Nuclear Operating Company
South Texas Project Electric Generating Station P.O. Box 289 Wadsworth, Texas 77483

December 30, 2009
U7-C-STP-NRC-090230

U. S. Nuclear Regulatory Commission
Attention: Document Control Desk
One White Flint North
11555 Rockville Pike
Rockville, MD 20852-2738

South Texas Project
Units 3 and 4
Docket Nos. 52-012 and 52-013
Response to Request for Additional Information and
Supplemental Response to Request for Additional Information

References:
1. Letter, Scott Head to Document Control Desk, "Response to Request for Additional Information," dated August 20, 2009. U7-C-STP-NRC-090112 (ML092360772)

2. Letter, Scott Head to Document Control Desk, "Response to Request for Additional Information," dated November 19, 2009. U7-C-STP-NRC-090208 (ML093270047)

Attached is a second supplement to the response to RAI question 03.07.01-13, related to COLA Part 2, Tier 2, Section 3.7, "Seismic Design." References 1 and 2 provided the original response and the first supplement to RAI question 03.07.01-13.

The attachment to this letter provides the following:

RAI 03.07.01-13, Supplement 2.

When a change to the COLA is indicated, the change will be incorporated into the next routine revision of the COLA following NRC acceptance of the RAI response.

There are no commitments in this letter.

If you have any questions regarding these responses, please contact me at (361) 972-7136, or Bill Mookhoek at (361) 972-7274.

D091

STI 32592407 NRO

I declare under penalty of perjury that the foregoing is true and correct.

Executed on 12/30/09

Scott Head
Manager, Regulatory Affairs
South Texas Project Units 3 & 4

rhb

Attachment: RAI 03.07.01-13, Supplement 2

cc: w/o attachments and enclosure except*
(paper copy)

Director, Office of New Reactors
U. S. Nuclear Regulatory Commission
One White Flint North
11555 Rockville Pike
Rockville, MD 20852-2738

Regional Administrator, Region IV
U. S. Nuclear Regulatory Commission
611 Ryan Plaza Drive, Suite 400
Arlington, Texas 76011-8064

Kathy C. Perkins, RN, MBA
Assistant Commissioner
Division for Regulatory Services
Texas Department of State Health Services
P. O. Box 149347
Austin, Texas 78714-9347

Alice Hamilton Rogers, P.E.
Inspection Unit Manager
Texas Department of State Health Services
P. O. Box 149347
Austin, Texas 78714-9347

C. M. Canady
City of Austin
Electric Utility Department
721 Barton Springs Road
Austin, TX 78704

*Steven P. Frantz, Esquire
A. H. Gutterman, Esquire
Morgan, Lewis & Bockius LLP
1111 Pennsylvania Ave. NW
Washington D.C. 20004

*George F. Wunder
* Tom Tai
Two White Flint North
11545 Rockville Pike
Rockville, MD 20852

(electronic copy)

*George F. Wunder
*Tom Tai
Loren R. Plisco
U. S. Nuclear Regulatory Commission

Steve Winn
Joseph Kiwak
Eli Smith
Nuclear Innovation North America

Jon C. Wood, Esquire
Cox Smith Matthews

J. J. Nesrsta
Kevin Pollo
L. D. Blaylock
CPS Energy

RAI 03.07.01-13, Supplement 2

QUESTION 03.07.01-13

FSAR Appendix 3H.6.5.1.3 states that soil conditions at the STP 3 & 4 site are described in Subsection 2.5S.4. The applicant is requested to provide the information per guidance of SRP Acceptance Criteria 3.7.1.II.3 either in this Section or by specific reference to specific Tables or Figures for all site-specific Category I structures (including UHS and RSW Piping Tunnel).

RESPONSE, SUPPLEMENT 2:

As specified in Reference 1 (ML092360772), Attachment 1, "Supplemental Response Schedule," the following tables and figures, which provide summary of designs for UHS/RSW Pump Houses and RSW Piping Tunnels, are provided in this supplement to the response to RAI 03.07.01-13:

Tables: Table 3H.6-5 through Table 3H.6-10;

Figures: Figure 3H.6-41 through Figure 3H.6-136; and
Figure1.2-34 through Figure 1.2-36.

Submittal of the tables and figures listed above also satisfies commitments in Reference 1 (ML092360772), Attachment 1, "Supplemental Response Schedule," for the following RAIs:

RAI 03.03.01-2
RAI 03.03.02-2
RAI 03.07.02-10
RAI 03.07.02-12
RAI 03.08.04-11
RAI 03.08.04-13
RAI 03.08.05-1

The dynamic bearing capacity factors of safety (FOS) for the site-specific conditions for the Reactor and Control Buildings and the UHS/RSW Pump Houses are being provided in a supplement to the response to RAI 02.05.04-29, which is being submitted separately from this submittal.

The static bearing capacity factors of safety (FOS) were provided in Revision 3 of COLA Part 2, Tier 2, in Table 2.5S.4-41B, "Bearing Capacity of Foundation."

As requested in RAI 03.07.02-12, the following Figures (i.e., RAI 03.07.01-13A and 03.07.01-13B) show the envelope of soil pressures obtained from the SSI analysis of the UHS/RSW Pump House. The averages of these SSI pressures, excluding the sharp peaks at support locations, are comparable to those obtained following the guidance in Subsection 3.5.3.2.2 of ASCE 4 (See Figures 3H.6-41 through 3H.6-43).

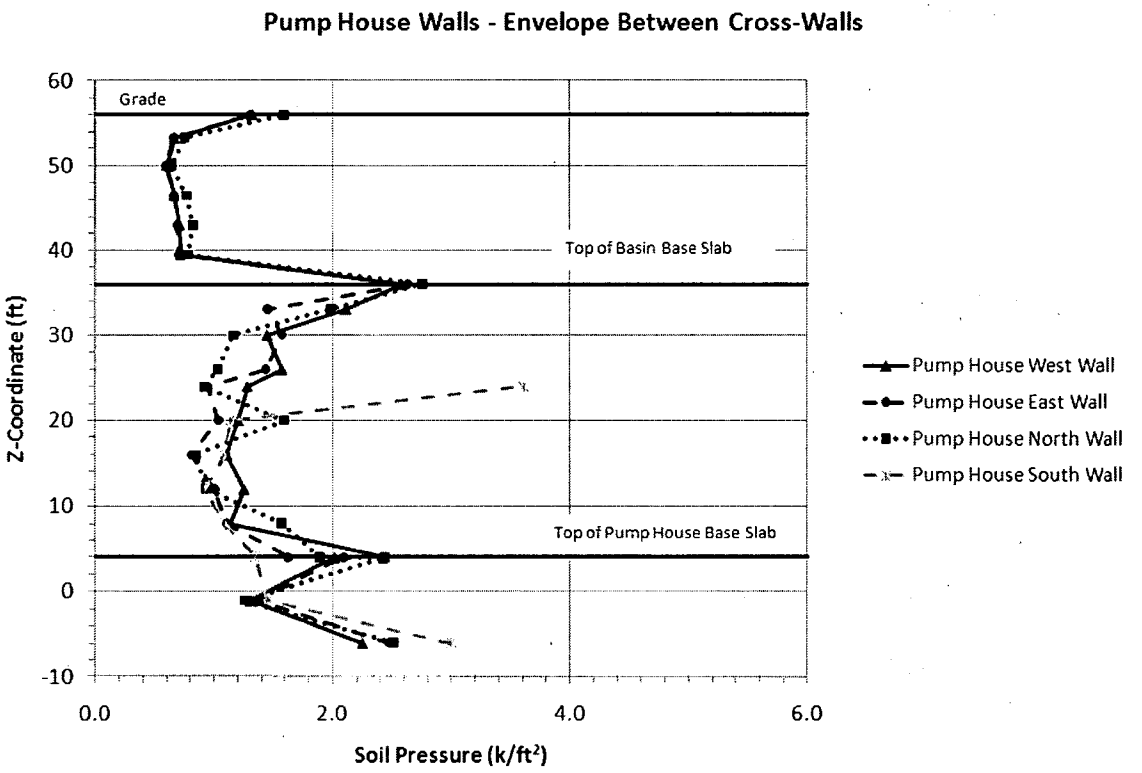


Figure RAI 03.07.01-13A: Enveloped Soil Pressures at Pump House Walls; Envelope Between Cross-Walls

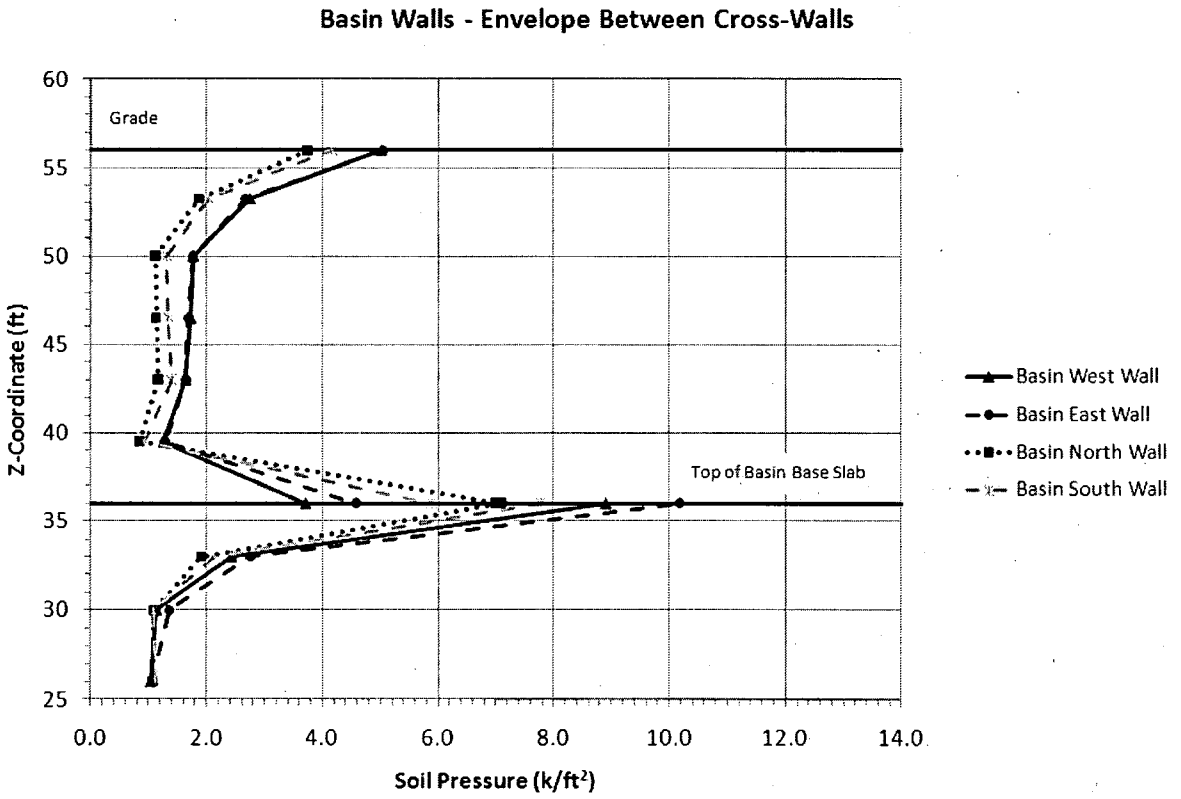


Figure RAI 03.07.01-13B: Enveloped Soil Pressures at Basin Walls; Envelope Between Cross-Walls

In addition to the above, the following COLA changes, (A) through (D), will be made as a result of this supplemental response:

(A) Previous COLA Section 3H.6.2 revision provided as enclosure in response to RAI 03.07.01-11 will be revised as shown below:

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 Table 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.

(B) Previous COLA Section 3H.6.4.2.1 revision provided as enclosure in response to RAI 03.07.01-11 will be revised as shown below:

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:	~~Calculated Factor of Safety (Later)~~ See FSAR Subsection 2.5S.4.10

(C) The COLA Section 3H.6.5.2.14 revision provided as enclosure in response to RAI 03.07.01-3 will be revised as shown below:

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 ~~is~~are 0.30 under the RSW Pump House and 0.40 under the UHS Basin. The calculated stability safety factors for the UHS/RSW Pump House are provided in Table 3H.6-5.

(D) COLA Chapter 21 Figures 1.2-34 through 1.2-36 will be replaced by the attached revised Figures 1.2-34 through 1.2-36.

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 cases 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						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 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	-226							
						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	3652	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	-118	-530							
									Including Thermal Gradient	-118	-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'	83	3.12	-	-	-	-
									Including Thermal Gradient	286	-711							
						Max Compression w/ corresponding moment	3842	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	-445	-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	3858	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	3844	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						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	Transverse Shear [6] Reinforcement Design Loads (kips / ft)		
								Load Combination	Thermal Gradient Loading Condition	Axial [4] (kips / ft)	Flexure [4] (ft-kips / ft)	Load Combination	In-plane [5] Shear (kips / ft)					
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	4.58	-	-	-	
									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	-398	-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	-783							
									Including Thermal Gradient	-41	-783							
					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	-218	-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	-455							
						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	-18	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						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	Transverse Shear [6] Reinforcement Design Loads (kips / ft)		
								Load Combination	Thermal Gradient Loading Condition	Axial [4] (kips / ft)	Flexure [4] (ft-kips / ft)	Load Combination	In-plane [5] Shear (kips / ft)					
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	-481							
						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	Transverse Shear [6] Reinforcement Design Loads (kips / ft)		
								Load Combination	Thermal Gradient Loading Condition	Axial [4] (kips / ft)	Flexure [4] (ft-kips / ft)	Load Combination	In-plane [5] Shear (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	-606	-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	-1183							
					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	-128	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	-78							
									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	-819							
						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						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	Transverse Shear [6] Reinforcement Design Loads (kips / ft)		
								Load Combination	Thermal Gradient Loading Condition	Axial [4] (kips / ft)	Flexure [4] (ft-kips / ft)	Load Combination	In-plane [5] Shear (kips / ft)					
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	-1081	-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	-281	284							
					2-H-L	Max Tension w/ corresponding moment	8827	1.4D + 1.4F + 1.7W	Excluding Thermal Gradient	180	82	D + F + L + H' + Ta + Ro +E'	245	6.24	-	-	-	
									Including Thermal Gradient	180	82							
						Max Compression w/ corresponding moment	8813	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	-556	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	-355	276							
					3-H-L	Max Tension w/ corresponding moment	3222	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	849	306	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	625							
									Including Thermal Gradient	320	664							
						Max Moment with axial compression	3222	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-1271	625							
									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						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	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	-728							
						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	600							
									Including Thermal Gradient	-656	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	187							
									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						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	Transverse Shear [6] Reinforcement Design Loads (kips / ft)		
								Load Combination	Thermal Gradient Loading Condition	Axial [4] (kips / ft)	Flexure [4] (ft-kips / ft)	Load Combination	In-plane [5] Shear (kips / ft)					
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	8.24	-	-	-	-
									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	5606	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	5606	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-475	-82							
									Including Thermal Gradient	-477	286							
						Max Moment with axial tension	5606	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	5606	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-18	-342							
									Including Thermal Gradient	-20	-108							
			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	5606	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	8.24	-	-	-	-
									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						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	Transverse Shear [6] Reinforcement Design Loads (kips / ft)		
								Load Combination	Thermal Gradient Loading Condition	Axial [4] (kips / ft)	Flexure [4] (ft-kips / ft)	Load Combination	In-plane Shear [5] (kips / ft)					
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						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	Transverse Shear [6] Reinforcement Design Loads (kips / ft)		
								Load Combination	Thermal Gradient Loading Condition	Axial [4] (kips / ft)	Flexure [4] (ft-kips / ft)	Load Combination	In-plane [5] Shear (kips / ft)					
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	182							
									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	-188	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						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 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	296							
									Including Thermal Gradient	-258	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	178	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	87	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	98	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						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	Transverse Shear [8] Reinforcement Design Loads (kips / ft)		
								Load Combination	Thermal Gradient Loading Condition	Axial [4] (kips / ft)	Flexure [4] (ft-kips / ft)	Load Combination	In-plane [5] Shear (kips / ft)					
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	9128	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'	128	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	-506							
									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	-968							
						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	-1387							
						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						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	Transverse Shear [6] Reinforcement Design Loads (kips / ft)		
								Load Combination	Thermal Gradient Loading Condition	Axial [4] (kips / ft)	Flexure [4] (ft-kips / ft)	Load Combination	In-plane [5] Shear (kips / ft)					
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	-805							
						Max Moment with axial compression	3030	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-28	-130							
									Including Thermal Gradient	144	-805							
					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	-385	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	581	-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						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	Transverse Shear [6] Reinforcement Design Loads (kips / ft)		
								Load Combination	Thermal Gradient Loading Condition	Axial [4] (kips / ft)	Flexure [4] (ft-kips / ft)	Load Combination	In-plane [5] Shear (kips / ft)					
Pump House West Wall	6	West (outside)	Vertical	3H.6-88	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	326	-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	8127	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	8240	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	-828							
						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	-16							
									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						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	Transverse Shear [6] Reinforcement Design Loads (kips / ft)		
								Load Combination	Thermal Gradient Loading Condition	Axial [4] (kips / ft)	Flexure [4] (ft-kips / ft)	Load Combination	In-plane [5] Shear (kips / ft)					
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	318	43	D + F + L + H' + Ta + Ro +E'	136	3.12	-	-	-	
									Including Thermal Gradient	313	-857							
						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	9048	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'	128	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	187							
						Max Moment with axial compression	9134	1.4D + 1.4F + 1.7W	Excluding Thermal Gradient	-159	198							
									Including Thermal Gradient	-159	198							
					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	158							
									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	Transverse Shear [6] Reinforcement Design Loads (ksi / ft)		
								Load Combination	Thermal Gradient Loading Condition	Axial [4] (kips / ft)	Flexure [4] (ft-kips / ft)	Load Combination	In-plane [5] Shear (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	85	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	81	9.00	-	-	-	
									Including Thermal Gradient	1158	-896							
						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	-810	624							
									Including Thermal Gradient	-802	570							
					2-V-L	Max Tension w/ corresponding moment	8165	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	276	-392							
						Max Compression w/ corresponding moment	9098	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-442	181							
									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	189	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	628							
						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						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)	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	186	-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 (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	Transverse Shear [6] Reinforcement Design Loads (kips / ft)		
								Load Combination	Thermal Gradient Loading Condition	Axial [4] (kips / ft)	Flexure [4] (ft-kips / ft)	Load Combination	In-plane [5] Shear (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 + Ps + L + H	Excluding Thermal Gradient	3	-138							
									Including Thermal Gradient	3	-138							
						Max Moment with axial compression	6984	D + Ps + L + H	Excluding Thermal Gradient	-58	-202							
									Including Thermal Gradient	-58	-202							
					2-H-L	Max Tension w/ corresponding moment	3248	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	418	-34	D + F + L + H' + Ta + Ro +E'	85	4.68	-	-	-	
									Including Thermal Gradient	421	-33							
						Max Compression w/ corresponding moment	3248	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-580	-31							
									Including Thermal Gradient	-504	-27							
						Max Moment with axial tension	3248	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	113	-64							
									Including Thermal Gradient	115	-59							
						Max Moment with axial compression	3248	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	3248	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	3248	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 + Ps + 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 + Ps + L + H	Excluding Thermal Gradient	8	113							
									Including Thermal Gradient	8	113							
						Max Moment with axial compression	7012	D + Ps + 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						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 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	6964	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	8	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						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 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	-48							
						Max Moment with corresponding axial compression	8576	D + Pa + L + H	Excluding Thermal Gradient	-96	-318							
									Including Thermal Gradient	-96	-318							

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	Transverse Shear [6] Reinforcement Design Loads (kips / ft)		
								Load Combination	Thermal Gradient Loading Condition	Axial [4] (kips / ft)	Flexure [4] (ft-kips / ft)	Load Combination	In-plane [5] Shear (kips / ft)					
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	8792	D + Pa + L + H	Excluding Thermal Gradient	1	125							
									Including Thermal Gradient	1	125							
						Max Moment with axial compression	8788	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	9183	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	8780	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	3189	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	8829	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	9183	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	9185	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						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	Transverse Shear [6] Reinforcement Design Loads (kips / ft)		
								Load Combination	Thermal Gradient Loading Condition	Axial [4] (kips / ft)	Flexure [4] (ft-kips / ft)	Load Combination	In-plane [5] Shear (kips / ft)					
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	-269	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	18							
									Including Thermal Gradient	-306	18							
						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	68	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						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	Transverse Shear [6] Reinforcement Design Loads (kips / ft)		
								Load Combination	Thermal Gradient Loading Condition	Axial [4] (kips / ft)	Flexure [4] (ft-kips / ft)	Load Combination	In-plane [5] Shear (kips / ft)					
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	-570							
									Including Thermal Gradient	16	-709							
						Max Moment with axial compression	3939	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-24	-570							
									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	-282							
						Max Moment with axial tension	5857	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	483	-485							
									Including Thermal Gradient	457	-106							
						Max Moment with axial compression	6583	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						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	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'	89	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	5968	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	5968	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	3606	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	78	-504							
						Max Moment with axial compression	3386	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	-148	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	187	3.12	-	-	-	
									Including Thermal Gradient	244	198							
						Max Compression w/ corresponding moment	3386	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	-589							

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	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	4.88				
									Including Thermal Gradient	235	-817							
						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	-78	-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	8.24				
									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	3018	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	42	-458							
									Including Thermal Gradient	47	-897							
						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	9.38				
									Including Thermal Gradient	412	-681							
						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	-406	612							
						Max Moment with axial tension	5978	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	44	-478							
									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						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	Transverse Shear [6] Reinforcement Design Loads (kips / ft)		
								Load Combination	Thermal Gradient Loading Condition	Axial [4] (kips / ft)	Flexure [4] (ft-kips / ft)	Load Combination	In-plane [5] Shear (kips / ft)					
UHS Basin North Wall	8	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	8005	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	8	-512							
									Including Thermal Gradient	-13	-1123							
						Max Moment with axial compression	8005	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	8094	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	-926							
						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	8094	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'	89	8.24	-	-	-	
									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	1068							
									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	-316	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	Transverse Shear [6] Reinforcement Design Loads (kips / ft)		
								Load Combination	Thermal Gradient Loading Condition	Axial [4] (kips / ft)	Flexure [4] (ft-kips / ft)	Load Combination	In-plane [5] Shear (kips / ft)					
UHS Basin North Wall	8	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	-489	287							
									Including Thermal Gradient	-485	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	-254	784							
									Including Thermal Gradient	-281	755							
					4-H-L	Max Tension w/ corresponding moment	6094	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	673	488	D + F + L + H' + Ta + Ro +E'	69	9.36	-	-	-	
									Including Thermal Gradient	677	328							
						Max Compression w/ corresponding moment	2881	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	3841	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	1	1302							
									Including Thermal Gradient	45	1201							
						Max Moment with axial compression	3841	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	178	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	857							
									Including Thermal Gradient	-34	1015							
					6-H-L	Max Tension w/ corresponding moment	3800	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	3800	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	3801	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 (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	Transverse Shear [6] Reinforcement Design Loads (kips / ft)		
								Load Combination	Thermal Gradient Loading Condition	Axial [4] (kips / ft)	Flexure [4] (ft-kips / ft)	Load Combination	In-plane [5] Shear (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	389	8	1.4D + 1.4To + 1.7F + 0.9H	258	6.24				
									Including Thermal Gradient	388	-871							
						Max Compression w/ corresponding moment	3807	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	496							
						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	2489	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						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	Transverse Shear [6] Reinforcement Design Loads (kips / ft)		
								Load Combination	Thermal Gradient Loading Condition	Axial [4] (kips / ft)	Flexure [4] (ft-kips / ft)	Load Combination	In-plane [5] Shear (kips / ft)					
UHS Basin North Wall	8	South (inside)	Vertical	3H.6-55	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	3841	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	3841	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	3841	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	84							
									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	-48	122							
									Including Thermal Gradient	-43	348							
		-	Horizontal Plane	3H.6-56	1-H-T		-	-	-	-	-	-	-	-	1.4D+1.4To+1.7F+0.9H	151	0.31 (#5 @12)	
				3H.6-56	2-H-T		-	-	-	-	-	-	-	-	1.4D+1.4To+1.7F+0.9H	148	0.31 (#5 @12)	
				3H.6-56	3-H-T		-	-	-	-	-	-	-	-	1.4D+1.4To+1.7F+0.9H	128	0.31 (#5 @12)	
				3H.6-56	4-H-T		-	-	-	-	-	-	-	-	1.4D+1.4To+1.7F+0.9H	100	0.11 (#3 @12)	
				3H.6-56	5-H-T		-	-	-	-	-	-	-	-	1.4D+1.4To+1.7F+0.9H	96	0.11 (#3 @12)	
				3H.6-56	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	Transverse Shear [6] Reinforcement Design Loads (kips / ft)		
								Load Combination	Thermal Gradient Loading Condition	Axial [4] (kips / ft)	Flexure [4] (ft-kips / ft)	Load Combination	In-plane [5] Shear (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	-696							
						Max Moment with axial compression	3528	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-22	-659							
									Including Thermal Gradient	-24	-696							
					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	2108	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	82	-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	-184	-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	386							
						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	3684	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	-189	-18							
									Including Thermal Gradient	-184	-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	-116	-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						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)	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	3684	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	-626							
						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	2138	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	8.24				(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						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	Transverse Shear [6] Reinforcement Design Loads (kips / ft)		
								Load Combination	Thermal Gradient Loading Condition	Axial [4] (kips / ft)	Flexure [4] (ft-kips / ft)	Load Combination	In-plane [5] Shear (kips / ft)					
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	108	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	-258							
						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	-84	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						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)	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	857	338							
						Max Compression w/ corresponding moment	1770	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	-726	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	-658	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	-262	796							
									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	256	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					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 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	82							
						Max Moment with axial compression	4342	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	0	184							
									Including Thermal Gradient	-2	82							
					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	226							
									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	1885	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	-518							
						Max Compression w/ corresponding moment	1778	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-453	134							
									Including Thermal Gradient	-486	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	-284	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						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,6-60	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	-198	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	1811	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	Transverse Shear [6] Reinforcement Design Loads (kips / ft)		
								Load Combination	Thermal Gradient Loading Condition	Axial [4] (kips / ft)	Flexure [4] (ft-kips / ft)	Load Combination	In-plane [5] Shear (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	-346	48							
									Including Thermal Gradient	-242	53							
						Max Moment with axial tension	2070	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	61	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	890							
									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	148	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	-461							
						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	8.24	-	-	-	
									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	9.38	-	-	-	
									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	-148	-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	594	418							
						Max Compression w/ max moment	5240/ 52414	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	N/A	N/A							
									Including Thermal Gradient	-306	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 (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)	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	8							
						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						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	Transverse Shear (8) Reinforcement Design Loads (kips / ft)		
								Load Combination	Thermal Gradient Loading Condition	Axial (4) (kips / ft)	Flexure (4) (ft-kips / ft)	Load Combination	In-plane (5) Shear (kips / ft)					
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	-2484							
									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	8.24	-	-	-	
									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	198							
						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	8.24	-	-	-	
									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	2888	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	3820	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+ 1.2Ts	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						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	Transverse Shear [6] Reinforcement Design Loads (kips / ft)		
								Load Combination	Thermal Gradient Loading Condition	Axial [4] (kips / ft)	Flexure [4] (ft-kips / ft)	Load Combination	In-plane [5] Shear (kips / ft)					
UHS Basin East Wall	5	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	-116	127							
									Including Thermal Gradient	-115	-158							
						Max Moment with axial tension	2294	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	326	985							
									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	894	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	66	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						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	Transverse Shear [6] Reinforcement Design Loads (kips / ft)		
								Load Combination	Thermal Gradient Loading Condition	Axial [4] (kips / ft)	Flexure [4] (ft-kips / ft)	Load Combination	In-plane [5] Shear (kips / ft)					
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	2626	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						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	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	1883							
									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'	148	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						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	Transverse Shear (6) Reinforcement Design Loads (kips / ft)		
								Load Combination	Thermal Gradient Loading Condition	Axial (4) (kips / ft)	Flexure (4) (ft-kips / ft)	Load Combination	In-plane (5) Shear (kips / ft)					
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	-818							
									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	596	-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	1987	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	-469	-289							
									Including Thermal Gradient	-483	-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	539	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						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	Transverse Shear [6] Reinforcement Design Loads (kips / ft)		
								Load Combination	Thermal Gradient Loading Condition	Axial [4] (kips / ft)	Flexure [4] (ft-kips / ft)	Load Combination	In-plane [5] Shear (kips / ft)					
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	2283	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	1980	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	1989	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	-48	-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						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	West (outside)	Vertical	3H.6-96	2-V-L	Max Tension w/ max moment	2517/ 2518	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	-1387							
									Including Thermal Gradient	33	-1585							
						Max Moment with corresponding axial compression	4238	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-114	-1387							
									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	2806	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	-624							
						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 [2]	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	Transverse Shear [6] Reinforcement Design Loads (kips / ft)		
								Load Combination	Thermal Gradient Loading Condition	Axial [4] (kips / ft)	Flexure [4] (ft-kips / ft)	Load Combination	In-plane [5] Shear (kips / ft)					
UHS Basin West Wall	6	East (inside)	Horizontal	3H.6-99	1-H-L	Max Tension w/ corresponding moment	5184	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	283	182	D + F + L + H' + Ta + Ro +E'	121	8.24	-	-	-	
									Including Thermal Gradient	288	-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	81	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	982							
					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	1978	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	-75	860							
					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	628	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	368	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	181							
									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	-181	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						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	Transverse Shear [6] Reinforcement Design Loads (kips / ft)		
								Load Combination	Thermal Gradient Loading Condition	Axial [4] (kips / ft)	Flexure [4] (ft-kips / ft)	Load Combination	In-plane [5] Shear (kips / ft)					
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	898	D + F + L + H' + Ta + Ro +E'	115	15.60	-	-	-	
									Including Thermal Gradient	887	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	-218	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	948							
						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	89	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						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	Transverse Shear [6] Reinforcement Design Loads (kips / ft)		
								Load Combination	Thermal Gradient Loading Condition	Axial [4] (kips / ft)	Flexure [4] (ft-kips / ft)	Load Combination	In-plane [5] Shear (kips / ft)					
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	483							
									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	789	D + F + L + H' + Ta + Ro +E'	98	18.00	-	-	-	
									Including Thermal Gradient	952	542							
						Max Compression w/ corresponding moment	2228	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						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	Transverse Shear [6] Reinforcement Design Loads (kips / ft)		
								Load Combination	Thermal Gradient Loading Condition	Axial [4] (kips / ft)	Flexure [4] (ft-kips / ft)	Load Combination	In-plane [5] Shear (kips / ft)					
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	78	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	1028	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	187							
									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	-583	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						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	Transverse Shear [6] Reinforcement Design Loads (kips / ft)		
								Load Combination	Thermal Gradient Loading Condition	Axial [4] (kips / ft)	Flexure [4] (ft-kips / ft)	Load Combination	In-plane [5] Shear (kips / ft)					
UHS Basin North-South Buttresses	6	East / West	Horizontal	3H.6-102	1-H-L	Max Tension w/ corresponding moment	7181	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	-181	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	538							
									Including Thermal Gradient	-50	533							
						Max Moment with axial compression	7717	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-38	538							
									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	28							
						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						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	Transverse Shear [6] Reinforcement Design Loads (kips / ft)		
								Load Combination	Thermal Gradient Loading Condition	Axial [4] (kips / ft)	Flexure [4] (ft-kips / ft)	Load Combination	In-plane [5] Shear (kips / ft)					
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	180							
						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	248							
									Including Thermal Gradient	441	230							
						Max Moment with axial compression	7417	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-34	248							
									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	-782	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	481	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	-545	62							
									Including Thermal Gradient	-445	89							
						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						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	Transverse Shear (8) Reinforcement Design Loads (kips / ft)		
								Load Combination	Thermal Gradient Loading Condition	Axial (4) (kips / ft)	Flexure (4) (ft-kips / ft)	Load Combination	In-plane (5) Shear (kips / ft)					
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	8.24	-	-	-	
									Including Thermal Gradient	235	165							
						Max Compression w/ corresponding moment	7673	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-458	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'	389	9.36	-	-	-	
									Including Thermal Gradient	368	62							
						Max Compression w/ corresponding moment	7065	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-882	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	178							
					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						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	Transverse Shear (6) Reinforcement Design Loads (kips / ft)		
								Load Combination	Thermal Gradient Loading Condition	Axial (4) (kips / ft)	Flexure (4) (ft-kips / ft)	Load Combination	In-plane (5) Shear (kips / ft)					
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	809	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	Transverse Shear [6] Reinforcement Design Loads (kips / ft)		
								Load Combination	Thermal Gradient Loading Condition	Axial [4] (kips / ft)	Flexure [4] (ft-kips / ft)	Load Combination	In-plane [5] Shear (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	-18							
						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	396	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	-82	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	88	-132							
									Including Thermal Gradient	86	-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	126	-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						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	Transverse Shear [6] Reinforcement Design Loads (kips / ft)		
								Load Combination	Thermal Gradient Loading Condition	Axial [4] (kips / ft)	Flexure [4] (ft-kips / ft)	Load Combination	In-plane [5] Shear (kips / ft)					
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	-288	-25							
									Including Thermal Gradient	-288	-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	-48							
						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)	Remarks
								Axial and Flexure Loads				In-Plane Shear Loads			Load Combination	Transverse Shear (8) Reinforcement Design Loads (kips / ft)		
								Load Combination	Thermal Gradient Loading Condition	Axial (4) (kips / ft)	Flexure (4) (ft-kips / ft)	Load Combination	In-plane (5) Shear (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	-106							
									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	1248	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	463	50							
						Max Compression w/ corresponding moment	530	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-294	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	851	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 (in²/ ft)	Transverse Shear Design Loads		Transverse Shear [7] Reinforcement Provided (in²/ft²)	Remarks
								Axial and Flexure Loads				In-Plane Shear Loads			Load Combination	Transverse Shear [8] Reinforcement Design Loads (kips / ft)		
								Load Combination	Thermal Gradient Loading Condition	Axial [4] (kips / ft)	Flexure [4] (ft-kips / ft)	Load Combination	In-plane [5] Shear (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	8	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	880	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						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	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	-480							
									Including Thermal Gradient	-110	-448							
						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	-1483							
									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	-1648							
									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	48	-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						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	Transverse Shear [6] Reinforcement Design Loads (kips / ft)		
								Load Combination	Thermal Gradient Loading Condition	Axial [4] (kips / ft)	Flexure [4] (ft-kips / ft)	Load Combination	In-plane [5] Shear (kips / ft)					
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	-178	-113							
									Including Thermal Gradient	-175	-106							
						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	258	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	248	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	Transverse Shear [6] Reinforcement Design Loads (kips / ft)		
								Load Combination	Thermal Gradient Loading Condition	Axial [4] (kips / ft)	Flexure [4] (ft-kips / ft)	Load Combination	In-plane [5] Shear (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	-206	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	-98	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 [2]	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	Transverse Shear [6] Reinforcement Design Loads (kips / ft)		
								Load Combination	Thermal Gradient Loading Condition	Axial [4] (kips / ft)	Flexure [4] (ft-kips / ft)	Load Combination	In-plane [3] Shear (kips / ft)					
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	258	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-450	74							
									Including Thermal Gradient	-448	28							
						Max Moment with corresponding axial tension	231	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	23	2785							
									Including Thermal Gradient	43	2850							
						Max Moment with corresponding axial compression	231	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-287	2785							
									Including Thermal Gradient	-287	2850							
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	1.58	-	-	-	
									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	-318	-1015							
									Including Thermal Gradient	-324	-1041							
						Max Moment with axial tension	203	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	84	-1449							
									Including Thermal Gradient	88	-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						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	Transverse Shear [6] Reinforcement Design Loads (kips / ft)		
								Load Combination	Thermal Gradient Loading Condition	Axial [4] (kips / ft)	Flexure [4] (ft-kips / ft)	Load Combination	In-plane [5] Shear (kips / ft)					
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	-296							
						Max Moment with corresponding axial tension	211	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	4	-692							
									Including Thermal Gradient	6	-683							
						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	9.38	-	-	-	-
									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 (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	Transverse Shear [6] Reinforcement Design Loads (kips / ft)		
								Load Combination	Thermal Gradient Loading Condition	Axial [4] (kips / ft)	Flexure [4] (ft-kips / ft)	Load Combination	In-plane [5] Shear (kips / ft)					
Cooling Tower West Fan Wall	8	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	-156	192							
						Max Moment with axial tension	223	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	14	540							
									Including Thermal Gradient	14	548							
						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	484							
									Including Thermal Gradient	64	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	406							
						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	1968							
									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						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	Transverse Shear [6] Reinforcement Design Loads (kips / ft)		
								Load Combination	Thermal Gradient Loading Condition	Axial [4] (kips / ft)	Flexure [4] (ft-kips / ft)	Load Combination	In-plane [5] Shear (kips / ft)					
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	18							
									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	682							
						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	8.24	-	-	-	
									Including Thermal Gradient	74	165							
						Max Compression w/ corresponding moment	242	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	-214	28							
									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 (2)	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	Transverse Shear (6) Reinforcement Design Loads (kips / ft)		
								Load Combination	Thermal Gradient Loading Condition	Axial (4) (kips / ft)	Flexure (4) (ft-kips / ft)	Load Combination	In-plane (5) Shear (kips / ft)					
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	2533/ 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	80							
									Including Thermal Gradient	8	80							
						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						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 Internal Fan Wall	2	East / West	Vertical	3H.6-122	2-V-L	Max Tension w/ corresponding moment	1382	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	18							
						Max Moment with corresponding axial tension	1280	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	7	27							
									Including Thermal Gradient	2	28							
						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	Transverse Shear[6] Reinforcement Design Loads (kips / ft)		
								Load Combination	Thermal Gradient Loading Condition	Axial[4] (kips / ft)	Flexure[4] (ft-kips / ft)	Load Combination	In-plane[5] Shear (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	10782	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	13487	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	105	-1045						
									Including Thermal Gradient	105	-1044						
						Max Moment with axial compression	13487	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	13846	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	-316						
									Including Thermal Gradient	-9	-316						
			North-South	3H.6-124	1-V-L	Max Tension w/ corresponding moment	13487	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	-686						
						Max Compression w/ corresponding moment	10748	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	13487	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	17	-1078						
									Including Thermal Gradient	17	-1078						
						Max Moment with corresponding axial compression	13487	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	-810	1.4D + 1.4To + 1.7F + 0.9H	178	6.24			
									Including Thermal Gradient	111	-807						
						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						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	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'	28	3.12	-	-	-	
									Including Thermal Gradient	222	114							
						Max Compression w/ corresponding moment	10781	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	148	117	1.4D + 1.4To + 1.7F + 0.9H	158	3.12	-	-	-	
									Including Thermal Gradient	148	116							
						Max Compression w/ corresponding moment	10808	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	84	1.4D + 1.4To + 1.7F + 0.9H	178	6.24	-	-	-	
									Including Thermal Gradient	119	85							
						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	488							
						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					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 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	12998	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	13128	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	13058	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						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 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	13048	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	13048	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	68	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						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	Transverse Shear[6] Reinforcement Design Loads (kips / ft)		
								Load Combination	Thermal Gradient Loading Condition	Axial[4] (kips / ft)	Flexure[4] (ft-kips / ft)	Load Combination	In-plane[5] Shear (kips / ft)					
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	-1827							
									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	-562							
						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						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	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	848	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	782							
						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	-1348	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						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	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	-849							
									Including Thermal Gradient	-1361	1130							
						Max Moment with corresponding axial tension	12044	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	5	-1878							
									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	11398	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	13148	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	13148	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	13148	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	779	-3278							
									Including Thermal Gradient	644	-3439							
						Max Moment with corresponding axial compression	13148	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	15.80	-	-	-	
									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	-1845							

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	Transverse Shear[6] Reinforcement Design Loads (kips / ft)		
								Load Combination	Thermal Gradient Loading Condition	Axial[4] (kips / ft)	Flexure[4] (ft-kips / ft)	Load Combination	In-plane[5] Shear (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	-958	-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	-48	-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	46							
						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						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	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	-1083	-10							
									Including Thermal Gradient	-1083	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	689	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	11639	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	3572	-2480	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	-2436							
					13-V-L	Max Tension w/ corresponding moment	11903	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	3844	-2368	D + F + L + H' + Ta + Ro +E'	55	28.00				
									Including Thermal Gradient	3827	-73							
						Max Compression w/ corresponding moment	11918	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	-418							
						Max Moment with corresponding axial compression	11918	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	-228	-1586							
									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					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	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	-118							
									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	389	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	-1548	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	-808	1289							
									Including Thermal Gradient	-809	2009							
					2-H-L	Max Tension w/ corresponding moment	11972	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	386	39	D + F + L + H' + Ta + Ro +E'	139	8.24	-	-	-	
									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						Longitudinal Reinforcement Provided (in^2/ ft)	Transverse Shear Design Loads		Transverse Shear[7] Reinforcement Provided (in^2/ft)	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	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	11961	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	58	1544							
									Including Thermal Gradient	60	1031							
						Max Moment with axial compression	11961	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	820							
					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	782							
						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	11978	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	880	1.4D + 1.4To + 1.7F + 0.9H	117	3.12	-	-	-	
									Including Thermal Gradient	403	892							
						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	5038	1.4D + 1.4F + 1.7W	Excluding Thermal Gradient	1	1561							
									Including Thermal Gradient	1	1561							
						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	1583							
									Including Thermal Gradient	756	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						Longitudinal Reinforcement Provided (in^2/ ft)	Transverse Shear Design Loads		Transverse Shear [7] Reinforcement Provided (in^2/ft)	Remarks
								Axial and Flexure Loads				In-Plane Shear Loads			Load Combination	Transverse Shear [6] Reinforcement Design Loads (kips / ft)		
								Load Combination	Thermal Gradient Loading Condition	Axial [4] (kips / ft)	Flexure [4] (ft-kips / ft)	Load Combination	In-plane [5] Shear (kips / ft)					
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	2526							
									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	11892	1.4D + 1.4To + 1.7F + 0.9H	Excluding Thermal Gradient	681	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						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	Transverse Shear[8] Reinforcement Design Loads (kips / ft)		
								Load Combination	Thermal Gradient Loading Condition	Axial[4] (kips / ft)	Flexure[4] (ft-kips / ft)	Load Combination	In-plane[5] Shear (kips / ft)					
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	1785	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	12080	D + F + L + H' + Ta + Ro +E'	Excluding Thermal Gradient	327	2563							
									Including Thermal Gradient	310	3136							
						Max Moment with corresponding axial compression	12080	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	680	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						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	Transverse Shear [6] Reinforcement Design Loads (kips / ft)		
								Load Combination	Thermal Gradient Loading Condition	Axial [4] (kips / ft)	Flexure [4] (ft-kips / ft)	Load Combination	In-plane [5] Shear (kips / ft)					
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	-148	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	-64							
						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	178	-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						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	Transverse Shear [6] Reinforcement Design Loads (kips / ft)		
								Load Combination	Thermal Gradient Loading Condition	Axial [4] (kips / ft)	Flexure [4] (ft-kips / ft)	Load Combination	In-plane [5] Shear (kips / ft)					
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	384	-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	58	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	10498	1.05D + 1.05F +1.3L + 1.3H + 1.3W+ 1.2Ta	Excluding Thermal Gradient	80	80							
									Including Thermal Gradient	103	-34							
						Max Moment with axial compression	10498	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	87							
									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						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 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	384	-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						Reinforcement			Remarks
					Axial (kips)	Moments (ft-kips)			Shear (kips)		Longitudinal	Stirrups		
					P	M2	M3	Torsion	V2	V3	Provided (in^2)	Provided 3-direction	Provided 2-direction	
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.

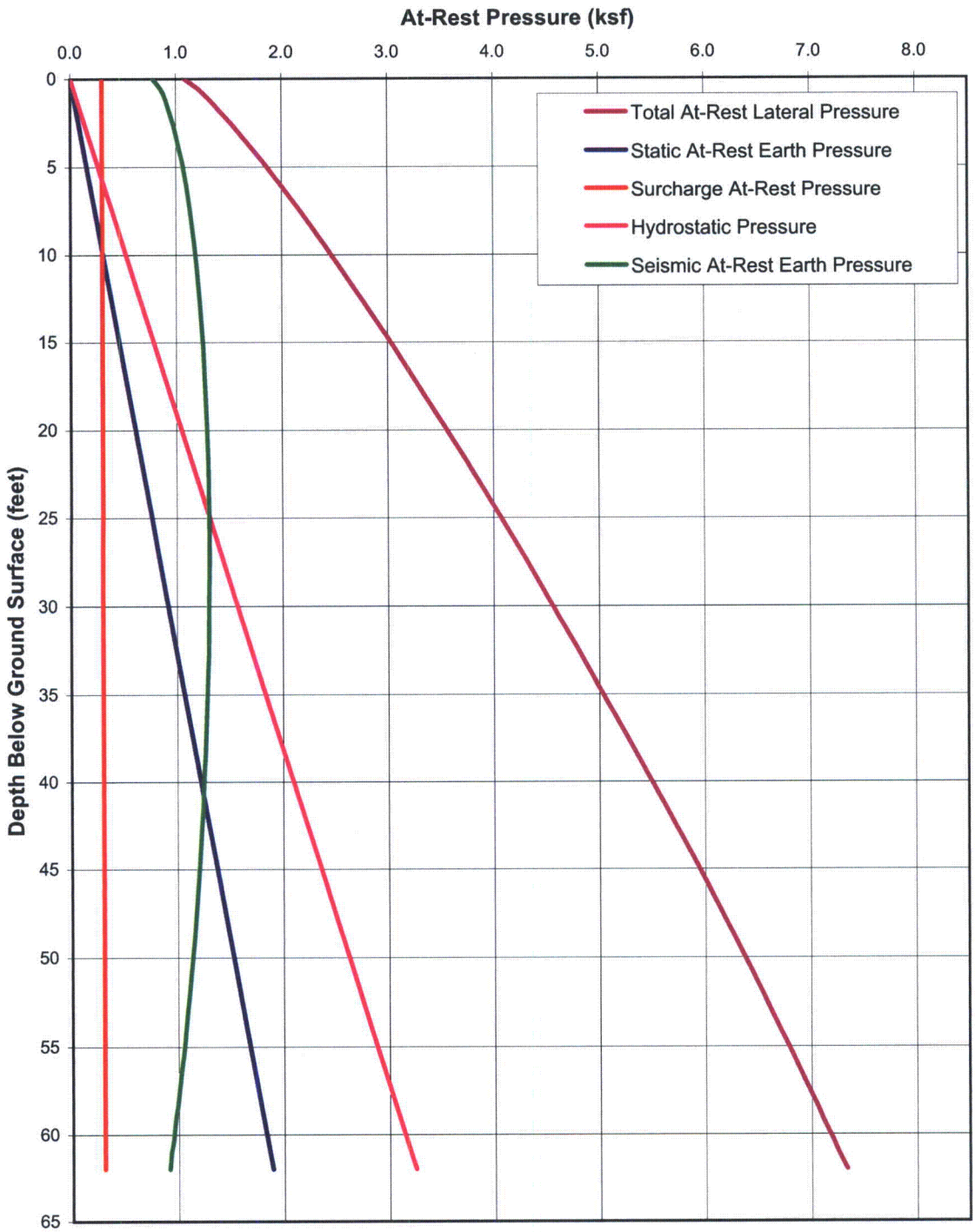


Figure 3H.6-41: At-Rest Lateral Earth Pressure on the East, West, and North Walls of Pump House

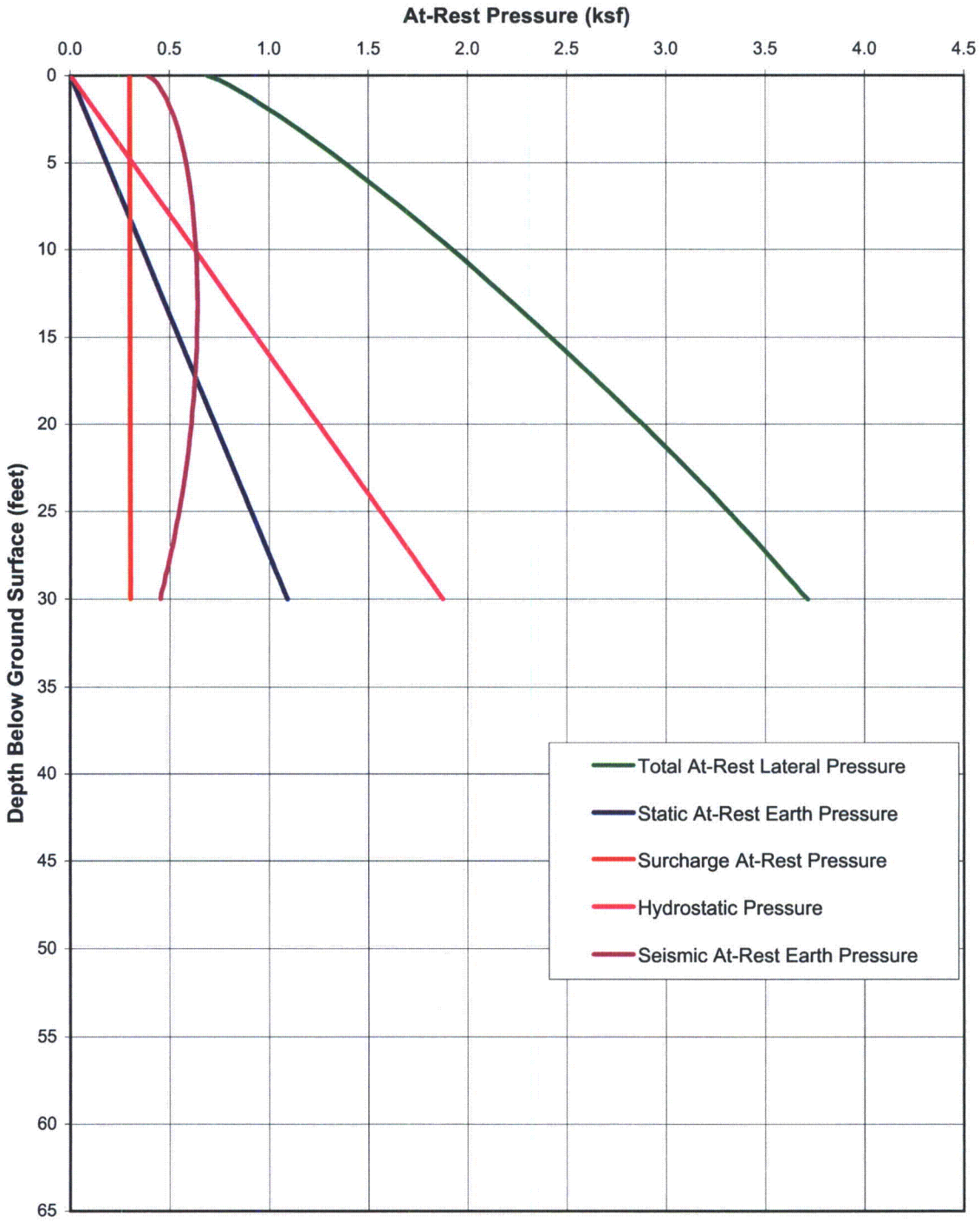


Figure 3H.6-42: At-Rest Lateral Earth Pressure on the UHS Basin Walls

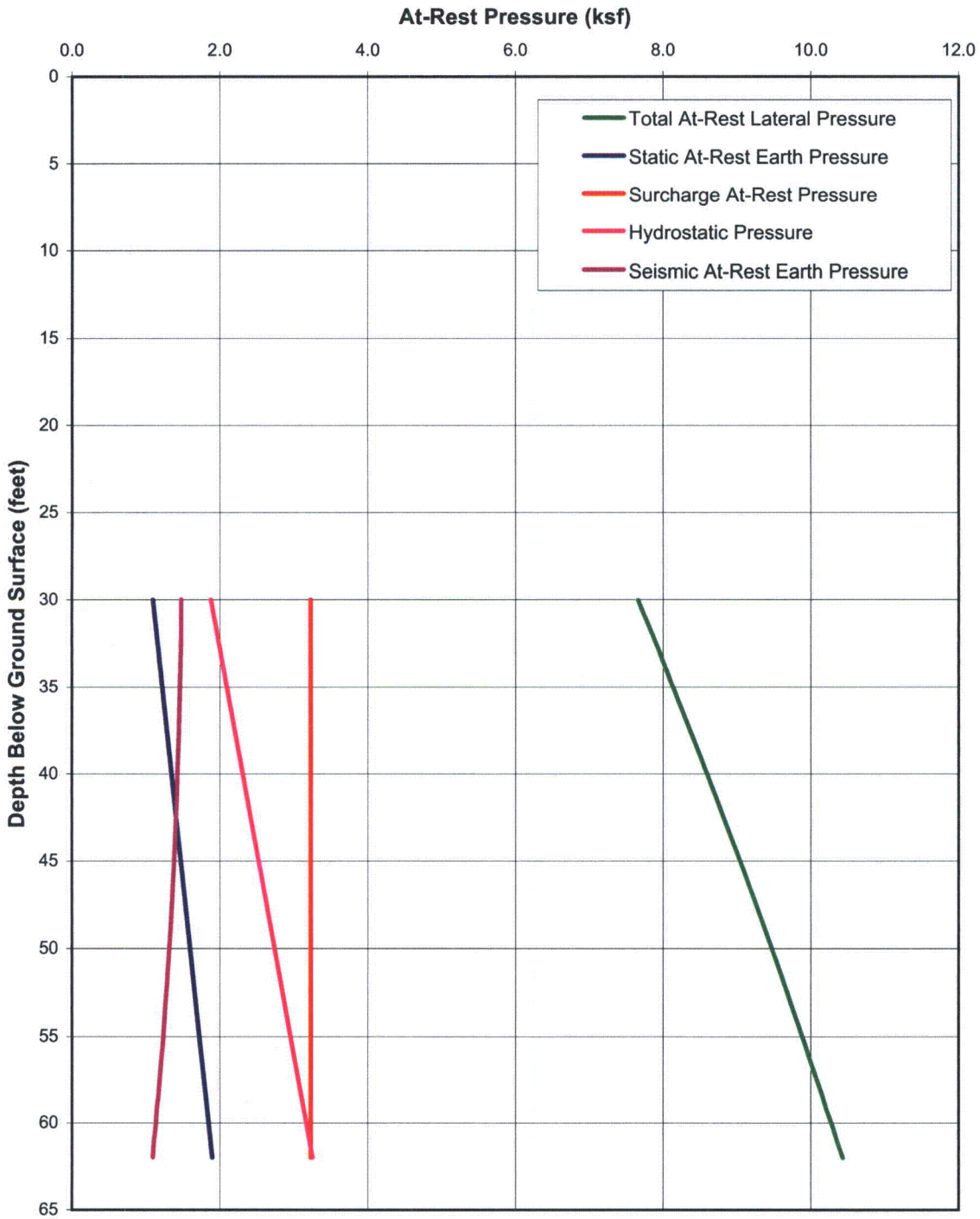


Figure 3H.6-43: At-Rest Lateral Earth Pressure on the South Wall of RSW Pump House

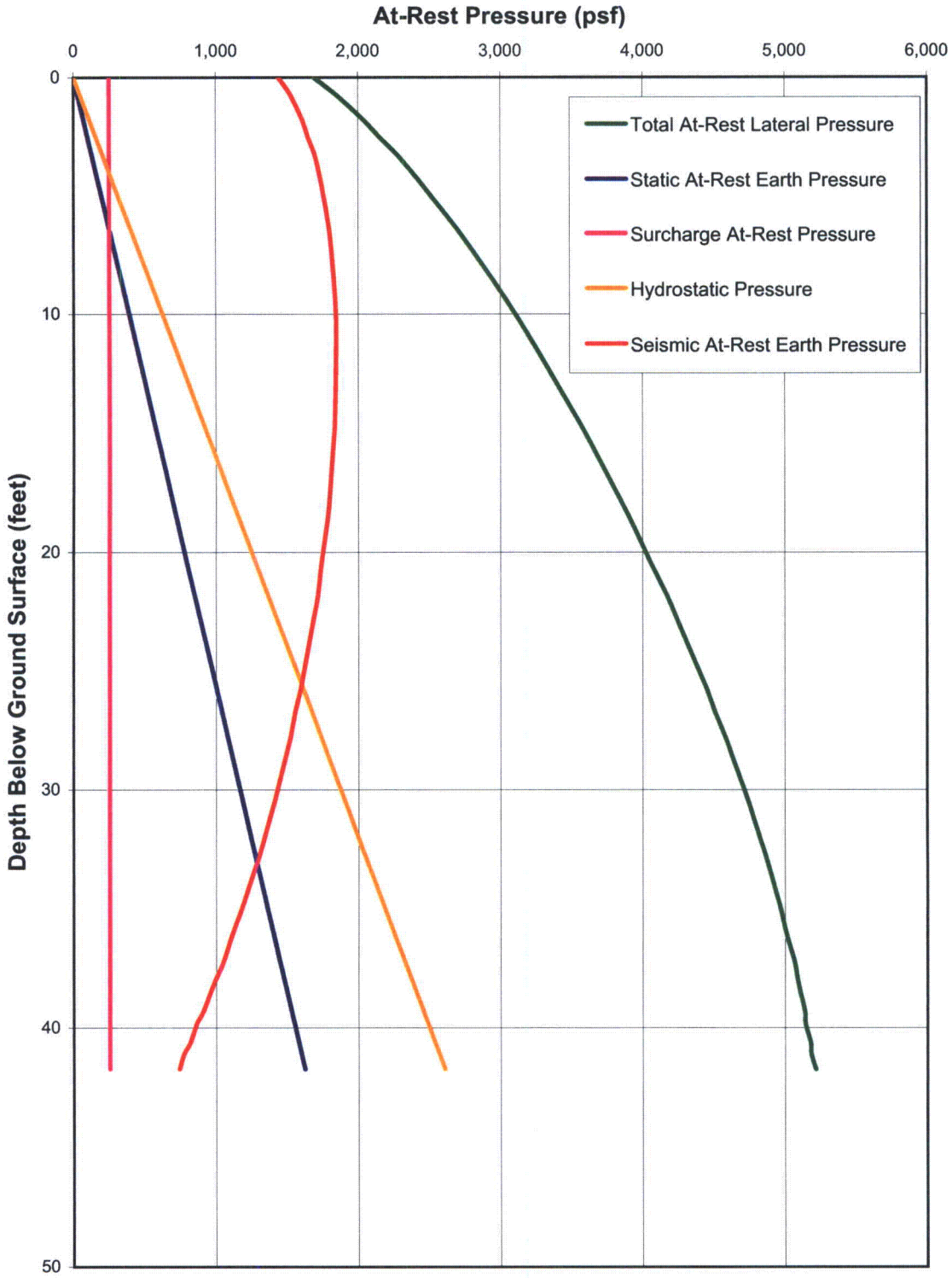


Figure 3H.6-44: At-Rest Lateral Earth Pressure Diagrams for Typical Section of RSW Tunnel

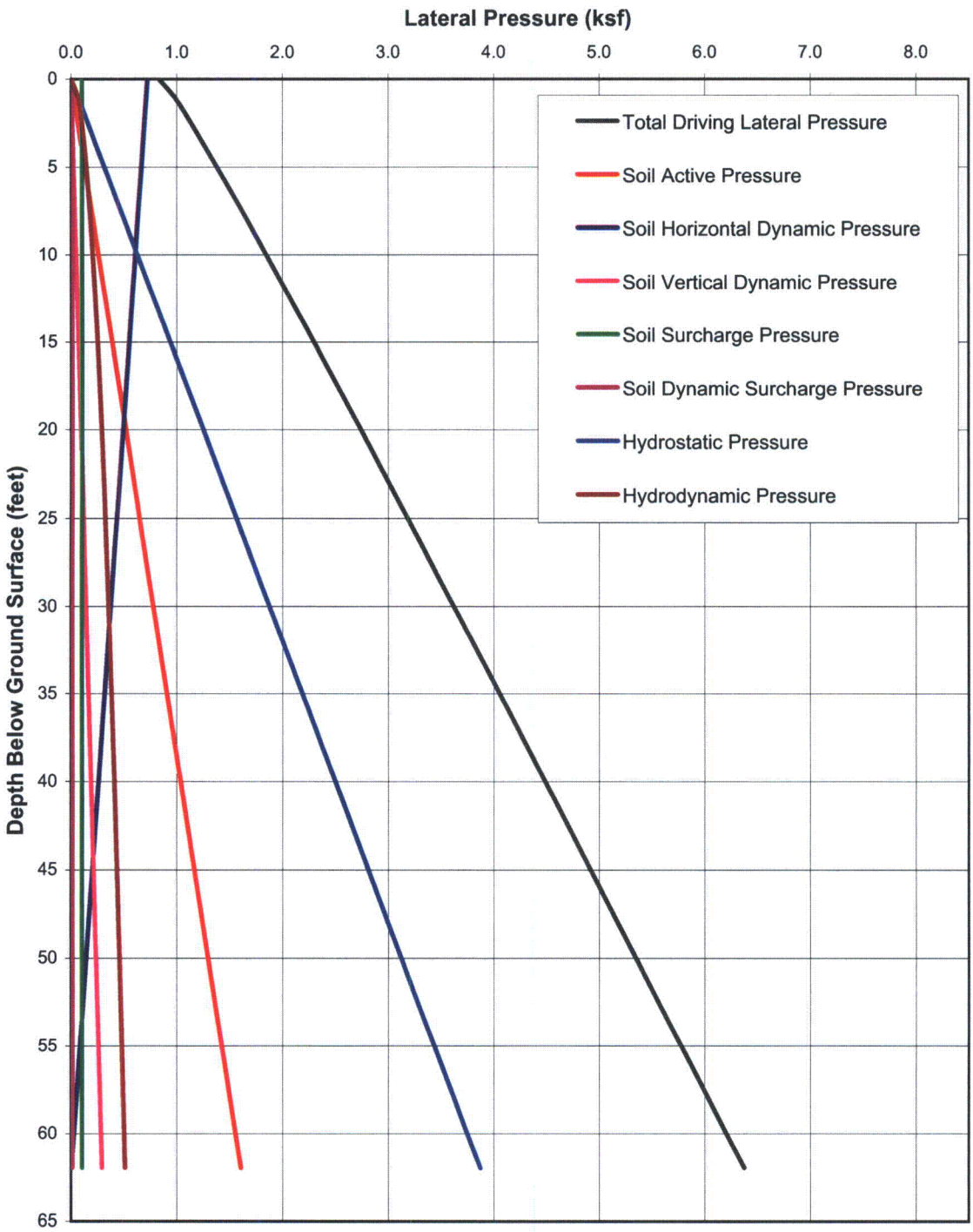


Figure 3H.6-45: Driving Lateral Pressure on the East, West, and North Walls of Pump House (for Stability Evaluation)

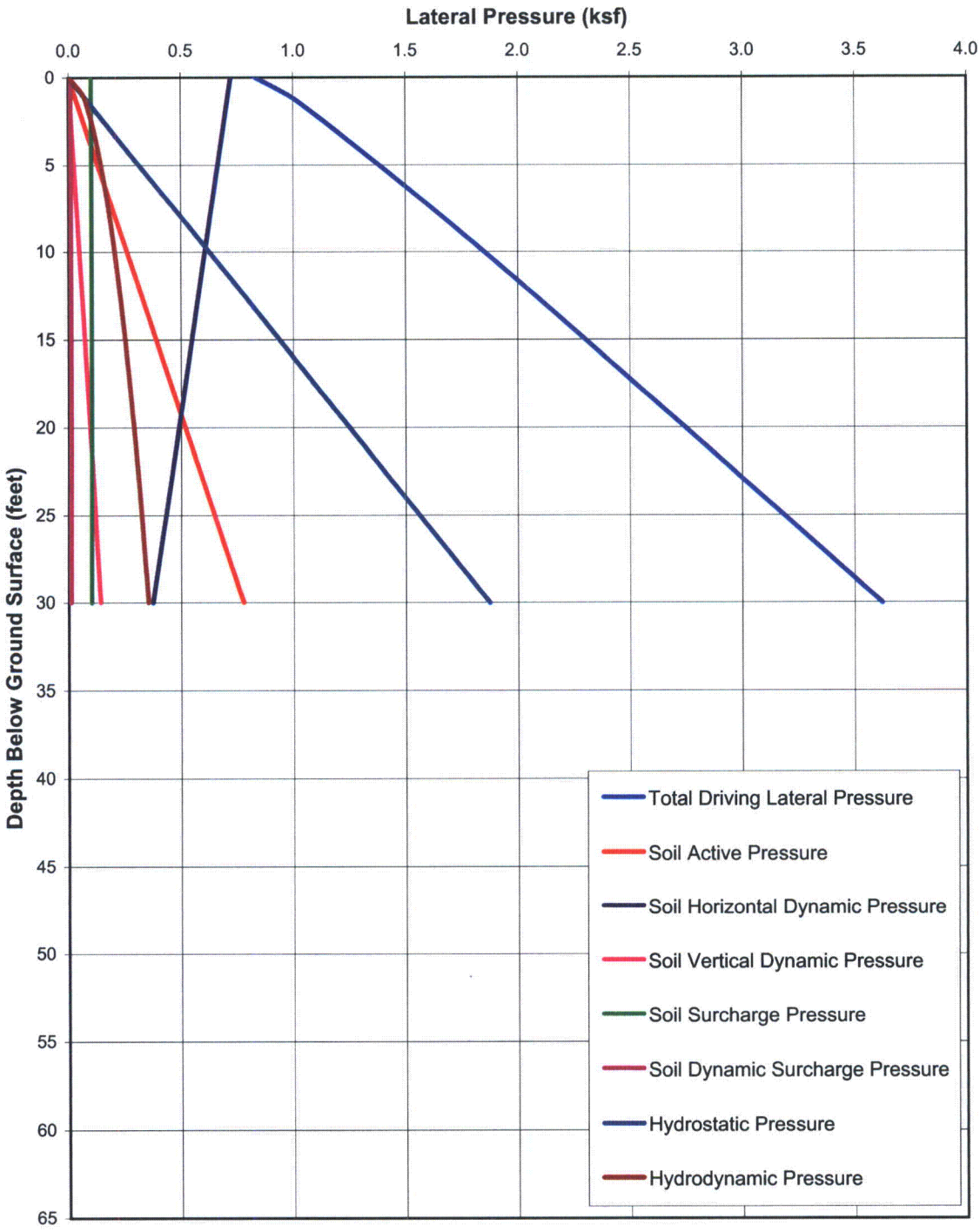


Figure 3H.6-46: Driving Lateral Pressure on Basin Walls (for Stability Evaluation)

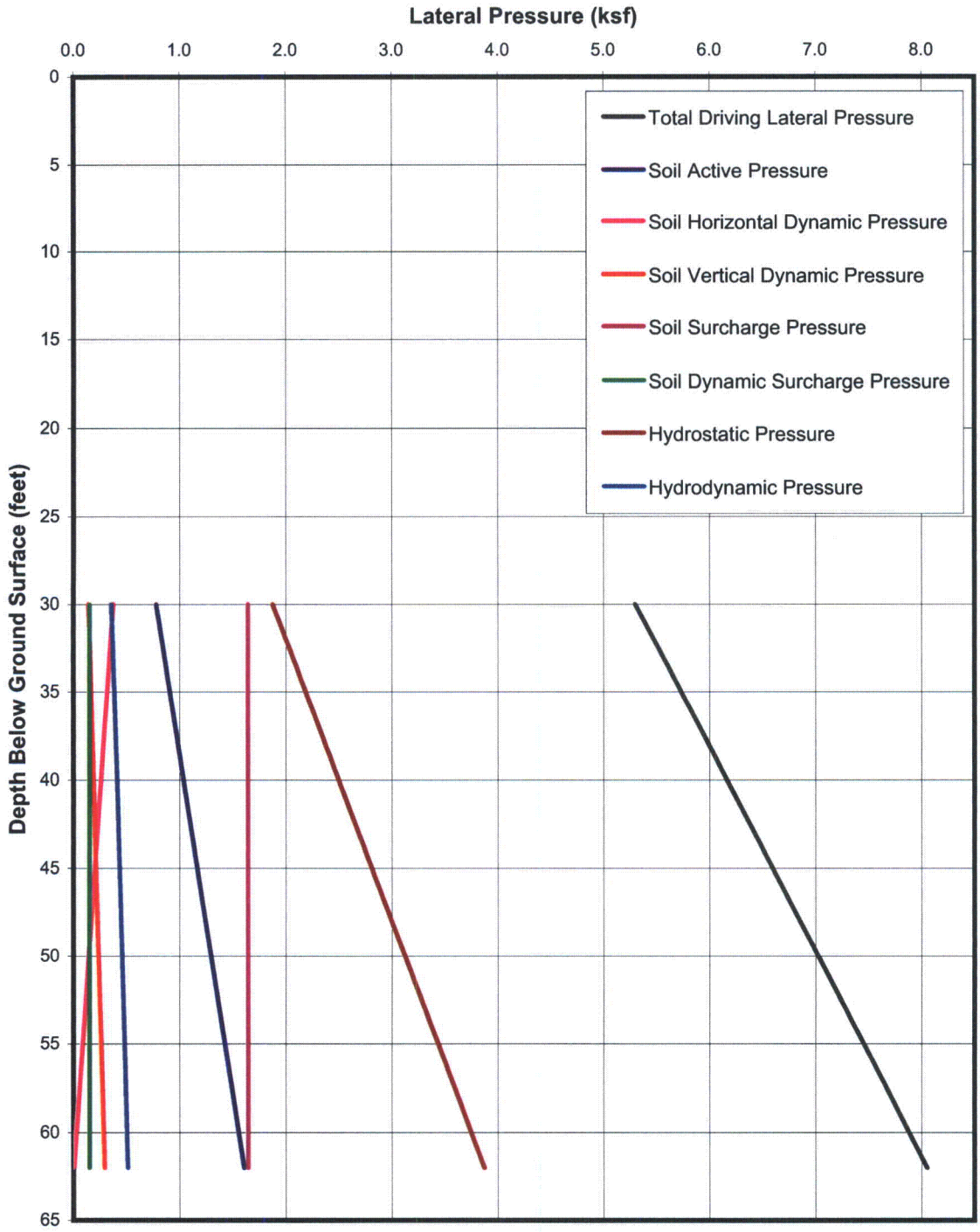


Figure 3H.6-47: Driving Lateral Pressure on the South Wall of Pump House (for Stability Evaluation)

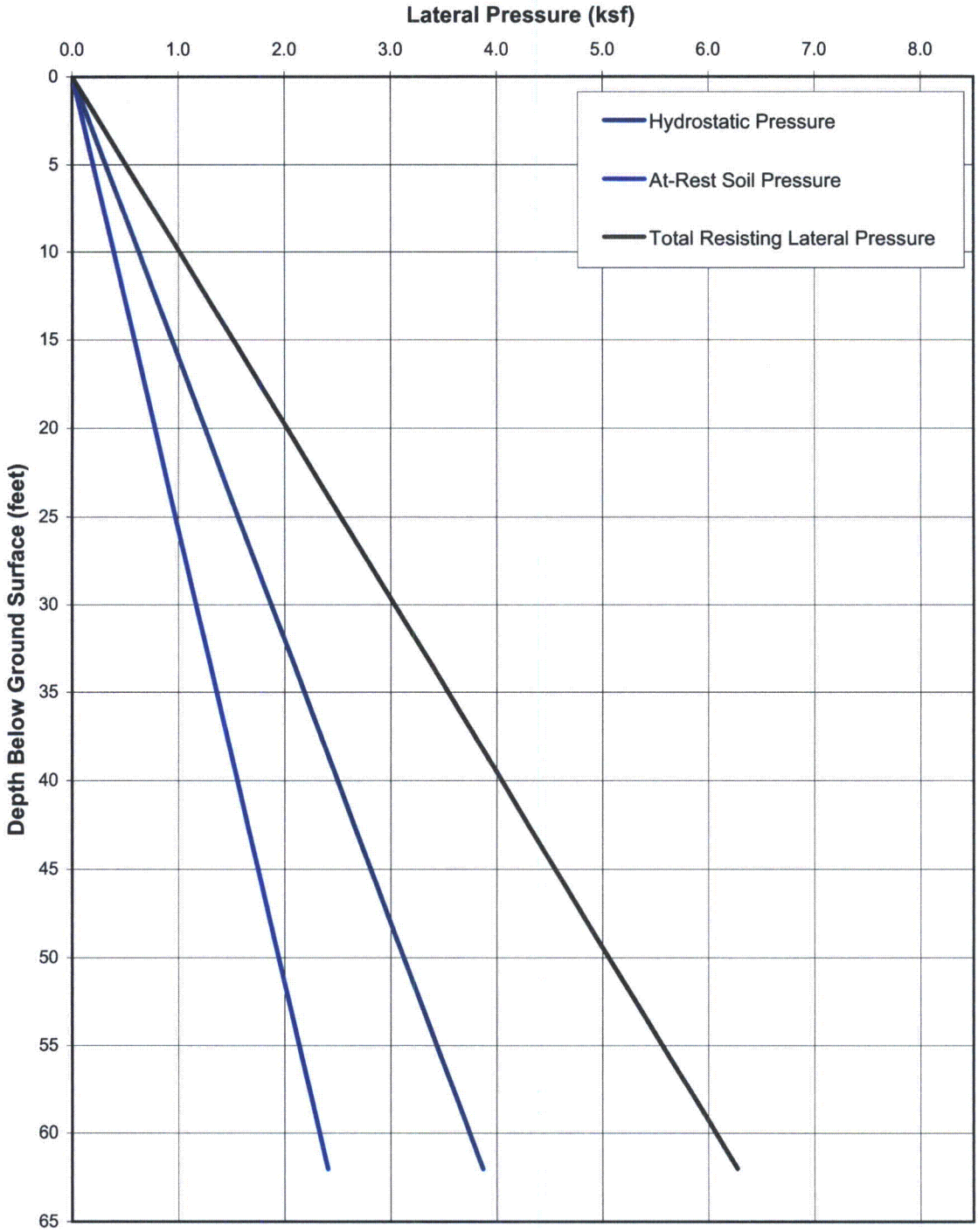


Figure 3H.6-48: Resisting Lateral Pressure on the East, West, and North Walls of Pump House (for Stability Evaluation)

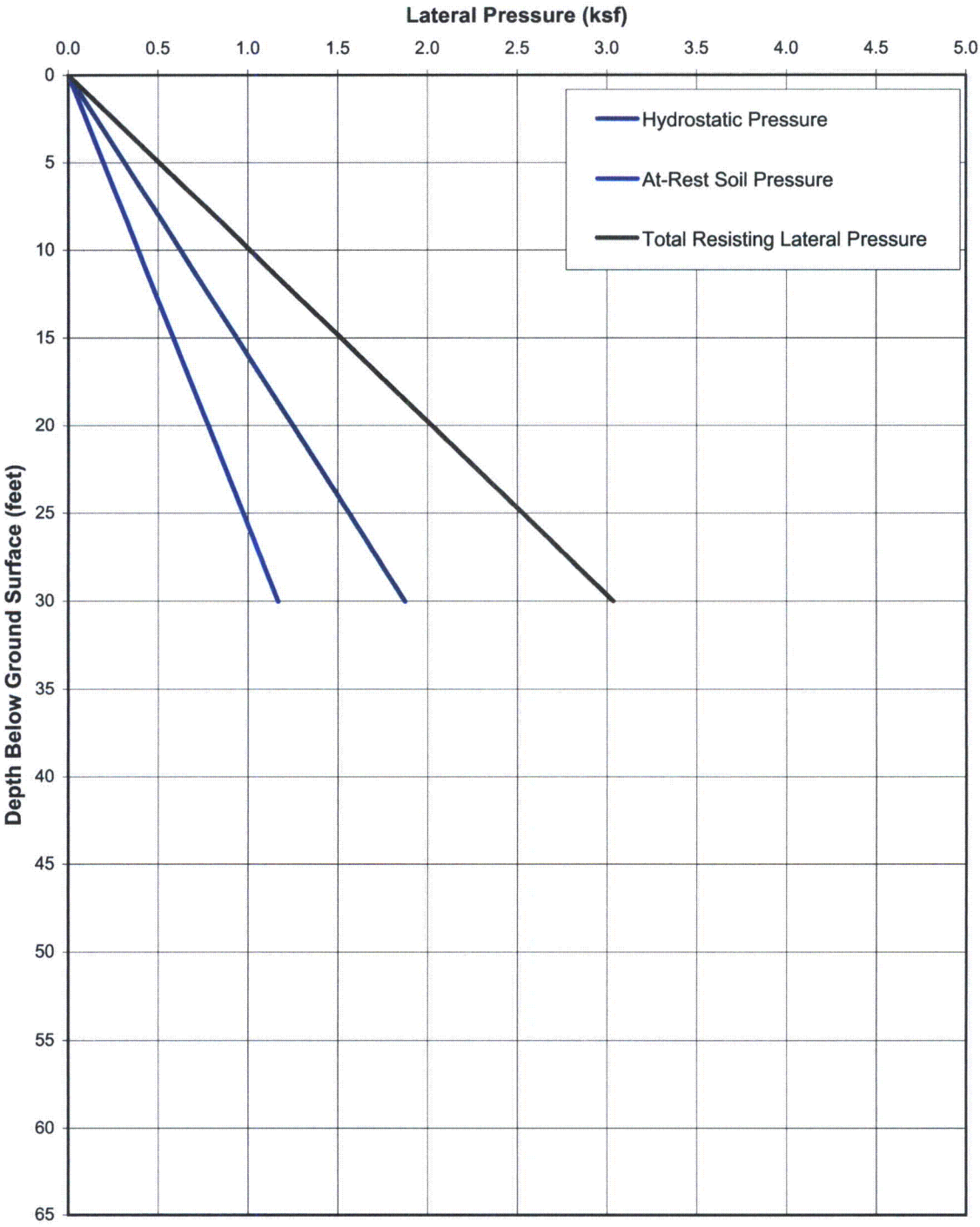


Figure 3H.6-49: Resisting Lateral Pressure on Basin Walls (for Stability Evaluation)

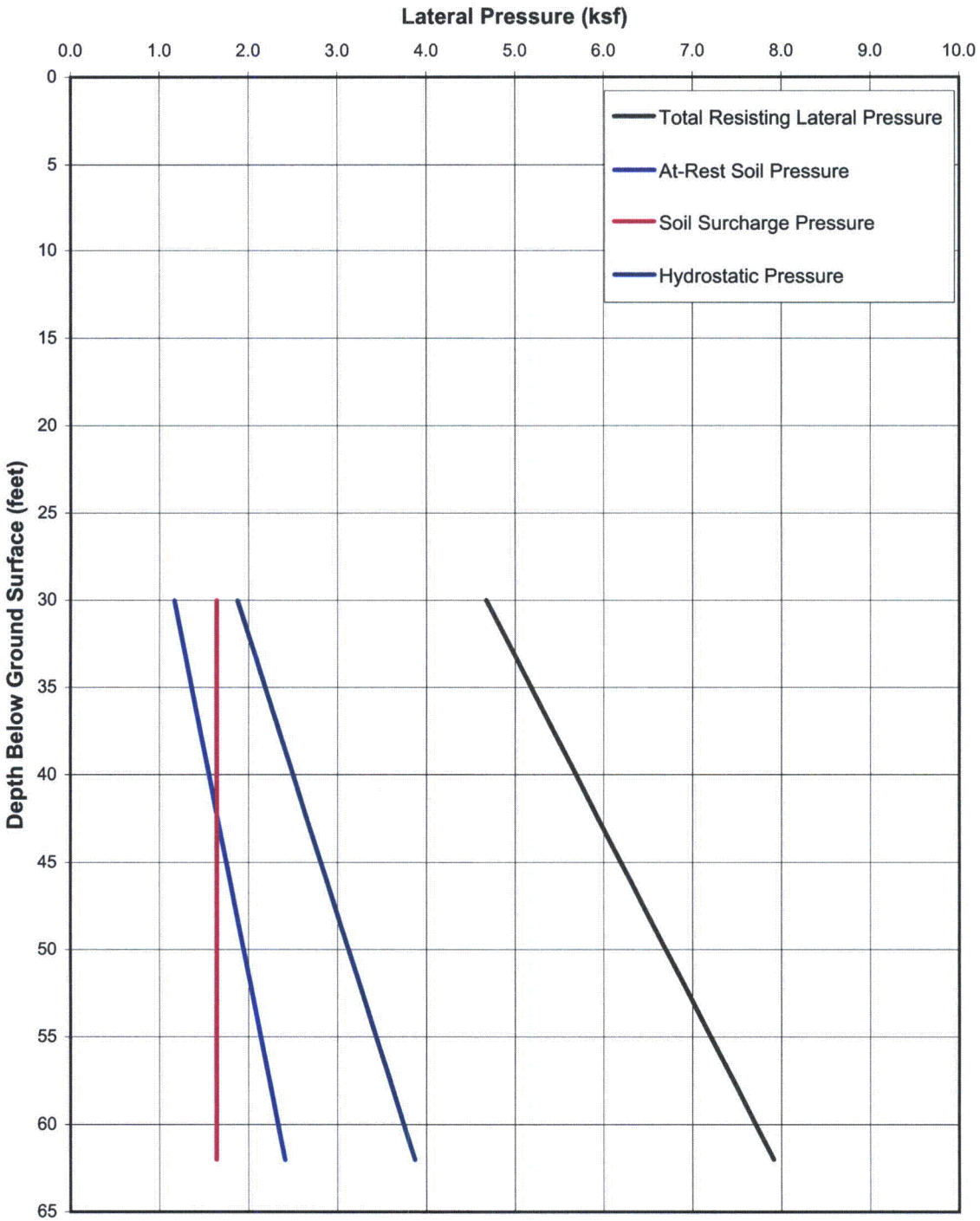


Figure 3H.6-50: Resisting Lateral Pressure on the South Wall of Pump House (for Stability Evaluation)

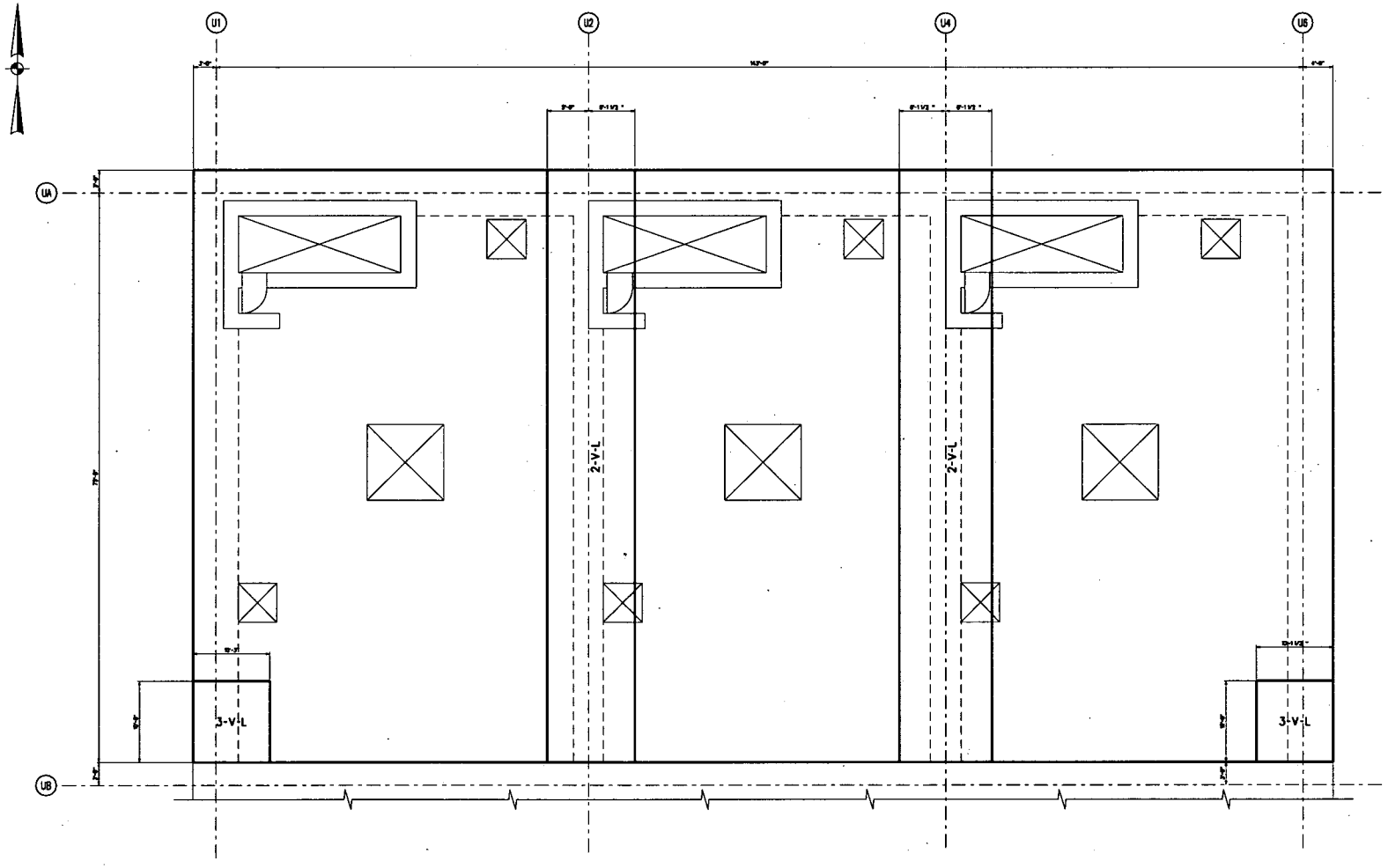


FIGURE 3H.6-51 : PUMPHOUSE ROOF
NORTH/SOUTH REINFORCEMENT ZONES

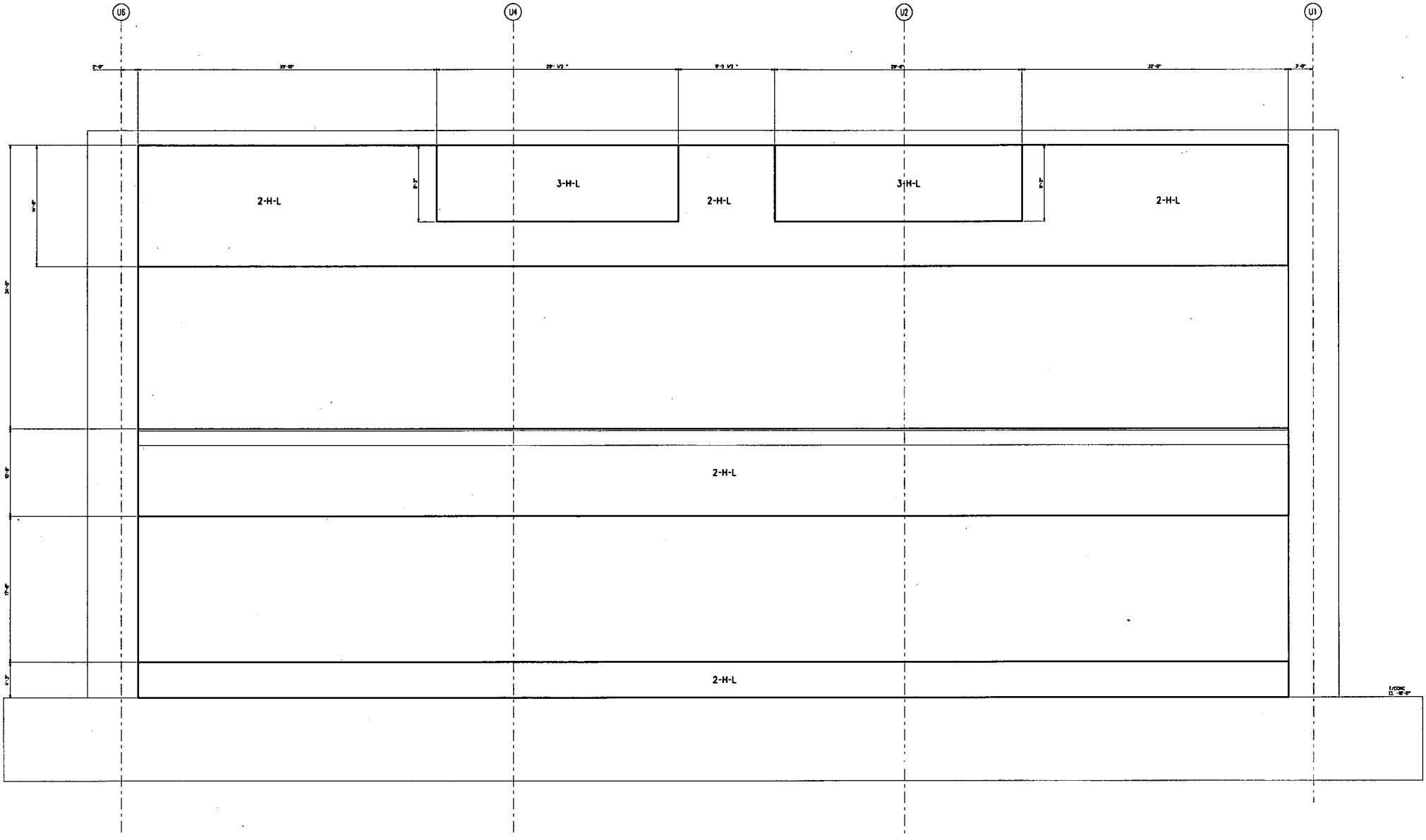


FIGURE 3H.6-52: PUMPHOUSE NORTH WALL LOOKING SOUTH

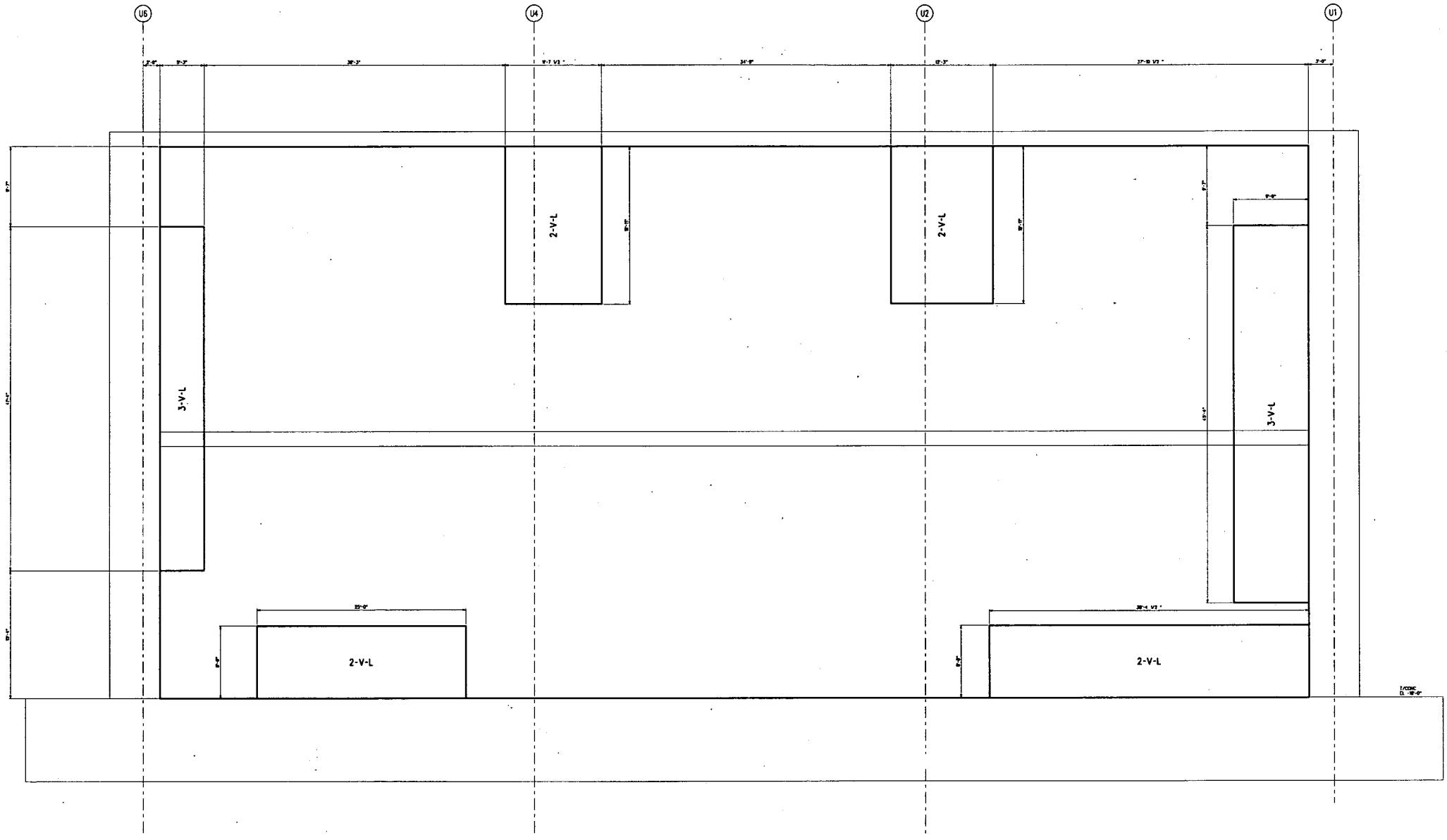


FIGURE 3H.6-53: PUMPHOUSE NORTH WALL LOOKING SOUTH

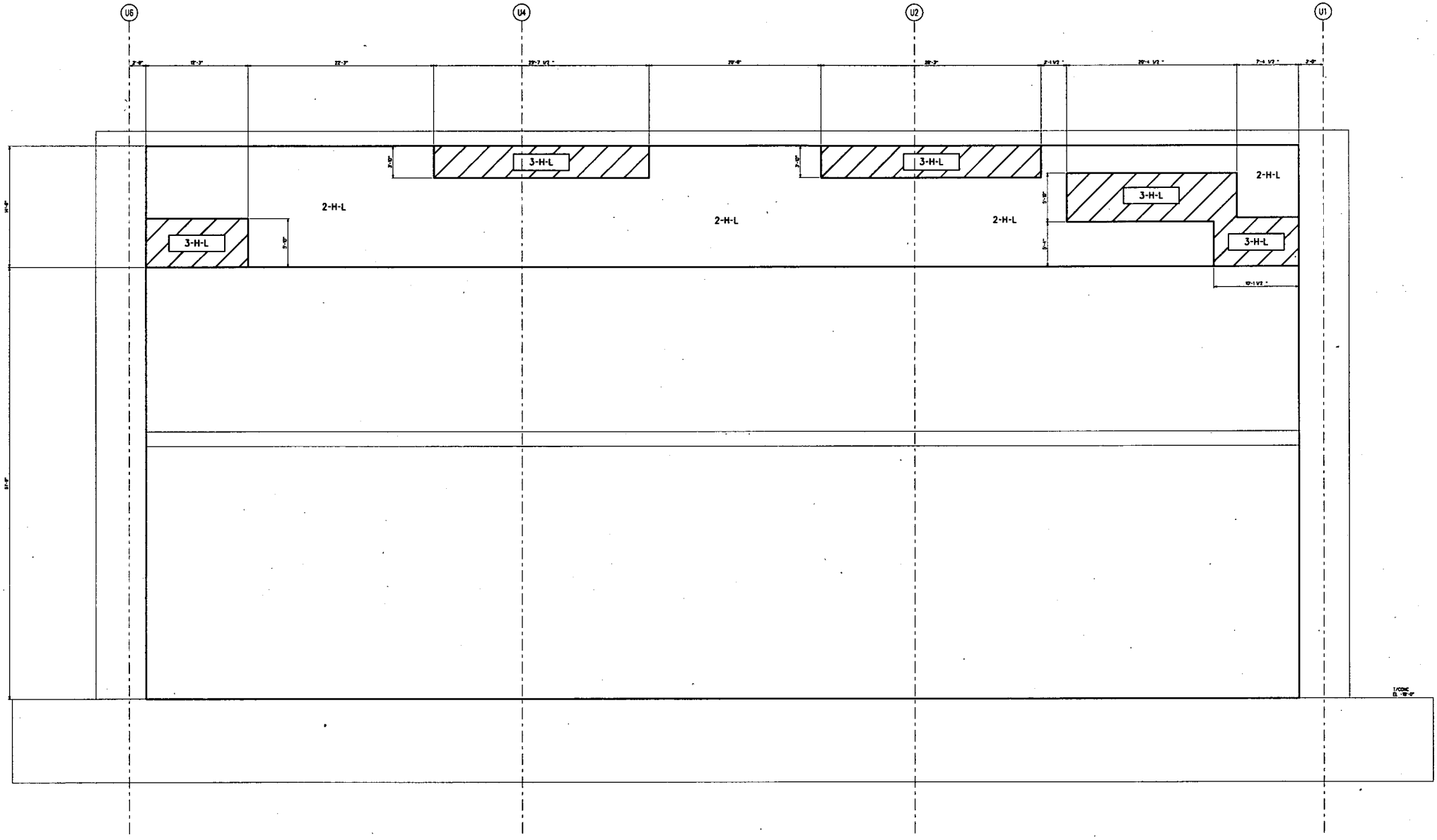


FIGURE 3H.6-54: PUMPHOUSE NORTH WALL LOOKING SOUTH

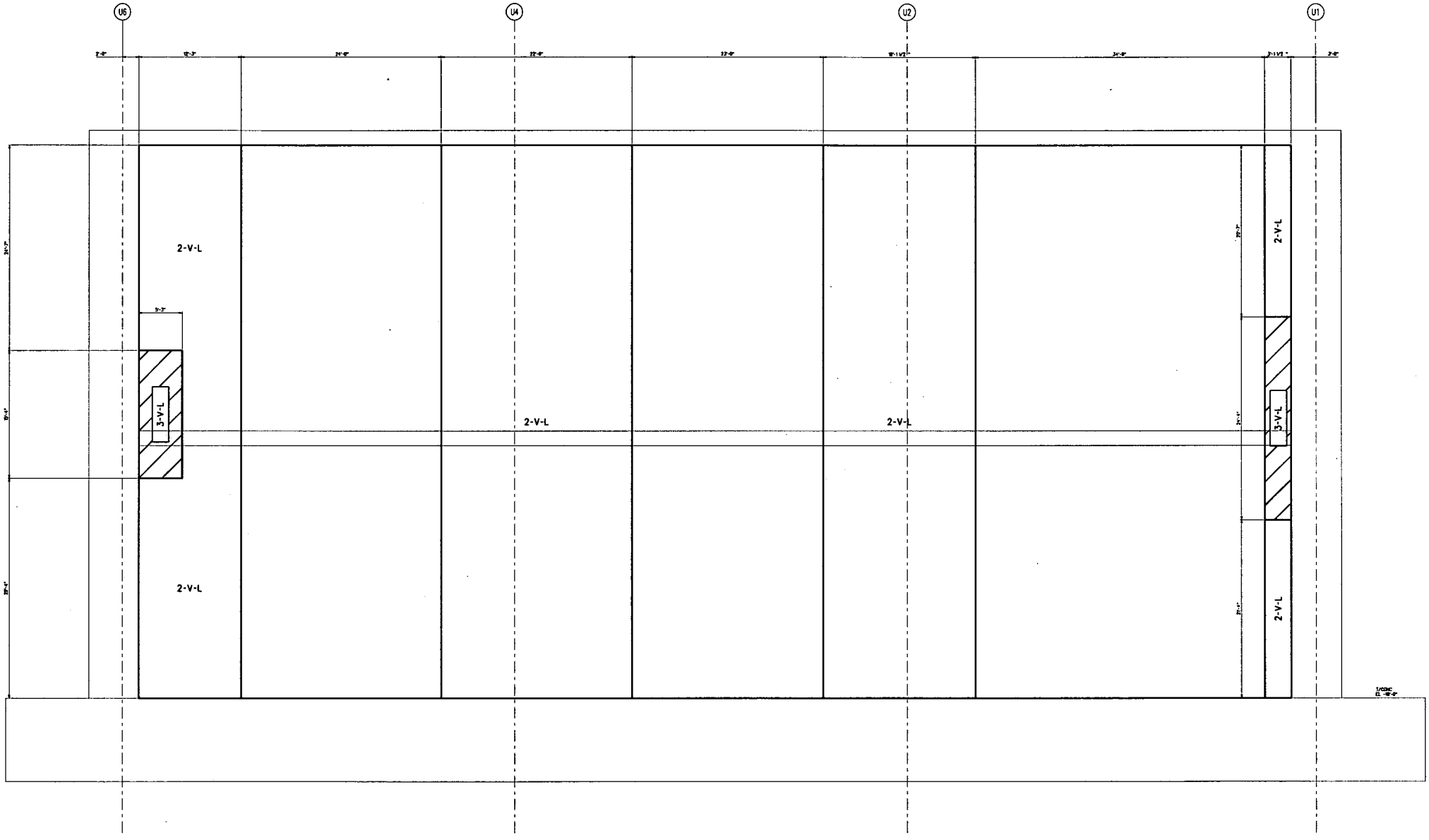


FIGURE 3H.6-55: PUMPHOUSE NORTH WALL LOOKING SOUTH

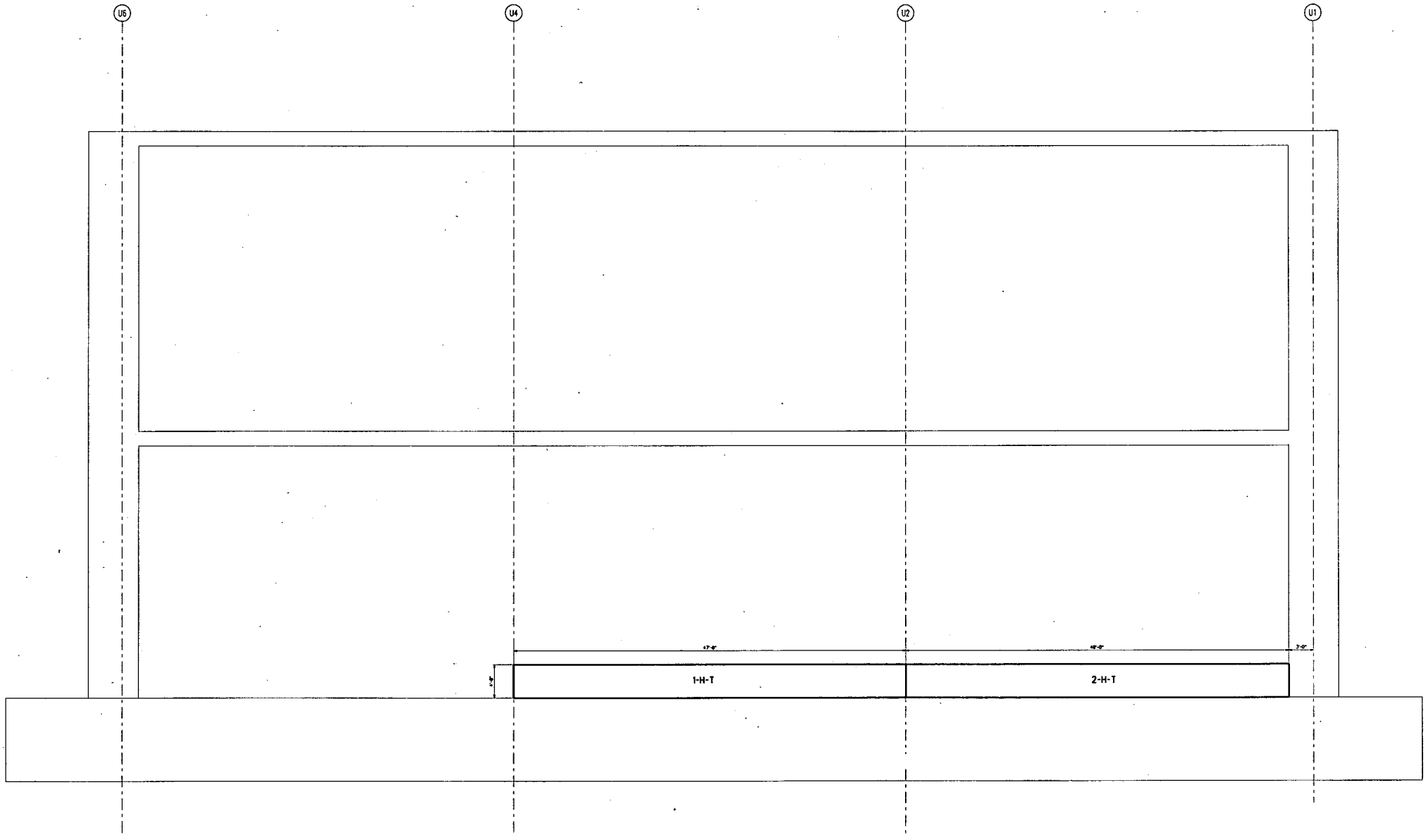


FIGURE 3H.6-56: PUMPHOUSE NORTH WALL LOOKING SOUTH
TRANSVERSE HORIZONTAL REINFORCEMENT ZONES

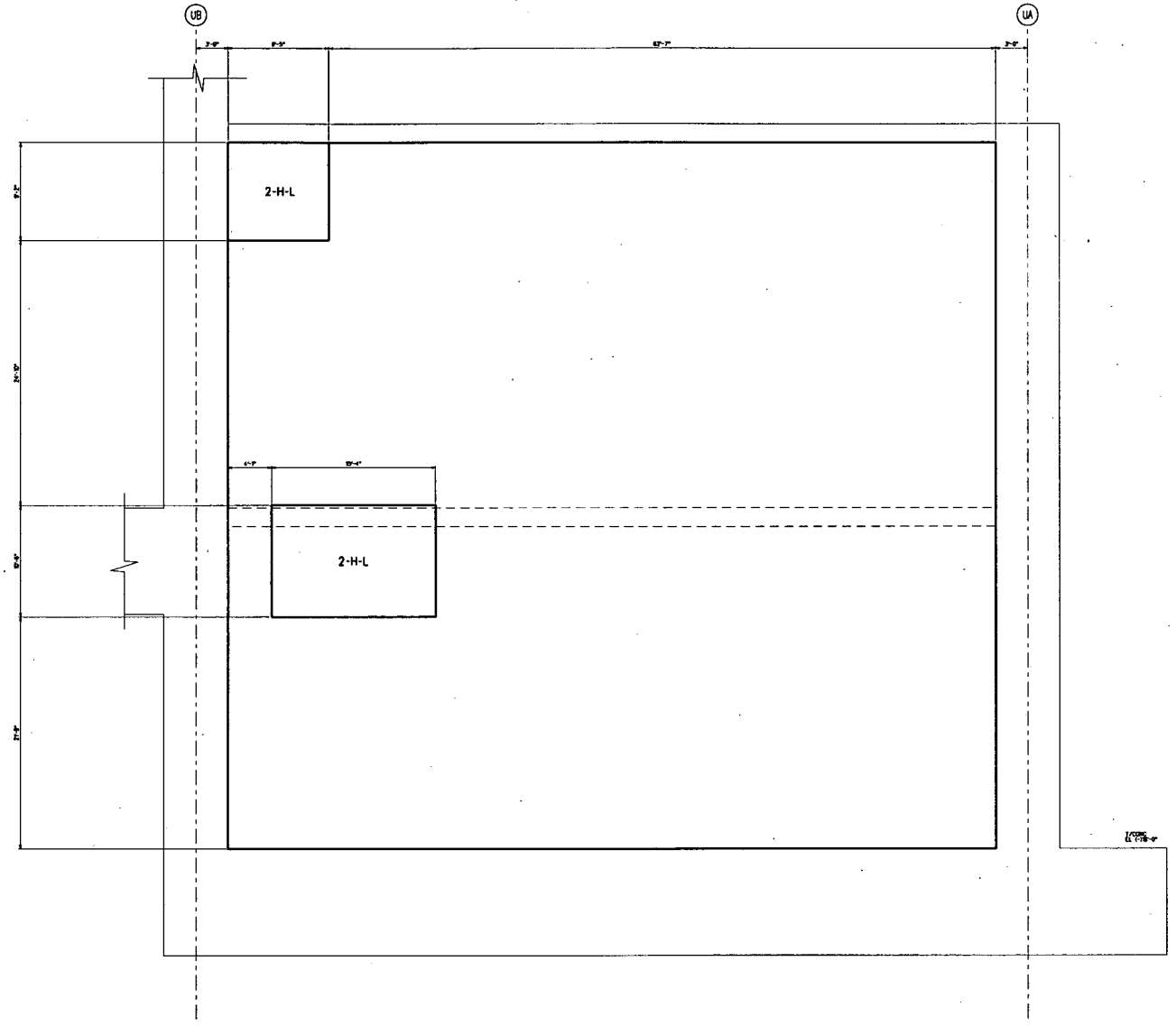


FIGURE 3H.6-57: PUMPHOUSE EAST WALL LOOKING WEST
HORIZONTAL REINFORCEMENT ZONES

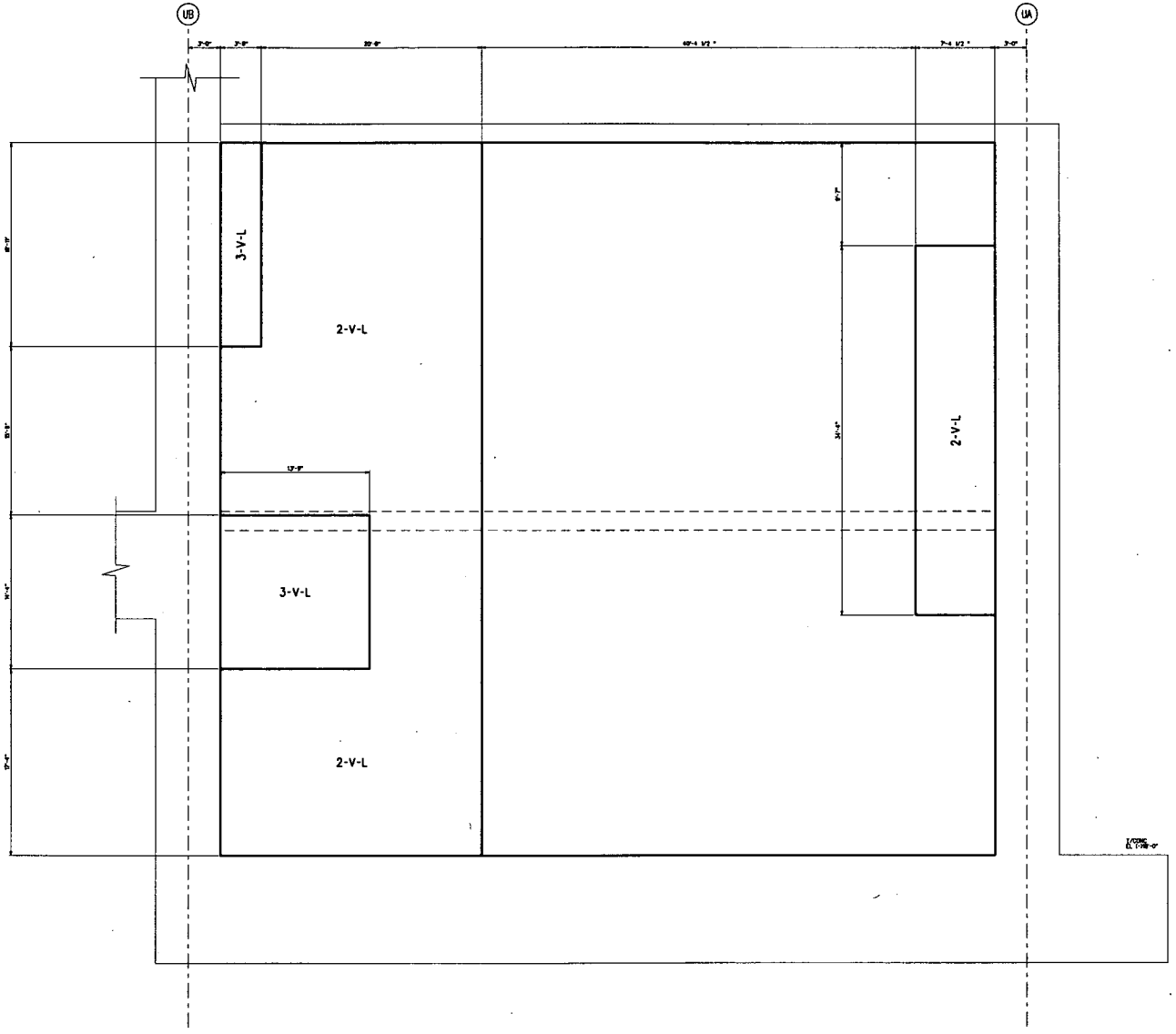


FIGURE 3H.6-58: PUMPHOUSE EAST WALL LOOKING WEST
VERTICAL REINFORCEMENT ZONES

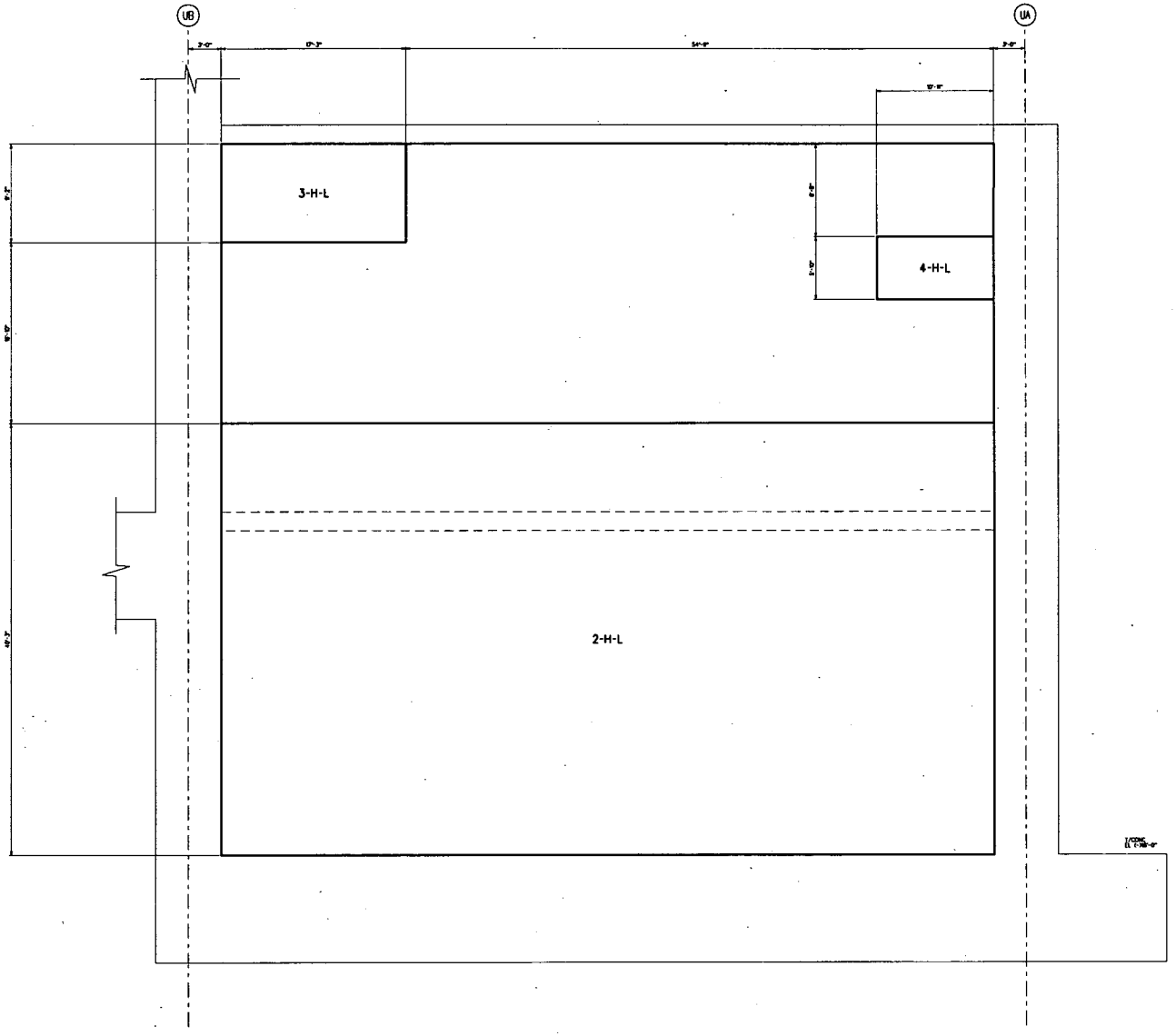


FIGURE 3H.6-59: PUMPHOUSE EAST WALL LOOKING WEST
HORIZONTAL REINFORCEMENT ZONES
FAR SIDE FACE

NOTE:
1-H-L UNLESS NOTED OTHERWISE.

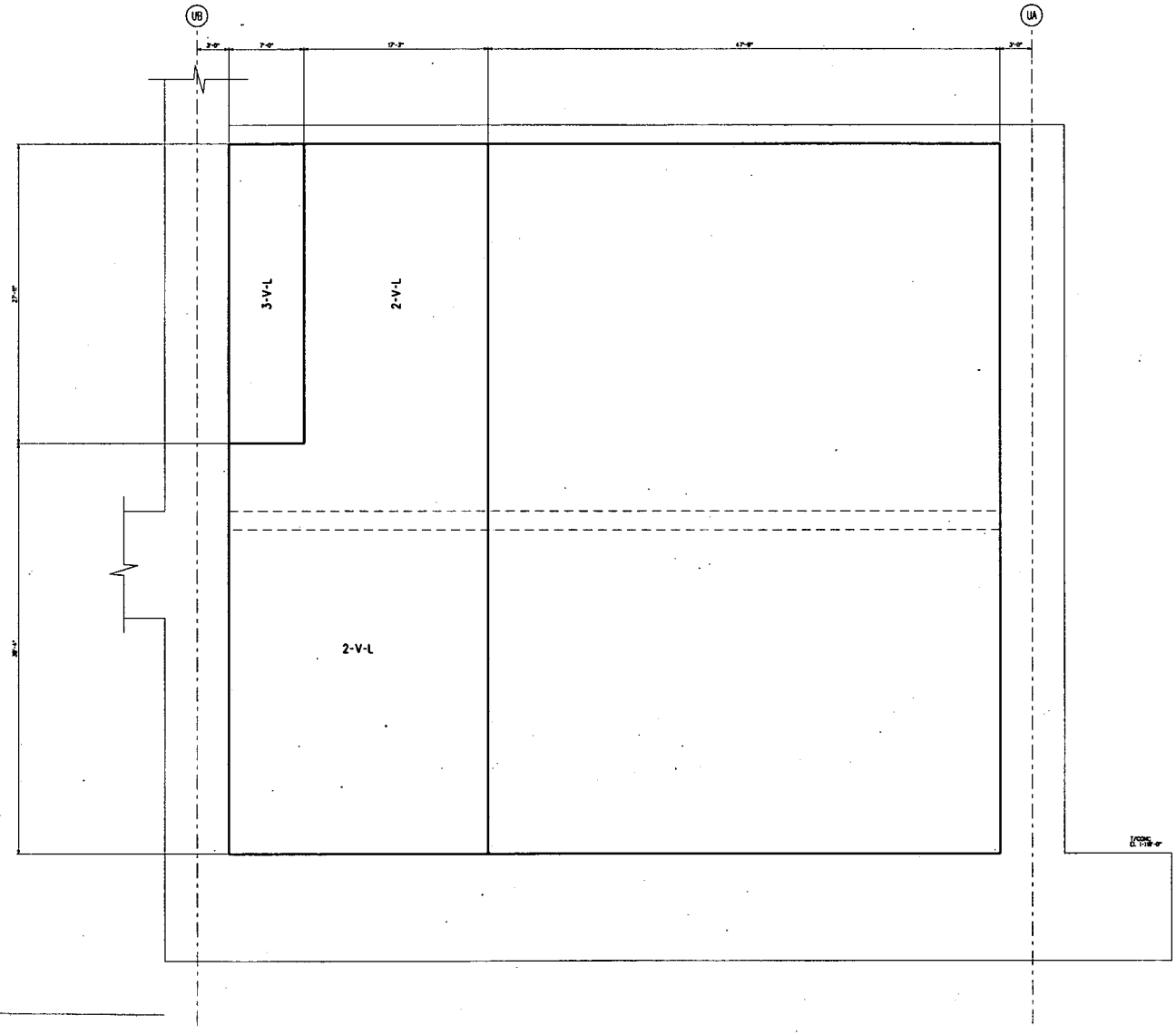


FIGURE 3H.6-60: PUMPHOUSE EAST WALL LOOKING WEST
VERTICAL REINFORCEMENT ZONES

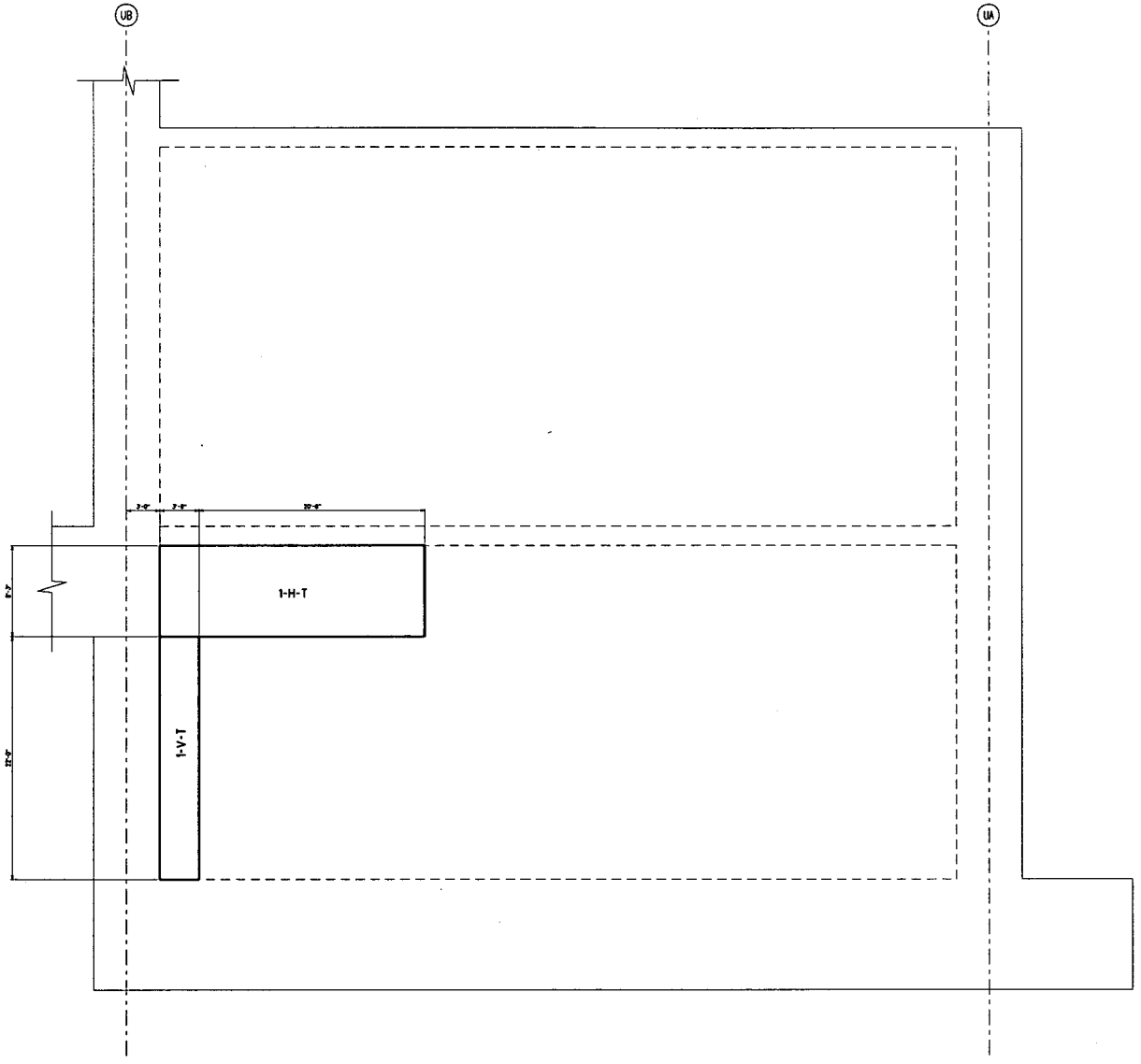


FIGURE 3H.6-61: PUMPHOUSE EAST WALL LOOKING WEST
TRANSVERSE VERTICAL AND HORIZONTAL REINFORCEMENT ZONES

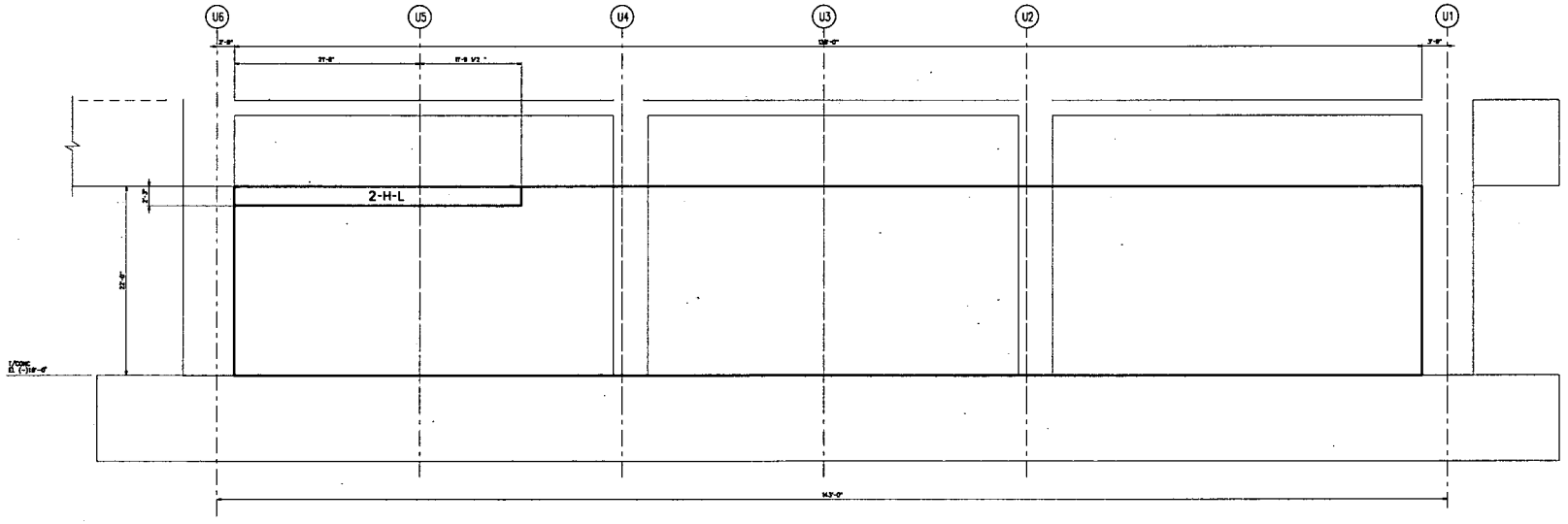


FIGURE 3H.6-62: PUMPHOUSE SOUTH WALL LOOKING SOUTH
HORIZONTAL REINFORCEMENT ZONES

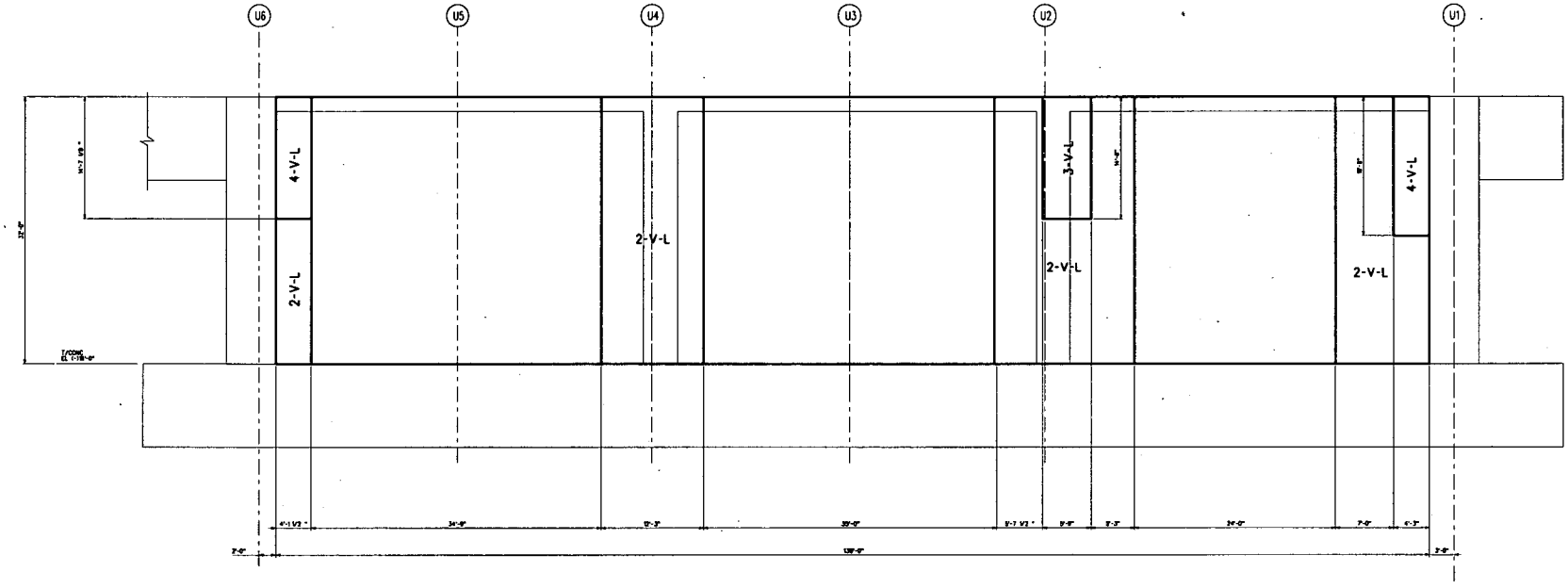


FIGURE 3H.6-63: PUMPHOUSE SOUTH WALL LOOKING SOUTH
VERTICAL REINFORCEMENT ZONES

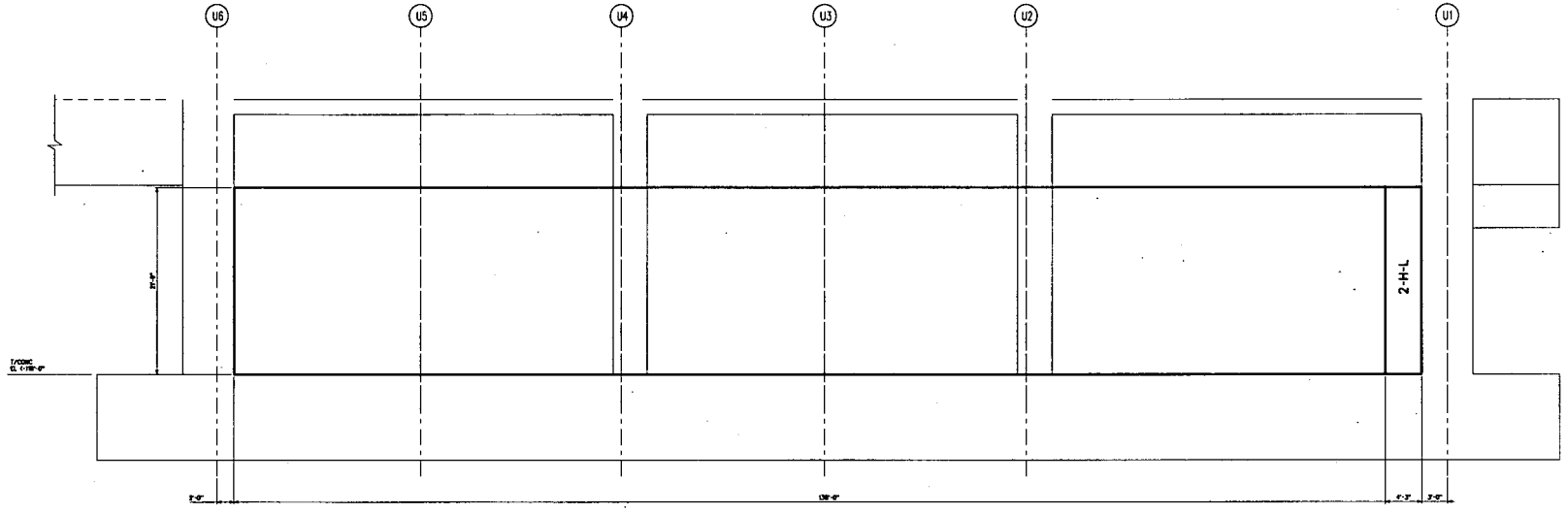


FIGURE 3H.6-64: PUMPHOUSE SOUTH WALL LOOKING SOUTH
HORIZONTAL REINFORCEMENT ZONES

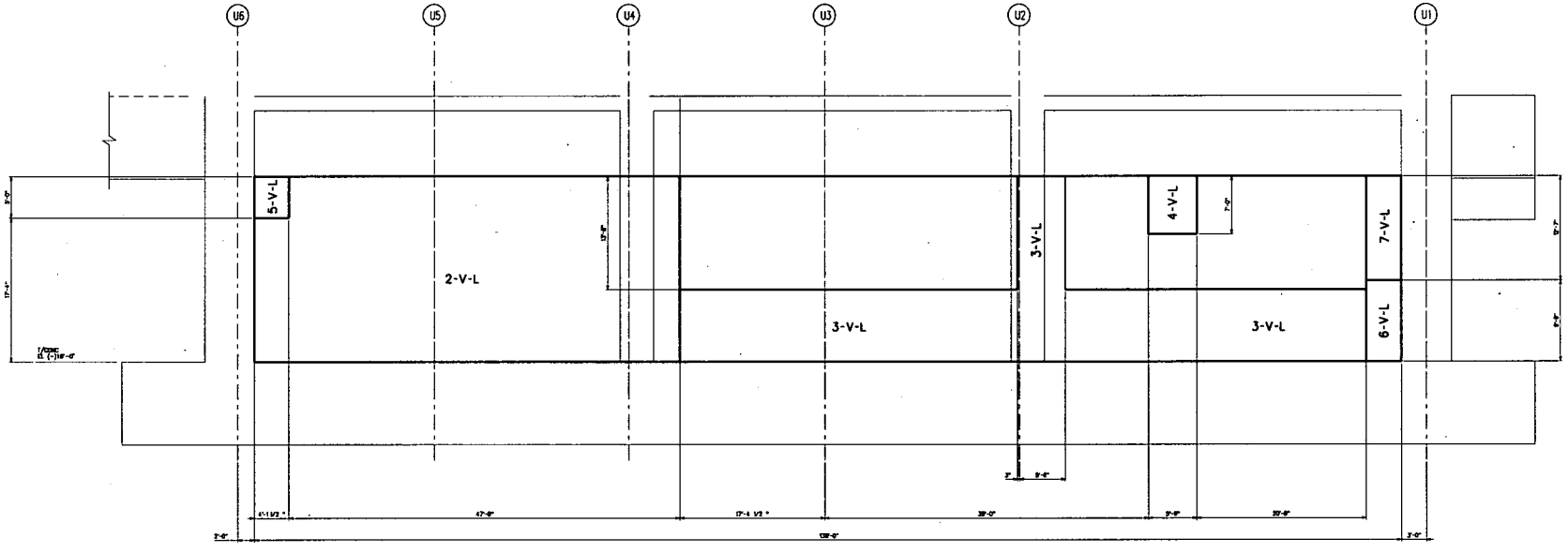


FIGURE 3H.6-65: PUMPHOUSE SOUTH WALL LOOKING SOUTH
VERTICAL REINFORCEMENT ZONES

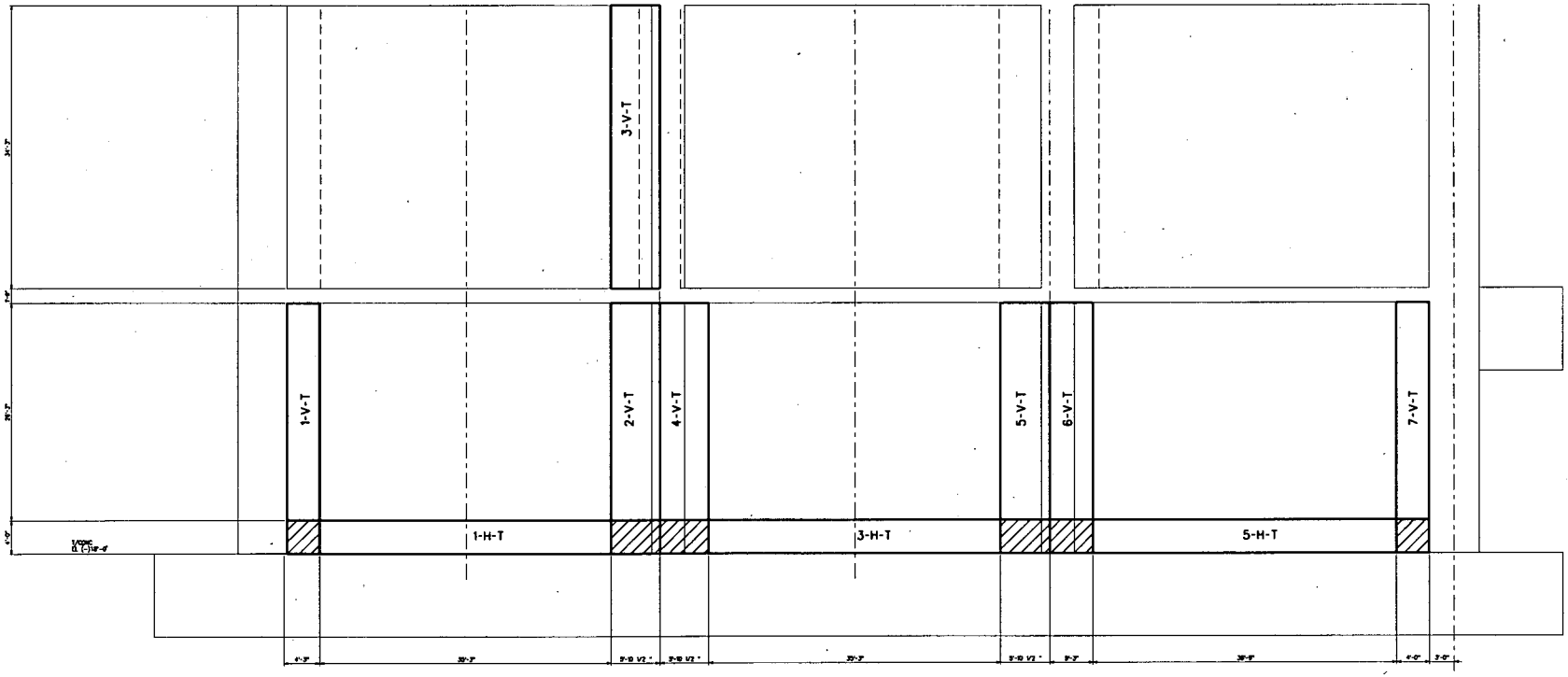


FIGURE 3H.6-66: PUMPHOUSE SOUTH WALL LOOKING NORTH
TRANSVERSE HORIZONTAL AND VERTICAL REINFORCEMENT ZONES

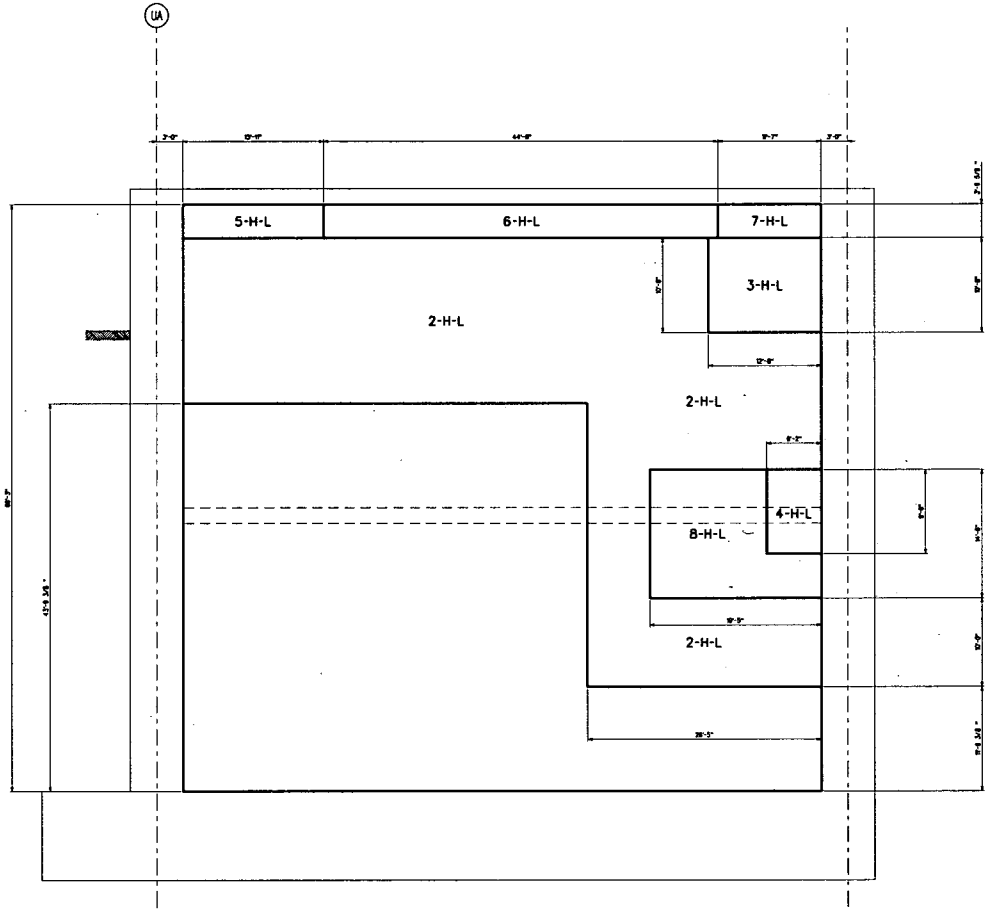


FIGURE 3H.6-67: PUMPHOUSE WEST WALL LOOKING EAST
HORIZONTAL REINFORCEMENT ZONES

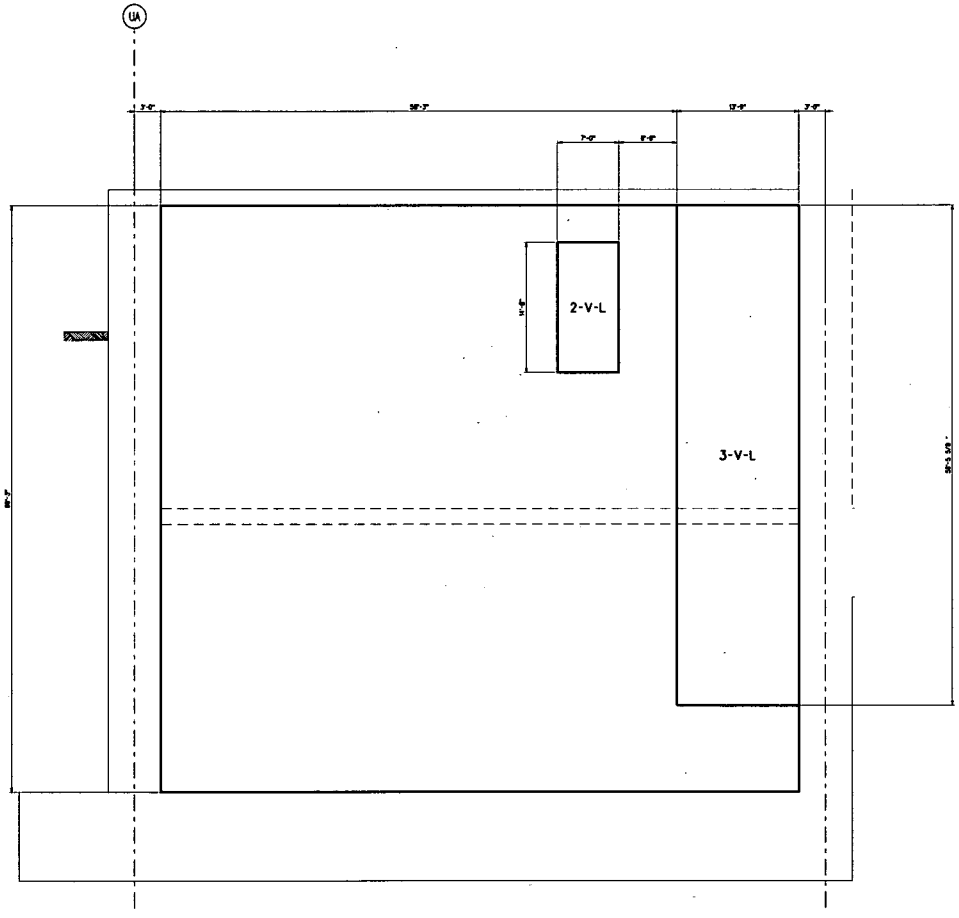


FIGURE 3H.6-68: PUMPHOUSE WEST WALL LOOKING EAST
VERTICAL REINFORCEMENT ZONES

NOTE:
V-L UNLESS NOTED OTHERWISE.

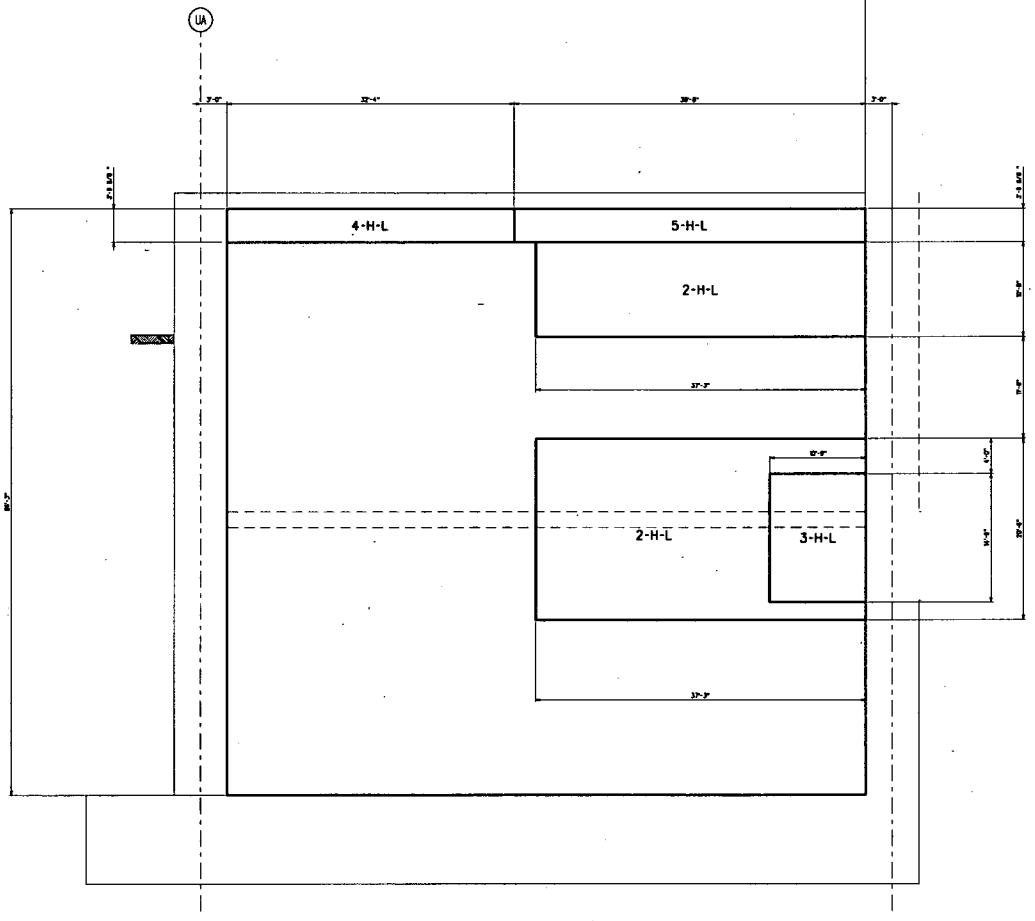


FIGURE 3H.6-69: PUMPHOUSE WEST WALL LOOKING EAST
HORIZONTAL REINFORCEMENT ZONES
FOR SIDE FACE

NOTE:
1) H-L UNLESS NOTED OTHERWISE.

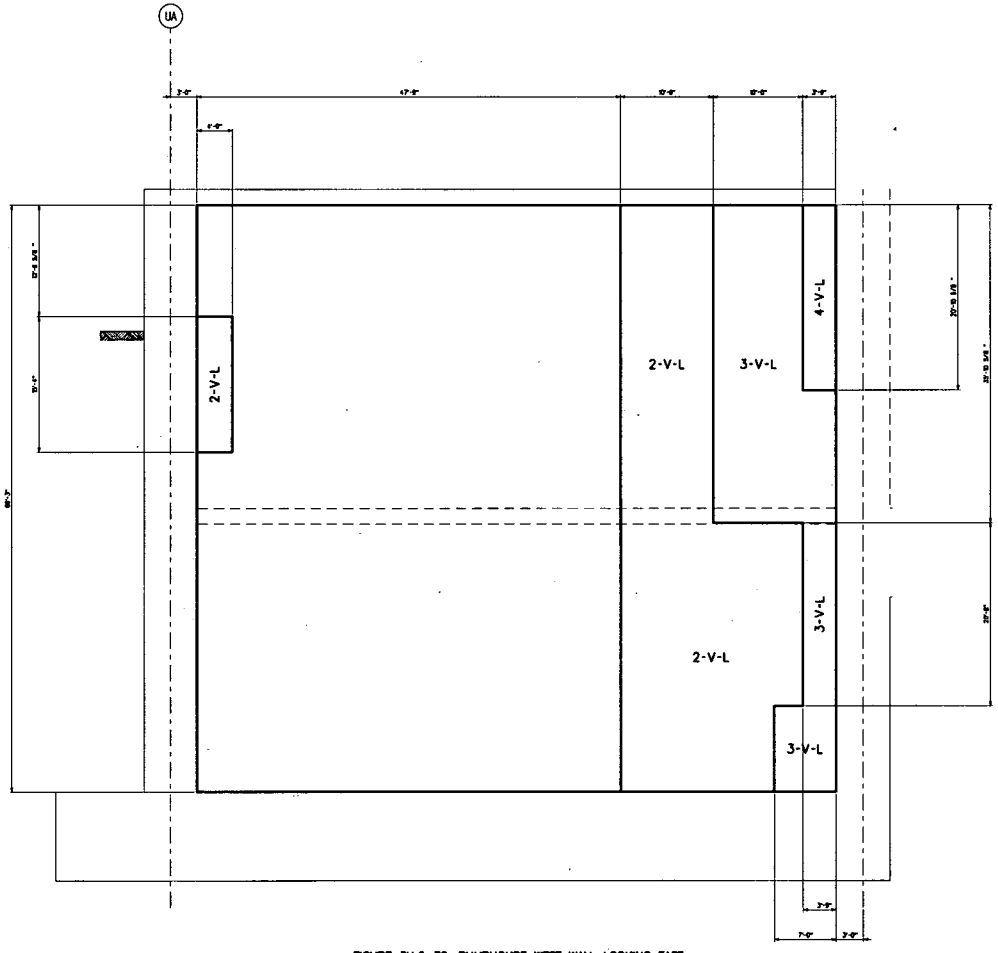


FIGURE 3H.6-70: PUMPHOUSE WEST WALL LOOKING EAST
VERTICAL REINFORCEMENT ZONES

NOTE:
1-V-L UNLESS NOTED OTHERWISE.

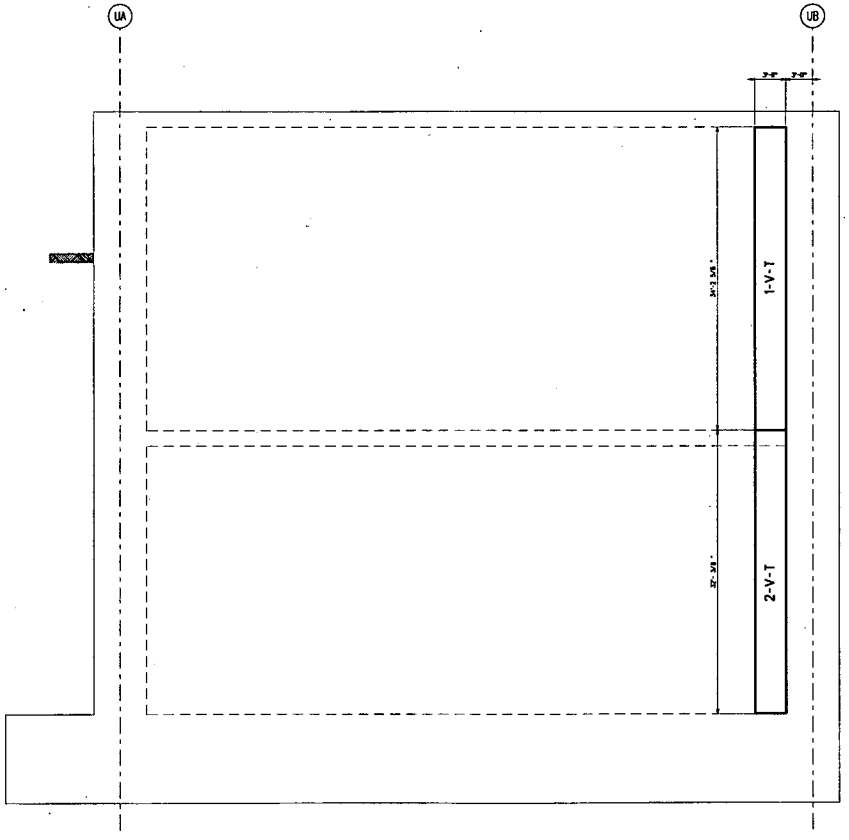


FIGURE 3H.6-71: PUMPHOUSE WEST WALL LOOKING EAST
TRANSVERSE VERTICAL REINFORCEMENT ZONES

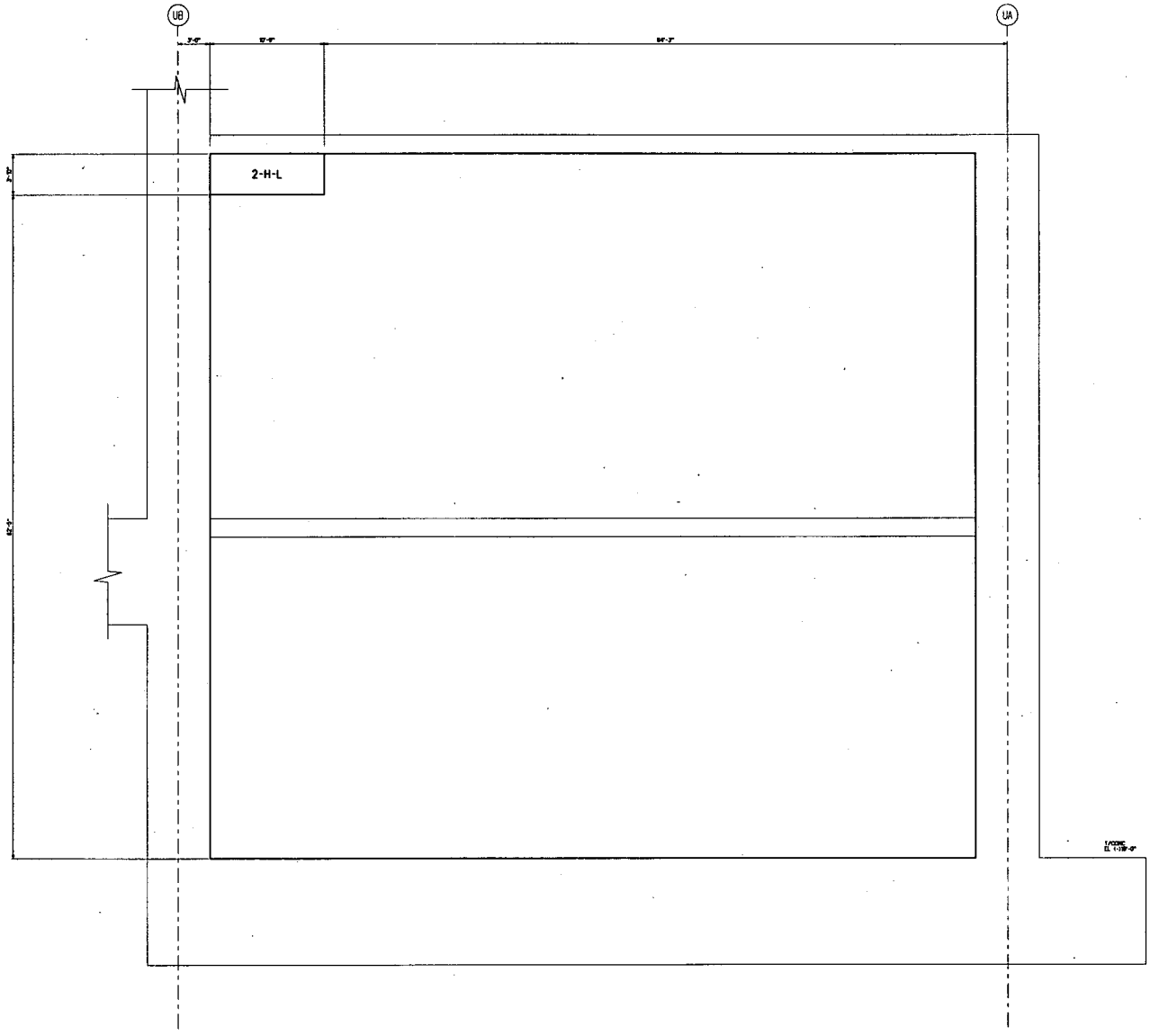


FIGURE 3H.6-72: PUMPHOUSE INTERNAL EAST WALL LOOKING WEST
HORIZONTAL REINFORCEMENT ZONES

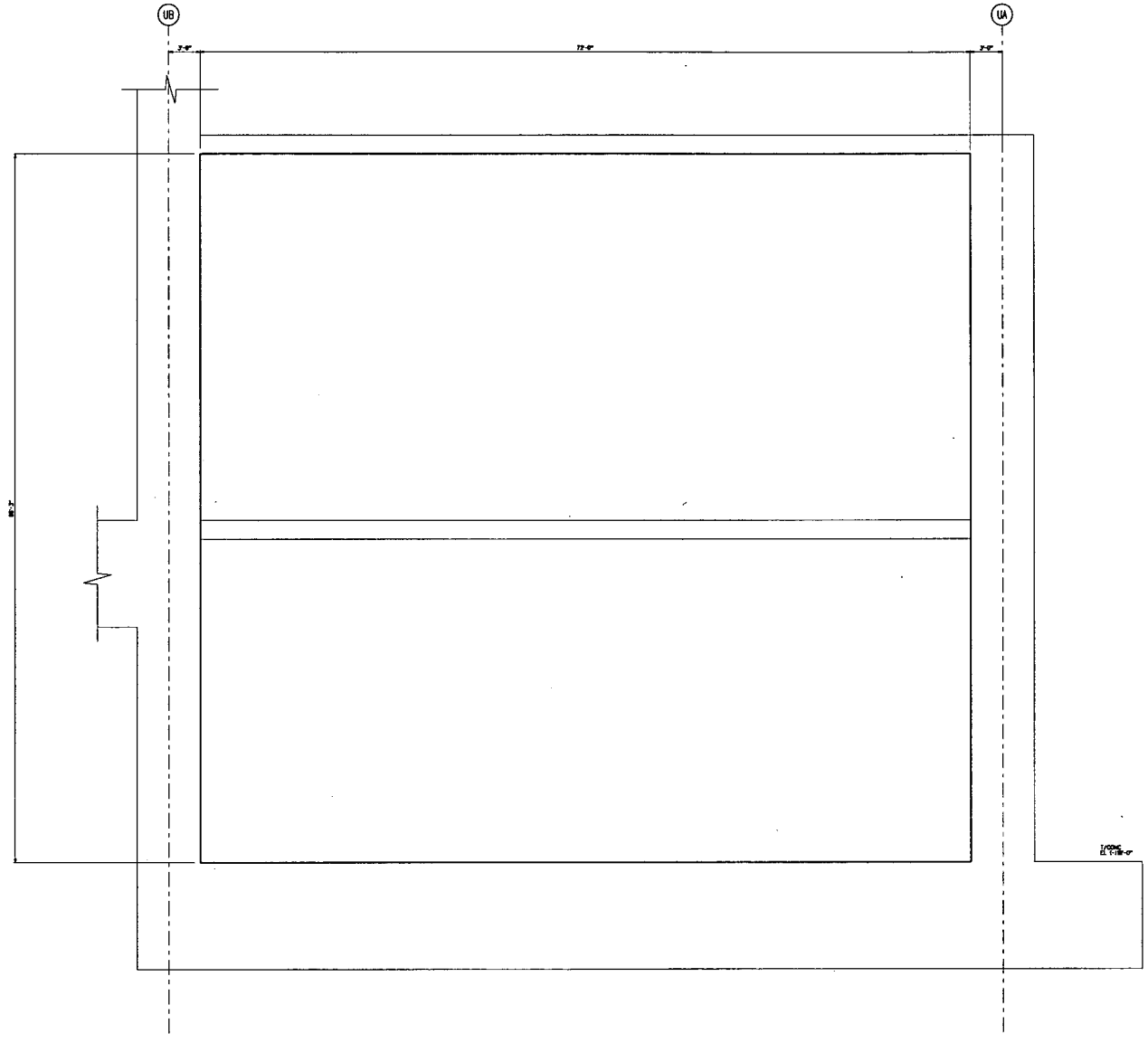


FIGURE 3H.6-73: PUMPHOUSE INTERNAL EAST WALL LOOKING WEST
VERTICAL REINFORCEMENT ZONES

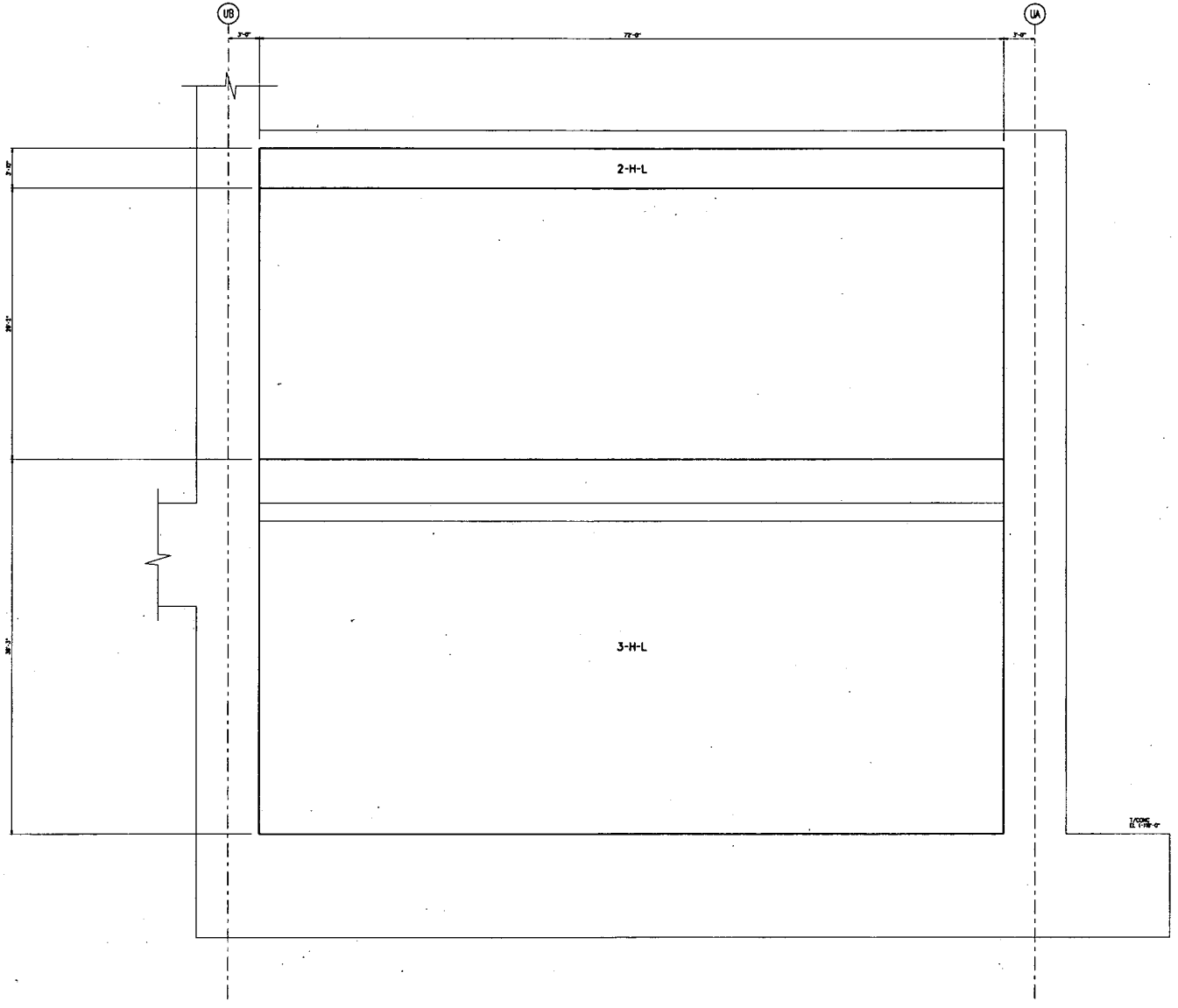


FIGURE 3H.6-74: PUMPHOUSE INTERNAL EAST WALL LOOKING WEST
HORIZONTAL REINFORCEMENT ZONES

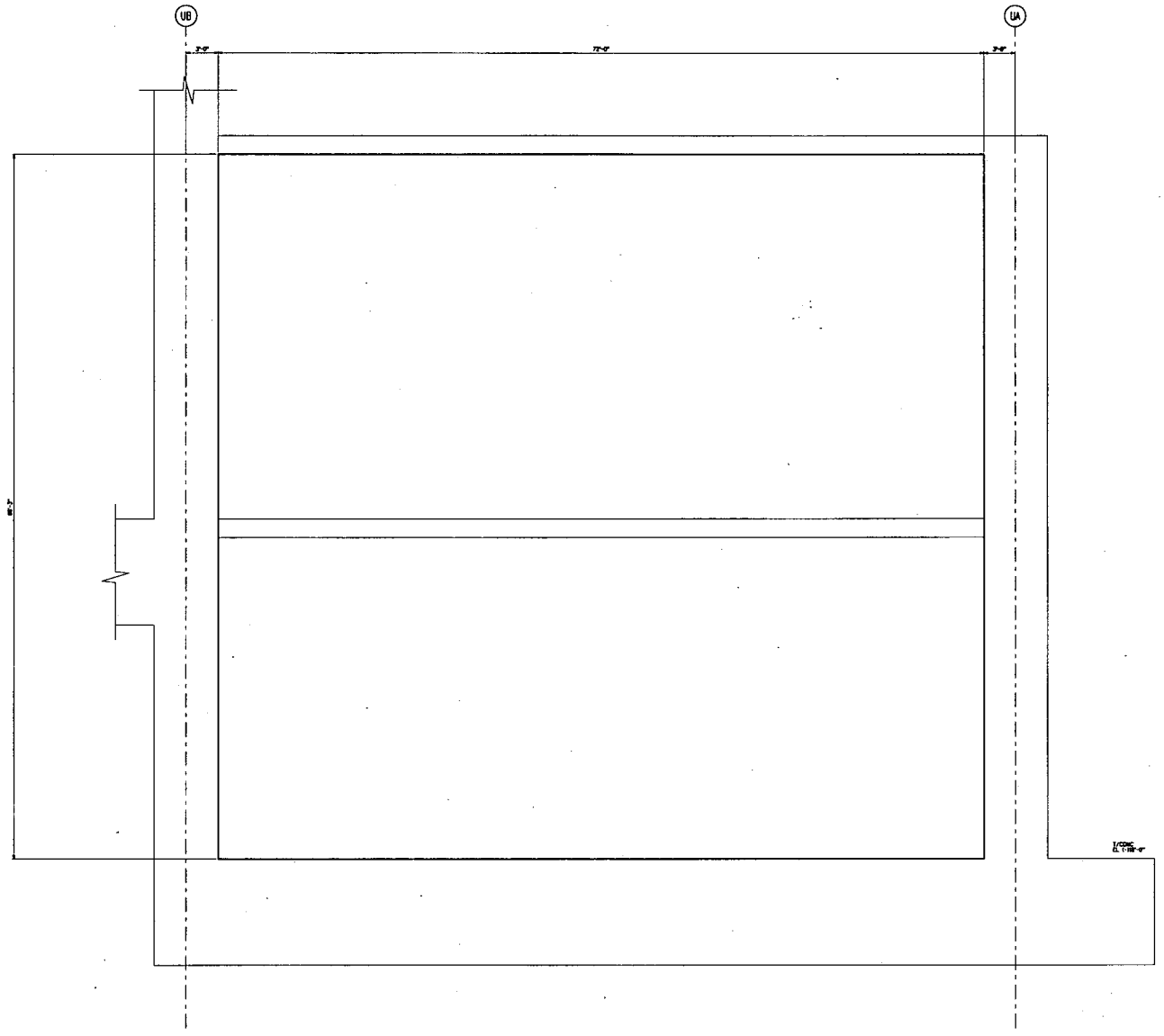


FIGURE 3H.6-75: PUMPHOUSE INTERNAL EAST WALL LOOKING WEST
VERTICAL REINFORCEMENT ZONES

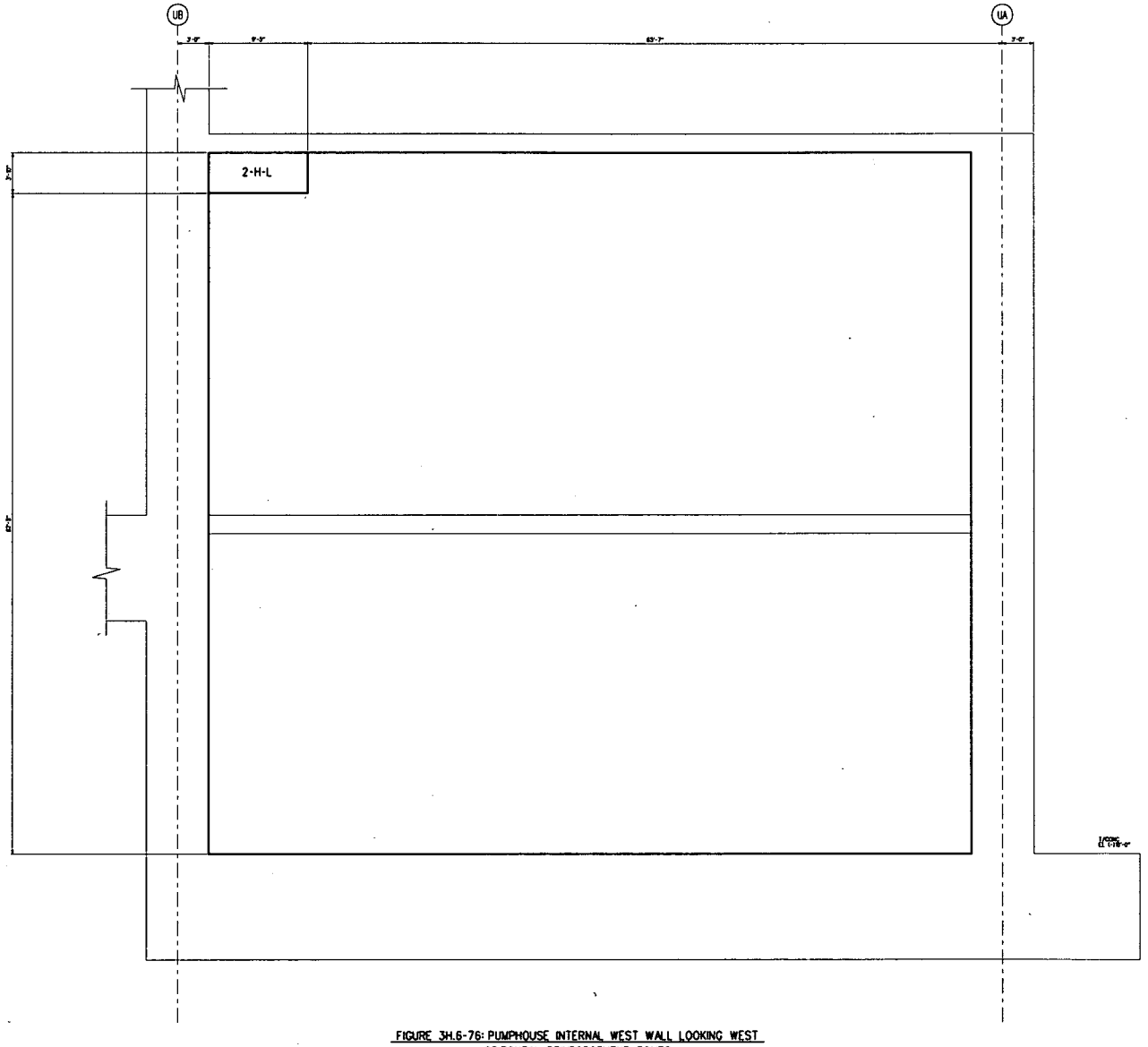


FIGURE 3H.6-76: PUMPHOUSE INTERNAL WEST WALL LOOKING WEST
HORIZONTAL REINFORCEMENT ZONES

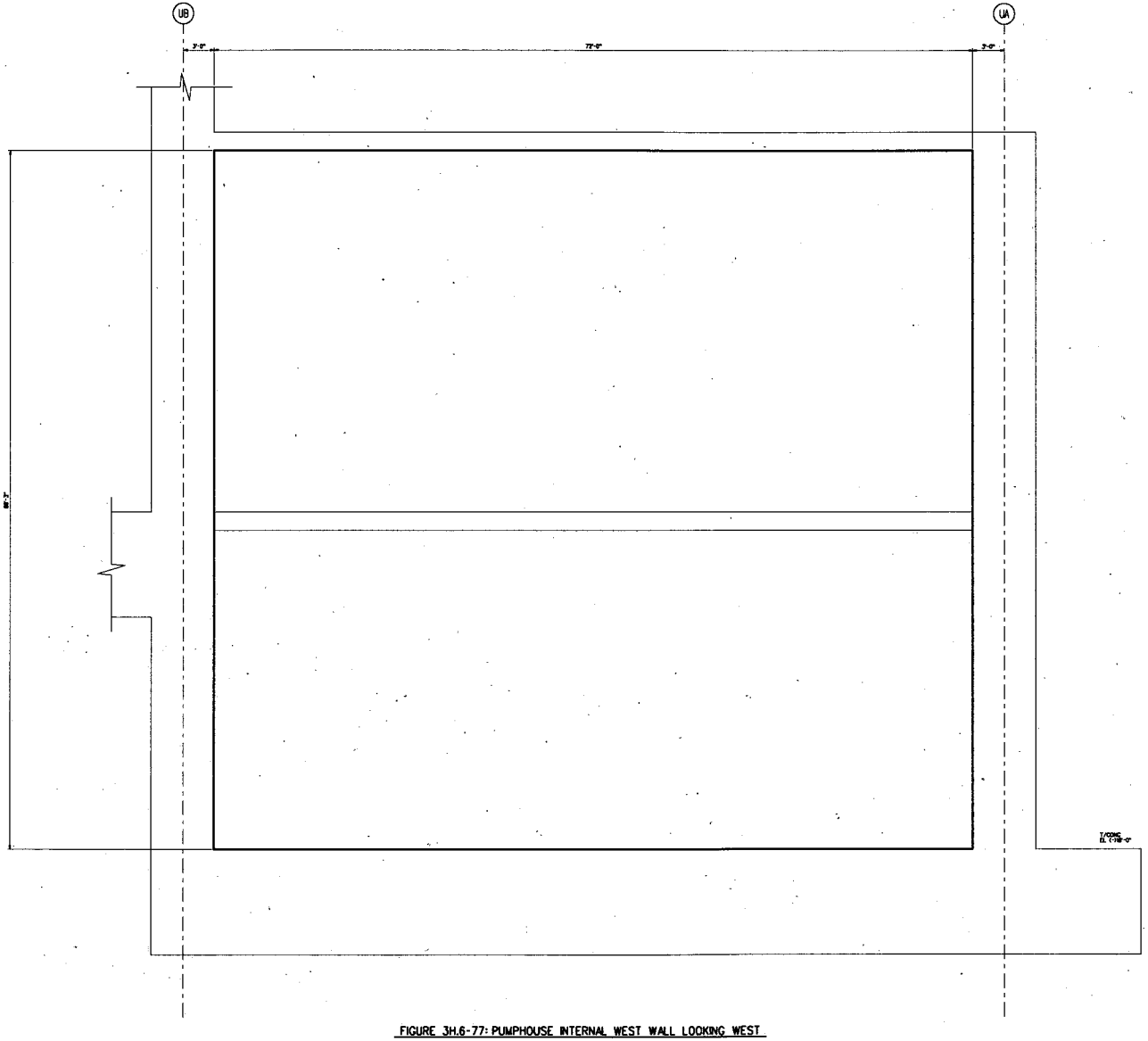


FIGURE 3H.6-77: PUMPHOUSE INTERNAL WEST WALL LOOKING WEST
VERTICAL REINFORCEMENT ZONES

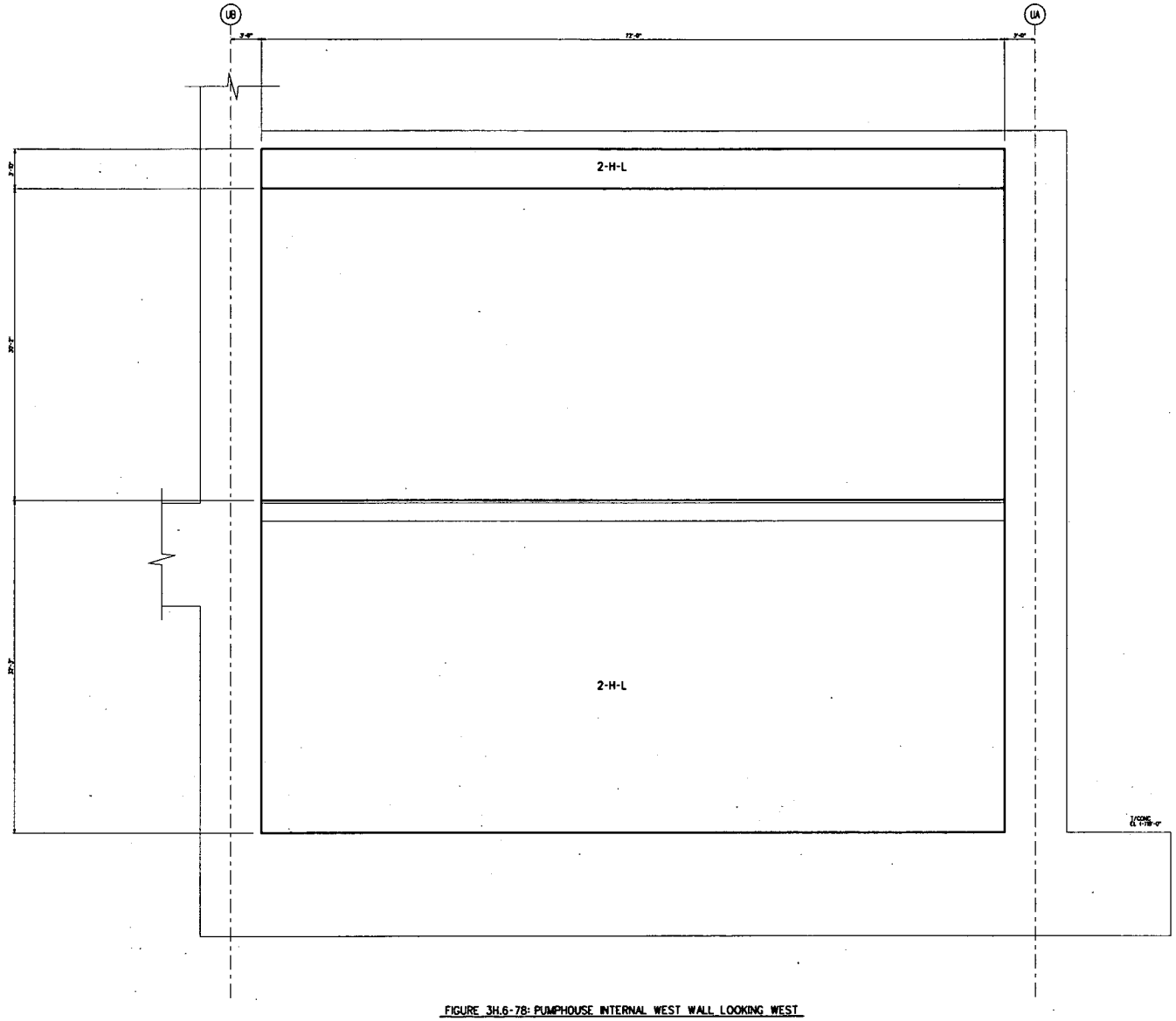


FIGURE 3H.6-78: PUMPHOUSE INTERNAL WEST WALL, LOOKING WEST
HORIZONTAL REINFORCEMENT ZONES

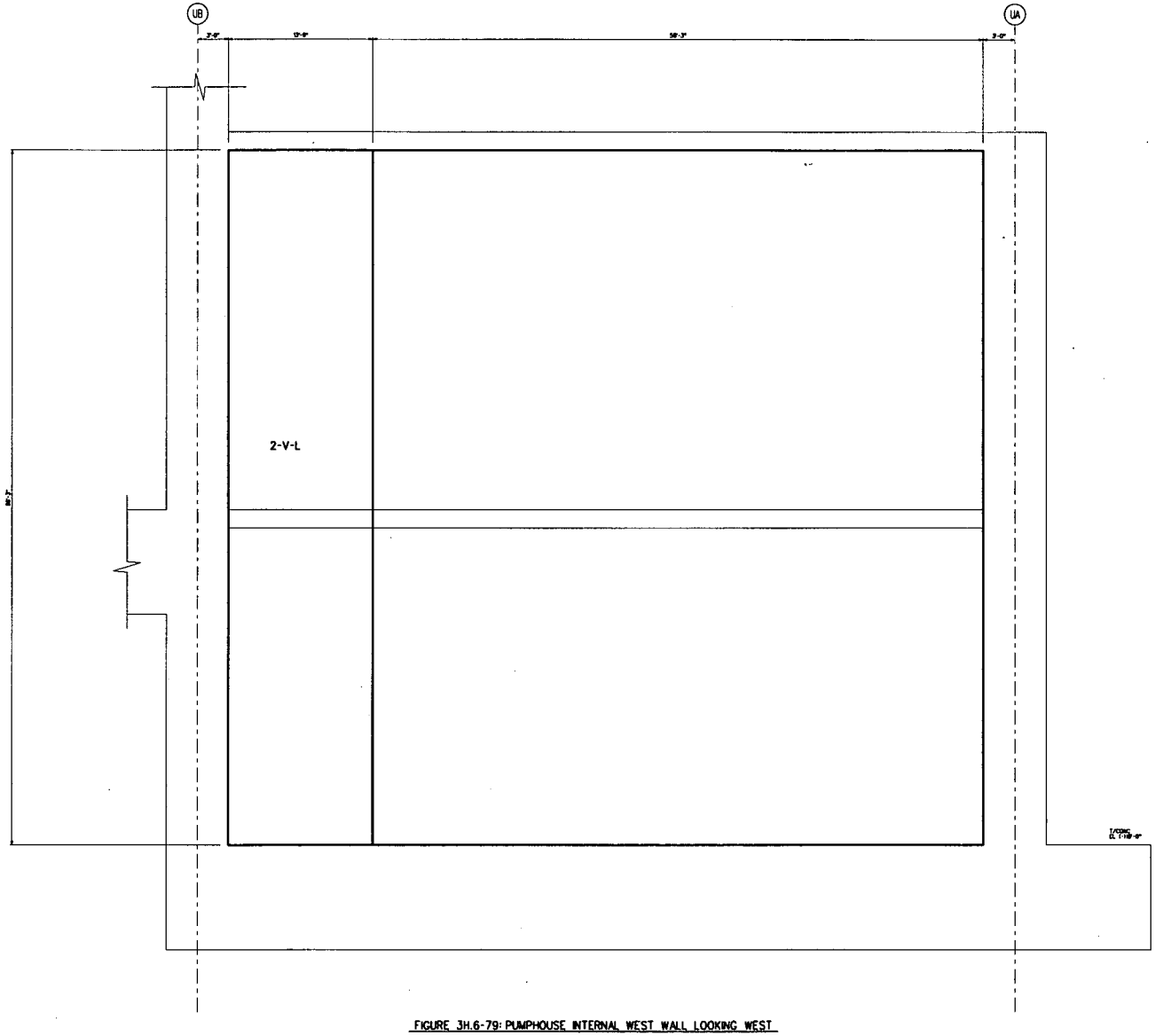


FIGURE 3H.6-79: PUMPHOUSE INTERNAL WEST WALL LOOKING WEST
VERTICAL REINFORCEMENT ZONES

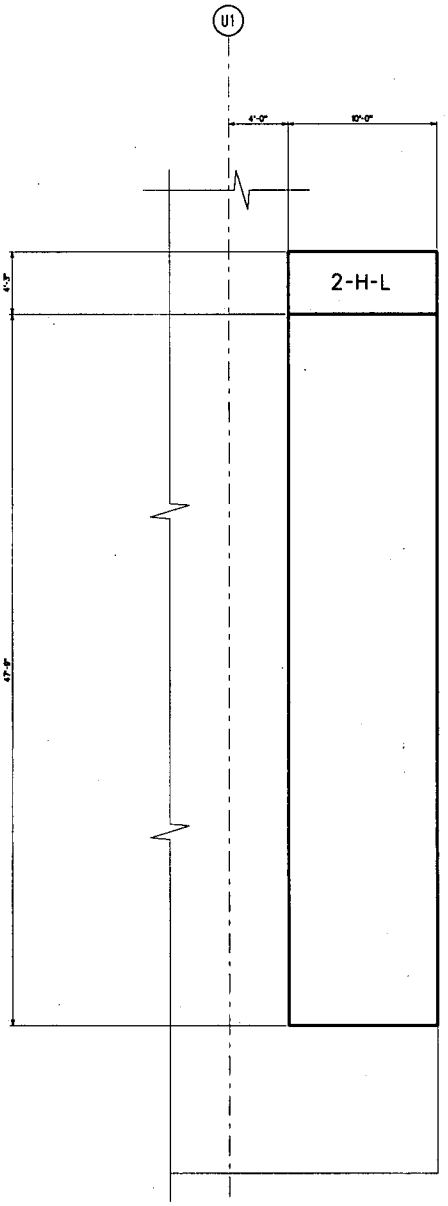


FIGURE 3H.6-80: PUMPHOUSE EAST BUTTRESS LOOKING NORTH
& PUMPHOUSE WEST BUTTRESS LOOKING SOUTH
HORIZONTAL REINFORCEMENT ZONES
NEAR & FAR SIDE FACES

NOTE:
1-H-L UNLESS NOTED OTHERWISE.

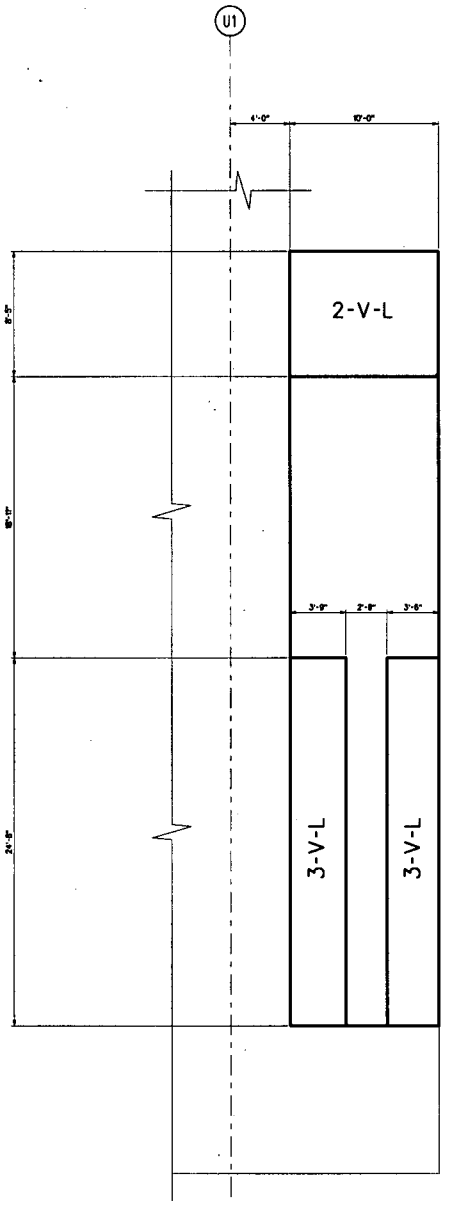


FIGURE 3H.6-81: PUMPHOUSE EAST BUTTRESS LOOKING NORTH
& PUMPHOUSE WEST BUTTRESS LOOKING SOUTH
VERTICAL REINFORCEMENT ZONES
NEAR & FAR SIDE FACES

NOTE:
1-V-L UNLESS NOTED OTHERWISE.

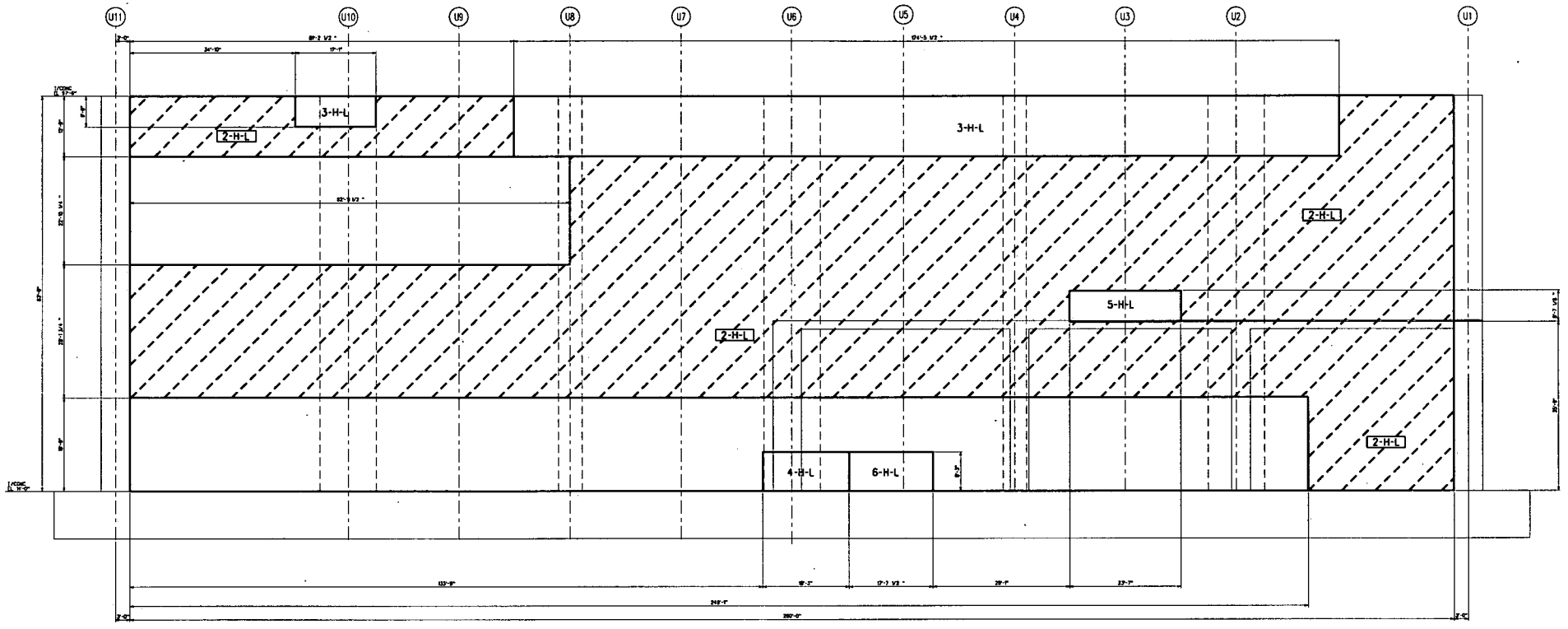


FIGURE 3H.6-82: BASIN NORTH WALL LOOKING SOUTH
HORIZONTAL REINFORCEMENT ZONES

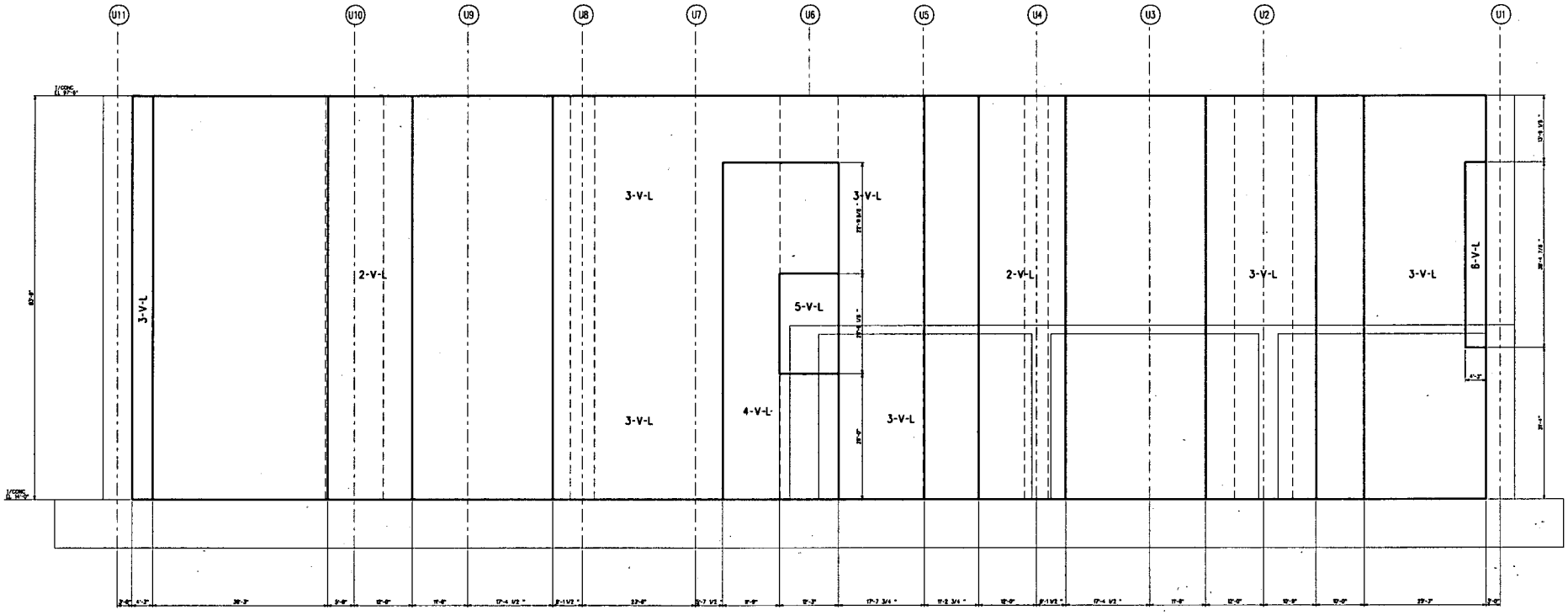


FIGURE 3H.6-83: BASIN NORTH WALL LOOKING SOUTH
VERTICAL REINFORCEMENT ZONES

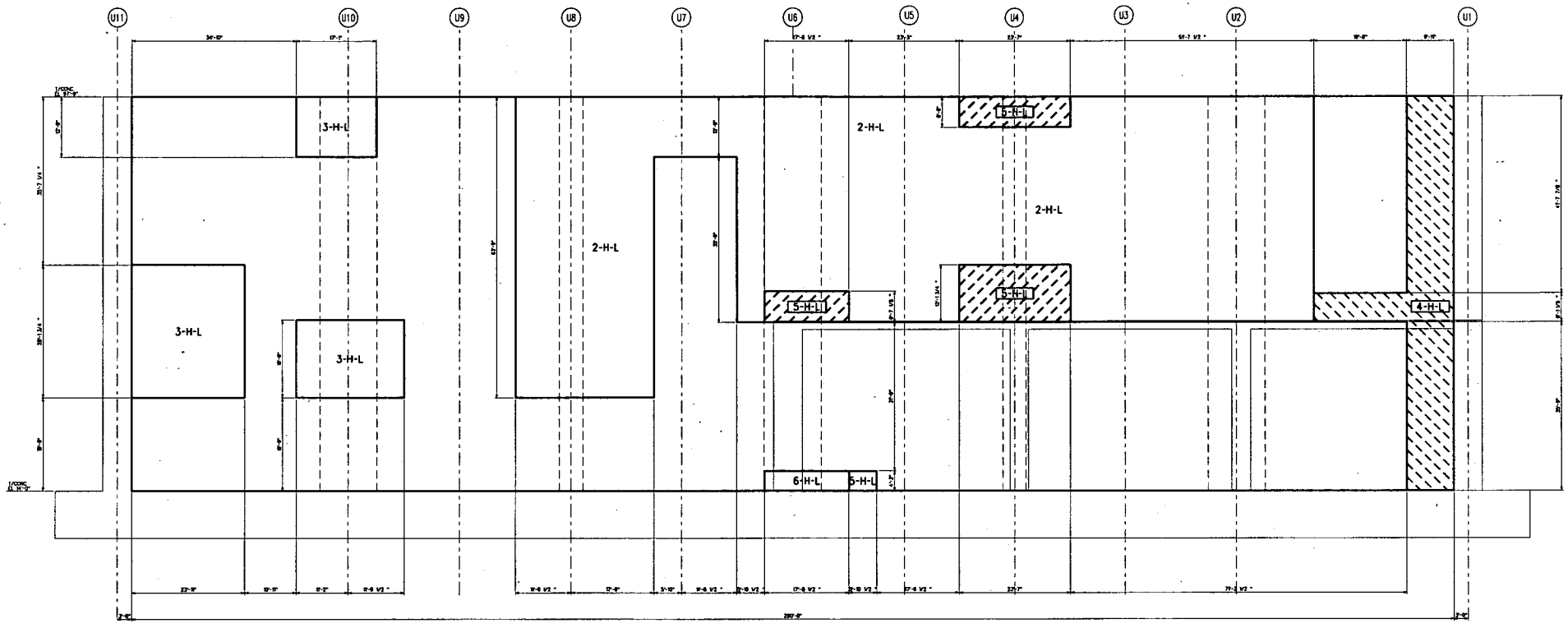


FIGURE 3H.6-84: BASIN NORTH WALL LOOKING SOUTH
HORIZONTAL REINFORCEMENT ZONES
FAR SIDE FACE

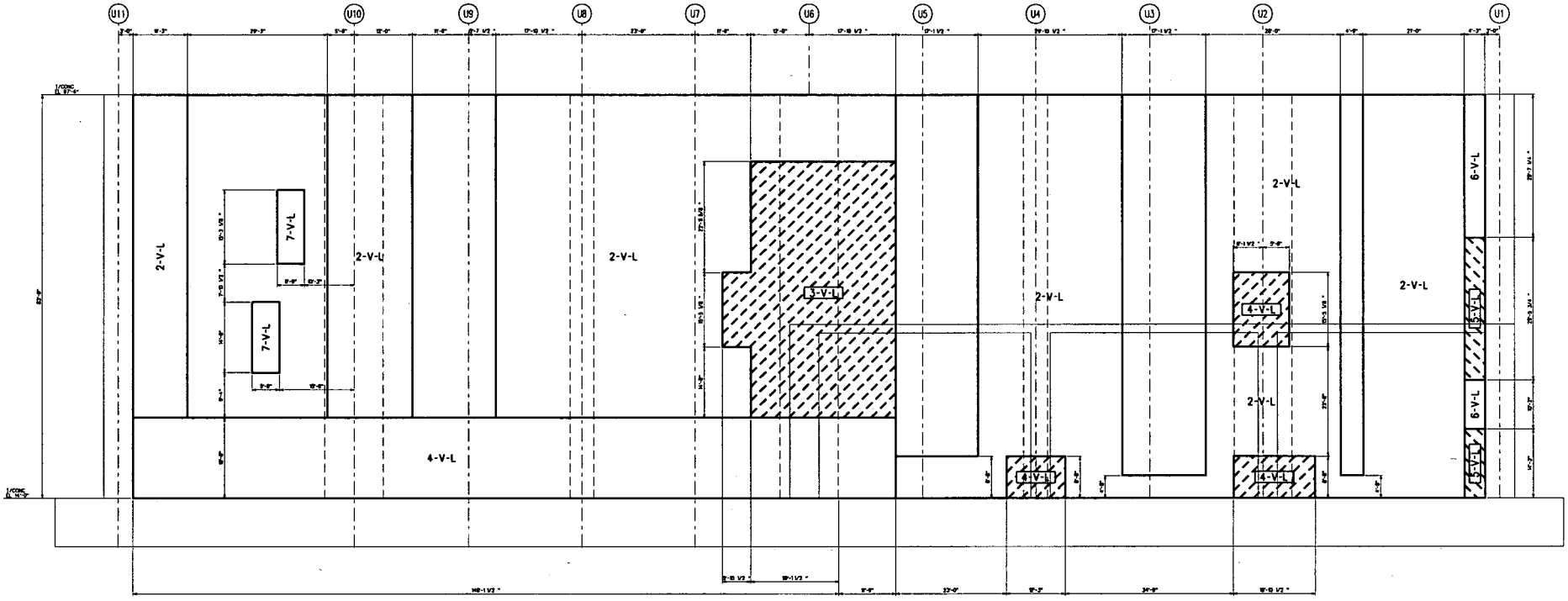


FIGURE 3H.6-85: BASIN NORTH WALL LOOKING SOUTH
VERTICAL REINFORCEMENT ZONES

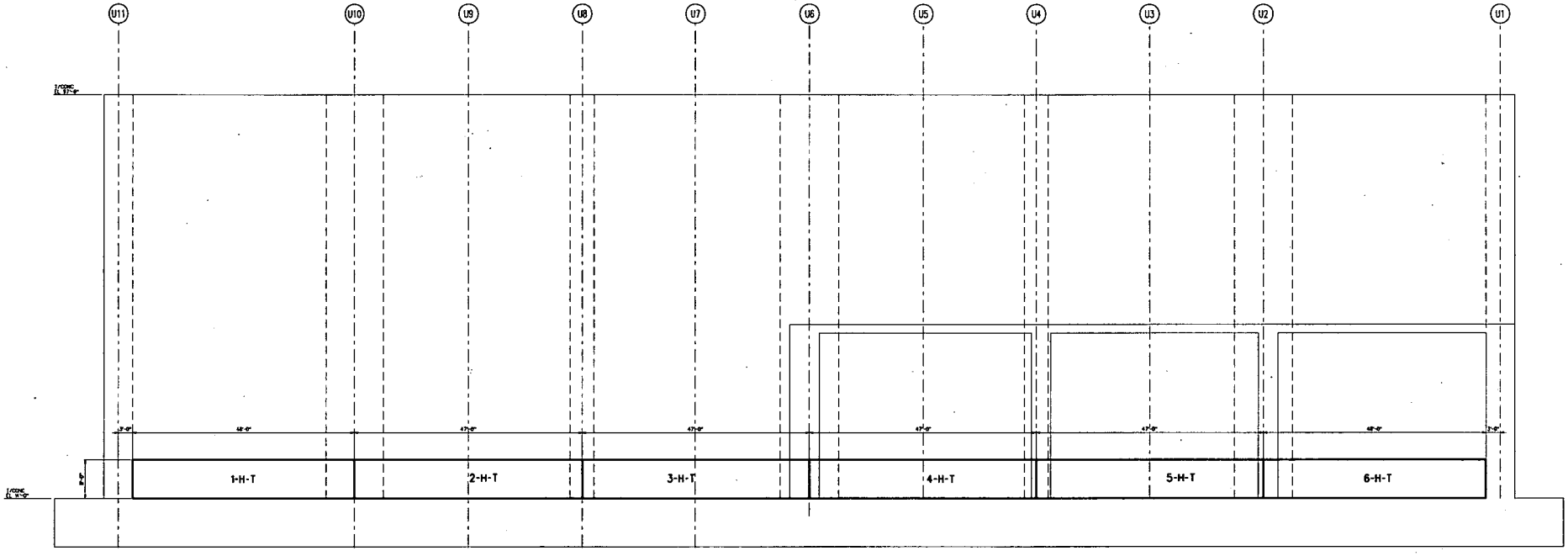
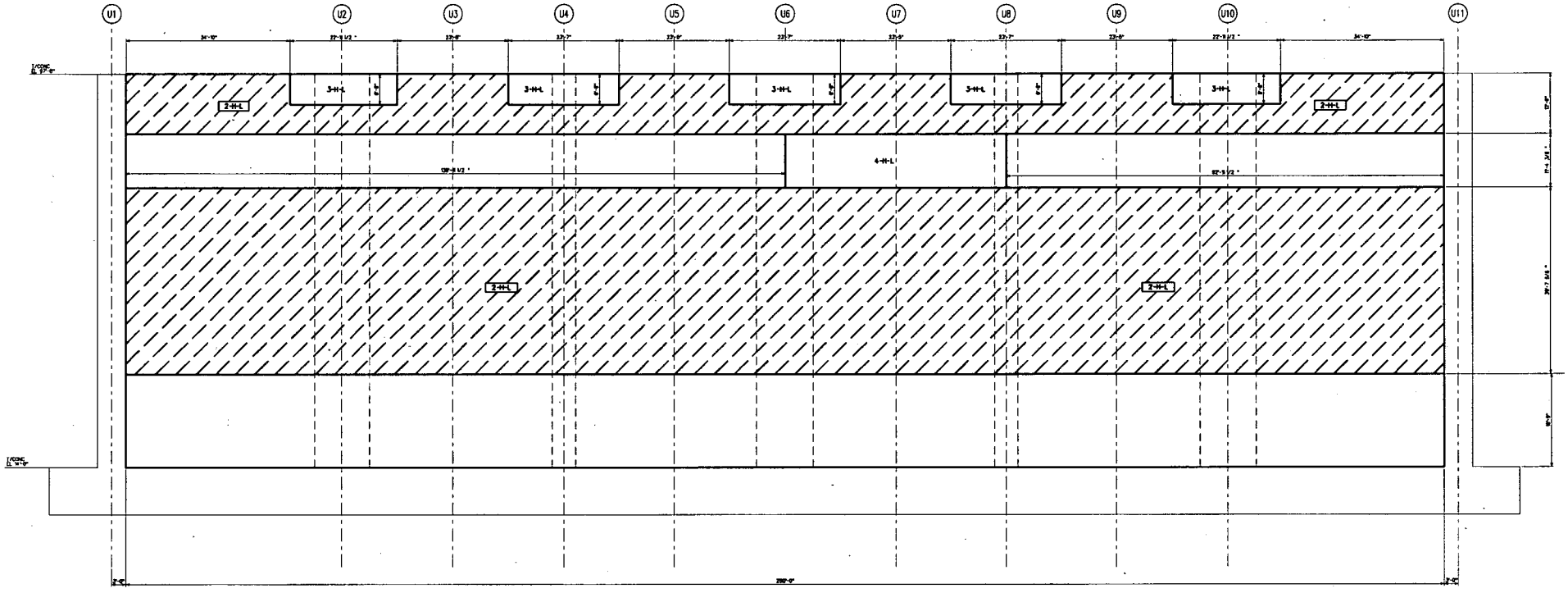


FIGURE 3H.6-86: BASIN NORTH WALL LOOKING SOUTH
TRANSVERSE HORIZONTAL REINFORCEMENT ZONES



NOTE:
H-L UNLESS NOTED OTHERWISE.

FIGURE 3H.6-87: BASIN SOUTH WALL LOOKING NORTH
HORIZONTAL REINFORCEMENT ZONES
NEAR SIDE FACE

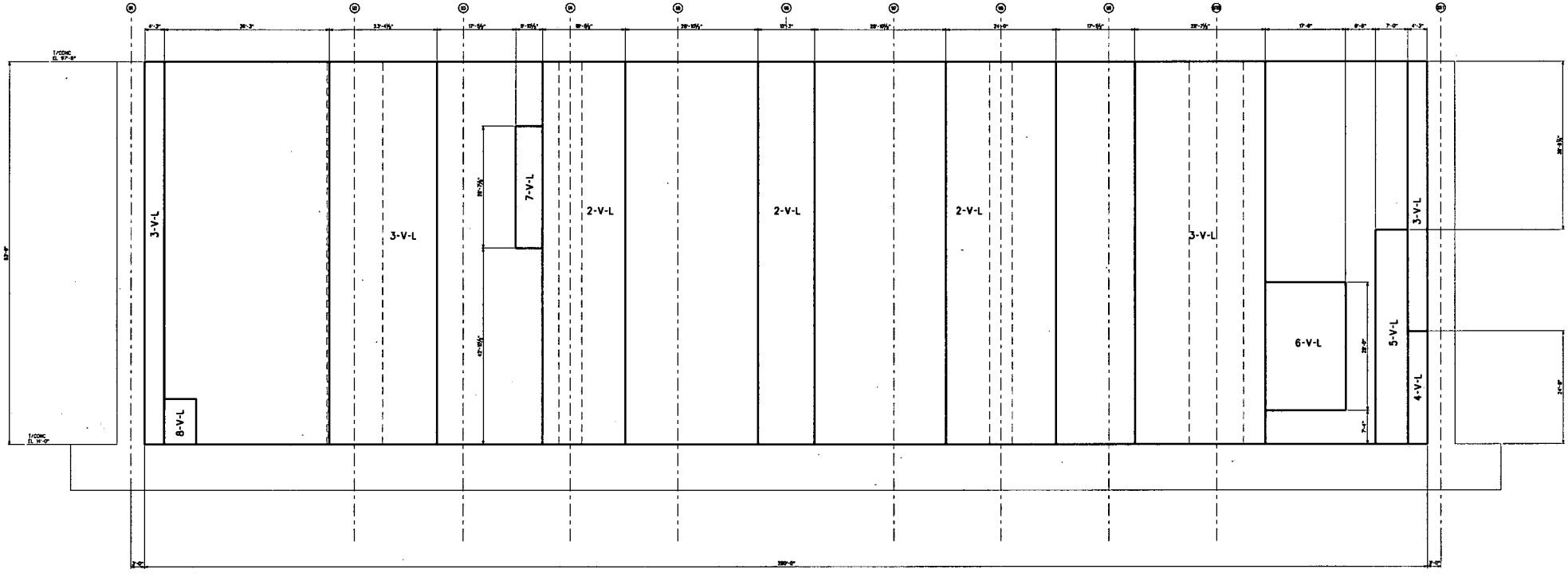


FIGURE 3H.6-88: BASIN SOUTH WALL LOOKING NORTH
VERTICAL REINFORCEMENT ZONES

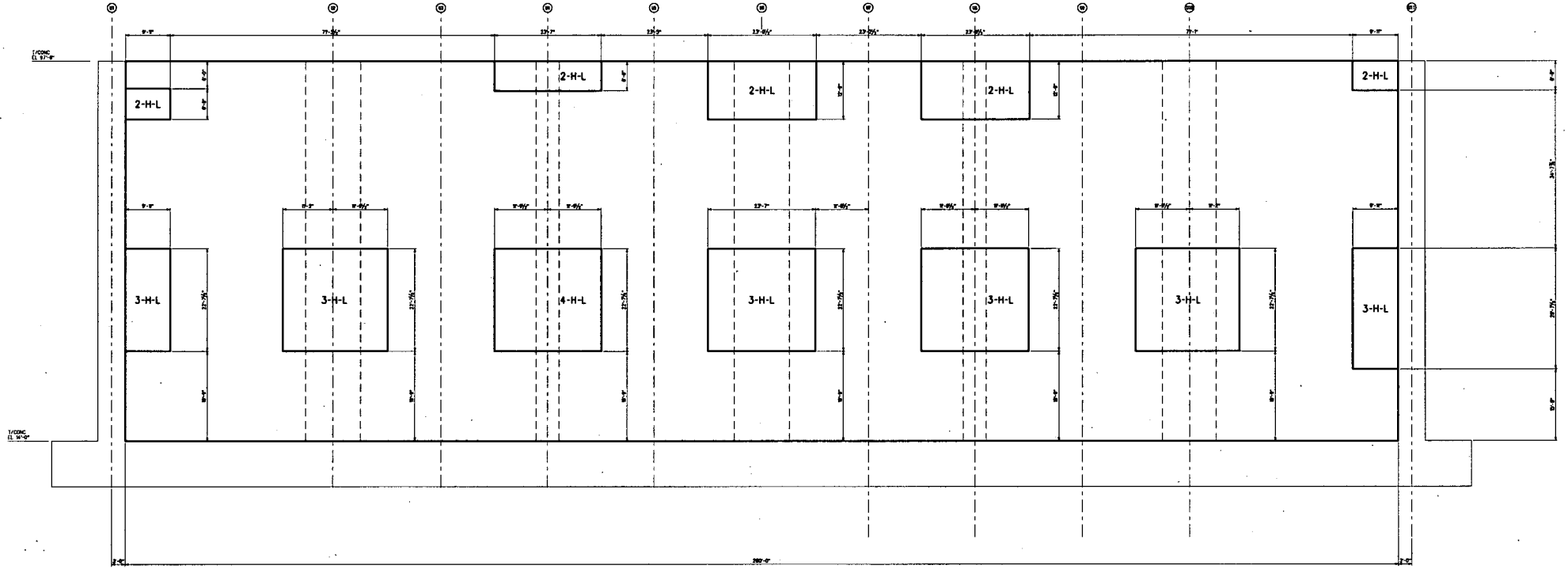


FIGURE 3H.6-89: BASIN SOUTH WALL LOOKING NORTH
HORIZONTAL REINFORCEMENT ZONES

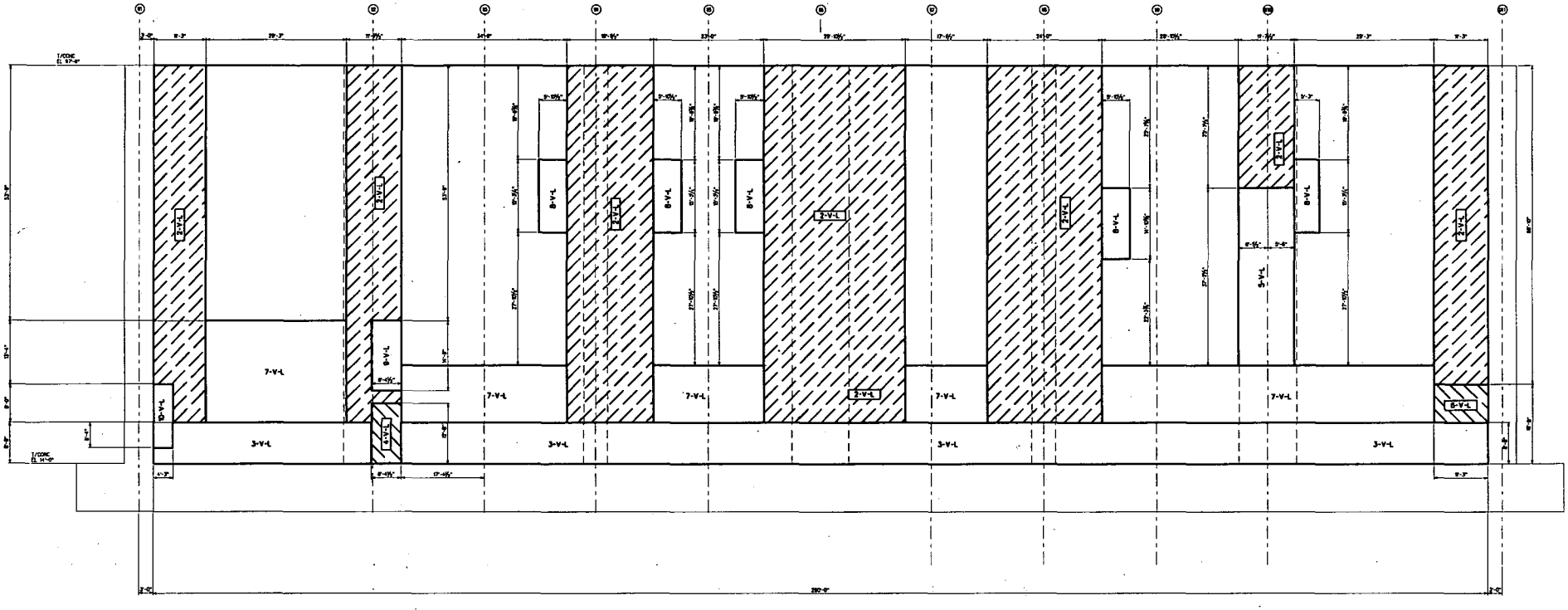


FIGURE 3H.6-90: BASIN SOUTH WALL LOOKING NORTH
VERTICAL REINFORCEMENT ZONES

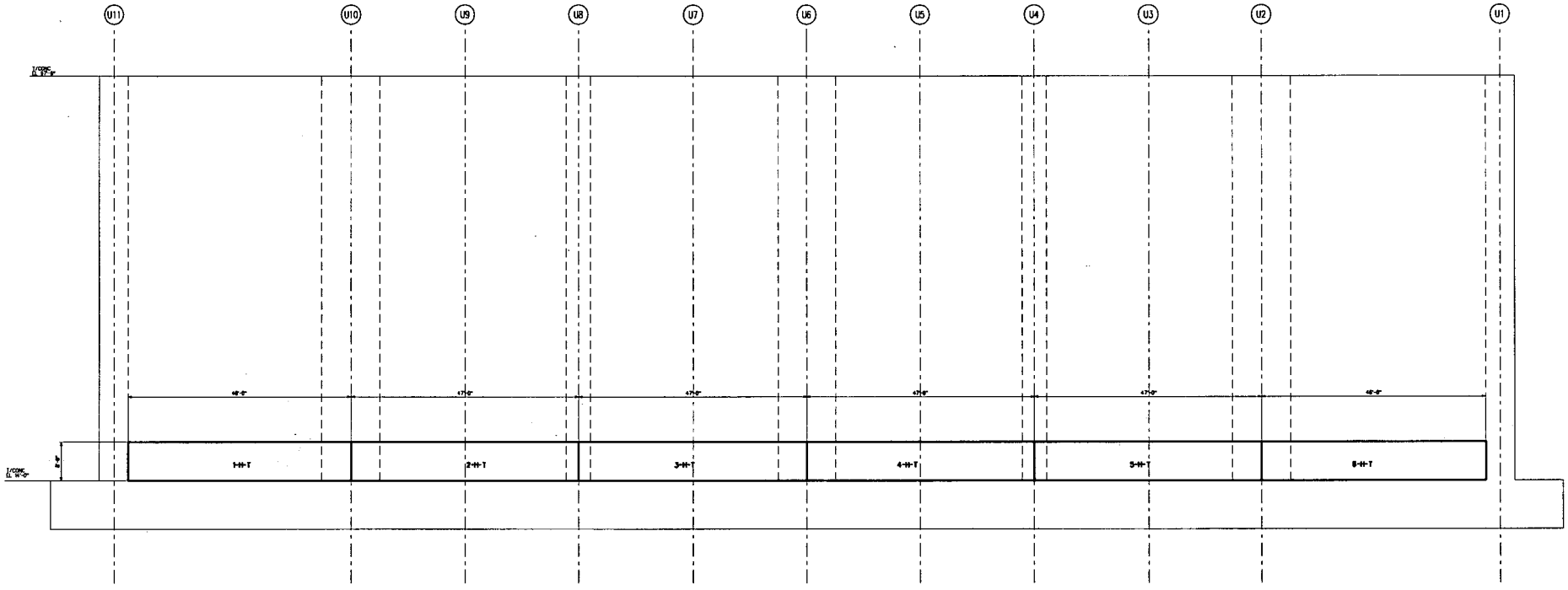


FIGURE 3H.6-91: BASIN SOUTH WALL LOOKING NORTH
TRANSVERSE HORIZONTAL REINFORCING ZONES

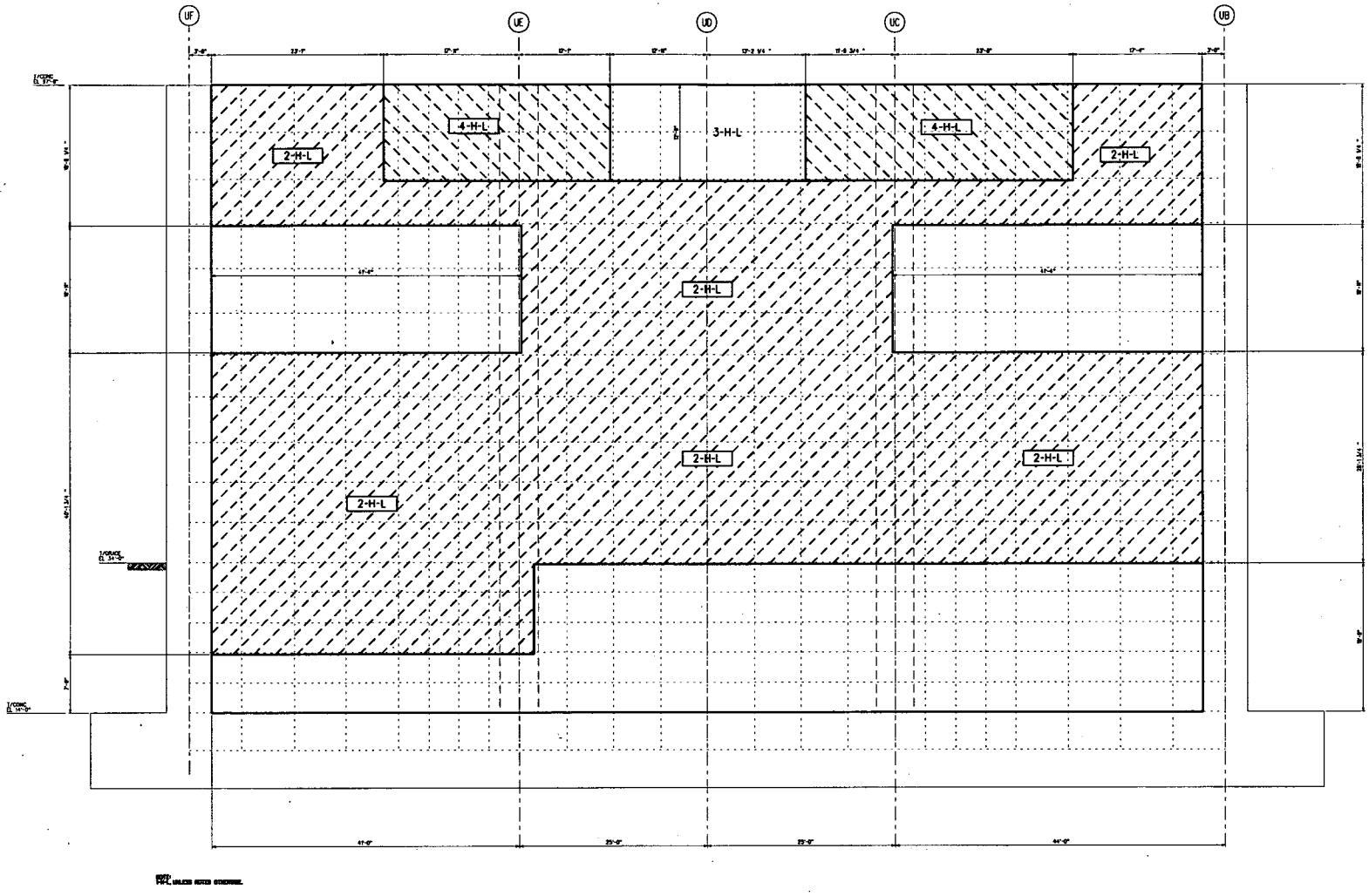


FIGURE 3H.6-92: BASIN EAST WALL LOOKING WEST
HORIZONTAL REINFORCEMENT ZONES

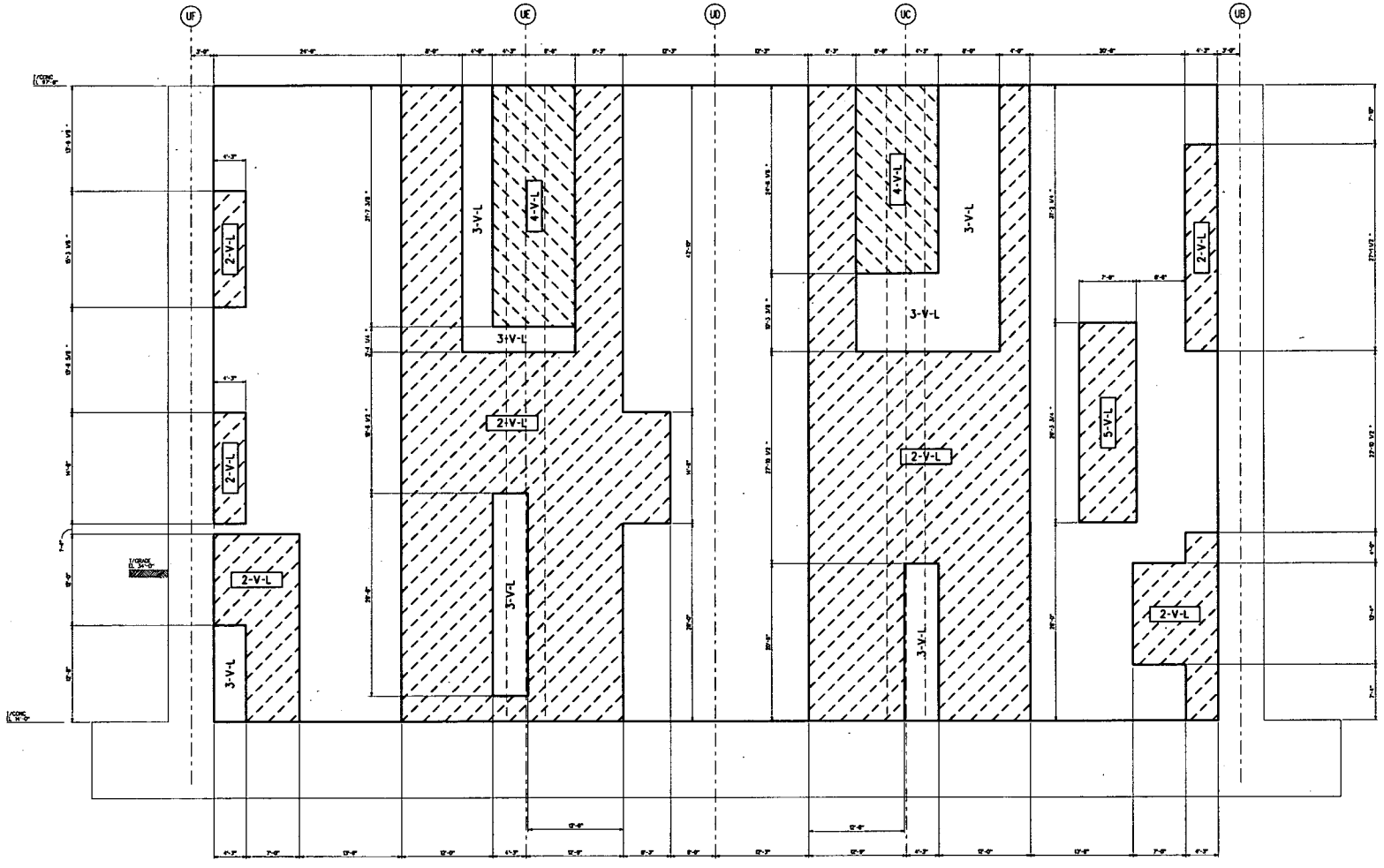
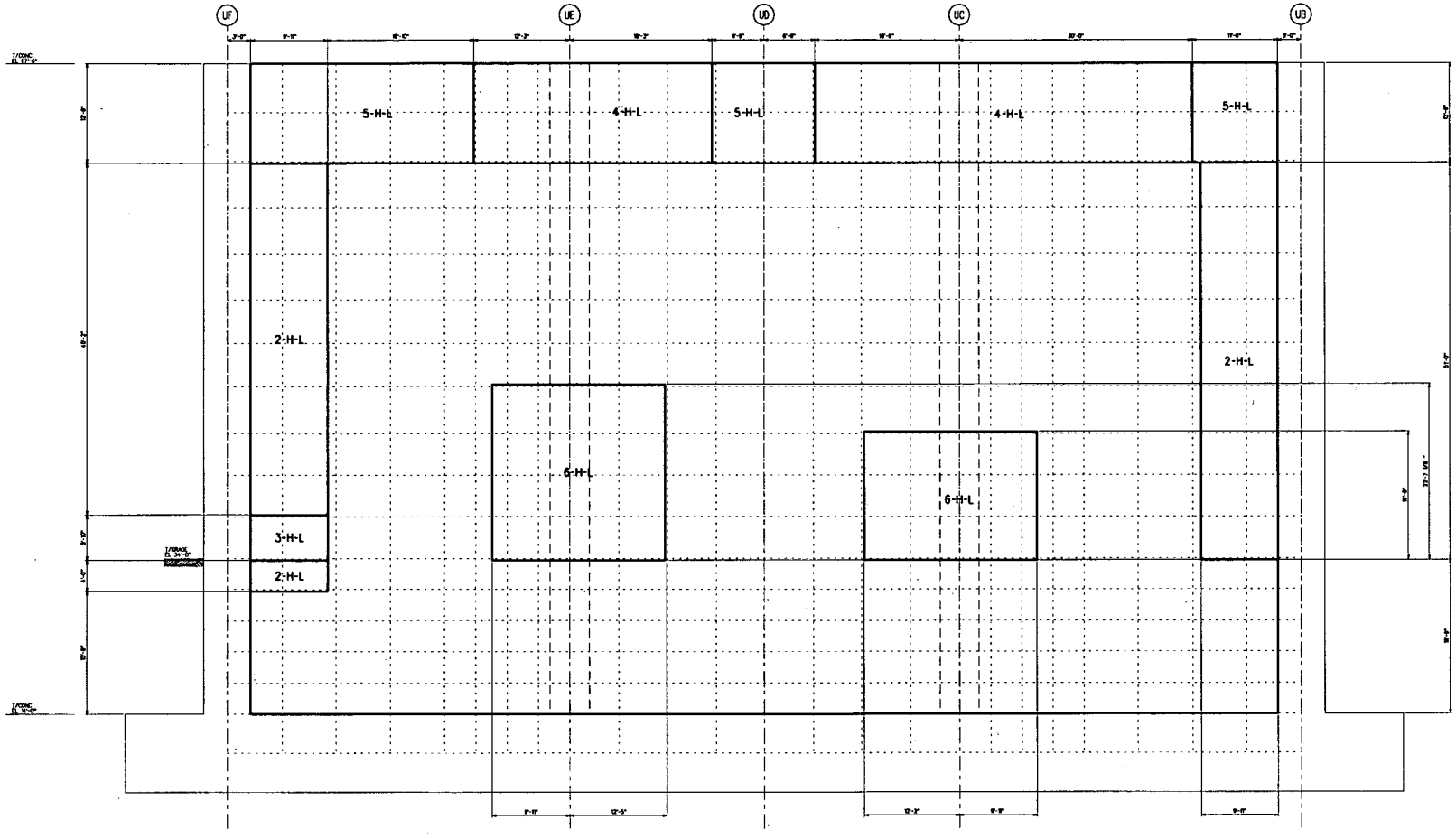


FIGURE 3H.6-93: BASIN EAST WALL LOOKING WEST
VERTICAL REINFORCEMENT ZONES



NOTE:
1H-L UNLESS NOTED OTHERWISE.

FIGURE 3H.6-94: BASIN EAST WALL LOOKING WEST
HORIZONTAL REINFORCEMENT ZONES
FAR SIDE FACE

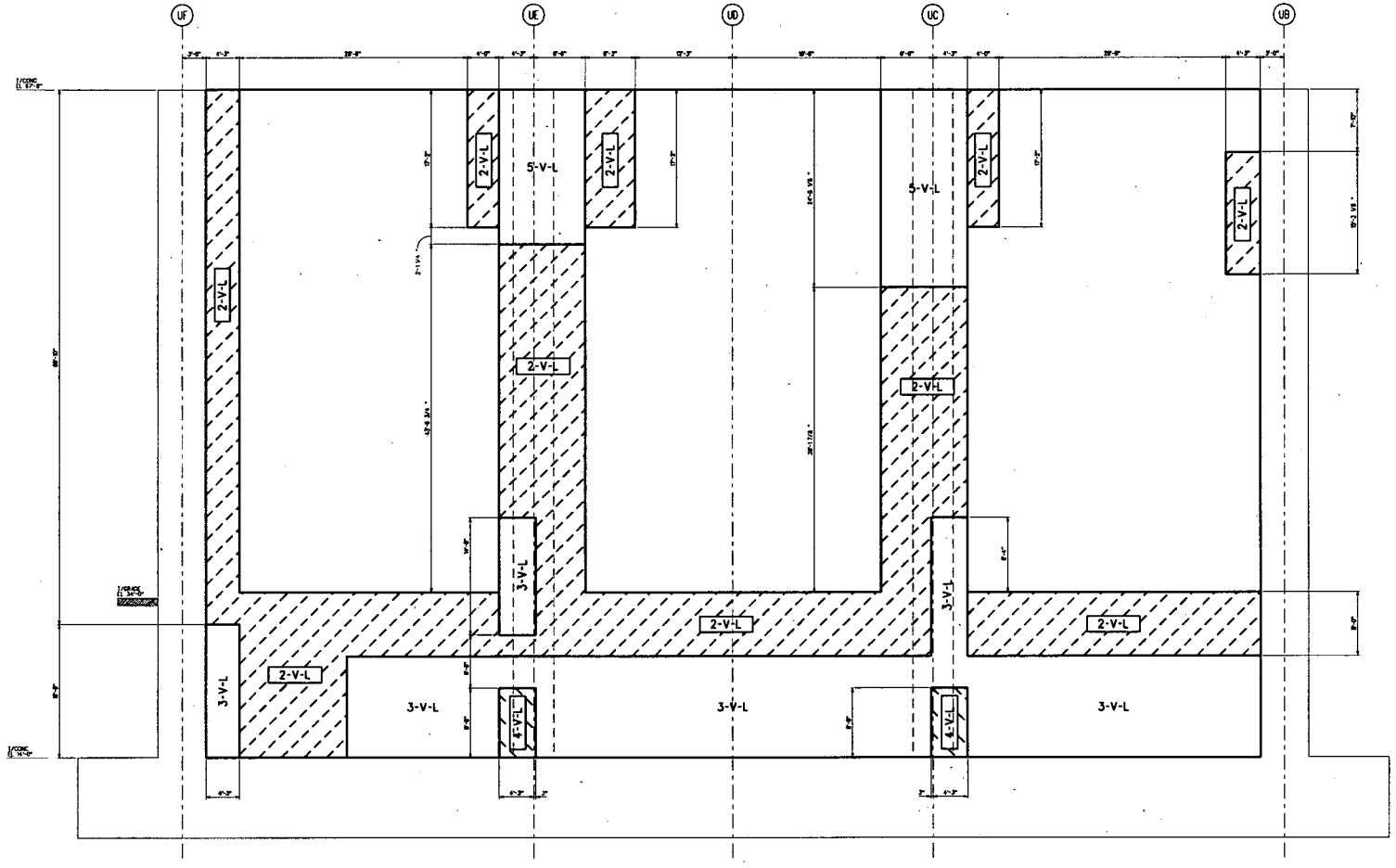


FIGURE 3H.6-95: BASIN EAST WALL LOOKING WEST
VERTICAL REINFORCEMENT ZONES

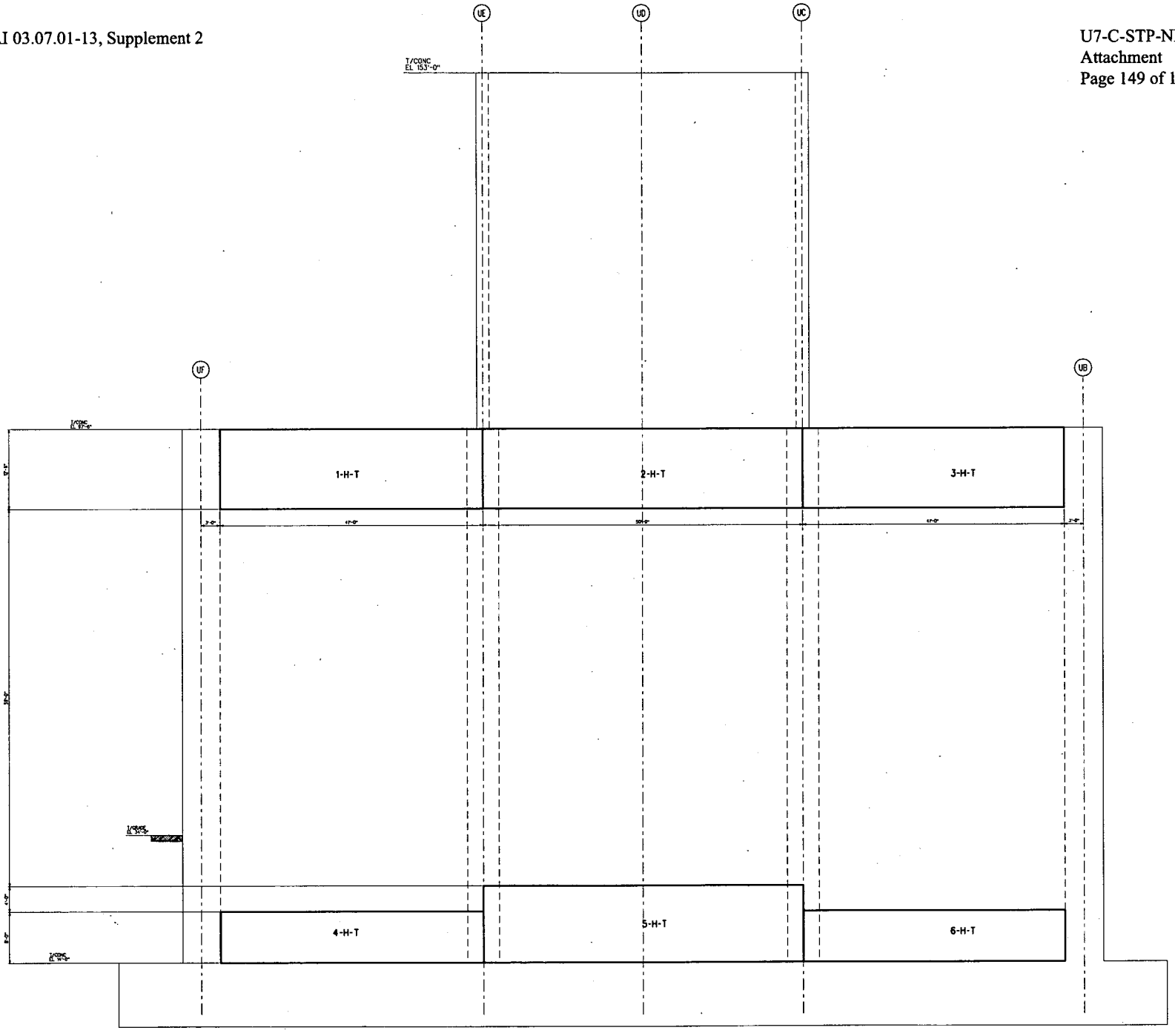
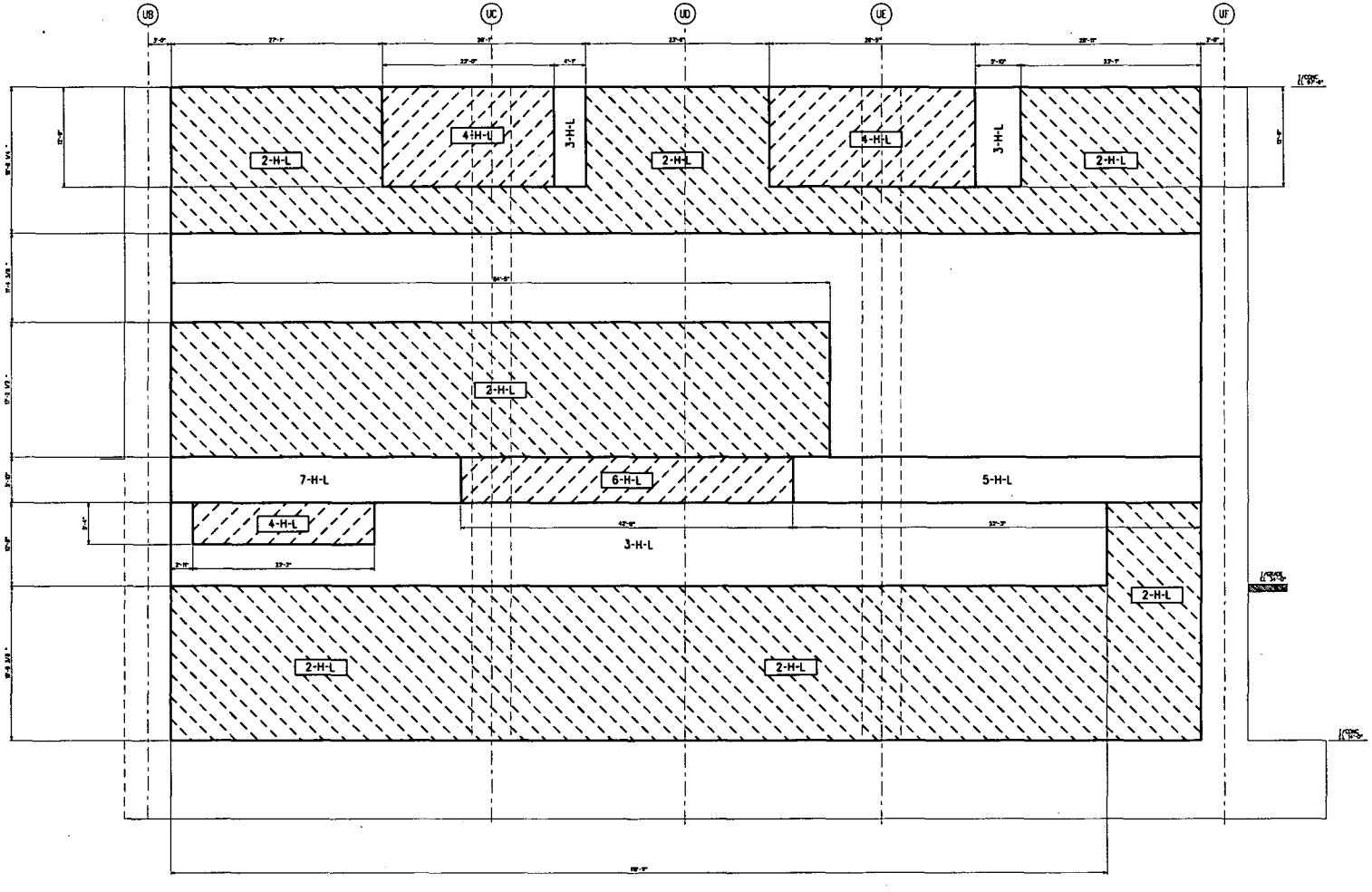
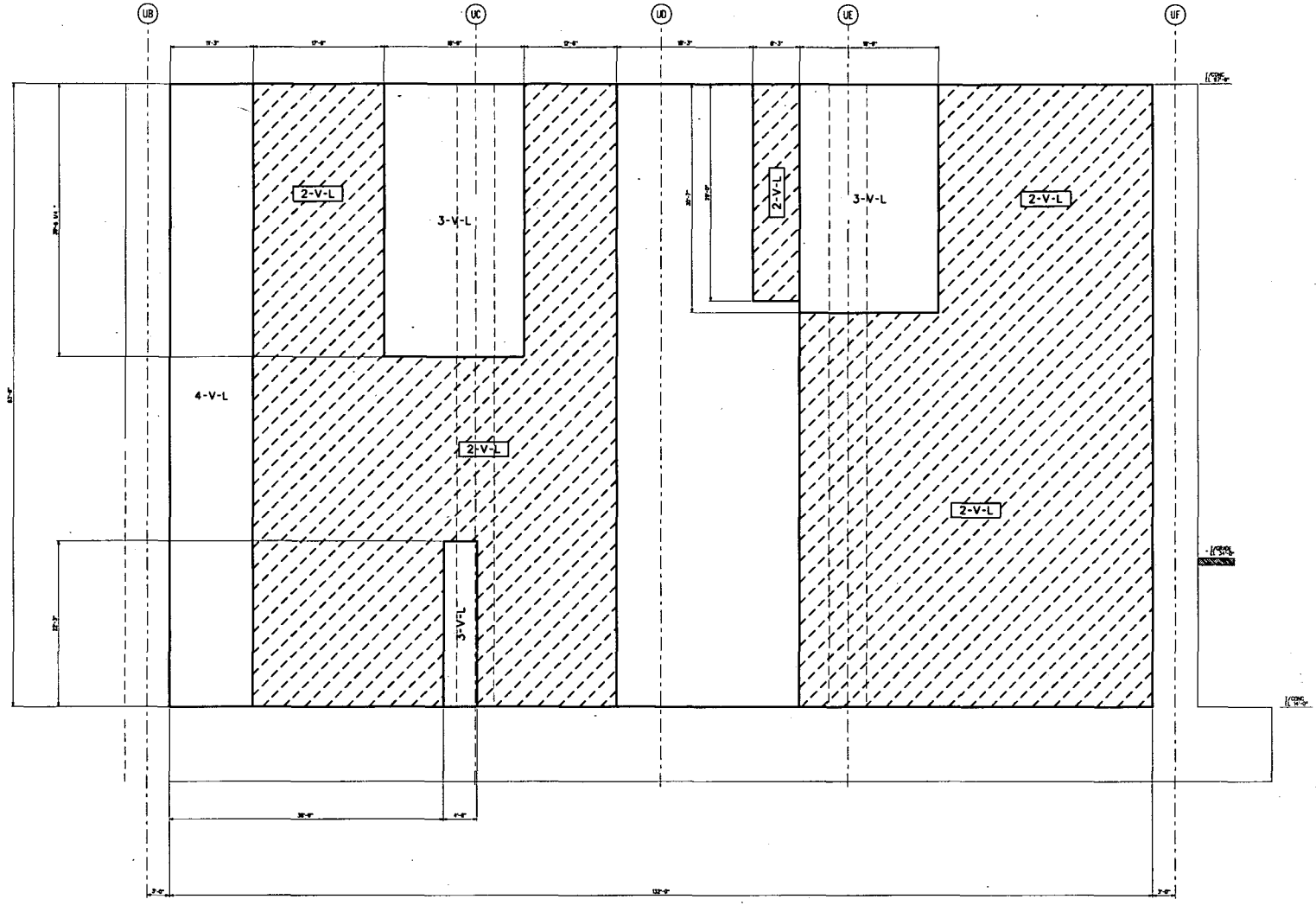


FIGURE 3H.6-96: BASIN/FAN EAST WALL LOOKING WEST
TRANSVERSE HORIZONTAL REINFORCEMENT ZONES



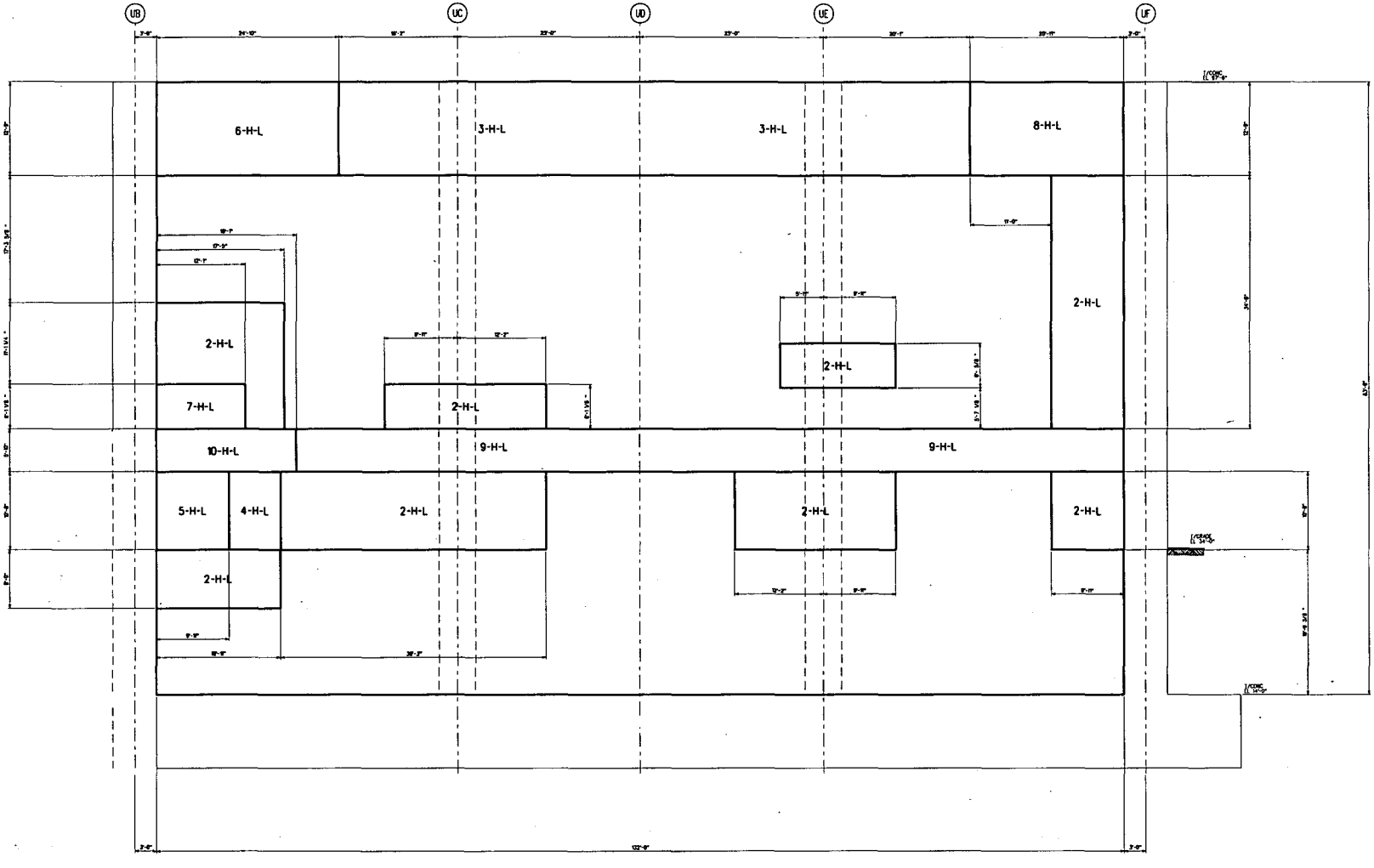
NOTE:
1-H-L, UNLESS NOTED OTHERWISE.

FIGURE 3H.6-97: BASIN WEST WALL LOOKING EAST
HORIZONTAL REINFORCEMENT ZONES



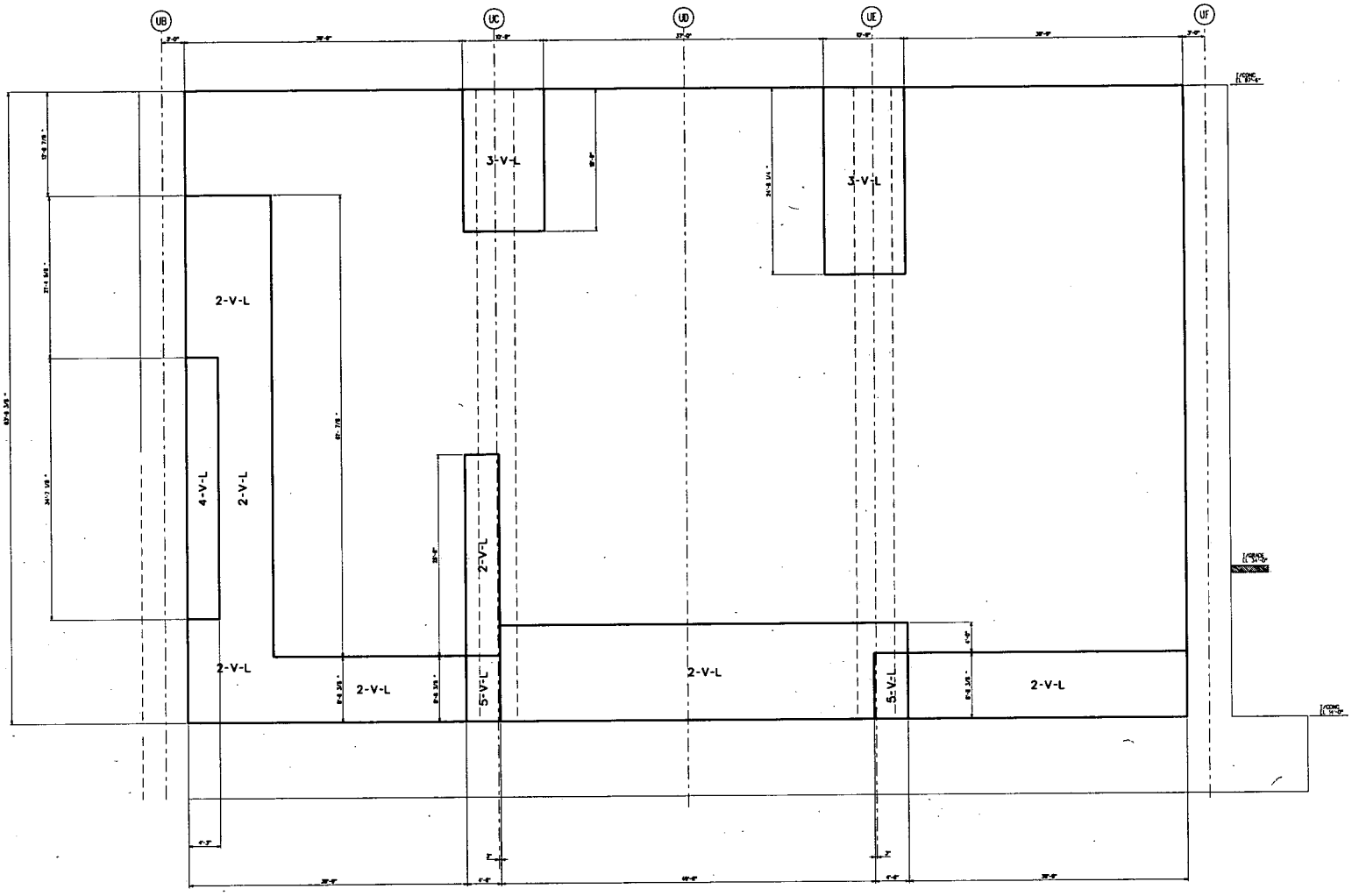
NOTE:
1-V-L, UNLESS NOTED OTHERWISE.

FIGURE 3H.6-98: BASIN WEST WALL LOOKING EAST
VERTICAL REINFORCEMENT ZONES



NOTE:
1-H-L, UNLESS NOTED OTHERWISE.

FIGURE 3H.6-99: BASIN WEST WALL LOOKING EAST
HORIZONTAL REINFORCEMENT ZONES
FAR SIDE FACE



NOTE:
1-V-L, UNLESS NOTED OTHERWISE.

FIGURE 3H.6-100: BASIN WEST WALL LOOKING EAST
VERTICAL REINFORCEMENT ZONES
FAR SIDE FACE

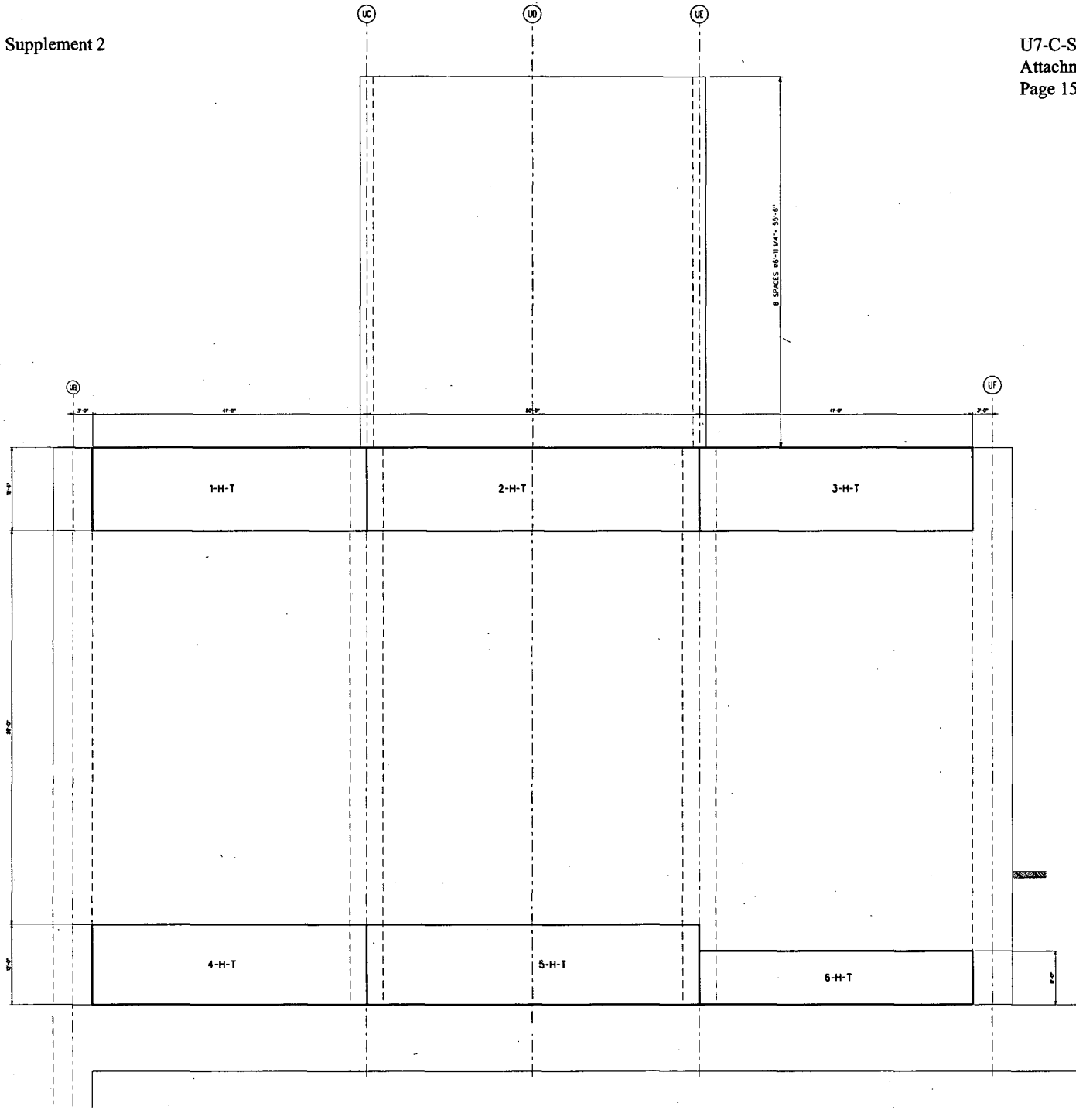
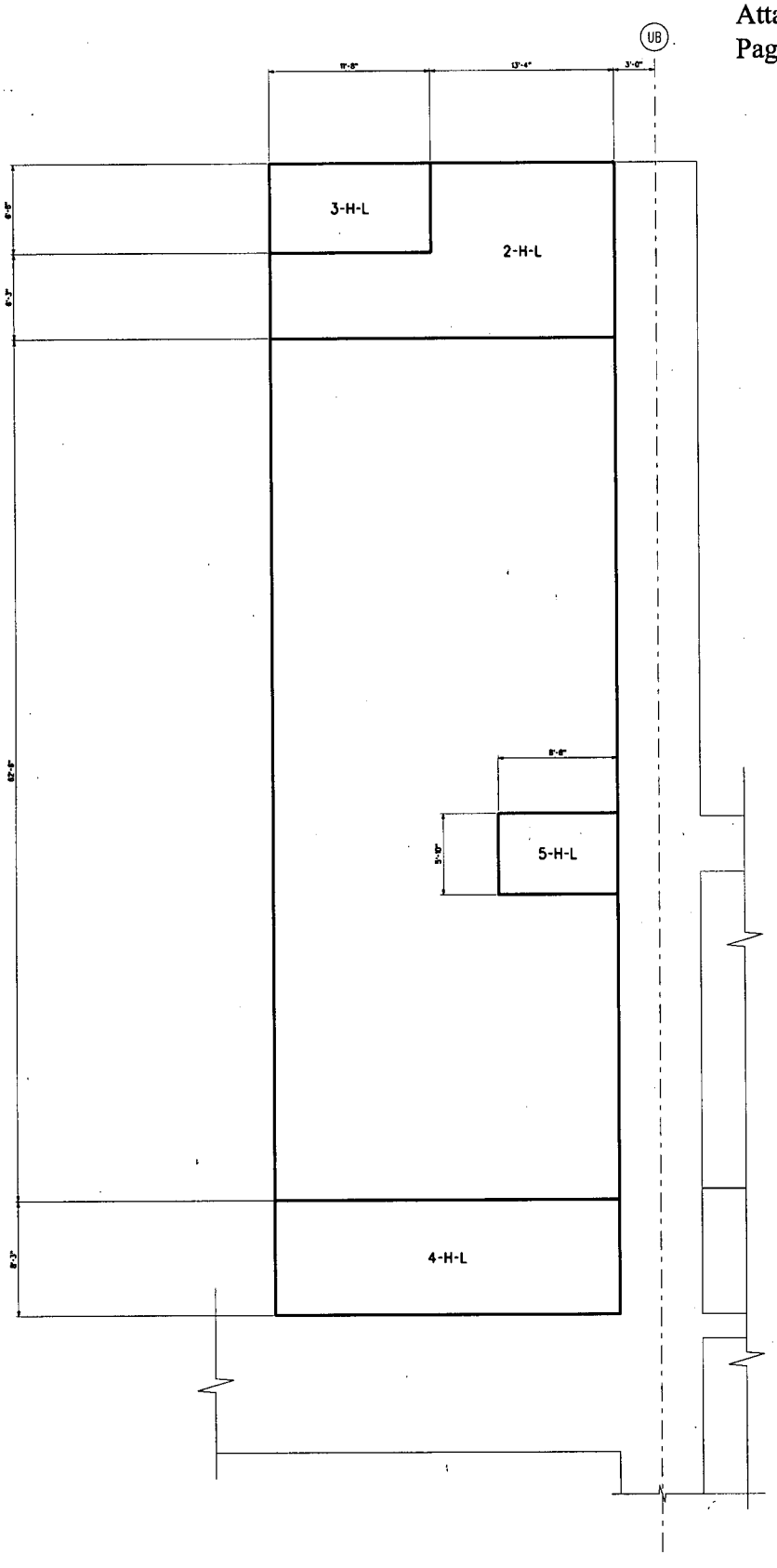


FIGURE 3H.6-101: BASIN/FAN WEST WALL LOOKING EAST
TRANSVERSE HORIZONTAL REINFORCEMENT ZONES

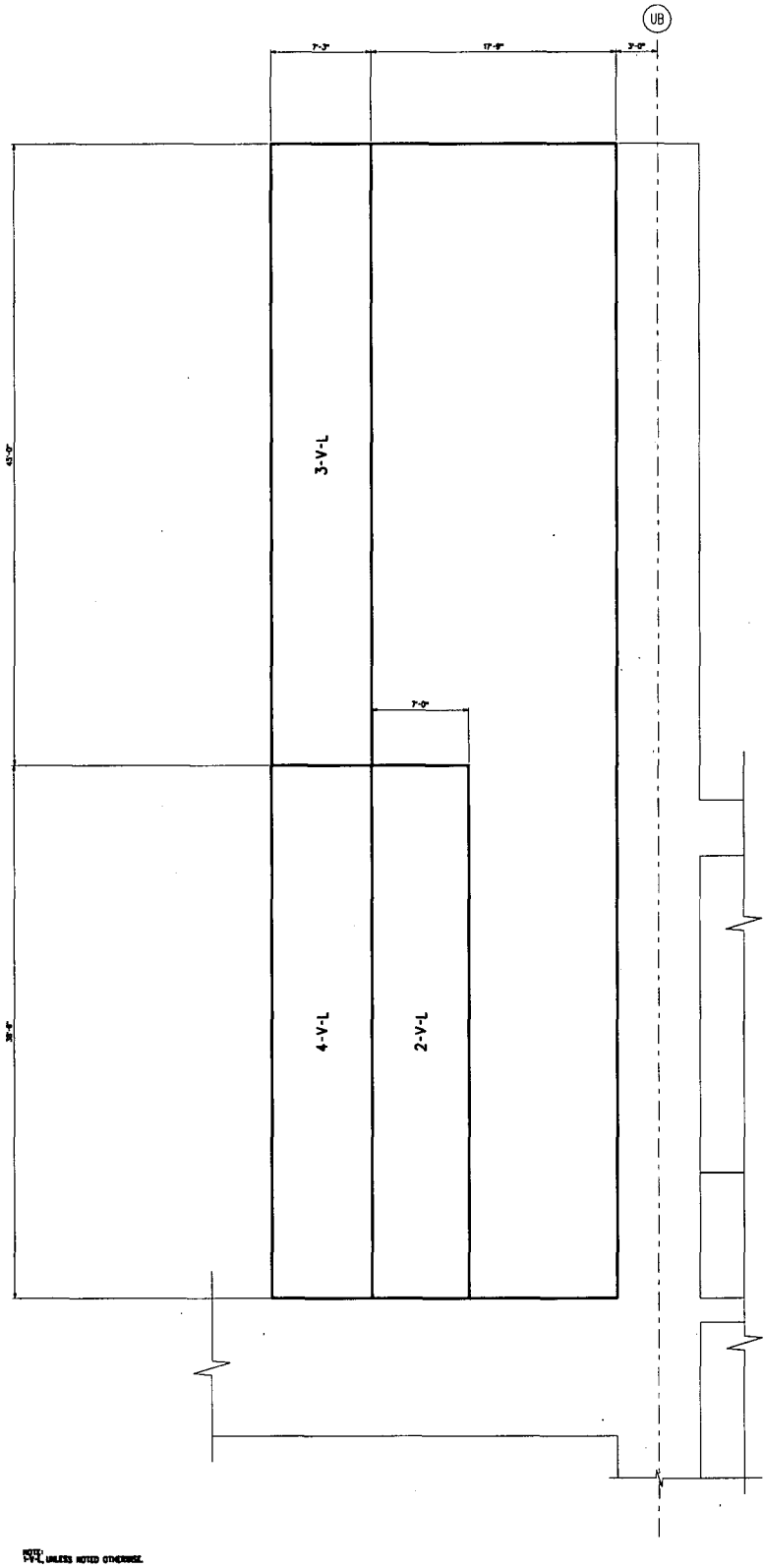


NOTE:
H-L UNLESS NOTED OTHERWISE.

NOTE:
H-L UNLESS NOTED OTHERWISE.

FIGURE 3H.6-102: BASIN NORTH BUTTRESS LOOKING WEST
& BASIN SOUTH BUTTRESS LOOKING EAST
HORIZONTAL REINFORCEMENT ZONES

NEAR & FAR SIDE FACES



NOTE:
1. V-L UNLESS NOTED OTHERWISE.

FIGURE 3H.6-103: BASIN NORTH BUTTRESS LOOKING WEST
& BASIN SOUTH BUTTRESS LOOKING EAST
VERTICAL REINFORCEMENT ZONES
NEAR & FAR SIDE FACES

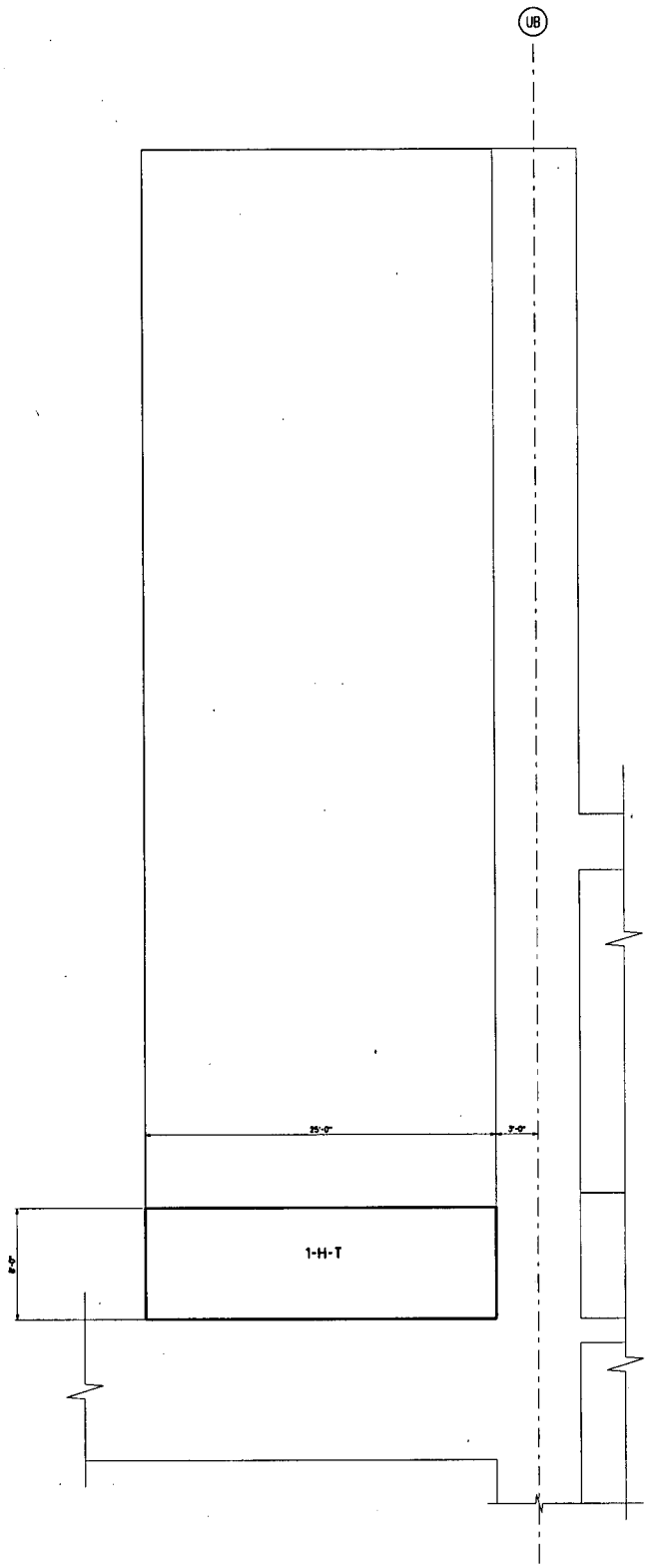
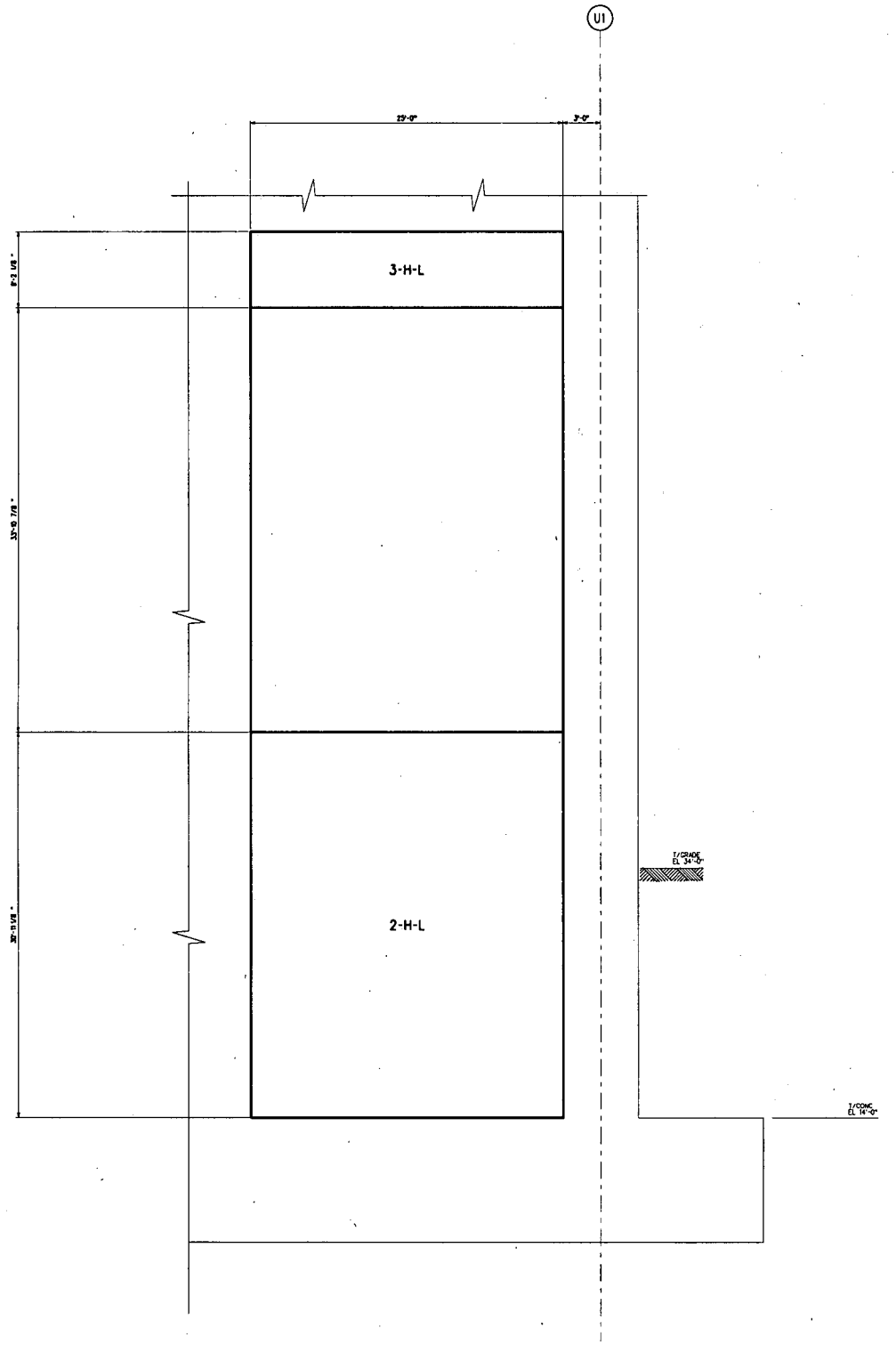
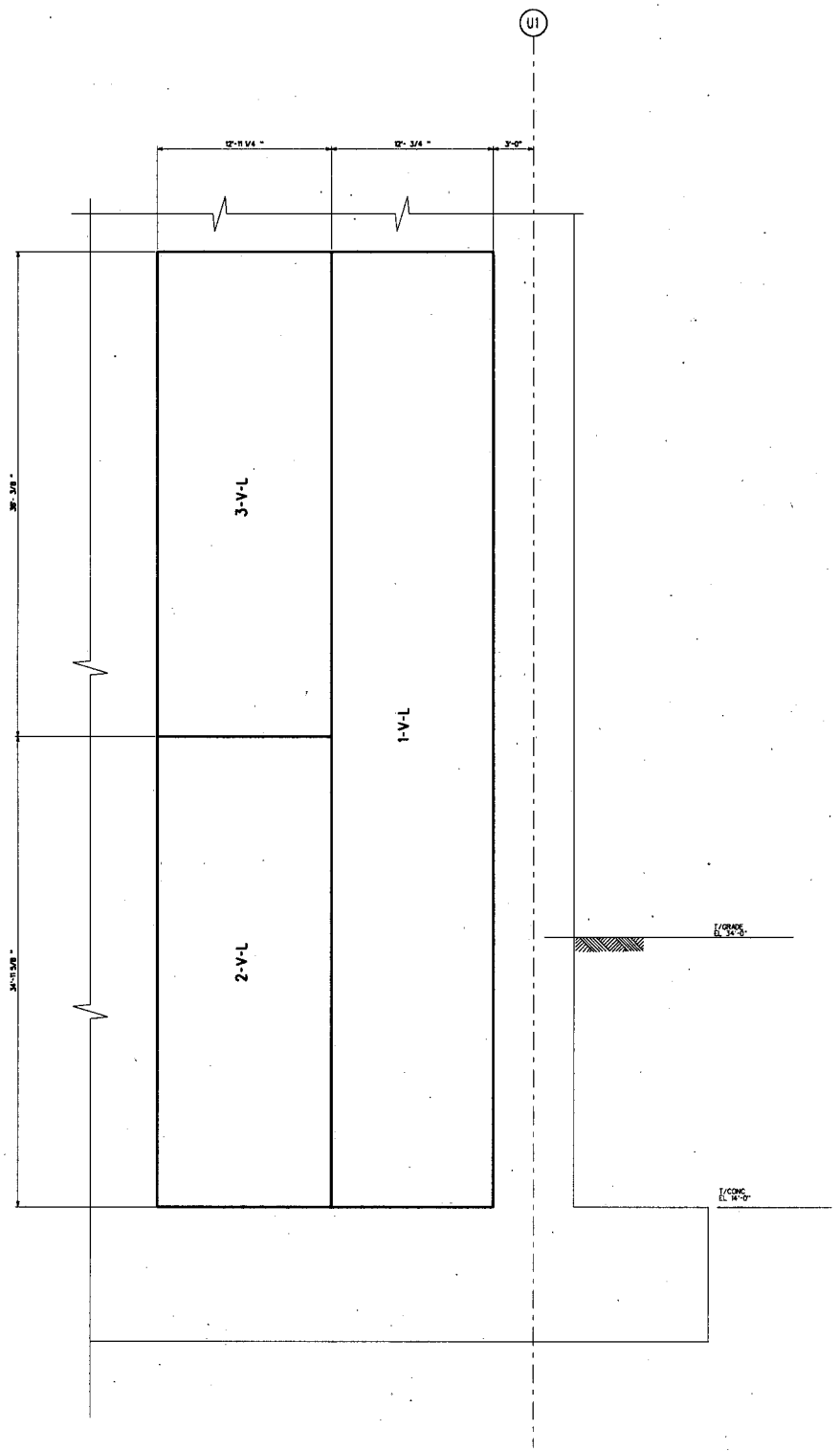


FIGURE 3H.6-104: BASIN NORTH BUTTRESS LOOKING WEST
& BASIN SOUTH BUTTRESS LOOKING EAST
TRANSVERSE HORIZONTAL REINFORCEMENT ZONES



NOTE:
H=L UNLESS NOTED OTHERWISE.

FIGURE 3H.6-105: BASIN EAST BUTTRESS LOOKING NORTH
& BASIN WEST BUTTRESS LOOKING SOUTH
HORIZONTAL REINFORCEMENT ZONES
NEAR & FAR SIDE FACES



NOTE
V-L UNLESS NOTED OTHERWISE.

FIGURE 3H.6-106: BASIN EAST BUTTRESS LOOKING NORTH
& BASIN WEST BUTTRESS LOOKING SOUTH
VERTICAL REINFORCEMENT ZONES

NEAR & FAR SIDE FACES

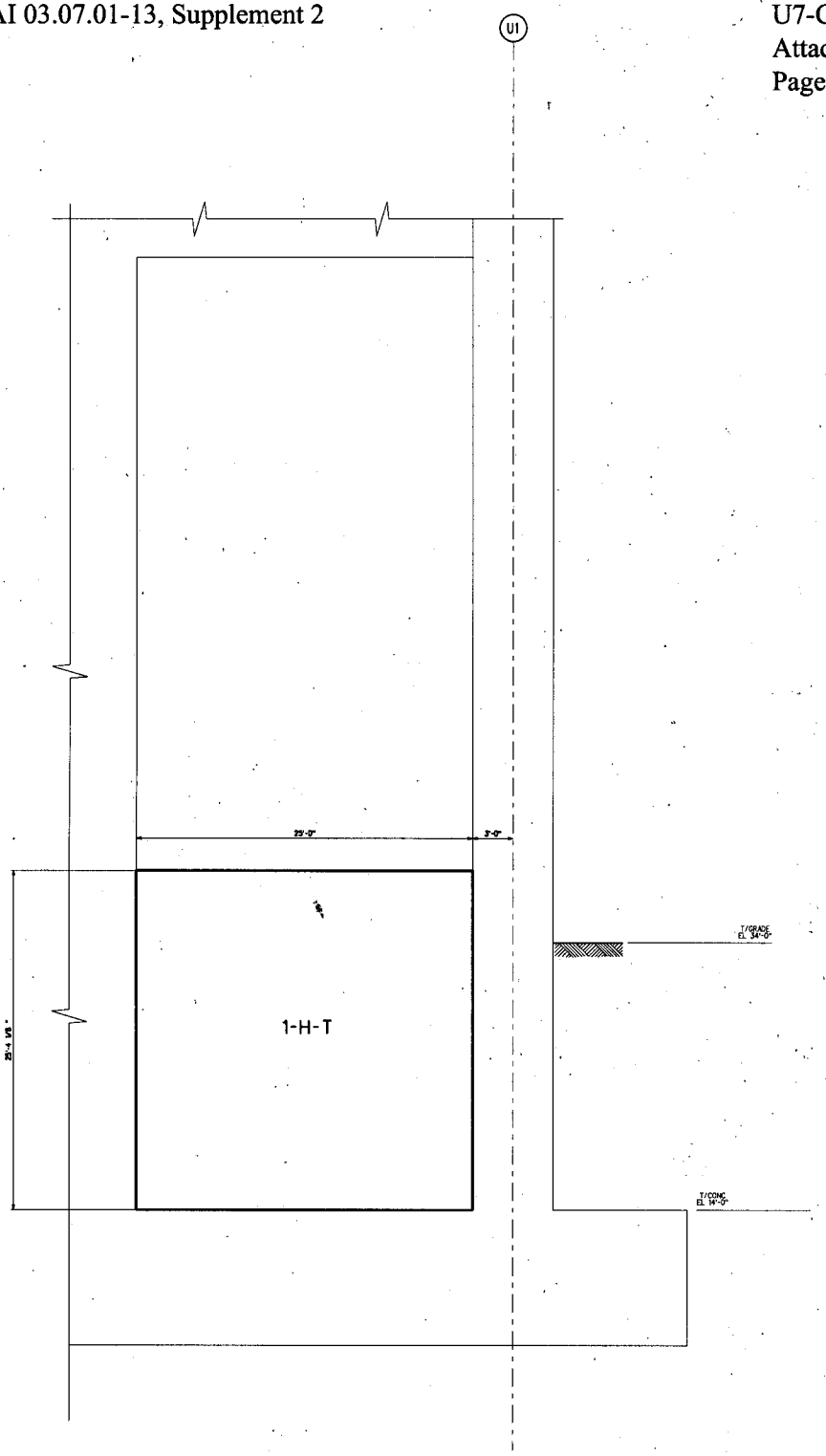
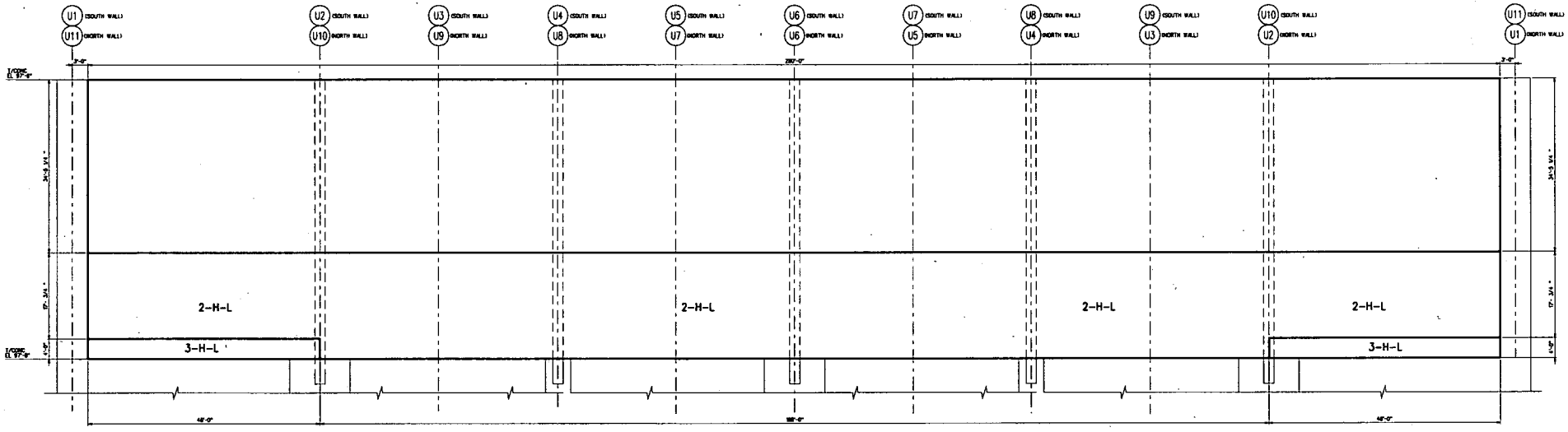


FIGURE 3H.6-107: BASIN EAST BUTTRESS LOOKING NORTH
& BASIN WEST BUTTRESS LOOKING SOUTH
TRANSVERSE HORIZONTAL REINFORCEMENT ZONES
NEAR & FAR SIDE FACES



NOTE:
3-H-L UNLESS NOTED OTHERWISE.

FIGURE 3H.6-108: FAN NORTH (AND SOUTH) WALL LOOKING SOUTH (NORTH)
HORIZONTAL REINFORCEMENT ZONES

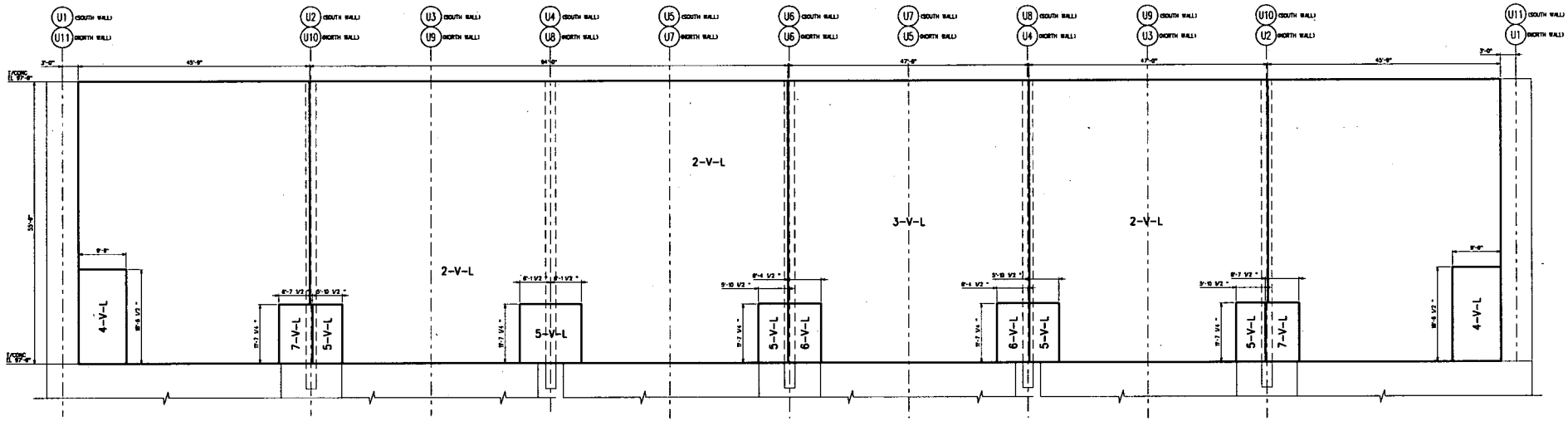


FIGURE 3H.6-109: FAN NORTH (AND SOUTH) WALL LOOKING SOUTH (NORTH)
VERTICAL REINFORCEMENT ZONES

NOTE:
1-V-L UNLESS NOTED OTHERWISE.

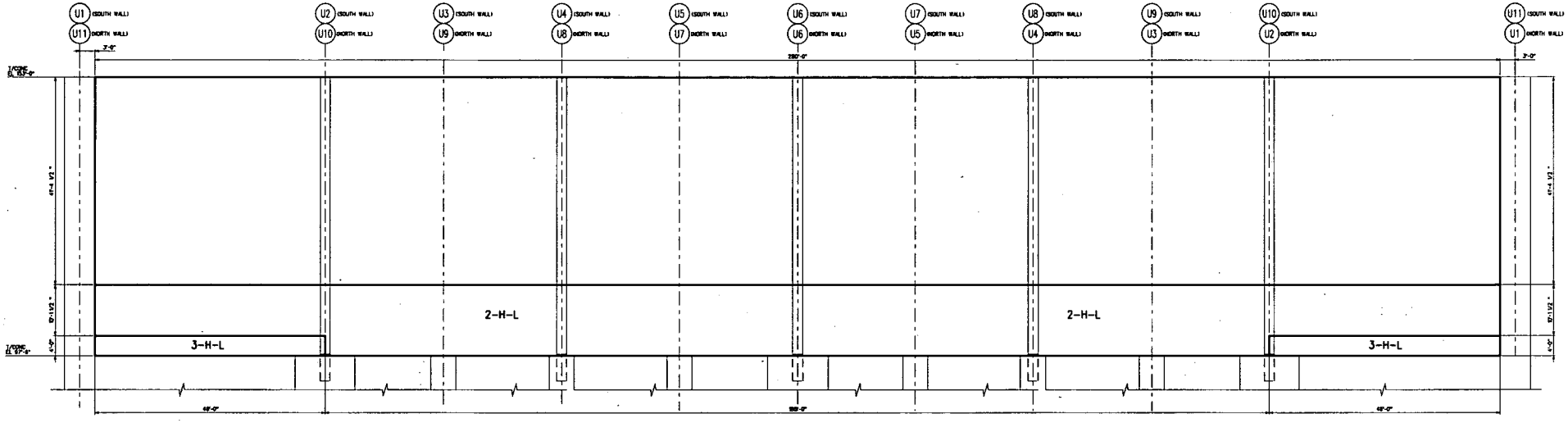


FIGURE 3H.6-110: FAN NORTH (AND SOUTH) WALL LOOKING SOUTH (NORTH)
HORIZONTAL REINFORCEMENT ZONES

FAN SIDE FACE

NOTE:
H-L UNLESS NOTED OTHERWISE.

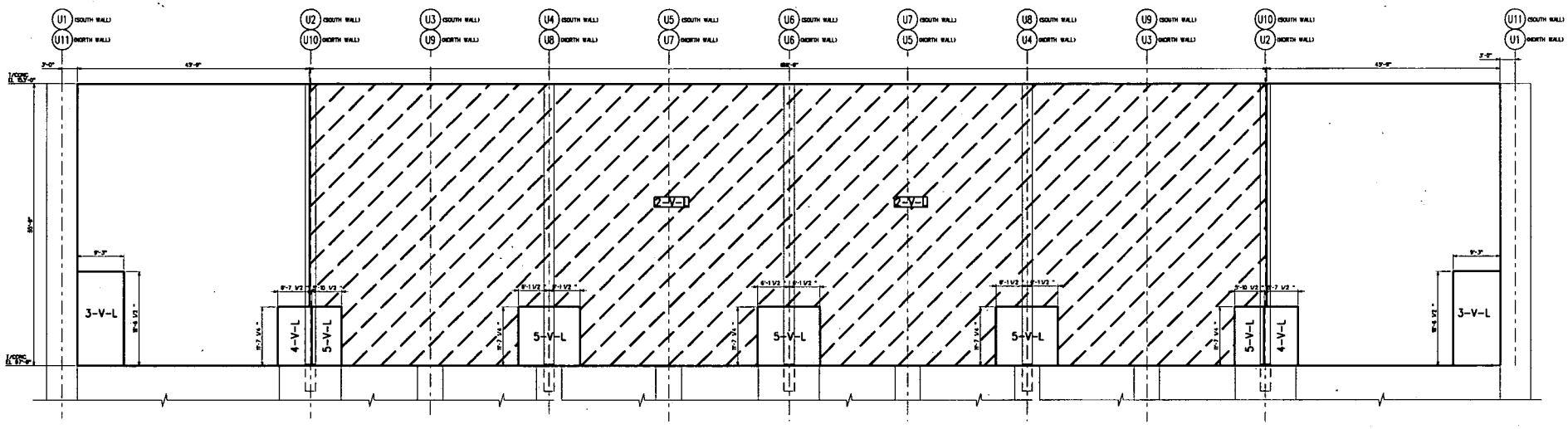


FIGURE 3H.6-111: FAN NORTH (AND SOUTH) WALL LOOKING SOUTH (NORTH)
VERTICAL REINFORCEMENT ZONES

NOTE:
1-V-L UNLESS NOTED OTHERWISE.

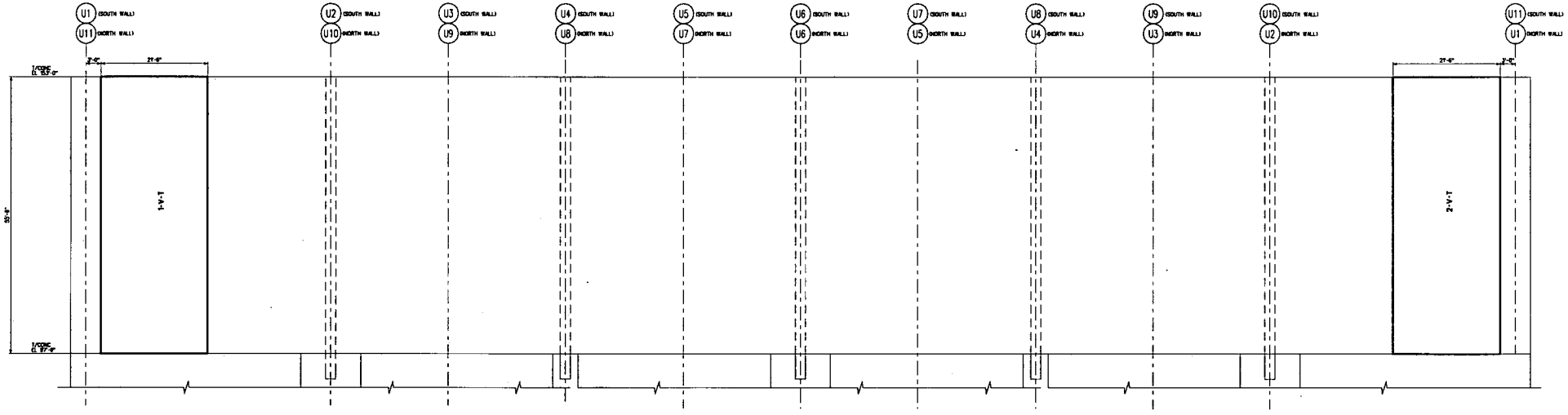


FIGURE 3H.6-112: FAN NORTH WALL LOOKING SOUTH & SOUTH WALL LOOKING NORTH
TRANSVERSE VERTICAL REINFORCEMENT ZONES

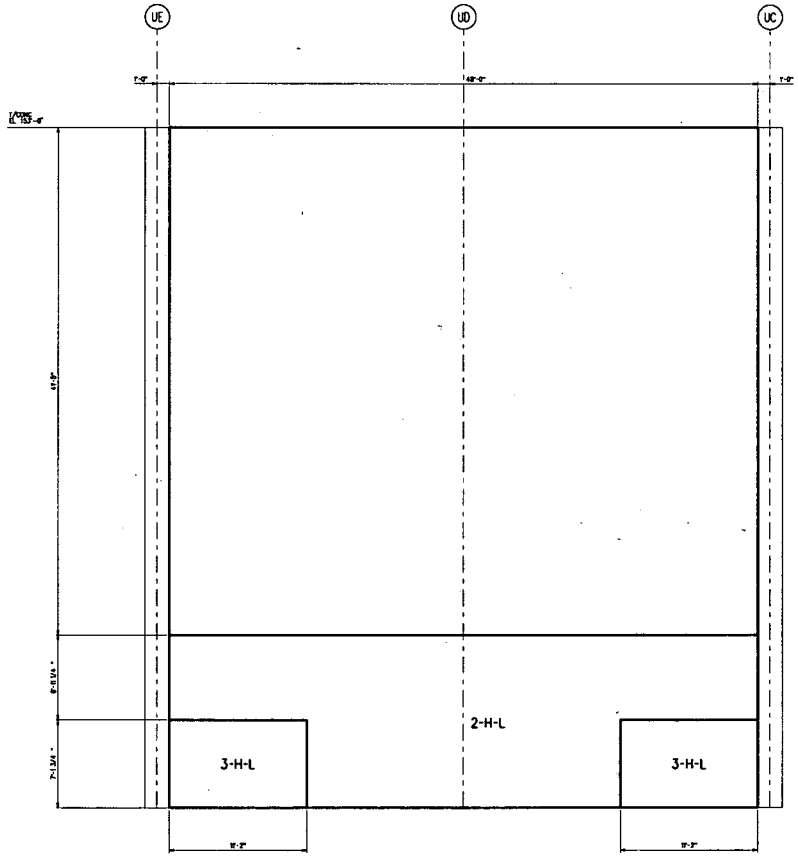


FIGURE 3H.6-113: FAN ENCLOSURE EAST WALL LOOKING WEST
HORIZONTAL REINFORCEMENT ZONES

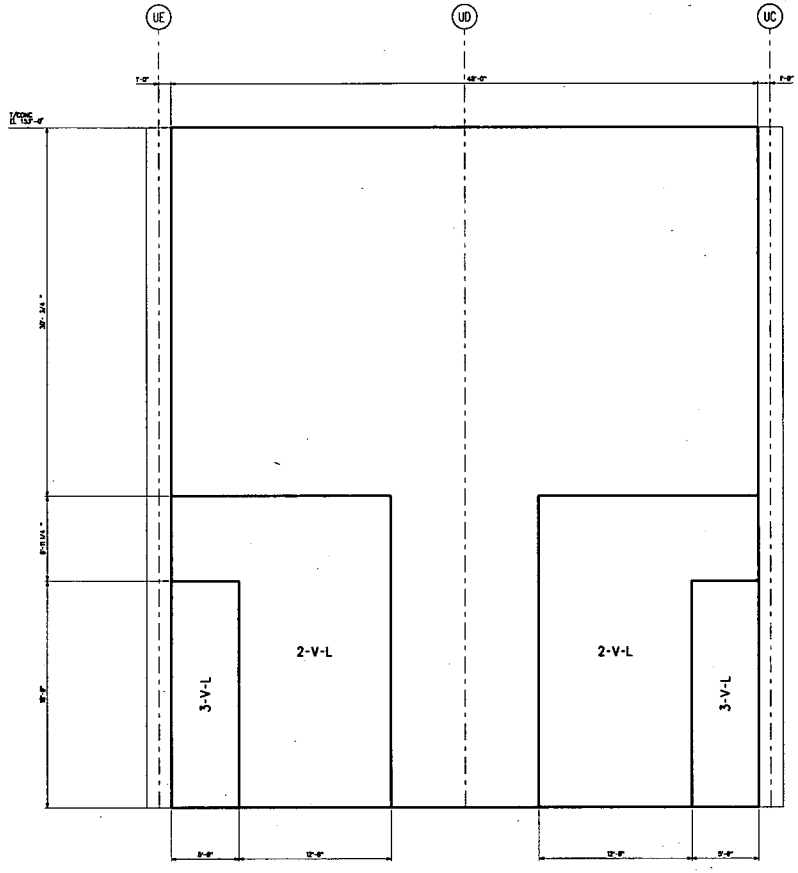


FIGURE 3H.6-114: FAN ENCLOSURE EAST WALL LOOKING WEST
VERTICAL REINFORCEMENT ZONES
NEAR SIDE FACE

NOTE:
1. #6 UNLESS NOTED OTHERWISE.

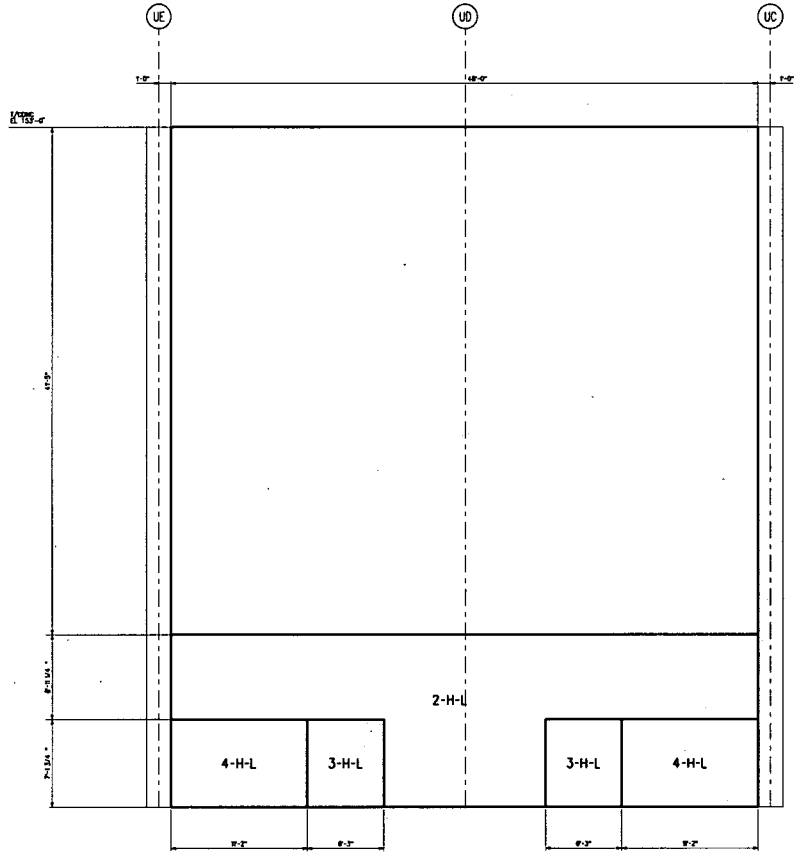


FIGURE 3H.6-115: FAN ENCLOSURE EAST WALL LOOKING WEST
HORIZONTAL REINFORCEMENT ZONES
FAR SIDE FACE

NOTE:
1-H-L UNLESS NOTED OTHERWISE.

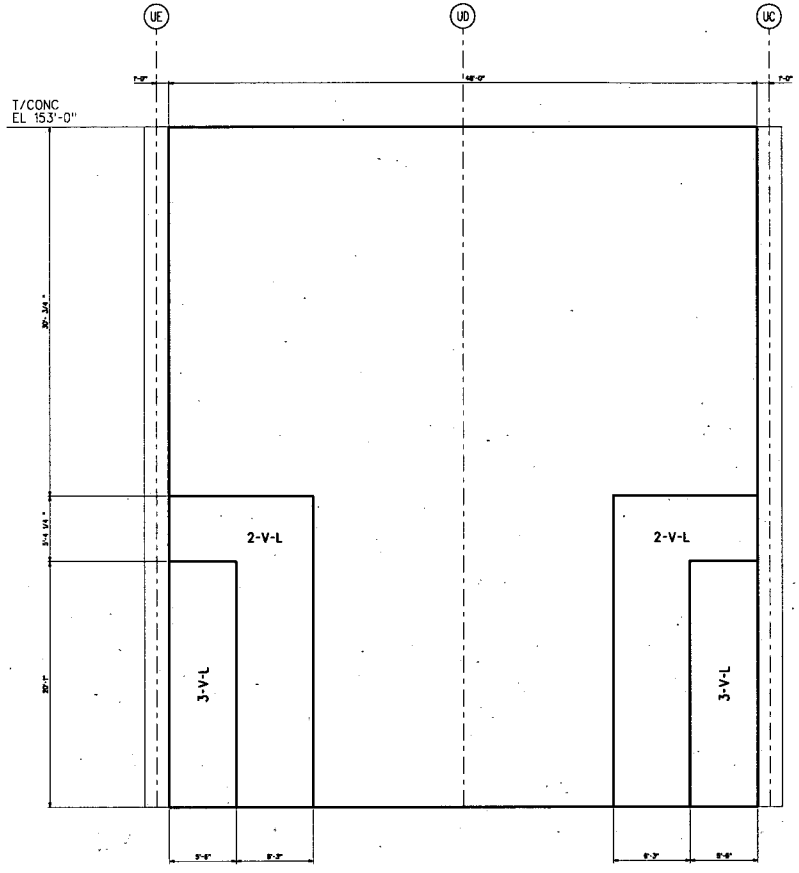


FIGURE 3H.6-116: FAN ENCLOSURE EAST WALL LOOKING WEST
VERTICAL REINFORCEMENT ZONES

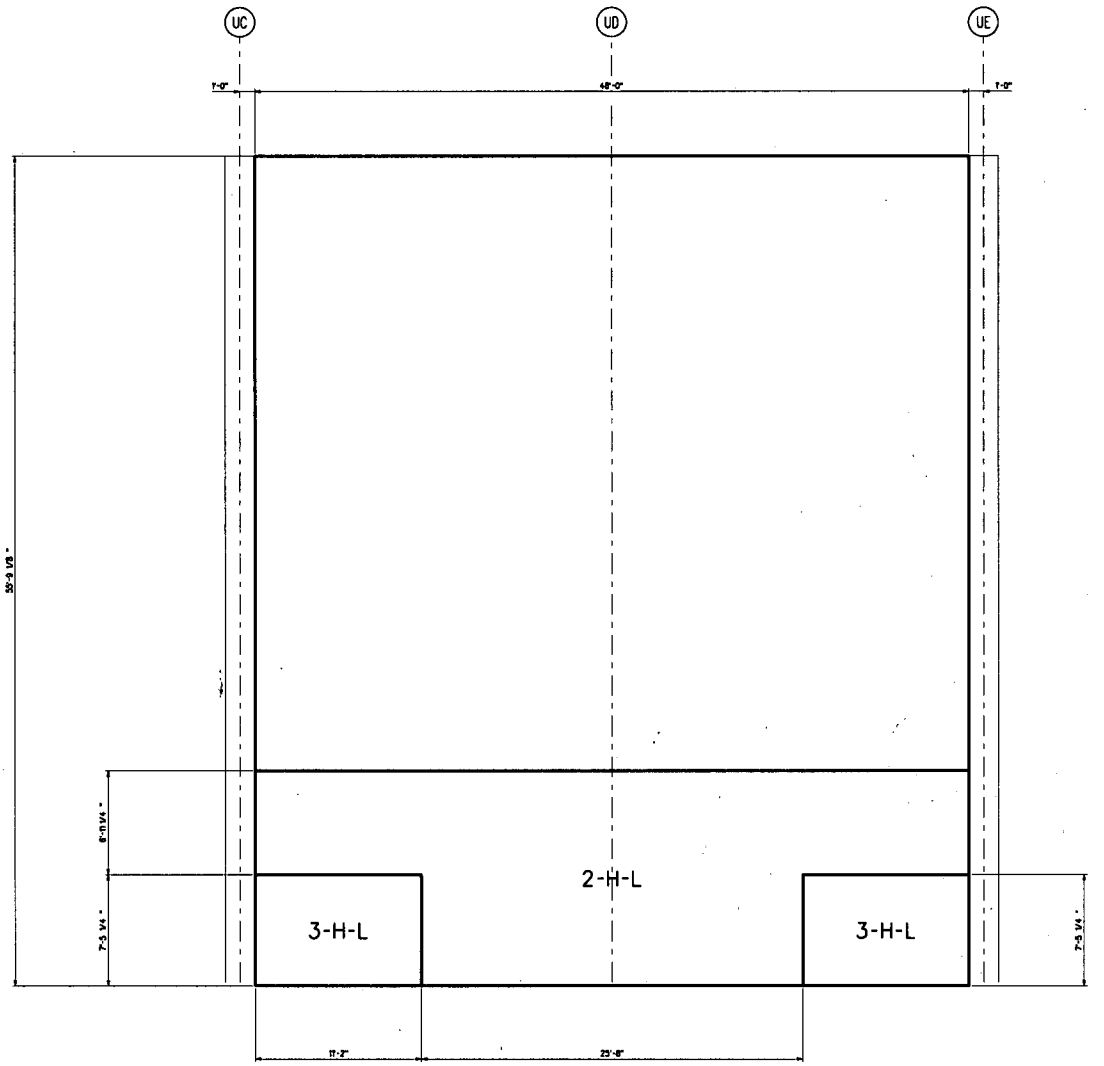


FIGURE 3H.6-117: FAN WEST WALL LOOKING EAST
HORIZONTAL REINFORCEMENT ZONES
NEAR SIDE FACE

NOTE:
1-H-L, UNLESS NOTED OTHERWISE.

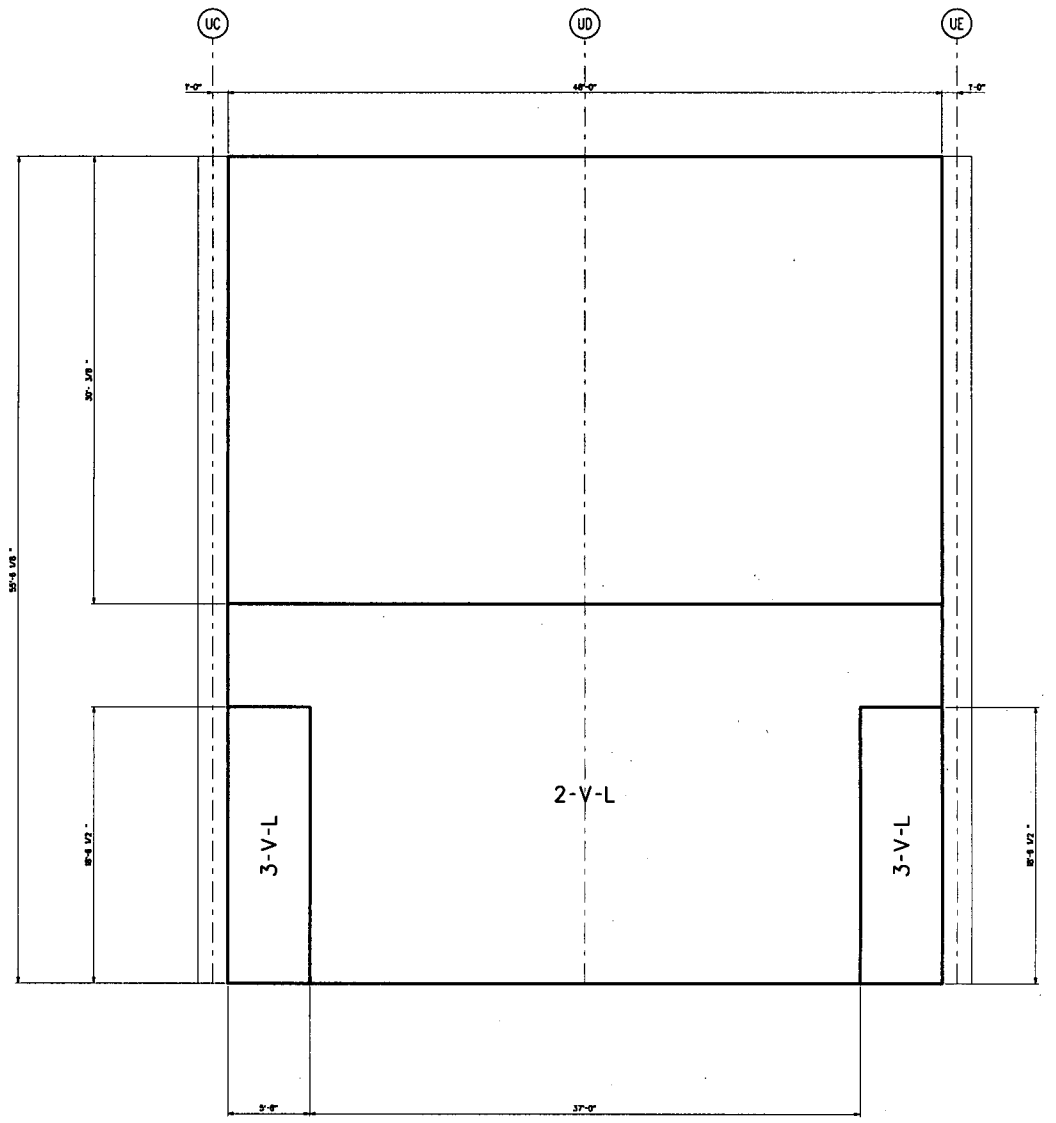


FIGURE 3H.6-118: FAN WEST WALL LOOKING EAST
VERTICAL REINFORCEMENT ZONES
NEAR SIDE FACE

NOTE:
1-V-L, UNLESS NOTED OTHERWISE.

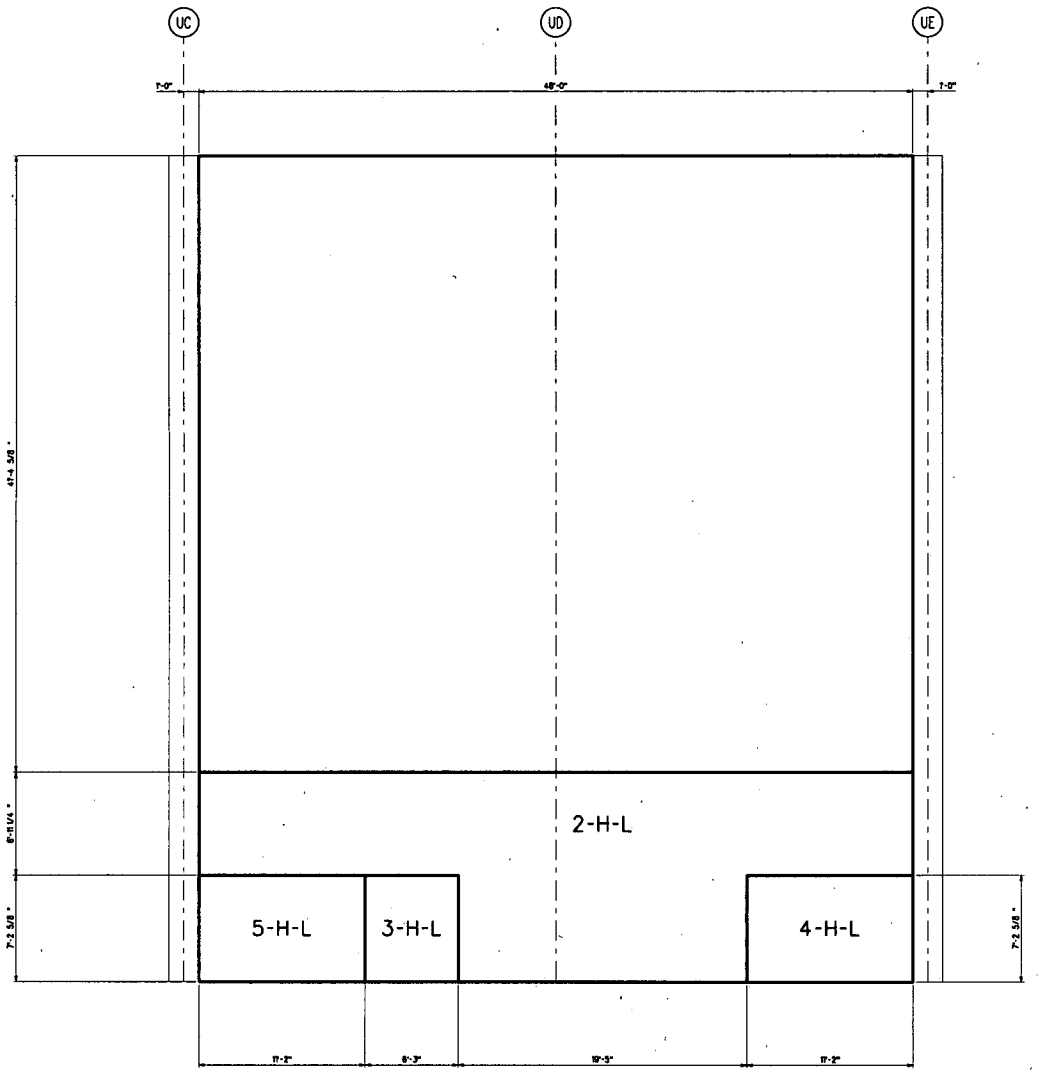


FIGURE 3H.6-119: FAN WEST WALL LOOKING EAST
HORIZONTAL REINFORCEMENT ZONES
FAN SIDE FACE

NOTE:
1-H-L UNLESS NOTED OTHERWISE.

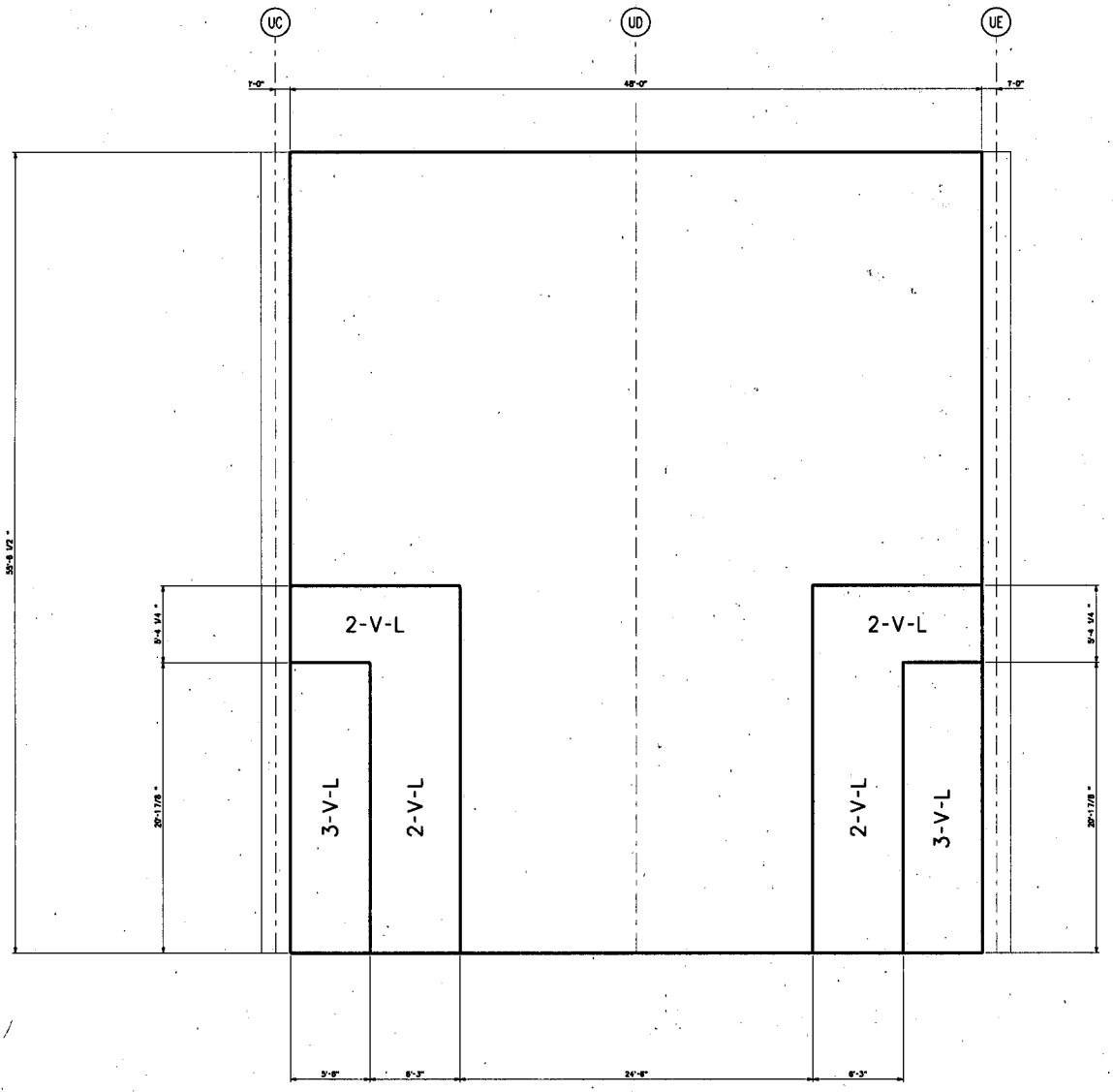


FIGURE 3H.6-120: FAN WEST WALL LOOKING EAST
VERTICAL REINFORCEMENT ZONES
FAN SIDE FACE

NOTE:
1-V-L UNLESS NOTED OTHERWISE.

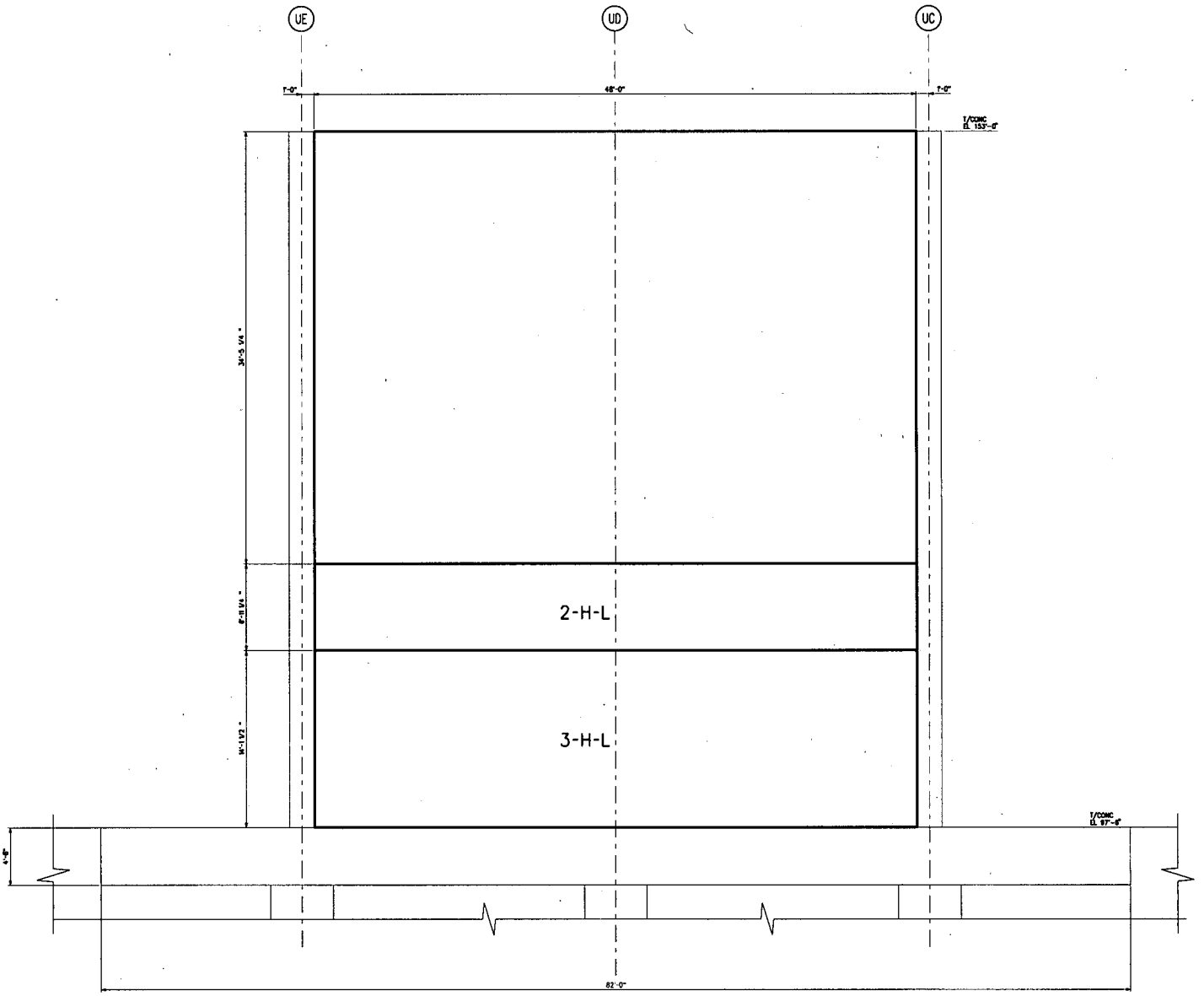
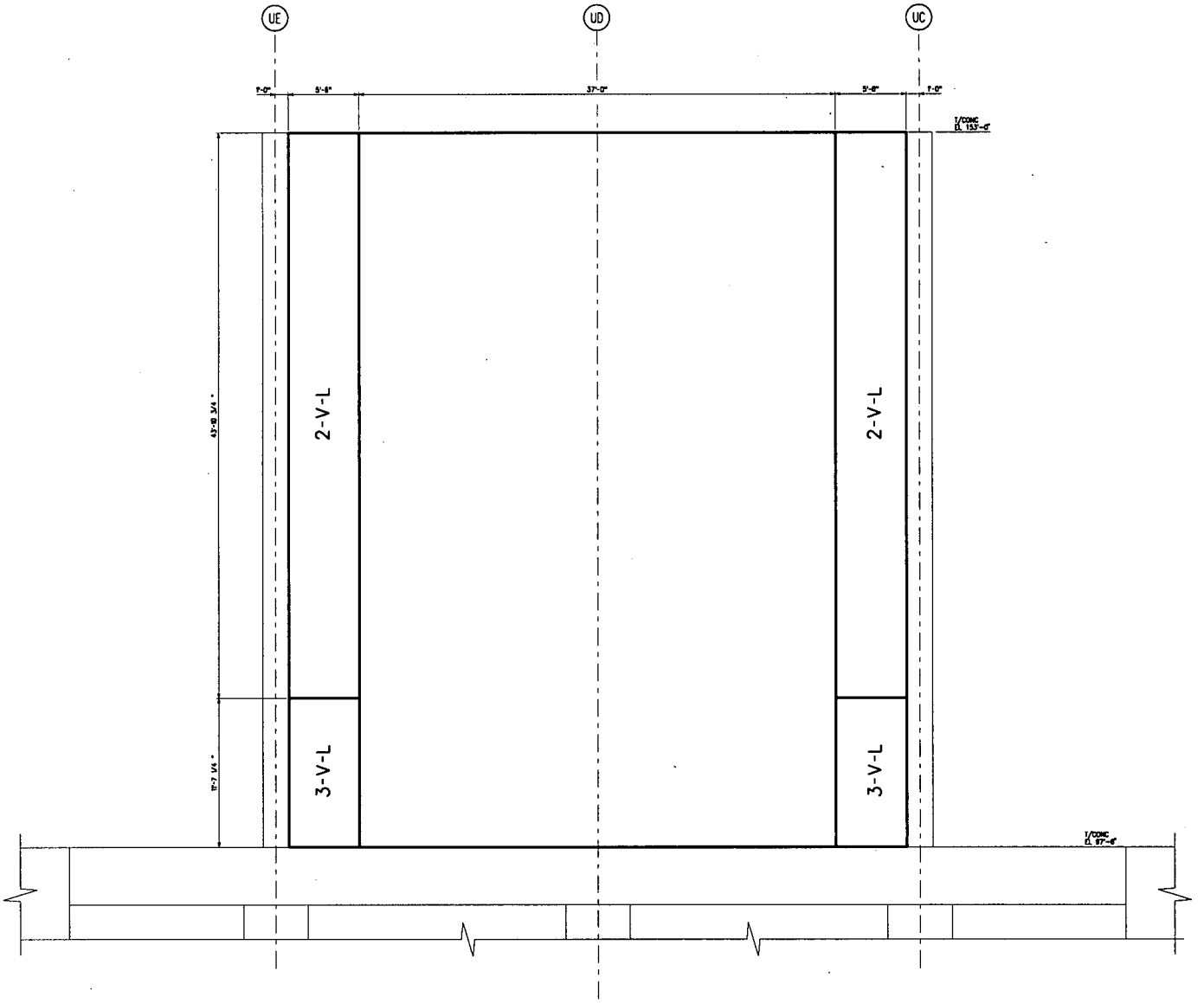


FIGURE 3H.6-121: FAN INTERNAL WALL LOOKING WEST
HORIZONTAL REINFORCEMENT ZONES
NEAR AND FAR SIDE FACES

NOTE:
1-H-L UNLESS NOTED OTHERWISE.



NOTE:
1-V-L, UNLESS NOTED OTHERWISE.

FIGURE 3H.6-122: FAN INTERNAL WALL LOOKING WEST
VERTICAL REINFORCEMENT ZONES
NEAR AND FAR SIDE FACES

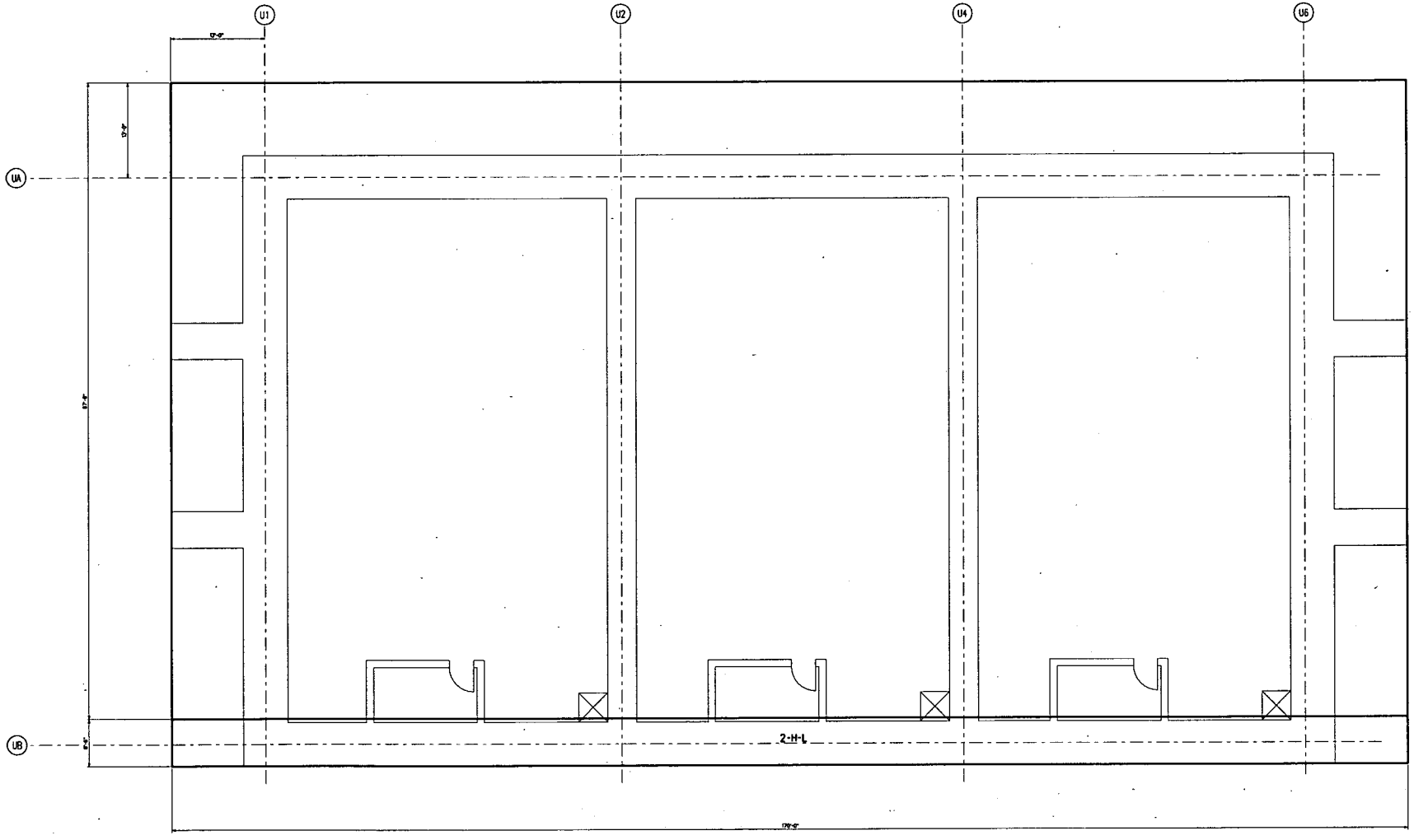
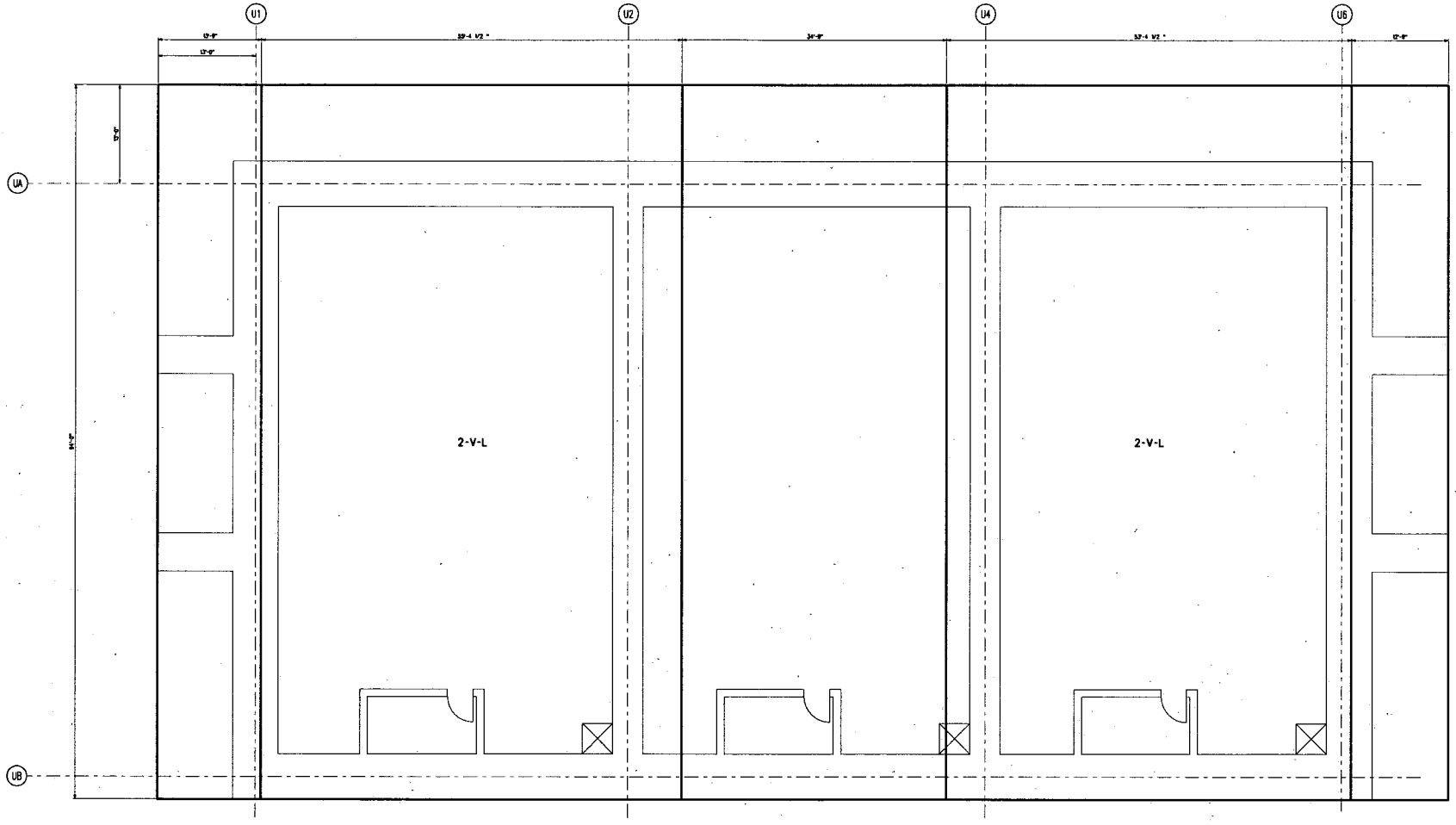


FIGURE 3H.6-123: PUMPHOUSE MAT EAST/WEST REINFORCEMENT ZONES



NOTE:
2-V-L UNLESS NOTED OTHERWISE.

FIGURE 3H.6-124: PUMPHOUSE MAT
NORTH/SOUTH REINFORCEMENT ZONES

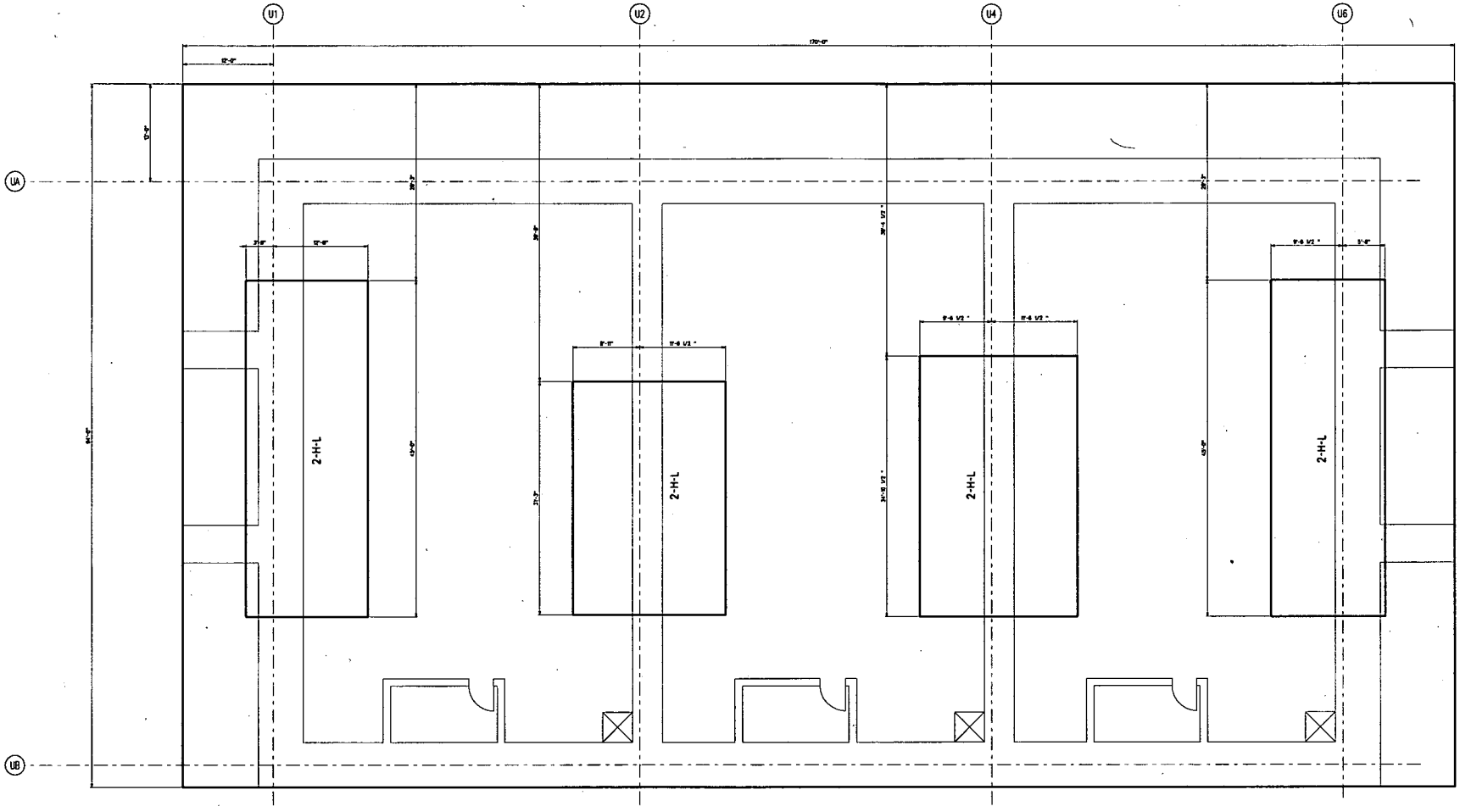
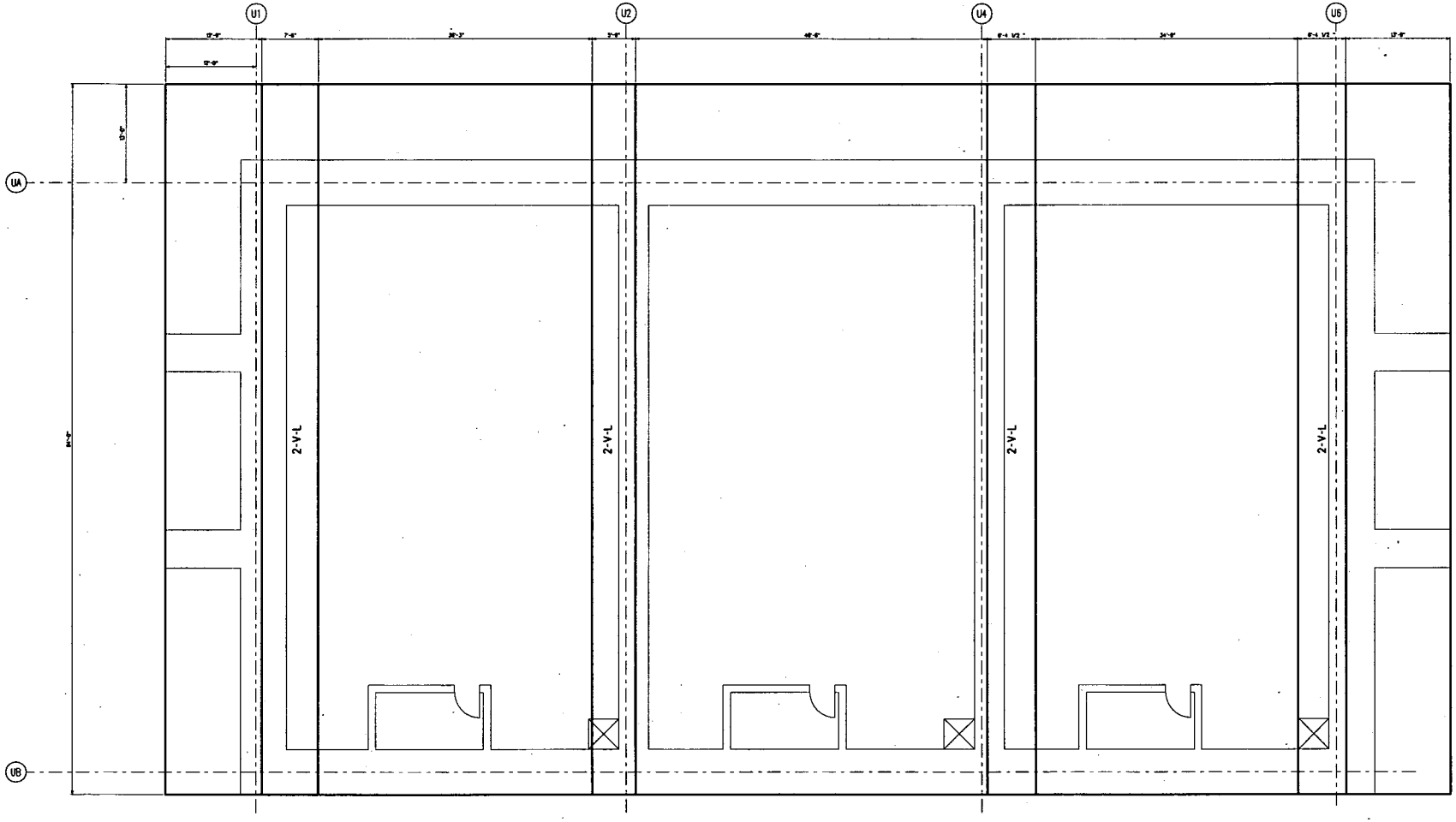


FIGURE 3H.6-125: PUMPHOUSE MAT
EAST/WEST REINFORCEMENT ZONES



NOTE:
2-V-L UNLESS NOTED OTHERWISE.

FIGURE 3H.6-126: PUMPHOUSE MAT
NORTH/SOUTH REINFORCEMENT ZONES

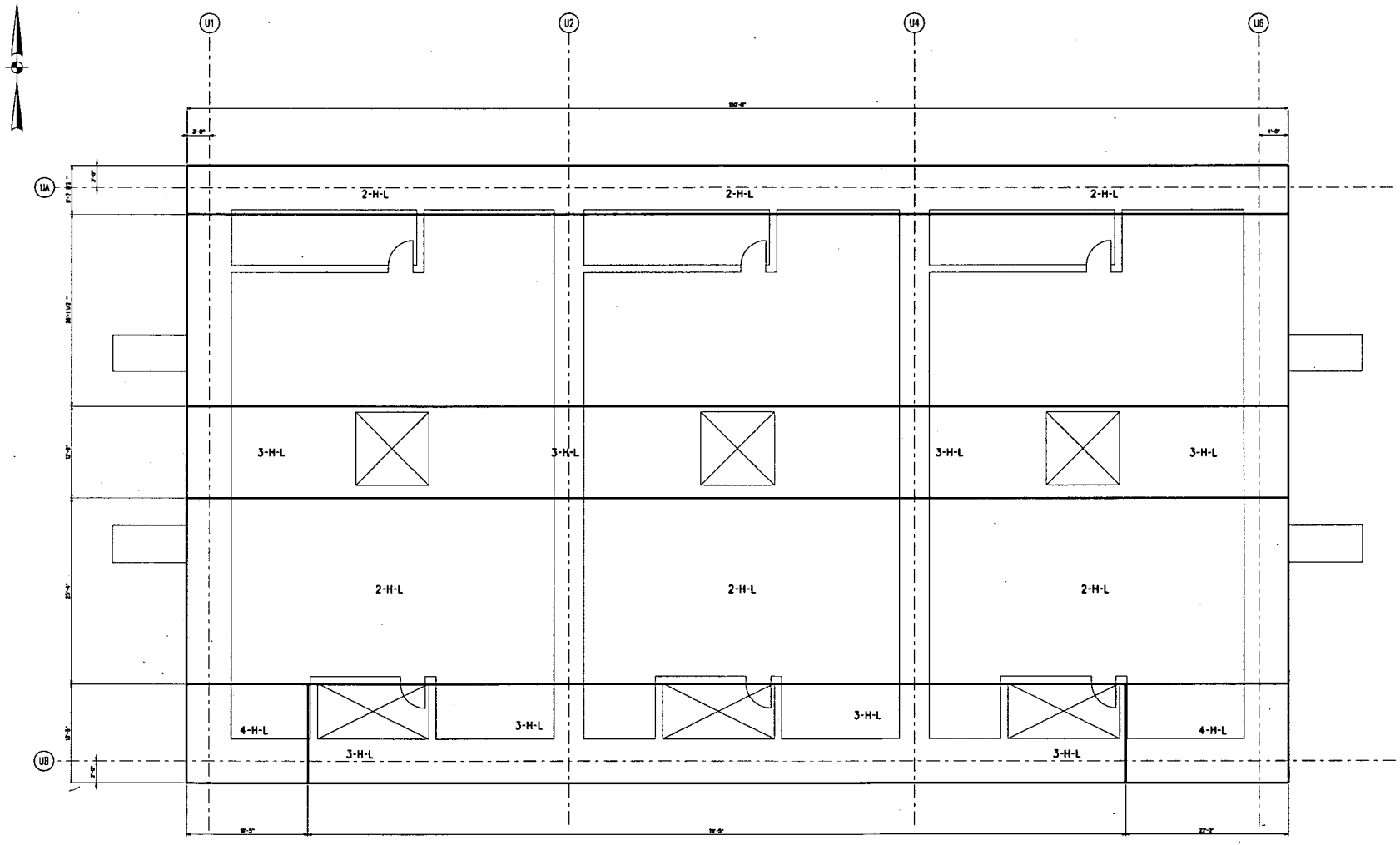


FIGURE 3H.6-127: PUMPHOUSE FLOOR EL 14'-0"
EAST/WEST REINFORCEMENT ZONES
TOP AND BOTTOM FACES

NOTE:
1. H-L UNLESS NOTED OTHERWISE.

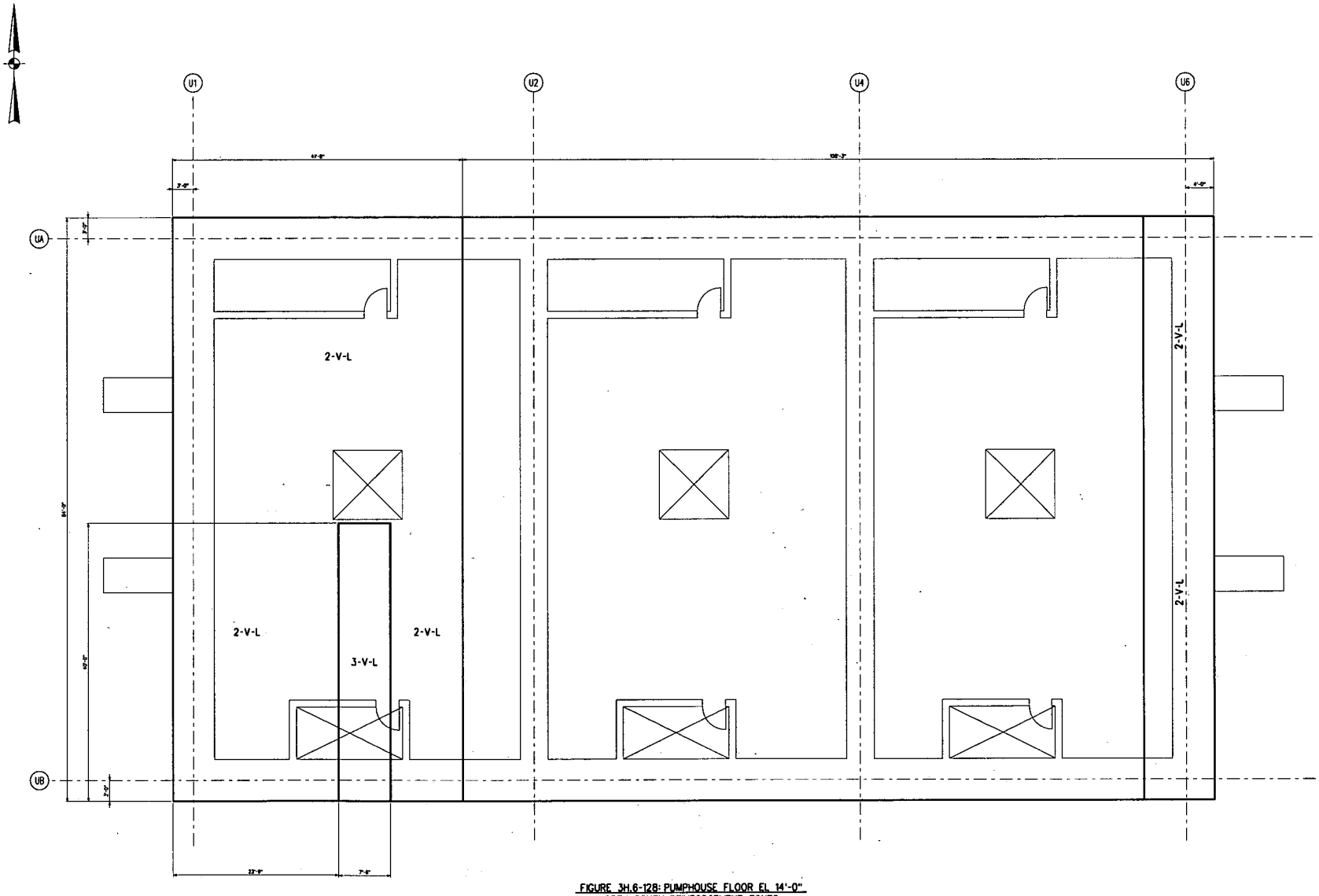
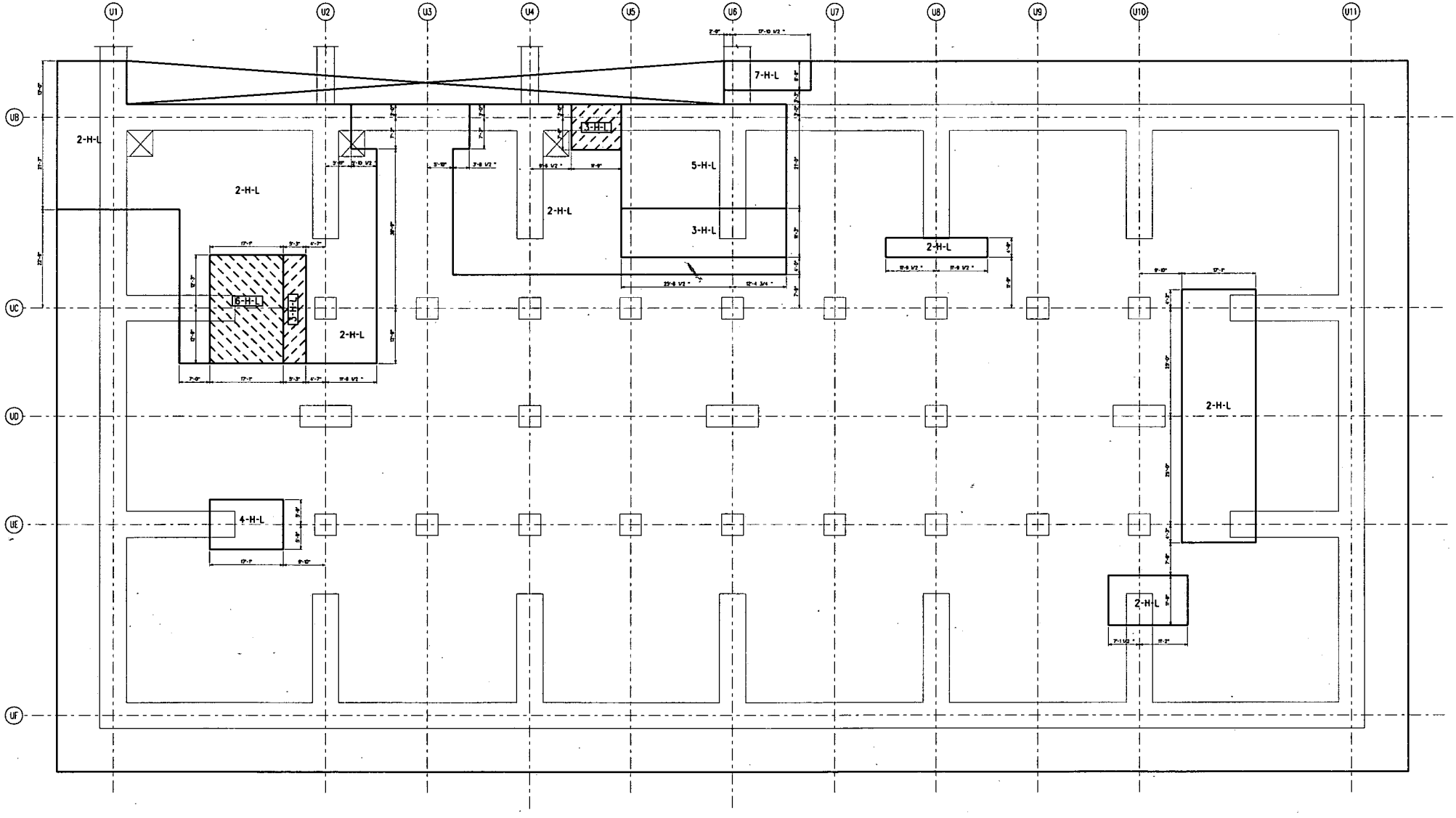


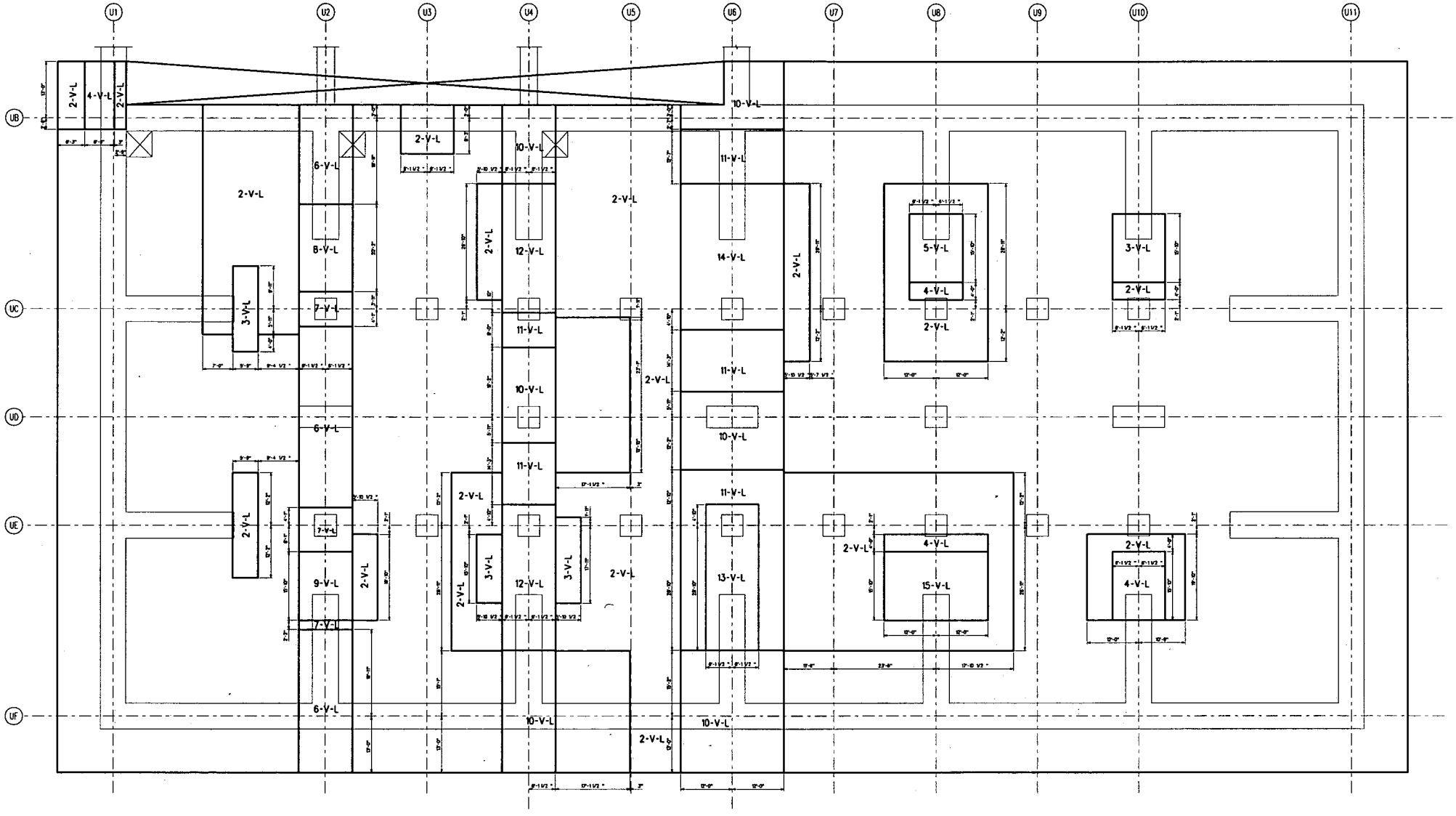
FIGURE 3H.6-128: PUMPHOUSE FLOOR EL 14'-0"
NORTH/SOUTH REINFORCEMENT ZONES
TOP AND BOTTOM FACES

NOTE:
1-V-L UNLESS NOTED OTHERWISE.



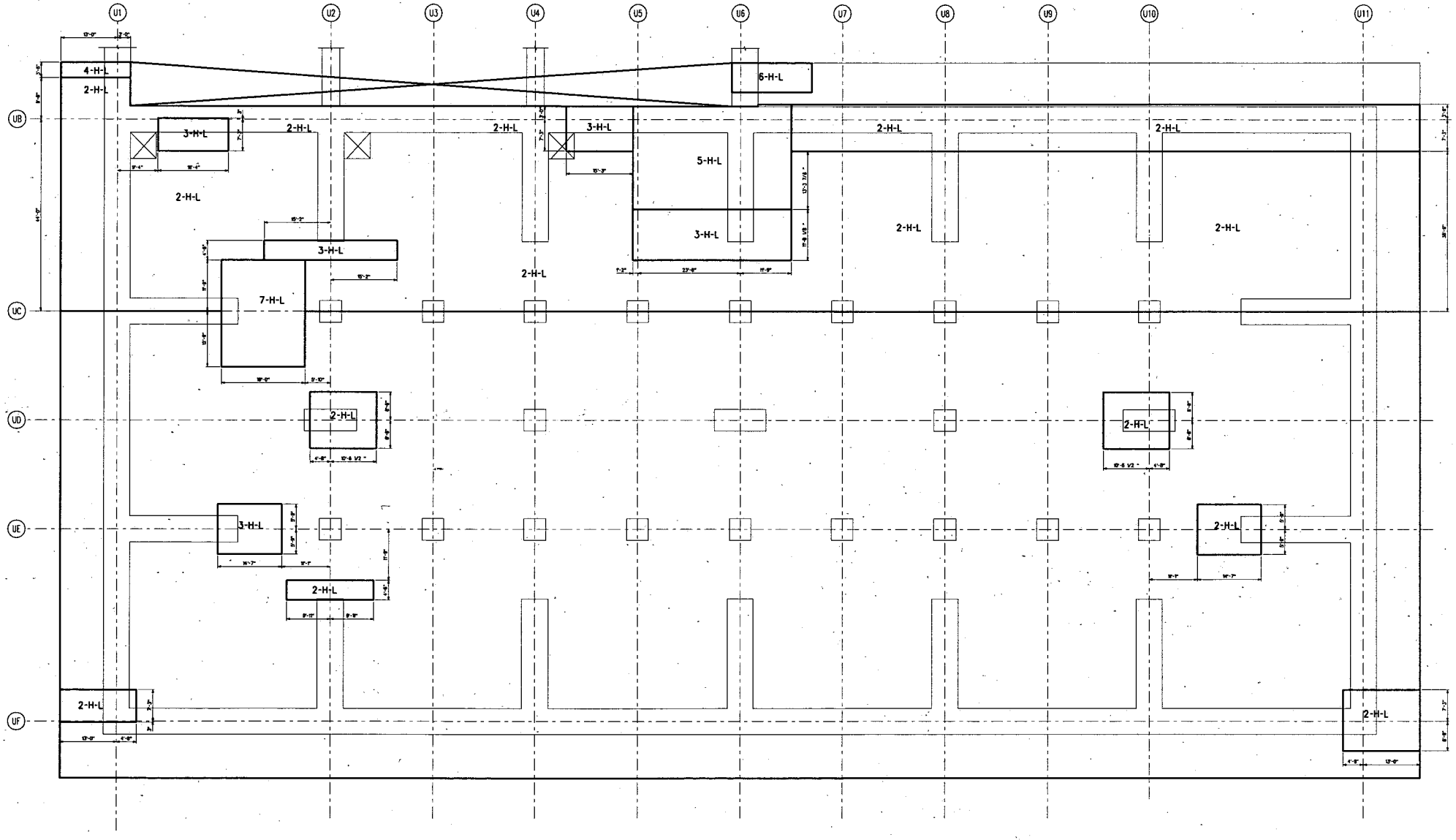
NOTE:
1-H-L UNLESS NOTED OTHERWISE.

FIGURE 3H.6-129: ULTIMATE HEAT SINK BASIN BASE MAT PLAN
EAST/WEST REINFORCEMENT ZONES
TOP FACE



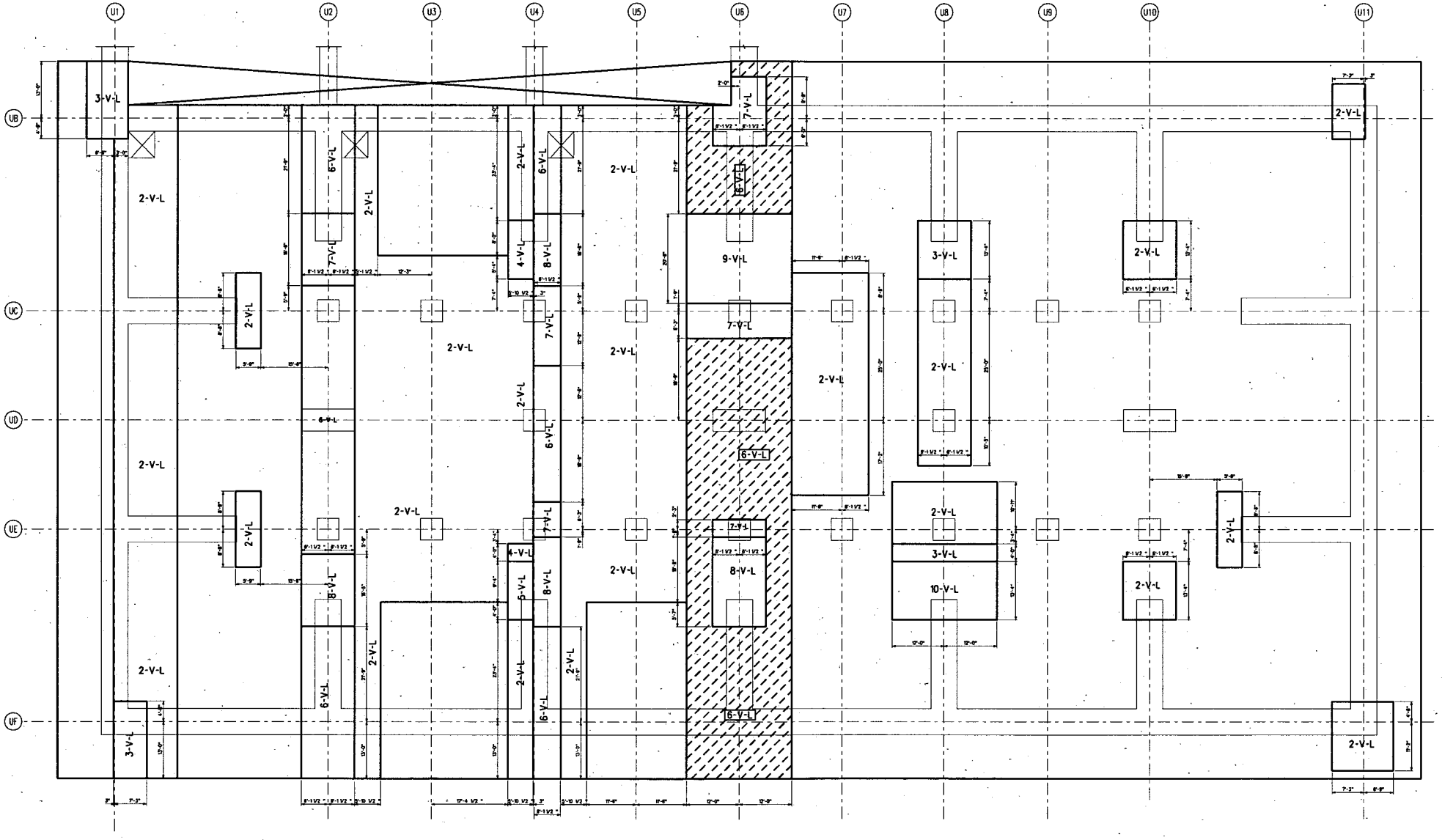
NOTE:
1-V-L UNLESS NOTED OTHERWISE.

FIGURE 3H.6-130: ULTIMATE HEAT SINK BASIN BASE MAT PLAN
NORTH/SOUTH REINFORCEMENT ZONES
TOP FACE



NOTE:
1-H-L, UNLESS NOTED OTHERWISE.

FIGURE 3H.6-131: ULTIMATE HEAT SINK BASIN BASE MAT PLAN
EAST/WEST REINFORCEMENT ZONES



NOTE:
V-L UNLESS NOTED OTHERWISE.

FIGURE 3H.6-132: ULTIMATE HEAT SINK BASIN BASE MAT PLAN
NORTH/SOUTH REINFORCEMENT ZONES

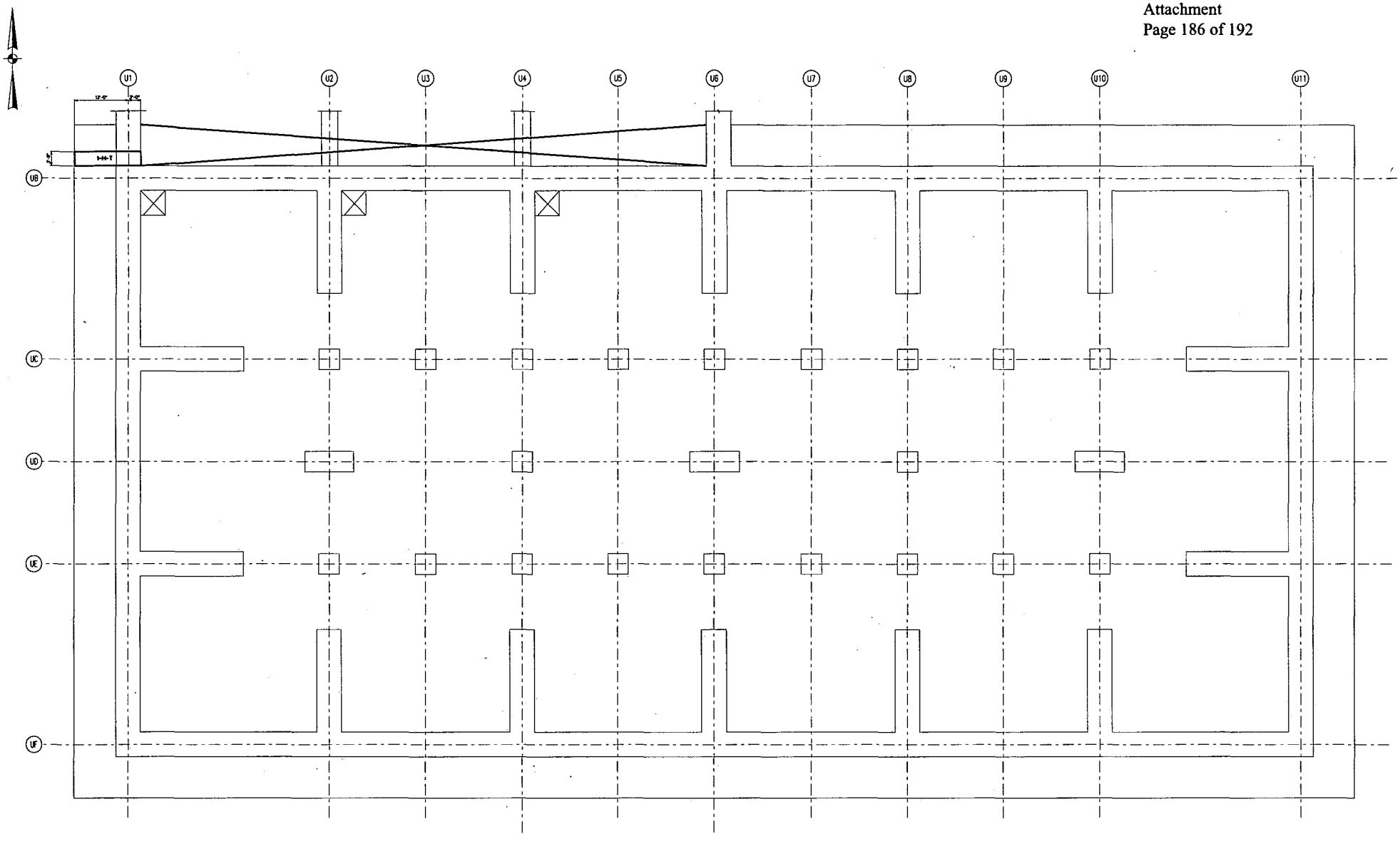
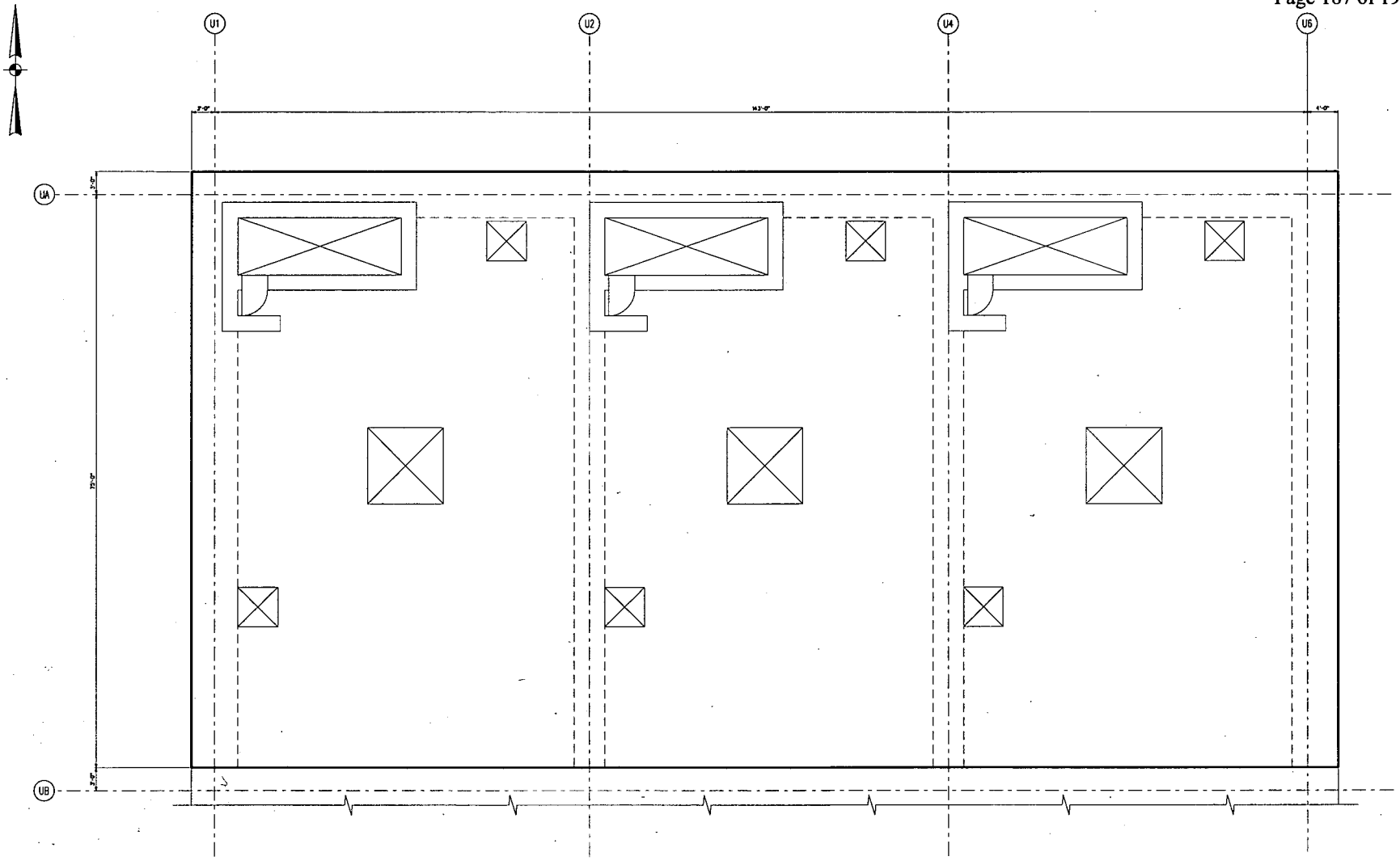
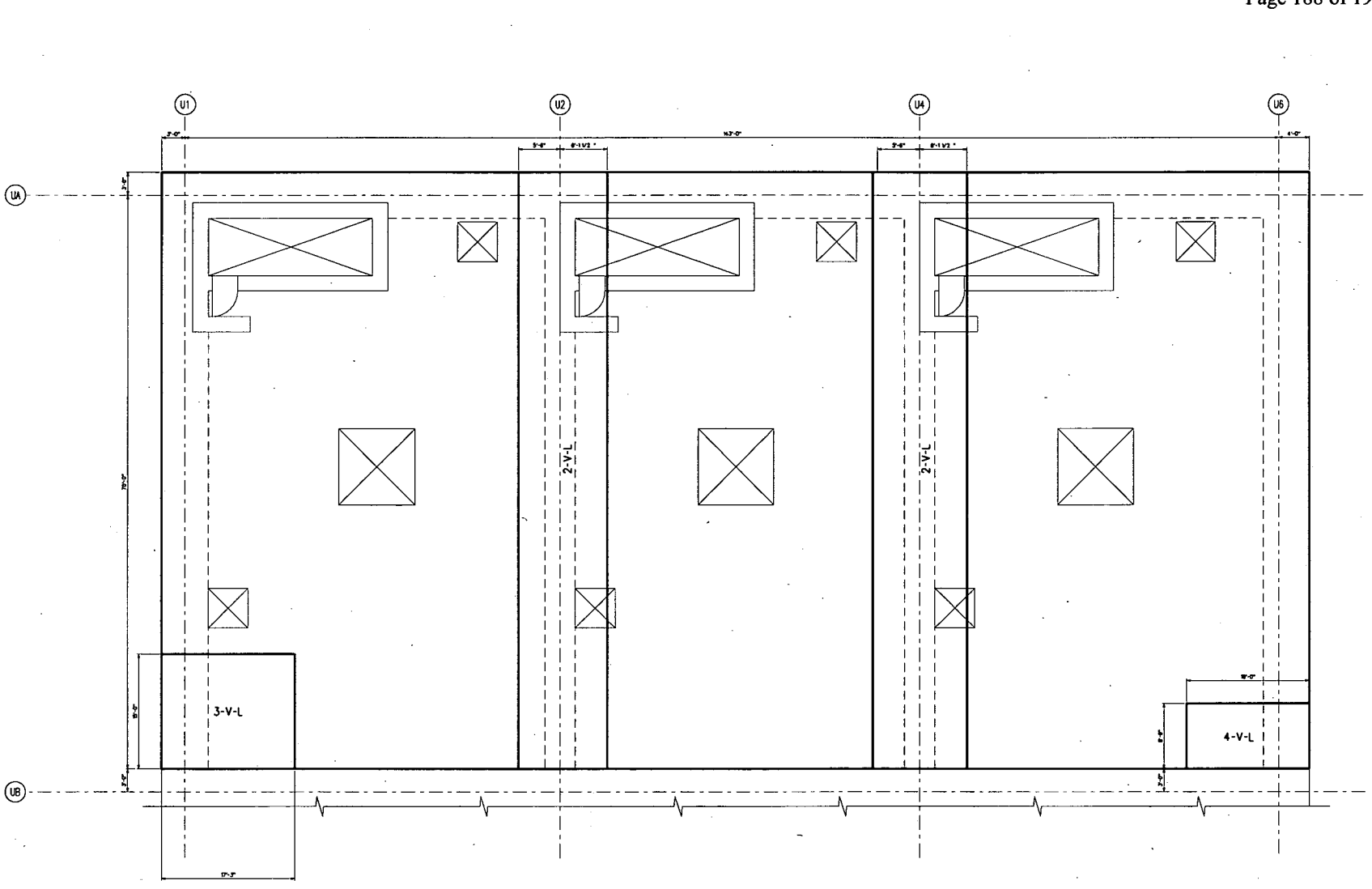


FIGURE 3H.6-133: ULTIMATE HEAT SINK BASIN BASE MAT PLAN
TRANSVERSE HORIZONTAL REINFORCEMENT ZONES



NOTE:
1-in-L, UNLESS NOTED OTHERWISE.

FIGURE 3H.6-134: PUMPHOUSE ROOF
EAST/WEST REINFORCEMENT ZONES
TOP FACE



NOTE:
1-V-L UNLESS NOTED OTHERWISE.

FIGURE 3H.6-135: PUMPHOUSE ROOF
NORTH/SOUTH REINFORCEMENT ZONES

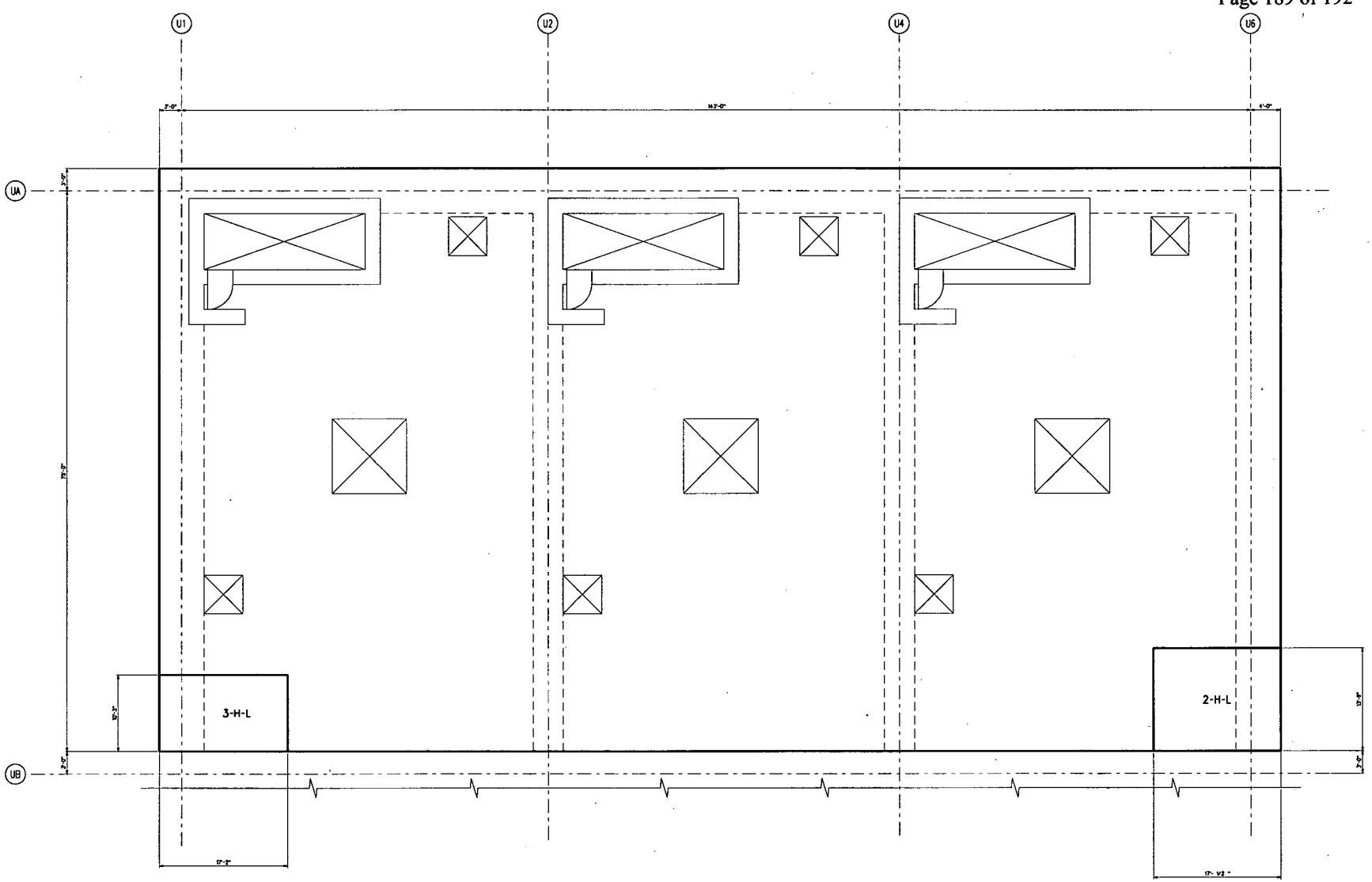
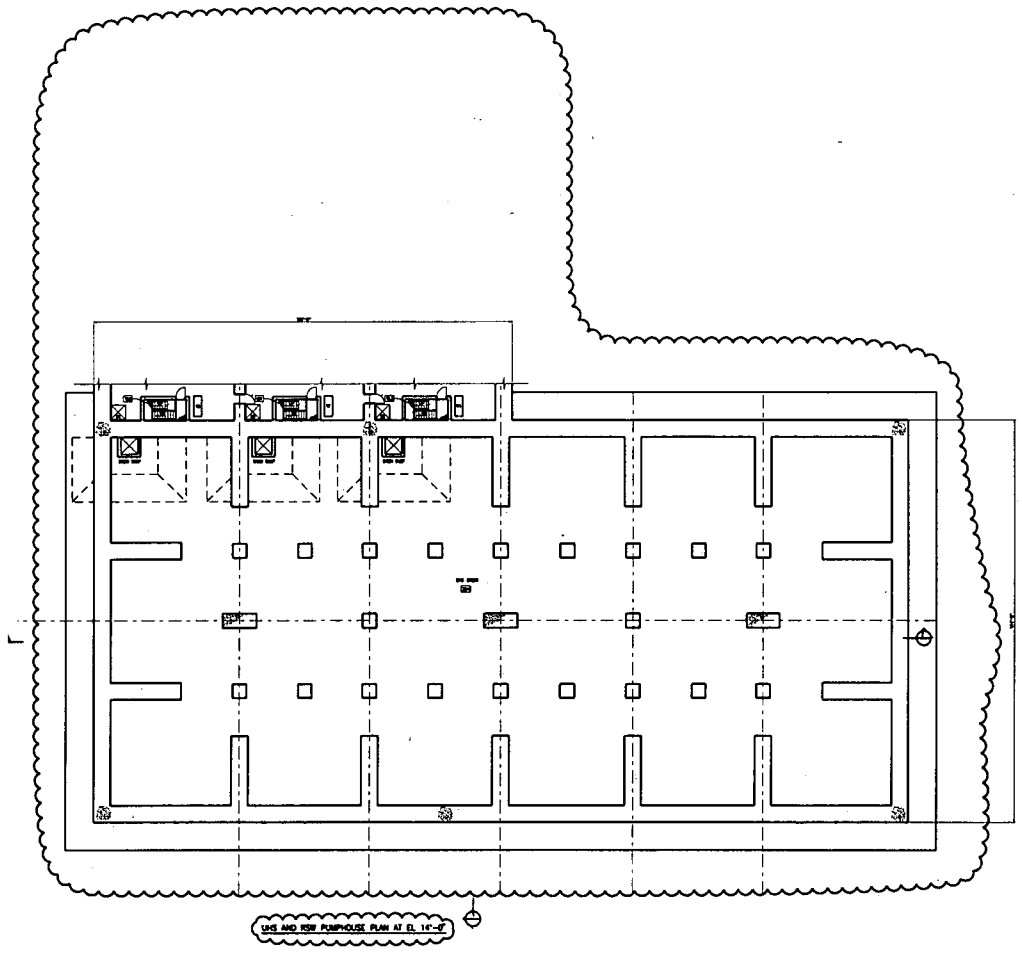


FIGURE 3H.6-136: PUMPHOUSE ROOF
EAST/WEST REINFORCEMENT ZONES
BOTTOM FACE

NOTE:
1-H-L UNLESS NOTED OTHERWISE.



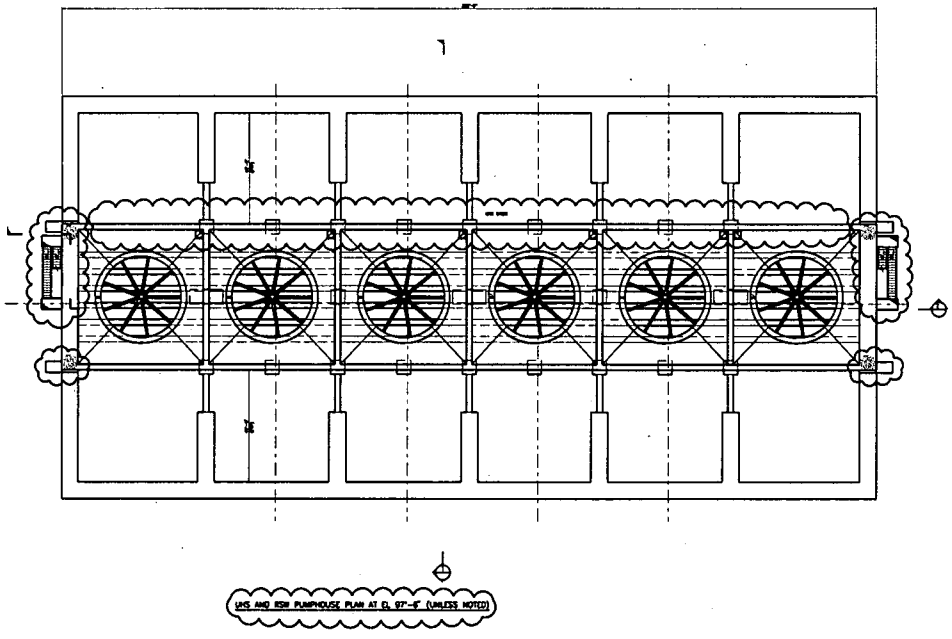
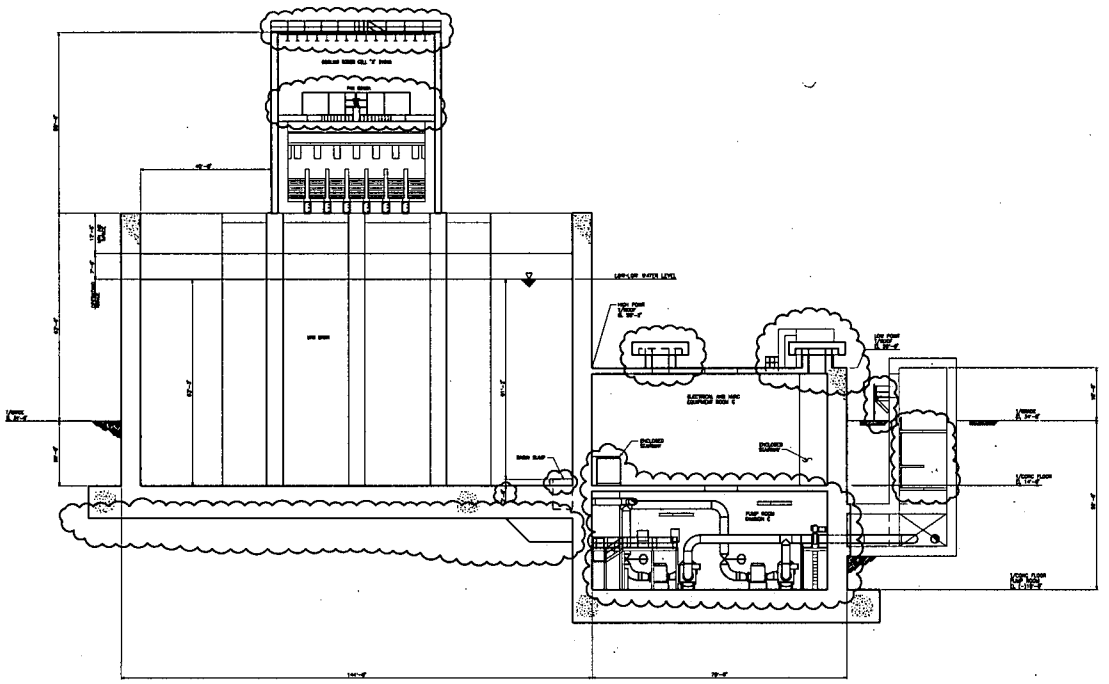
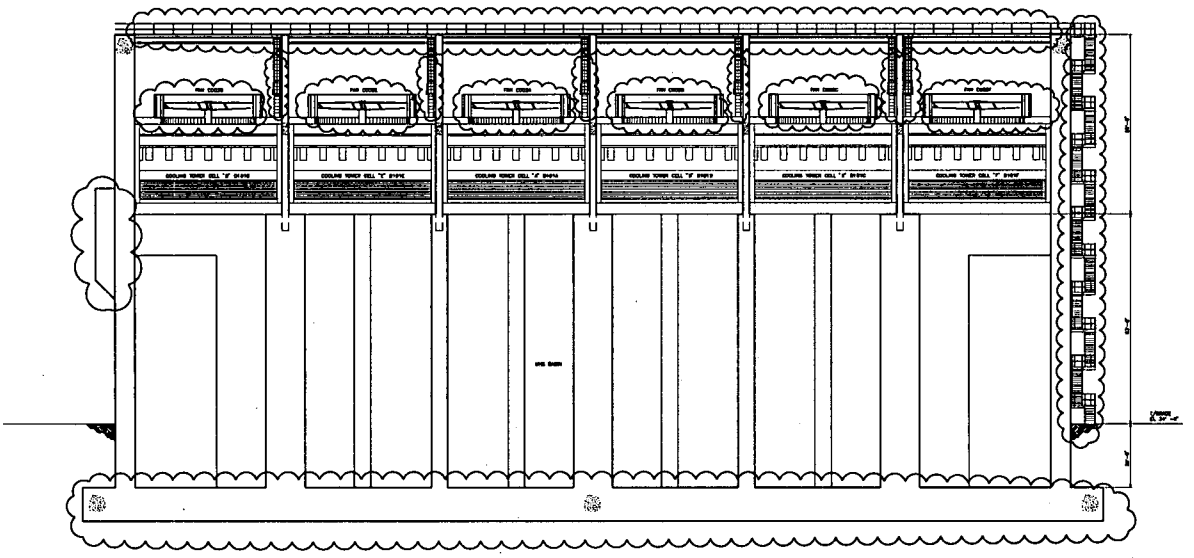


Figure 1.2-34 UHS Tunnel Plans
STP 3&4 Rev 4



SECTION 1



SECTION 2

Figure 1.2-35 UHS Tower Section
STP 3&4 Rev 4

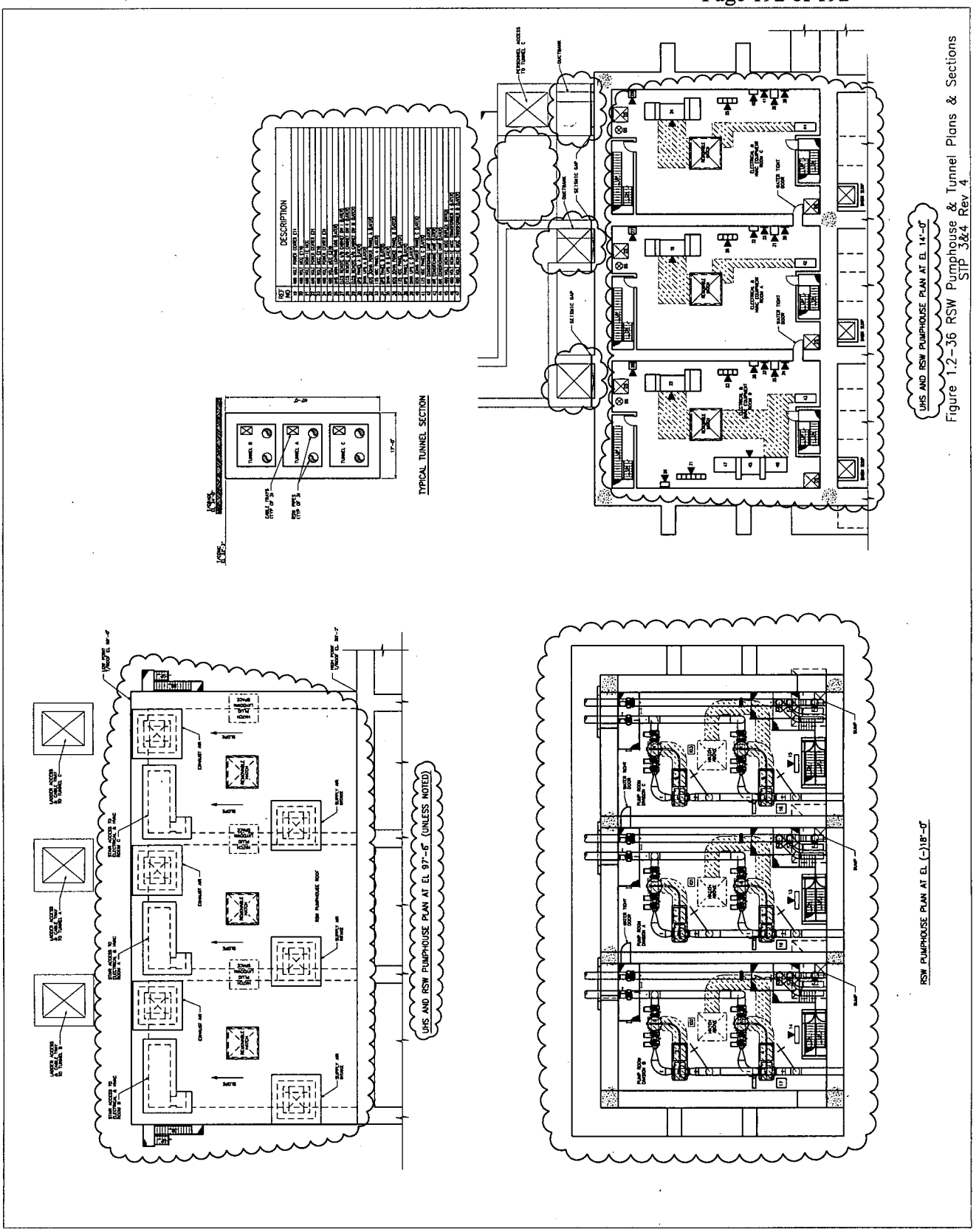


Figure 1.2-36 RSW Pumphouse & Tunnel Plans & Sections
STP 3&4 Rev 4