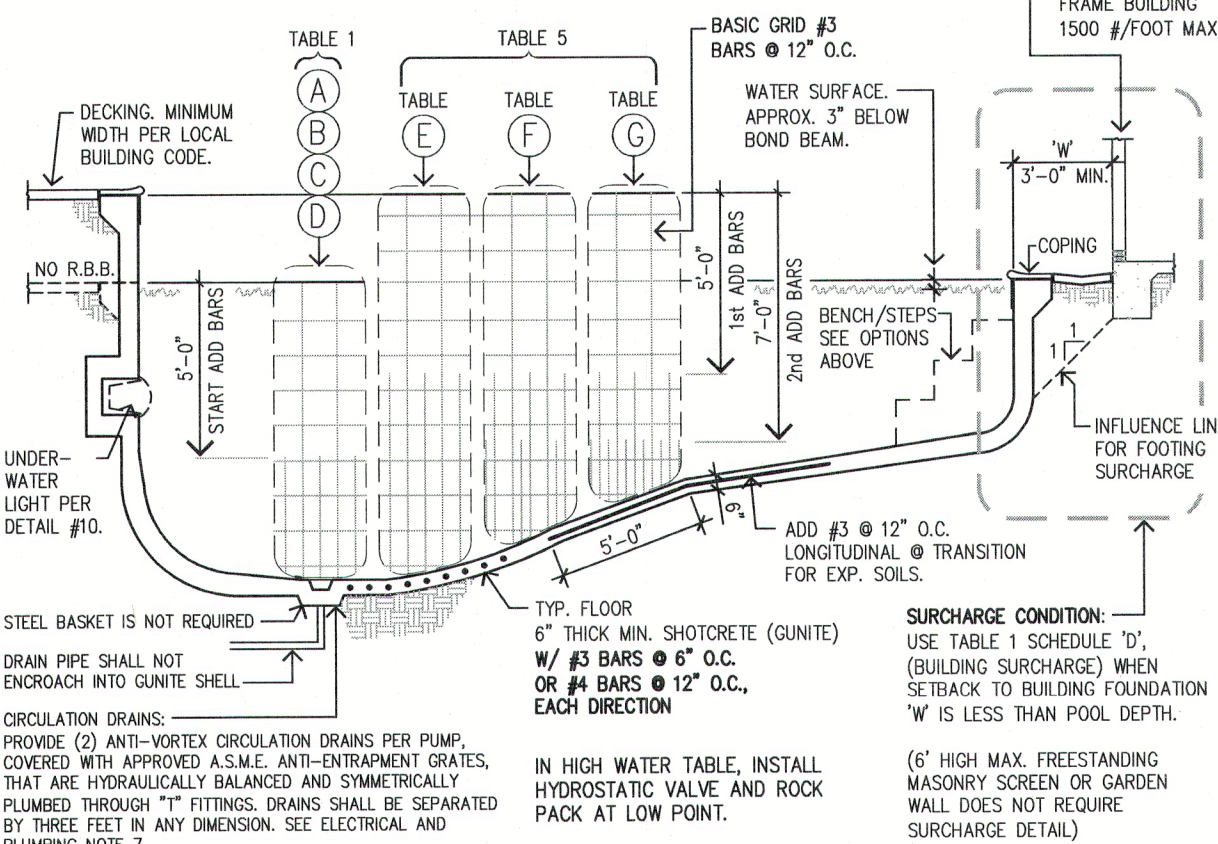


BENCH AND STEP OPTIONS:

- 1. UNDISTURBED EARTH MAY BE LEFT IN PLACE TO FORM THE STEPS OR BENCHES. REINFORCING STEEL SHOULD BE PLACED AROUND THE STEP OR BENCH SHAPED EARTH (3" CLEAR FROM EARTH).
- 2. THE EARTH MAY BE REMOVED AND BENCHES AND STEPS MAY BE FORMED OF SHOTCRETE (GUNITE) WITHIN THE STRUCTURAL POOL SHELL. REINFORCING AT THE SURFACE OF THE BENCHES AND STEPS IS OPTIONAL.



TYPICAL LONGITUDINAL SECTION

N.T.S.

2

STANDARD WALL SECTION

N.T.S.

1

TABLE NO. 1

NON-EXPANSIVE		EXPANSIVE	NO DECK/HIGH EXP.	BUILD'G SURCHARGE
A		B	C	D
(3) #3 BARS.		(4) #3 BARS.	(4) #3 BARS.	(4) #3 BARS.
30 P.C.F.		45 P.C.F.	62.4 P.C.F.	45 P.C.F.
E.F.P.	D	R	C	VERTICAL STEEL
3'0"	1'-0"	3"	#3 @ 12"	3"
3'6"	1'-0"	3"	#3 @ 12"	3"
4'0"	1'-0"	3"	#3 @ 12"	3"
4'6"	1'-0"	3"	#3 @ 12"	3"
5'0"	1'-0"	3"	#3 @ 12"	3"
5'6"	1'-0"	3"	#3 @ 12"	3"
6'0"	1'-0"	3"	#3 @ 12"	3"
6'6"	1'-0"	3"	#3 @ 12"	3"
7'0"	1'-0"	3"	#3 @ 12"	3"
7'6"	1'-0"	3"	#3 @ 12"	3"
8'0"	1'-0"	3"	#3 @ 12"	3"
8'6"	1'-0"	3"	#3 @ 12"	3"

GENERAL NOTES

1. THIS STANDARD POOL STRUCTURAL PLAN MUST BE ACCOMPANIED BY A CLEAR PLOT PLAN SHOWING POOL & OR SPA SHAPE, DEPTH AND DISTANCE TO PROPERTY LINE, SLOPES AND STRUCTURES.
2. REPRESENTATIVES OF POOL ENGINEERING INC. HAVE NOT INSPECTED THE SITE & ARE RELYING ON INFORMATION PROVIDED BY THE CONTRACTOR OR OWNER TO DETERMINE THE ADEQUACY OF THIS STANDARD POOL STRUCTURAL PLAN FOR THE ACTUAL SITE CONDITIONS. SHOULD SITE CONDITIONS VARY FROM THAT COVERED BY THIS STANDARD POOL STRUCTURAL PLAN, IT IS THE RESPONSIBILITY OF THE CONTRACTOR OR THE OWNER TO NOTIFY POOL ENGINEERING INC. AND OBTAIN APPLICABLE SPECIAL ENGINEERING DETAILS PRIOR TO CONSTRUCTION. EXPANSIVE SOIL DETAILS ARE VALID ONLY FOR STATED EQUIVALENT FLUID PRESSURES AND POOL ENGINEERING INC. RECOMMENDS THAT THE OWNER OR CONTRACTOR OBTAIN A SOILS REPORT.
3. THIS PLAN IS NOT VALID WITHOUT ADDITIONAL SURCHARGE DETAILS WHEN THE CONDITIONS AS SHOWN IN DETAIL #3 APPLY (PER IBC SECTION 1808.7.3).
4. THE STANDARD POOL STRUCTURAL PLAN IS NOT INTENDED TO BE APPLICABLE TO NON-STRUCTURAL ITEMS INCLUDING BUT NOT LIMITED TO PLUMBING, ELECTRICAL, FENCING, CONCRETE DECKING AND POOL GEOMETRICS.
5. DECKING CONSTRUCTION IS SHOWN AS RECOMMENDED MINIMUM CONSTRUCTION AND DOES NOT DEMONSTRATE A SYSTEM THAT WILL RESIST HEAVING DUE TO SOIL EXPANSION.
6. ALL CONSTRUCTION SHALL COMPLY WITH THE 2015 EDITION OF THE INTERNATIONAL BUILDING CODE AND LOCAL ORDINANCES.
7. POOLS WITH DIVING BOARDS SHALL MEET DIVING BOARD MANUFACTURER'S POOL GEOMETRIC STANDARDS AND/OR LOCAL CODES.
8. SIGNS & SAFETY EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH LOCAL CODES.
9. PUBLIC POOLS REQUIRE COUNTY HEALTH DEPARTMENT APPROVAL AND PROVISIONS FOR ASSISTIVE DEVICES FOR THE DISABLED.
10. CONTRACTOR OR OWNER SHALL VERIFY ALL FIELD CONDITIONS & DIMENSIONS AT JOB SITE.
11. POOL LENGTH, WIDTH, BREAK LOCATIONS & DEPTH DIMENSIONS AS NOTED ON THE PLOT PLAN SHALL COMPLY WITH APSP SUGGESTED MINIMUM STANDARDS FOR RESIDENTIAL POOLS OR APPLICABLE STATE AND LOCAL HEALTH DEPARTMENTS REGULATIONS AND MANUFACTURERS RECOMMENDATIONS.
12. IN ACCORDANCE WITH IBC 2015 EDITION, A SITE SPECIFIC SOILS INVESTIGATION MAY BE REQUIRED FOR PROJECTS LOCATED IN SEISMIC DESIGN CATEGORIES D, E, OR F.
13. WHERE FREEZING TEMPERATURES OCCUR, THE POOL SHALL BE WINTERIZED TO PREVENT DAMAGE TO THE POOL STRUCTURE, PLUMBING, AND POOL EQUIPMENT. CONTACT LOCAL PROFESSIONAL FOR PROPER WINTERIZATION PROCEDURES.

ELECTRICAL AND PLUMBING

- ALL ELECTRICAL SHALL BE IN CONFORMANCE WITH THE NEC.
1. IN ACCORDANCE WITH NEC SECTION 680.26, ALL METAL WITHIN 5' HORIZ. OF INSIDE WALL OF POOL AND 12' VERT. ABOVE WATER LINE MUST BE GROUNDED VIA EQUIPOTENTIAL BONDING GRID. BONDING GRID SHALL EXTEND UNDER PAVED WALKING SURFACES 3' HORIZ. BEYOND INSIDE WALL OF POOL. CONCRETE REINFORCING THE WIRE SHALL BE MADE TIGHT FOR BONDING PURPOSES.
 2. OBTAIN ELECTRICAL AND PLUMBING PERMITS ALONG WITH POOL BUILDING PERMIT.
 3. ALL EQUIPMENT SHALL BE INSTALLED PER MANUFACTURERS RECOMMENDATIONS AND IN ACCORDANCE WITH LOCAL REGULATIONS.
 4. POOLS SHALL BE EQUIPPED WITH A FILTERING SYSTEM & A DRAIN.
 5. BACKWASH SHALL BE DISPOSED OF IN AN APPROVED MANNER.
 6. POOL/SPA WATER HEATER AND GAS PIPING INSTALLATION TO BE IN CONFORMANCE WITH THE IBC.
 7. CONTRACTOR IS ADVISED TO REFER TO SECTION 3109.5 OF THE INTERNATIONAL BUILDING CODE AND ANSI/APSP-7 FOR PROPER INSTALLATION OF THE POOL DRAIN SYSTEM.
 8. WHERE REINFORCING STEEL IS ENCAPSULATED WITH A NONCONDUCTIVE COMPOUND, PROVISIONS SHALL BE MADE FOR AN ALTERNATIVE MEANS TO ELIMINATE VOLTAGE GRADIENTS THAT WOULD OTHERWISE BE PROVIDED BY BONDED REINFORCING STEEL.

STRUCTURAL NOTES

1. SOIL SHALL HAVE A MINIMUM BEARING VALUE OF 1500 PSF. CONCRETE SHALL BE PLACED AGAINST UNDISTURBED SOIL OR BUILDING DEPARTMENT APPROVED 90% COMPACT FILL. THIS PLAN IS NOT SUITABLE WHERE POTENTIAL EXISTING DIFFERENTIAL MOVEMENT FROM DISSIMILAR SOIL CONDITIONS UNDER POOL, SUCH AS CUT-FILL TRANSITIONS.
2. ALL REINFORCING STEEL SHALL BE DEFORMED BARS & CONFORM TO ASTM A615 GRADE 40 FOR #3 BARS AND #4 BARS. SPLICES TO BE LAPPED A MINIMUM OF 24". MINIMUM CLEARANCE BETWEEN PARALLEL BARS IS 2 1/2".
3. (1) #4 BAR IS EQUIVALENT TO AND MAY BE USED IN PLACE OF (2) #3 BARS, WITH THE EXCEPTION THAT IF #4 BARS ARE USED FOR THE BASIC GRID, THE MAXIMUM SPACING IS #4 BARS AT 18" O.C.
4. THE PLAN TABLES SPECIFY THE MINIMUM REQUIRED REINFORCEMENT. FOR CONVENIENCE OF THE INSTALLER, THERE MAY BE MORE REINFORCEMENT THAN SPECIFIED AT ANY GIVEN POINT IN THE POOL STRUCTURE.
5. GROUNDING/BONDING (PER THE LATEST ADOPTED EDITION OF THE NATIONAL ELECTRICAL CODE) OF THE STRUCTURAL REINFORCING MUST BE INSTALLED PRIOR TO PLACEMENT OF CONCRETE.
6. SHOTCRETE (GUNITE) TO BE IN CONFORMANCE WITH IBC SECTION 1908 & SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 2500 PSI AT 28 DAYS. WHERE APPLICABLE, SHOTCRETE (GUNITE) TO BE IN CONFORMANCE WITH IBC SECTION 1904 DURABILITY REQUIREMENTS. CONCRETE THAT WILL BE EXPOSED TO FREEZING AND THAWING, DEICING CHEMICALS OR OTHER EXPOSED CONDITIONS SHALL COMPLY WITH IBC SECTIONS 1904.2.1 THROUGH 1904.2.3. CONCRETE EXPOSED TO FREEZING AND THAWING OR DEICING CHEMICALS SHALL BE AIR ENTRAINED IN ACCORDANCE WITH ACI 318 SECTION 19.3. CONCRETE THAT WILL BE SUBJECT TO THE FOLLOWING EXPOSURES SHALL CONFORM TO THE CORRESPONDING MAXIMUM WATER-CEMENTITIOUS MATERIALS RATIOS AND MINIMUM SPECIFIED CONCRETE COMPRESSIVE STRENGTH REQUIREMENTS OF ACI 318, SECTION 19.3. CONCRETE INTENDED TO HAVE LOW PERMEABILITY WHERE EXPOSED TO WATER, CONCRETE EXPOSED TO FREEZING AND THAWING IN A MOST CONDITION OR DEICER CHEMICALS, OR CONCRETE WITH REINFORCEMENT WHERE THE CONCRETE IS EXPOSED TO CHLORIDES FROM DEICING CHEMICALS, SALT, SALT WATER, BRACKISH WATER, SEAWATER OR SPRAY FROM THESE SOURCES. IN ADDITION, CONCRETE EXPOSED TO DEICING CHEMICALS SHALL CONFORM TO THE LIMITATIONS OF IBC SECTION 1904.2.3.
7. CEMENT SHALL CONFORM TO IBC SECTION 1903.1, ACI 318 CHAP. 19 & ASTM C 150.
8. SHOTCRETE/GUNITE IN CONTACT WITH SOIL SHALL BE IN ACCORDANCE WITH ACI 318 SECTION 19.3 FOR CONCRETE EXPOSURE TO SULFATE AND AS DIRECTED BY LOCAL BUILDING OFFICIAL.
9. KEEP CONCRETE DAMP CONTINUOUSLY FOR 14 DAYS.
10. ALL INTERIOR SURFACES OF POOL/SPA SHALL BE COATED WITH A WATER-RESISTANT SURFACE.
11. FLOOR TO WALL TRANSITION RADIUS MAY VARY DEPENDING ON CONTRACTOR OR OWNER DESIGN INTENT. RADIUS SHALL NOT BE LESS THAN 1'-0" AND SHALL NOT EXCEED 5'-FEET.
12. IN AREAS WITH SOIL CONDITIONS SUBJECT TO FROST-HEAVE, THE FOLLOWING REQUIREMENTS APPLY:
a. ACCORDANCE WITH IBC SECTION 1809.5, THE ENTIRE BOTTOM OF POOL STRUCTURE AND OR PLUMBING MUST EXTEND BELOW THE FROST LINE OF THE LOCALITY.
b. ALTERNATIVELY, WHERE DAMAGE TO THE POOL STRUCTURES, PLUMBING, ADJACENT STRUCTURES AND SURFACE IMPROVEMENTS IS A CONCERN, SELF-DRAINING GRANULAR BACKFILL MAY BE EXTENDED BELOW THE FROST-LINE WITH A MEANS TO PRECLUDE BUILD-UP OF WATER.

TABLE NO. 5 RAISED BOND BEAM

NON-EXPANSIVE		EXPANSIVE	NO DECK/HIGH EXP.
E		F	G
30 P.C.F.		45 P.C.F.	62.4 P.C.F.
E.F.P.	D	C	VERTICAL STEEL
3'6"	3"	#3 @ 12"	3"
4'0"	3"	#3 @ 12"	3"
4'6"	3"	#3 @ 12"	3"
5'0"	3"	#3 @ 12"	3"
5'6"	3"	#3 @ 12"	3"
6'0"	3"	#3 @ 12"	3"
6'6"	3"	#3 @ 12"	3"
7'0"	3"	#3 @ 12"	3"
7'6"	3"	#3 @ 12"	3"
8'0"	3"	#3 @ 12"	3"
8'6"	3"	#3 @ 12"	3"
9'0"	3"	#3 @ 12"	3"
9'6"	3"	#3 @ 12"	3"
10'0"	3"	#3 @ 12"	3"
11'0"	3"	#3 @ 12"	3"

MASONRY NOTES:

1. CONCRETE BLOCK SHALL BE GRADE N (EXPOSED TO WEATHER), TYPE II (NON-MOISTURE CONTROLLED), NORMAL WEIGHT UNITS (135 PCF), CONFORMING TO IBC SEC. 2103, AND ASTM C 90. ALL CONCRETE BLOCK SHALL HAVE A DESIGN STRENGTH OF $f_m = 1500$ psi.
2. GROUT SHALL CONFORM TO IBC SEC. 2103 & ASTM C 476 WITH $f_c = 2,000$ PSI. SEE IBC TABLE 2103.12 FOR PROPORTIONS OF INGREDIENTS.
3. MORTAR SHALL BE TYPE M WITH $f_c = 1800$ PSI AND SHALL CONFORM TO IBC SEC. 2103 & ASTM C 270. SEE IBC TABLES 2103.8(1),(2) FOR PROPORTION AND PROPERTY SPECIFICATIONS.

SURCHARGE CONDITIONS - ADDITIONAL SPECIAL DETAILS REQUIRED FOR CONDITIONS ABOVE

N.T.S.

3

SHALLOW FEATURES - MAINTAIN 18" MIN. EMBEDMENT INTO UNDISTURBED OR 90% COMPACTED SOIL

N.T.S.

4

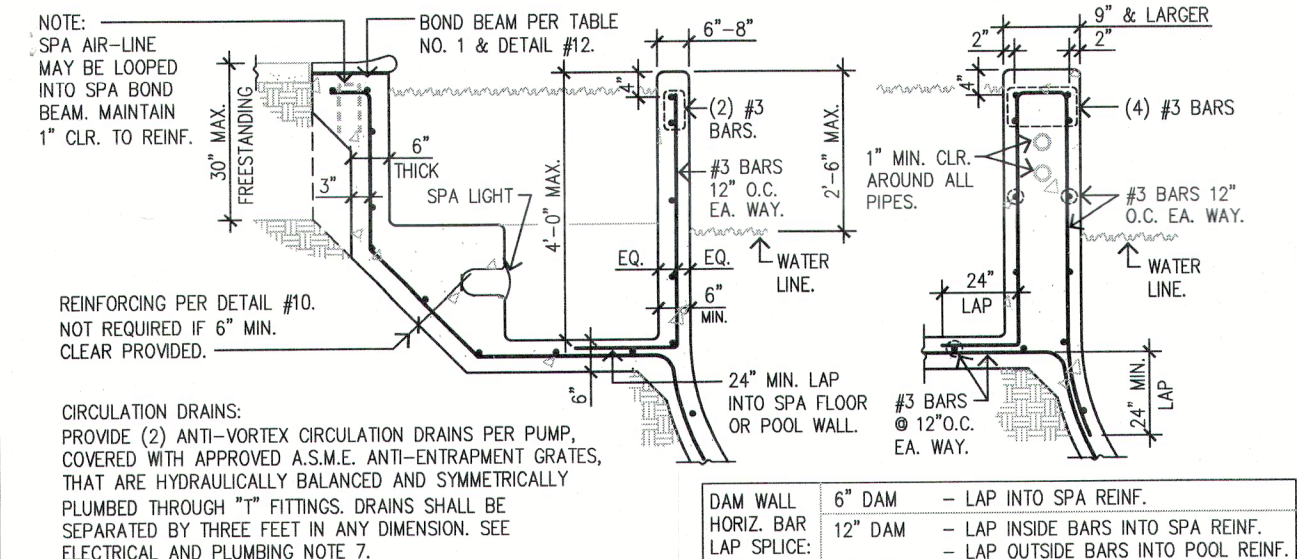
RAISED BOND BEAM

N.T.S.

5

NOTES BY THE USE OF THIS PLAN, THE USER ACKNOWLEDGES THAT HE HAS READ & UNDERSTANDS ALL OF THE NOTES INCLUDED HEREIN.

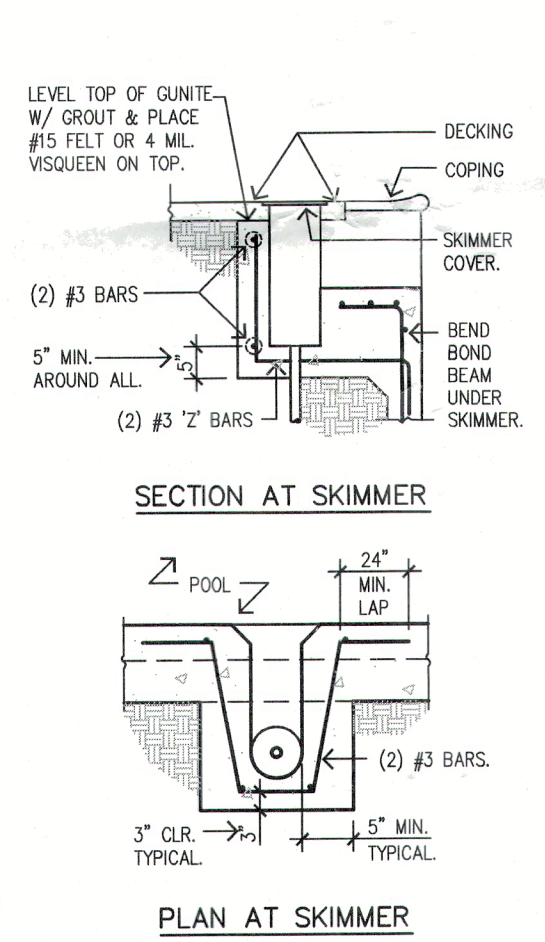
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SPA DETAILS - SPA DETAILS MAY BE USED FOR SPAS WITHOUT POOLS.

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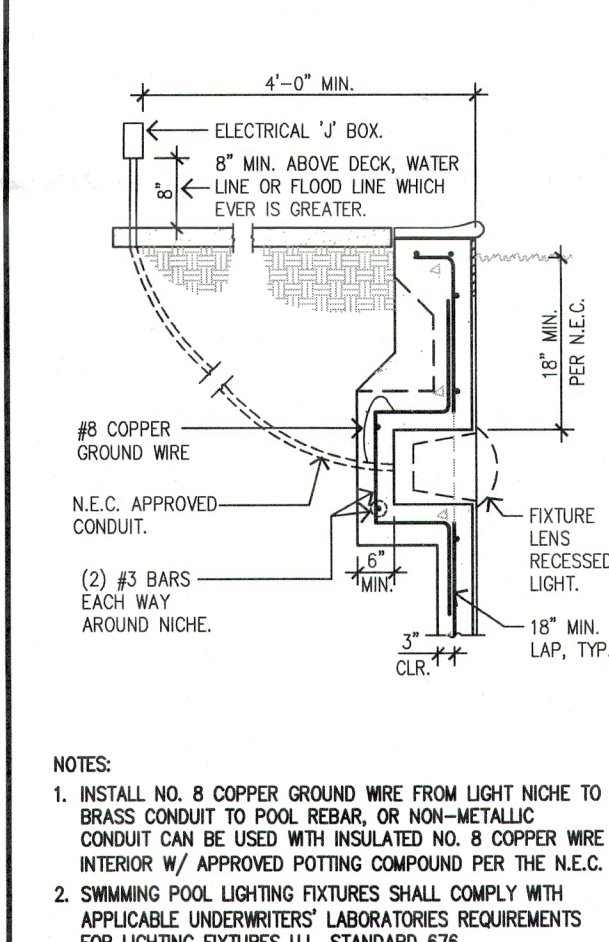
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SKIMMER DETAIL

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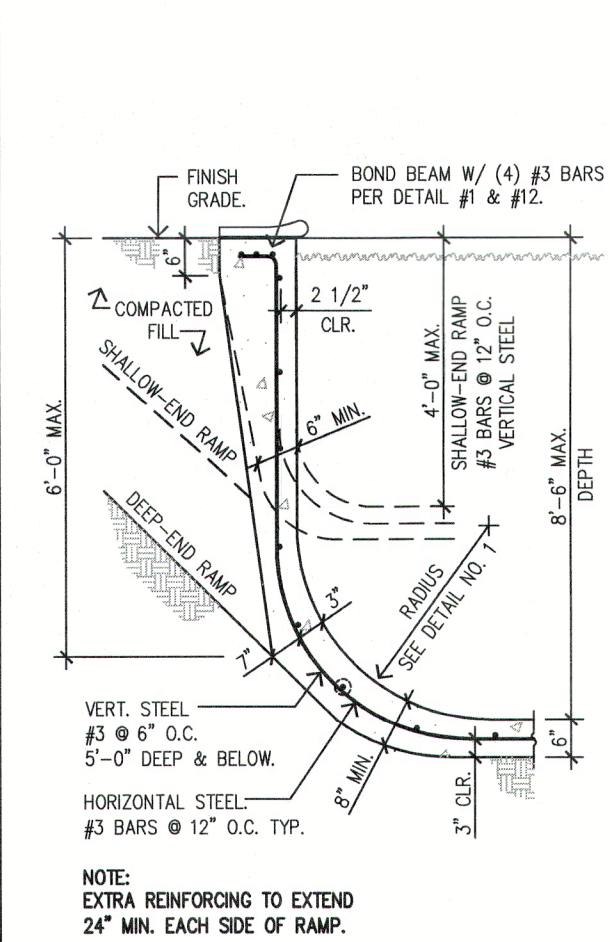
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SECTION AT LIGHT

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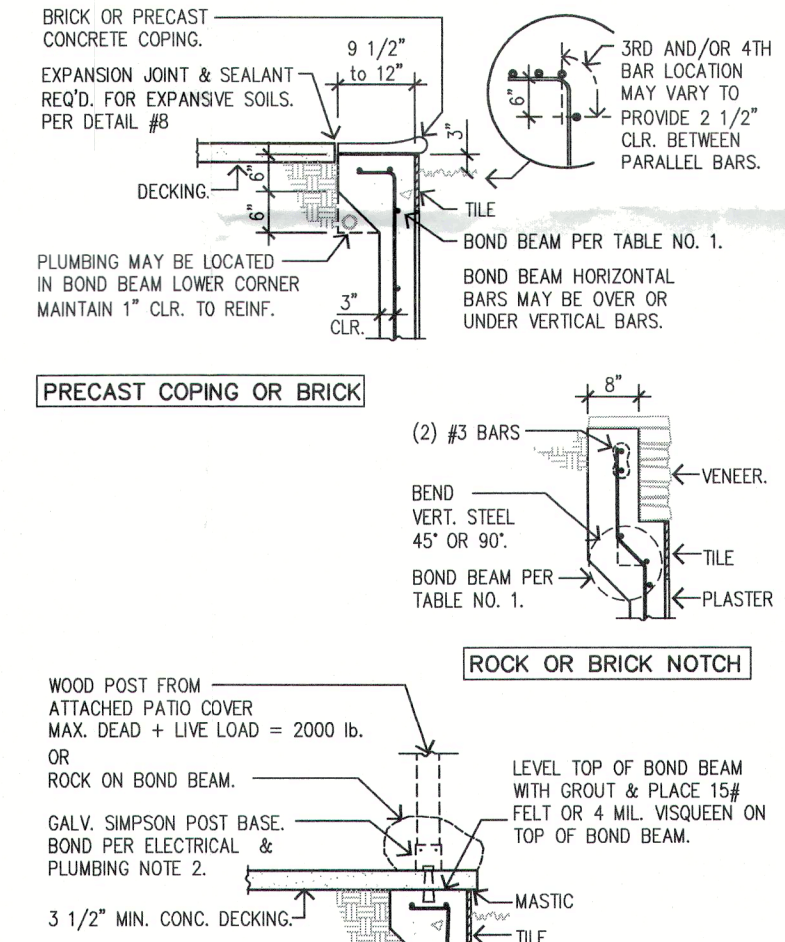
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FREESTANDING POOL WALL

N.T.S.

11



BOND BEAM DETAILS

N.T.S.

12

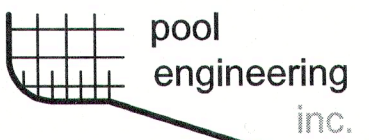
EXPANSIVE SOIL DETAILS

N.T.S.

8

COMMERCIAL POOL STRUCTURAL PLAN

PREPARED IN ACCORDANCE WITH 2015 INTERNATIONAL BUILDING CODE



Ron Lacher, R.C.E.
1201 N. Tustin Ave.
Anaheim, California 92807
Fax: (714) 630-6114
Phone: (714) 630-6100

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