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revisions:

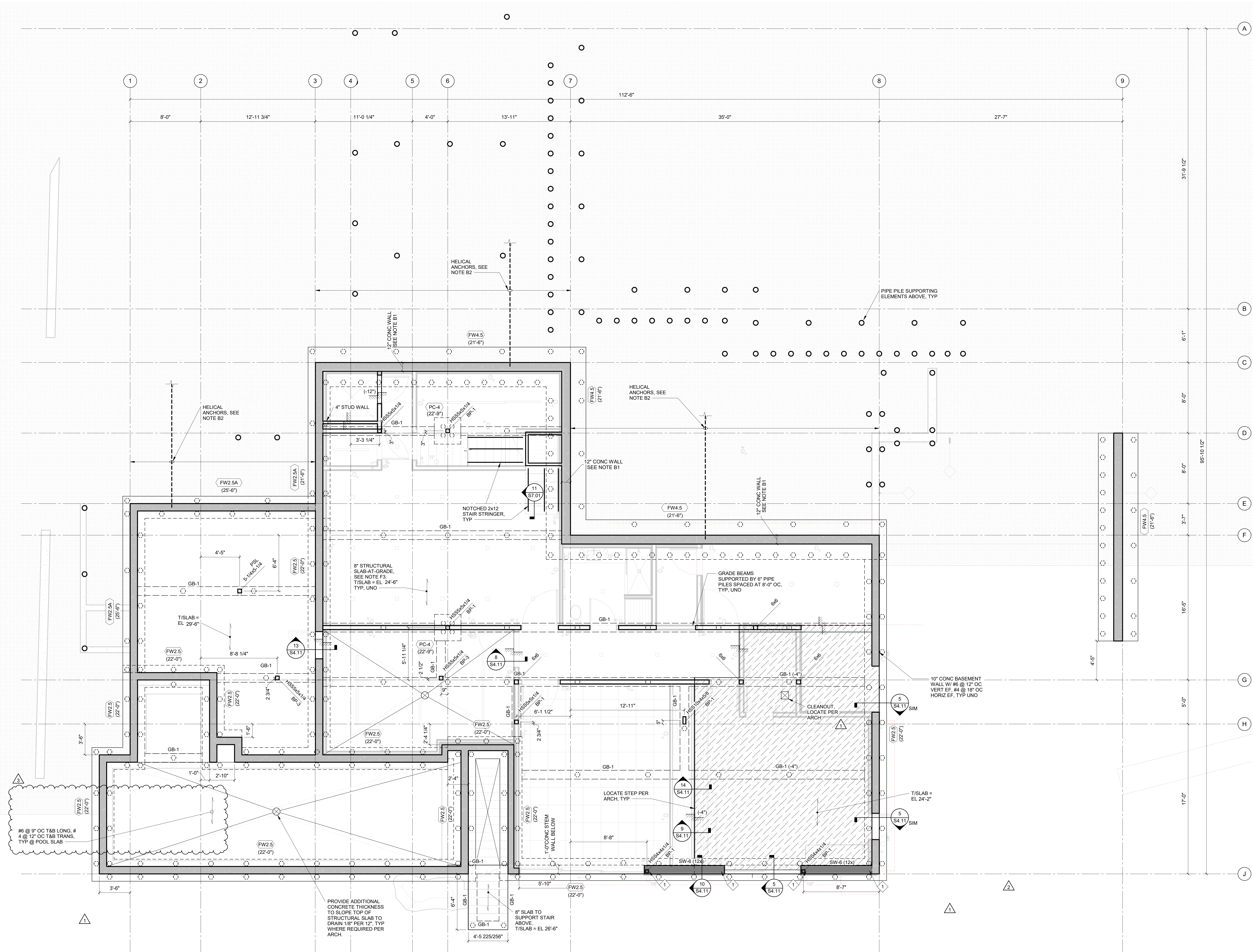
3	01/24/2025	POOL SLAB UPDATES
2	08/19/2024	ELEVATION UPDATE
1	07/12/2024	BULLETIN 01
no.	date:	description:

100% CD
5/29/2024

FOUNDATION PLAN

sheet:
S2.00

- GENERAL PLAN NOTES:**
01. REFERENCE DRAWINGS:
S0.0X - STRUCTURAL NOTES, SPECIAL INSPECTION SCHEDULE, SYMBOLS AND ABBREVIATIONS
S1.01 - LOAD MAPS
S4.0X - TYPICAL CONCRETE DETAILS
S5.0X - TYPICAL STEEL DETAILS
S6.0X - TYPICAL WOOD DETAILS
S7.0X - TYPICAL WOOD DETAILS
SHX - SHORING DRAWINGS
02. TOP OF MAIN LEVEL FLOOR FINISH ELEVATION = 36'-0"
- FOUNDATION PLAN NOTES:**
- F1. SEE S04.01 FOR BEAM SCHEDULE.
F2. SEE 1/54.02 FOR CONTINUOUS FOOTING SCHEDULE.
F3. STRUCTURAL SLAB AT-GRADE SHALL BE 8" THICK WITH #4 @ 12" OC 188 LONGITUDINAL REIN. #4 @ 18" OC TRANSVERSE REINFORCEMENT. UNO. SEE 4/54.01.
F4. (FW2) INDICATES FOOTING TYPE AND BOTTOM OF FOOTING ELEVATION. SEE 1/54.02.
F5. (W-7) INDICATES GRADE BEAM TYPE. SEE 6/54.01.
F6. (PC-2) INDICATES PILE CAP PER 10/54.02.
F7. [Hatched Area] INDICATES AREA OF TOPPING SLAB OVER SLIP MEMBRANE. TOP OF TOPPING SLAB EL. PER ARCH.
F8. [Hatched Area] INDICATES AREA OF 4" SLAB OVER EPS GEOPOLYMER.
- WOOD FRAMING PLAN NOTES:**
- W1. SEE THE ARCHITECTURAL DRAWINGS FOR WALL TYPES AND FOR NON-BEARING WALL LOCATIONS. WALL STUDS SHALL BE 2x6 @ 16" OC. UNO WALL HEADERS ARE PER 18/56.01 UNO.
W2. DIMENSIONS SHOWN ARE TO FACE OF STUD. UNO.
W3. [Symbol] INDICATES HOLD-DOWN AND COMPRESSION STUDS PER 2/56.02.
W4. [Symbol] INDICATES NUMBER OF BUNDLED STUDS LOCATED UNDER BEAM ABOVE PER 3/56.02.
W5. [Symbol] INDICATES WOOD SHEAR WALL ABOVE PER 9/56.02.
- BASEMENT WALL NOTES:**
- B1. 12" CONCRETE WALL WITH #7 @ 9" OC VERT. OF.
B2. #7 @ 12" OC VERT. IF #4 @ 16" OC HORIZ. EF. BIDDER-DESIGNED HELICAL ANCHORS TO RESIST 2.7 KIP ALLOWABLE LATERAL LOAD WITHIN EXTENTS SHOWN. CONTRACTOR TO COORDINATE ANCHOR QUANTITY, PLACEMENT AND ANCHORAGE INTO WALL FOUNDATIONS WITH GEOTECH AND SEOR.
PROVIDE 6" MIN CLEARANCE FROM HELICAL ANCHOR TO ANY STEEL PIPE PILE. CONTRACTOR TO COORDINATE EXACT ANCHOR LOCATION WITH BIDDER-DESIGNER. ANTICIPATED CONSTRUCTION SEQUENCE IS INSTALLATION OF HELICAL ANCHORS BEFORE MAIN LEVEL PIPE PILES.



1 FOUNDATION PLAN
1/4" = 1'-0"

CALCULATIONS

METHODOLOGY:

γ = EQUIVALENT FLUID PRESSURE
 OTM = $1/6 \gamma H^3$ WHERE $\gamma = 62.4$ pcf
 NET MOM = OTM + RESISTING MOMENT

$$f_s = \frac{M(12 \text{ in/ft})}{A_s j d} = \frac{M_t (12)}{A_s (0.887) d}$$

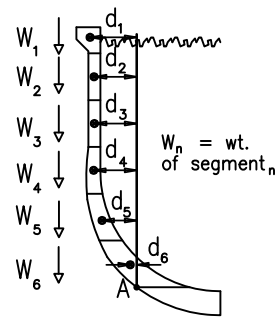
$$f_c = \frac{M(2) 12 \text{ in/ft}}{j k b d^2} = \frac{M_t (2)(12)}{(0.887)(0.339)(12) d^2} < 1125 \text{ psi}$$

$$v_c = \frac{(1/2) \gamma H^2}{(12 \text{ in/ft}) j d} = \frac{\gamma H^2}{(2)(12)(0.887) d} < 55 \text{ psi}$$

$f'_c = 2,500$ psi
 $F_s = 20,000$ psi
 $f_c = 0.45 f'_c = 1125$ psi
 $v_c = 1.1 \sqrt{f'_c} = 55$ psi

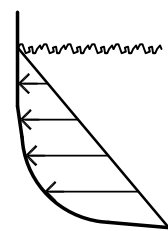
RESISTING MOMENT:

RESISTING MOMENT ABOUT POINT A
 $RM = W_1 d_1 + W_2 d_2 + \dots + W_n d_n$



LOADING DIAGRAM:

THIS DETAIL IS DESIGNED FOR EACH OF THE LOAD CASES DEFINED BELOW.



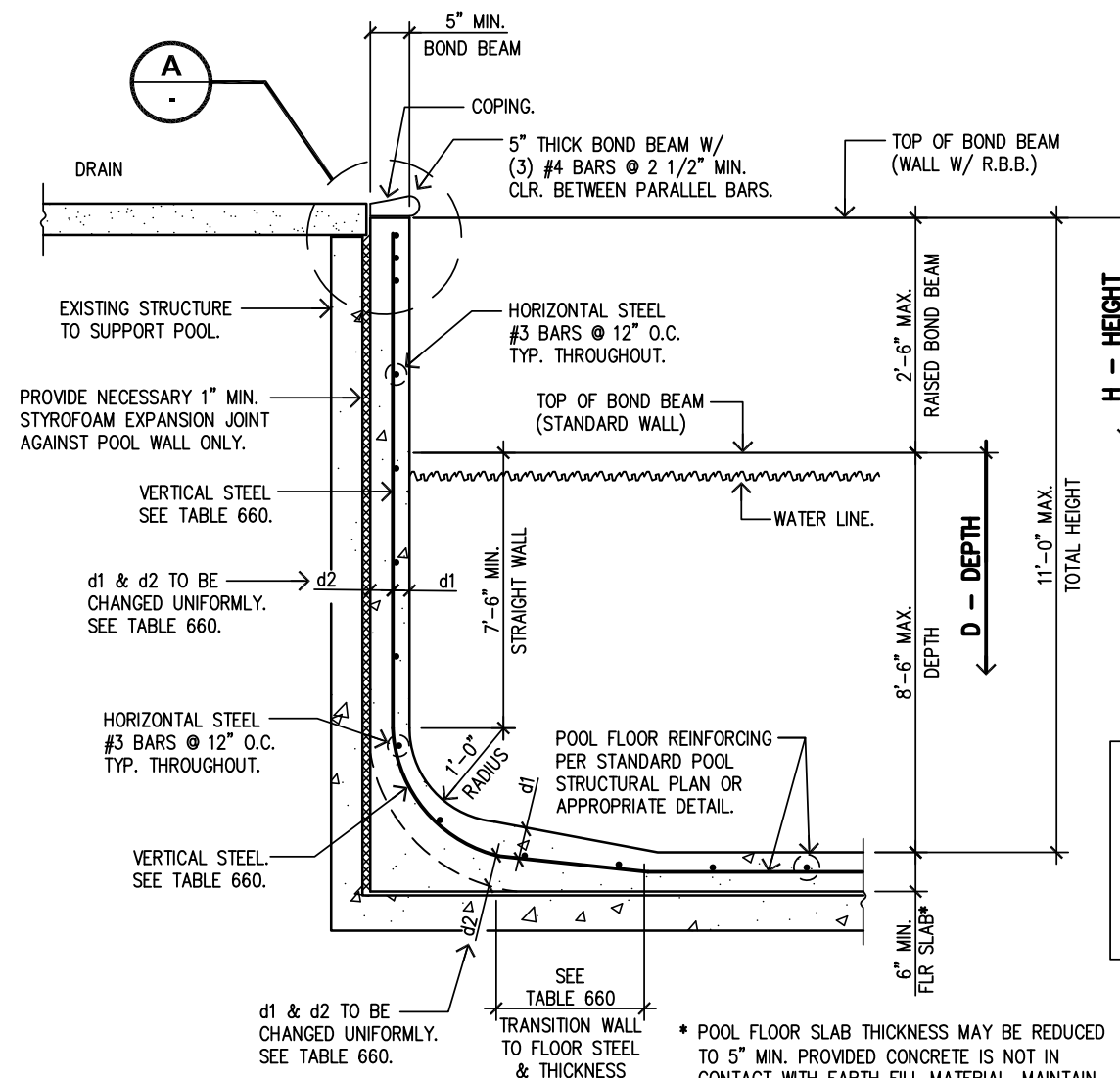
$\gamma = 62.4$ P.C.F.

FREESTANDING WALL
 EXPANSIVE SOIL
 EQUIVALENT FLUID PRESSURE = 62.4 P.C.F.
 RESULTS FOR NO RAISED BOND BEAM

DEPTH 'D'	SOIL OTM ft-#	WATER OTM ft-#	SOIL RM ft-#	WATER RM ft-#	NET Mom	CASE I d1 SOIL	CASE II d2 WATER	VERTICAL STEEL	f_s p.s.i.	f_c p.s.i.	v_c p.s.i.
3'-0"	0	281	25	-25	298	1 1/2"	2 1/2"	#3 @ 12"	14125	415	9.4
4'-0"	0	666	43	-62	645	1 1/2"	4 1/2"	"	16636	351	9.2
5'-0"	0	1300	120	-61	1305	1 1/2"	5 1/2"	#3 @ 6"	14012	390	11.8
6'-0"	0	2246	304	27	2412	1 1/2"	6 1/2"	#3 @ 4"	14749	471	14.4
7'-0"	0	3567	704	186	3891	1 1/2"	8 1/2"	"	18002	493	15.0
8'-0"	0	5325	1675	540	5865	1 1/2"	9 1/2"	#3 @ 3"	18333	555	17.5
8'-6"	0	6387	3924	277	6664	1 1/2"	10"	"	19751	580	18.8

RESULTS FOR 2'-6" MAX. RAISED BOND BEAM

HEIGHT 'H'	SOIL OTM ft-#	WATER OTM ft-#	SOIL RM ft-#	WATER RM ft-#	NET Mom	CASE I d1 SOIL	CASE II d2 WATER	VERTICAL STEEL	f_s p.s.i.	f_c p.s.i.	v_c p.s.i.
5'-6"	0	281	46	-46	333	1 1/2"	2 1/2"	#3 @ 12"	15813	465	9.4
6'-0"	0	446	51	-75	481	1 1/2"	3 1/2"	"	16099	391	9.1
7'-0"	0	948	104	-113	903	1 1/2"	5 1/2"	"	18961	358	9.6
7'-6"	0	1300	170	-87	1313	1 1/2"	5 1/2"	#3 @ 6"	14097	392	11.8
8'-0"	0	1730	268	-28	1847	1 1/2"	5 1/2"	"	19836	552	14.3
8'-6"	0	2246	408	66	2495	1 1/2"	5 1/2"	#3 @ 4"	18160	638	17.0
9'-0"	0	2856	605	183	3255	1 1/2"	6 1/2"	"	19902	635	16.9
9'-6"	0	3567	886	319	4081	1 1/2"	7 1/2"	#3 @ 3"	16319	566	17.0
10'-0"	0	4388	1304	512	5030	1 1/2"	8 1/2"	"	17652	570	17.2
10'-6"	0	5325	1981	786	6111	1 1/2"	9 1/2"	"	19102	578	17.5
11'-0"	0	6387	4414	560	6947	1 1/2"	10 1/2"	"	19571	559	17.9



d1 & d2 TO BE CHANGED UNIFORMLY. SEE TABLE 660.

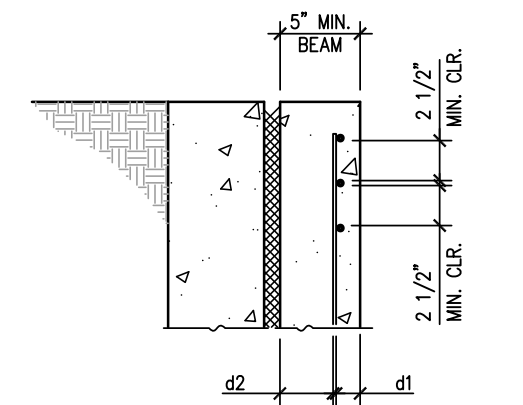
TABLE 660

'D' OR 'H' IS DISTANCE FROM TOP OF POOL WALL DOWNWARD. BEGIN SPECIFIED STEEL & GUNITE THICKNESS AT INDICATED 'D' OR 'H' DEPTH. (SEE STANDARD STRUCTURAL PLAN, DETAIL #2)

POOL DEPTH	NO RAISED BOND BEAM			REQ'D TRANS.
	d1	d2	VERTICAL STEEL	
0 to 3'0"	1 1/2"	2 1/2"	#3 @ 12"	2'-0"
4'-0"	1 1/2"	4 1/2"	#3 @ 6"	2'-0"
4'-6"	1 1/2"	5 1/2"	"	2'-0"
5'-0"	1 1/2"	5 1/2"	#3 @ 4"	2'-0"
5'-6"	1 1/2"	5 1/2"	"	2'-0"
6'-6"	1 1/2"	7 1/2"	"	2'-0"
7'-0"	1 1/2"	8 1/2"	#3 @ 3"	2'-0"
7'-6"	1 1/2"	9 1/2"	"	2'-0"
8'-0"	1 1/2"	9 1/2"	"	2'-0"
8'-6"	1 1/2"	10"	"	2'-0"

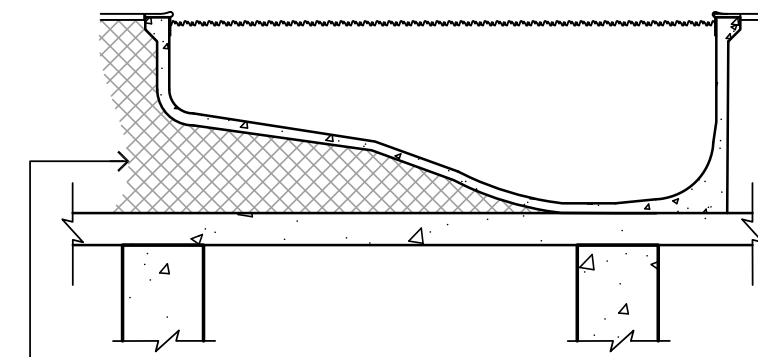
TOTAL HEIGHT	2'-6" MAX. RAISED BOND BEAM			REQ'D TRANS.
	d1	d2	VERTICAL STEEL	
0 to 5'6"	1 1/2"	2 1/2"	#3 @ 12"	2'-0"
6'-0"	1 1/2"	3 1/2"	"	2'-0"
6'-6"	1 1/2"	4 1/2"	#3 @ 6"	2'-0"
7'-0"	1 1/2"	5 1/2"	"	2'-0"
7'-6"	1 1/2"	5 1/2"	#3 @ 4"	2'-0"
8'-0"	1 1/2"	5 1/2"	"	2'-0"
8'-6"	1 1/2"	5 1/2"	#3 @ 3"	2'-0"
9'-0"	1 1/2"	6 1/2"	"	2'-0"
9'-6"	1 1/2"	7 1/2"	"	2'-0"
10'-0"	1 1/2"	8 1/2"	"	2'-0"
10'-6"	1 1/2"	9 1/2"	"	2'-0"
11'-0"	1 1/2"	10 1/2"	"	2'-0"

* POOL FLOOR SLAB THICKNESS MAY BE REDUCED TO 5" MIN. PROVIDED CONCRETE IS NOT IN CONTACT WITH EARTH FILL MATERIAL. MAINTAIN 2" MIN. CONCRETE COVERAGE TO REINFORCING.



BOND BEAM DETAIL A

SCALE: 1"=1'-0"

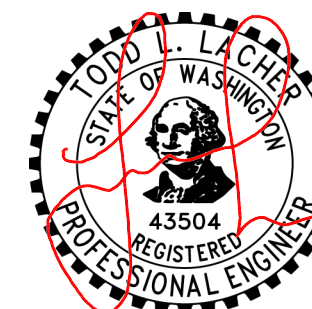


PROVIDE ENGINEERED FILL MATERIAL W/ NEGLIGIBLE COMPRESSIVE DEFORMATION, SUCH AS INSULFOAM GEOFOAM EPS-29 OR EQUIVALENT, BENEATH SHALLOW POOL AREAS TO BE APPROVED BY ENGINEER OF RECORD FOR THE VAULT STRUCTURE. IN THE EVENT THAT EARTH OR OTHER COMPACTABLE AND/OR COMPRESSIBLE FILL MATERIALS ARE PLACED UNDER PORTIONS OF THE POOL IN PLACE OF LOW DENSITY ENGINEERED FILL, A SOIL ENGINEER SHALL EXAMINE THE FILL MATERIALS AND CERTIFY THAT THE FILL MATERIALS WILL NOT PERMIT THE SWIMMING POOL TO EXPERIENCE DIFFERENTIAL MOVEMENT.

AS A CONDITION FOR THE USE OF THIS PLAN, THE FOLLOWING NOTES MUST BE COMPLIED WITH:

- ENGINEER OF RECORD FOR VAULT STRUCTURE SUPPORTING THE POOL SHALL REVIEW THIS DETAIL AND BASED ON THE POOL'S DEPTH, CERTIFY THAT THE VAULT STRUCTURE WAS DESIGNED TO SUPPORT WEIGHT OF THE POOL WITHOUT EXCEEDING THE DEFLECTION CAPACITY OF THE POOL SHELL.
- IF THE SWIMMING POOL IS LOCATED SUCH THAT WATER LEAKAGE FROM THE POOL COULD CAUSE DAMAGE TO UNDERLYING OR ADJACENT FACILITIES, A SECONDARY LEAKAGE CONTAINMENT AND DISPOSAL SYSTEM IS RECOMMENDED AS A PART OF THE POOL INSTALLATION.
- POOL ENGINEERING, INC. SHALL HAVE NO LIABILITY FOR DAMAGE TO THE SWIMMING POOL DUE TO FAILURE OF THE VAULT STRUCTURE. THE VAULT STRUCTURE HAS BEEN DESIGN BY OTHERS AND IS BEYOND THE SCOPE OF OUR RESPONSIBILITY.
- THE SWIMMING POOL FLOOR IS NOT DESIGNED AS A STRUCTURAL SLAB AND AS SUCH CONTINUOUS & UNIFORM SUPPORT IS REQUIRED BENEATH THE EXTENTS OF THE POOL SHELL.

FOR USE ONLY AT:
 4525 Forest Ave Se
 Mercer Island, WA 98040-4304



01/27/2025

VAULT SUPPORTED SWIMMING POOL
 WITH FREESTANDING WALL
 EQUIVALENT FLUID PRESSURE = 62.4 P.C.F.

23-06545-dg

DETAIL #660

Ron Lacher, R.C.E.
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pool engineering inc.



PLAN VALID ONLY WITH EMBEDDED QR CODE ON DETAIL, WHICH WHEN SCANNED DISPLAYS THE INTENDED PROJECT ADDRESS
 THIS DETAIL TO BE USED IN CONJUNCTION WITH STANDARD POOL STRUCTURAL PLAN