F + 0.9H	184	16.00	-	-	-	
									Including Thermal Gradient	669	977							
						Max Compression w/ corresponding moment	12132	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	-1079	-61							
									Including Thermal Gradient	-1079	1261							
						Max Moment with corresponding axial tension	11919	1.4D + 1.4F + 1.7W	Excluding Thermal Gradient	212	-1403							
									Including Thermal Gradient	212	-1403							
						Max Moment with corresponding axial compression	11919	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	-170	-1456							
									Including Thermal Gradient	-173	-188							
					12-V-L	Max Tension w/ corresponding moment	11839	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	3572	-2460	1.4D + 1.4To + 1.7F + 0.9H	184	24.00	-	-	-	
									Including Thermal Gradient	3553	-97							
						Max Compression w/ corresponding moment	11852	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	-1101	-37							
									Including Thermal Gradient	-1102	1267							
						Max Moment with corresponding axial tension	12045	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	68	-2997							
									Including Thermal Gradient	81	-3232							
						Max Moment with corresponding axial compression	12045	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-149	-2001							
									Including Thermal Gradient	-138	-2438							
					13-V-L	Max Tension w/ corresponding moment	11903	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	3844	-2388	D + F + L + H' + Ta + Ro +E'	55	28.00	-	-	-	
									Including Thermal Gradient	3827	-73							
						Max Compression w/ corresponding moment	11916	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	-1101	-116							
									Including Thermal Gradient	-1101	1189							
						Max Moment with corresponding axial tension	11918	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	1727	-2428							
									Including Thermal Gradient	1716	-416							
						Max Moment with corresponding axial compression	11918	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	-228	-1566							
									Including Thermal Gradient	-231	-188							

Table 3H.6-8 Results of UHS/RSW Pump House Concrete Slab Design (Continued)

Location	Thickness (ft)	Face	Direction	Reinforcement Layout Drawing Number (1)	Reinforcement Zone Number (2)	Maximum Forces (3)	Element	Longitudinal Reinforcement Design Loads – Axial and Flexure Loads – Load Combination	Thermal Gradient Loading Condition	Axial (4) (kips / ft)	Flexure (4) (ft-kips / ft)	In-Plane Shear Loads – Load Combination	In-plane (5) Shear (kips / ft)	Longitudinal Reinforcement Provided (in^2/ ft)	Transverse Shear Design Loads – Load Combination	Transverse Shear (6) Reinforcement Design Loads (kips / ft)	Transverse Shear (7) Reinforcement Provided (in^2/ft^2)	Remarks
UHS Basin Mat	10	Top	North-South	3H.6-130	14-V-L	Max Tension w/ max moment	12108/ 12109/ 12124/ 12125	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	N/A	N/A	D + F + L + H' + Ta + Ro +E'	55	28.00	-	-	-	(8)
									Including Thermal Gradient	1321	3371							
						Max Compression w/ corresponding moment	12126	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	-1104	-116							
									Including Thermal Gradient	-1104	1193							
						Max Moment with corresponding axial tension	12108/ 12109/ 12124/ 12125	1.4D + 1.7F +1.7L + 1.7H + 1.7W	Excluding Thermal Gradient	N/A	N/A							
									Including Thermal Gradient	350	3478							
						Max Moment with corresponding axial compression	12108/ 12109/ 12124/ 12125	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	N/A	N/A							
									Including Thermal Gradient	-19	2759							
					15-V-L	Max Tension w/ max moment	11142/ 11143/ 11158/ 11159	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	N/A	N/A	D + F + L + H' + Ta + Ro +E'	45	15.60	-	-	-	(8)
									Including Thermal Gradient	660	1780							
						Max Compression w/ corresponding moment	11141	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	-1090	-60							
									Including Thermal Gradient	-1091	1246							
						Max Moment with corresponding axial tension	11142/ 11143/ 11158/ 11159	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	N/A	N/A							
									Including Thermal Gradient	369	2015							
						Max Moment with corresponding axial compression	11142/ 11143/ 11158/ 11159	1.4D + 1.7L + 1.7W	Excluding Thermal Gradient	N/A	N/A							
									Including Thermal Gradient	-26	829							
		Bottom	East-West	3H.6-131	1-H-L	Max Tension w/ corresponding moment	4586	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	319	955	D + F + L + H' + Ta + Ro +E'	53	3.12	-	-	-	
									Including Thermal Gradient	319	972							
						Max Compression w/ corresponding moment	11205	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	-1545	446							
									Including Thermal Gradient	-1546	1759							
						Max Moment with axial tension	4586	1.4D + 1.4F + 1.7W	Excluding Thermal Gradient	5	1391							
									Including Thermal Gradient	5	1391							
						Max Moment with axial compression	11706	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-608	1289							
									Including Thermal Gradient	-609	2009							
					2-H-L	Max Tension w/ corresponding moment	11972	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	388	39	D + F + L + H' + Ta + Ro +E'	139	6.24	-	-	-	
									Including Thermal Gradient	400	-801							
						Max Compression w/ corresponding moment	11383	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	-1164	47							
									Including Thermal Gradient	-1165	909							
						Max Moment with axial tension	5036	1.4D + 1.4F + 1.7W	Excluding Thermal Gradient	2	1609							
									Including Thermal Gradient	2	1609							
						Max Moment with axial compression	11983	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-178	2089							
									Including Thermal Gradient	-182	2721							

Table 3H.6-8 Results of UHS/RSW Pump House Concrete Slab Design (Continued)

Location	Thickness (ft)	Face	Direction	Reinforcement Layout Drawing Number (1)	Reinforcement Zone Number (2)	Maximum Forces (3)	Element	Longitudinal Reinforcement Design Loads: Axial and Flexure Loads: Load Combination	Thermal Gradient Loading Condition	Axial (4) (kips / ft)	Flexure (4) (ft-kips / ft)	In-Plane Shear Loads: Load Combination	In-plane (5) Shear (kips / ft)	Longitudinal Reinforcement Provided (in^2/ ft)	Transverse Shear Design Loads: Load Combination	Transverse Shear (6) Reinforcement Design Loads (kips / ft)	Transverse Shear (7) Reinforcement Provided (in^2/ft^2)	Remarks
UHS Basin Mat	10	Bottom	East-West	3H.6-131	3-H-L	Max Tension w/ corresponding moment	11957	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	427	60	1.4D + 1.4To + 1.7F + 0.9H	124	9.36	-	-	-	
									Including Thermal Gradient	436	-729							
						Max Compression w/ corresponding moment	12126	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	-1151	128							
									Including Thermal Gradient	-1152	980							
						Max Moment with axial tension	11981	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	58	1544							
									Including Thermal Gradient	60	1031							
						Max Moment with axial compression	11981	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-82	2445							
									Including Thermal Gradient	-87	3067							
					4-H-L	Max Tension w/ corresponding moment	13149	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	761	894	D + F + L + H' + Ta + Ro +E'	110	12.48	-	-	-	
									Including Thermal Gradient	744	851							
						Max Compression w/ corresponding moment	13145	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-192	54							
									Including Thermal Gradient	-183	52							
						Max Moment with axial tension	13149	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	480	1480							
									Including Thermal Gradient	468	1355							
						Max Moment with axial compression	13149	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	-61	923							
									Including Thermal Gradient	-108	620							
					5-H-L	Max Tension w/ max moment	12117/ 12115/ 12113	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	N/A	N/A	1.4D + 1.4To + 1.7F + 0.9H	113	15.60	-	-	-	(8)
									Including Thermal Gradient	1403	705							
						Max Compression w/ corresponding moment	12132	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	-977	74							
									Including Thermal Gradient	-978	1377							
						Max Moment with axial tension	12117/ 12115/ 12113	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	N/A	N/A							
									Including Thermal Gradient	633	1681							
						Max Moment with axial compression	12117/ 12115/ 12113	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	N/A	N/A							
									Including Thermal Gradient	-89	1424							
					6-H-L	Max Tension w/ max moment	13251/ 13250	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	N/A	N/A	D + F + L + H' + Ta + Ro +E'	31	9.36	-	-	-	(8)
									Including Thermal Gradient	789	310							
						Max Compression w/ max moment	13251/ 13250	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	N/A	N/A							
									Including Thermal Gradient	-344	762							
						Max Moment with axial tension	13251/ 13250	1.4D + 1.7F +1.7L + 1.7H + 1.7W	Excluding Thermal Gradient	N/A	N/A							
									Including Thermal Gradient	113	1586							
						Max Moment with axial compression	13251/ 13250	1.4D + 1.4F + 1.7W	Excluding Thermal Gradient	N/A	N/A							
									Including Thermal Gradient	-4	1415							

Table 3H.6-8 Results of UHS/RSW Pump House Concrete Slab Design (Continued)

Location	Thickness (ft)	Face	Direction	Reinforcement Layout Drawing Number (1)	Reinforcement Zone Number (2)	Maximum Forces (3)	Element	Longitudinal Reinforcement Design Loads						Longitudinal Reinforcement Provided (in^2/ ft)	Transverse Shear Design Loads		Transverse Shear (7) Reinforcement Provided (in^2/ft^2)	Remarks
								Axial and Flexure Loads				In-Plane Shear Loads						
								Load Combination	Thermal Gradient Loading Condition	Axial (4) (kips / ft)	Flexure (4) (ft-kips / ft)	Load Combination	In-plane (5) Shear (kips / ft)		Load Combination	Transverse Shear (6) Reinforcement Design Loads (kips / ft)		
UHS Basin Mat	10	Bottom	East-West	3H.6-131	7-H-L	Max Tension w/ max moment	11960/ 11958/ 11512/ 11510	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	N/A	N/A	1.4D + 1.4To + 1.7F + 0.9H	117	12.48	-	-	-	(8)
									Including Thermal Gradient	648	2433							
						Max Compression w/ corresponding moment	11943	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	-792	12							
									Including Thermal Gradient	-792	887							
						Max Moment with axial tension	11960/ 11958/ 11512/ 11510	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	N/A	N/A							
									Including Thermal Gradient	-30	183							
						Max Moment with axial compression	11976	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-59	771							
									Including Thermal Gradient	-64	1461							
			North-South	3H.6-132	1-V-L	Max Tension w/ corresponding moment	13150	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	402	680	1.4D + 1.4To + 1.7F + 0.9H	117	3.12	-	-	-	
									Including Thermal Gradient	403	692							
						Max Compression w/ corresponding moment	11022	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	-1347	144							
									Including Thermal Gradient	-1348	1431							
						Max Moment with corresponding axial tension	4586	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	22	1303							
									Including Thermal Gradient	22	1320							
						Max Moment with corresponding axial compression	11980	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-329	1894							
									Including Thermal Gradient	-331	2468							
					2-V-L	Max Tension w/ corresponding moment	11673	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	559	454	1.4D + 1.4To + 1.7F + 0.9H	178	6.24	-	-	-	
									Including Thermal Gradient	554	1715							
						Max Compression w/ corresponding moment	11003	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	-1270	193							
									Including Thermal Gradient	-1272	1481							
						Max Moment with corresponding axial tension	5036	1.4D + 1.4F + 1.7W	Excluding Thermal Gradient	1	1581							
									Including Thermal Gradient	1	1581							
						Max Moment with corresponding axial compression	5036	1.4D + 1.4F + 1.7W	Excluding Thermal Gradient	-3	1636							
									Including Thermal Gradient	-3	1636							
					3-V-L	Max Tension w/ corresponding moment	13147	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	1204	342	1.4D + 1.4To + 1.7F + 0.9H	178	9.36	-	-	-	
									Including Thermal Gradient	1111	234							
						Max Compression w/ corresponding moment	11718	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	-1067	23							
									Including Thermal Gradient	-1070	1313							
						Max Moment with corresponding axial tension	11332	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	769	1563							
									Including Thermal Gradient	758	2232							
						Max Moment with corresponding axial compression	11456	1.4D + 1.4F + 1.7W	Excluding Thermal Gradient	-2	1290							
									Including Thermal Gradient	-2	1290							

Table 3H.6-8 Results of UHS/RSW Pump House Concrete Slab Design (Continued)

Location	Thickness (ft)	Face	Direction	Reinforcement Layout Drawing Number (1)	Reinforcement Zone Number (2)	Maximum Forces (3)	Element	Longitudinal Reinforcement Design Loads: Axial and Flexure Loads: Load Combination	Thermal Gradient Loading Condition	Axial (4) (kips / ft)	Flexure (4) (ft-kips / ft)	In-Plane Shear Loads: Load Combination	In-plane (5) Shear (kips / ft)	Longitudinal Reinforcement Provided (in^2/ ft)	Transverse Shear Design Loads: Load Combination	Transverse Shear (6) Reinforcement Design Loads (kips / ft)	Transverse Shear (7) Reinforcement Provided (in^2/ft^2)	Remarks
UHS Basin Mat	10	Bottom	North-South	3H.6-132	4-V-L	Max Tension w/ corresponding moment	12045	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	622	1223	D + F + L + H' + Ta + Ro +E'	78	12.48	-	-	-	
									Including Thermal Gradient	612	1771							
						Max Compression w/ corresponding moment	12047	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	-802	14							
									Including Thermal Gradient	-802	915							
						Max Moment with corresponding axial tension	12045	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	334	2525							
									Including Thermal Gradient	317	3099							
						Max Moment with corresponding axial compression	12045	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-124	1836							
									Including Thermal Gradient	-113	1403							
					5-V-L	Max Tension w/ corresponding moment	11839	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	1632	94	D + F + L + H' + Ta + Ro +E'	78	15.60	-	-	-	
									Including Thermal Gradient	1624	762							
						Max Compression w/ corresponding moment	11837	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	-1050	2							
									Including Thermal Gradient	-1051	1299							
						Max Moment with corresponding axial tension	11839	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	11	907							
									Including Thermal Gradient	17	381							
						Max Moment with corresponding axial compression	11839	1.4D + 1.7L + 1.7W	Excluding Thermal Gradient	-36	937							
									Including Thermal Gradient	-36	937							
					6-V-L	Max Tension w/ corresponding moment	11690	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	528	466	1.4D + 1.4To + 1.7F + 0.9H	184	9.00	-	-	-	
									Including Thermal Gradient	522	1753							
						Max Compression w/ corresponding moment	11910	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	-1072	9							
									Including Thermal Gradient	-1072	1310							
						Max Moment with corresponding axial tension	13248	1.4D + 1.4F + 1.7W	Excluding Thermal Gradient	90	2116							
									Including Thermal Gradient	90	2116							
						Max Moment with corresponding axial compression	13248	1.4D + 1.7F +1.7L + 1.7H + 1.7W	Excluding Thermal Gradient	-21	1597							
									Including Thermal Gradient	-21	1597							
					7-V-L	Max Tension w/ corresponding moment	11692	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	661	388	1.4D + 1.4To + 1.7F + 0.9H	184	13.50	-	-	-	
									Including Thermal Gradient	655	1662							
						Max Compression w/ corresponding moment	12132	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	-936	6							
									Including Thermal Gradient	-936	1302							
						Max Moment with corresponding axial tension	11981	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	193	3083							
									Including Thermal Gradient	180	3595							
						Max Moment with corresponding axial compression	11981	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-68	2990							
									Including Thermal Gradient	-75	3498							

Table 3H.6-8 Results of UHS/RSW Pump House Concrete Slab Design (Continued)

Location	Thickness (ft)	Face	Direction	Reinforcement Layout Drawing Number (1)	Reinforcement Zone Number (2)	Maximum Forces (3)	Element	Longitudinal Reinforcement Design Loads — Axial and Flexure Loads: Load Combination	Thermal Gradient Loading Condition	Axial (4) (kips / ft)	Flexure (4) (ft-kips / ft)	In-Plane Shear Loads: Load Combination	In-plane (5) Shear (kips / ft)	Longitudinal Reinforcement Provided (in^2/ ft)	Transverse Shear Design Loads: Load Combination	Transverse Shear (6) Reinforcement Design Loads (kips / ft)	Transverse Shear (7) Reinforcement Provided (in^2/ft^2)	Remarks
UHS Basin Mat	10	Bottom	North-South	3H.6-132	8-V-L	Max Tension w/ corresponding moment	11903	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	1765	19	1.4D + 1.4To + 1.7F + 0.9H	184	18.00	-	-	-	
									Including Thermal Gradient	1749	327							
						Max Compression w/ corresponding moment	11901	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	-1071	8							
									Including Thermal Gradient	-1071	1307							
						Max Moment with corresponding axial tension	12060	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	327	2563							
									Including Thermal Gradient	310	3136							
						Max Moment with corresponding axial compression	12060	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-2	1880							
									Including Thermal Gradient	-12	2487							
					9-V-L	Max Tension w/ max moment	12108/ 12109/ 12124/ 12125	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	N/A	N/A	D + F + L + H' + Ta + Ro +E'	55	18.00	-	-	-	(8)
									Including Thermal Gradient	1321	3371							
						Max Compression w/ corresponding moment	12126	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	-943	4							
									Including Thermal Gradient	-943	859							
						Max Moment with corresponding axial tension	12108/ 12109/ 12124/ 12125	1.4D + 1.7F +1.7L + 1.7H + 1.7W	Excluding Thermal Gradient	N/A	N/A							
									Including Thermal Gradient	350	3478							
						Max Moment with corresponding axial compression	12108/ 12109/ 12124/ 12125	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	N/A	N/A							
									Including Thermal Gradient	-19	2759							
					10-V-L	Max Tension w/ max moment	11142/ 11143/ 11158/ 11159	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	N/A	N/A	D + F + L + H' + Ta + Ro +E'	45	12.48	-	-	-	(8)
									Including Thermal Gradient	660	1780							
						Max Compression w/ corresponding moment	11141	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	-1092	42							
									Including Thermal Gradient	-1093	1341							
						Max Moment with corresponding axial tension	11142/ 11143/ 11158/ 11159	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	N/A	N/A							
									Including Thermal Gradient	369	2015							
						Max Moment with corresponding axial compression	11142/ 11143/ 11158/ 11159	1.4D + 1.7L + 1.7W	Excluding Thermal Gradient	N/A	N/A							
									Including Thermal Gradient	-26	829							
		-	Horizontal Plane	3H.6-133	1-H-T		-	-	-	-	-	-	-	-	1.4D + 1.4To + 1.7F + 0.9H	131	0.11 (#3 @12)	

Table 3H.6-8 Results of UHS/RSW Pump House Concrete Slab Design (Continued)

Location	Thickness (ft)	Face	Direction	Reinforcement Layout Drawing Number (1)	Reinforcement Zone Number (2)	Maximum Forces (3)	Element	Longitudinal Reinforcement Design Loads: Axial and Flexure Loads: Load Combination	Thermal Gradient Loading Condition	Axial (4) (kips / ft)	Flexure (4) (ft-kips / ft)	In-Plane Shear Loads: Load Combination	In-plane (5) Shear (kips / ft)	Longitudinal Reinforcement Provided (in^2/ ft)	Transverse Shear Design Loads: Load Combination	Transverse Shear (6) Reinforcement Design Loads (kips / ft)	Transverse Shear (7) Reinforcement Provided (in^2/ft^2)	Remarks
Pump House Roof	2	Top	East-West	3H.6-134	1-H-L	Max Tension w/ corresponding moment	9824	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	179	2	D + F + L + H' + Ta + Ro +E'	57	2.54	-	-	-	
									Including Thermal Gradient	210	-81							
						Max Compression w/ corresponding moment	9832	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-94	1							
									Including Thermal Gradient	-90	4							
						Max Moment with axial tension	10318	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	87	67							
									Including Thermal Gradient	105	-25							
						Max Moment with axial compression	10318	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-2	37							
									Including Thermal Gradient	13	-49							
			North-South	3H.6-135	1-V-L	Max Tension w/ corresponding moment	9817	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	261	1	D + F + L + H + Ta + Ro +Wt	59	2.54	-	-	-	
									Including Thermal Gradient	278	-136							
						Max Compression w/ corresponding moment	9835	D + F + L + H + Ta + Ro +Wt	Excluding Thermal Gradient	-146	3							
									Including Thermal Gradient	-127	3							
						Max Moment with corresponding axial tension	9864	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	57	38							
									Including Thermal Gradient	95	-56							
						Max Moment with corresponding axial compression	10447	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-54	29							
									Including Thermal Gradient	-51	26							
					2-V-L	Max Tension w/ corresponding moment	10431	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	283	1	D + F + L + H' + Ta + Ro +E'	42	3.81	-	-	-	
									Including Thermal Gradient	299	-84							
						Max Compression w/ corresponding moment	10431	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-156	33							
									Including Thermal Gradient	-148	32							
						Max Moment with axial tension	10431	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	161	72							
									Including Thermal Gradient	176	-2							
						Max Moment with axial compression	10431	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-13	72							
									Including Thermal Gradient	3	-2							
					3-V-L	Max Tension w/ corresponding moment	10317	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	311	1	D + F + L + H' + Ta + Ro +E'	45	3.81	-	-	-	
									Including Thermal Gradient	308	-120							
						Max Compression w/ corresponding moment	10317	1.4D + 1.7L + 1.7W	Excluding Thermal Gradient	-44	5							
									Including Thermal Gradient	-44	5							
						Max Moment with axial tension	10318	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	189	41							
									Including Thermal Gradient	203	-34							
						Max Moment with axial compression	10317	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-8	27							
									Including Thermal Gradient	-5	26							

Table 3H.6-8 Results of UHS/RSW Pump House Concrete Slab Design (Continued)

Location	Thickness (ft)	Face	Direction	Reinforcement Layout Drawing Number (1)	Reinforcement Zone Number (2)	Maximum Forces (3)	Element	Longitudinal Reinforcement Design Loads: Axial and Flexure Loads: Load Combination	Thermal Gradient Loading Condition	Axial (4) (kips / ft)	Flexure (4) (ft-kips / ft)	In-Plane Shear Loads: Load Combination	In-plane (5) Shear (kips / ft)	Longitudinal Reinforcement Provided (in^2/ ft)	Transverse Shear Design Loads: Load Combination	Transverse Shear (6) Reinforcement Design Loads (kips / ft)	Transverse Shear (7) Reinforcement Provided (in^2/ft^2)	Remarks
Pump House Roof	2	Top	North-South	3H.6-135	4-V-L	Max Tension w/ corresponding moment	10495	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	352	3	D + F + L + H' + Ta + Ro +E'	35	3.81	-	-	-	
									Including Thermal Gradient	364	-110							
						Max Compression w/ corresponding moment	10495	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-347	45							
									Including Thermal Gradient	-344	44							
						Max Moment with axial tension	10495	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	53	79							
									Including Thermal Gradient	56	78							
						Max Moment with axial compression	10495	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-206	79							
									Including Thermal Gradient	-203	78							
		Bottom	East-West	3H.6-136	1-H-L	Max Tension w/ corresponding moment	9824	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	179	2	D + F + L + H' + Ta + Ro +E'	57	2.54	-	-	-	
									Including Thermal Gradient	210	-81							
						Max Compression w/ corresponding moment	9832	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-94	1							
									Including Thermal Gradient	-90	4							
						Max Moment with axial tension	10325	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	38	47							
									Including Thermal Gradient	57	-50							
						Max Moment with axial compression	9749	D + F + L + H + Ta + Ro +Wt	Excluding Thermal Gradient	-23	31							
									Including Thermal Gradient	-14	-50							
					2-H-L	Max Tension w/ corresponding moment	10495	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	119	42	D + F + L + H' + Ta + Ro +E'	25	3.81	-	-	-	
									Including Thermal Gradient	129	-47							
						Max Compression w/ corresponding moment	10495	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-89	6							
									Including Thermal Gradient	-89	6							
						Max Moment with axial tension	10496	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	80	60							
									Including Thermal Gradient	103	-34							
						Max Moment with axial compression	10496	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-12	30							
									Including Thermal Gradient	6	-48							
					3-H-L	Max Tension w/ corresponding moment	10317	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	142	42	D + F + L + H' + Ta + Ro +E'	25	3.81	-	-	-	
									Including Thermal Gradient	150	-47							
						Max Compression w/ corresponding moment	10319	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	-56	1							
									Including Thermal Gradient	-52	1							
						Max Moment with axial tension	10318	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	87	67							
									Including Thermal Gradient	105	-25							
						Max Moment with axial compression	10318	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-2	37							
									Including Thermal Gradient	13	-49							

Table 3H.6-8 Results of UHS/RSW Pump House Concrete Slab Design (Continued)

Location	Thickness (ft)	Face	Direction	Reinforcement Layout Drawing Number [1]	Reinforcement Zone Number [2]	Maximum Forces [3]	Element	Longitudinal Reinforcement Design Loads: Axial and Flexure Loads: Load Combination	Thermal Gradient Loading Condition	Axial [4] (kips / ft)	Flexure [4] (ft-kips / ft)	In-Plane Shear Loads: Load Combination	In-plane [5] Shear (kips / ft)	Longitudinal Reinforcement Provided (in^2/ ft)	Transverse Shear Design Loads: Load Combination	Transverse Shear [6] Reinforcement Design Loads (kips / ft)	Transverse Shear [7] Reinforcement Provided (in^2/ft^2)	Remarks
Pump House Roof	2	Bottom	North-South	3H.6-51	1-V-L	Max Tension w/ corresponding moment	9817	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	261	1	D + F + L + H + Ta + Ro +Wt	59	2.54	-	-	-	
									Including Thermal Gradient	278	-136							
						Max Compression w/ corresponding moment	9835	D + F + L + H + Ta + Ro +Wt	Excluding Thermal Gradient	-146	3							
									Including Thermal Gradient	-127	3							
						Max Moment with axial tension	9864	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	57	38							
									Including Thermal Gradient	95	-56							
						Max Moment with axial compression	10493	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-70	34							
									Including Thermal Gradient	-67	33							
					2-V-L	Max Tension w/ corresponding moment	10431	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	283	1	D + F + L + H' + Ta + Ro +E'	42	3.81	-	-	-	
									Including Thermal Gradient	299	-84							
						Max Compression w/ corresponding moment	10431	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-156	33							
									Including Thermal Gradient	-148	32							
						Max Moment with axial tension	10431	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	161	72							
									Including Thermal Gradient	176	-2							
						Max Moment with axial compression	10431	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-13	72							
									Including Thermal Gradient	3	-2							
					3-V-L	Max Tension w/ corresponding moment	10495	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	352	3	D + F + L + H' + Ta + Ro +E'	45	3.81	-	-	-	
									Including Thermal Gradient	364	-110							
						Max Compression w/ corresponding moment	10495	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-347	45							
									Including Thermal Gradient	-344	44							
						Max Moment with axial tension	10495	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	53	79							
									Including Thermal Gradient	56	78							
						Max Moment with axial compression	10495	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-206	79							
									Including Thermal Gradient	-203	78							

Notes:

(1) The reinforcement layout drawings show the various zones used to define the minimum reinforcement that will be provided based on finite element analysis results. Actual provided reinforcement based on final rebar layout may exceed the reported provided reinforcement and the zones with higher reinforcement may be extended beyond their reported boundaries.

(2) Each reinforcement layout drawing is divided into reinforcement zones. The reinforcement zone naming convention is as follows: "H" = horizontal, "V" = vertical, "L" = longitudinal reinforcement, "T" = transverse reinforcement.

(3) The maximum tension and compression axial forces are provided with the corresponding moment from the same load combination. The maximum moment that has a corresponding tension in the same load combination and the maximum moment that has a corresponding compression in the same load combination are also provided. For zones where either axial tension or axial compression does not occur for any load combination, dashes are input into the corresponding cell.

(4) Negative axial load is compression and positive axial load is tension. Negative moment applies tension to the top face of the shell element and positive moment applies tension to the bottom face of the shell element. For walls or slabs where the same reinforcement is provided on both faces, the moment is shown as absolute value.

(5) The reported in-plane shear is the maximum average in-plane shear along a plane that crosses the longitudinal reinforcement zone.

(6) The reported transverse shear is the maximum average transverse shear along a plane in that transverse reinforcement zone

(7) In areas where horizontal and vertical transverse shear zones overlap, the total transverse shear reinforcement to be supplied in the overlapping area is the sum of the transverse reinforcement required from the horizontal and vertical zones.

(8) For certain areas of the structure, the standard element post-processing methods were too conservative. For such cases, detailed manual design was performed and the design forces determined by the detailed manual design are provided in the table.

Table 3H.6-9 Results of UHS/RSW Pump House Beams and Columns Design

Location	Item	Critical Element Number	Load Combination	Maximum Forces	Design Loads: Axial (kips) P	Moments (ft-kips) M2	Moments (ft-kips) M3	Moments (ft-kips) Torsion	Shear (kips) V2	Shear (kips) V3	Reinforcement: Longitudinal Provided (in^2)	Stirrups Provided 3-direction	Stirrups Provided 2-direction	Remarks
UHS Basin	5' x 5' Columns	498	1.4D+1.7L+1.7F+1.7H+1.7W	Maximum axial compression with corresponding forces	2221 Compression	716	59	-	-	-	63	3 # 4 @ 16" O.C	3 # 4 @ 16" O.C	Local Axis definition: 1 = vertical 2 = east-west 3 = north-south
		484	D+Lo+F+H'+To+E'	Maximum M2 moment with corresponding forces	1716 Compression	2066	2456	-	-	-	63	3 # 4 @ 16" O.C	3 # 4 @ 16" O.C	
		486	D+Lo+F+H'+To+E'	Maximum M3 moment with corresponding forces	1586 Compression	1795	2604	-	-	-	63	3 # 4 @ 16" O.C	3 # 4 @ 16" O.C	
		486	D+Lo+F+H'+To+E'	Maximum V2	-	-	-	-	98	-	63	3 # 4 @ 16" O.C	3 # 4 @ 16" O.C	
		486	D+Lo+F+H'+To+E'	Maximum V3	-	-	-	-	-	98	63	3 # 4 @ 16" O.C	3 # 4 @ 16" O.C	
		504/505	D+Lo+F+H'+To+E'	Maximum Torsion	-	-	-	621	-	-	63	3 # 4 @ 16" O.C	3 # 4 @ 16" O.C	
	5' x 12' Columns	518	1.4D+1.4T+1.7F+0.9H	Maximum axial compression with corresponding forces	3559 Compression	396	843	-	-	-	90	4 # 4 @ 16" O.C.	2 # 4 @ 16" O.C.	Local Axis definition: 1 = vertical 2 = east-west 3 = north-south
		496	D+Lo+F+H'+To+E'	Maximum M2 moment with corresponding forces	2751 Compression	4165	16510	-	-	-	90	4 # 4 @ 16" O.C.	2 # 4 @ 16" O.C.	
		496	D+Lo+F+H'+To+E'	Maximum M3 moment with corresponding forces	2581 Compression	4088	16604	-	-	-	90	4 # 4 @ 16" O.C.	2 # 4 @ 16" O.C.	
		496	D+Lo+F+H'+To+E'	Maximum V2	-	-	-	-	297	-	90	4 # 4 @ 16" O.C.	2 # 4 @ 16" O.C.	
		496	D+Lo+F+H'+To+E'	Maximum V3	-	-	-	-	-	297	90	4 # 4 @ 16" O.C.	2 # 4 @ 16" O.C.	
		476/477	D+Lo+F+H'+To+E'	Maximum Torsion	-	-	-	618	-	-	90	4 # 4 @ 16" O.C.	2 # 4 @ 16" O.C.	
	4' x 2'-6" Beams	17	D+Lo+F+H'+To+E'	Maximum axial compression with corresponding forces	1523 Compression	2257	1497	-	-	-	152	4 # 4 @ 4" O.C.	2 # 4 @ 4" O.C.	Local Axis definition: 1 = north-south 2 = vertical 3 = east-west
		16	D+Lo+F+H'+To+E'	Maximum axial tension with corresponding forces	4171 Tension	1960	1532	-	-	-	152	4 # 4 @ 4" O.C.	2 # 4 @ 4" O.C.	
		16	D+Lo+F+H'+To+E'	Maximum M2 moment with corresponding forces	1468 Tension	2487	1570	-	-	-	152	4 # 4 @ 4" O.C.	2 # 4 @ 4" O.C.	
		17	D+Lo+F+H'+To+E'	Maximum M3 moment with corresponding forces	2183 Tension	1759	1978	-	-	-	152	4 # 4 @ 4" O.C.	2 # 4 @ 4" O.C.	
		406	D+Lo+F+H'+To+E'	Maximum V2	-	-	-	-	416	-	152	4 # 4 @ 4" O.C.	2 # 4 @ 4" O.C.	
		16	D+Lo+F+H'+To+E'	Maximum V3	-	-	-	-	-	308	152	4 # 4 @ 4" O.C.	2 # 4 @ 4" O.C.	
		401	D+Lo+F+H'+To+E'	Maximum Torsion	-	-	-	245	-	-	152	4 # 4 @ 4" O.C.	2 # 4 @ 4" O.C.	

Table 3H.6-10 Tornado Missile Impact Evaluations for UHS/RSW Pump House

Local Check	**UHS/ RSW Pump House Walls and Roof**		Minimum Required Thickness to Prevent Penetration, Perforation and Scabbing = 12.9"
			Minimum Provided Thickness = 18"
Overall Check of Impacted Element	**Pump House**	**Roof**	Shear controls. Maximum impact load including Dynamic Load Factor (DLF) = 168 Kips Minimum capacity = 188 Kips
		Walls	Shear controls. Maximum impact load including Dynamic Load Factor (DLF) = 900 Kips Minimum capacity = 1772 Kips
	UHS Basin	**Fan Enclosure Walls**	Flexure controls. Ductility demand = 0.522 < Ductility limit = 10
		Basin Walls	Shear controls. Maximum impact load including Dynamic Load Factor (DLF) = 319 Kips Minimum capacity = 402 Kips
Global Check			Equivalent static impact forces are applied to the FEM analysis of the UHS/RSW Pump House. The analysis results presented in Tables 3H.6-7 and 3H.6-8 provide summary of the results for all load combinations including those applicable to tornado load combinations which include missile impact.

Table 3H.6-11 Results of DGFOS Vault Concrete Design

Location	Thickness (ft)	Face	Direction	Reinforcement Layout Drawing Number (1)	Reinforcement Zone Number (2)	Maximum Forces (3)	Element	Longitudinal Reinforcement Design Loads					Longitudinal Reinforcement Provided (in^2/ ft)	Transverse Shear Design Loads		Transverse Shear (7) Reinforcement Provided (in^2/ft^2)	Remarks
								Axial and Flexure Loads			In-Plane Shear Loads						
								Load Combination	Axial (4) (kips / ft)	Flexure (4) (ft-kips / ft)	Load Combination	In-plane (5) Shear (kips / ft)		Load Combination	Transverse Shear (6) Reinforcement Design Loads (kips / ft)		
Slab 1	6	Near Side	Horizontal	3H.6-142	1-H-L	Max Tension w/ corresponding moment	372	D + F + L + H' + E'	54	-302	D + F + L + H' + E'	21	3.12	-	-	-	
						Max Compression w/ corresponding moment	367	D + F + L + H' + E'	-49	-164							
						Max Moment with axial tension	25	D + F + L + H' + E'	3	-555							
						Max Moment with axial compression	367	D + F + L + H' + E'	-7	-486							
					2-H-L	Max Tension w/ corresponding moment	35	D + F + L + H' + E'	49	-275	D + F + L + H' + E'	21	7.8	-	-	-	
						Max Compression w/ corresponding moment	36	D + F + L + H' + E'	-64	-1064							
						Max Moment with axial tension	36	D + F + L + H' + E'	8	-1264							
						Max Moment with axial compression	36	D + F + L + H' + E'	-7	-1264							
					3-H-L	Max Tension w/ corresponding moment	377	D + F + L + H' + E'	59	-201	D + F + L + H' + E'	21	7.8	-	-	-	
						Max Compression w/ corresponding moment	378	D + F + L + H' + E'	-67	-994							
						Max Moment with axial tension	377	D + F + L + H' + E'	3	-968							
						Max Moment with axial compression	378	D + F + L + H' + E'	-42	-1127							
					4-H-L	Max Tension w/ corresponding moment	22	D + F + L + H' + E'	54	-189	D + F + L + H' + E'	21	7.8	-	-	-	
						Max Compression w/ corresponding moment	22	D + F + L + H' + E'	-63	-206							
						Max Moment with axial tension	21	D + F + L + H' + E'	9	-1183							
						Max Moment with axial compression	21	D + F + L + H' + E'	-7	-1183							
					5-H-L	Max Tension w/ corresponding moment	364	D + F + L + H' + E'	64	-211	D + F + L + H' + E'	21	7.8	-	-	-	
						Max Compression w/ corresponding moment	364	D + F + L + H' + E'	-70	-214							
						Max Moment with axial tension	363	D + F + L + H' + E'	1	-1252							
						Max Moment with axial compression	363	D + F + L + H' + E'	-44	-1252							

Table 3H.6-11 Results of DGFOS Vault Concrete Design (Continued)

Location	Thickness (ft)	Face	Direction	Reinforcement Layout Drawing Number (1)	Reinforcement Zone Number (2)	Maximum Forces (3)	Element	Longitudinal Reinforcement Design Loads					Longitudinal Reinforcement Provided (in²/ ft)	Transverse Shear Design Loads		Transverse Shear (7) Reinforcement Provided (in²/ft²)	Remarks
								Axial and Flexure Loads			In-Plane Shear Loads						
								Load Combination	Axial (4) (kips / ft)	Flexure (4) (ft-kips / ft)	Load Combination	In-plane (5) Shear (kips / ft)		Load Combination	Transverse Shear (6) Reinforcement Design Loads (kips / ft)		
Slab 1	6	Near Side	Vertical	3H.6-143	1-V-L	Max Tension w/ corresponding moment	183	D + F + L + H' +E'	106	-477	D + F + L + H' +E'	13	4.68	-	-	-	
						Max Compression w/ corresponding moment	327	D + F + L + H' +E'	-131	-294							
						Max Moment with corresponding axial tension	72	D + F + L + H' +E'	2	-785							
						Max Moment with corresponding axial compression	327	D + F + L + H' +E'	-13	-764							
					2-V-L	Max Tension w/ corresponding moment	4	D + F + L + H' +E'	17	-231	D + F + L + H' +E'	17	4.68	-	-	-	
						Max Compression w/ corresponding moment	2	D + F + L + H' +E'	-44	-46							
						Max Moment with axial tension	18	D + F + L + H' +E'	3	-705							
						Max Moment with axial compression	18	D + F + L + H' +E'	0	-501							
					3-V-L	Max Tension w/ corresponding moment	21	D + F + L + H' +E'	43	-695	D + F + L + H' +E'	28	7.8	-	-	-	
						Max Compression w/ corresponding moment	36	D + F + L + H' +E'	-196	-421							
						Max Moment with axial tension	36	D + F + L + H' +E'	24	-1317							
						Max Moment with axial compression	36	D + F + L + H' +E'	-8	-1317							
					4-V-L	Max Tension w/ corresponding moment	345	D + F + L + H +Wt	51	-755	D + F + L + H' +E'	30	7.8	-	-	-	
						Max Compression w/ corresponding moment	378	D + F + L + H' +E'	-190	-320							
						Max Moment with axial tension	363	D + F + L + H' +E'	26	-1259							
						Max Moment with axial compression	363	D + F + L + H' +E'	-6	-1259							
					5-V-L	Max Tension w/ corresponding moment	382	D + F + L + H' +E'	23	-540	D + F + L + H' +E'	18	3.12	-	-	-	
						Max Compression w/ corresponding moment	397	D + F + L + H' +E'	-35	-84							
						Max Moment with axial tension	381	D + F + L + H' +E'	4	-634							
						Max Moment with axial compression	381	D + F + L + H' +E'	-2	-432							
		Far Side	Horizontal	3H.6-144	1-H-L	Max Tension w/ corresponding moment	346	D + F + L + H' +E'	73	502	D + F + L + H' +E'	21	3.12	-	-	-	
						Max Compression w/ corresponding moment	364	D + F + L + H' +E'	-70	85							
						Max Moment with axial tension	346	D + F + L + H' +E'	46	719							
						Max Moment with axial compression	378	D + F + L + H' +E'	-1	709							
			Vertical	3H.6-145	1-V-L	Max Tension w/ corresponding moment	346	D + F + L + H' +E'	137	1110	D + F + L + H' +E'	30	7.8	-	-	-	
						Max Compression w/ corresponding moment	36	D + F + L + H' +E'	-196	416							
						Max Moment with corresponding axial tension	292	D + F + L + H' +E'	3	1381							
						Max Moment with corresponding axial compression	202	D + F + L + H' +E'	-128	1810							
					2-V-L	Max Tension w/ corresponding moment	16	D + F + L + H' +E'	44	382	D + F + L + H' +E'	17	3.12	-	-	-	
						Max Compression w/ corresponding moment	19	D + F + L + H' +E'	-45	89							
						Max Moment with axial tension	17	D + F + L + H' +E'	4	660							
						Max Moment with axial compression	17	D + F + L + H' +E'	0	634							
					3-V-L	Max Tension w/ corresponding moment	394	D + F + L + H' +E'	44	388	D + F + L + H' +E'	18	3.12	-	-	-	
						Max Compression w/ corresponding moment	397	D + F + L + H' +E'	-42	85							
						Max Moment with axial tension	382	D + F + L + H' +E'	6	748							
						Max Moment with axial compression	382	D + F + L + H' +E'	-11	748							
		-	Horizontal Plane	3H.6-146	1-H-T	-	-	-	-	-	-	-	-	D + F + L + H' +E'	120	0.20 (#4 @12)	
				3H.6-146	2-H-T	-	-	-	-	-	-	-	-	D + F + L + H' +E'	120	0.20 (#4 @12)	

Table 3H.6-11 Results of DGFOS Vault Concrete Design (Continued)

Location	Thickness (ft)	Face	Direction	Reinforcement Layout Drawing Number (1)	Reinforcement Zone Number (2)	Maximum Forces (3)	Element	Longitudinal Reinforcement Design Loads: Axial and Flexure Loads: Load Combination	Axial (4) (kips / ft)	Flexure (4) (ft-kips / ft)	In-Plane Shear Loads: Load Combination	In-plane (5) Shear (kips / ft)	Longitudinal Reinforcement Provided (in^2/ ft)	Transverse Shear Design Loads: Load Combination	Transverse Shear (6) Reinforcement Design Loads (kips / ft)	Transverse Shear (7) Reinforcement Provided (in^2/ft^2)	Remarks
Roof 2	2	Near Side	Horizonta	3H.6-147	1-H-L	Max Tension w/ corresponding moment	539	D + F + L + H' + E'	95	-15	D + F + L + H + Wt	67	3.12	-	-	-	(9)
						Max Compression w/ corresponding moment	539	D + F + L + H' + E'	-144	-31							
						Max Moment with axial tension	555	D + F + L + H + Wt	22	-103							
						Max Moment with axial compression	407	1.4D + 1.4F + 1.7L + 1.7H + 1.7W	-33	-107							
					2-H-L	Max Tension w/ corresponding moment	566	D + F + L + H + Wt	143	-33	D + F + L + H + Wt	54	4.68	-	-	-	(9)
						Max Compression w/ corresponding moment	566	D + F + L + H' + E'	-180	-21							
						Max Moment with axial tension	566	D + F + L + H + Wt	92	-89							
						Max Moment with axial compression	566	D + F + L + H' + E'	-21	-61							
					3-H-L	Max Tension w/ corresponding moment	553	D + F + L + H + Wt	189	-40	D + F + L + H + Wt	67	4.68	-	-	-	(9)
						Max Compression w/ corresponding moment	553	D + F + L + H' + E'	-189	-20							
						Max Moment with axial tension	554	D + F + L + H + Wt	50	-123							
						Max Moment with axial compression	553	D + F + L + H' + E'	-115	-62							
			Vertica	3H.6-148	1-V-L	Max Tension w/ corresponding moment	554	D + F + L + H' + E'	113	-11	D + F + L + H' + E'	80	4.68	-	-	-	
						Max Compression w/ corresponding moment	554	D + F + L + H' + E'	-220	-71							
						Max Moment with corresponding axial tension	554	D + F + L + H' + E'	8	-46							
						Max Moment with corresponding axial compression	554	D + F + L + H' + E'	-143	-134							
		Far side	Horizonta	3H.6-149	1-H-L	Max Tension w/ corresponding moment	528	D + F + L + H + Wt	34	11	D + F + L + H + Wt	55	1.56	-	-	-	(9)
						Max Compression w/ corresponding moment	472	D + F + L + H' + E'	-62	2							
						Max Moment with axial tension	557	D + F + L + H' + E'	2	66							
						Max Moment with axial compression	556	D + F + L + H + Wt	-12	82							
					2-H-L	Max Tension w/ corresponding moment	566	D + F + L + H + Wt	90	15	D + F + L + H + Wt	54	3.12	-	-	-	(9)
						Max Compression w/ corresponding moment	566	D + F + L + H' + E'	-180	33							
						Max Moment with axial tension	565	D + F + L + H' + E'	7	59							
						Max Moment with axial compression	565	D + F + L + H + Wt	-22	98							
					3-H-L	Max Tension w/ corresponding moment	553	D + F + L + H + Wt	138	19	D + F + L + H + Wt	67	3.12	-	-	-	(9)
						Max Compression w/ corresponding moment	553	D + F + L + H' + E'	-189	32							
						Max Moment with axial tension	555	D + F + L + H' + E'	5	55							
						Max Moment with axial compression	554	D + F + L + H + Wt	-52	113							
			Vertica	3H.6-150	1-V-L	Max Tension w/ corresponding moment	554	D + F + L + H' + E'	113	35	D + F + L + H' + E'	80	3.12	-	-	-	
						Max Compression w/ corresponding moment	555	D + F + L + H' + E'	-155	2							
						Max Moment with corresponding axial tension	565	D + F + L + H + Wt	21	44							
						Max Moment with corresponding axial compression	490	1.4D + 1.4F + 1.7L + 1.7H + 1.7W	-51	77							
Slab 3	2	Near Side	Horizonta	3H.6-151	1-H-L	Max Tension w/ corresponding moment	651	D + F + L + H' + E'	52	-21	D + F + L + H + Wt	31	1.56	-	-	-	
						Max Compression w/ corresponding moment	651	D + F + L + H' + E'	-119	-18							
						Max Moment with axial tension	642	D + F + L + H + Wt	1	-40							
						Max Moment with axial compression	644	D + F + L + H + Wt	-10	-55							

Table 3H.6-11 Results of DGFOS Vault Concrete Design (Continued)

Location	Thickness (ft)	Face	Direction	Reinforcement Layout Drawing Number (1)	Reinforcement Zone Number (2)	Maximum Forces (3)	Element	Longitudinal Reinforcement Design Loads: Axial and Flexure Loads: Load Combination	Axial (4) (kips / ft)	Flexure (4) (ft-kips / ft)	In-Plane Shear Loads: Load Combination	In-plane (5) Shear (kips / ft)	Longitudinal Reinforcement Provided (in²/ ft)	Transverse Shear Design Loads: Load Combination	Transverse Shear (6) Reinforcement Design Loads (kips / ft)	Transverse Shear (7) Reinforcement Provided (in²/ft²)	Remarks
Slab 3	2	Near Side	Vertical	3H.6-152	1-V-L	Max Tension w/ corresponding moment	574	D + F + L + H' + E'	64	-34	D + F + L + H +Wt	21	1.56	-	-	-	
						Max Compression w/ corresponding moment	574	D + F + L + H' + E'	-122	-13							
						Max Moment with corresponding axial tension	651	D + F + L + H +Wt	3	-47							
						Max Moment with corresponding axial compression	574	D + F + L + H' + E'	-17	-43							
		Far Side	Horizontal	3H.6-153	1-H-L	Max Tension w/ corresponding moment	651	D + F + L + H +Wt	59	10	D + F + L + H +Wt	31	1.56	-	-	-	
						Max Compression w/ corresponding moment	651	D + F + L + H' + E'	-119	5							
						Max Moment with axial tension	638	D + F + L + H +Wt	34	36							
						Max Moment with axial compression	573	D + F + L + H +Wt	-10	74							
			Vertical	3H.6-154	1-V-L	Max Tension w/ corresponding moment	574	D + F + L + H +Wt	61	14	D + F + L + H +Wt	21	1.56	-	-	-	
						Max Compression w/ corresponding moment	574	D + F + L + H +Wt	-206	51							
						Max Moment with corresponding axial tension	638	D + F + L + H +Wt	11	29							
						Max Moment with corresponding axial compression	574	D + F + L + H +Wt	-156	90							
Roof 5	2	Near Side	Horizontal	3H.6-155	1-H-L	Max Tension w/ corresponding moment	690	D + F + L + H +Wt	107	-17	D + F + L + H +Wt	61	1.56	-	-	-	
						Max Compression w/ corresponding moment	695	D + F + L + H +Wt	-91	-7							
						Max Moment with axial tension	770	D + F + L + H' + E'	1	-32							
						Max Moment with axial compression	768	D + F + L + H' + E'	-9	-41							
			Vertical	3H.6-156	1-V-L	Max Tension w/ corresponding moment	767	D + F + L + H +Wt	138	-13	D + F + L + H +Wt	29	2.08	-	-	-	
						Max Compression w/ corresponding moment	719	D + F + L + H +Wt	-126	0							
						Max Moment with corresponding axial tension	731	D + F + L + H' + E'	1	-20							
						Max Moment with corresponding axial compression	731	D + F + L + H' + E'	-4	-20							
		Far Side	Horizontal	3H.6-157	1-H-L	Max Tension w/ corresponding moment	704	D + F + L + H +Wt	77	4	D + F + L + H +Wt	61	1.56	-	-	-	
						Max Compression w/ corresponding moment	768	D + F + L + H +Wt	-271	22							
						Max Moment with axial tension	699	D + F + L + H +Wt	3	37							
						Max Moment with axial compression	698	D + F + L + H +Wt	-138	48							
			Vertical	3H.6-158	1-V-L	Max Tension w/ corresponding moment	761	D + F + L + H +Wt	39	7	D + F + L + H +Wt	29	2.08	-	-	-	
						Max Compression w/ corresponding moment	732	D + F + L + H +Wt	-334	14							
						Max Moment with corresponding axial tension	732	D + F + L + H' + E'	1	19							
						Max Moment with corresponding axial compression	695	D + F + L + H +Wt	-190	20							
Roof 6	2	Near Side	Horizontal	3H.6-159	1-H-L	Max Tension w/ corresponding moment	684	D + F + L + H +Wt	111	-8	D + F + L + H +Wt	68	1.56	-	-	-	
						Max Compression w/ corresponding moment	689	D + F + L + H +Wt	-335	-83							
						Max Moment with axial tension	689	D + F + L + H' + E'	27	-52							
						Max Moment with axial compression	689	D + F + L + H +Wt	-190	-84							
			Vertical	3H.6-160	1-V-L	Max Tension w/ corresponding moment	689	D + F + L + H +Wt	39	-6	D + F + L + H +Wt	125	2.08	-	-	-	
						Max Compression w/ corresponding moment	689	D + F + L + H +Wt	-209	-12							
						Max Moment with corresponding axial tension	659	D + F + L + H' + E'	0	-11							
						Max Moment with corresponding axial compression	689	D + F + L + H +Wt	-209	-12							

Table 3H.6-11 Results of DGFOS Vault Concrete Design (Continued)

Location	Thickness (ft)	Face	Direction	Reinforcement Layout Drawing Number (1)	Reinforcement Zone Number (2)	Maximum Forces (3)	Element	Longitudinal Reinforcement Design Loads: Axial and Flexure Loads: Load Combination	Axial (4) (kips / ft)	Flexure (4) (ft-kips / ft)	In-Plane Shear Loads: Load Combination	In-plane (5) Shear (kips / ft)	Longitudinal Reinforcement Provided (in^2/ ft)	Transverse Shear Design Loads: Load Combination	Transverse Shear (6) Reinforcement Design Loads (kips / ft)	Transverse Shear (7) Reinforcement Provided (in^2/ft^2)	Remarks
Roof 6	2	Far side	Horizontal	3H.6-161	1-H-L	Max Tension w/ corresponding moment	673	D + F + L + H +Wt	85	3	D + F + L + H +Wt	68	1.56	-	-	-	
						Max Compression w/ corresponding moment	656	D + F + L + H +Wt	-452	26							
						Max Moment with axial tension	659	D + F + L + H +Wt	14	53							
						Max Moment with axial compression	689	D + F + L + H' + E'	-59	45							
			Vertical	3H.6-162	1-V-L	Max Tension w/ corresponding moment	689	D + F + L + H' + E'	22	3	D + F + L + H +Wt	125	2.08	-	-	-	
						Max Compression w/ corresponding moment	666	D + F + L + H +Wt	-429	26							
						Max Moment with corresponding axial tension	655	D + F + L + H +Wt	12	12							
						Max Moment with corresponding axial compression	672	D + F + L + H +Wt	-262	34							
Wall 7	4	Near Side	Horizontal	3H.6-163	1-H-L	Max Tension w/ corresponding moment	843	D + F + L + H' + E'	144	-61	D + F + L + H' + E'	67	3.12	-	-	-	
						Max Compression w/ corresponding moment	843	D + F + L + H' + E'	-200	-42							
						Max Moment with axial tension	811	D + F + L + H' + E'	2	-238							
						Max Moment with axial compression	809	D + F + L + H' + E'	-139	-330							
					2-H-L	Max Tension w/ corresponding moment	803	D + F + L + H' + E'	63	-132	D + F + L + H' + E'	67	7.8	-	-	-	
						Max Compression w/ corresponding moment	799	D + F + L + H' + E'	-178	-763							
						Max Moment with axial tension	803	D + F + L + H' + E'	3	-283							
						Max Moment with axial compression	800	D + F + L + H' + E'	-169	-766							
					3-H-L	Max Tension w/ corresponding moment	891	D + F + L + H +Wt	421	-100	D + F + L + H +Wt	43	6.24	-	-	-	
						Max Compression w/ corresponding moment	1042	D + F + L + H +Wt	-412	-63							
						Max Moment with axial tension	1042	D + F + L + H' + E'	150	-315							
						Max Moment with axial compression	1057	D + F + L + H' + E'	-145	-319							
					4-H-L	Max Tension w/ corresponding moment	1046	D + F + L + H +Wt	65	-35	D + F + L + H' + E'	67	7.8	-	-	-	
						Max Compression w/ corresponding moment	1053	D + F + L + H' + E'	-179	-817							
						Max Moment with axial tension	1016	D + F + L + H' + E'	13	-98							
						Max Moment with axial compression	1065	D + F + L + H' + E'	-173	-853							
			Vertical	3H.6-164	1-V-L	Max Tension w/ corresponding moment	1042	D + F + L + H +Wt	292	-83	D + F + L + H' + E'	105	6.24	-	-	-	
						Max Compression w/ corresponding moment	1042	D + F + L + H +Wt	-340	-68							
						Max Moment with corresponding axial tension	869	D + F + L + H' + E'	9	-366							
						Max Moment with corresponding axial compression	891	D + F + L + H' + E'	-134	-397							
					2-V-L	Max Tension w/ corresponding moment	796	D + F + L + H' + E'	288	-94	D + F + L + H' + E'	105	10.92	-	-	-	
						Max Compression w/ corresponding moment	796	D + F + L + H' + E'	-232	-26							
						Max Moment with corresponding axial tension	852	D + F + L + H' + E'	13	-1205							
						Max Moment with corresponding axial compression	852	D + F + L + H' + E'	-39	-1208							

Table 3H.6-11 Results of DGFOS Vault Concrete Design (Continued)

Location	Thickness (ft)	Face	Direction	Reinforcement Layout Drawing Number (1)	Reinforcement Zone Number (2)	Maximum Forces (3)	Element	Longitudinal Reinforcement Design Loads: Axial and Flexure Loads: Load Combination	Axial (4) (kips / ft)	Flexure (4) (ft-kips / ft)	In-Plane Shear Loads: Load Combination	In-plane (5) Shear (kips / ft)	Longitudinal Reinforcement Provided (in^2/ ft)	Transverse Shear Design Loads: Load Combination	Transverse Shear (6) Reinforcement Design Loads (kips / ft)	Transverse Shear (7) Reinforcement Provided (in^2/ft^2)	Remarks
Wall 7	4	Far Side	Horizontal	3H.6-165	1-H-L	Max Tension w/ corresponding moment	1042	D + F + L + H +Wt	463	94	D + F + L + H' +E'	67	4.68	-	-	-	
						Max Compression w/ corresponding moment	891	D + F + L + H' +E'	-404	70							
						Max Moment with axial tension	1047	D + F + L + H' +E'	14	227							
						Max Moment with axial compression	814	D + F + L + H' +E'	-99	379							
			Vertical	3H.6-166	1-V-L	Max Tension w/ corresponding moment	891	D + F + L + H +Wt	339	94	D + F + L + H' +E'	105	6.24	-	-	-	
						Max Compression w/ corresponding moment	796	D + F + L + H' +E'	-299	67							
						Max Moment with corresponding axial tension	856	D + F + L + H' +E'	11	693							
						Max Moment with corresponding axial compression	856	D + F + L + H' +E'	-31	693							
		-	Horizontal Plane	3H.6-167	1-H-T	-	-	-	-	-	-	-	-	D + F + L + H' +E'	92	0.31 (#5 @12)	
				3H.6-167	2-H-T	-	-	-	-	-	-	-	-	D + F + L + H' +E'	148	0.62 (#5 @6)	
			Vertical Plane	3H.6-167	1-V-T	-	-	-	-	-	-	-	-	D + F + L + H' +E'	98	0.31 (#5 @12)	
				3H.6-167	2-V-T	-	-	-	-	-	-	-	-	D + F + L + H' +E'	99	0.31 (#5 @12)	
				3H.6-167	3-V-T	-	-	-	-	-	-	-	-	D + F + L + H' +E'	124	0.62 (#5 @6)	
Wall 8	4	Near Side	Horizontal	3H.6-168	1-H-L	Max Tension w/ corresponding moment	1156	D + F + L + H' +E'	143	-46	D + F + L + H' +E'	66	3.12	-	-	-	
						Max Compression w/ corresponding moment	1156	D + F + L + H' +E'	-201	-27							
						Max Moment with axial tension	1188	D + F + L + H' +E'	2	-212							
						Max Moment with axial compression	1183	D + F + L + H' +E'	-145	-336							
					2-H-L	Max Tension w/ corresponding moment	1276	D + F + L + H +Wt	50	-44	D + F + L + H' +E'	66	7.8	-	-	-	
						Max Compression w/ corresponding moment	1305	D + F + L + H' +E'	-179	-833							
						Max Moment with axial tension	1282	D + F + L + H' +E'	0	-129							
						Max Moment with axial compression	1311	D + F + L + H' +E'	-173	-888							
					3-H-L	Max Tension w/ corresponding moment	1108	D + F + L + H' +E'	251	-310	D + F + L + H +Wt	40	6.24	-	-	-	
						Max Compression w/ corresponding moment	1280	D + F + L + H +Wt	-406	-71							
						Max Moment with axial tension	1280	D + F + L + H' +E'	189	-382							
						Max Moment with axial compression	1301	D + F + L + H' +E'	-156	-387							
					4-H-L	Max Tension w/ corresponding moment	1196	D + F + L + H' +E'	63	-109	D + F + L + H' +E'	66	7.8	-	-	-	
						Max Compression w/ corresponding moment	1192	D + F + L + H' +E'	-178	-785							
						Max Moment with axial tension	1196	D + F + L + H' +E'	5	-250							
						Max Moment with axial compression	1192	D + F + L + H' +E'	-178	-786							

Table 3H.6-11 Results of DGFOS Vault Concrete Design (Continued)

Location	Thickness (ft)	Face	Direction	Reinforcement Layout Drawing Number [1]	Reinforcement Zone Number [2]	Maximum Forces [3]	Element	Longitudinal Reinforcement Design Loads – Axial and Flexure Loads – Load Combination	Axial [4] (kips / ft)	Flexure [4] (ft-kips / ft)	In-Plane Shear Loads – Load Combination	In-plane Shear [5] (kips / ft)	Longitudinal Reinforcement Provided (in^2/ ft)	Transverse Shear Design Loads – Load Combination	Transverse Shear [6] Reinforcement Design Loads (kips / ft)	Transverse Shear [7] Reinforcement Provided (in^2/ft^2)	Remarks
Wall 8	4	Near Side	Vertical	3H.6-169	1-V-L	Max Tension w/ corresponding moment	1190	D + F + L + H' + E'	181	-85	D + F + L + H' + E'	107	4.68	-	-	-	
						Max Compression w/ corresponding moment	1280	D + F + L + H +Wt	-326	-61							
						Max Moment with corresponding axial tension	1108	D + F + L + H' + E'	17	-406							
						Max Moment with corresponding axial compression	1108	D + F + L + H' + E'	-107	-442							
					2-V-L	Max Tension w/ corresponding moment	1189	D + F + L + H' + E'	286	-100	D + F + L + H' + E'	107	10.92	-	-	-	
						Max Compression w/ corresponding moment	1189	D + F + L + H' + E'	-232	-29							
						Max Moment with corresponding axial tension	1133	D + F + L + H' + E'	13	-1206							
						Max Moment with corresponding axial compression	1133	D + F + L + H' + E'	-38	-1208							
		Far side	Horizontal	3H.6-170	1-H-L	Max Tension w/ corresponding moment	1280	D + F + L + H +Wt	368	142	D + F + L + H' + E'	66	3.12	-	-	-	
						Max Compression w/ corresponding moment	1108	D + F + L + H' + E'	-382	105							
						Max Moment with axial tension	1275	D + F + L + H' + E'	13	282							
						Max Moment with axial compression	1280	D + F + L + H' + E'	-209	384							
					2-H-L	Max Tension w/ corresponding moment	1181	D + F + L + H' + E'	14	96	D + F + L + H' + E'	66	4.68	-	-	-	
						Max Compression w/ corresponding moment	1183	D + F + L + H' + E'	-140	331							
						Max Moment with axial tension	1181	D + F + L + H' + E'	11	97							
						Max Moment with axial compression	1175	D + F + L + H' + E'	-99	399							
			Vertical	3H.6-171	1-V-L	Max Tension w/ corresponding moment	1280	D + F + L + H +Wt	293	86	D + F + L + H' + E'	107	6.24	-	-	-	
						Max Compression w/ corresponding moment	1189	D + F + L + H' + E'	-299	73							
						Max Moment with corresponding axial tension	1145	D + F + L + H' + E'	11	694							
						Max Moment with corresponding axial compression	1145	D + F + L + H' + E'	-30	694							
		-	Horizontal Plane	3H.6-172	1-H-T	-	-	-	-	-	-	-	-	D + F + L + H' + E'	92	0.31 (#5 @12)	
				3H.6-172	2-H-T	-	-	-	-	-	-	-	-	D + F + L + H' + E'	148	0.62 (#5 @6)	
			Vertical Plane	3H.6-172	1-V-T	-	-	-	-	-	-	-	-	D + F + L + H' + E'	123	0.62 (#5 @6)	
				3H.6-172	2-V-T	-	-	-	-	-	-	-	-	D + F + L + H' + E'	98	0.31 (#5 @12)	
				3H.6-172	3-V-T	-	-	-	-	-	-	-	-	D + F + L + H' + E'	98	0.31 (#5 @12)	
Wall 9	2	Near Side	Horizontal	3H.6-173	1-H-L	Max Tension w/ corresponding moment	1019	D + F + L + H +Wt	131	-2	D + F + L + H +Wt	125	3.12	-	-	-	
						Max Compression w/ corresponding moment	995	D + F + L + H +Wt	-165	-4							
						Max Moment with axial tension	1018	D + F + L + H' + E'	30	-94							
						Max Moment with axial compression	1035	D + F + L + H' + E'	-36	-111							
					2-H-L	Max Tension w/ corresponding moment	1030	D + F + L + H +Wt	271	-12	D + F + L + H +Wt	125	4.68	-	-	-	
						Max Compression w/ corresponding moment	1030	D + F + L + H +Wt	-241	-13							
						Max Moment with axial tension	1030	D + F + L + H' + E'	90	-112							
						Max Moment with axial compression	1030	D + F + L + H' + E'	-19	-112							

Table 3H.6-11 Results of DGFOS Vault Concrete Design (Continued)

Location	Thickness (ft)	Face	Direction	Reinforcement Layout Drawing Number (1)	Reinforcement Zone Number (2)	Maximum Forces (3)	Element	Longitudinal Reinforcement Design Loads: Axial and Flexure Loads: Load Combination	Axial (4) (kips / ft)	Flexure (4) (ft-kips / ft)	In-Plane Shear Loads: Load Combination	In-plane (5) Shear (kips / ft)	Longitudinal Reinforcement Provided (in^2/ ft)	Transverse Shear Design Loads: Load Combination	Transverse Shear (6) Reinforcement Design Loads (kips / ft)	Transverse Shear (7) Reinforcement Provided (in^2/ft^2)	Remarks
Wall 9	2	Near Side	Vertical	3H.6-174	1-V-L	Max Tension w/ corresponding moment	1019	D + F + L + H +Wt	203	-16	D + F + L + H +Wt	114	3.12	-	-	-	
						Max Compression w/ corresponding moment	1019	D + F + L + H +Wt	-205	-20							
						Max Moment with corresponding axial tension	1031	D + F + L + H' + E'	33	-114							
						Max Moment with corresponding axial compression	1031	D + F + L + H' + E'	-59	-114							
					2-V-L	Max Tension w/ corresponding moment	1030	D + F + L + H +Wt	596	-38	D + F + L + H +Wt	100	6.24	-	-	-	
						Max Compression w/ corresponding moment	1030	D + F + L + H +Wt	-525	-52							
						Max Moment with corresponding axial tension	1030	D + F + L + H' + E'	131	-197							
						Max Moment with corresponding axial compression	1030	D + F + L + H' + E'	-171	-197							
					3-V-L	Max Tension w/ corresponding moment	1035	D + F + L + H +Wt	161	-9	D + F + L + H +Wt	109	4.68	-	-	-	
						Max Compression w/ corresponding moment	1035	D + F + L + H +Wt	-219	-14							
						Max Moment with corresponding axial tension	1035	D + F + L + H' + E'	68	-62							
						Max Moment with corresponding axial compression	1035	D + F + L + H' + E'	-30	-62							
		Far Side	Horizontal	3H.6-175	1-H-L	Max Tension w/ corresponding moment	1019	D + F + L + H +Wt	148	6	D + F + L + H +Wt	125	3.12	-	-	-	
						Max Compression w/ corresponding moment	996	D + F + L + H +Wt	-316	6							
						Max Moment with axial tension	975	D + F + L + H +Wt	2	62							
						Max Moment with axial compression	983	D + F + L + H +Wt	-13	64							
					2-H-L	Max Tension w/ corresponding moment	1030	D + F + L + H +Wt	160	17	D + F + L + H +Wt	125	4.68	-	-	-	
						Max Compression w/ corresponding moment	1030	D + F + L + H' + E'	-218	36							
						Max Moment with axial tension	1030	D + F + L + H' + E'	0	23							
						Max Moment with axial compression	1030	D + F + L + H' + E'	-169	56							
			Vertical	3H.6-176	1-V-L	Max Tension w/ corresponding moment	952	D + F + L + H +Wt	134	9	D + F + L + H +Wt	114	3.12	-	-	-	
						Max Compression w/ corresponding moment	1011	D + F + L + H +Wt	-187	3							
						Max Moment with corresponding axial tension	956	D + F + L + H +Wt	1	57							
						Max Moment with corresponding axial compression	995	D + F + L + H +Wt	-5	71							
					2-V-L	Max Tension w/ corresponding moment	1000	D + F + L + H +Wt	51	11	D + F + L + H +Wt	100	6.24	-	-	-	
						Max Compression w/ corresponding moment	1030	D + F + L + H' + E'	-403	21							
						Max Moment with corresponding axial tension	1018	D + F + L + H +Wt	11	28							
						Max Moment with corresponding axial compression	1018	D + F + L + H' + E'	-248	43							
Wall 10	2	Near Side	Horizontal	3H.6-177	1-H-L	Max Tension w/ corresponding moment	1246	D + F + L + H' + E'	63	-28	D + F + L + H +Wt	100	3.12	-	-	-	
						Max Compression w/ corresponding moment	1204	D + F + L + H +Wt	-163	-3							
						Max Moment with axial tension	1258	D + F + L + H' + E'	29	-91							
						Max Moment with axial compression	1197	D + F + L + H' + E'	-36	-107							
					2-H-L	Max Tension w/ corresponding moment	1257	D + F + L + H' + E'	122	-63	D + F + L + H +Wt	95	4.68	-	-	-	
						Max Compression w/ corresponding moment	1257	D + F + L + H +Wt	-233	-15							
						Max Moment with axial tension	1257	D + F + L + H' + E'	85	-107							
						Max Moment with axial compression	1257	D + F + L + H' + E'	-13	-107							

Table 3H.6-11 Results of DGFOS Vault Concrete Design (Continued)

Location	Thickness (ft)	Face	Direction	Reinforcement Layout Drawing Number [1]	Reinforcement Zone Number[2]	Maximum Forces[3]	Element	Longitudinal Reinforcement Design Loads: Axial and Flexure Loads: Load Combination	Axial [4] (kips / ft)	Flexure [4] (ft-kips / ft)	In-Plane Shear Loads: Load Combination	In-plane [5] Shear (kips / ft)	Longitudinal Reinforcement Provided (in^2/ ft)	Transverse Shear Design Loads: Load Combination	Transverse Shear [6] Reinforcement Design Loads (kips / ft)	Transverse Shear [7] Reinforcement Provided (in^2/ft^2)	Remarks
Wall 10	2	Near Side	Vertica	3H.6-178	1-V-L	Max Tension w/ corresponding moment	1246	D + F + L + H +Wt	166	-6	D + F + L + H +Wt	84	3.12	-	-	-	
						Max Compression w/ corresponding moment	1246	D + F + L + H +Wt	-182	-22							
						Max Moment with corresponding axial tension	1245	D + F + L + H'+E'	21	-123							
						Max Moment with corresponding axial compression	1245	D + F + L + H'+E'	-54	-123							
					2-V-L	Max Tension w/ corresponding moment	1197	D + F + L + H +Wt	152	-9	D + F + L + H +Wt	80	4.68	-	-	-	
						Max Compression w/ corresponding moment	1197	D + F + L + H +Wt	-176	-7							
						Max Moment with corresponding axial tension	1197	D + F + L + H'+E'	65	-68							
						Max Moment with corresponding axial compression	1197	D + F + L + H'+E'	-32	-68							
					3-V-L	Max Tension w/ corresponding moment	1257	D + F + L + H +Wt	458	-21	D + F + L + H +Wt	71	6.24	-	-	-	
						Max Compression w/ corresponding moment	1257	D + F + L + H +Wt	-462	-58							
						Max Moment with corresponding axial tension	1257	D + F + L + H'+E'	111	-204							
						Max Moment with corresponding axial compression	1257	D + F + L + H'+E'	-139	-204							
		Far side	Horizonta	3H.6-179	1-H-L	Max Tension w/ corresponding moment	1246	D + F + L + H +Wt	117	10	D + F + L + H +Wt	100	3.12	-	-	-	
						Max Compression w/ corresponding moment	1265	D + F + L + H +Wt	-308	17							
						Max Moment with axial tension	1199	D + F + L + H'+E'	1	51							
						Max Moment with axial compression	1232	D + F + L + H +Wt	-36	65							
					2-H-L	Max Tension w/ corresponding moment	1257	D + F + L + H +Wt	214	16	D + F + L + H +Wt	95	4.68	-	-	-	
						Max Compression w/ corresponding moment	1257	D + F + L + H'+E'	-206	43							
						Max Moment with axial tension	1245	D + F + L + H'+E'	3	33							
						Max Moment with axial compression	1257	D + F + L + H'+E'	-158	52							
			Vertica	3H.6-180	1-V-L	Max Tension w/ corresponding moment	1261	D + F + L + H +Wt	149	7	D + F + L + H +Wt	84	3.12	-	-	-	
						Max Compression w/ corresponding moment	1199	D + F + L + H +Wt	-149	1							
						Max Moment with corresponding axial tension	1234	D + F + L + H'+E'	0	29							
						Max Moment with corresponding axial compression	1265	D + F + L + H +Wt	-25	69							
					2-V-L	Max Tension w/ corresponding moment	1260	D + F + L + H'+E'	61	9	D + F + L + H +Wt	71	6.24	-	-	-	
						Max Compression w/ corresponding moment	1257	D + F + L + H'+E'	-340	16							
						Max Moment with corresponding axial tension	1260	D + F + L + H'+E'	61	9							
						Max Moment with corresponding axial compression	1258	D + F + L + H'+E'	-229	42							
Wall 11	2	Near Side	Horizonta	3H.6-181	1-H-L	Max Tension w/ corresponding moment	951	D + F + L + H +Wt	116	-54	D + F + L + H +Wt	46	3.12	-	-	-	
						Max Compression w/ corresponding moment	924	D + F + L + H +Wt	-131	-4							
						Max Moment with axial tension	951	D + F + L + H +Wt	70	-63							
						Max Moment with axial compression	944	D + F + L + H'+E'	-16	-40							
			Vertica	3H.6-182	1-V-L	Max Tension w/ corresponding moment	944	D + F + L + H +Wt	137	-9	D + F + L + H'+E'	20	1.56	-	-	-	
						Max Compression w/ corresponding moment	944	D + F + L + H +Wt	-123	-6							
						Max Moment with corresponding axial tension	935	D + F + L + H +Wt	5	-40							
						Max Moment with corresponding axial compression	907	D + F + L + H +Wt	-81	-33							

Table 3H.6-11 Results of DGFOS Vault Concrete Design (Continued)

Location	Thickness (ft)	Face	Direction	Reinforcement Layout Drawing Number (1)	Reinforcement Zone Number (2)	Maximum Forces (3)	Element	Longitudinal Reinforcement Design Loads: Axial and Flexure Loads: Load Combination	Axial (4) (kips / ft)	Flexure (4) (ft-kips / ft)	In-Plane Shear Loads: Load Combination	In-plane (5) Shear (kips / ft)	Longitudinal Reinforcement Provided (in^2/ ft)	Transverse Shear Design Loads: Load Combination	Transverse Shear (6) Reinforcement Design Loads (kips / ft)	Transverse Shear (7) Reinforcement Provided (in^2/ft^2)	Remarks
Wall 11	2	Far side	Horizonta	3H.6-183	1-H-L	Max Tension w/ corresponding moment	944	D + F + L + H +Wt	58	7	D + F + L + H +Wt	46	3.12	-	-	-	
						Max Compression w/ corresponding moment	907	D + F + L + H +Wt	-426	30							
						Max Moment with axial tension	935	D + F + L + H +Wt	7	84							
						Max Moment with axial compression	927	D + F + L + H +Wt	-6	83							
			Vertica	3H.6-184	1-V-L	Max Tension w/ corresponding moment	944	D + F + L + H +Wt	99	10	D + F + L + H' + E'	20	1.56	-	-	-	
						Max Compression w/ corresponding moment	944	D + F + L + H +Wt	-134	7							
						Max Moment with corresponding axial tension	935	D + F + L + H +Wt	2	23							
						Max Moment with corresponding axial compression	907	D + F + L + H +Wt	-80	104							
Wall 12	4	Near Side	Horizonta	3H.6-185	1-H-L	Max Tension w/ corresponding moment	1349	D + F + L + H' + E'	87	-151	D + F + L + H' + E'	127	3.12	-	-	-	
						Max Compression w/ corresponding moment	1345	D + F + L + H' + E'	-187	-340							
						Max Moment with axial tension	1349	D + F + L + H' + E'	17	-207							
						Max Moment with axial compression	1346	D + F + L + H' + E'	-174	-382							
					2-H-L	Max Tension w/ corresponding moment	1341	D + F + L + H' + E'	95	-79	D + F + L + H' + E'	127	7.8	-	-	-	
						Max Compression w/ corresponding moment	1337	D + F + L + H' + E'	-189	-759							
						Max Moment with axial tension	1341	D + F + L + H' + E'	3	-211							
						Max Moment with axial compression	1337	D + F + L + H' + E'	-187	-761							
					3-H-L	Max Tension w/ corresponding moment	1437	D + F + L + H' + E'	99	-119	D + F + L + H' + E'	127	6.24	-	-	-	
						Max Compression w/ corresponding moment	1433	D + F + L + H' + E'	-186	-487							
						Max Moment with axial tension	1445	D + F + L + H' + E'	1	-219							
						Max Moment with axial compression	1442	D + F + L + H' + E'	-175	-746							
			Vertica	3H.6-186	1-V-L	Max Tension w/ corresponding moment	1336	D + F + L + H' + E'	120	-64	D + F + L + H' + E'	107	3.12	-	-	-	
						Max Compression w/ corresponding moment	1336	D + F + L + H' + E'	-220	-58							
						Max Moment with corresponding axial tension	1373	D + F + L + H' + E'	2	-222							
						Max Moment with corresponding axial compression	1373	D + F + L + H' + E'	-24	-222							
					2-V-L	Max Tension w/ corresponding moment	1438	D + F + L + H' + E'	286	-73	D + F + L + H' + E'	107	6.24	-	-	-	
						Max Compression w/ corresponding moment	1334	D + F + L + H' + E'	-305	-69							
						Max Moment with corresponding axial tension	1406	D + F + L + H' + E'	56	-462							
						Max Moment with corresponding axial compression	1406	D + F + L + H' + E'	-30	-462							
					3-V-L	Max Tension w/ corresponding moment	1366	D + F + L + H' + E'	95	-610	D + F + L + H' + E'	107	7.8	-	-	-	
						Max Compression w/ corresponding moment	1398	D + F + L + H' + E'	-105	-56							
						Max Moment with corresponding axial tension	1374	D + F + L + H' + E'	27	-653							
						Max Moment with corresponding axial compression	1358	D + F + L + H' + E'	-5	-546							

Table 3H.6-11 Results of DGFOS Vault Concrete Design (Continued)

Location	Thickness (ft)	Face	Direction	Reinforcement Layout Drawing Number (1)	Reinforcement Zone Number (2)	Maximum Forces (3)	Element	Longitudinal Reinforcement Design Loads: Axial and Flexure Loads: Load Combination	Axial (4) (kips / ft)	Flexure (4) (ft-kips / ft)	In-Plane Shear Loads: Load Combination	In-plane (5) Shear (kips / ft)	Longitudinal Reinforcement Provided (in^2/ ft)	Transverse Shear Design Loads: Load Combination	Transverse Shear (6) Reinforcement Design Loads (kips / ft)	Transverse Shear (7) Reinforcement Provided (in^2/ft^2)	Remarks
Wall 12	4	Far Side	Horizontal	3H.6-187	1-H-L	Max Tension w/ corresponding moment	1445	D + F + L + H' +E'	90	7	D + F + L + H' +E'	127	3.12	-	-	-	
						Max Compression w/ corresponding moment	1409	D + F + L + H' +E'	-181	47							
						Max Moment with axial tension	1357	D + F + L + H' +E'	2	118							
						Max Moment with axial compression	1393	D + F + L + H' +E'	-157	310							
			Vertical	3H.6-188	1-V-L	Max Tension w/ corresponding moment	1438	D + F + L + H' +E'	184	8	D + F + L + H' +E'	107	6.24	-	-	-	
						Max Compression w/ corresponding moment	1334	D + F + L + H' +E'	-289	17							
						Max Moment with corresponding axial tension	1384	D + F + L + H' +E'	10	323							
						Max Moment with corresponding axial compression	1392	D + F + L + H' +E'	0	321							
		-	Horizontal Plane	3H.6-189	1-H-T	-	-	-	-	-	-	-	-	D + F + L + H' +E'	94	0.31 (#5 @12)	
			Vertical Plane	3H.6-189	1-V-T	-	-	-	-	-	-	-	-	D + F + L + H' +E'	102	0.31 (#5 @12)	
				3H.6-189	2-V-T	-	-	-	-	-	-	-	-	D + F + L + H' +E'	109	0.31 (#5 @12)	
Wall 13	4	Near Side	Horizontal	3H.6-190	1-H-L	Max Tension w/ corresponding moment	1860	D + F + L + H +Wt	15	-13	D + F + L + H' +E'	119	3.12	-	-	-	
						Max Compression w/ corresponding moment	1944	D + F + L + H' +E'	-183	-191							
						Max Moment with axial tension	1867	D + F + L + H' +E'	0	-59							
						Max Moment with axial compression	1874	D + F + L + H' +E'	-56	-216							
					2-H-L	Max Tension w/ corresponding moment	1871	D + F + L + H' +E'	68	-12	D + F + L + H' +E'	119	7.8	-	-	-	
						Max Compression w/ corresponding moment	1941	D + F + L + H' +E'	-187	-802							
						Max Moment with axial tension	1871	D + F + L + H' +E'	36	-465							
						Max Moment with axial compression	1955	D + F + L + H' +E'	-178	-838							
					3-H-L	Max Tension w/ corresponding moment	1884	D + F + L + H' +E'	49	-240	D + F + L + H' +E'	119	7.8	-	-	-	
						Max Compression w/ corresponding moment	1954	D + F + L + H' +E'	-188	-816							
						Max Moment with axial tension	1884	D + F + L + H' +E'	34	-455							
						Max Moment with axial compression	1968	D + F + L + H' +E'	-179	-870							
			Vertical	3H.6-191	1-V-L	Max Tension w/ corresponding moment	1870	D + F + L + H' +E'	209	-42	D + F + L + H' +E'	114	4.68	-	-	-	
						Max Compression w/ corresponding moment	1857	D + F + L + H' +E'	-265	-55							
						Max Moment with corresponding axial tension	1860	D + F + L + H' +E'	37	-389							
						Max Moment with corresponding axial compression	1860	D + F + L + H' +E'	-60	-389							
					2-V-L	Max Tension w/ corresponding moment	1868	D + F + L + H' +E'	106	-150	D + F + L + H' +E'	88	7.8	-	-	-	
						Max Compression w/ corresponding moment	1868	D + F + L + H' +E'	-138	-64							
						Max Moment with corresponding axial tension	1865	D + F + L + H' +E'	27	-686							
						Max Moment with corresponding axial compression	1866	D + F + L + H' +E'	-1	-652							
		Far Side	Horizontal	3H.6-192	1-H-L	Max Tension w/ corresponding moment	1871	D + F + L + H' +E'	68	12	D + F + L + H' +E'	119	4.68	-	-	-	
						Max Compression w/ corresponding moment	1952	D + F + L + H' +E'	-181	126							
						Max Moment with axial tension	1882	D + F + L + H' +E'	4	259							
						Max Moment with axial compression	1964	D + F + L + H' +E'	-150	377							

Table 3H.6-11 Results of DGFOS Vault Concrete Design (Continued)

Location	Thickness (ft)	Face	Direction	Reinforcement Layout Drawing Number (1)	Reinforcement Zone Number (2)	Maximum Forces (3)	Element	Longitudinal Reinforcement Design Loads: Axial and Flexure Loads: Load Combination	Axial (4) (kips / ft)	Flexure (4) (ft-kips / ft)	In-Plane Shear Loads: Load Combination	In-plane (5) Shear (kips / ft)	Longitudinal Reinforcement Provided (in^2/ ft)	Transverse Shear Design Loads: Load Combination	Transverse Shear (6) Reinforcement Design Loads (kips / ft)	Transverse Shear (7) Reinforcement Provided (in^2/ft^2)	Remarks
Wall 13	4	Far side	Vertical	3H.6-193	1-V-L	Max Tension w/ corresponding moment	1857	D + F + L + H +Wt	161	3	D + F + L + H' + E'	114	4.68	-	-	-	
						Max Compression w/ corresponding moment	1857	D + F + L + H' + E'	-260	13							
						Max Moment with corresponding axial tension	1922	D + F + L + H' + E'	1	310							
						Max Moment with corresponding axial compression	1922	D + F + L + H' + E'	-9	309							
		-	Horizontal Plane	3H.6-194	1-H-T	-	-	-	-	-	-	-	-	D + F + L + H' +E'	92	0.31 (#5 @12)	
			Vertical Plane	3H.6-194	1-V-T	-	-	-	-	-	-	-	-	D + F + L + H' +E'	125	0.62 (#5 @6)	
				3H.6-194	2-V-T	-	-	-	-	-	-	-	-	D + F + L + H' +E'	107	0.31 (#5 @12)	
				3H.6-194	3-V-T	-	-	-	-	-	-	-	-	D + F + L + H' +E'	90	0.31 (#5 @12)	
				3H.6-194	4-V-T	-	-	-	-	-	-	-	-	D + F + L + H' +E'	118	0.62 (#5 @6)	
Wall 14	2	Near Side	Horizontal	3H.6-195	1-H-L	Max Tension w/ corresponding moment	1652	D + F + L + H +Wt	96	-7	D + F + L + H +Wt	97	3.12	-	-	-	
						Max Compression w/ corresponding moment	1652	D + F + L + H' + E'	-311	-66							
						Max Moment with axial tension	1653	D + F + L + H' + E'	7	-77							
						Max Moment with axial compression	1652	D + F + L + H' + E'	-136	-90							
			Vertical	3H.6-196	1-V-L	Max Tension w/ corresponding moment	1498	D + F + L + H +Wt	241	-6	D + F + L + H +Wt	82	3.12	-	-	-	
						Max Compression w/ corresponding moment	1498	D + F + L + H +Wt	-231	-5							
						Max Moment with corresponding axial tension	1628	D + F + L + H +Wt	14	-105							
						Max Moment with corresponding axial compression	1508	D + F + L + H +Wt	-1	-82							
					2-V-L	Max Tension w/ corresponding moment	1496	D + F + L + H +Wt	433	-107	D + F + L + H +Wt	82	6.24	-	-	-	
						Max Compression w/ corresponding moment	1496	D + F + L + H' + E'	-283	-3							
						Max Moment with corresponding axial tension	1496	D + F + L + H +Wt	215	-124							
						Max Moment with corresponding axial compression	1496	D + F + L + H +Wt	-3	-79							
					3-V-L	Max Tension w/ corresponding moment	1652	D + F + L + H +Wt	560	-139	D + F + L + H +Wt	47	6.24	-	-	-	
						Max Compression w/ corresponding moment	1652	D + F + L + H' + E'	-341	-5							
						Max Moment with corresponding axial tension	1652	D + F + L + H +Wt	312	-170							
						Max Moment with corresponding axial compression	1652	D + F + L + H' + E'	-62	-92							
		Far side	Horizontal	3H.6-197	1-H-L	Max Tension w/ corresponding moment	1640	D + F + L + H' + E'	114	16	D + F + L + H +Wt	97	3.12	-	-	-	
						Max Compression w/ corresponding moment	1659	D + F + L + H +Wt	-314	28							
						Max Moment with axial tension	1652	D + F + L + H' + E'	81	68							
						Max Moment with axial compression	1567	D + F + L + H +Wt	-103	71							

Table 3H.6-11 Results of DGFOS Vault Concrete Design (Continued)

Location	Thickness (ft)	Face	Direction	Reinforcement Layout Drawing Number [1]	Reinforcement Zone Number [2]	Maximum Forces [3]	Element	Longitudinal Reinforcement Design Loads: Axial and Flexure Loads: Load Combination	Axial [4] (kips / ft)	Flexure [4] (ft-kips / ft)	In-Plane Shear Loads: Load Combination	In-plane [5] Shear (kips / ft)	Longitudinal Reinforcement Provided (in^2/ ft)	Transverse Shear Design Loads: Load Combination	Transverse Shear [6] Reinforcement Design Loads (kips / ft)	Transverse Shear [7] Reinforcement Provided (in^2/ft^2)	Remarks
Wall 14	2	Far Side	Vertical	3H.6-198	1-V-L	Max Tension w/ corresponding moment	1653	D + F + L + H' +E'	166	12	D + F + L + H +Wt	82	3.12	-	-	-	
						Max Compression w/ corresponding moment	1653	D + F + L + H +Wt	-340	15							
						Max Moment with corresponding axial tension	1504	D + F + L + H +Wt	15	72							
						Max Moment with corresponding axial compression	1640	D + F + L + H +Wt	-78	120							
					2-V-L	Max Tension w/ corresponding moment	1496	D + F + L + H' +E'	199	10	D + F + L + H +Wt	82	4.68	-	-	-	
						Max Compression w/ corresponding moment	1496	D + F + L + H +Wt	-442	101							
						Max Moment with corresponding axial tension	1496	D + F + L + H' +E'	8	70							
						Max Moment with corresponding axial compression	1496	D + F + L + H +Wt	-242	123							
					3-V-L	Max Tension w/ corresponding moment	1652	D + F + L + H' +E'	223	16	D + F + L + H +Wt	47	6.24	-	-	-	
						Max Compression w/ corresponding moment	1652	D + F + L + H +Wt	-504	104							
						Max Moment with corresponding axial tension	1652	D + F + L + H' +E'	12	86							
						Max Moment with corresponding axial compression	1652	D + F + L + H +Wt	-315	134							
		-	Horizontal Plane	3H.6-199	1-H-T	-	-	-	-	-	-	-	-	D + F + L + H +Wt	25	0.20 (#4 @12)	
Wall 15	2	Near Side	Horizontal	3H.6-200	1-H-L	Max Tension w/ corresponding moment	1784	D + F + L + H +Wt	138	-17	D + F + L + H +Wt	59	3.12	-	-	-	
						Max Compression w/ corresponding moment	1696	D + F + L + H +Wt	-178	-8							
						Max Moment with axial tension	1845	D + F + L + H' +E'	3	-95							
						Max Moment with axial compression	1689	D + F + L + H' +E'	-35	-107							
			Vertical	3H.6-201	1-V-L	Max Tension w/ corresponding moment	1690	D + F + L + H +Wt	153	-24	D + F + L + H +Wt	81	3.12	-	-	-	
						Max Compression w/ corresponding moment	1846	D + F + L + H' +E'	-105	-11							
						Max Moment with corresponding axial tension	1690	D + F + L + H' +E'	3	-39							
						Max Moment with corresponding axial compression	1796	D + F + L + H' +E'	-11	-43							
					2-V-L	Max Tension w/ corresponding moment	1689	D + F + L + H +Wt	163	-36	D + F + L + H +Wt	81	4.68	-	-	-	
						Max Compression w/ corresponding moment	1689	D + F + L + H' +E'	-110	-3							
						Max Moment with corresponding axial tension	1689	D + F + L + H' +E'	75	-44							
						Max Moment with corresponding axial compression	1689	D + F + L + H' +E'	-24	-44							
					3-V-L	Max Tension w/ corresponding moment	1845	D + F + L + H +Wt	154	-35	D + F + L + H +Wt	50	4.68	-	-	-	
						Max Compression w/ corresponding moment	1845	D + F + L + H' +E'	-112	-10							
						Max Moment with corresponding axial tension	1845	D + F + L + H' +E'	62	-42							
						Max Moment with corresponding axial compression	1845	D + F + L + H' +E'	-28	-42							
		Far Side	Horizontal	3H.6-202	1-H-L	Max Tension w/ corresponding moment	1711	D + F + L + H +Wt	32	7	D + F + L + H +Wt	59	1.56	-	-	-	
						Max Compression w/ corresponding moment	1697	D + F + L + H +Wt	-359	13							
						Max Moment with axial tension	1740	D + F + L + H' +E'	2	46							
						Max Moment with axial compression	1796	D + F + L + H +Wt	-103	66							
			Vertical	3H.6-203	1-V-L	Max Tension w/ corresponding moment	1689	D + F + L + H' +E'	103	5	D + F + L + H +Wt	81	3.12	-	-	-	
						Max Compression w/ corresponding moment	1689	D + F + L + H +Wt	-220	42							
						Max Moment with corresponding axial tension	1696	D + F + L + H +Wt	11	74							
						Max Moment with corresponding axial compression	1697	D + F + L + H +Wt	-2	71							

Table 3H.6-11 Results of DGFOS Vault Concrete Design (Continued)

Location	Thickness (ft)	Face	Direction	Reinforcement Layout Drawing Number (1)	Reinforcement Zone Number (2)	Maximum Forces (3)	Element	Longitudinal Reinforcement Design Loads: Axial and Flexure Loads: Load Combination	Axial (4) (kips / ft)	Flexure (4) (ft-kips / ft)	In-Plane Shear Loads: Load Combination	In-plane (5) Shear (kips / ft)	Longitudinal Reinforcement Provided (in²/ ft)	Transverse Shear Design Loads: Load Combination	Transverse Shear (6) Reinforcement Design Loads (kips / ft)	Transverse Shear (7) Reinforcement Provided (in²/ft²)	Remarks
Wall 16	2	Near Side	Horizontal	3H.6-204	1-H-L	Max Tension w/ corresponding moment	1447	D + F + L + H' + E'	31	-3	D + F + L + H +Wt	69	1.56	-	-	-	
						Max Compression w/ corresponding moment	1447	D + F + L + H +Wt	-104	-25							
						Max Moment with axial tension	1492	D + F + L + H +Wt	4	-30							
						Max Moment with axial compression	1478	D + F + L + H +Wt	-35	-29							
			Vertical	3H.6-205	1-V-L	Max Tension w/ corresponding moment	1450	D + F + L + H +Wt	101	-15	D + F + L + H' + E'	15	1.56	-	-	-	
						Max Compression w/ corresponding moment	1447	D + F + L + H +Wt	-151	-76							
						Max Moment with corresponding axial tension	1455	D + F + L + H +Wt	5	-54							
						Max Moment with corresponding axial compression	1447	D + F + L + H +Wt	-70	-88							
		Far Side	Horizontal	3H.6-206	1-H-L	Max Tension w/ corresponding moment	1447	D + F + L + H' + E'	31	4	D + F + L + H +Wt	69	1.56	-	-	-	
						Max Compression w/ corresponding moment	1491	D + F + L + H +Wt	-362	37							
						Max Moment with axial tension	1489	D + F + L + H +Wt	6	31							
						Max Moment with axial compression	1478	D + F + L + H +Wt	-35	82							
			Vertical	3H.6-207	1-V-L	Max Tension w/ corresponding moment	1451	D + F + L + H +Wt	108	17	D + F + L + H' + E'	15	1.56	-	-	-	
						Max Compression w/ corresponding moment	1491	D + F + L + H +Wt	-143	8							
						Max Moment with corresponding axial tension	1454	D + F + L + H +Wt	40	52							
						Max Moment with corresponding axial compression	1491	D + F + L + H +Wt	-40	88							
		-	Horizontal Plane	3H.6-208	1-H-T	-	-	-	-	-	-	-	-	-	-	0.62 (#5 @6)	Transverse shear reinforcement provided due to tornado missile impact evaluation.
				3H.6-208	2H-T	-	-	-	-	-	-	-	-	-	-	0.62 (#5 @6)	

Notes:

(1) The reinforcement layout drawings show the various zones used to define the minimum reinforcement that will be provided based on finite element analysis results. Actual provided reinforcement based on final rebar layout and including development length may exceed the reported provided reinforcement and the zones with higher reinforcement may be extended beyond their reported boundaries. The dimensions in the reinforcement drawings are based on the dimensions of the 2D SAP2000 shell elements, which are modeled at the centerline of the walls and slabs. Therefore, the reinforcement drawing dimensions do not match actual building dimensions.

(2) Each reinforcement layout drawing is divided into reinforcement zones. The reinforcement zone naming convention is as follows: "H" = horizontal, "V" = vertical, "L" = longitudinal reinforcement, "T" = transverse reinforcement. For slabs, vertical corresponds to Y-axis and horizontal corresponds to X-axis as shown on Figure 3H.6-140.

(3) The maximum tension and compression axial forces are provided with the corresponding moment from the same load combination. The maximum moment that has a corresponding tension in the same load combination and the maximum moment that has a corresponding compression in the same load combination are also provided. For zones where either axial tension or axial compression does not occur for any load combination, dashes are input into the corresponding cell.

(4) Negative axial load is compression and positive axial load is tension. Negative moment applies tension to the top face of the shell element and positive moment applies tension to the bottom face of the shell element. For walls or slabs where the same reinforcement is provided on both faces, the moment is shown as absolute value. The axial and flexural loads reported in the table are the average of the 2 node pairs that form the 4 edges of the critical rectangular shell element. If the 2 node pairs on the shell element edges parallel to the reinforcement direction do not satisfy P&M interaction criteria, then only the 2 node pairs on the shell element edges perpendicular to the reinforcement direction are used for design (effective width considered).

(5) The reported in-plane shear is the maximum average in-plane shear along a plane that crosses the longitudinal reinforcement zone.

(6) The reported transverse shear is the maximum average transverse shear along a plane in that transverse reinforcement zone.

(7) In areas where horizontal and vertical transverse shear zones overlap, the total transverse shear reinforcement to be supplied in the overlapping area is the sum of the transverse reinforcement required from the horizontal and vertical zones.

(8) For certain areas of the structure, the standard element post-processing methods were too conservative. For such cases, detailed manual design was performed and the design forces determined by the detailed manual design are provided in the table.

(9) The reported forces are from the FEM analysis. The provided longitudinal reinforcement includes additional reinforcement required due to manual one-way design calculations.

Table 3H.6-12 Factors of Safety Against Sliding, Overturning, and Flotation for Diesel Generator Fuel Oil Storage Vaults

Load Combination	Calculated Safety Factor			Notes
	Overturning	Sliding	Flotation	
D + F’	---	---	1.28	2, 3
D + H + W	73.3	63.1	---	
D + H + Wt	32.5	27.3	---	
D + H + E’	1.1	1.1	---	3, 4

Notes:

1) Loads D, H, W, Wt, and E’ are defined in Subsection 3H.6.4.3.4.1. F’ is the buoyant force corresponding to the design basis flood.
2) Reported safety factors are conservatively based on considering empty weight of the fuel oil tank.
3) Coefficients of friction for sliding resistance are 0.58 for static conditions and 0.39 for dynamic conditions for the Diesel Generator Fuel Oil Storage Vault.
4) The calculated safety factors consider less that half of the full passive pressure. The calculated safety factors increase if full passive pressure (Kp = 3.0) is considered.

Table 3H.6-13 Tornado Missile Impact Evaluation for Diesel Generator Fuel Oil Storage Vault

Local Check	**DGFOS Vault**	Minimum required thickness to prevent penetration, perforation, and scabbing = 13.6” Minimum provided thickness = 18”
Overall Check of Impacted Element	**Roof**	Flexure controls. Maximum impact load including Dynamic Load Factor (DLF) = 432 kips Ductility demand = 0.5 < Ductility limit = 10
	Protection Hood	Flexure controls Maximum impact load including Dynamic Load Factor (DLF) = 432 kips Ductility demand = 5 < Ductility limit = 10
	Walls	Flexure controls. Maximum impact load including Dynamic Load Factor (DLF) = 938 kips Ductility demand = 0.7 < Ductility limit = 10
	Entry Way Wall	Shear controls. Maximum impact load including Dynamic Load Factor (DLF) = 617 kips Minimum capacity = 929 kips Shear ties are required locally to withstand a missile strike near the top and bottom panel supports. See Table 3H.6-11 and Figure 3H.6-208 for reinforcement size and location.
Global Check		Equivalent static impact forces are applied to the FEM analysis of the DGFOS Vault. The analysis results presented in Table 3H.6-11 provide a summary of the results for all load combinations including those affected by the tornado missile impact.

Table 3H.6-14 Calculated Overturning and Sliding Factors of Safety Under Site-Specific SSE for TB, SB, RWB and CBA

Structure	Calculated Factor of Safety		Minimum Required Factor of Safety	Coefficient of Friction for Sliding Evaluation
	Overturning	Sliding		
Turbine Building (TB)	2.18	1.11	1.1	0.30
Service Building (SB)	2.65	1.81	1.1	0.39
Radwaste Building (RWB)	4.23	1.92	1.1	0.39
Control Building Annex (CBA)	2.03	1.16	1.1	0.58

Table 3H.6-15 Required and Provided Gaps at the Interface of Site-Specific Seismic Category I Structures and the Adjoining Structures

Interfacing Structures	Required and Provided Gaps (inches)	
	Required Gap	Provided Gap
RSW Piping Tunnels and Control Building	4.41	4.5
RSW Pump House and RSW Piping Tunnel A	3.51	4.5
RSW Pump House and RSW Piping Tunnel B	4.44	4.5
RSW Pump House and RSW Piping Tunnel C	2.59	4.5
Diesel Generator Fuel Oil Storage Vault (DGFOSV) No. 1 and its Diesel Generator Fuel Oil Tunnel	1.44	2.0
Diesel Generator Fuel Oil Storage Vault (DGFOSV) No. 2 and its Diesel Generator Fuel Oil Tunnel	1.62	2.0
Diesel Generator Fuel Oil Storage Vault (DGFOSV) No. 3 and its Diesel Generator Fuel Oil Tunnel	1.38	2.0

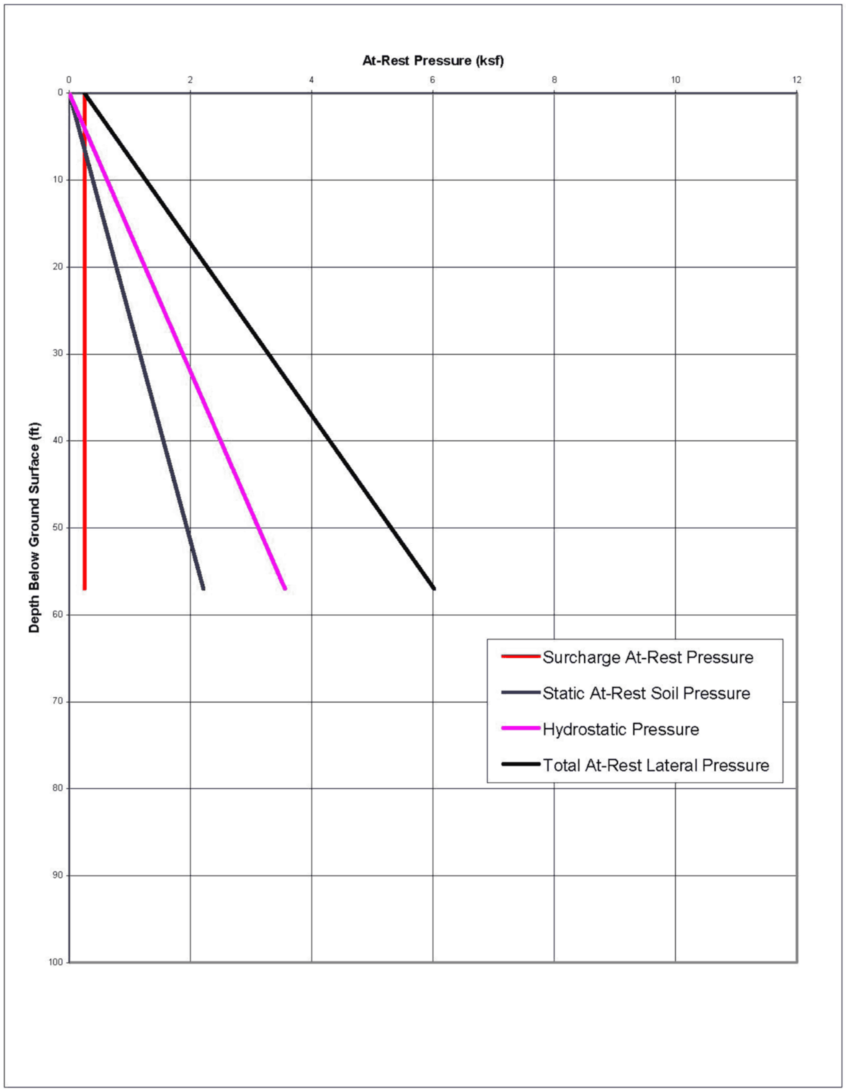


Figure 3H.3-1 At-Rest Lateral Earth Pressure on the RWB Walls

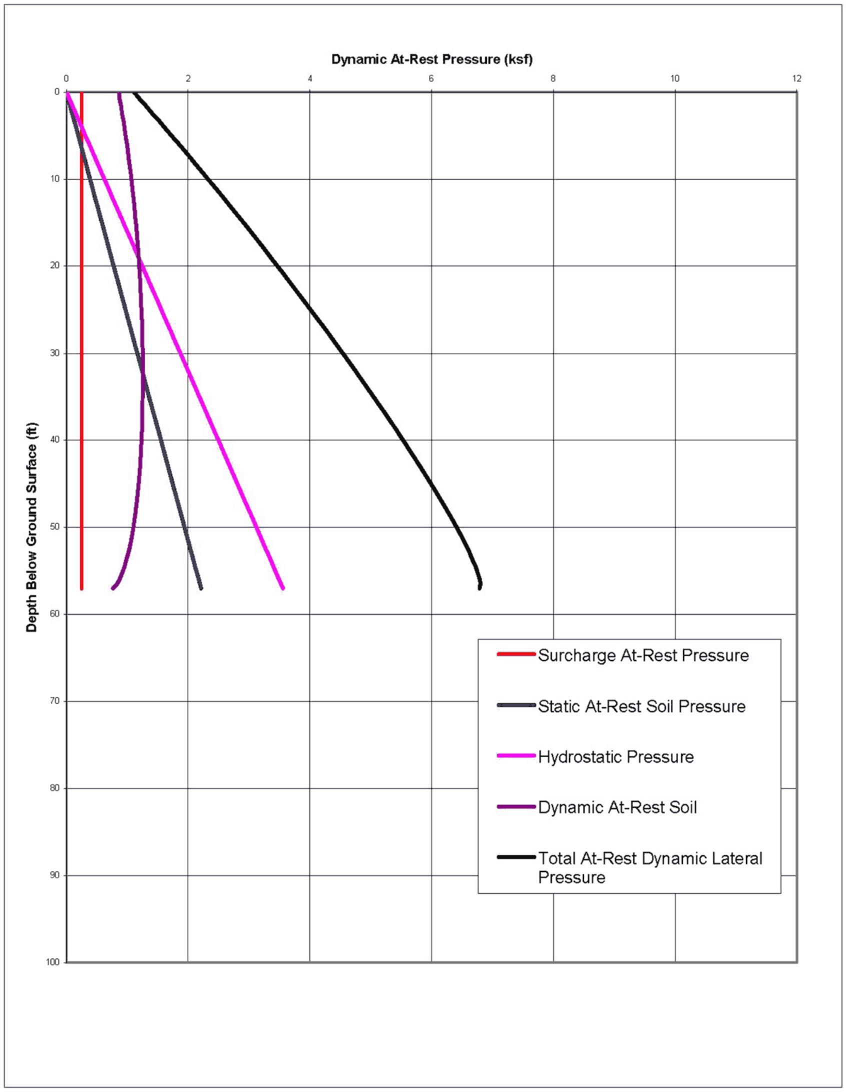


Figure 3H.3-2 Dynamic At-Rest Lateral Earth Pressure on the RWB Walls

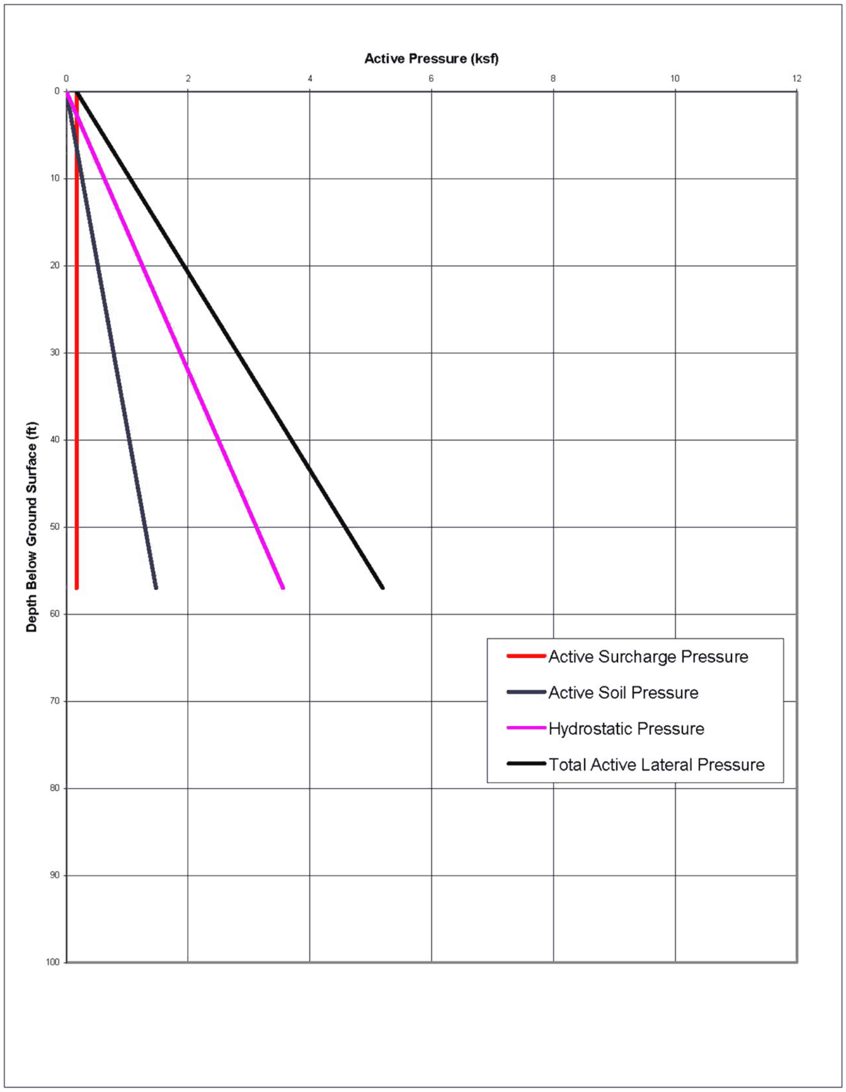


Figure 3H.3-3 Active Lateral Earth Pressure on the RWB Walls

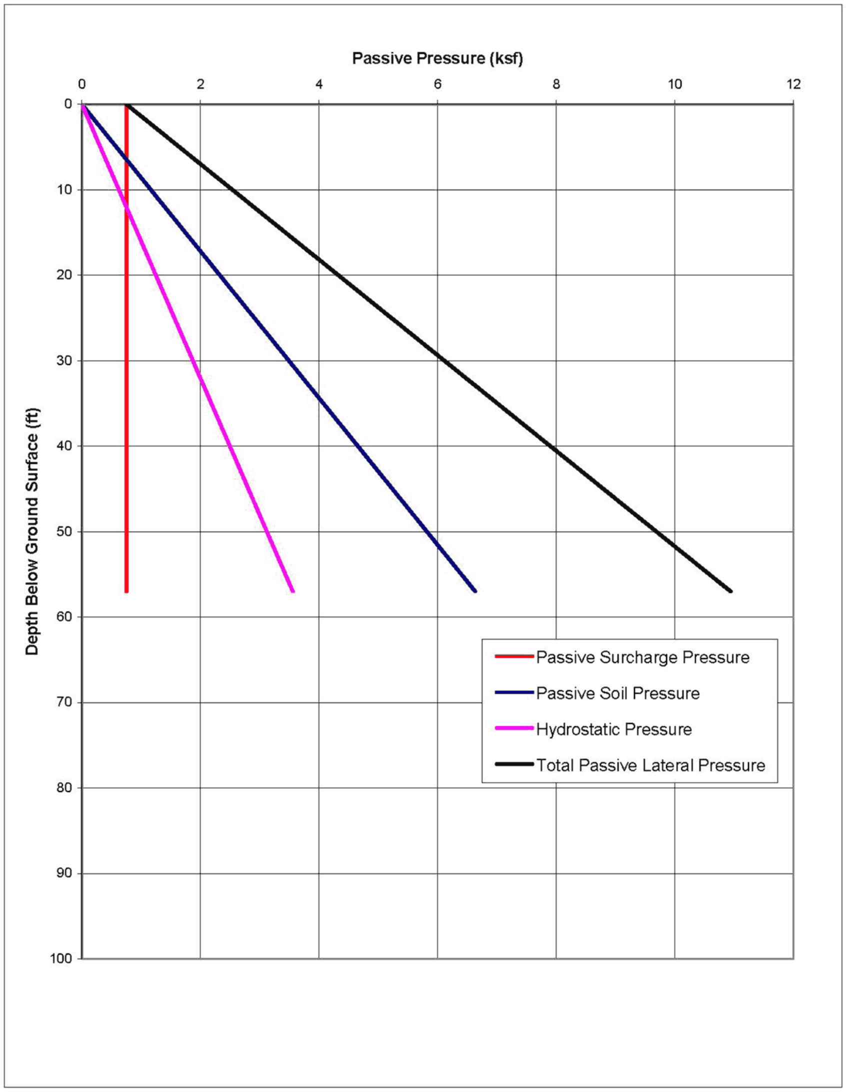


Figure 3H.3-4 Passive Lateral Earth Pressure on the RWB Walls

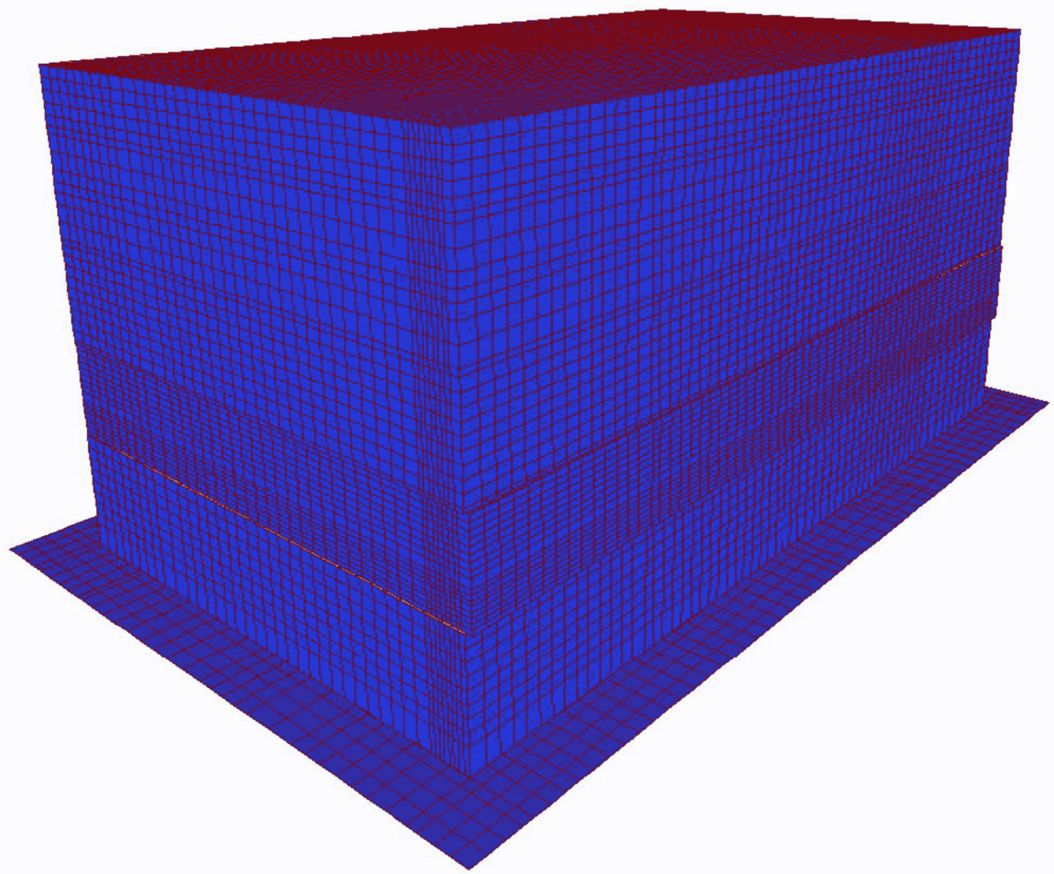


Figure 3H.3-5 Radwaste Building SAP2000 Model (Looking from Southwest Corner)

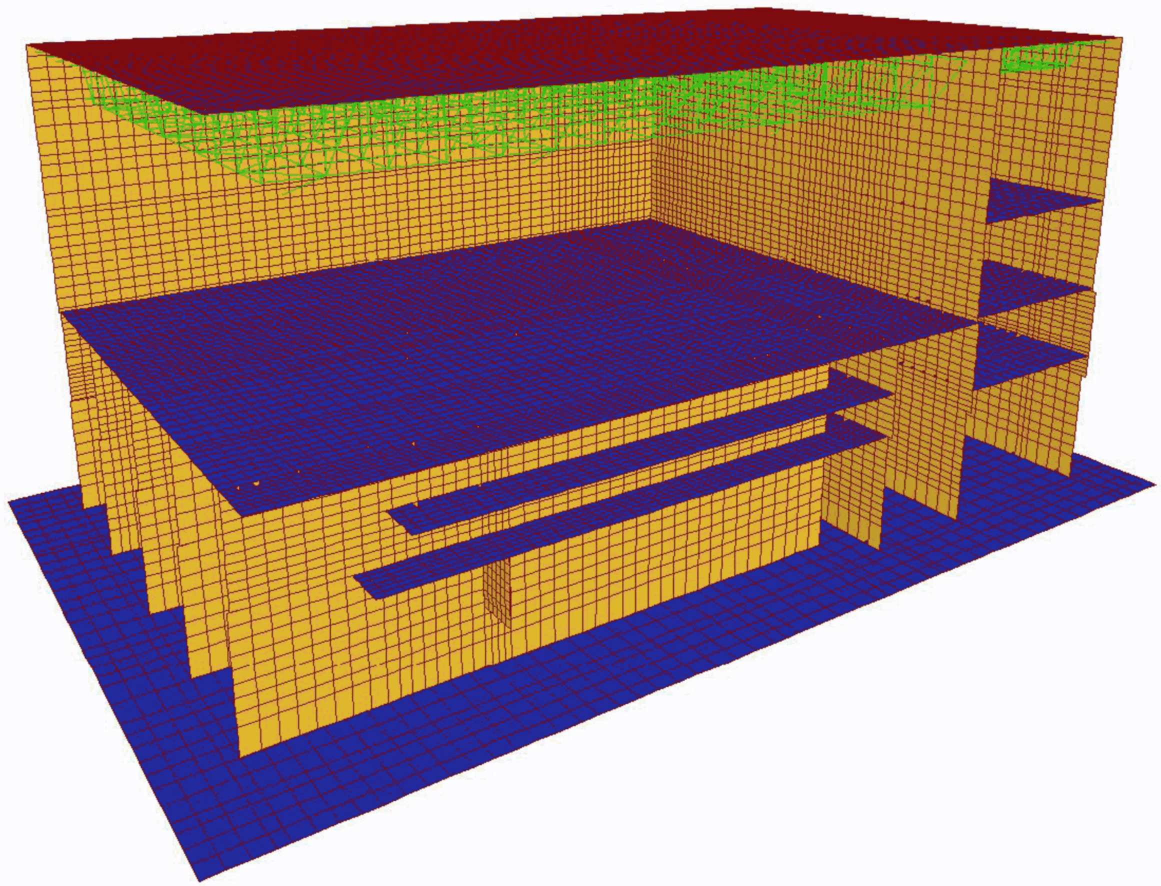


Figure 3H.3-6 Radwaste Building SAP2000 Model (South and West Walls Removed)

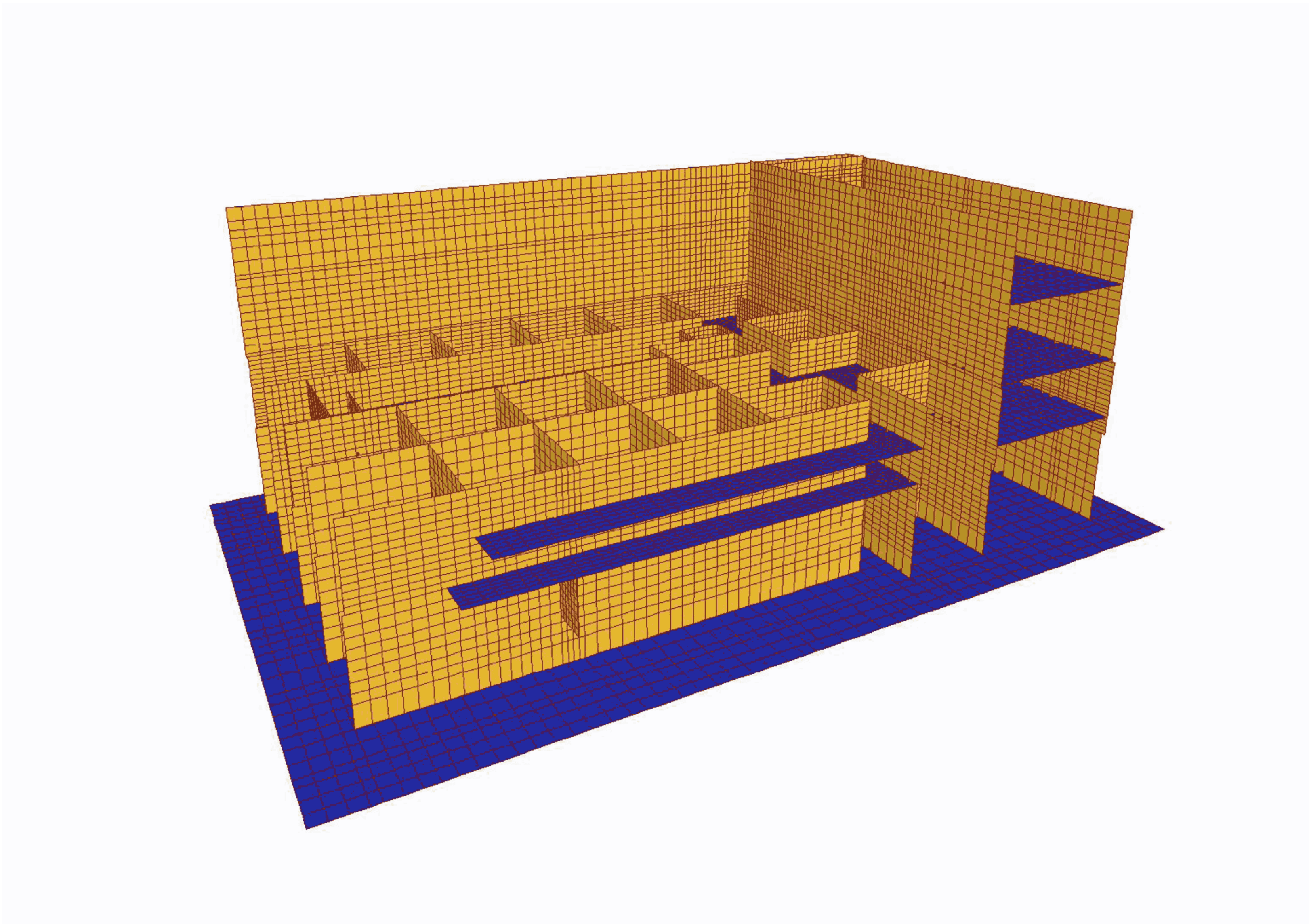


Figure 3H.3-7 Radwaste Building SAP2000 Model (South Wall, West Wall, Roof and El. 35’-0” Slab Removed)

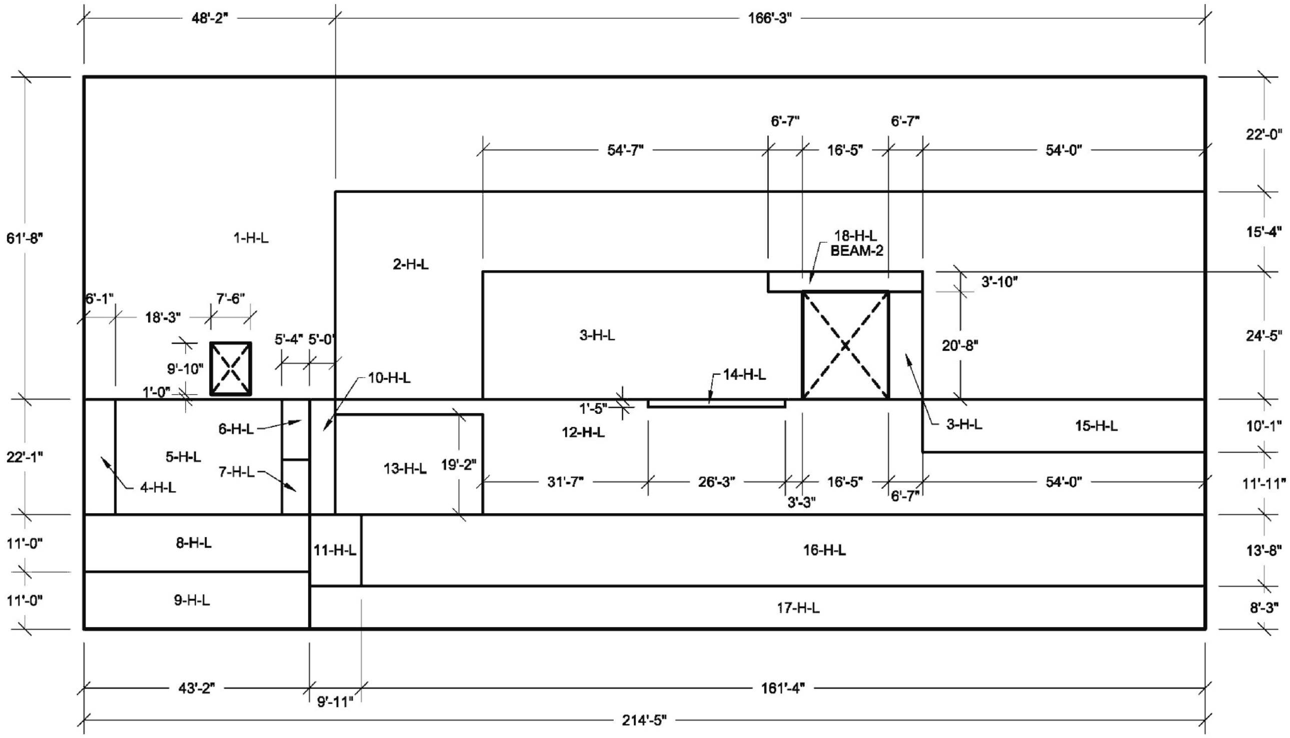


Figure 3H.3-8 North Wall Looking South Horizontal Reinforcement Zones Near Side Face

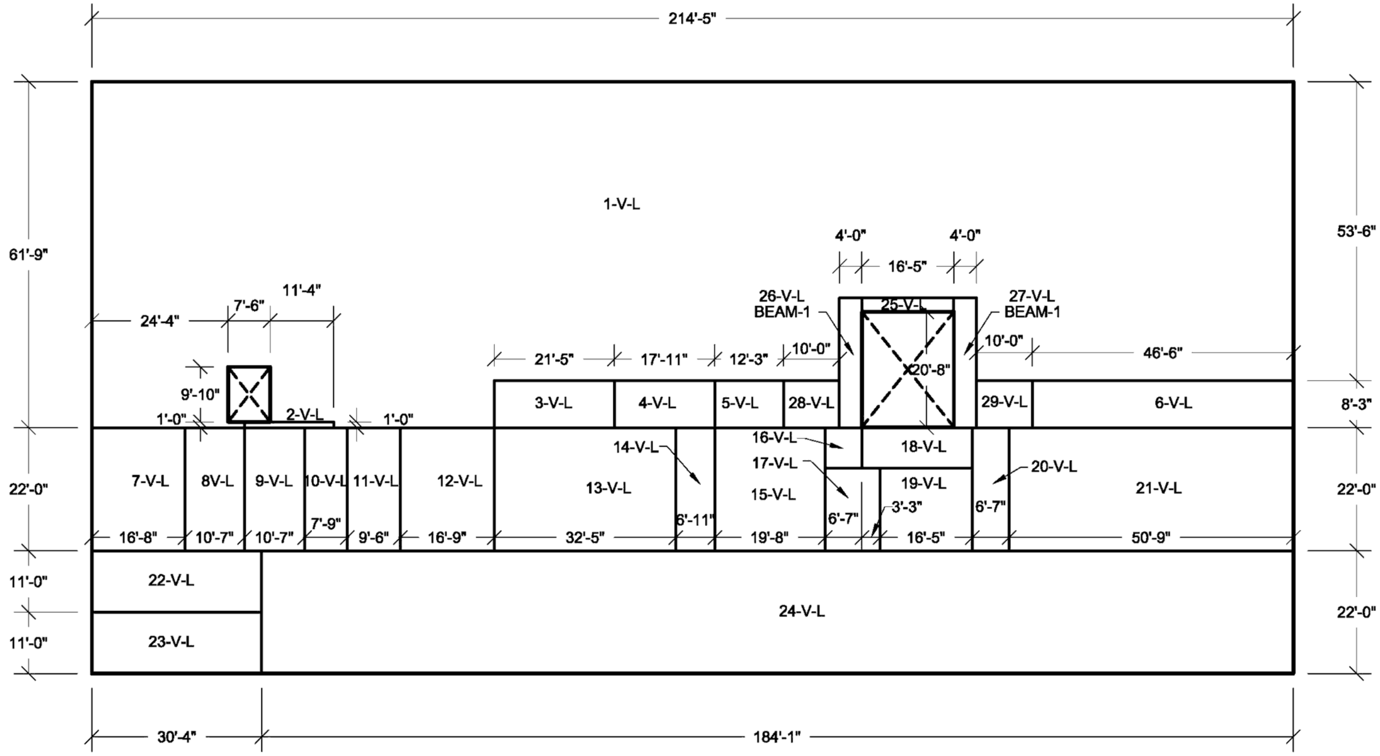


**Figure 3H.3-9 North Wall Looking South
Vertical Reinforcement Zones
Near Side Face**

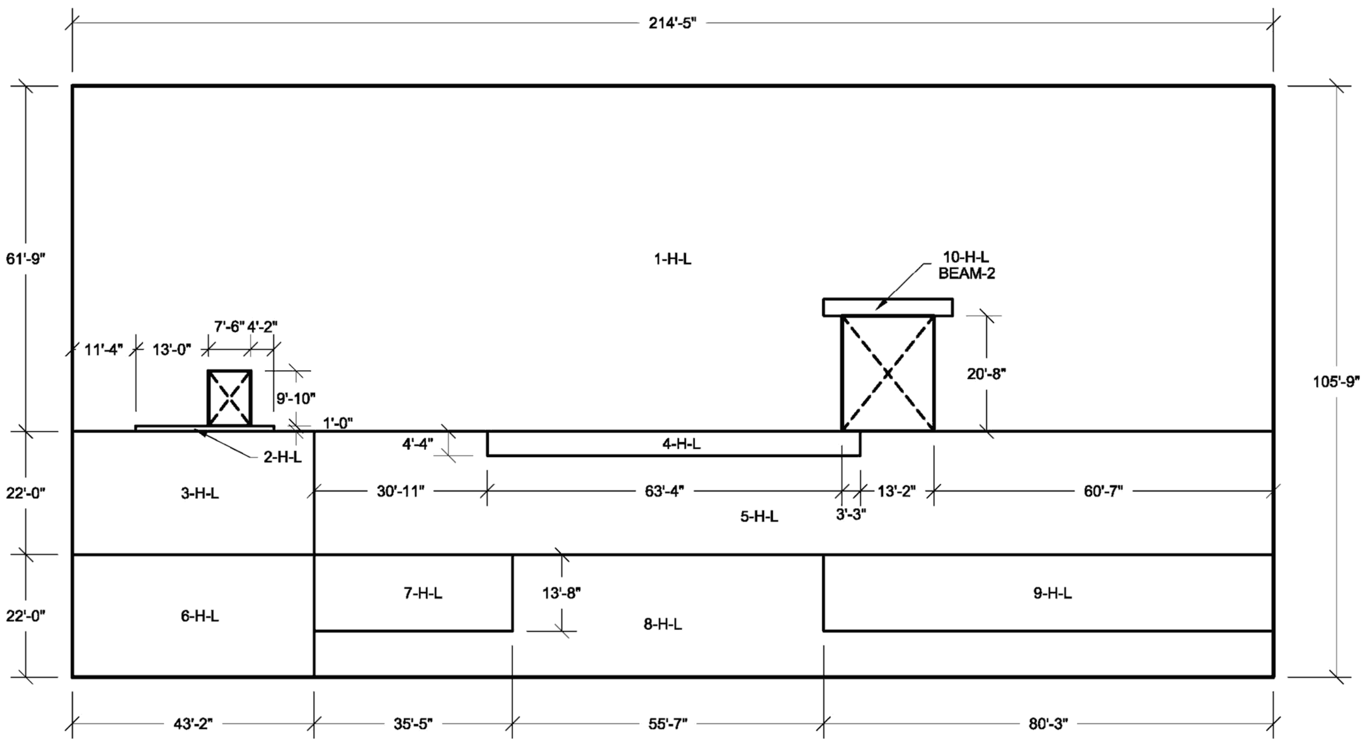


Figure 3H.3-10 North Wall Looking South
Horizontal Reinforcement Zones
Far Side Face

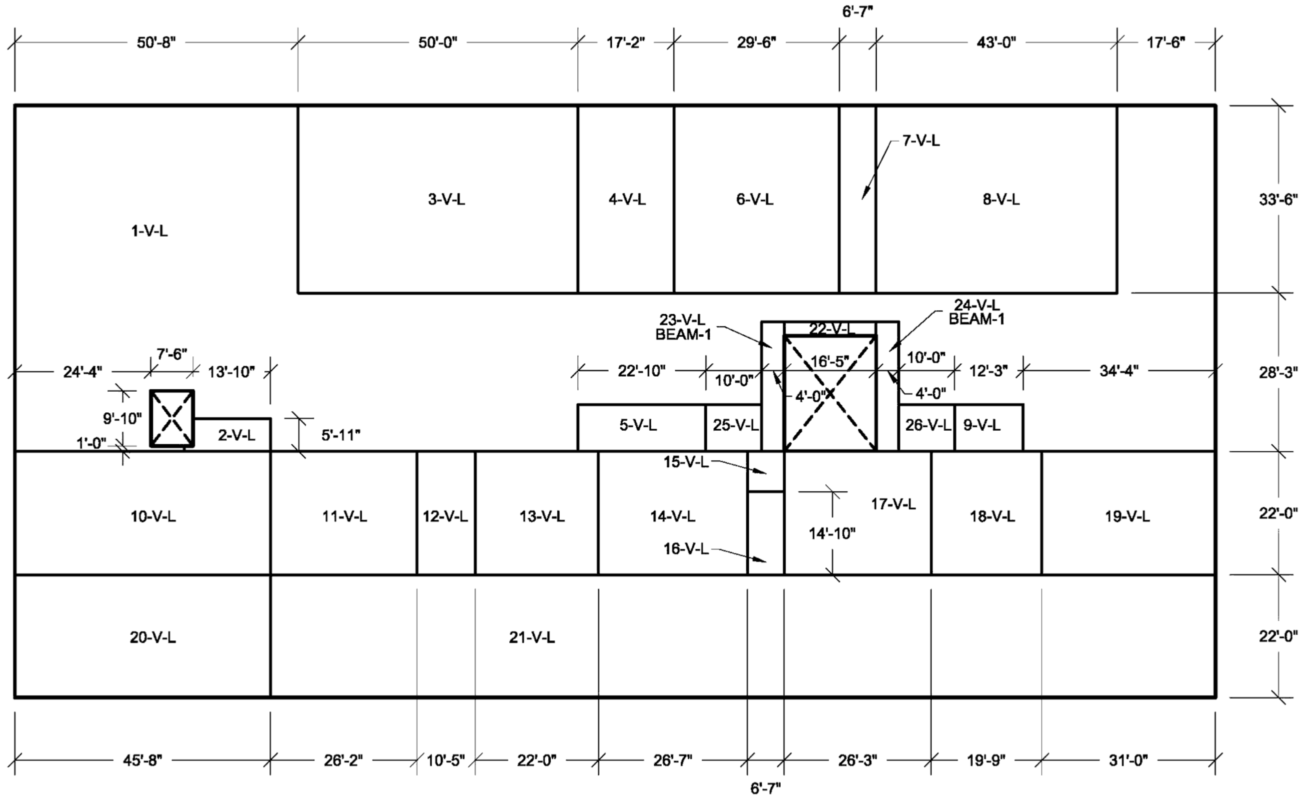


Figure 3H.3-11 North Wall Looking South
Vertical Reinforcement Zones
Far Side Face

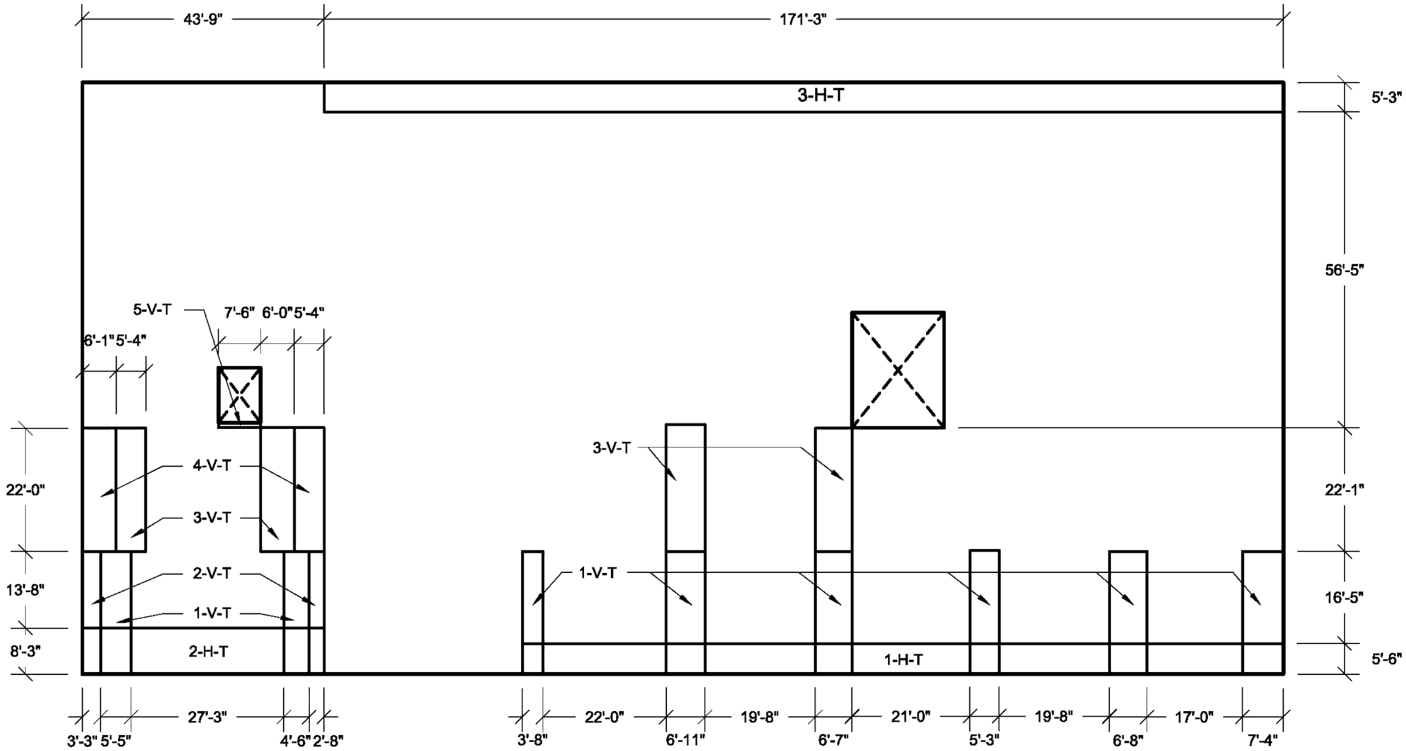


Figure 3H.3-12 North Wall Looking South Transverse Reinforcement Zones

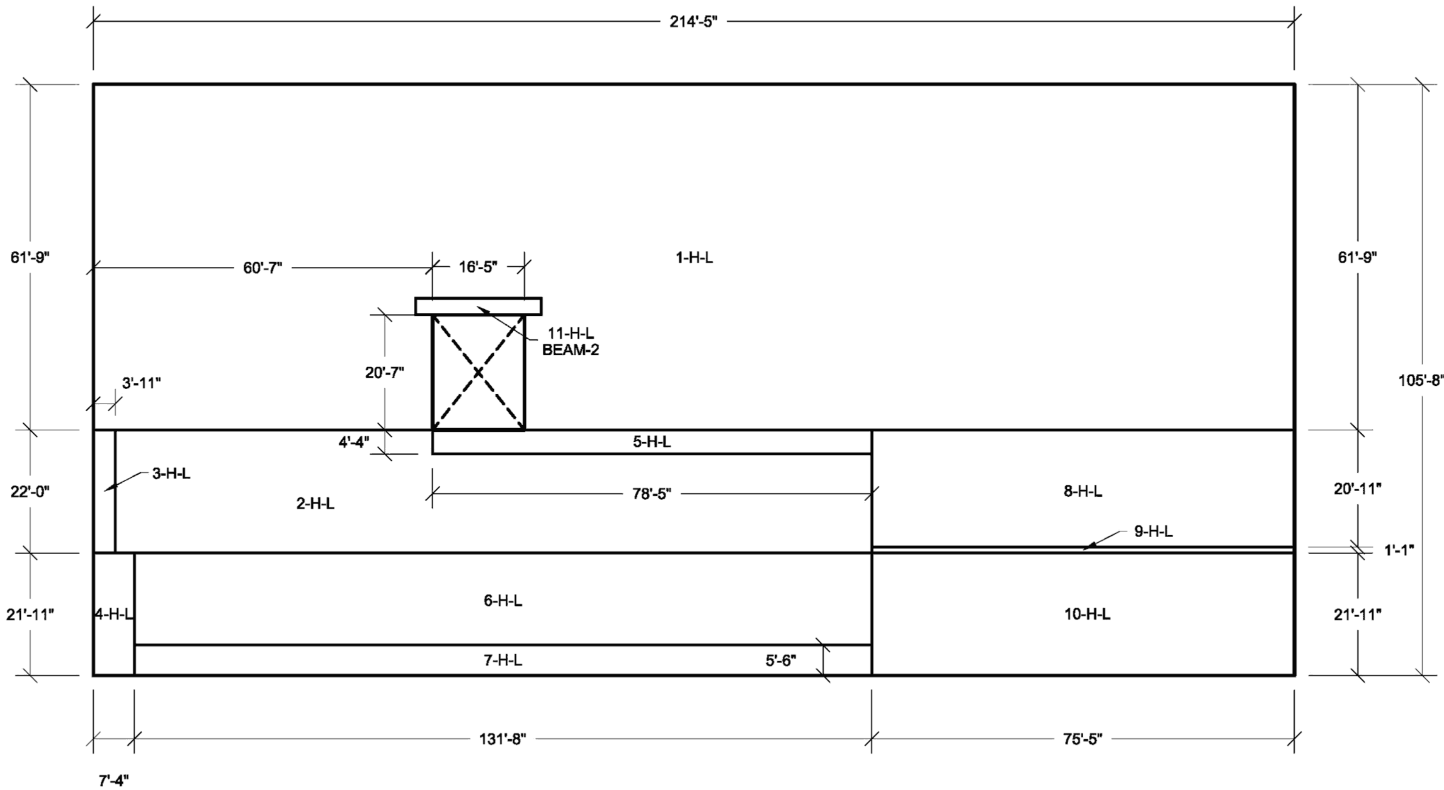


**Figure 3H.3-13 South Wall Looking North
Horizontal Reinforcement Zones
Near Side Face**

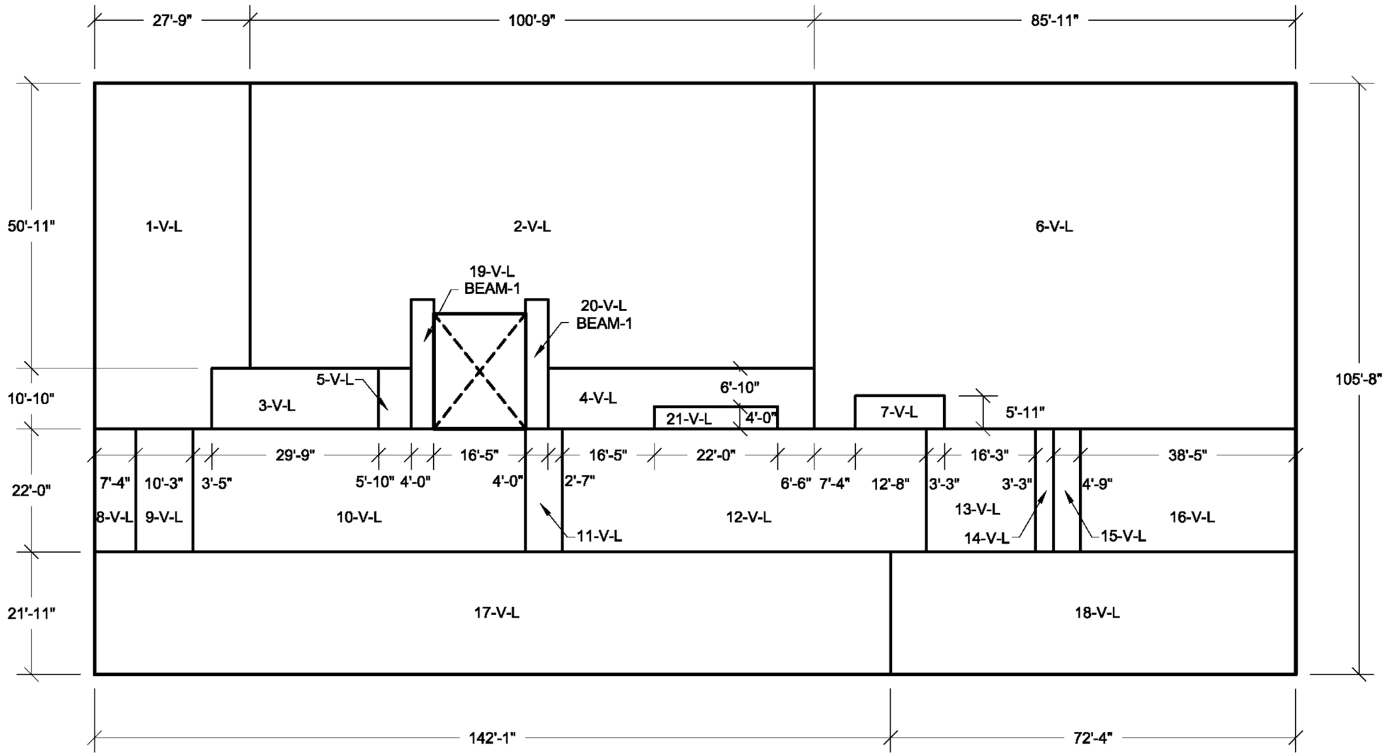


Figure 3H.3-14 South Wall Looking North
Vertical Reinforcement Zones
Near Side Face

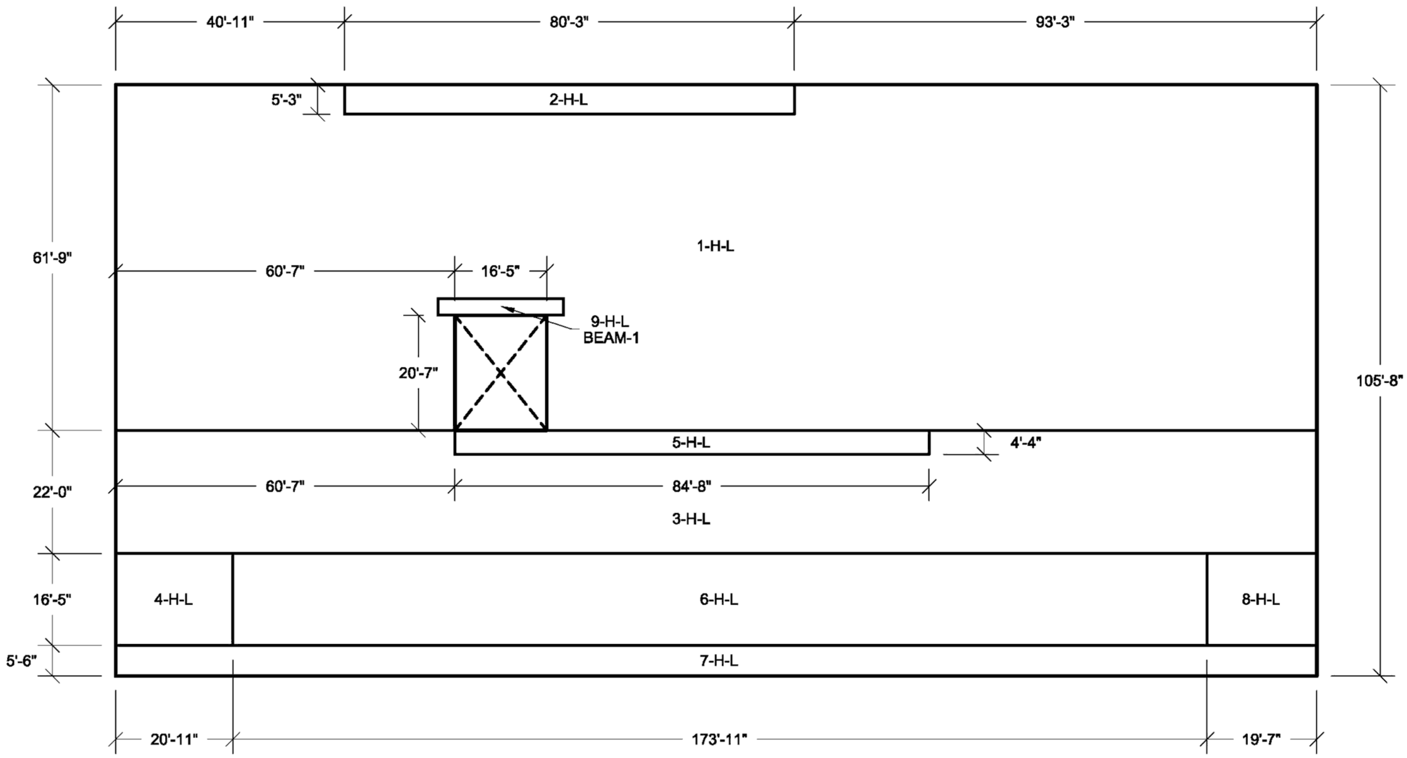


Figure 3H.3-15 South Wall Looking North
Horizontal Reinforcement Zones
Far Side Face

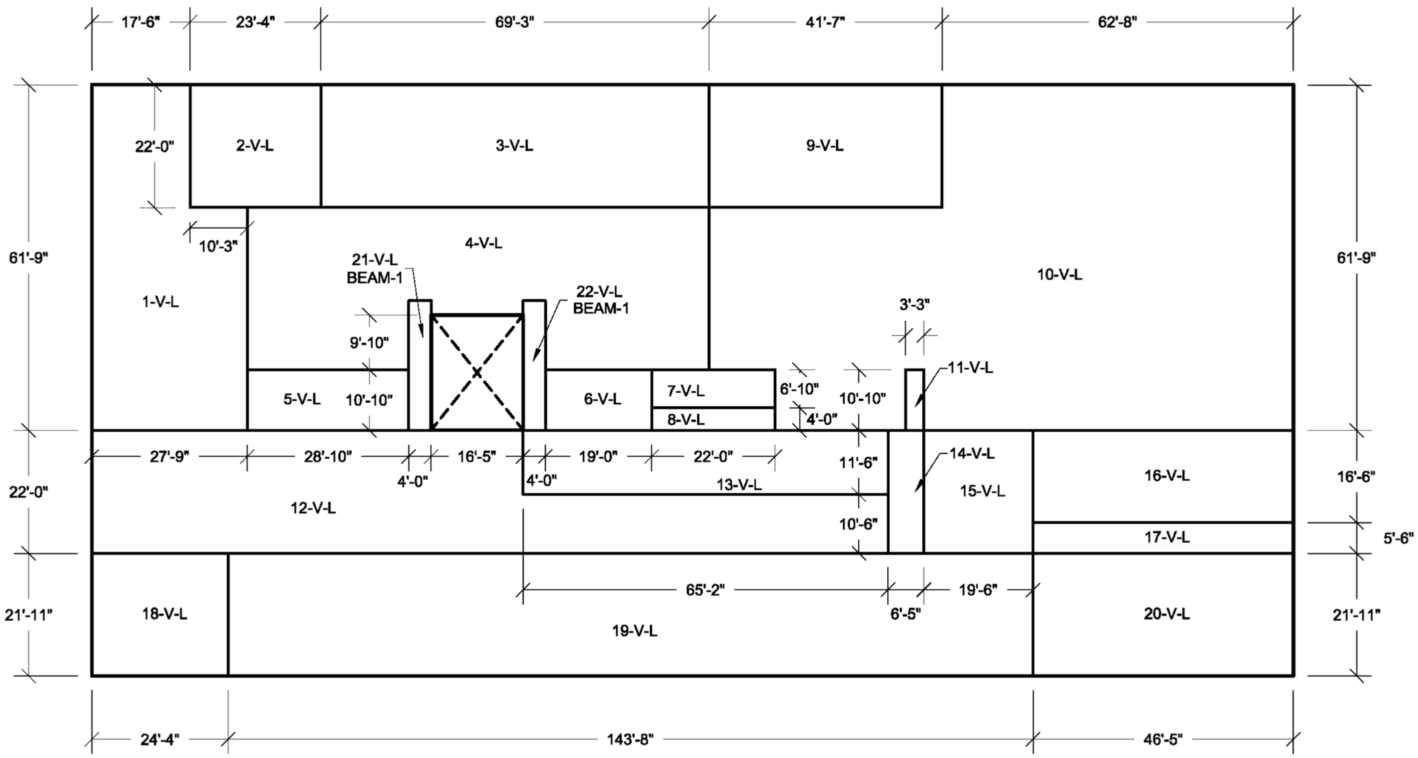


Figure 3H.3-16 South Wall Looking North
Vertical Reinforcement Zones
Far Side Face

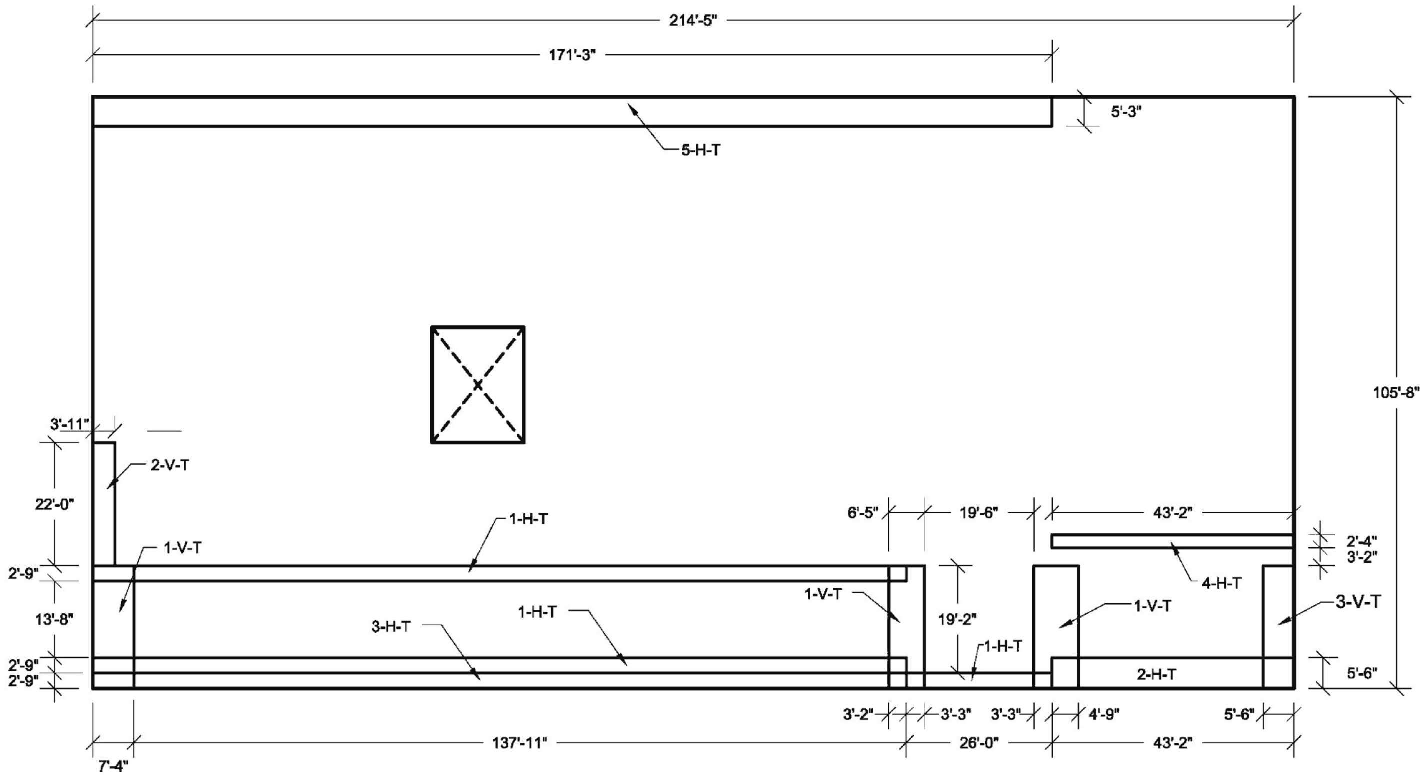


Figure 3H.3-17 South Wall Looking North Transverse Reinforcement Zones

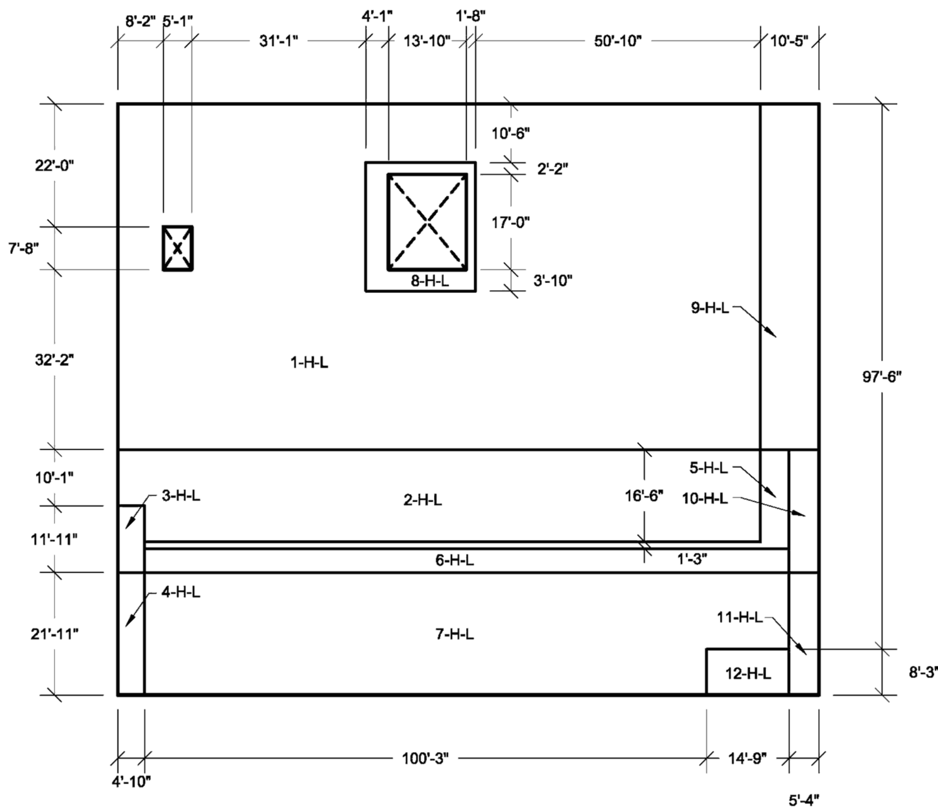


Figure 3H.3-18 East Wall Looking West Horizontal Reinforcement Zones Near Side Face

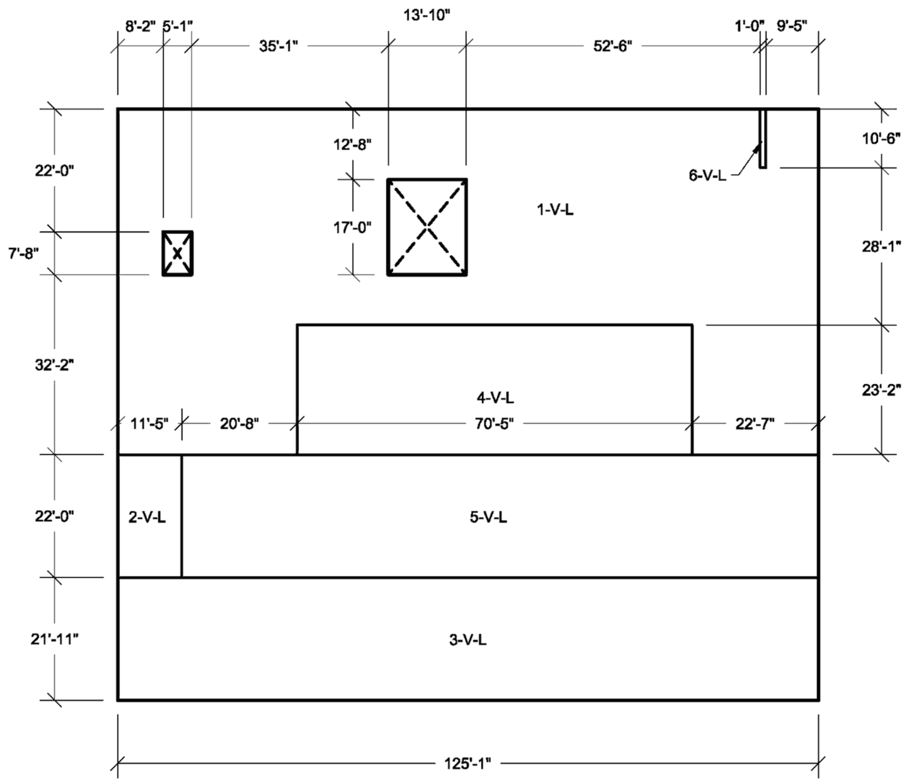


Figure 3H.3-19 East Wall Looking West
Vertical Reinforcement Zones
Near Side Face

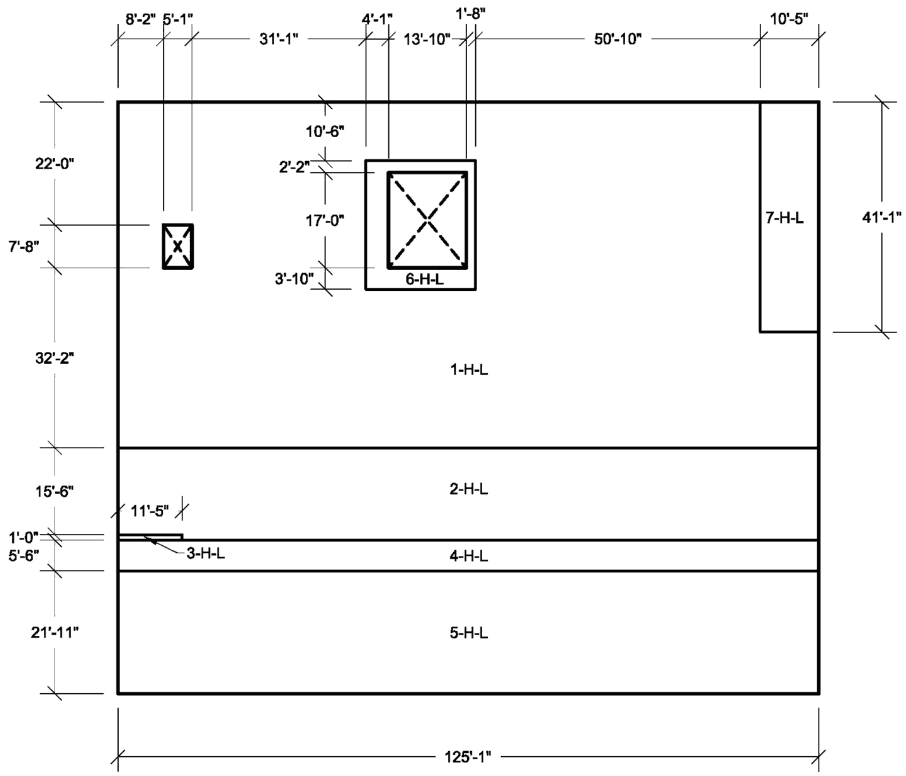


Figure 3H.3-20 East Wall Looking West
Horizontal Reinforcement Zones
Far Side Face

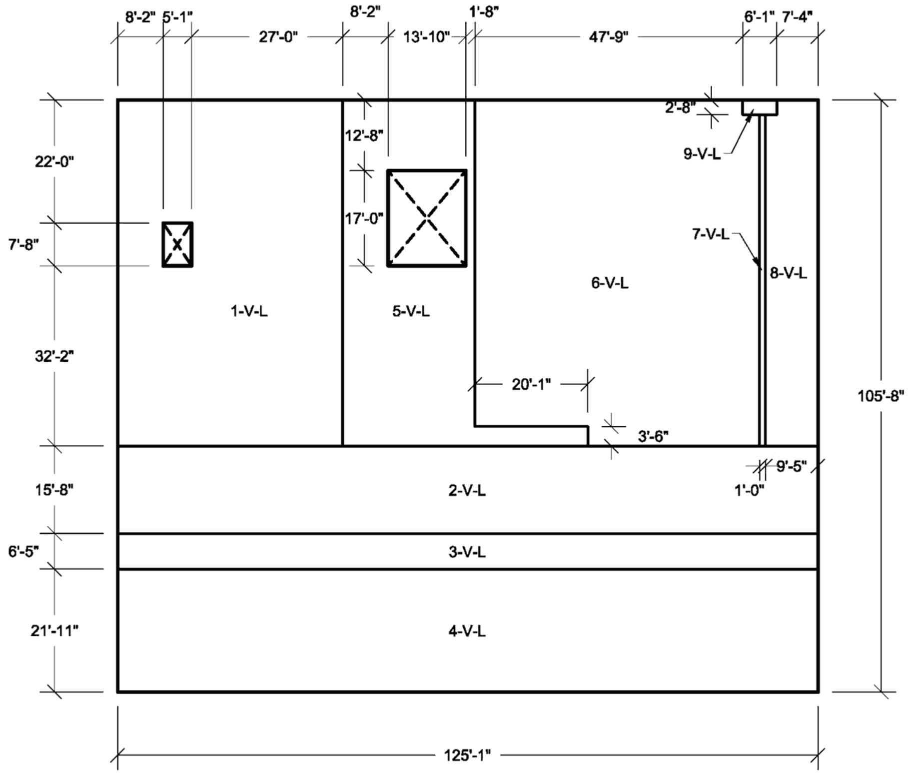


Figure 3H.3-21 East Wall Looking West Vertical Reinforcement Zones Far Side Face

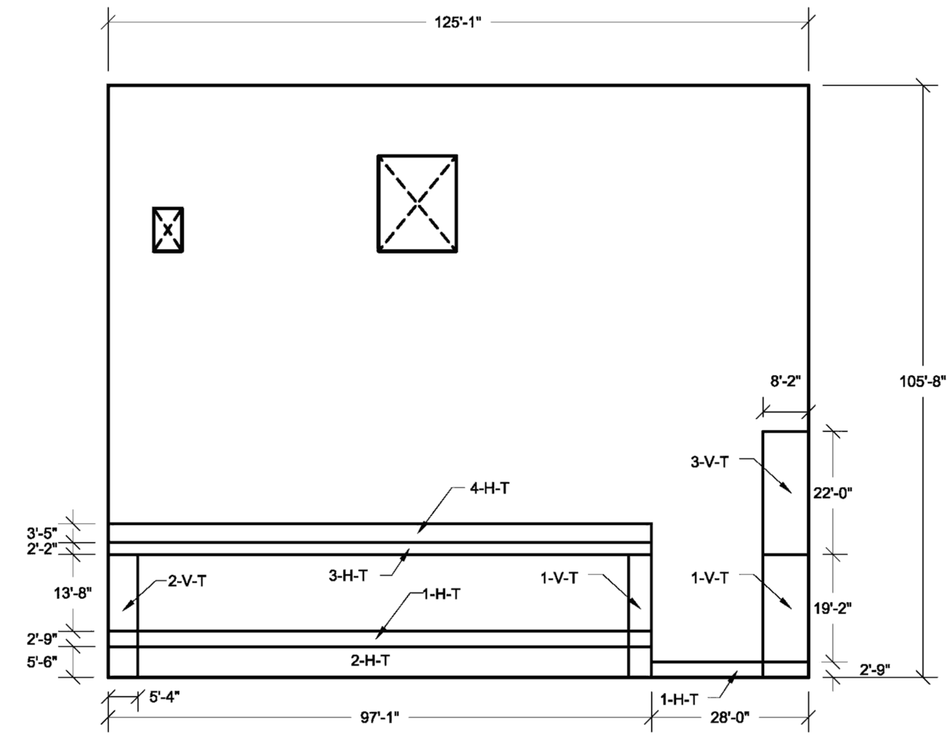


Figure 3H.3-22 East Wall Looking West Transverse Reinforcement Zones

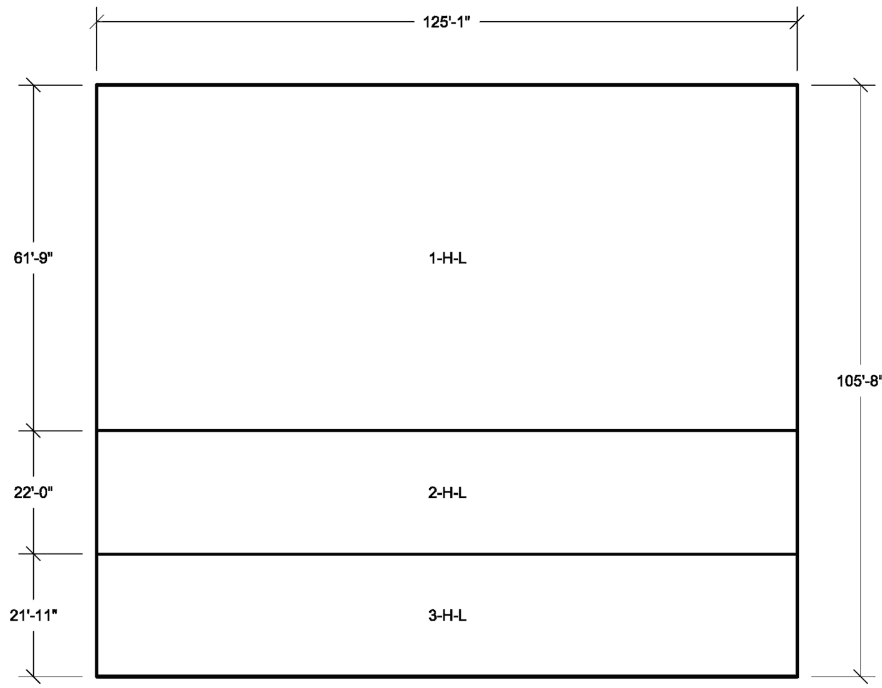


**Figure 3H.3-23 West Wall Looking East
Horizontal Reinforcement Zones
Near Side Face**

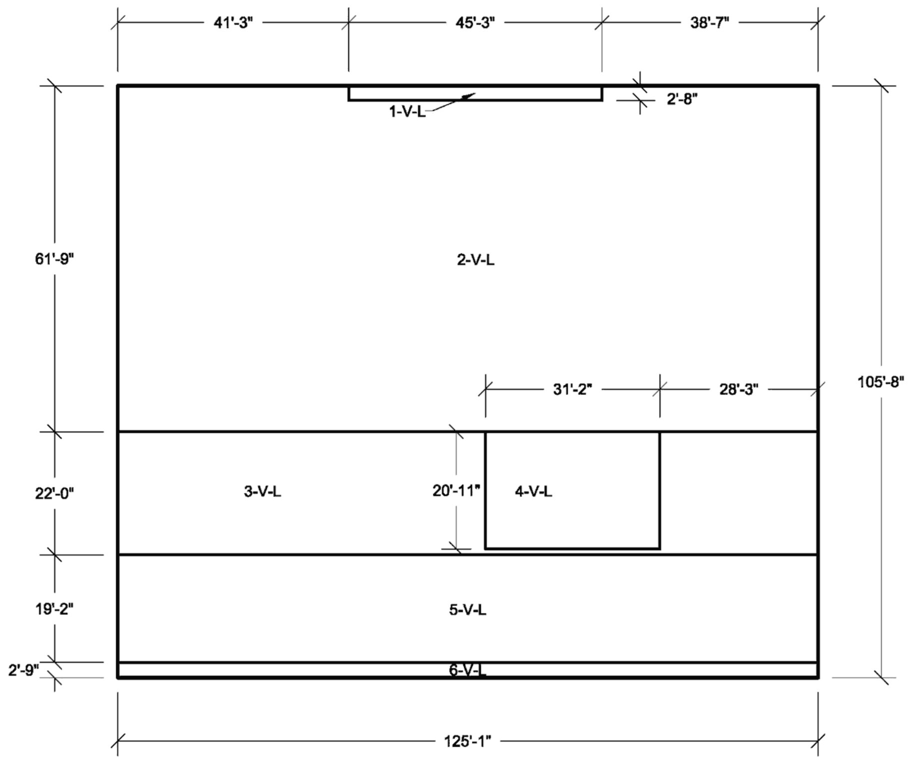


Figure 3H.3-24 West Wall Looking East
Vertical Reinforcement Zones
Near Side Face

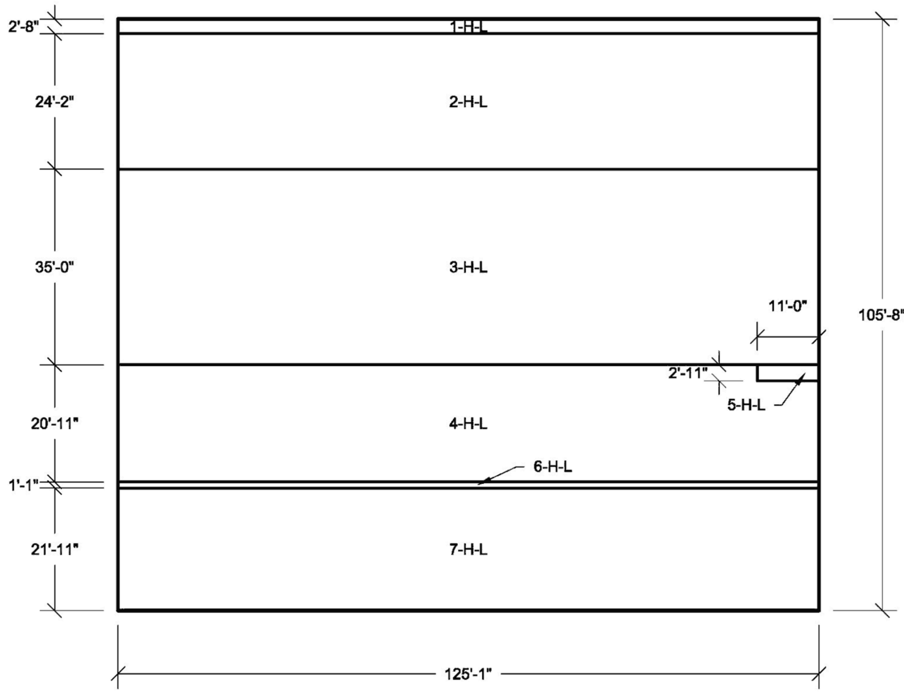


**Figure 3H.3-25 West Wall Looking East
Horizontal Reinforcement Zones
Far Side Face**

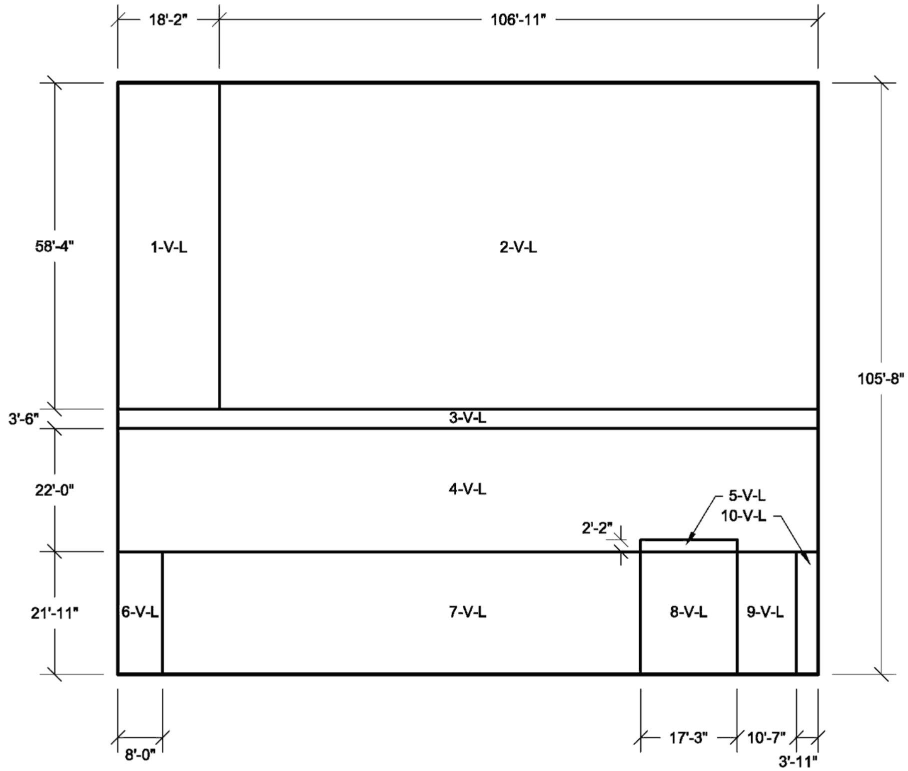


Figure 3H.3-26 West Wall Looking East
Vertical Reinforcement Zones
Far Side Face

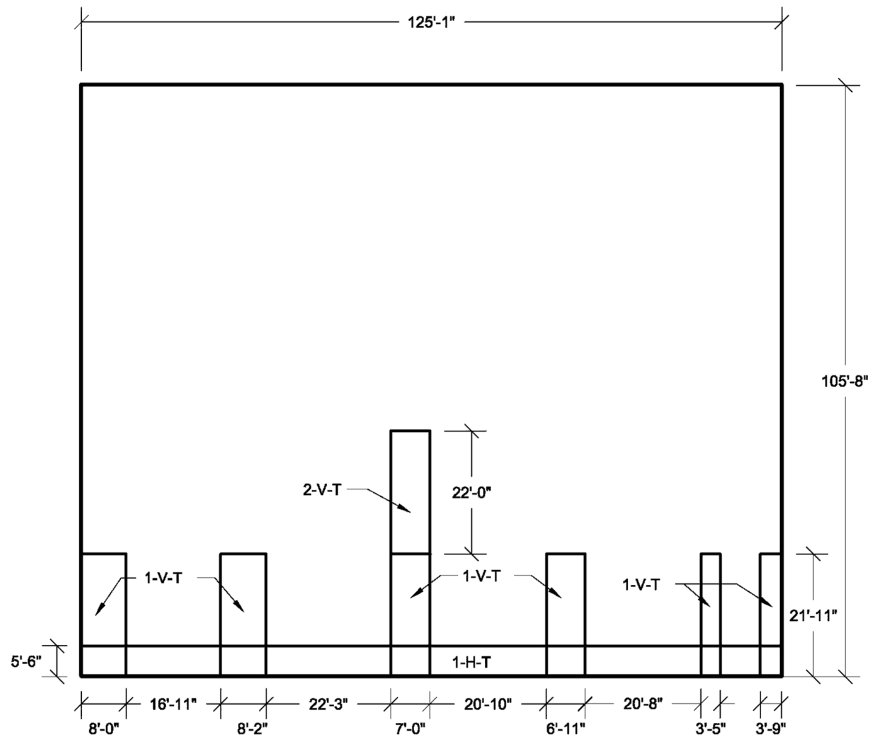


Figure 3H.3-27 West Wall Looking East Transverse Reinforcement Zones

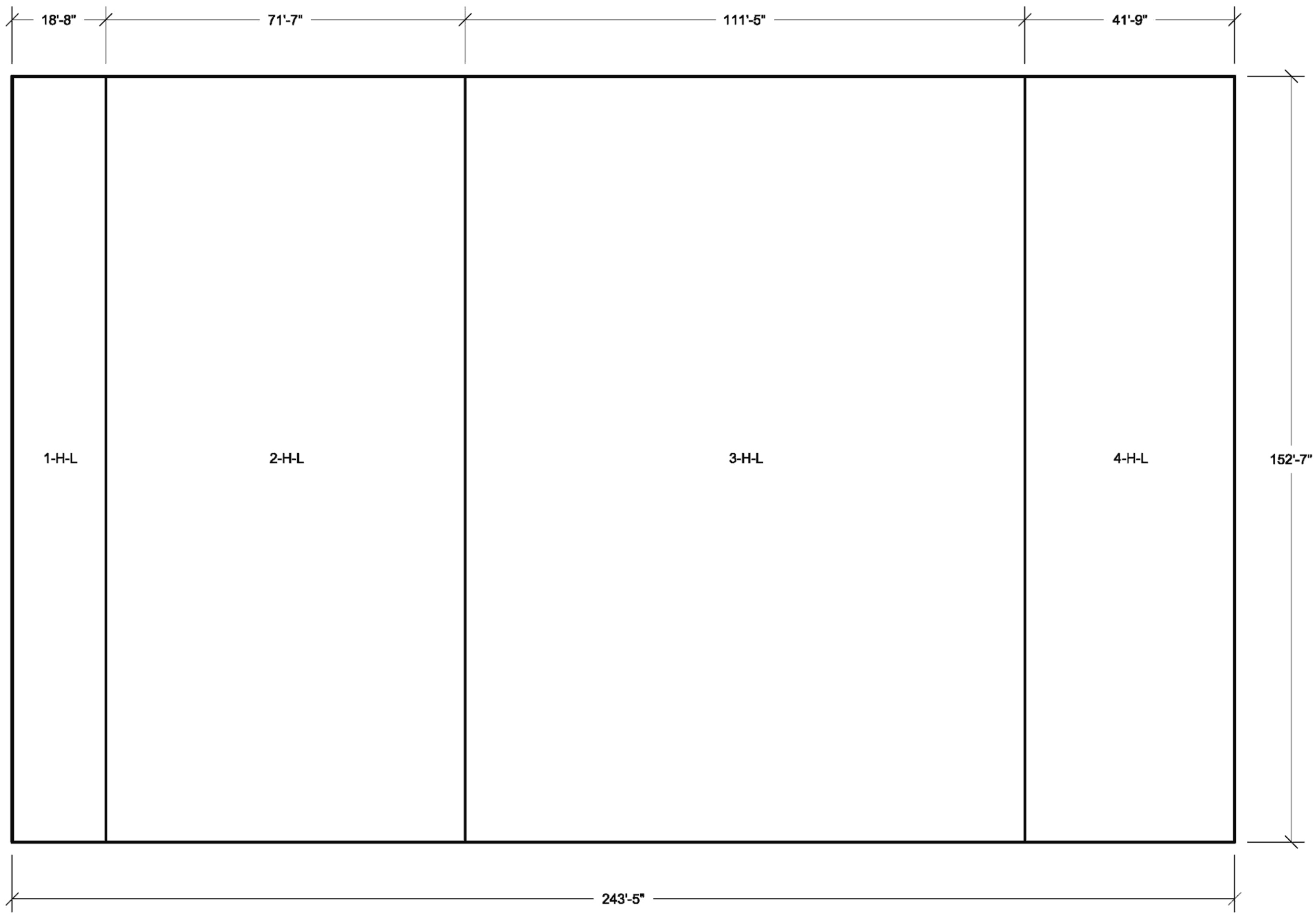


Figure 3H.3-28 Basemat Looking Down East-West Reinforcement Zones Near Side Face

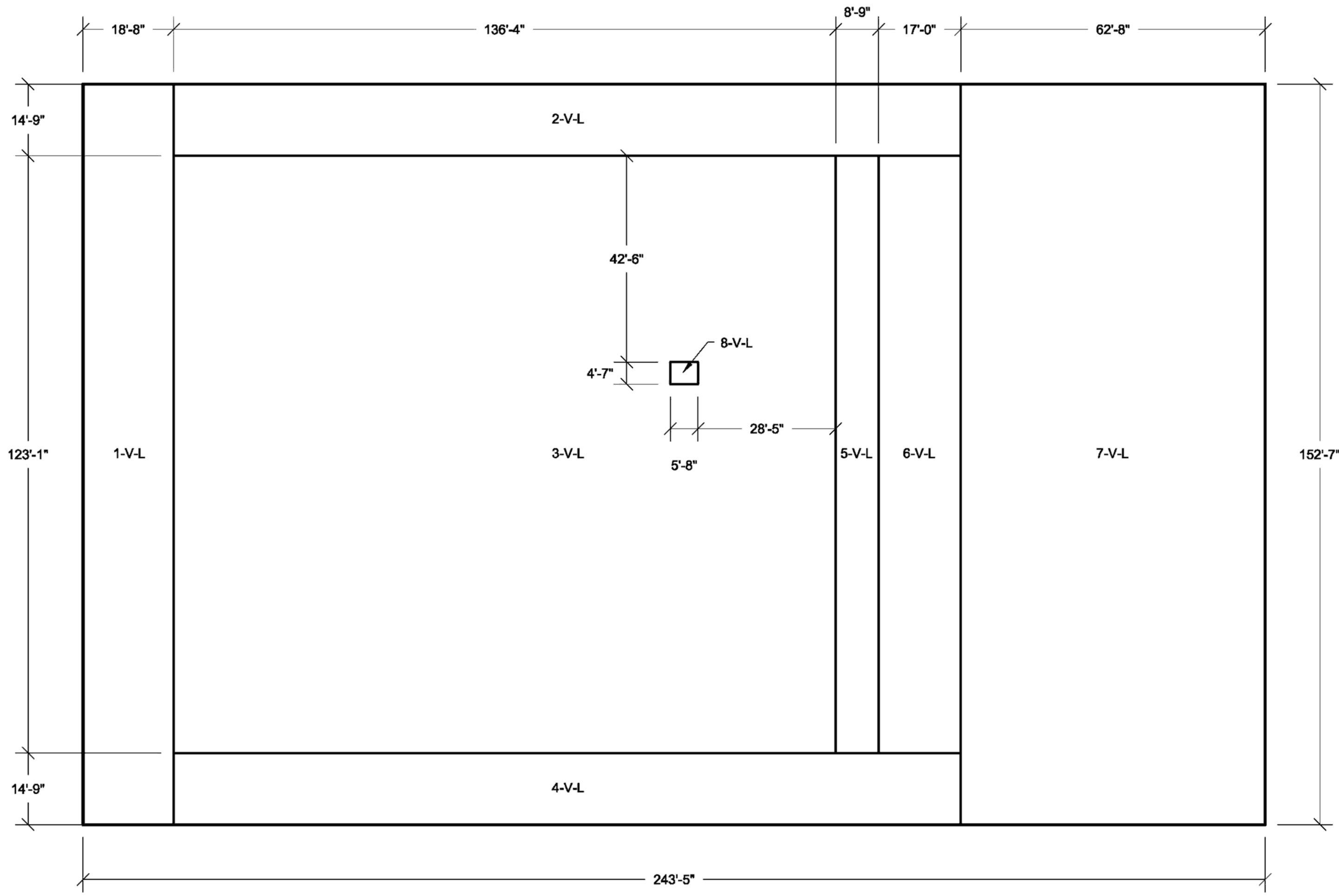


Figure 3H.3-29 Basemat Looking Down North-South Reinforcement Zones Near Side Face

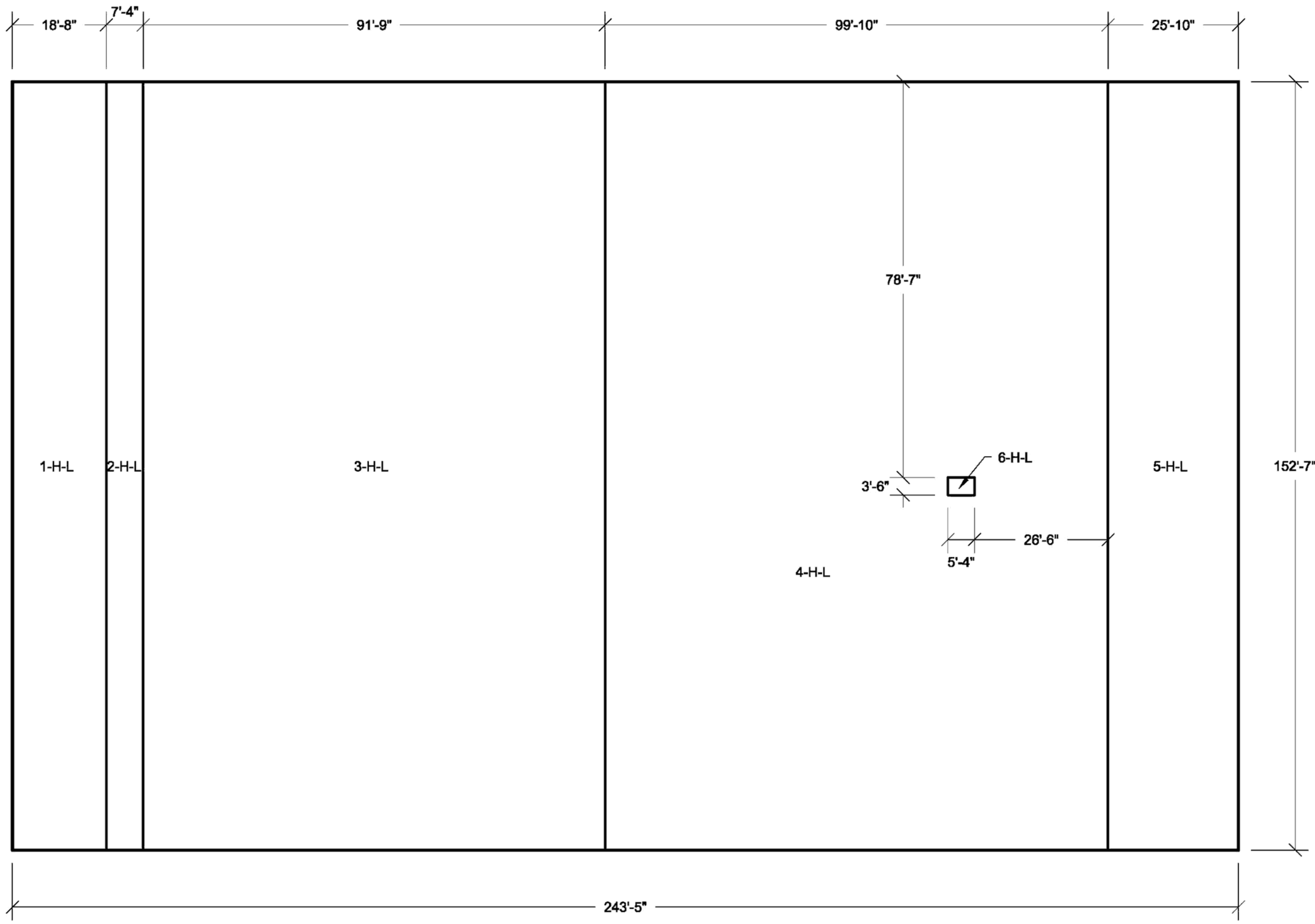


Figure 3H.3-30 Basemat Looking Down East-West Reinforcement Zones Far Side Face

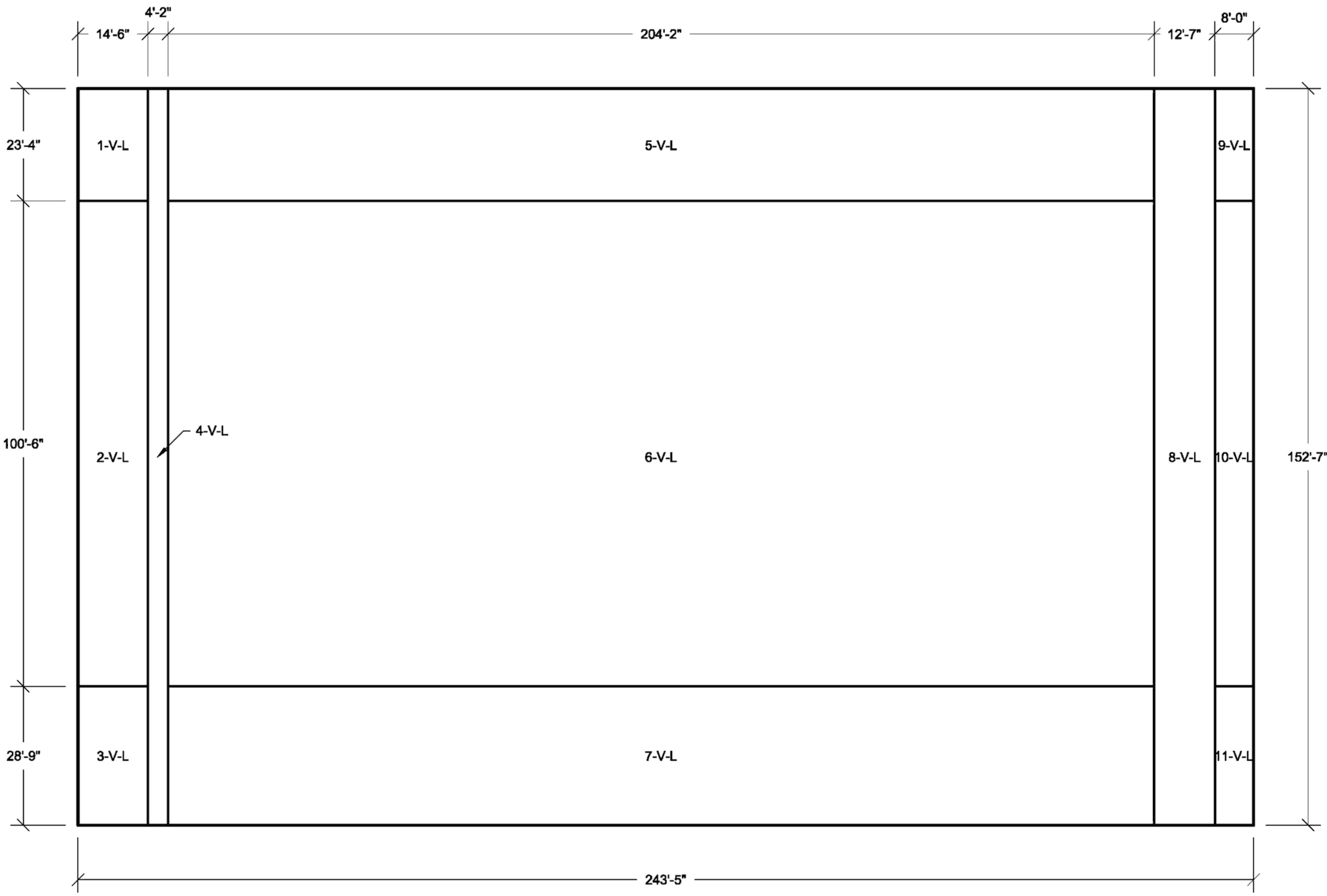


Figure 3H.3-31 Basemat Looking Down North-South Reinforcement Zones Far Side Face

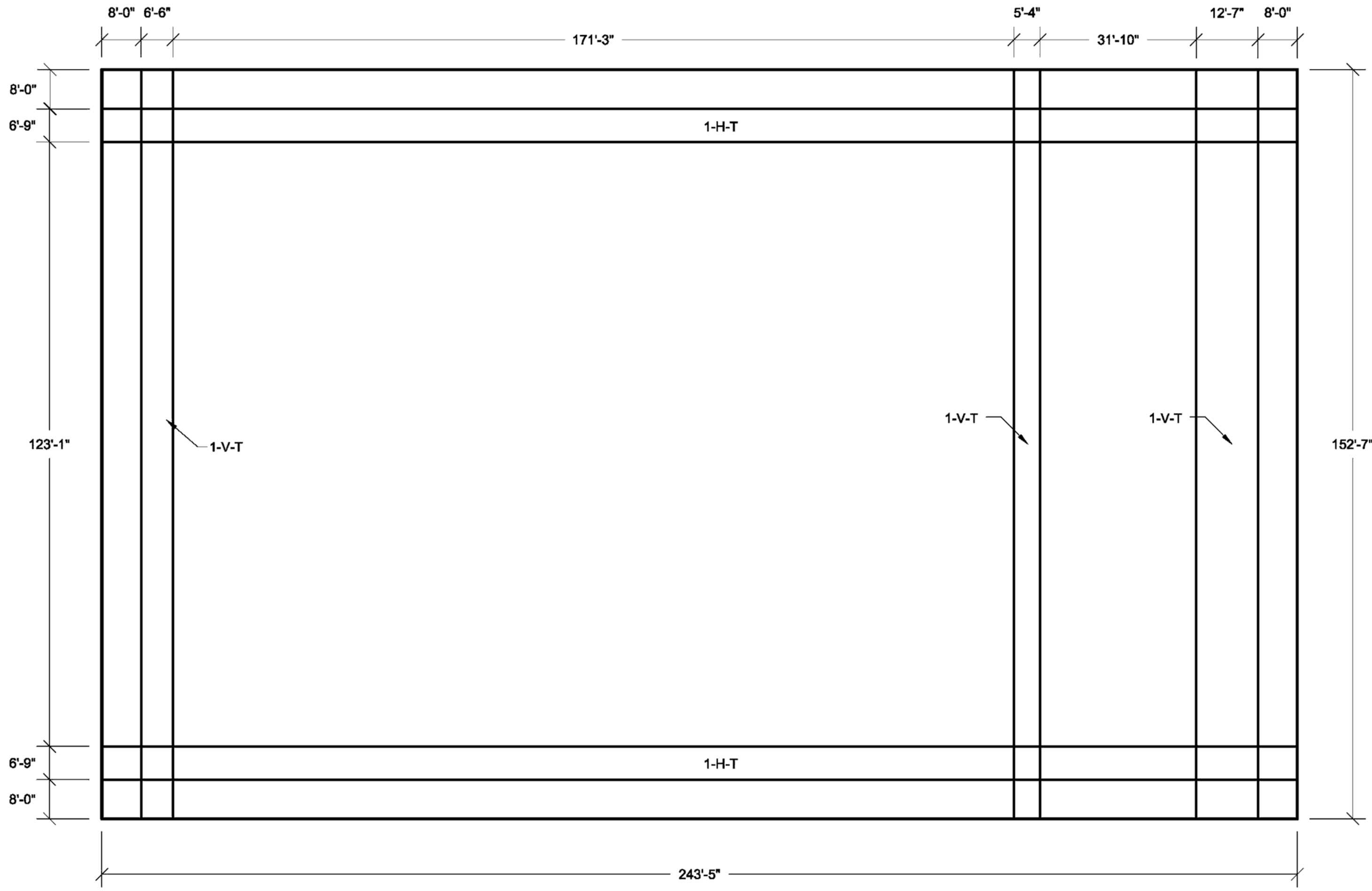


Figure 3H.3-32 Basemat Looking Down Transverse Reinforcement Zones

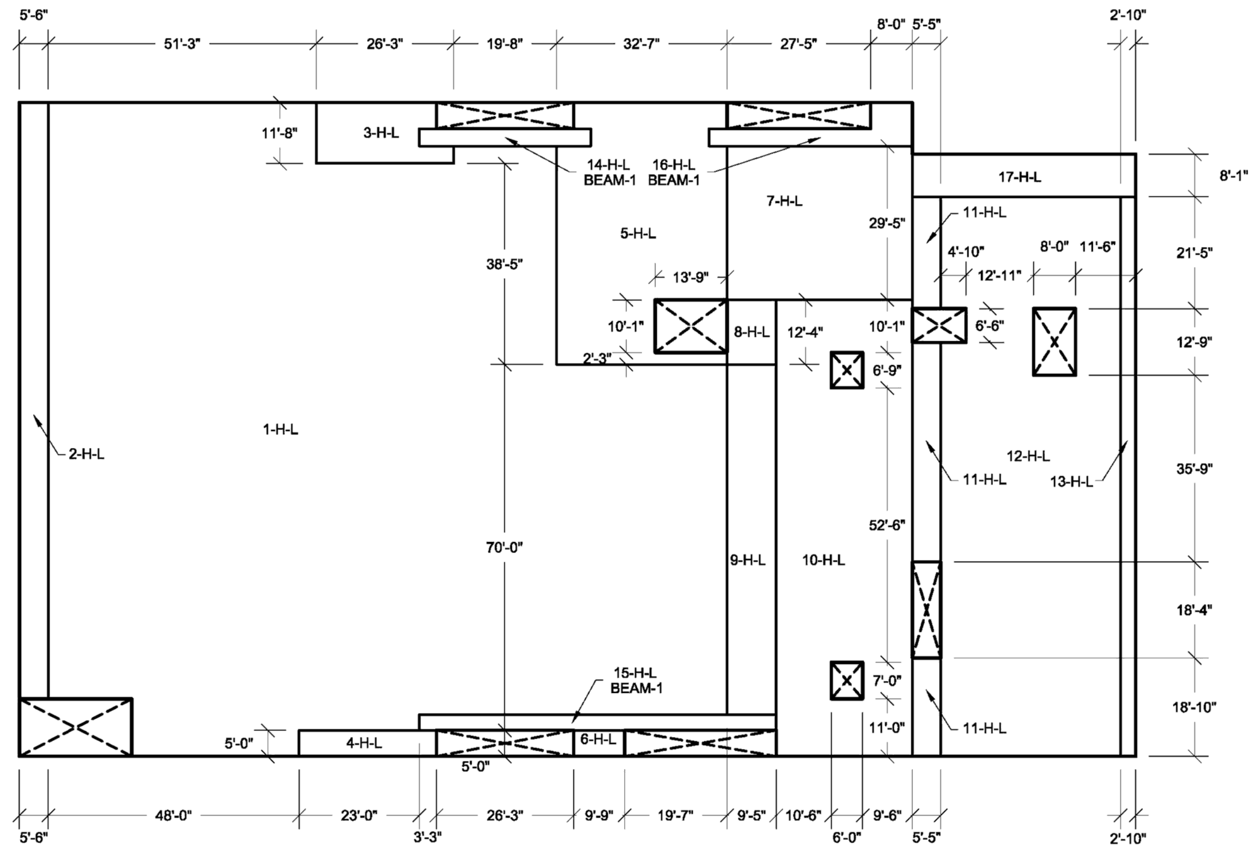


Figure 3H.3-33 Elevation 35 Looking Down East-West Reinforcement Zones Near Side Face

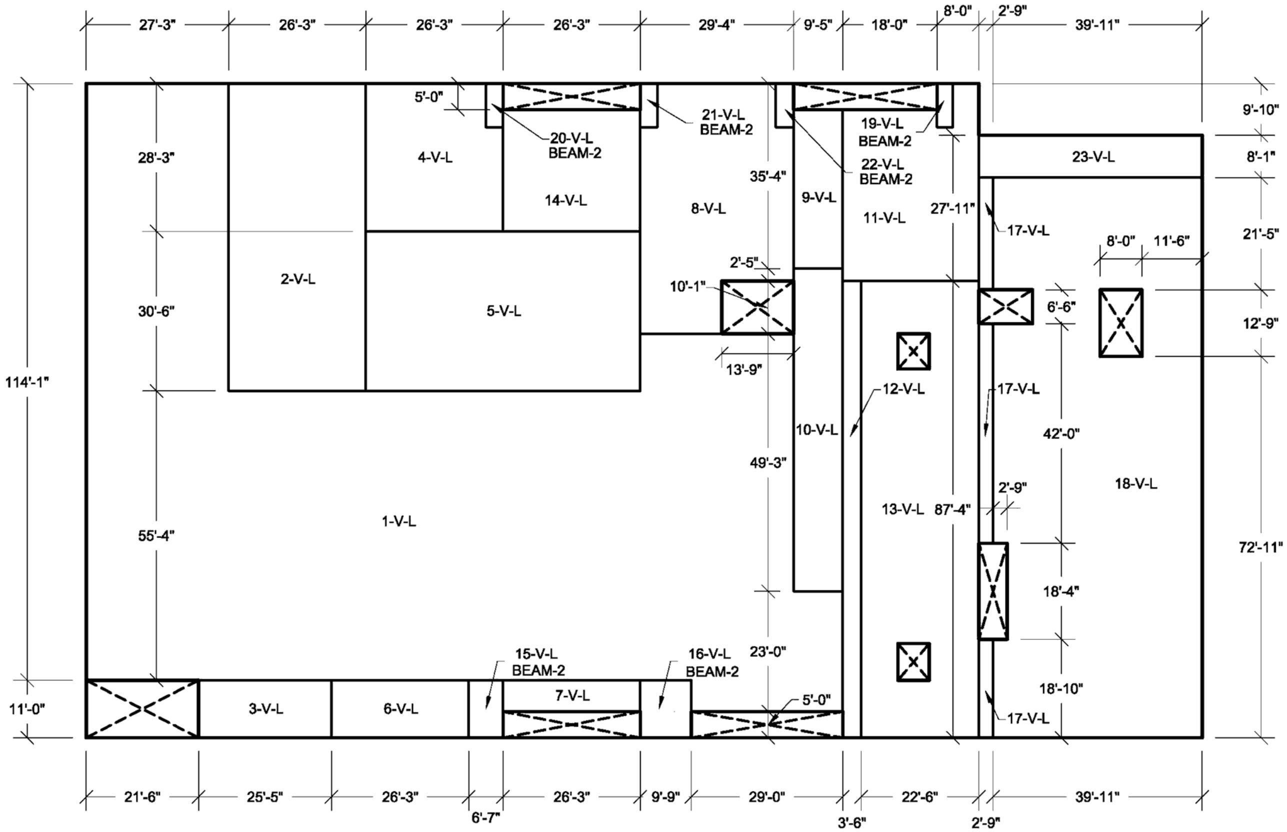


Figure 3H.3-34 Elevation 35 Looking Down North-South Reinforcement Zones Near Side Face

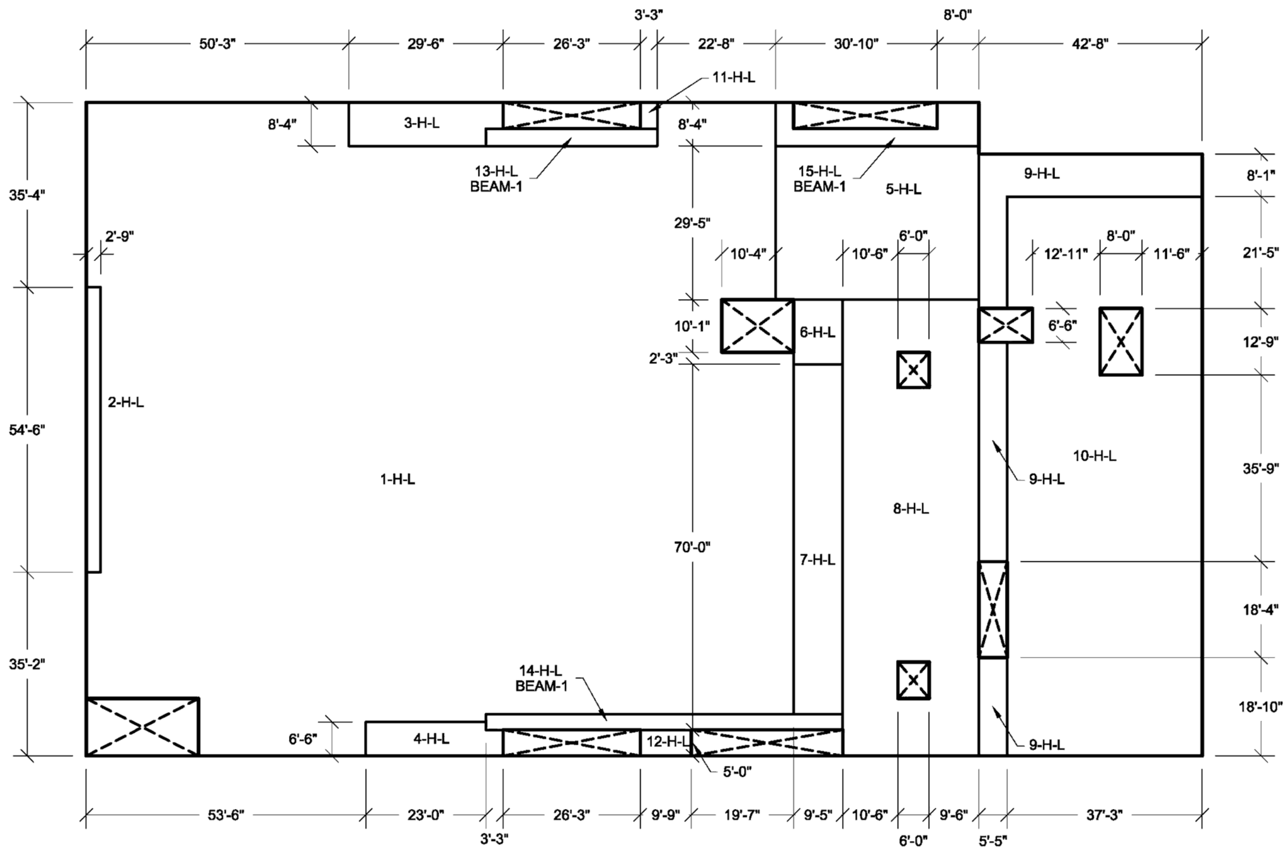


Figure 3H.3-35 Elevation 35 Looking Down East-West Reinforcement Zones Far Side Face

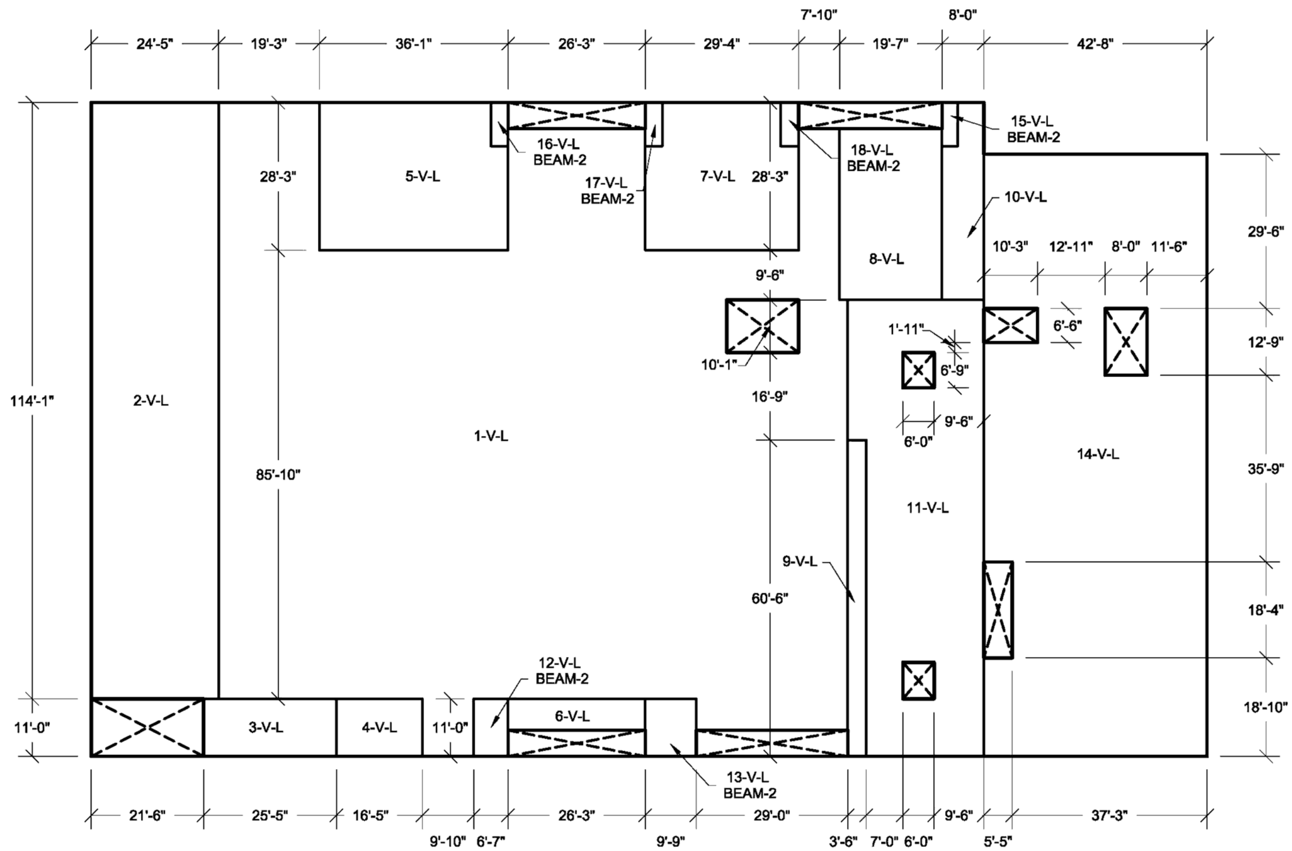


**Figure 3H.3-36 Elevation 35 Looking Down
North-South Reinforcement Zones
Far Side Face**

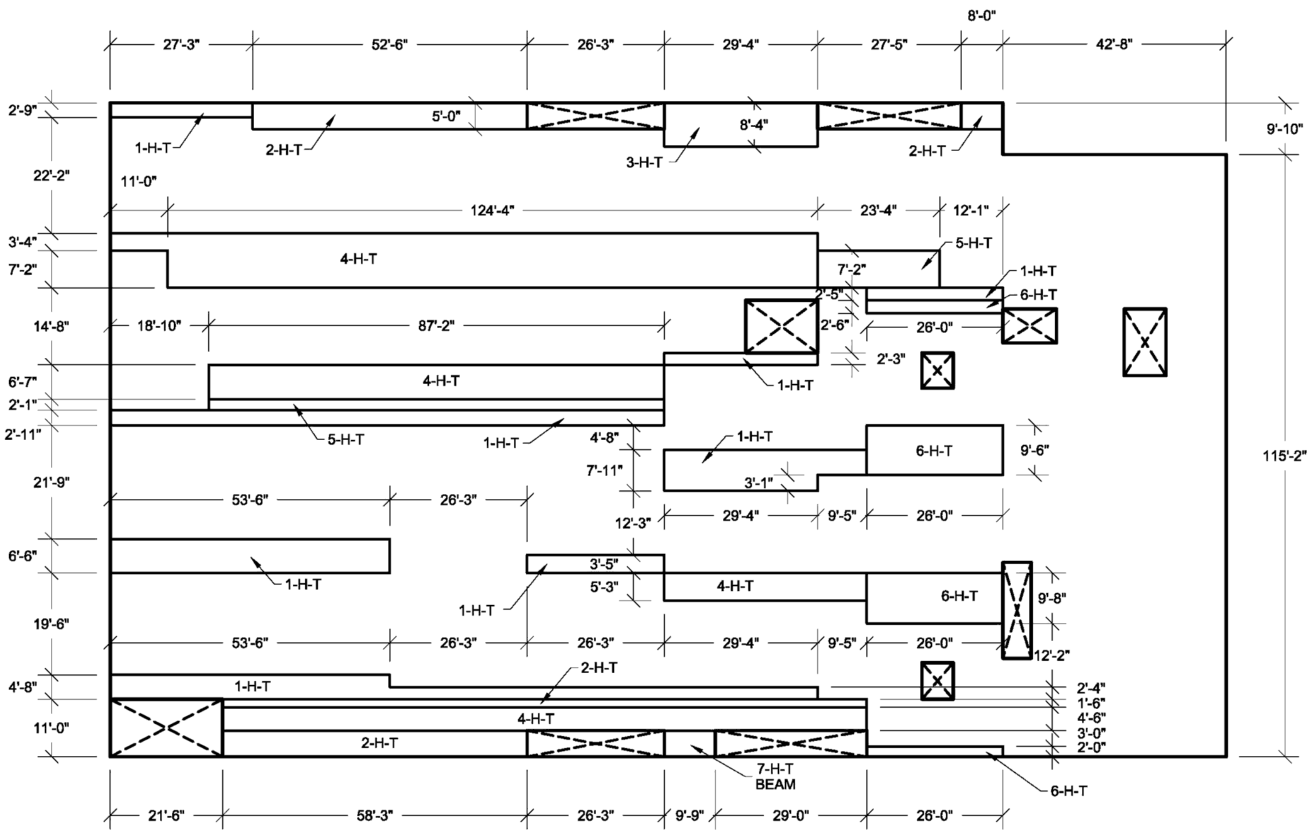


**Figure 3H.3-37a Elevation 35 Looking Down
Horizontal Transverse Reinforcement Zones**

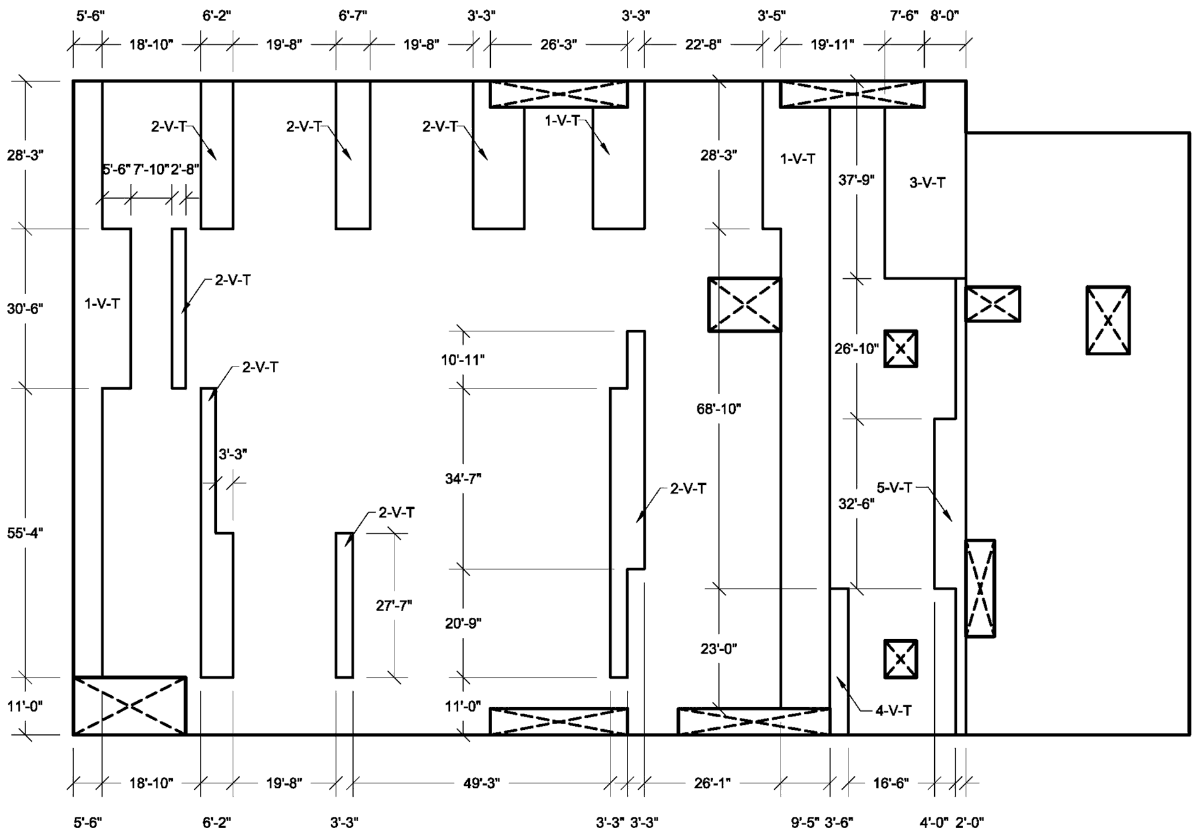


Figure 3H.3-37b Elevation 35 Looking Down
Vertical Transverse Reinforcement Zones

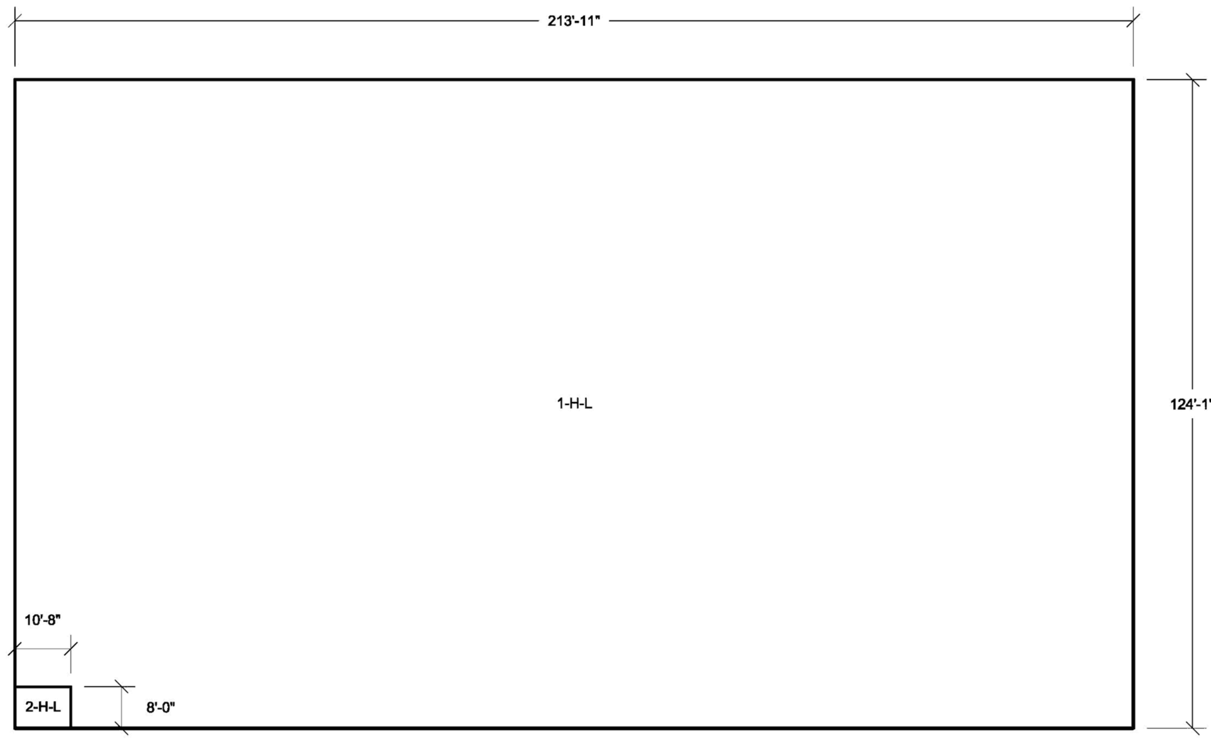


**Figure 3H.3-38 Elevation 95 Looking Down
East-West Reinforcement Zones
Near Side Face**

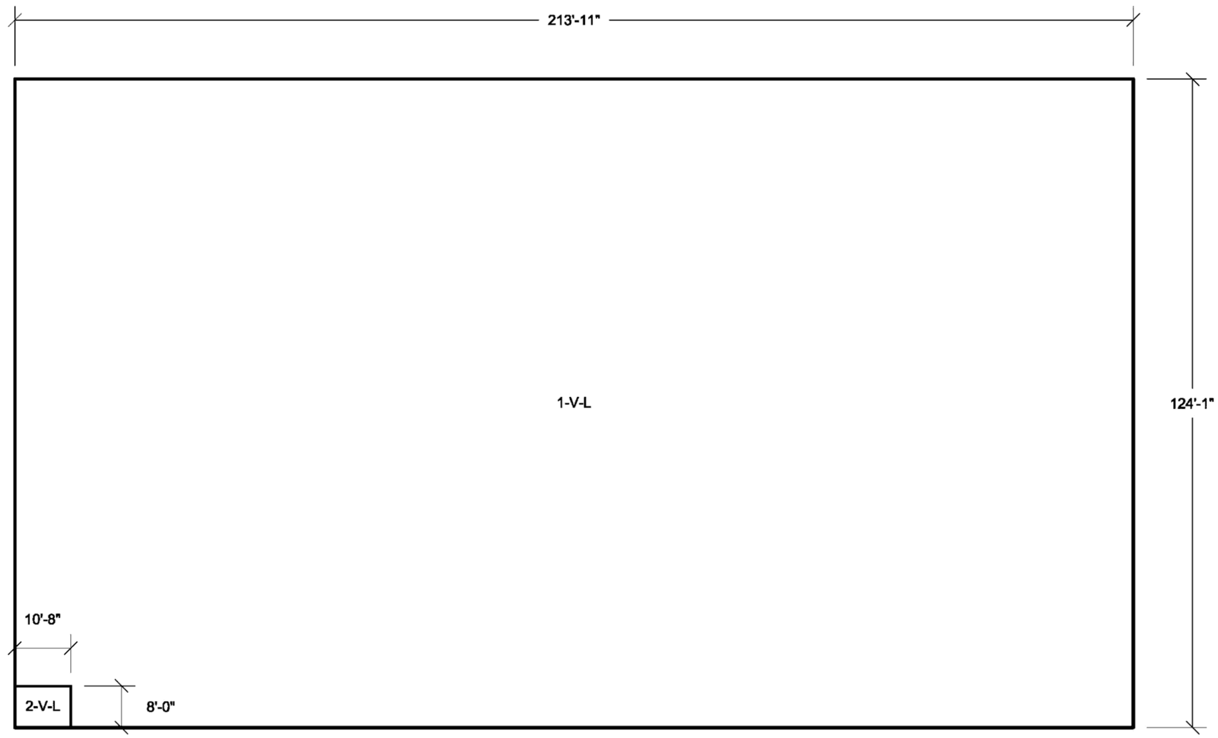


**Figure 3H.3-39 Elevation 95 Looking Down
North-South Reinforcement Zones
Near Side Face**

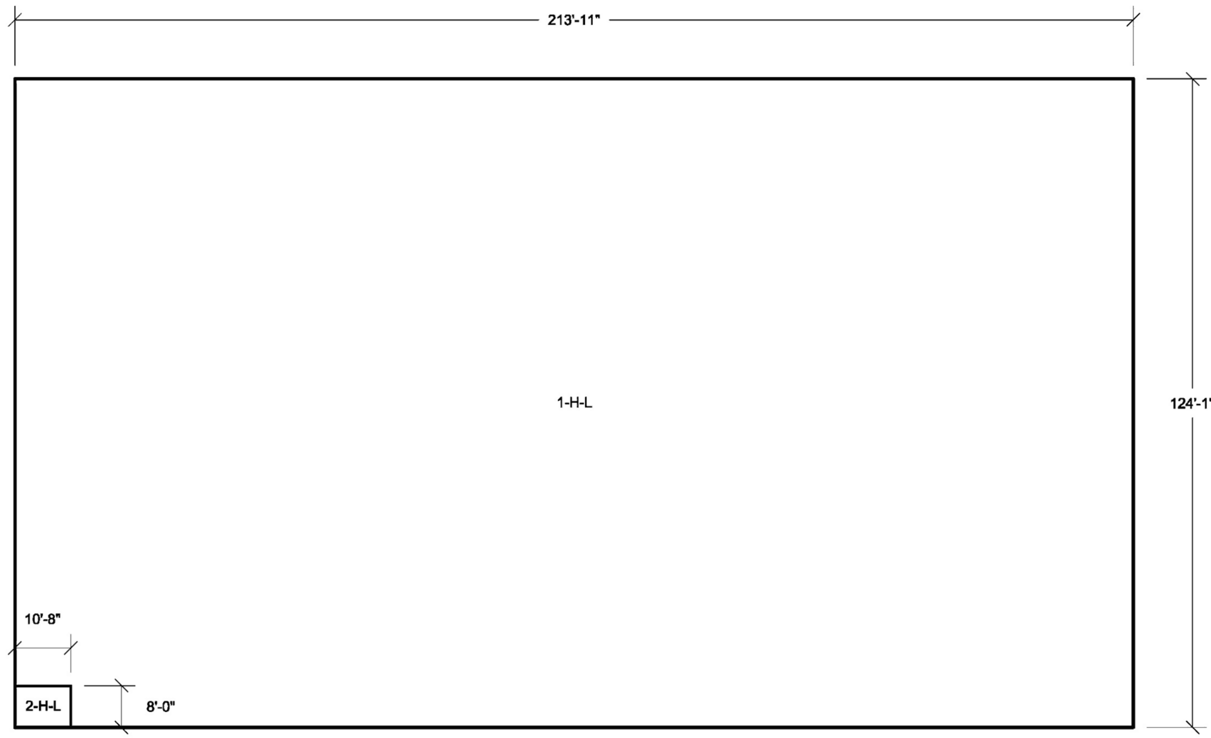


**Figure 3H.3-40 Elevation 95 Looking Down
East-West Reinforcement Zones
Far Side Face**

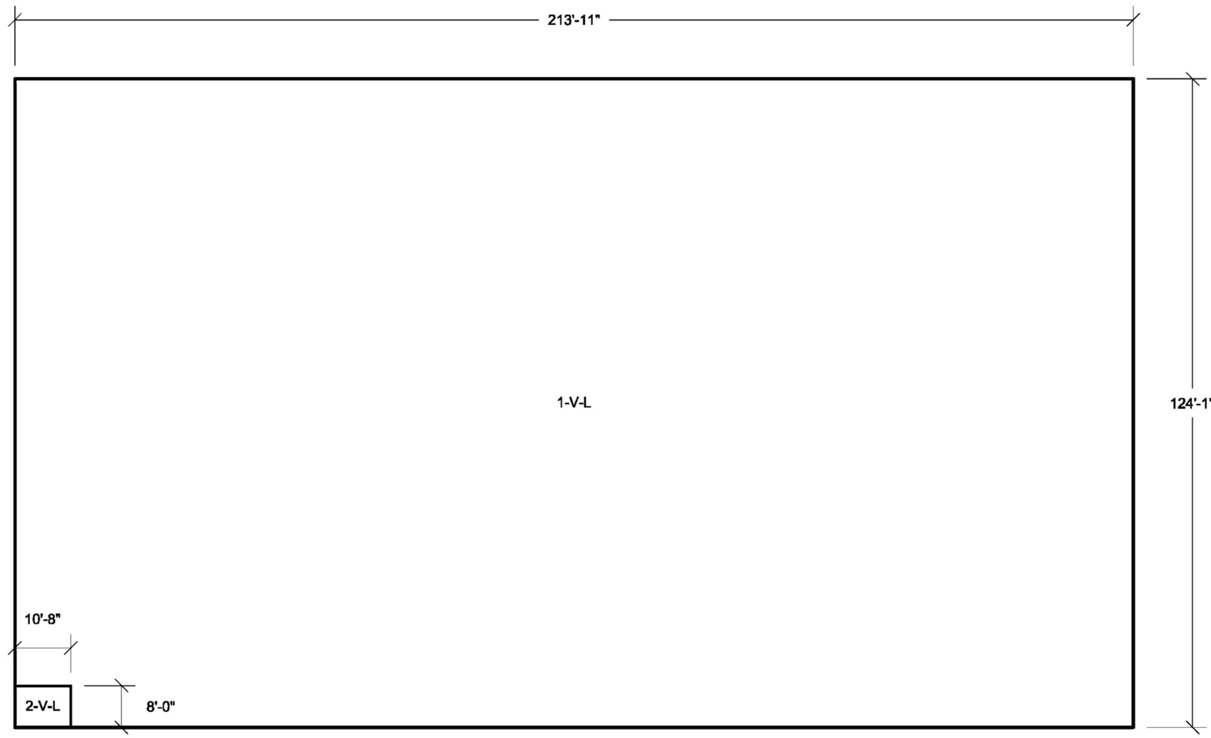


**Figure 3H.3-41 Elevation 95 Looking Down
North-South Reinforcement Zones
Far Side Face**

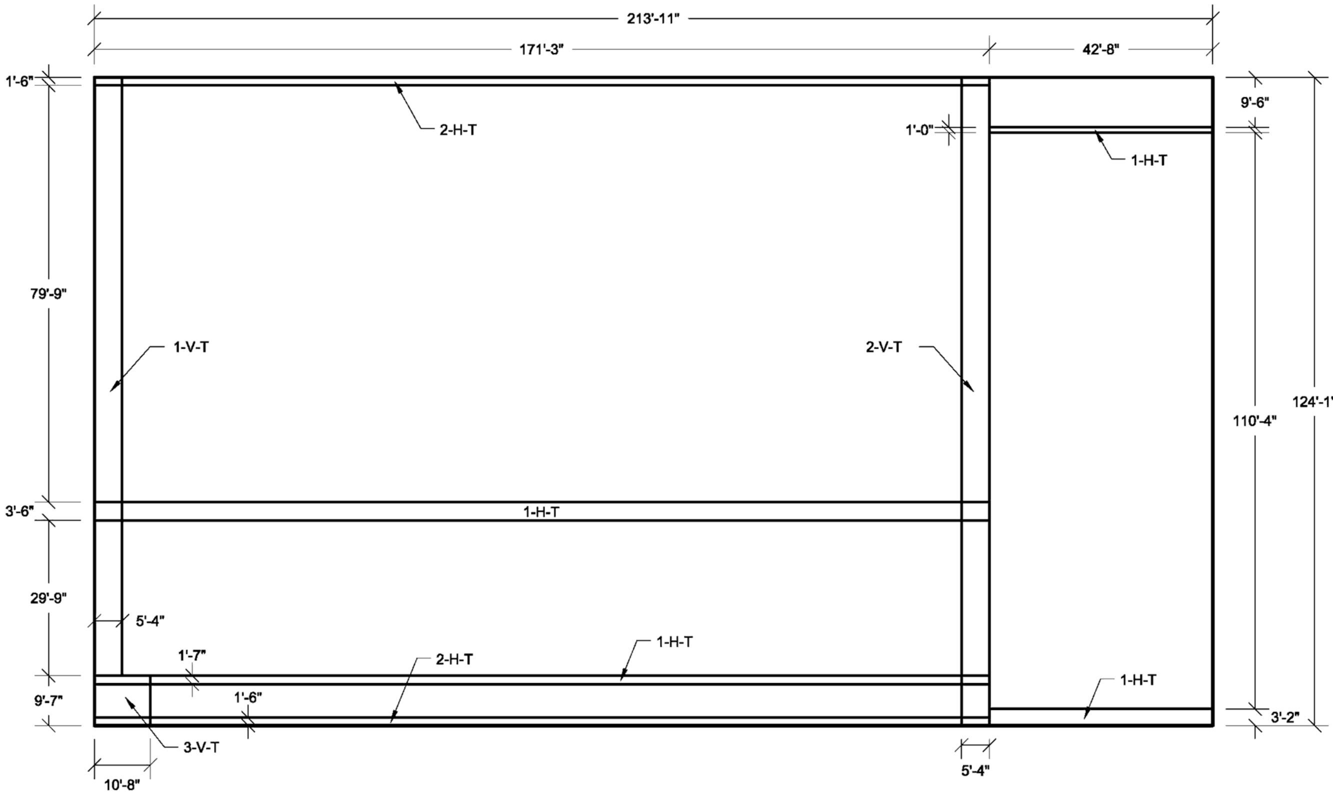


Figure 3H.3-42 Elevation 95 Looking Down Transverse Reinforcement Zones

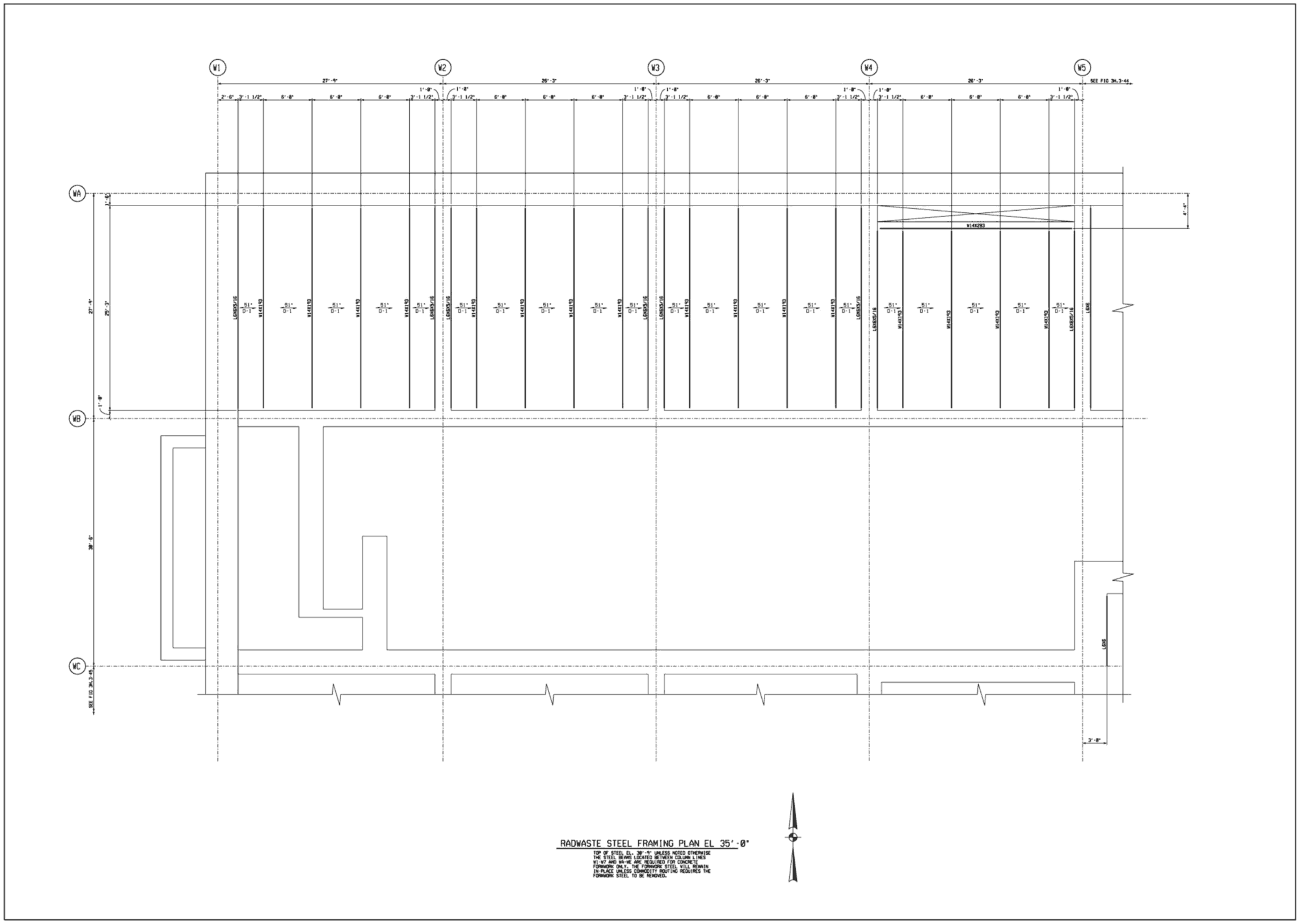


Figure 3H.3-43 El 35’-0” Steel Layout Between Column Lines W1-W5 and WA-WC

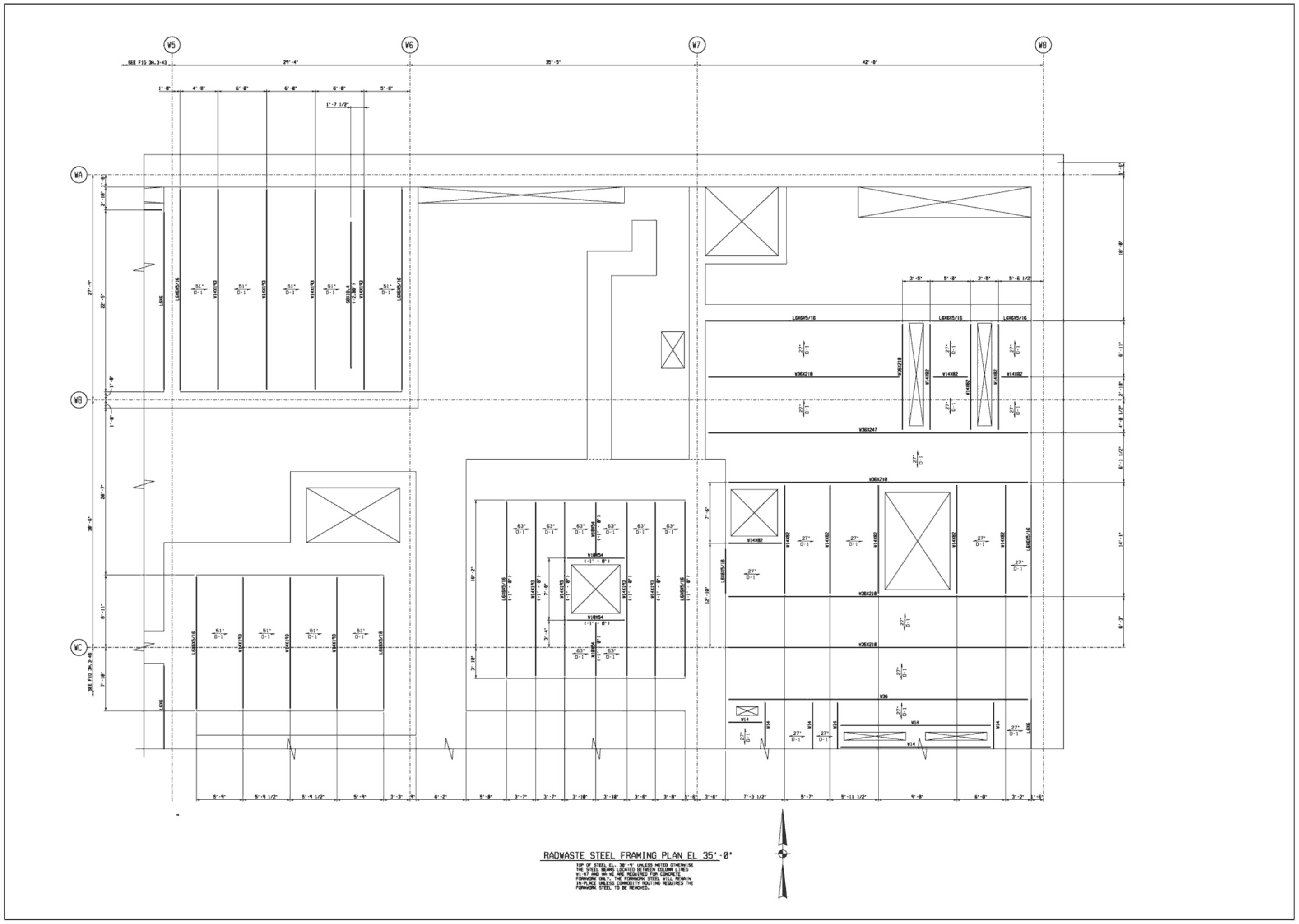


Figure 3H.3-44 El 35'-0" Steel Layout Between Column Lines W5-W8 and WA-WC

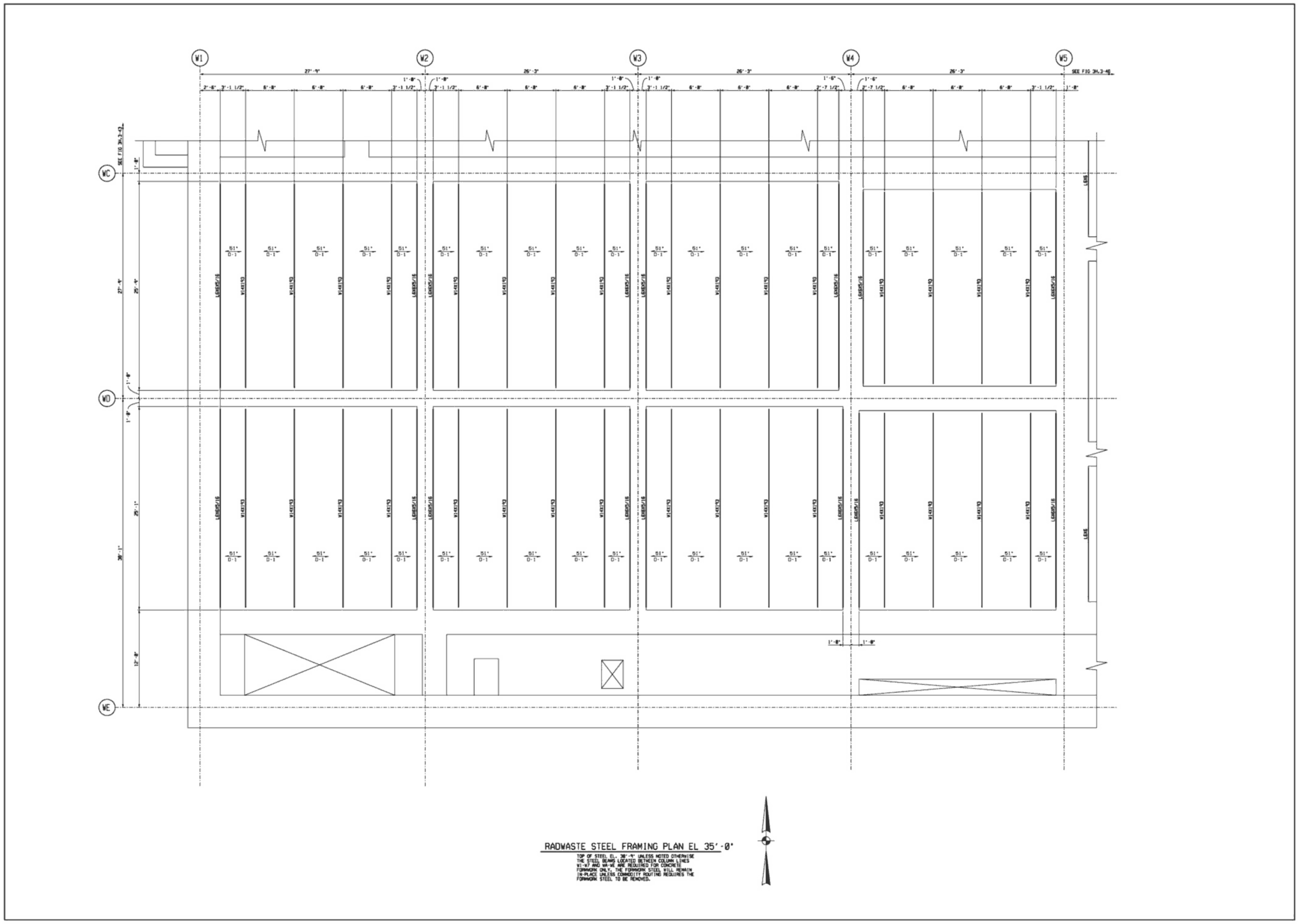


Figure 3H.3-45 El 35’-0” Steel Layout Between Column Lines W1-W5 and WC-WE

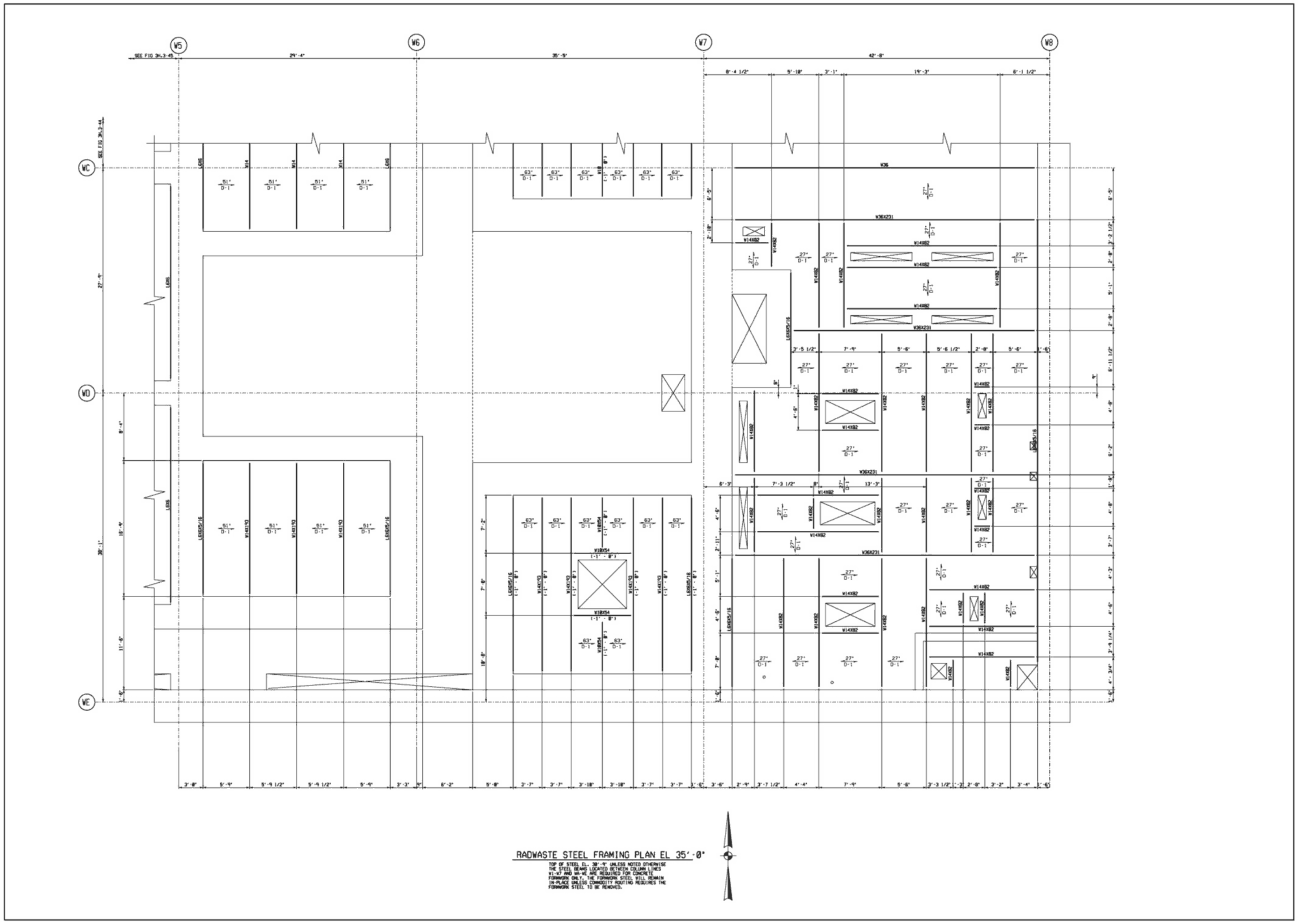


Figure 3H.3-46 El 35'-0" Steel Layout Between Column Lines W5-W8 and WC-WE

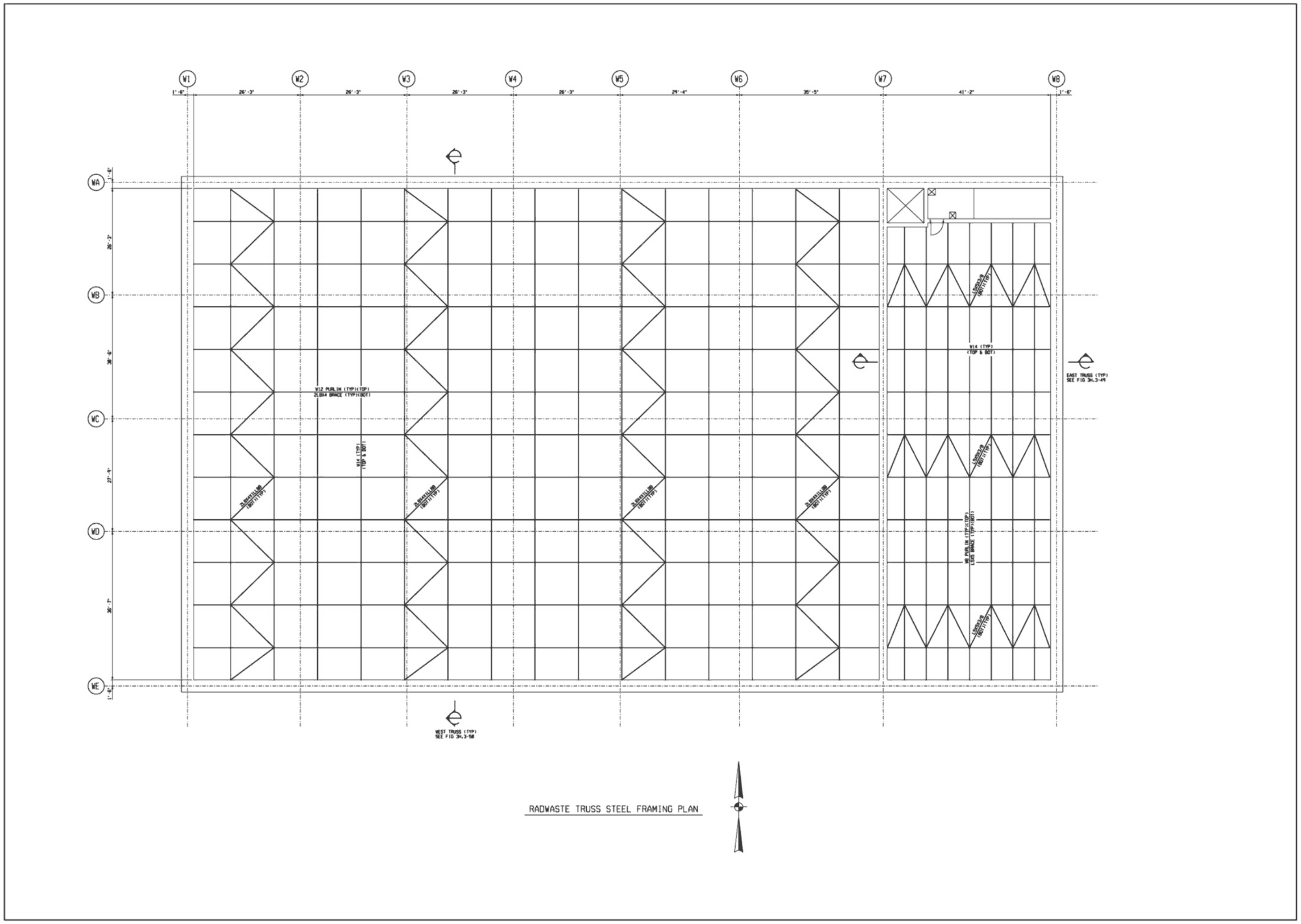


Figure 3H.3-47 Roof Truss. Purlin and Horizontal Bracing Layout (Plan View)

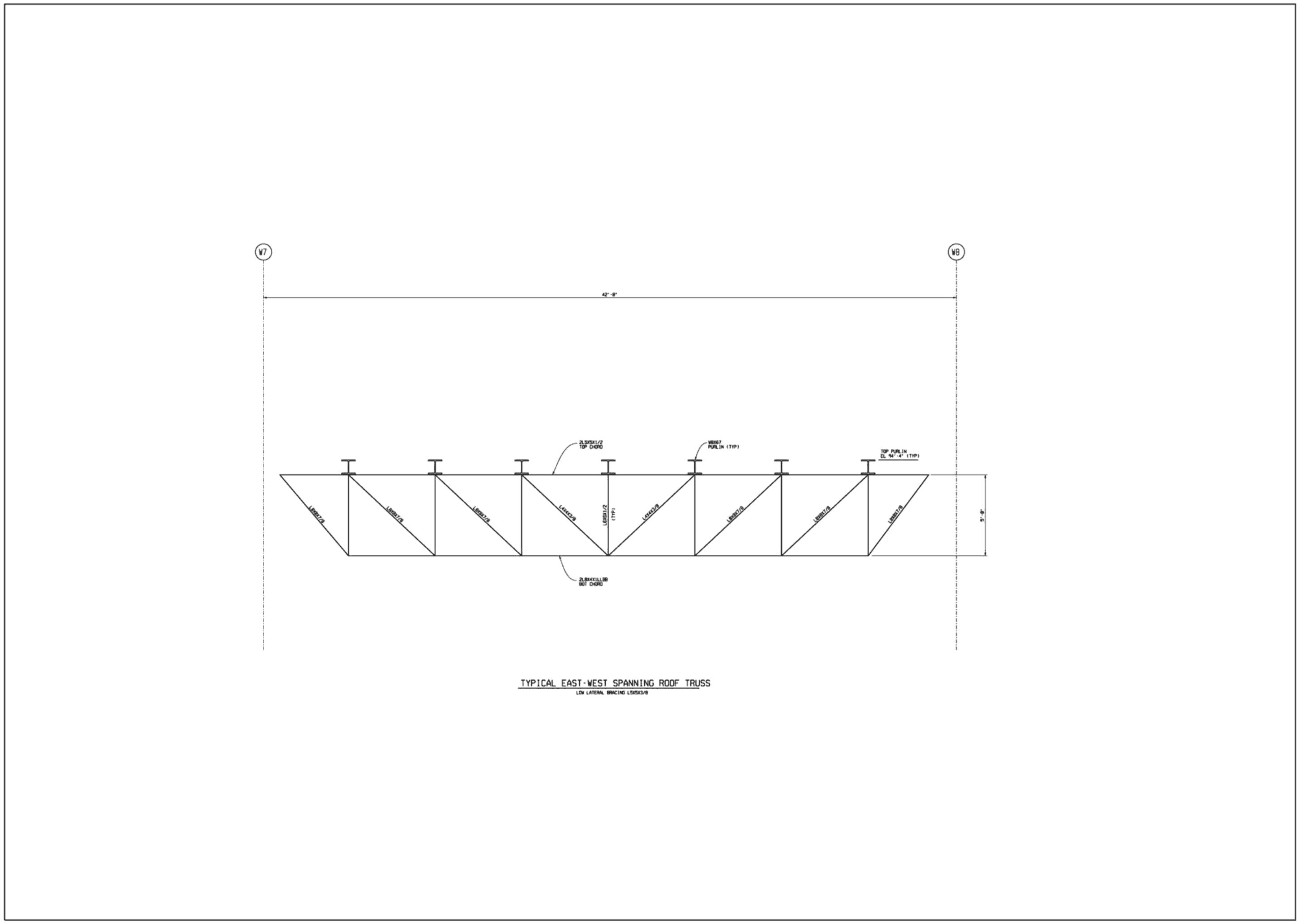


Figure 3H.3-48 Typical East-West Spanning Roof Truss Between Column Lines W7-W8 (Elevation View)

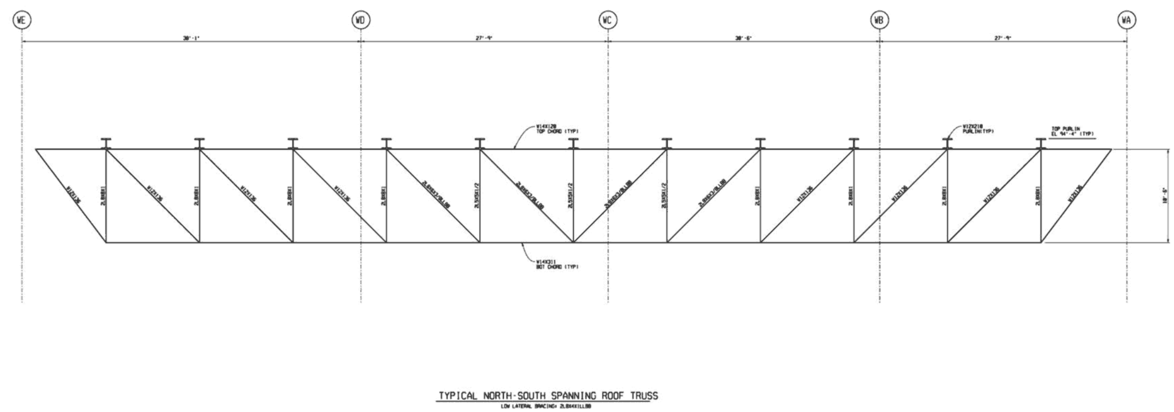
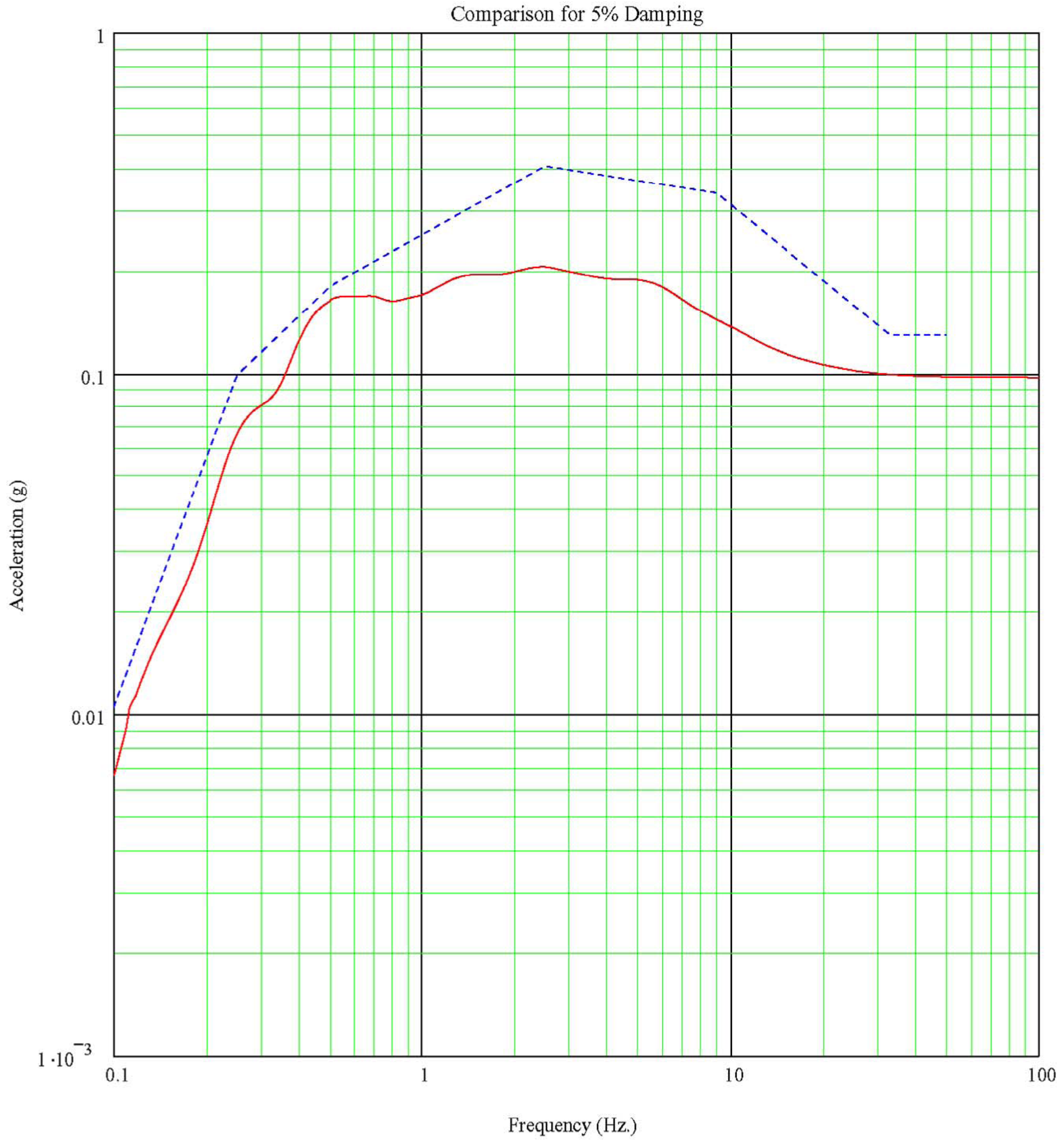


Figure 3H.3-49 Typical North-South Spanning Truss Between Column Lines WA-WE (Elevation View)



___ (Red): GMRS in the horizontal direction
...... (Blue): Input Spectrum in the horizontal direction

Figure 3H.6-1 Comparison of GMRS with the Input Spectrum (Horizontal)

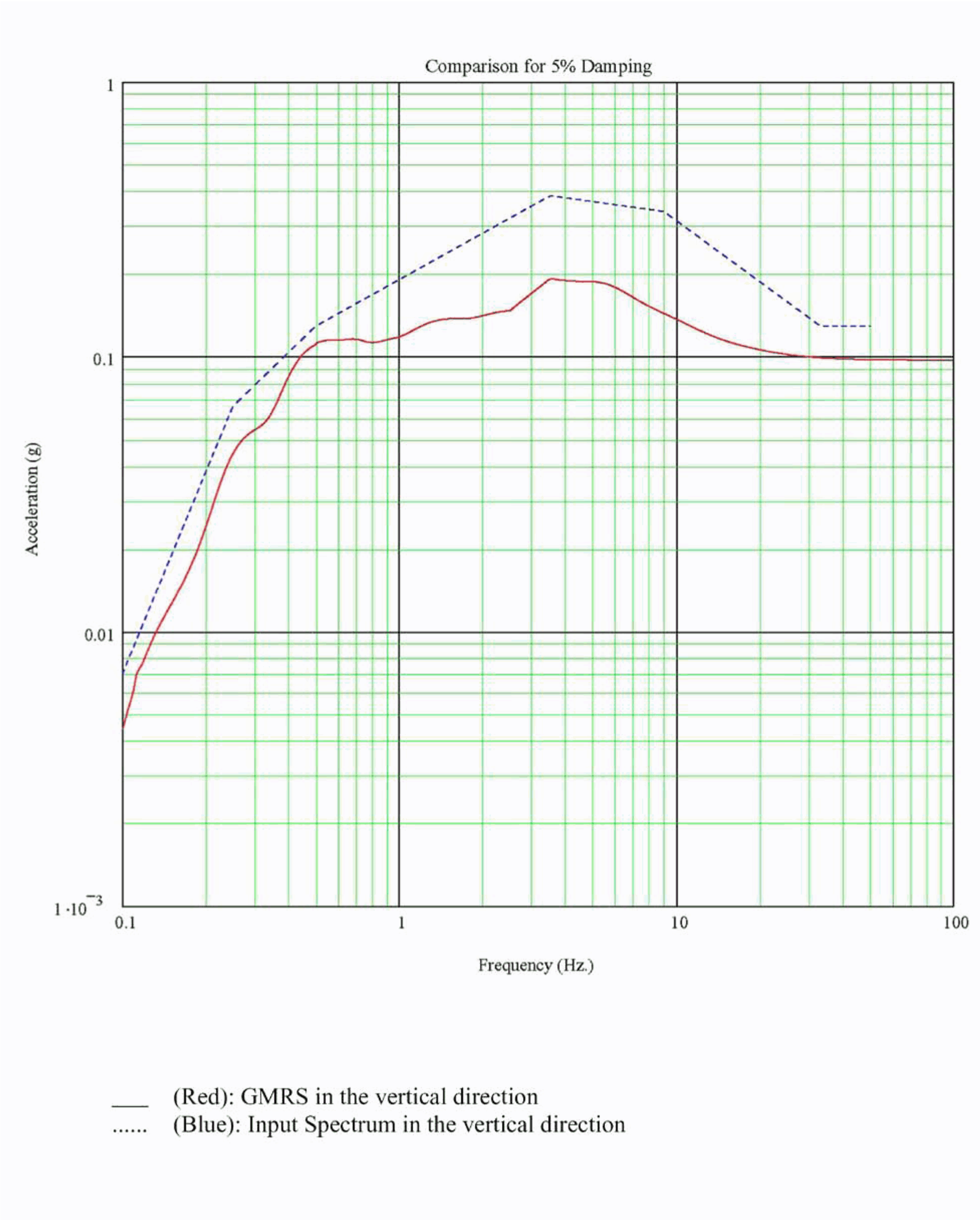
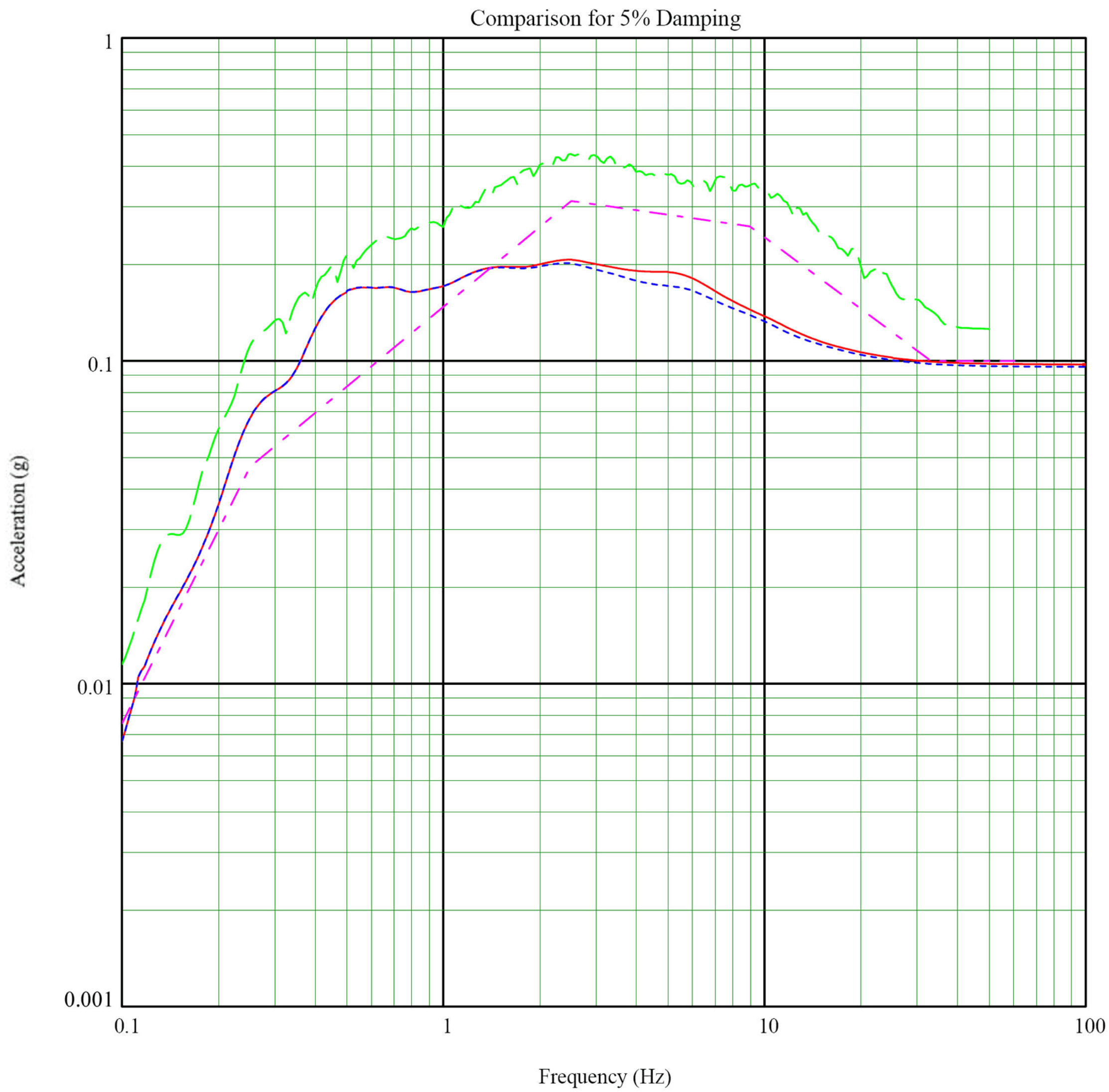


Figure 3H.6-2 Comparison of GMRS with the Input Spectrum (Vertical)

Figure 3H.6-3 Not Used



___ (Red): GMRS
...... (Blue): FIRS at 32 ft below ground surface
____ (Green): Outcrop spectrum at 32 ft below ground surface resulting from synthetic time history applied at ground surface
_._. (Magenta): RG 1.60 spectrum scaled to 0.10g

Figure 3H.6-3a Comparison of Spectra at Foundation of UHS Basin (Mean Soil Properties, E-W Direction)

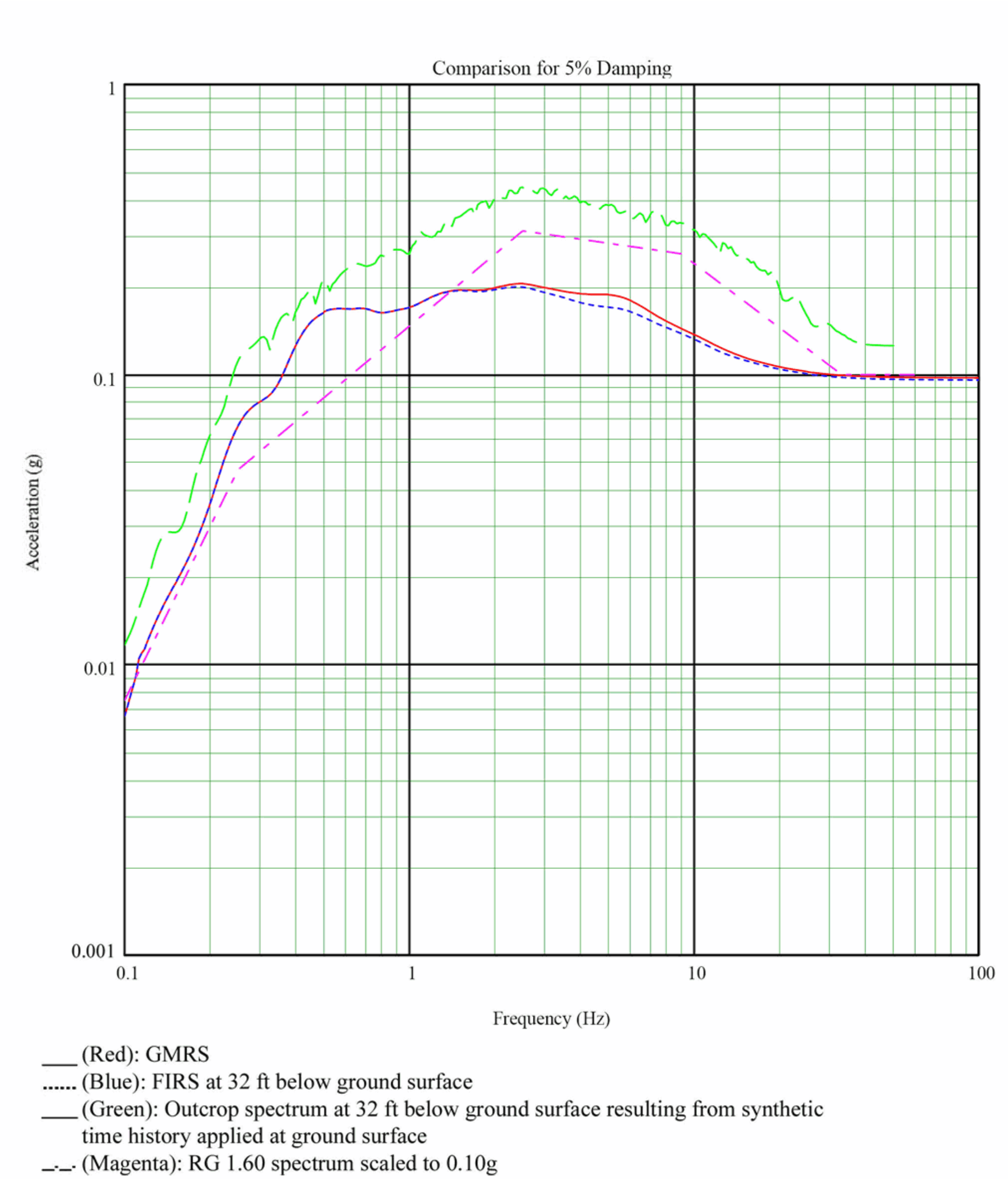
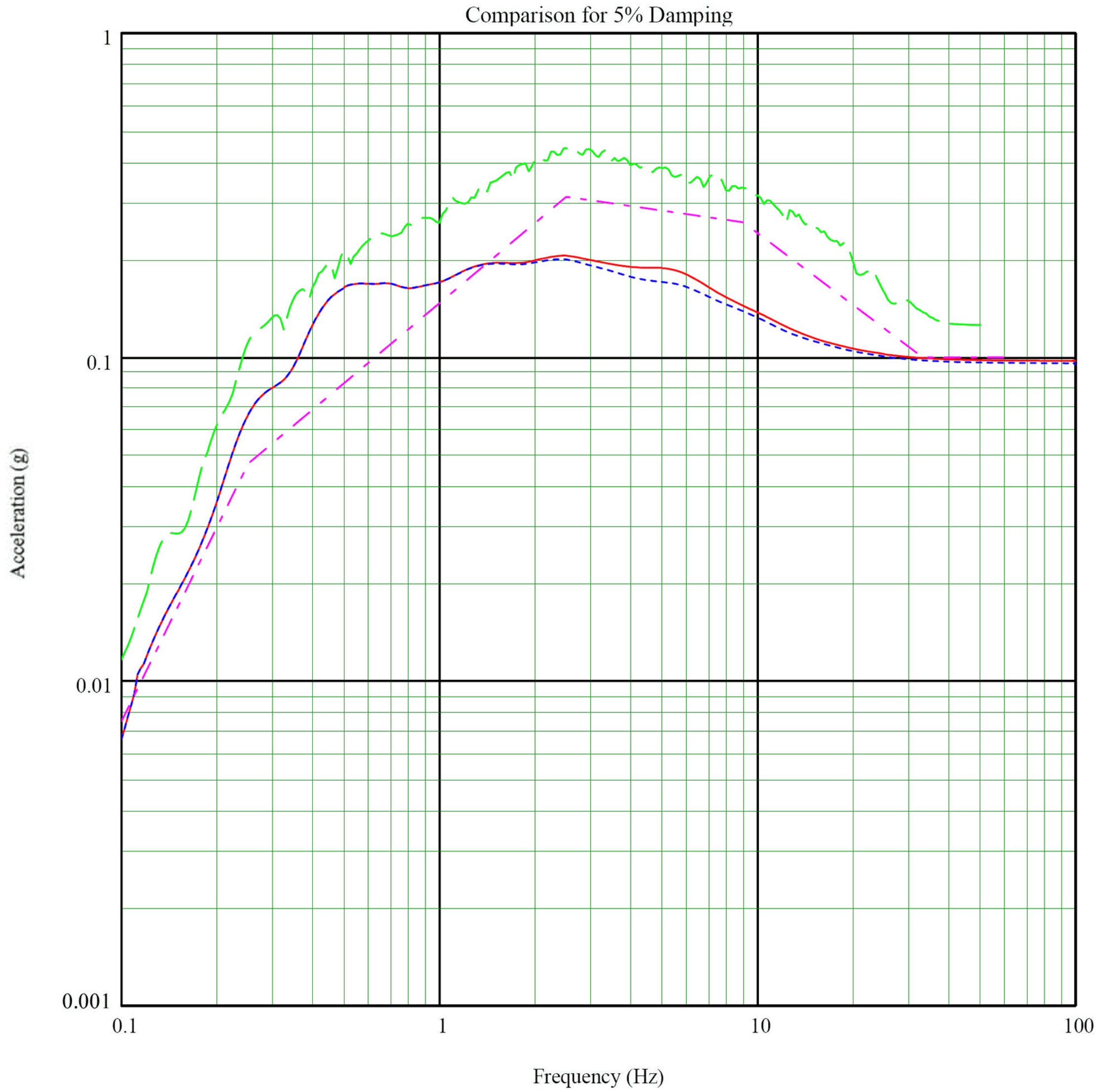


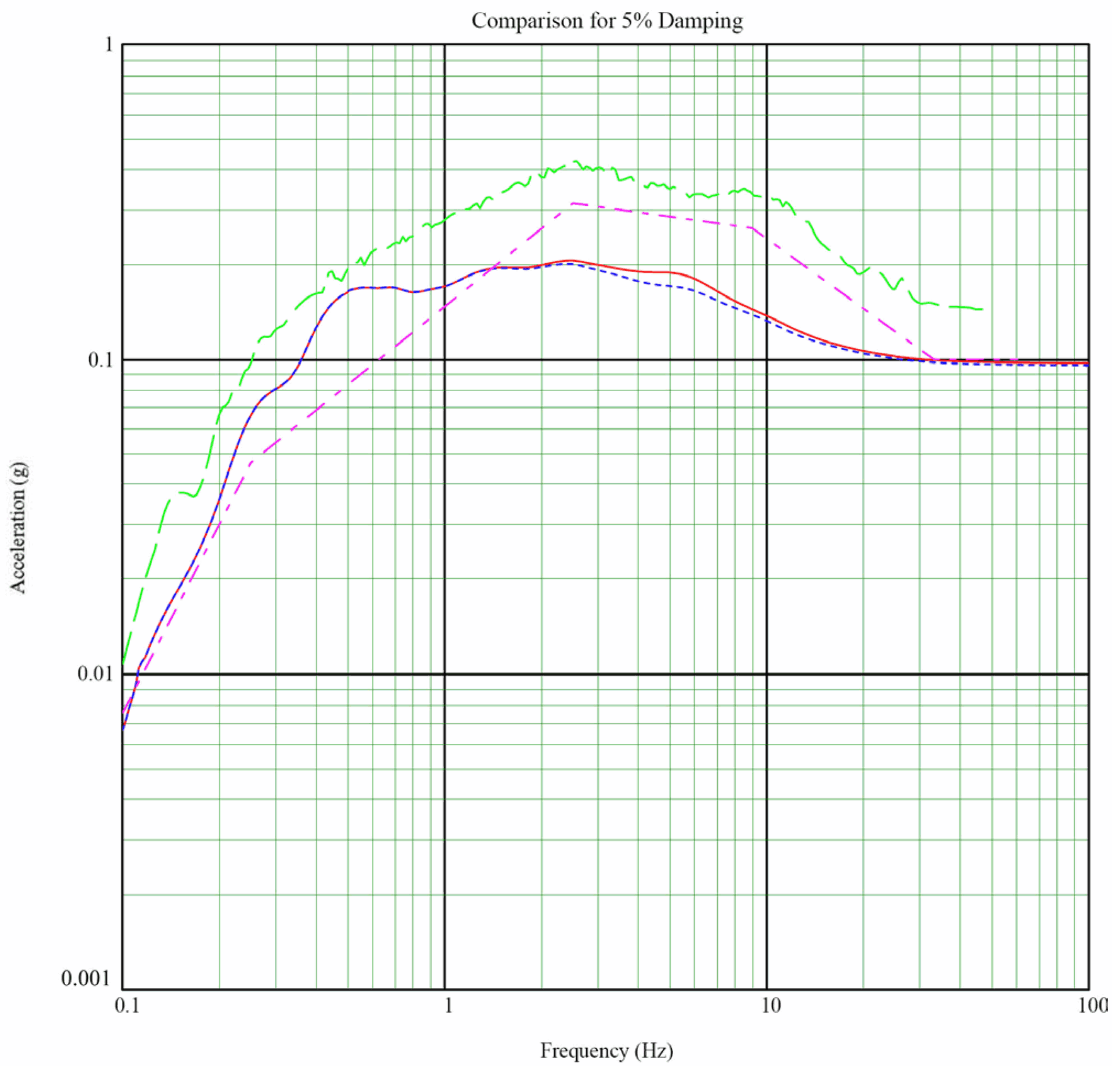
Figure 3H.6-3b Comparison of Spectra at Foundation of UHS Basin (Upper Bound Soil Properties, E-W Direction)



___ (Red): GMRS
...... (Blue): FIRS at 32 ft below ground surface
___ (Green): Outcrop spectrum at 32 ft below ground surface resulting from synthetic time history applied at ground surface
_._. (Magenta): RG 1.60 spectrum scaled to 0.10g

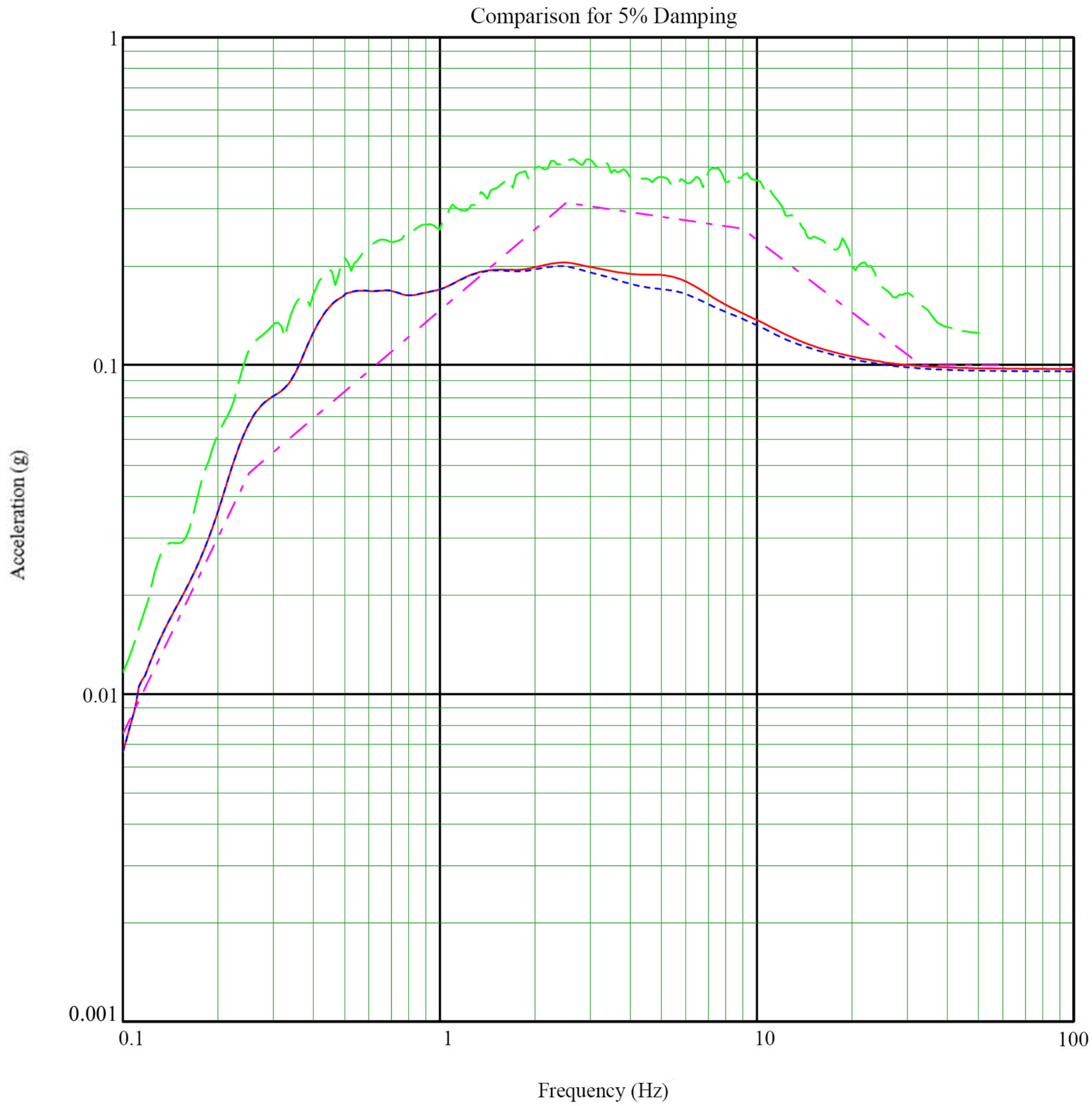
Figure 3H.6-3c Comparison of Spectra at Foundation of UHS Basin (Lower Bound Soil Properties, E-W Direction)

Figure 3H.6-4 Not Used



___ (Red): GMRS
...... (Blue): FIRS at 32 ft below ground surface
___ (Green): Outcrop spectrum at 32 ft below ground surface resulting from synthetic time history applied at ground surface
_._. (Magenta): RG 1.60 spectrum scaled to 0.10g

Figure 3H.6-4a Comparison of Spectra at Foundation of UHS Basin (Mean Soil Properties, N-S Direction)



___ (Red): GMRS
...... (Blue): FIRS at 32 ft below ground surface
___ (Green): Outcrop spectrum at 32 ft below ground surface resulting from synthetic time history applied at ground surface
_._. (Magenta): RG 1.60 spectrum scaled to 0.10g

Figure 3H.6-4b Comparison of Spectra at Foundation of UHS Basin (Upper Bound Soil Properties, N-S Direction)

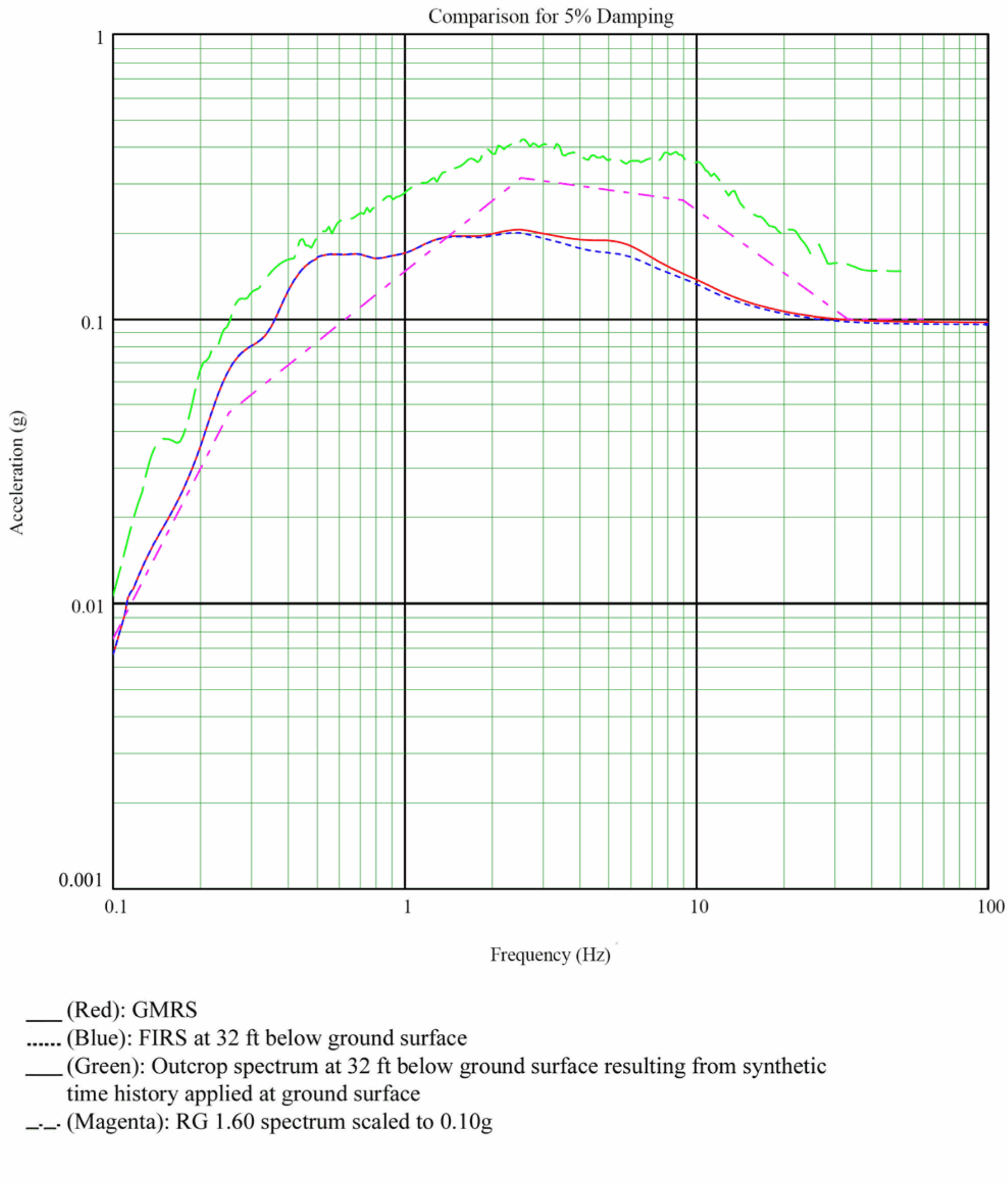


Figure 3H.6-4c Comparison of Spectra at Foundation of UHS Basin (Lower Bound Soil Properties, N-S Direction)

Figure 3H.6-5 Not Used

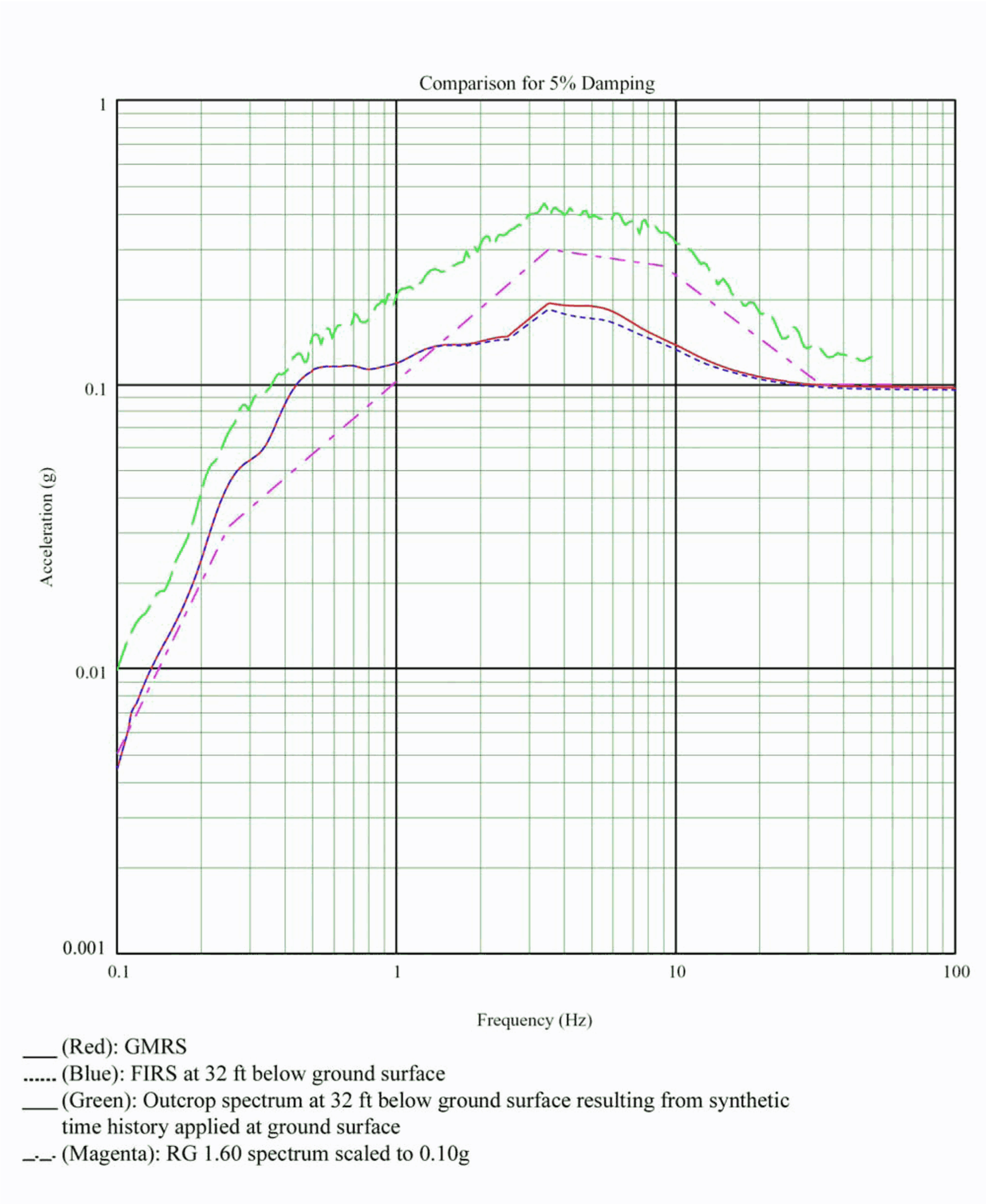


Figure 3H.6-5a Comparison of Spectra at Foundation of UHS Basin (Mean Soil Properties, Vertical Direction)

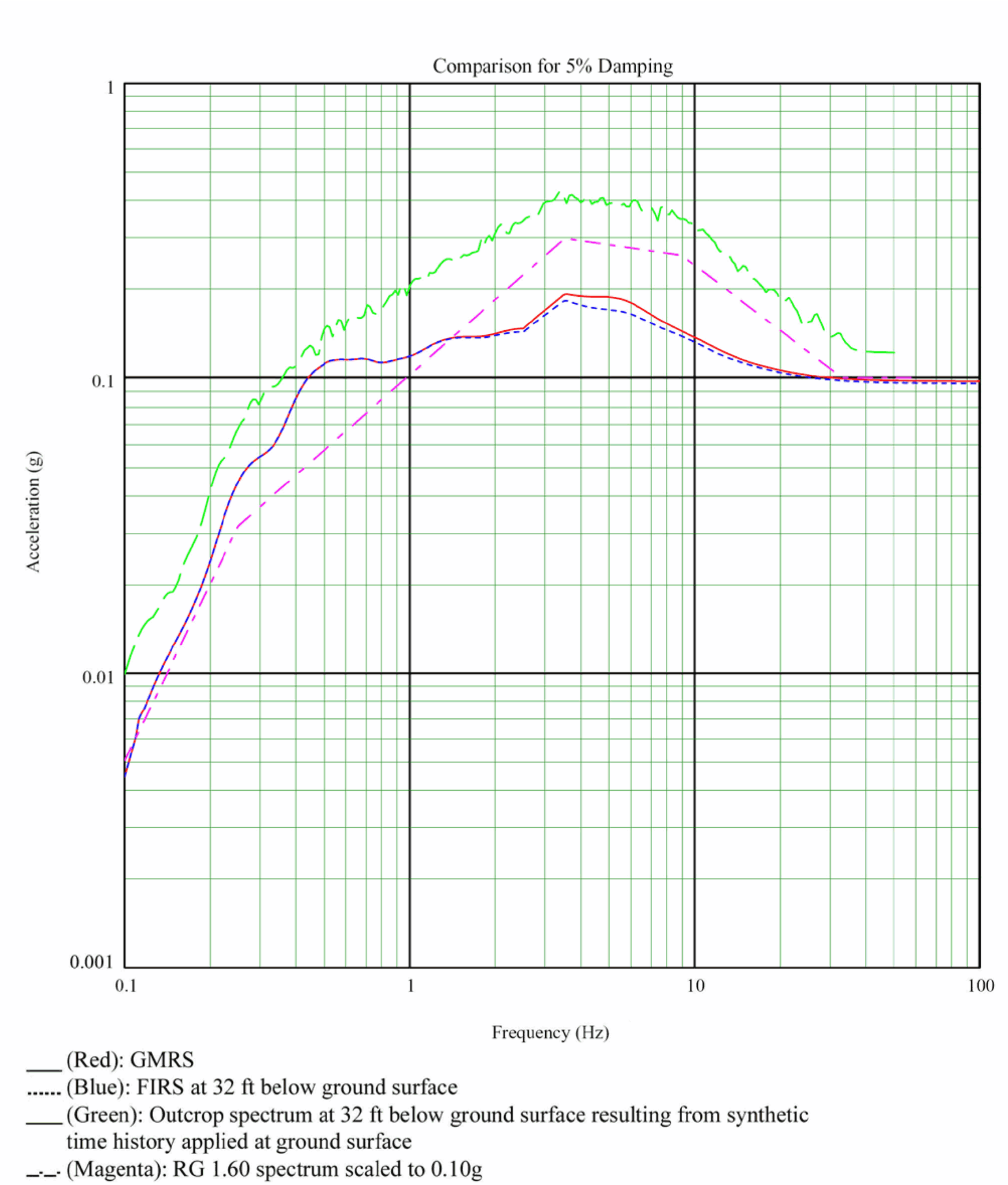


Figure 3H.6-5b Comparison of Spectra at Foundation of UHS Basin (Upper Bound Soil Properties, Vertical Direction)

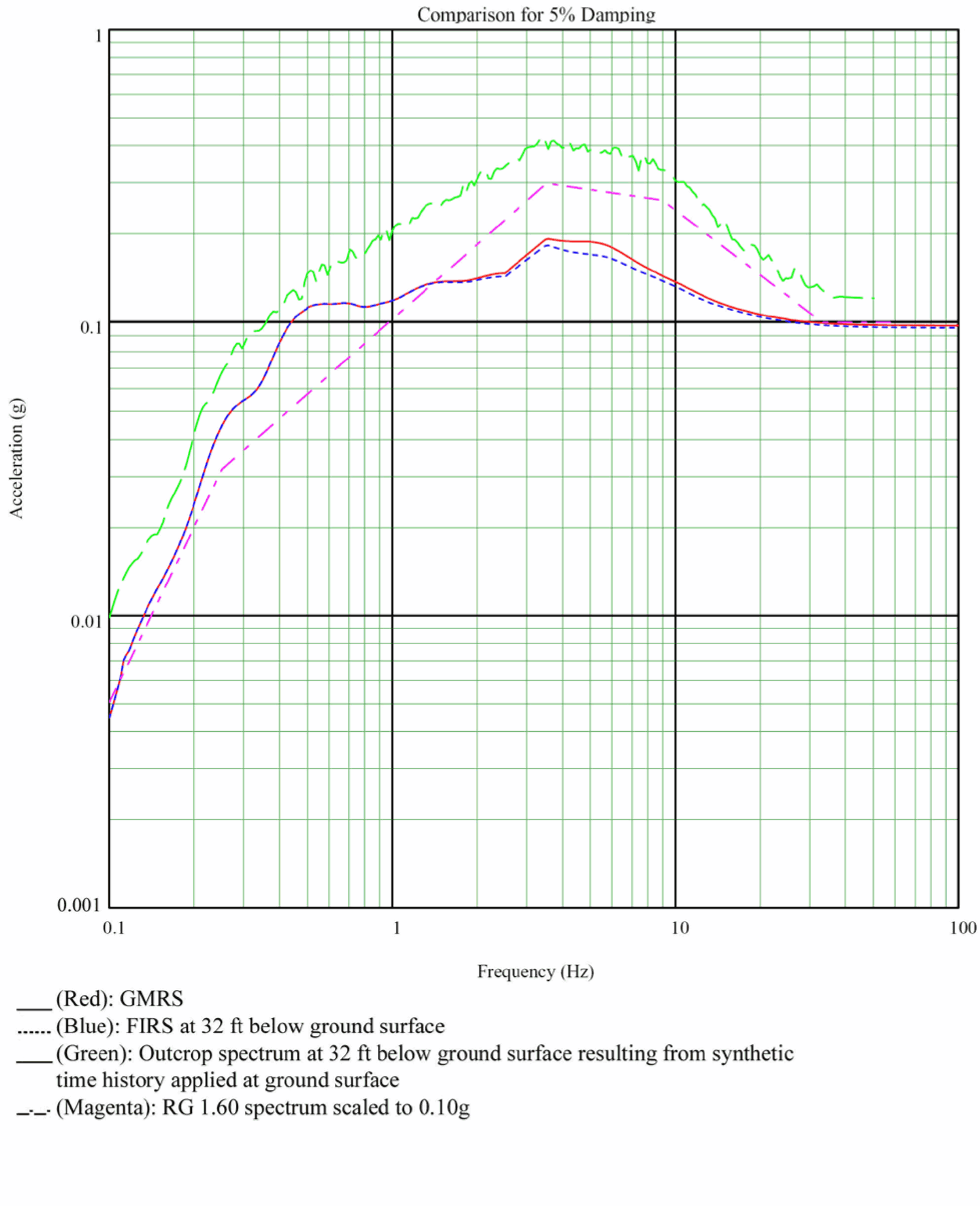


Figure 3H.6-5c Comparison of Spectra at Foundation of UHS Basin (Lower Bound Soil Properties, Vertical Direction)

Figure 3H.6-6 Not Used

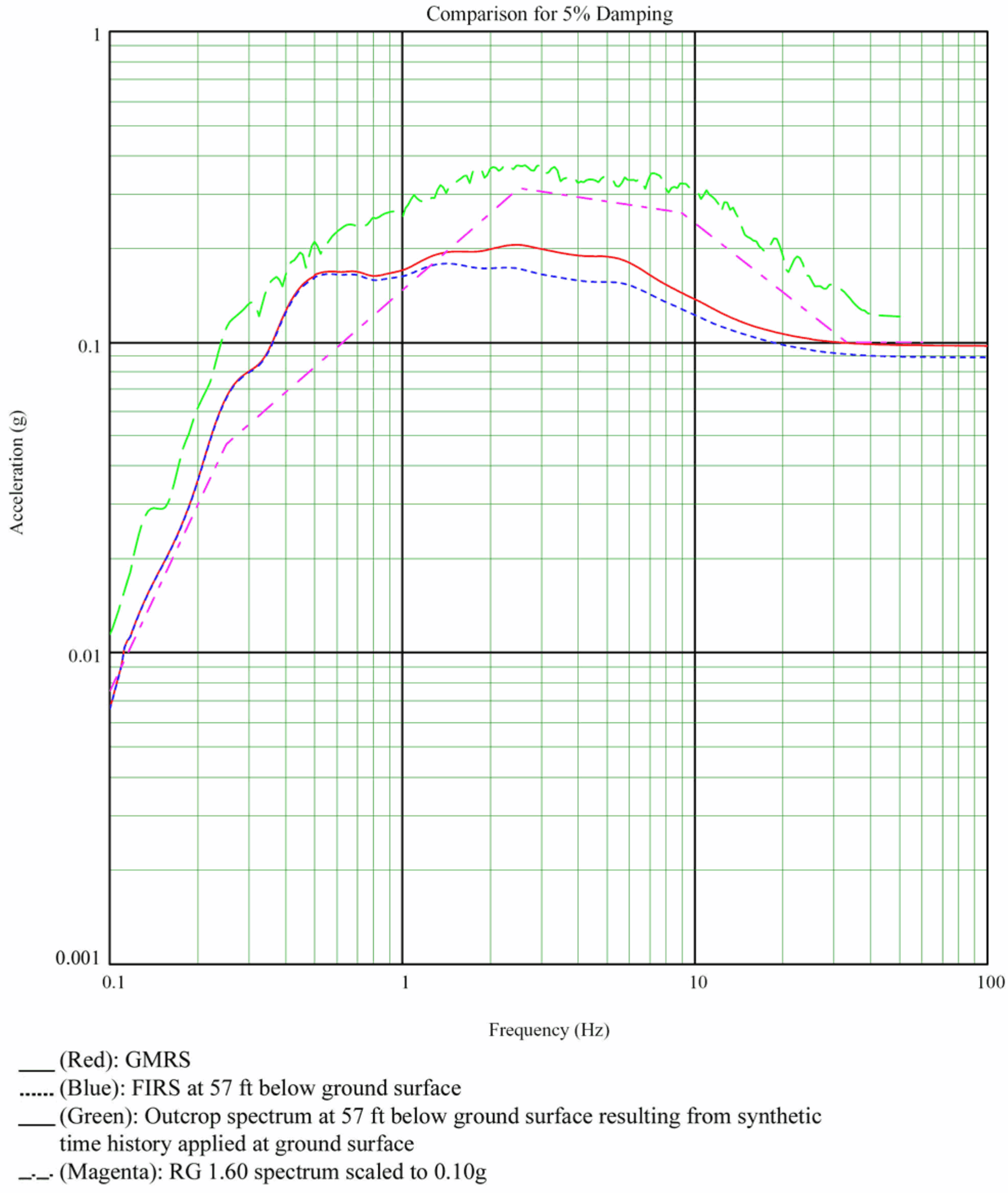


Figure 3H.6-6a Comparison of Spectra at Foundation of RSW Piping Tunnel (Mean Soil Properties, E-W Direction)

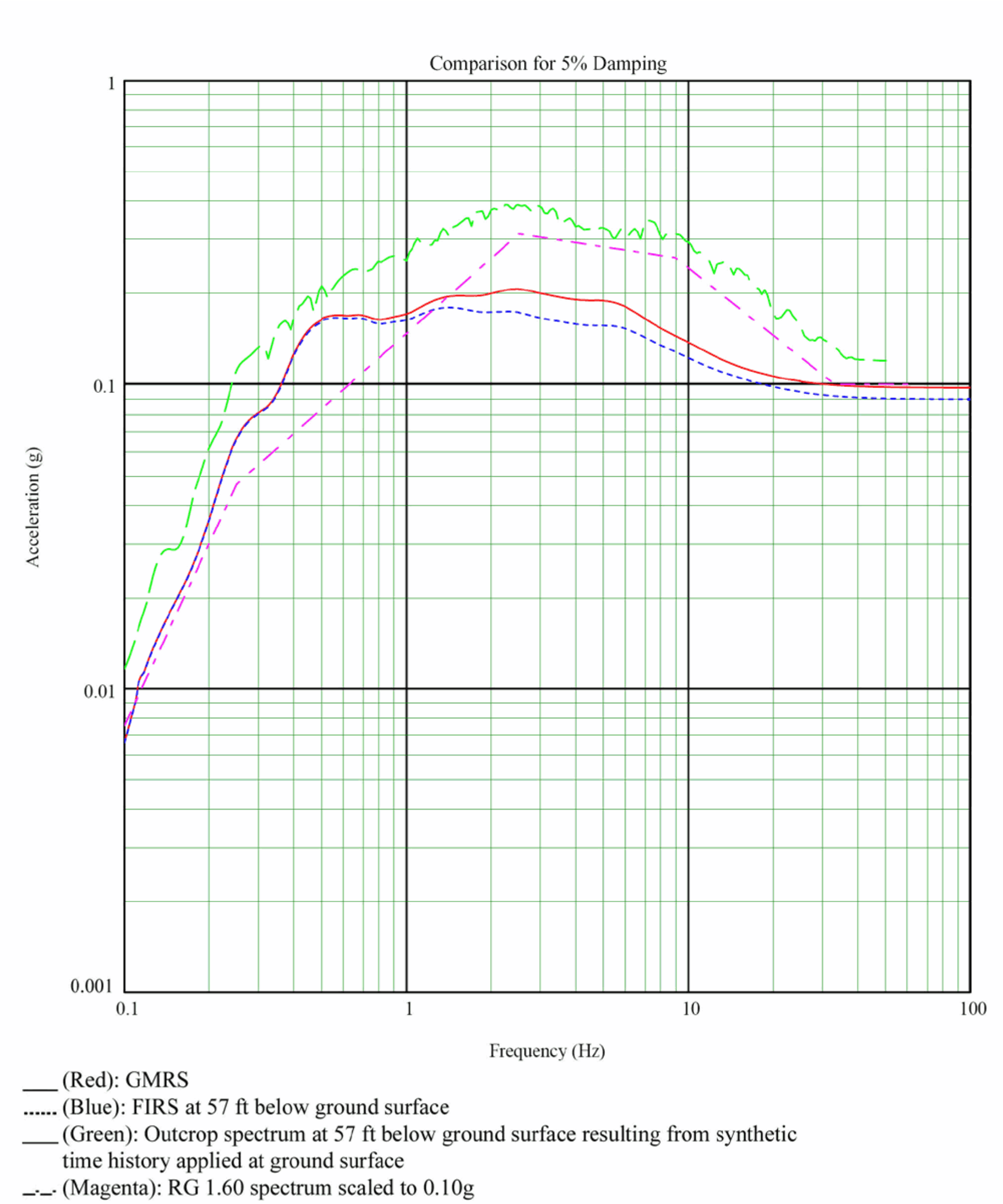
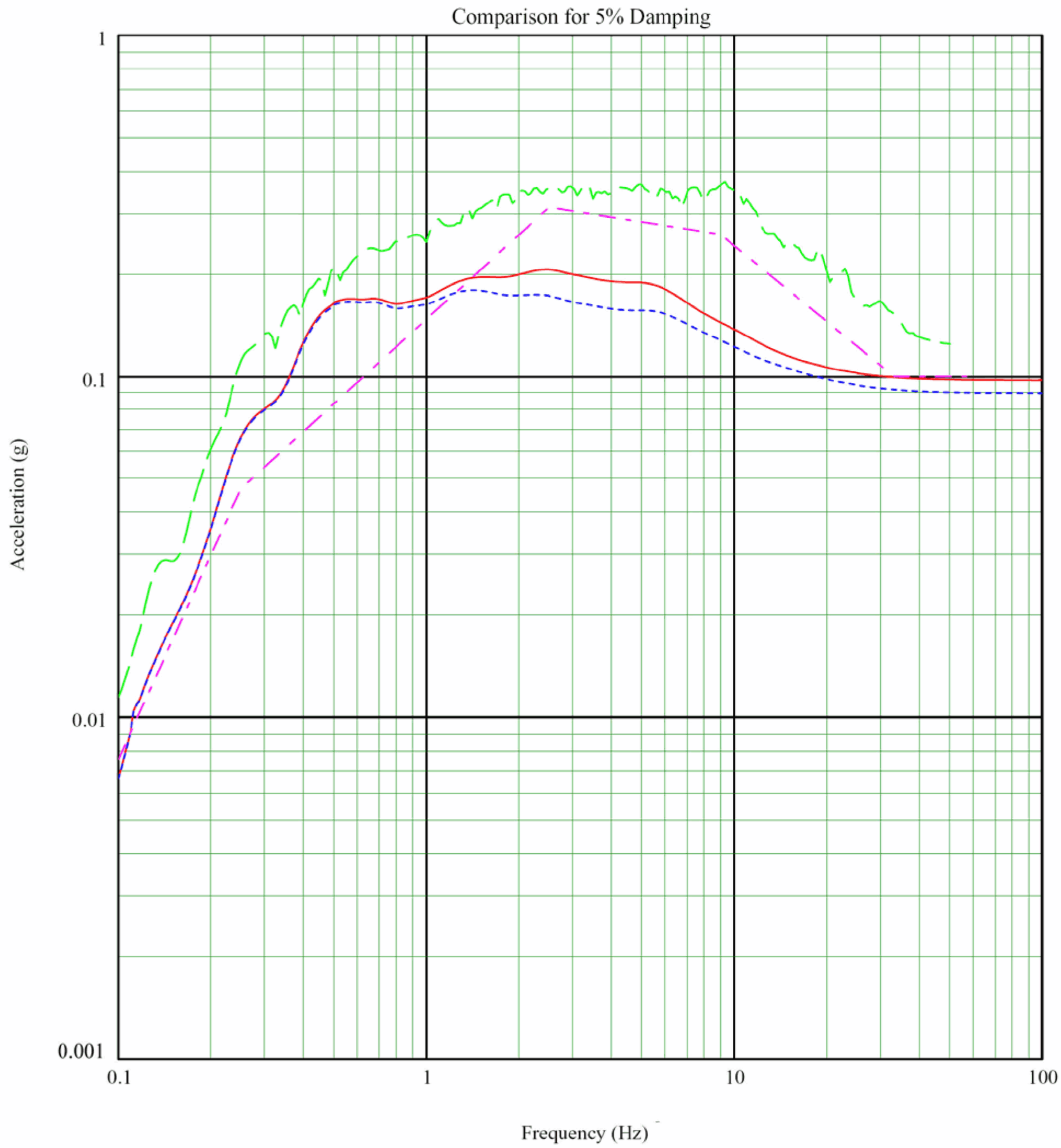


Figure 3H.6-6b Comparison of Spectra at Foundation of RSW Piping Tunnel (Upper Bound Soil Properties, E-W Direction)



___ (Red): GMRS

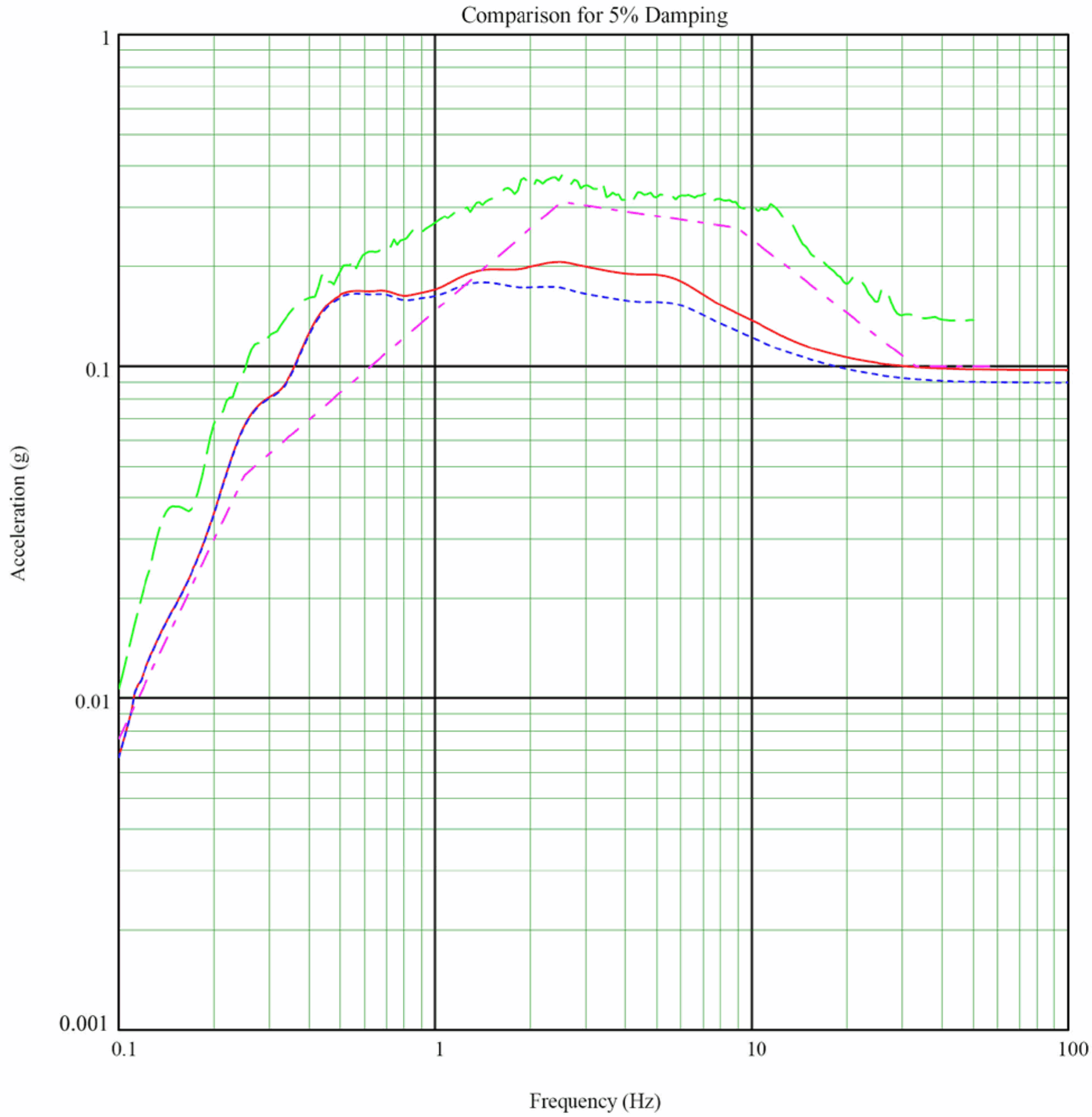
...... (Blue): FIRS at 57 ft below ground surface

___ (Green): Outcrop spectrum at 57 ft below ground surface resulting from synthetic time history applied at ground surface

_._. (Magenta): RG 1.60 spectrum scaled to 0.10g

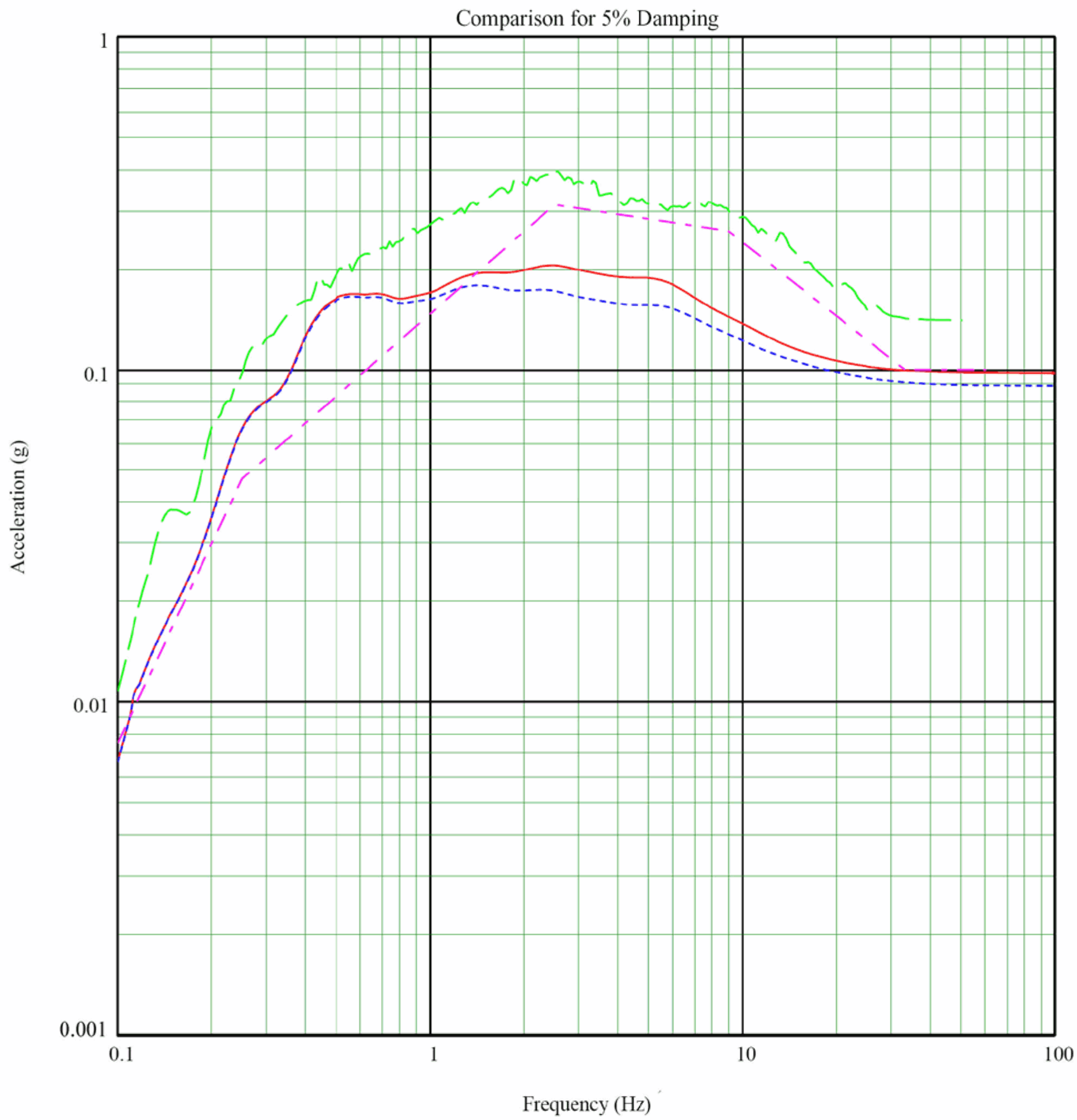
Figure 3H.6-6c Comparison of Spectra at Foundation of RSW Piping Tunnel (Lower Bound Soil Properties, E-W Direction)

Figure 3H.6-7 Not Used



___ (Red): GMRS
...... (Blue): FIRS at 57 ft below ground surface
___ (Green): Outcrop spectrum at 57 ft below ground surface resulting from synthetic time history applied at ground surface
_._. (Magenta): RG 1.60 spectrum scaled to 0.10g

Figure 3H.6-7a Comparison of Spectra at Foundation of RSW Piping Tunnel (Mean Soil Properties, N-S Direction)



____ (Red): GMRS
...... (Blue): FIRS at 57 ft below ground surface
____ (Green): Outcrop spectrum at 57 ft below ground surface resulting from synthetic time history applied at ground surface
_._. (Magenta): RG 1.60 spectrum scaled to 0.10g

Figure 3H.6-7b Comparison of Spectra at Foundation of RSW Piping Tunnel (Upper Bound Soil Properties, N-S Direction)

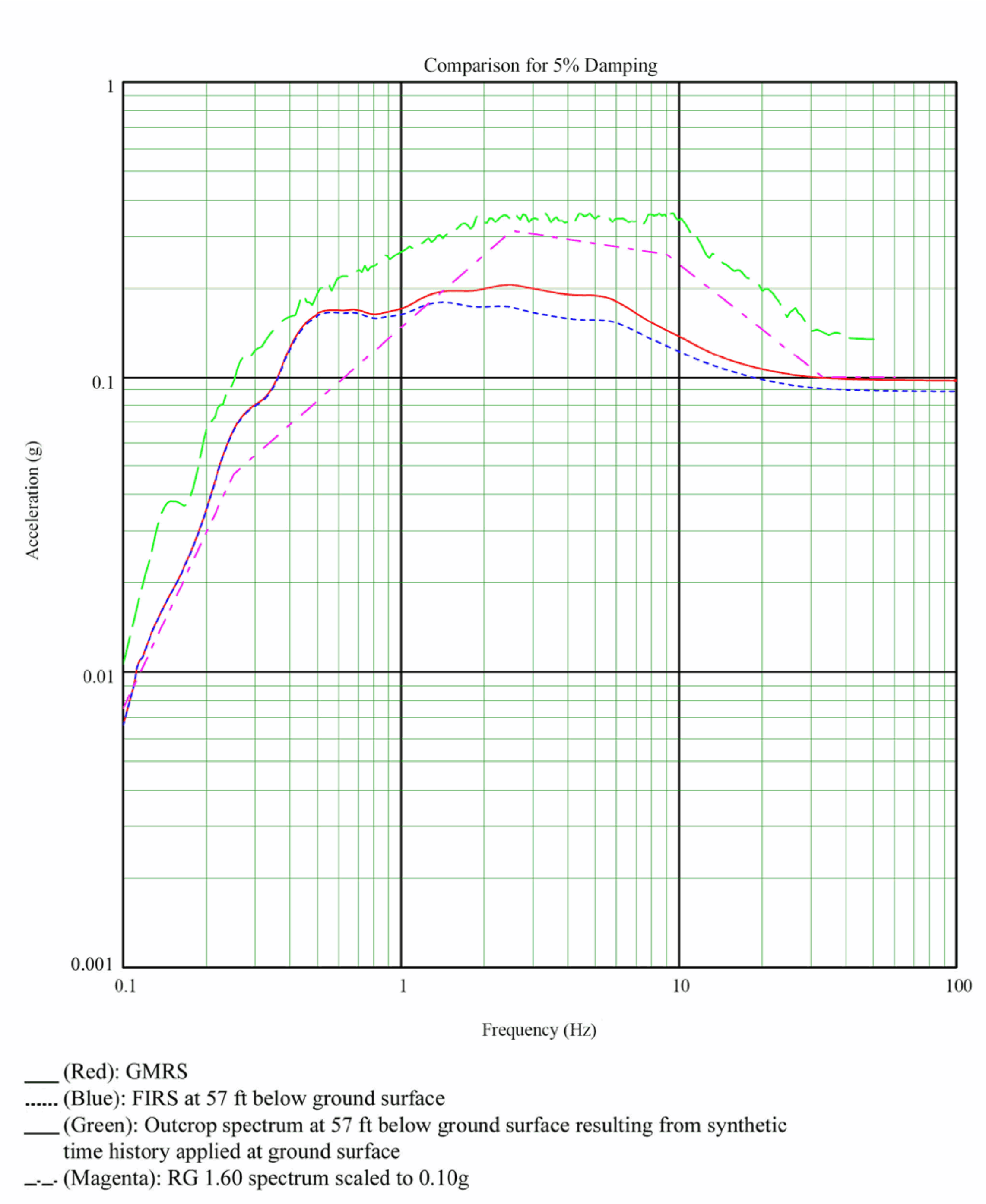


Figure 3H.6-7c Comparison of Spectra at Foundation of RSW Piping Tunnel (Lower Bound Soil Properties, N-S Direction)

Figure 3H.6-8 Not Used

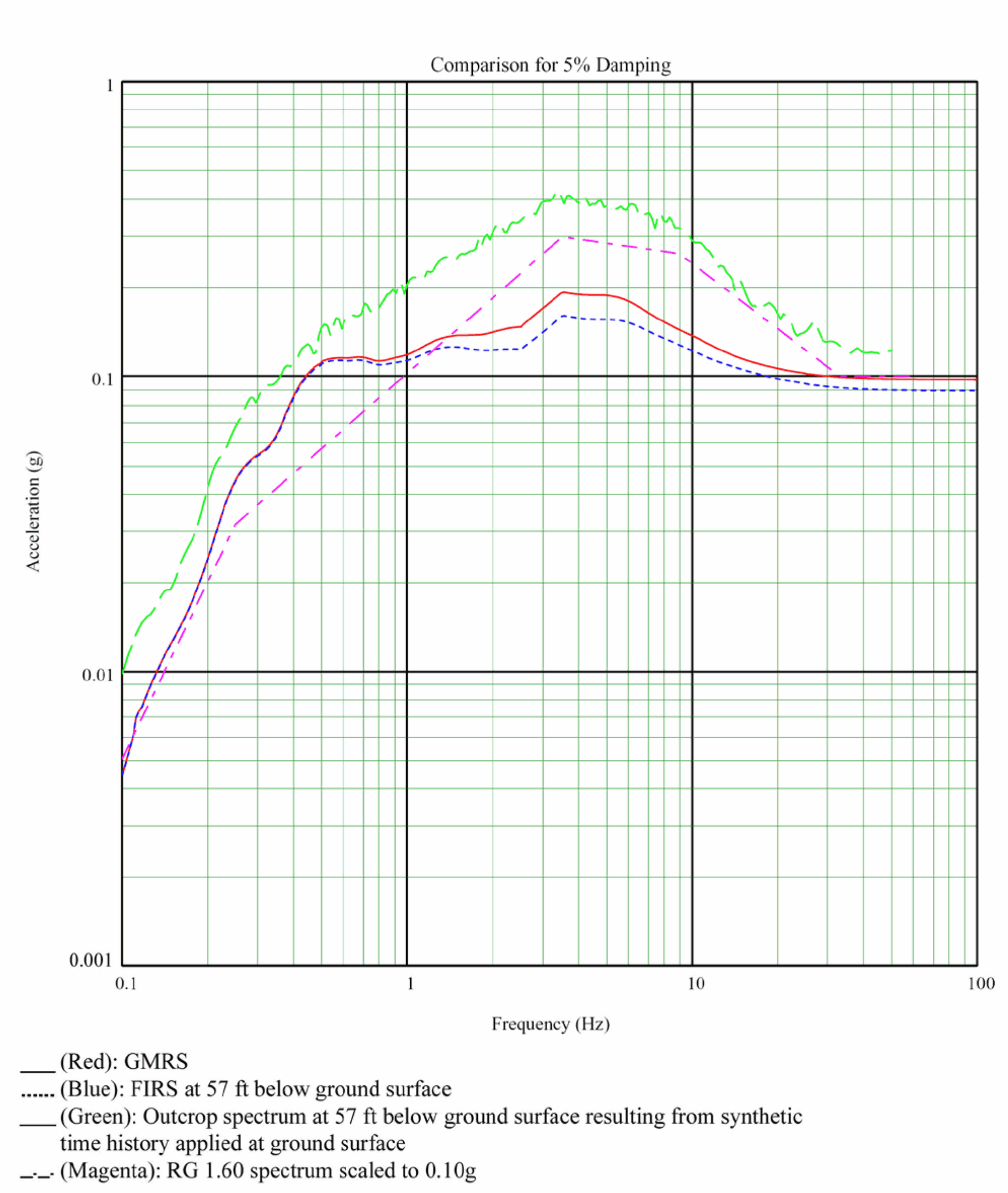
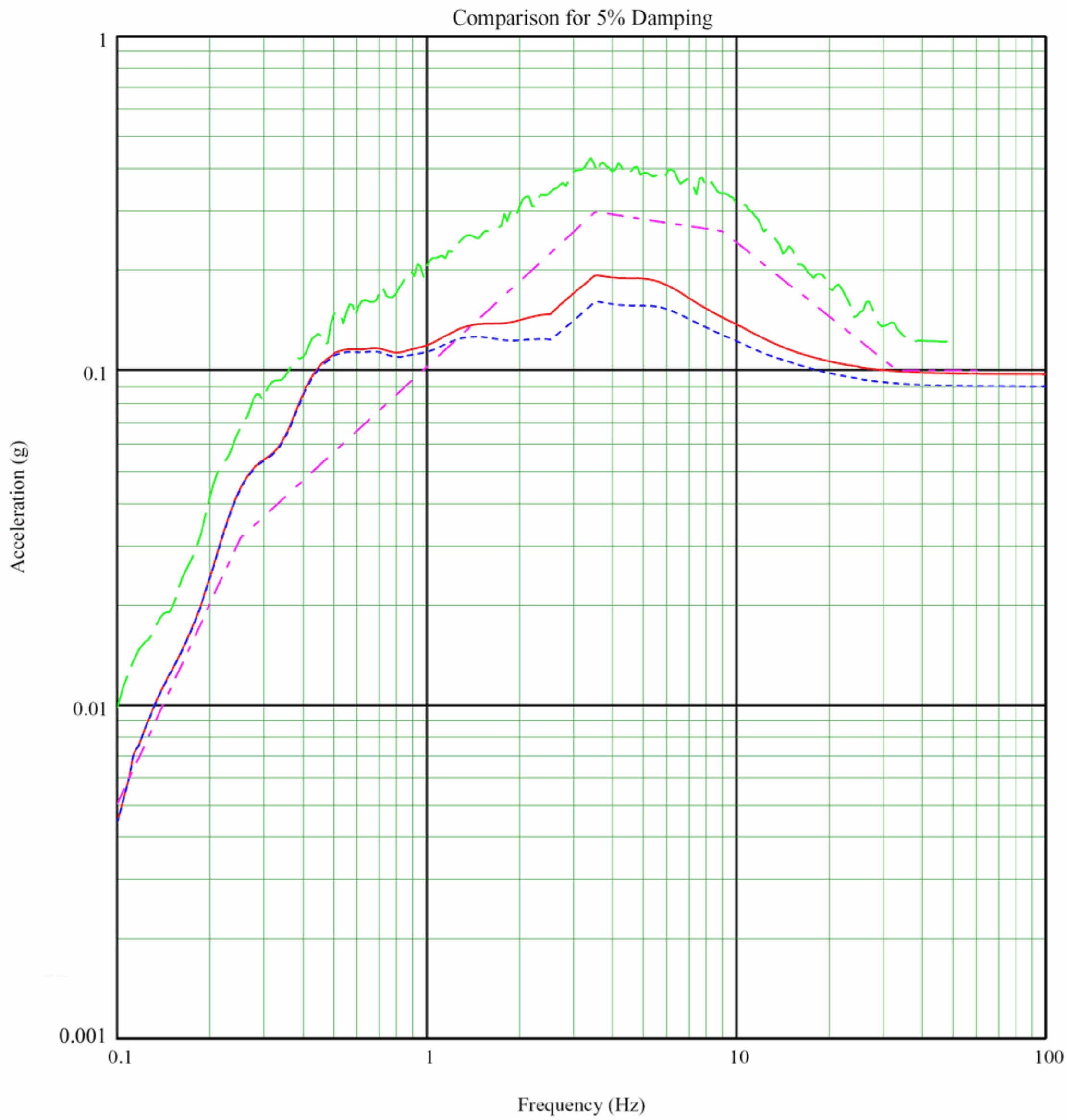


Figure 3H.6-8a Comparison of Spectra at Foundation of RSW Piping Tunnel (Mean Soil Properties, Vertical Direction)



___(Red): GMRS
...... (Blue): FIRS at 57 ft below ground surface
___(Green): Outcrop spectrum at 57 ft below ground surface resulting from synthetic time history applied at ground surface
_._. (Magenta): RG 1.60 spectrum scaled to 0.10g

Figure 3H.6-8b Comparison of Spectra at Foundation of RSW Piping Tunnel (Upper Bound Soil Properties, Vertical Direction)

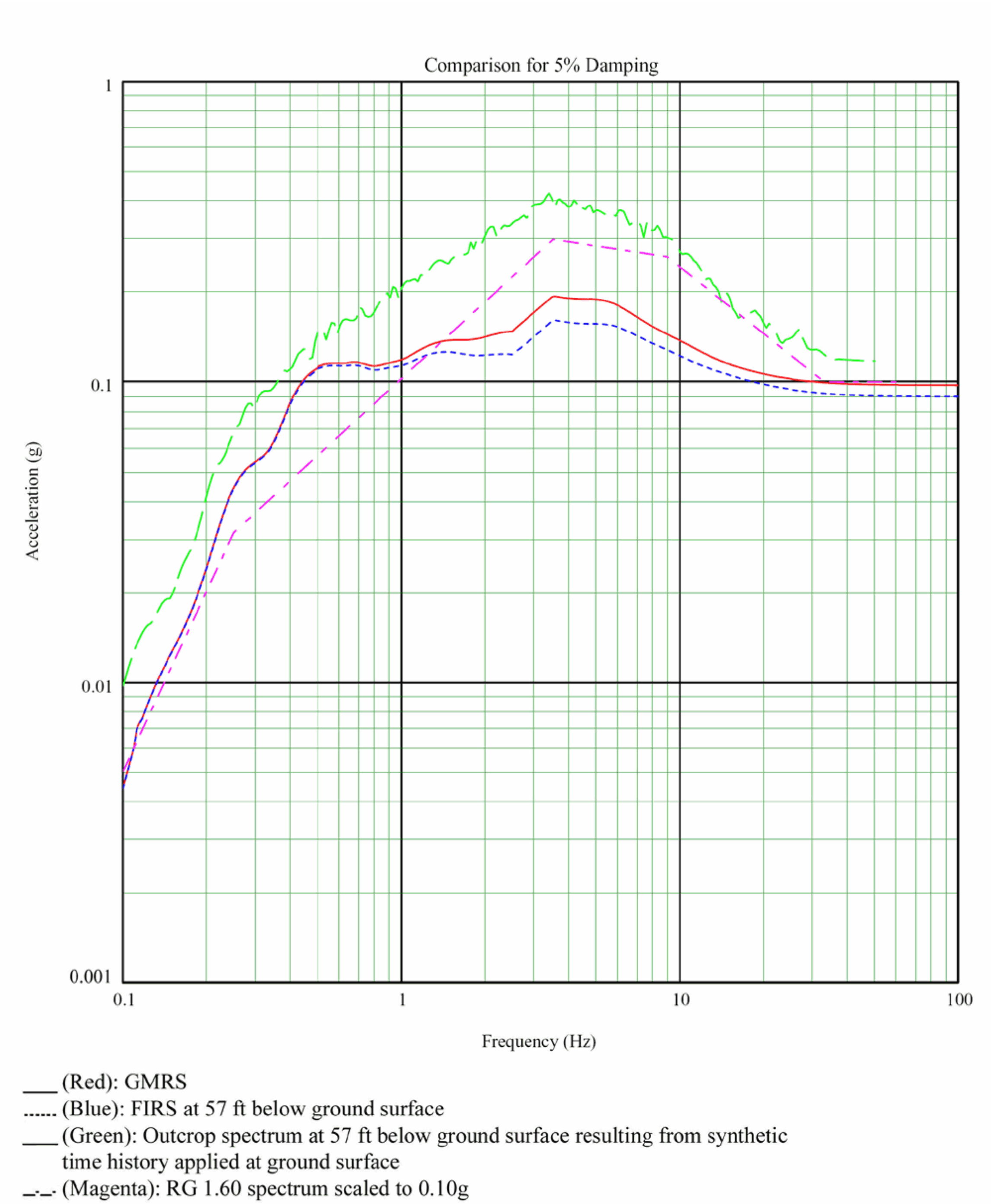
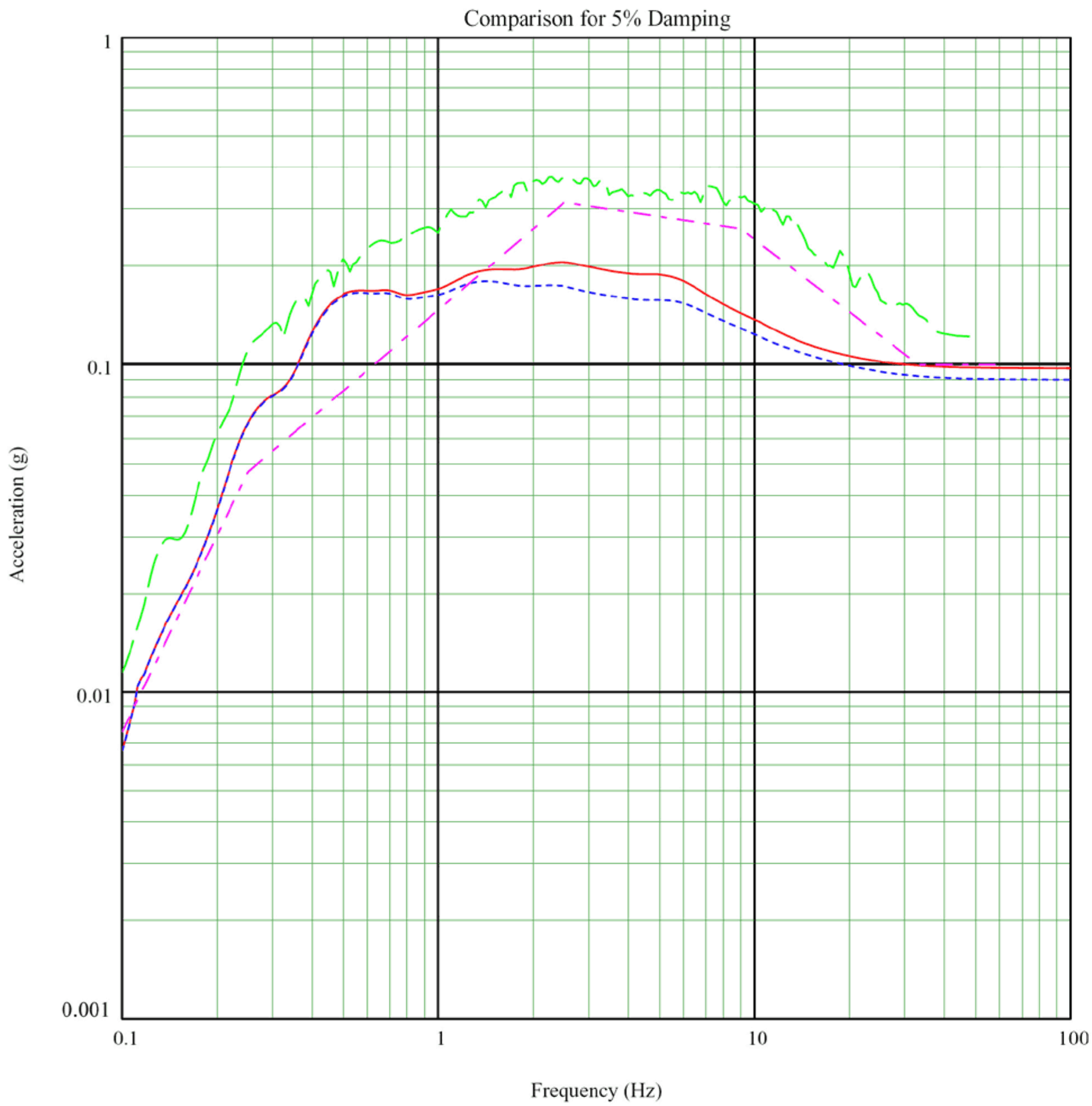


Figure 3H.6-8c Comparison of Spectra at Foundation of RSW Piping Tunnel (Lower Bound Soil Properties, Vertical Direction)

Figure 3H.6-9 Not Used



___ (Red): GMRS
...... (Blue): FIRS at 68 ft below ground surface
___ (Green): Outcrop spectrum at 68 ft below ground surface resulting from synthetic time history applied at ground surface
_._ (Magenta): RG 1.60 spectrum scaled to 0.10g

Figure 3H.6-9a Comparison of Spectra at Foundation of RSW Pump House (Mean Soil Properties, E-W Direction)

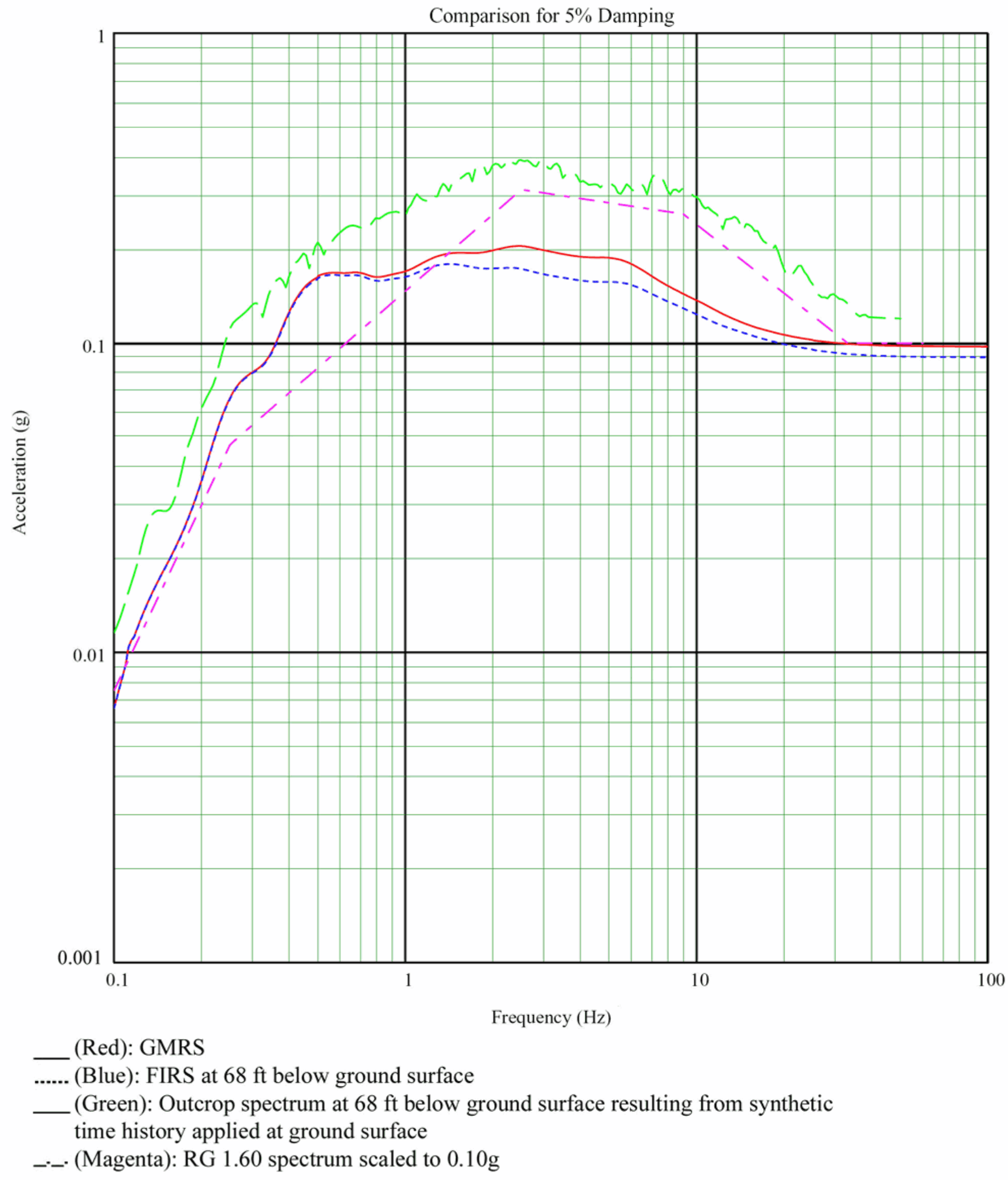


Figure 3H.6-9b Comparison of Spectra at Foundation of RSW Pump House (Upper Bound Soil Properties, E-W Direction)

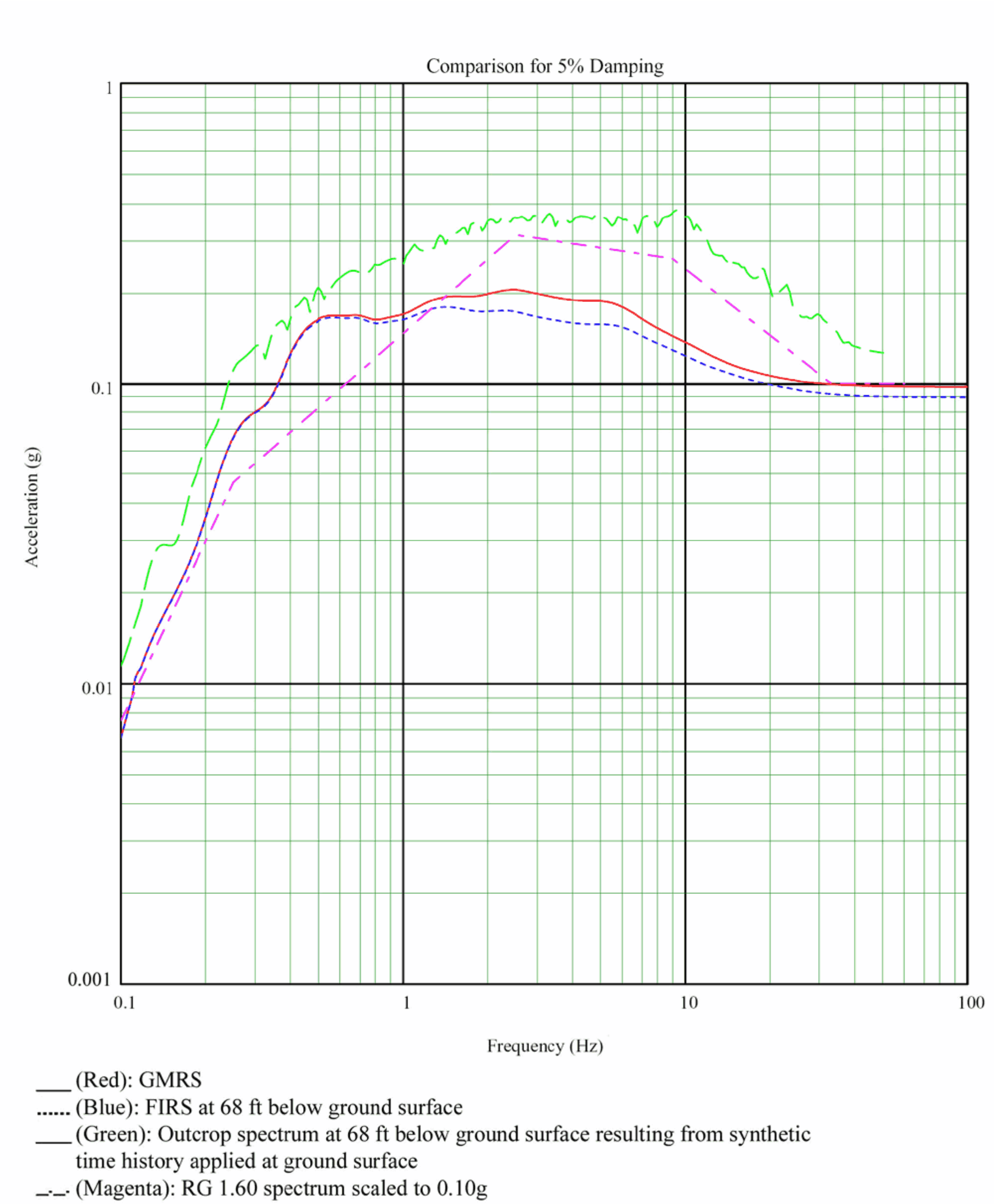


Figure 3H.6-9c Comparison of Spectra at Foundation of RSW Pump House (Lower Bound Soil Properties, E-W Direction

Figure 3H.6-10 Not Used

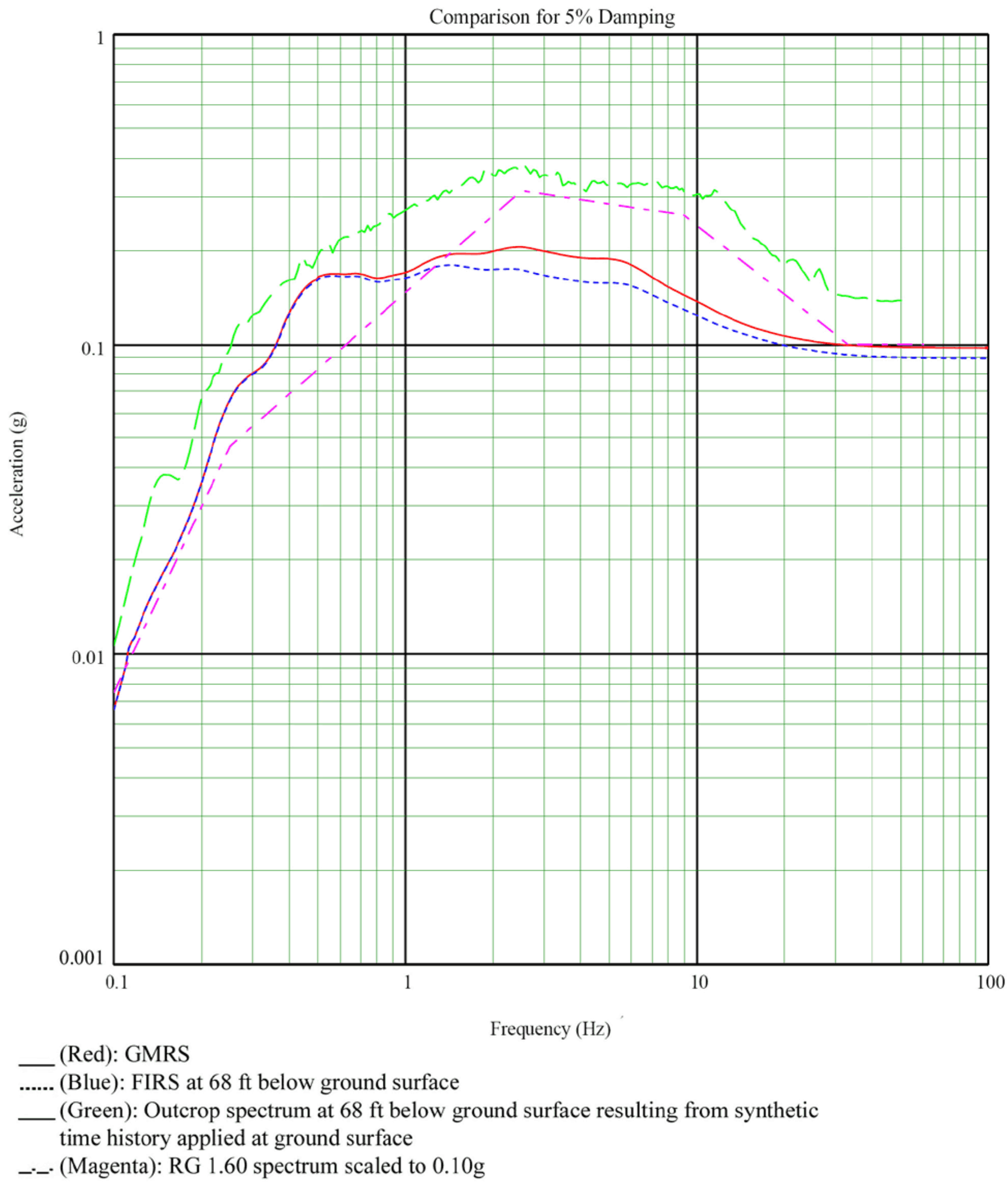


Figure 3H.6-10a Comparison of Spectra at Foundation of RSW Pump House (Mean Soil Properties, N-S Direction)

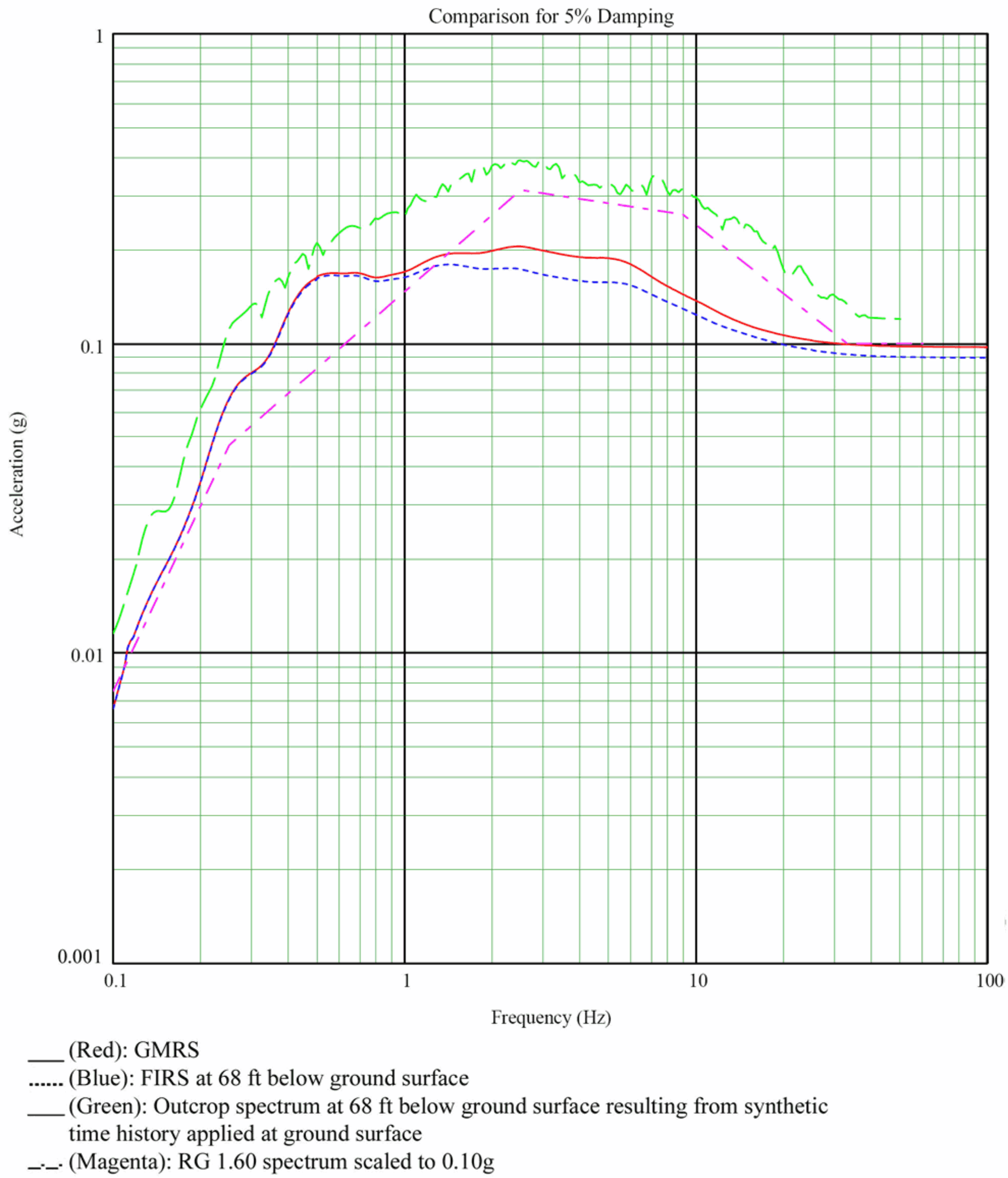


Figure 3H.6-10b Comparison of Spectra at Foundation of RSW Pump House (Upper Bound Soil Properties, N-S Direction)

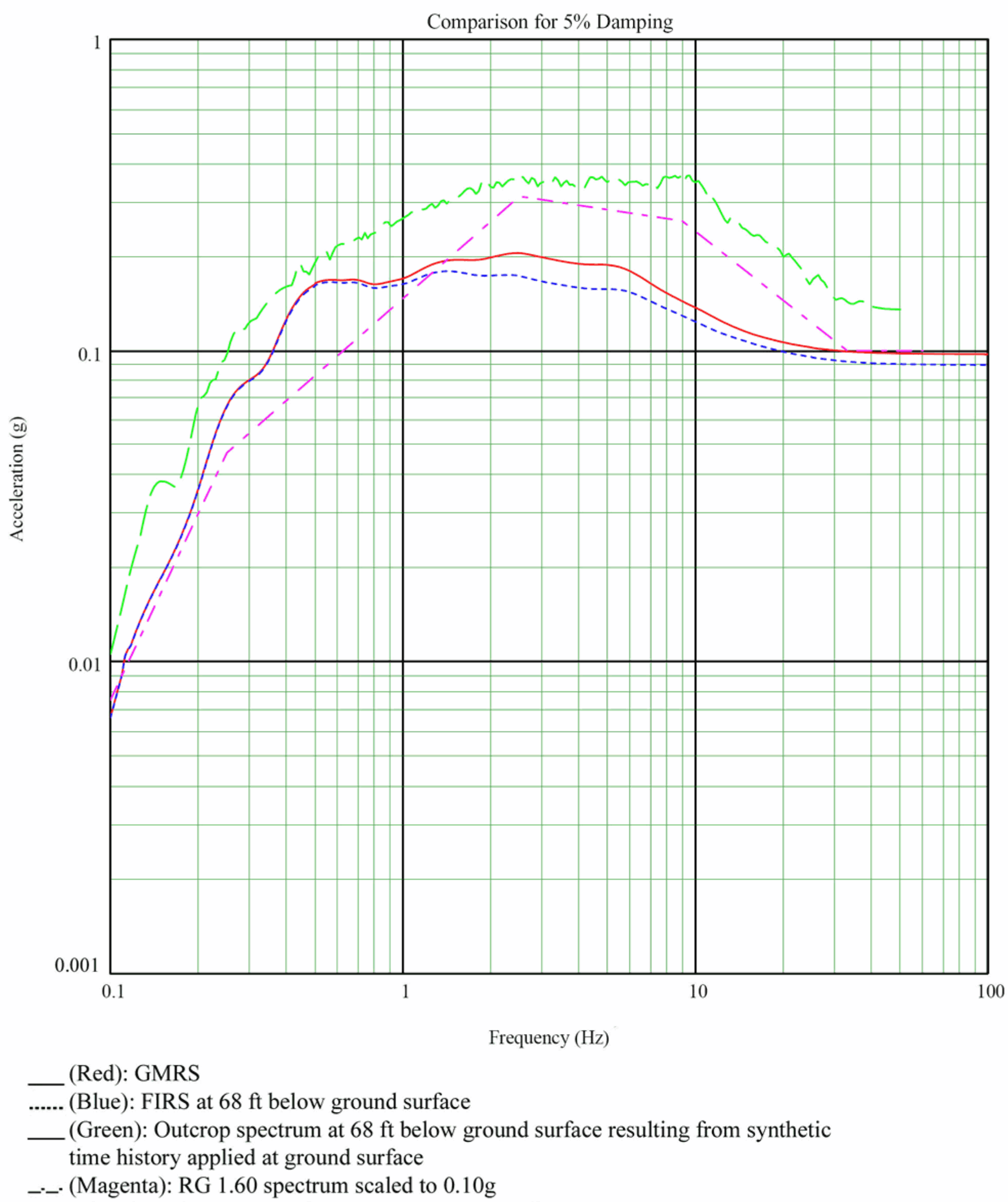
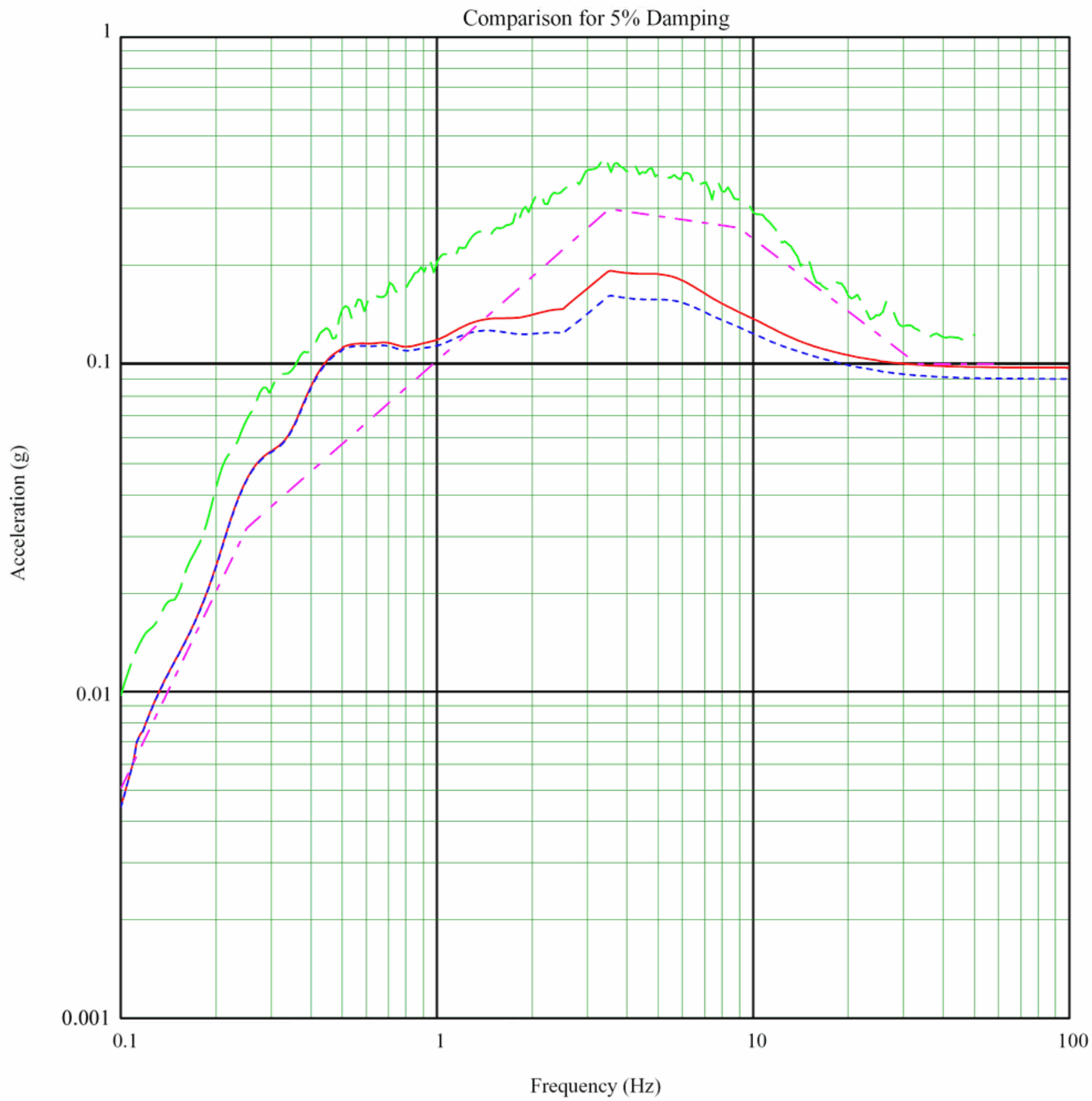


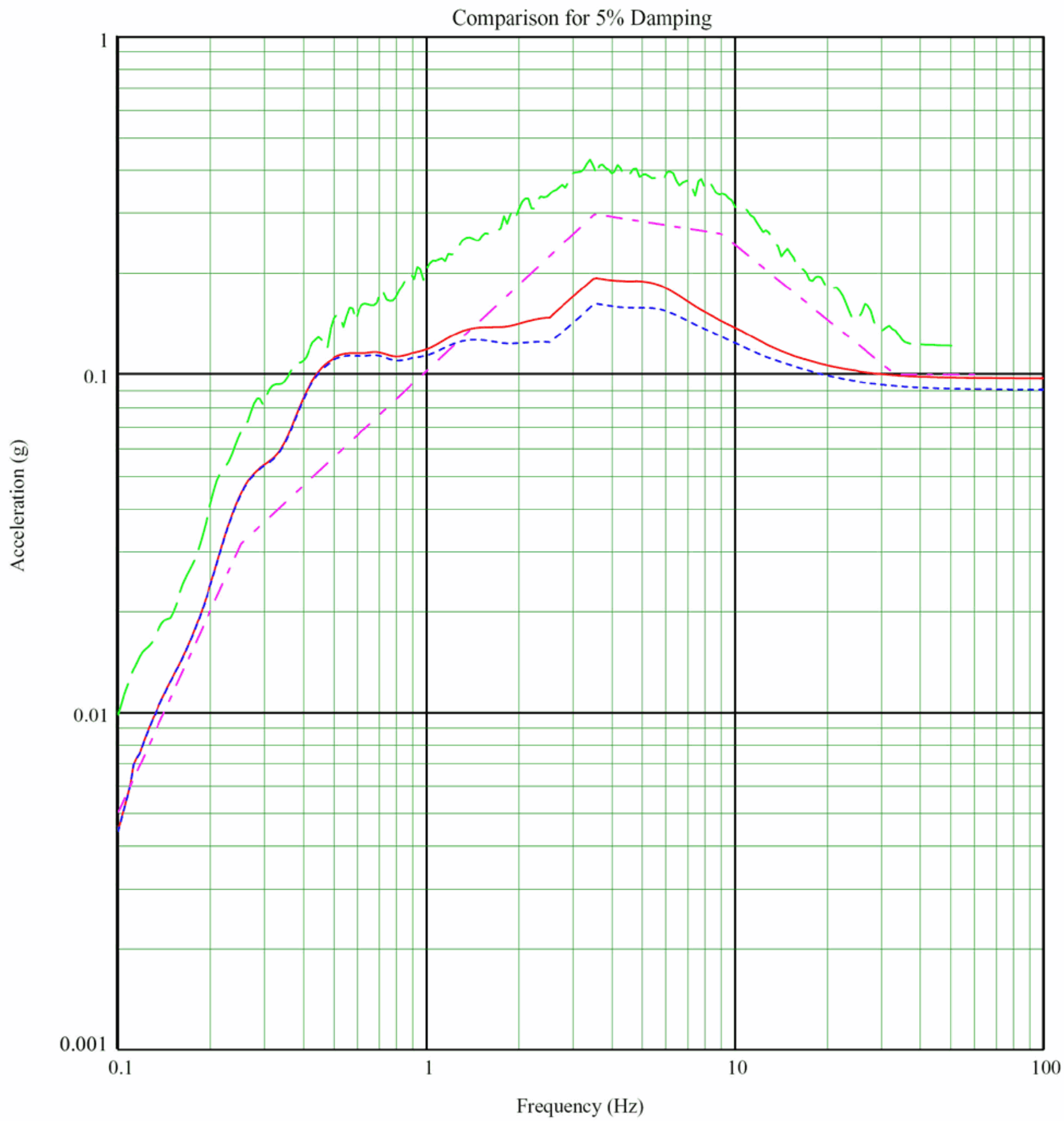
Figure 3H.6-10c Comparison of Spectra at Foundation of RSW Pump House (Lower Bound Soil Properties, N-S Direction)

Figure 3H.6-11 Not Used



___ (Red): GMRS
...... (Blue): FIRS at 68 ft below ground surface
___ (Green): Outcrop spectrum at 68 ft below ground surface resulting from synthetic time history applied at ground surface
_._. (Magenta): RG 1.60 spectrum scaled to 0.10g

Figure 3H.6-11a Comparison of Spectra at Foundation of RSW Pump House (Mean Soil Properties, Vertical Direction)



___ (Red): GMRS
...... (Blue): FIRS at 68 ft below ground surface
___ (Green): Outcrop spectrum at 68 ft below ground surface resulting from synthetic time history applied at ground surface
_._. (Magenta): RG 1.60 spectrum scaled to 0.10g

Figure 3H.6-11b Comparison of Spectra at Foundation of RSW Pump House (Upper Bound Soil Properties, Vertical Direction)

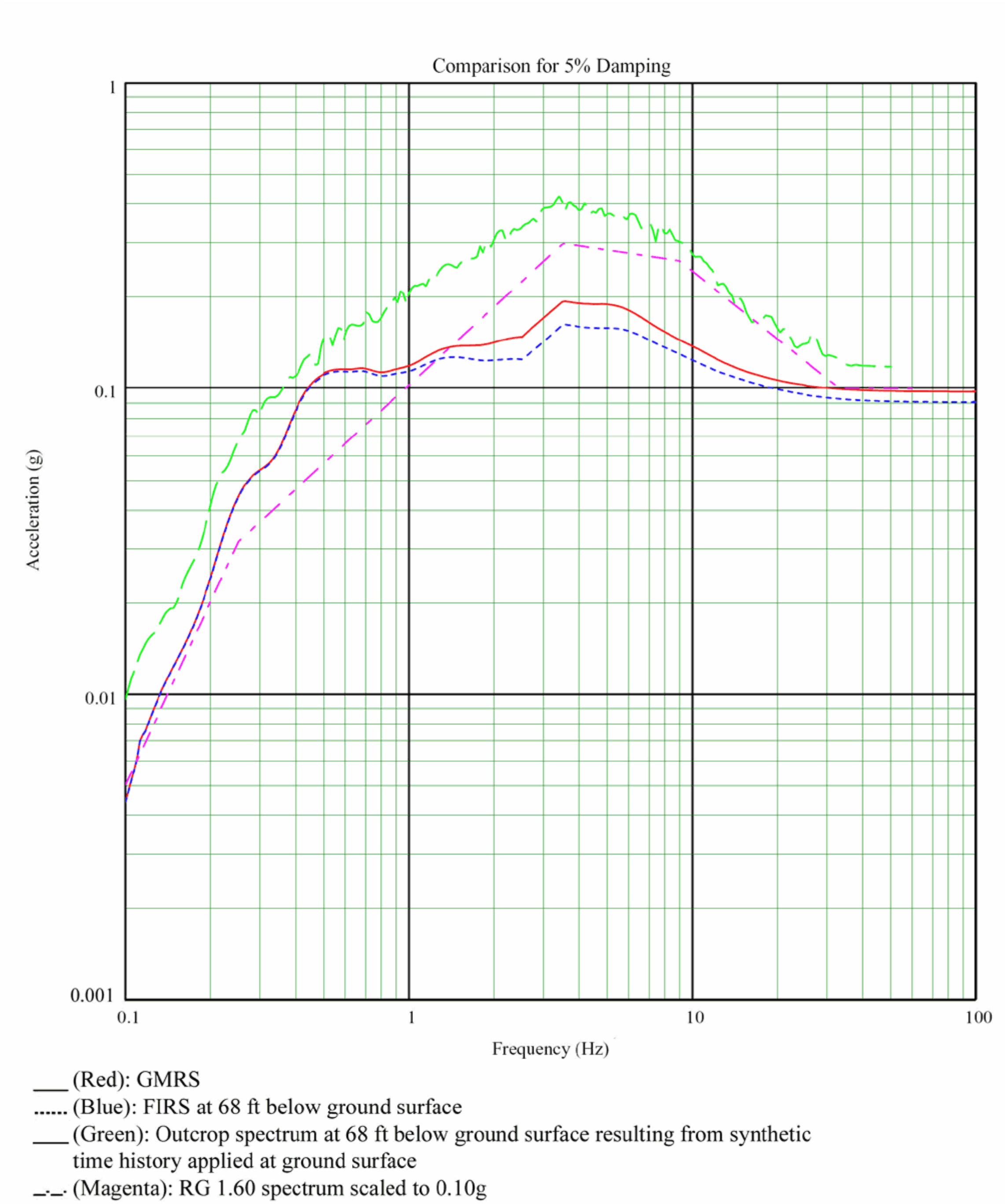


Figure 3H.6-11c Comparison of Spectra at Foundation of RSW Pump House (Lower Bound Soil Properties, Vertical Direction)

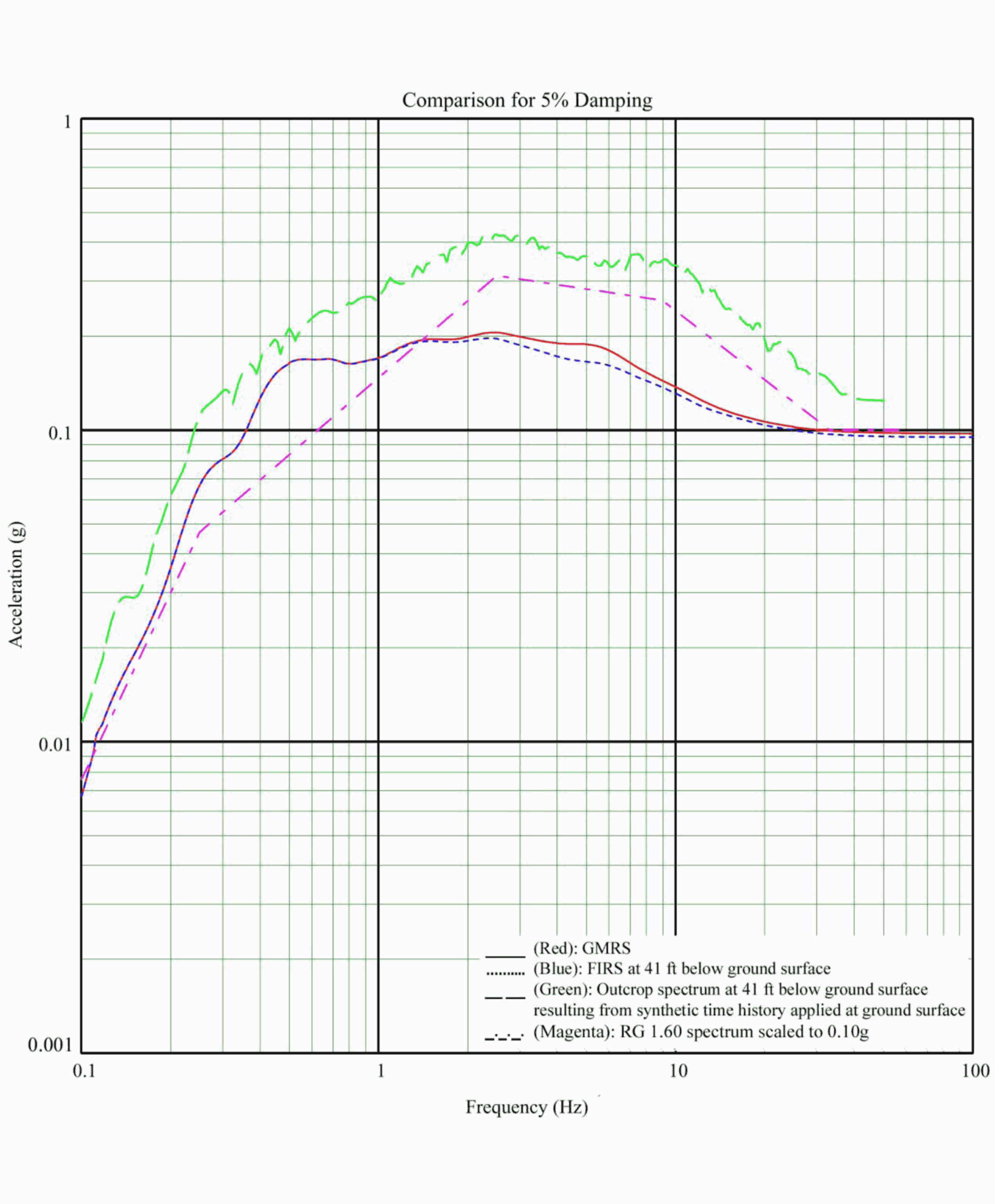


Figure 3H.6-11d Comparison of Spectra at Foundation of Emergency Diesel Generator Fuel Storage Vault – Mean Soil Properties, E-W Direction

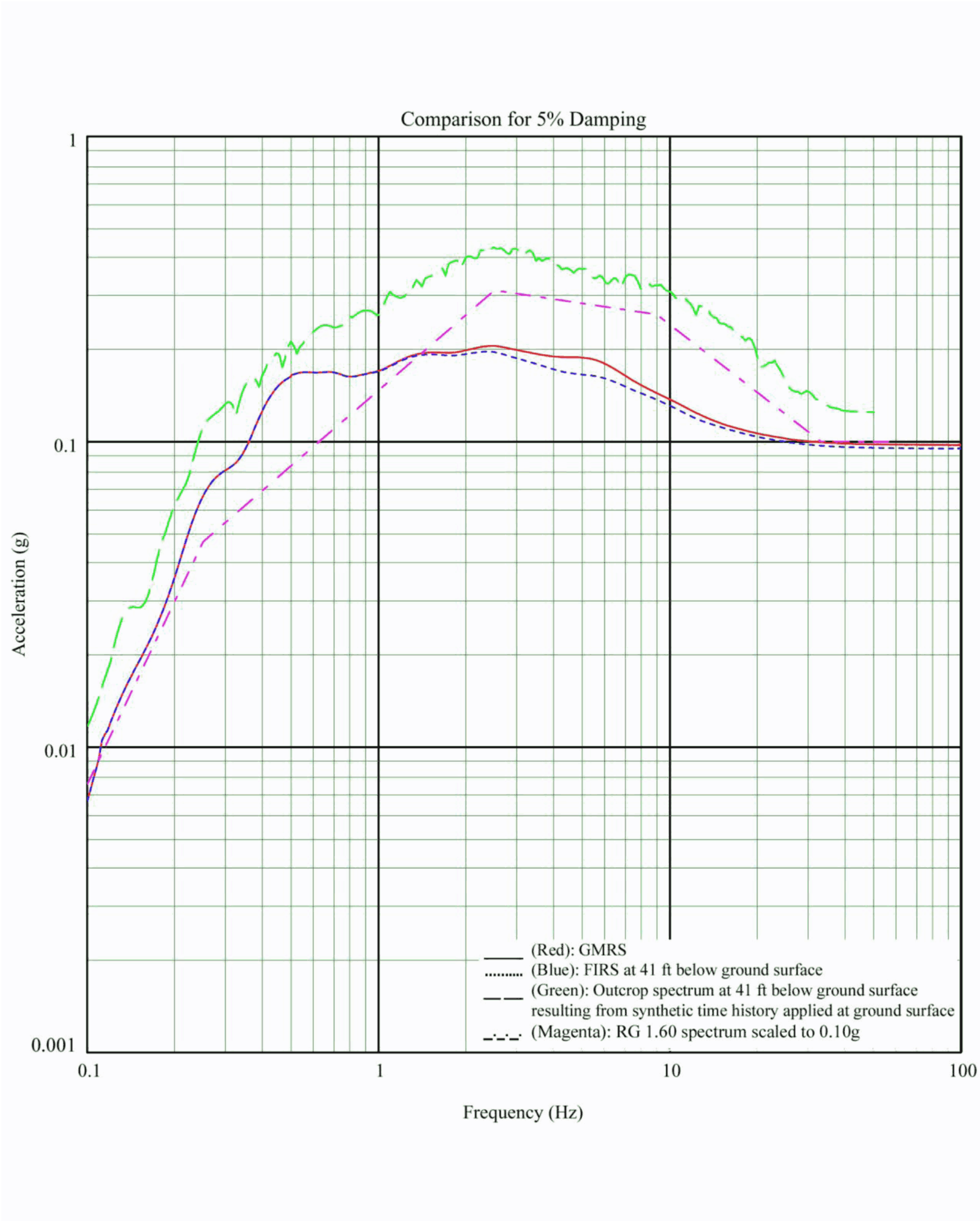


Figure 3H.6-11e Comparison of Spectra at Foundation of Emergency Diesel Generator Fuel Storage Vault – Upper Bound Soil Properties, E-W Direction

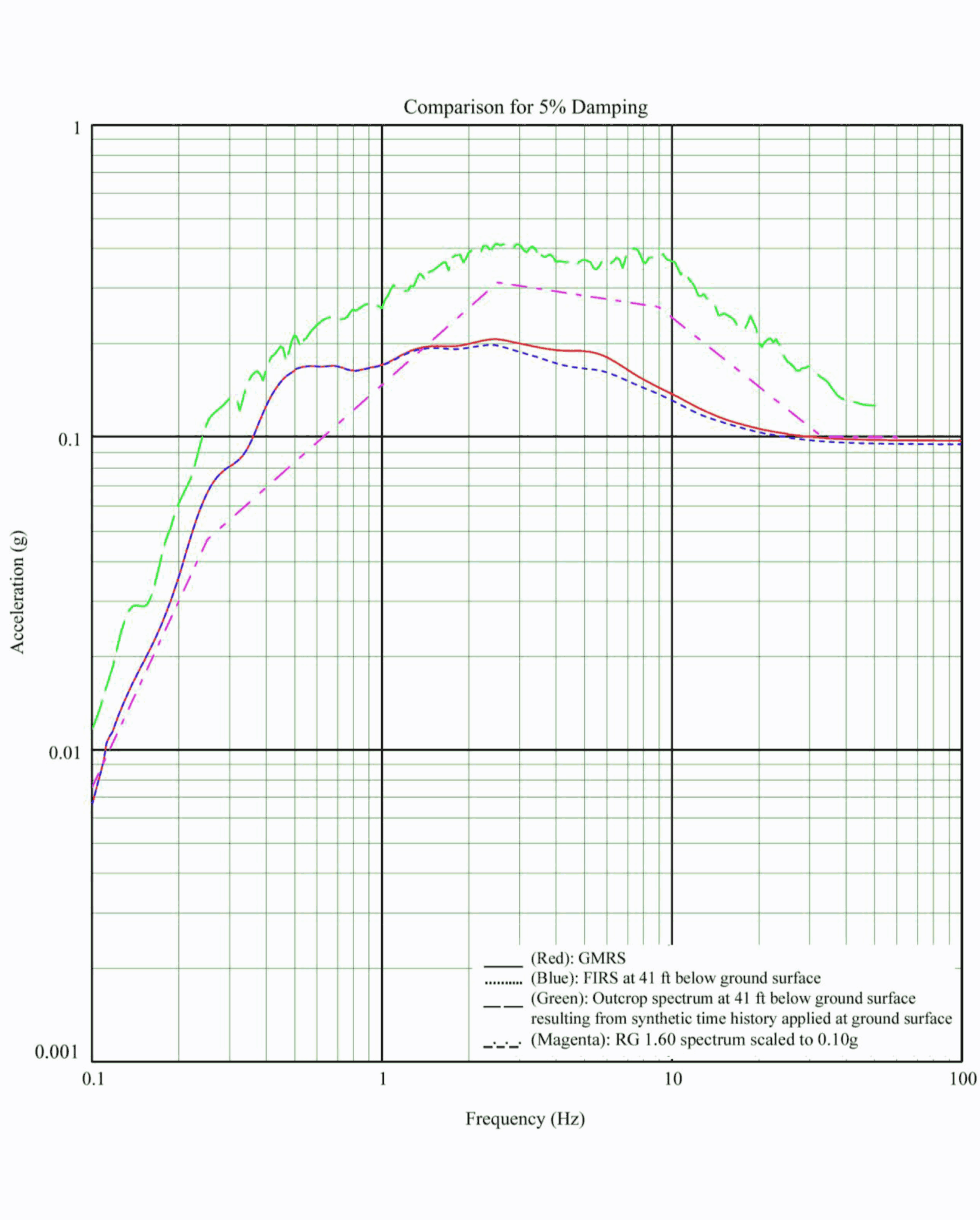


Figure 3H.6-11f Comparison of Spectra at Foundation of Emergency Diesel Generator Fuel Storage Vault – Lower Bound Soil Properties, E-W Direction

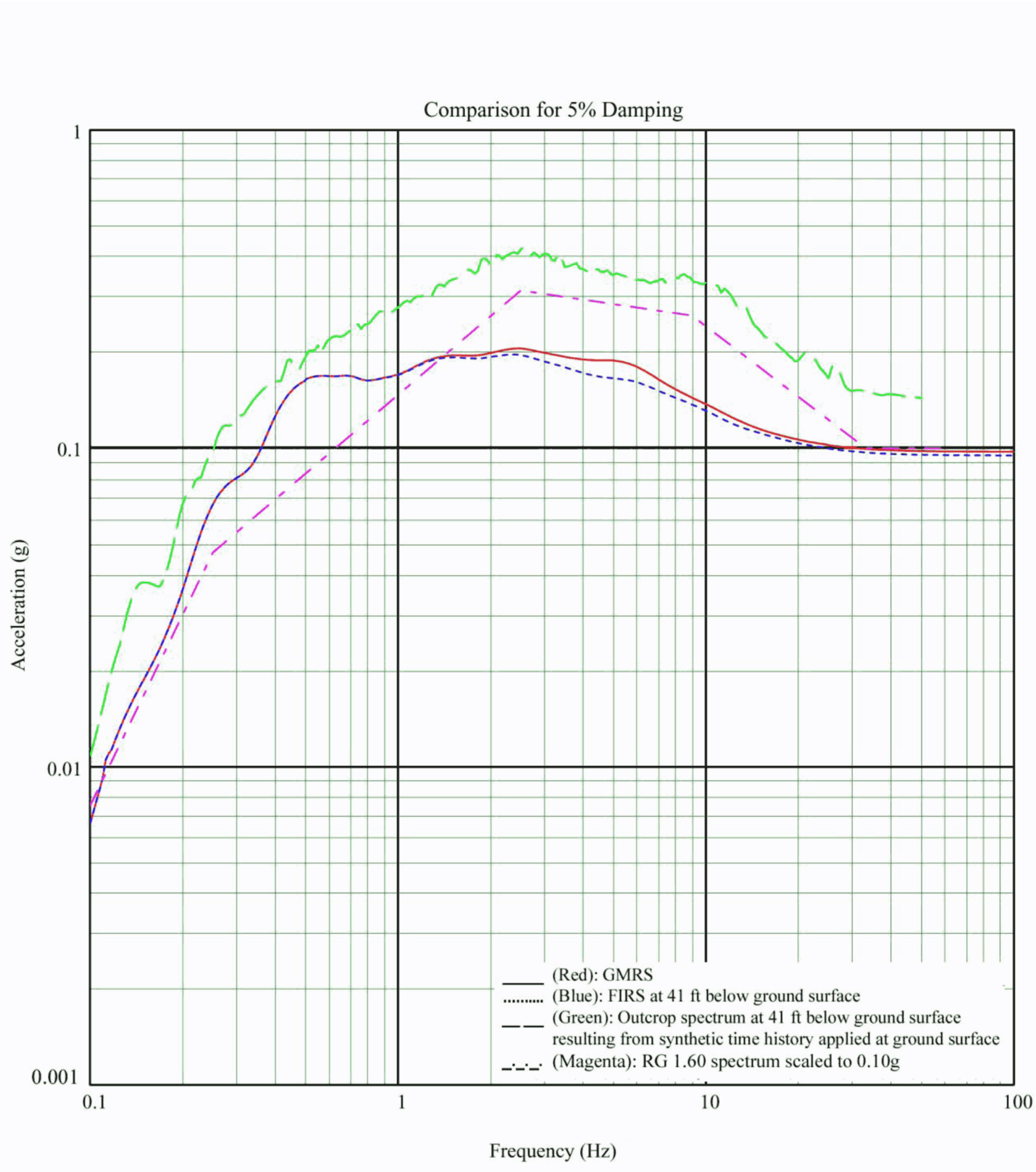


Figure 3H.6-11g Comparison of Spectra at Foundation of Emergency Diesel Generator Fuel Storage Vault – Mean Soil Properties, N-S Direction

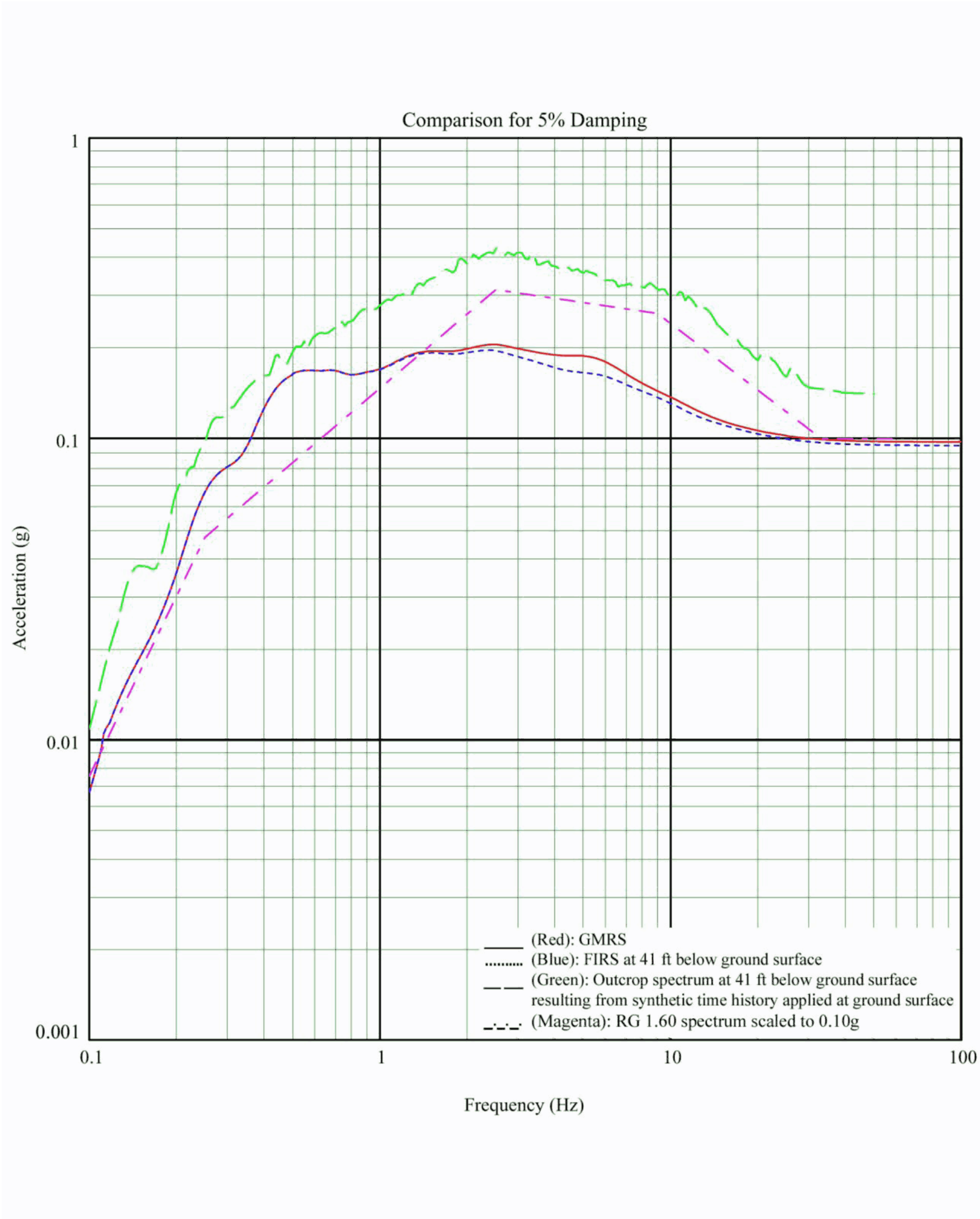


Figure 3H.6-11h Comparison of Spectra at Foundation of Emergency Diesel Generator Fuel Storage Vault – Upper Bound Soil Properties, N-S Direction

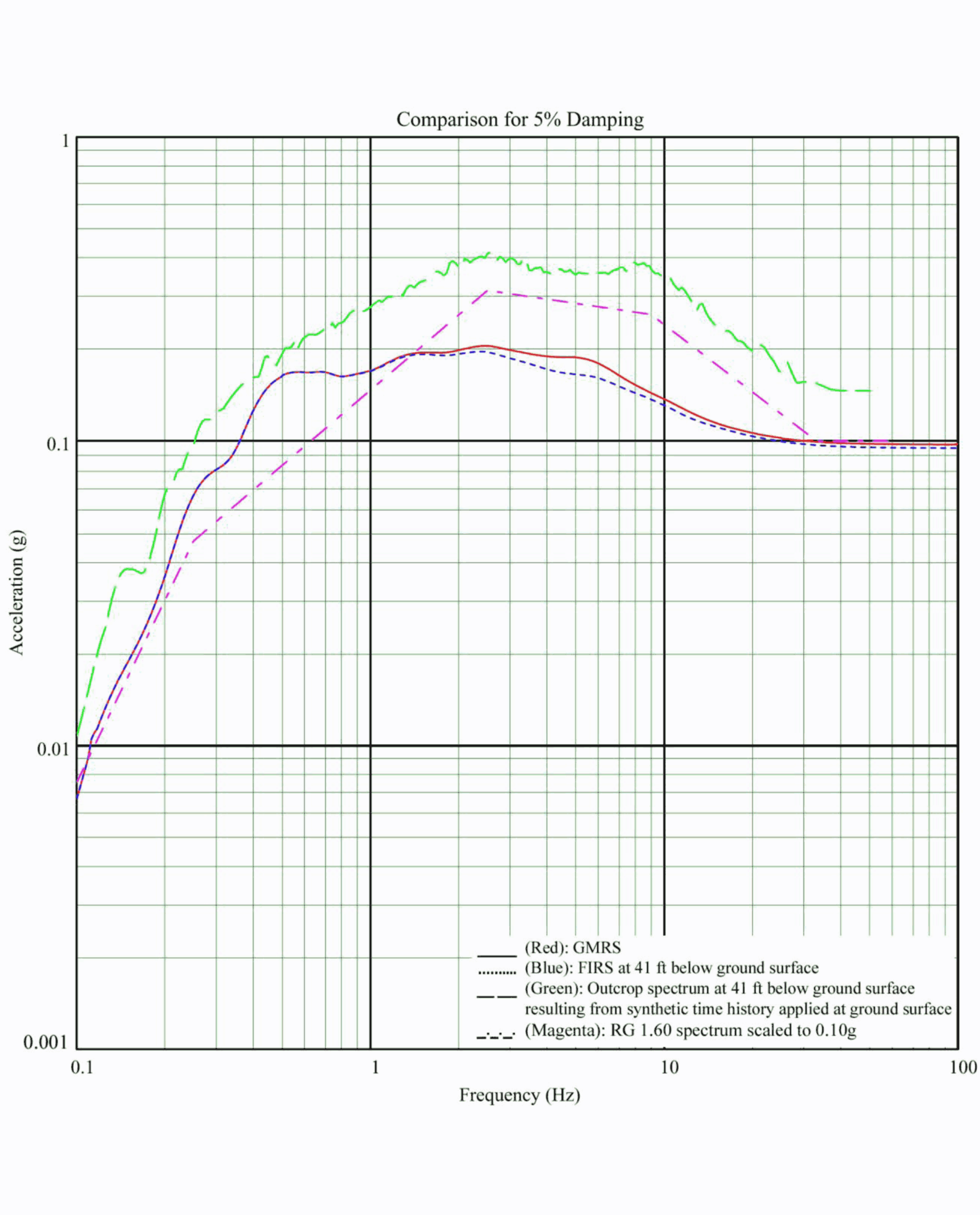


Figure 3H.6-11i Comparison of Spectra at Foundation of Emergency Diesel Generator Fuel Storage Vault – Lower Bound Soil Properties, N-S Direction

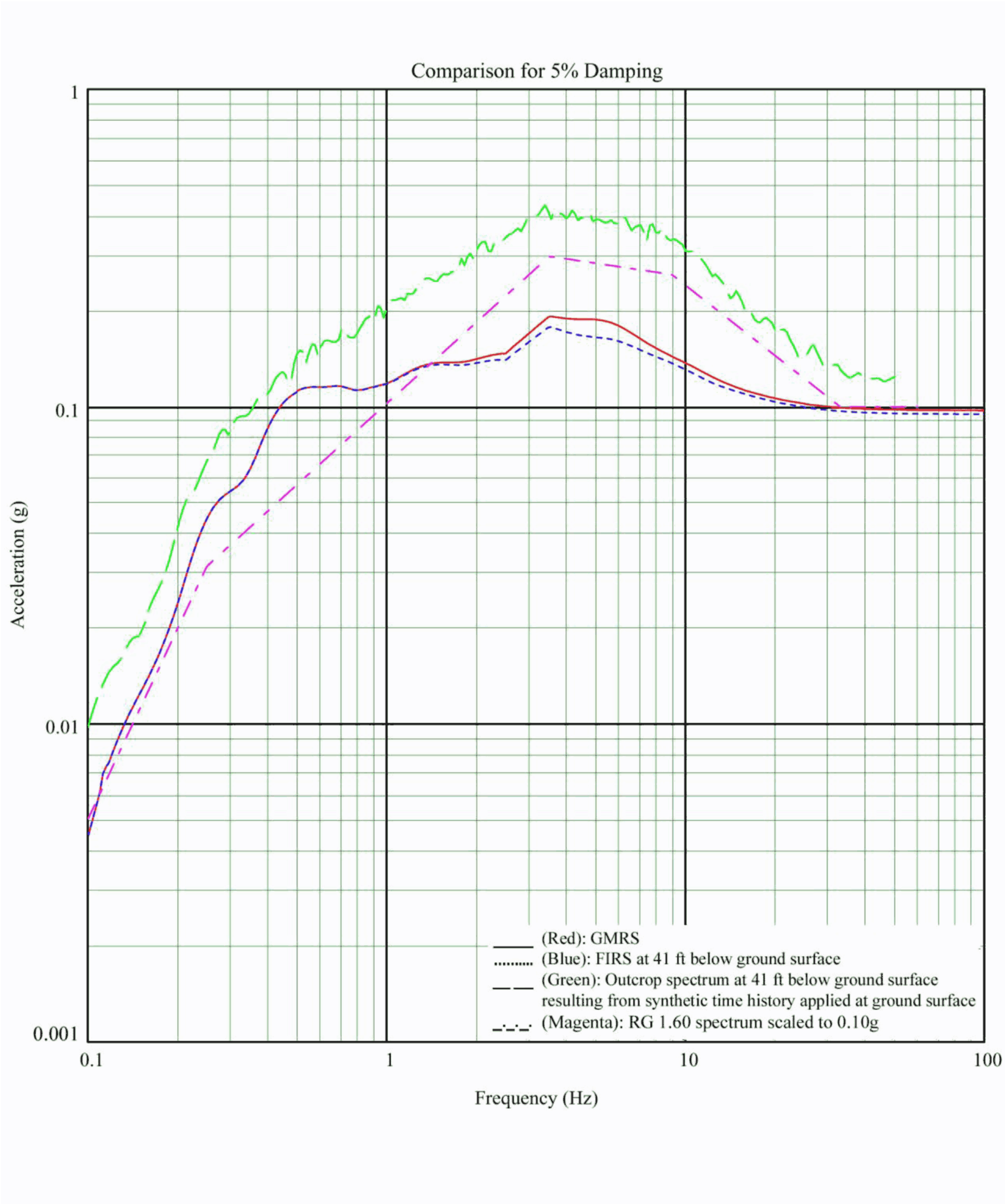


Figure 3H.6-11j Comparison of Spectra at Foundation of Emergency Diesel Generator Fuel Storage Vault – Mean Soil Properties, Vertical Direction

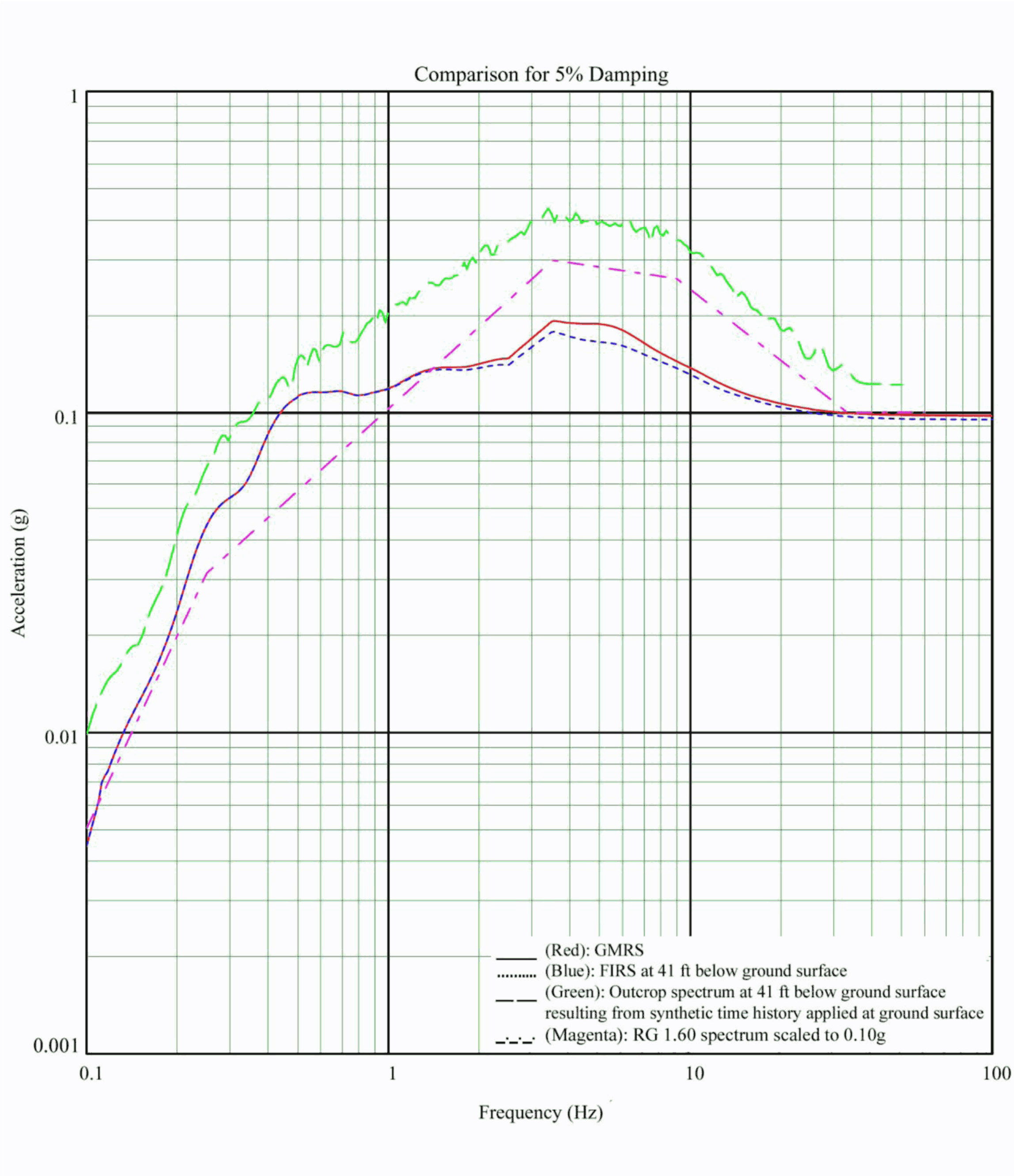


Figure 3H.6-11k Comparison of Spectra at Foundation of Emergency Diesel Generator Fuel Storage Vault – Upper Bound Soil Properties, Vertical Direction

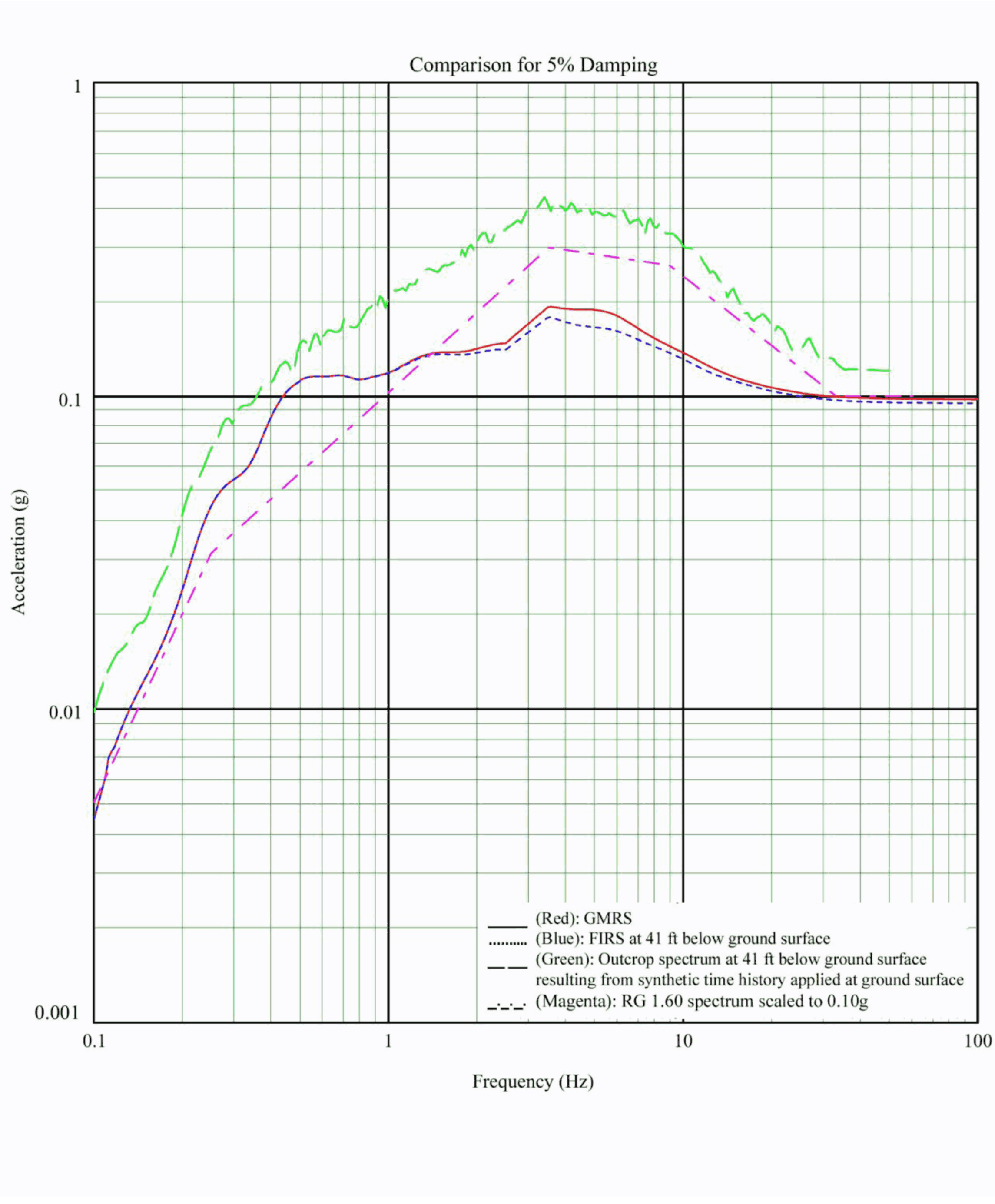


Figure 3H.6-11L Comparison of Spectra at Foundation of Emergency Diesel Generator Fuel Storage Vault – Lower Bound Soil Properties, Vertical Direction

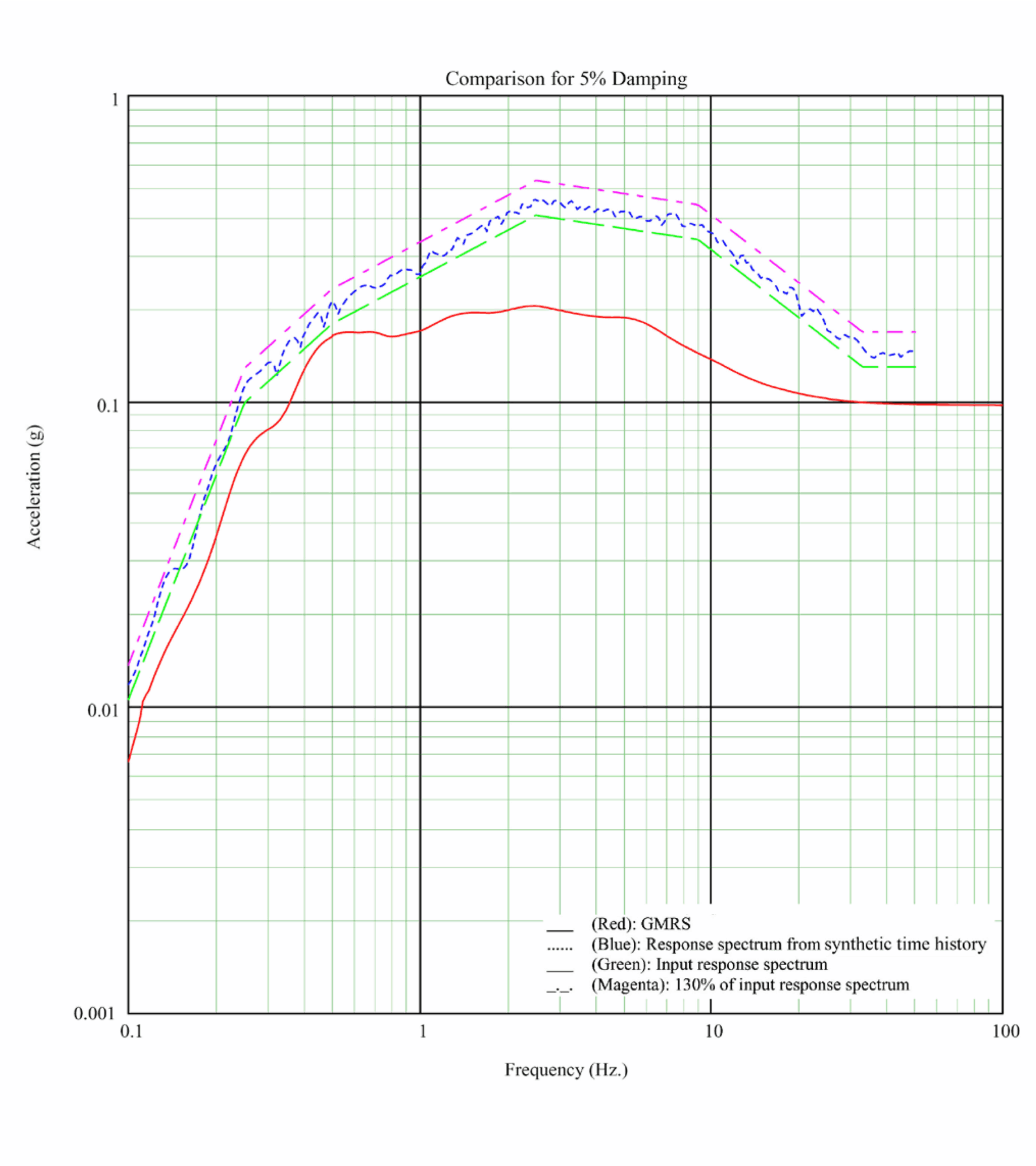


Figure 3H.6-12 Comparison of Spectrum from Synthetic Time History, Input Spectrum, 130% of Input Spectrum, and GMRS (E-W Direction)