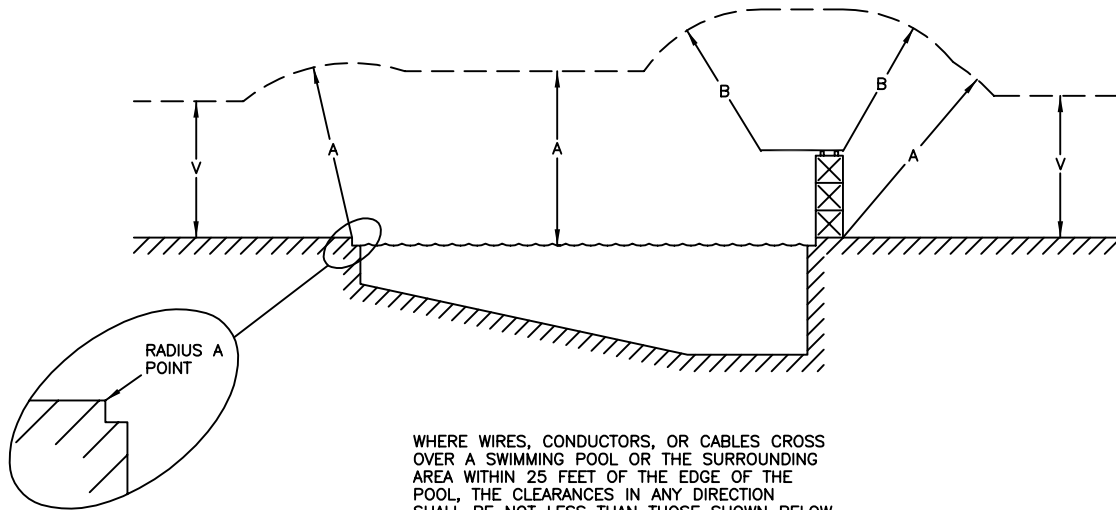




► 2002 NESC, SEE FIG. 234-3, PG. 109



WHERE WIRES, CONDUCTORS, OR CABLES CROSS OVER A SWIMMING POOL OR THE SURROUNDING AREA WITHIN 25 FEET OF THE EDGE OF THE POOL, THE CLEARANCES IN ANY DIRECTION SHALL BE NOT LESS THAN THOSE SHOWN BELOW. (SEE NOTES 1 THRU 6)
2002 NESC, 234E1, PG. 109

ALL VOLTAGES ARE PHASE TO GROUND

INSULATED COMMUNICATION CONDUCTORS; MESSengers; GROUNDED GUYS; NEUTRAL CONDUCTORS (SEE NOTE 7). (FT.)	DUPLEX, TRIPLEX, QUADRUPLEx OF 0-750V (SEE NOTE 6) (FT.)	OPEN-WIRE CONDUCTORS, 0-750V (FT.)	OPEN SUPPLY CONDUCTORS, 751-22 kV (FT.)
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► 2002 NESC, TABLE 234-3, PG. 114

A: CLEARANCE IN ANY DIRECTION FROM THE WATER LEVEL, EDGE OF POOL, BASE OF DIVING PLATFORM, OR ANCHORED RAFT.	22.0	22.5	23.0	25.0
B: CLEARANCE IN ANY DIRECTION TO THE DIVING PLATFORM OR TOWER.	14.0	14.5	15.0	17.0
V: VERTICAL CLEARANCE OVER ADJACENT LAND.	CLEARANCES SHALL BE AS REQUIRED BY C1101A			

CLEARANCES OVER OTHER WATER AREAS
2002 NESC, TABLE 232-1, PG. 78

1. WATER AREAS NOT SUITABLE FOR SAILBOATING OR WHERE SAILBOATING IS PROHIBITED (SEE NOTE 5).	14.0	14.5	15.0	17.0
2. WATER AREAS SUITABLE FOR SAILBOATING INCLUDING LAKES, PONDS, RESERVOIRS, RIVERS, STREAMS AND CANALS WITH AN UNOBSTRUCTED SURFACE AREA OF: (SEE NOTES 8, 9 AND 10)				
a) LESS THAN 20 ACRES	17.5	18.0	18.5	20.5
b) 20 TO 200 ACRES	25.5	26.0	26.5	28.5
c) OVER 200 TO 2000 ACRES	31.5	32.0	32.5	34.5
d) OVER 2000 ACRES	37.5	38.0	38.5	40.5
3. PUBLIC OR PRIVATE LAND AND WATER AREAS POSTED FOR RIGGING OR LAUNCHING SAILBOATS. 2002 NESC, TABLE 232-3G, PG. 83	CLEARANCE ABOVE GROUND SHALL BE 5 FT. GREATER THAN IN 2 ABOVE, FOR THE TYPE OF WATER AREAS SERVED BY THE LAUNCHING SITE.			

SEE C1105B FOR NOTES

► = REVISION MARK

CLEARANCE OF WIRES FROM SWIMMING POOLS AND OTHER WATER AREAS

► = REVISION MARK

C1105A

REV: 3

DATE: 10-11-02

APPROVED BY: WWW

C1105A



NOTES:

1. REQUIREMENTS SHOWN ON THIS DRAWING ARE TAKEN FROM "PART 2" AND THE GROUNDING GUIDELINES OF THE 2002 EDITION OF THE NATIONAL ELECTRICAL SAFETY CODE (NEC).
2. THE CLEARANCES SPECIFIED ON THIS DRAWING ARE THE MINIMUM CLEARANCES ALLOWED BASED ON THE WORST-CASE APPLICATION DESCRIBED IN NOTE 3. AMBIENT AIR TEMPERATURE ON THE DAY OF INSTALLATION WILL AFFECT THESE NUMBERS. REFERENCE SHOULD BE MADE TO SECTION 3 OF THE OVERHEAD CONSTRUCTION STANDARDS REGARDING SAGS AND TENSIONS FOR VARIOUS CONDUCTORS AND TEMPERATURES.
3. MINIMUM CLEARANCES APPLY UNDER WHICHEVER CONDITIONS OF THE FOLLOWING CONDUCTOR TEMPERATURE AND LOADING CONDITIONS PRODUCES THE CLOSEST APPROACH:
 - A. VERTICAL AND HORIZONTAL ('02 NEC DOES NOT REQUIRE WIND DISPLACEMENT FOR SWIMMING POOLS):
 - 1) 120° F, NO WIND DISPLACEMENT, FINAL SAG. 2002 NEC, 234A1a, PG. 96
 - 2) THE MAXIMUM CONDUCTOR TEMPERATURE FOR WHICH THE LINE IS DESIGNED TO OPERATE, IF GREATER THAN 120° F, NO WIND DISPLACEMENT, FINAL SAG. 2002 NEC, 234A1b, PG. 96
 - 3) 32° F, NO WIND DISPLACEMENT, FINAL SAG, WITH 1/2" RADIAL ICE. 2002 NEC, 234A1c, PG. 96
4. FOR VOLTAGES BETWEEN 22 AND 470 KV, THE CLEARANCE SPECIFIED ABOVE SHALL BE INCREASED AT THE RATE OF 0.4 INCH PER KILOVOLT IN EXCESS OF 22 KV. ALL CLEARANCES FOR LINES OVER 50 KV SHALL BE BASED ON THE MAXIMUM OPERATING VOLTAGE. 2002 NEC, 234G, PG. 117
5. THE NATIONAL ELECTRICAL CODE (NEC), 2002 EDITION, ARTICLE 680-8 STATES THAT THE FOLLOWING PARTS OF SWIMMING OR WADING POOLS SHALL NOT BE PLACED UNDER EXISTING SERVICE-DROP CONDUCTORS OR ANY OTHER OPEN OVERHEAD WIRING; NOR SHALL SUCH WIRING BE INSTALLED ABOVE THE FOLLOWING:
 - a) SWIMMING AND WADING POOLS AND THE AREA EXTENDING 10 FEET HORIZONTALLY FROM THE INSIDE OF THE WALLS OF THE POOL.
 - b) DIVING STRUCTURE.
 - c) OBSERVATION STANDS, TOWERS, OR PLATFORMS.
 UNLESS SUCH INSTALLATION PROVIDES THE REQUIRED CLEARANCES OF PAGE 1105A.
6. THESE RULES DO NOT APPLY TO DUPLEX, TRIPLEX, OR QUADRUPLIX OF 0 TO 750V WHEN THESE FACILITIES ARE 10 FEET OR MORE HORIZONTALLY FROM THE EDGE OF THE POOL, DIVING PLATFORM, OR TOWER. SEE C1101A. 2002 NEC, 234E1 EXCEPTION 2, PG. 109
7. NEUTRAL CONDUCTORS WHICH ARE EFFECTIVELY GROUNDING THROUGHOUT THEIR LENGTH AND ASSOCIATED WITH CIRCUITS OF 0 TO 22 KV TO GROUND MAY HAVE THE SAME CLEARANCES AS GUYS AND MESSENGERS. ALL OTHER NEUTRAL CONDUCTORS OF SUPPLY CIRCUITS SHALL HAVE THE SAME CLEARANCES AS THE PHASE CONDUCTORS OF THE CIRCUIT WITH WHICH THEY ARE ASSOCIATED. 2002 NEC, 234E, PG. 70
8. WHERE THE U.S. ARMY CORPS OF ENGINEERS, OR THE STATE, OR SURROGATE THEREOF HAS ISSUED A CROSSING PERMIT, CLEARANCES OF THAT PERMIT SHALL GOVERN. 2002 NEC, NOTE 21, PG. 80
9. FOR CONTROLLED IMPOUNDMENTS, THE SURFACE AREA AND CORRESPONDING CLEARANCES SHALL BE BASED UPON THE DESIGN HIGH WATER LEVEL. FOR OTHER WATERS, THE SURFACE AREA SHALL BE THAT ENCLOSED BY ITS ANNUAL HIGH WATER MARK, AND CLEARANCES SHALL BE BASED ON THE NORMAL FLOOD LEVEL. THE CLEARANCE OVER RIVERS, STREAMS, AND CANALS SHALL BE BASED UPON THE LARGEST SURFACE AREA OF ANY 1 MILE LONG SEGMENT THAT INCLUDES THE CROSSING. THE CLEARANCE OVER A CANAL, RIVER, OR STREAM NORMALLY USED TO PROVIDE ACCESS FOR SAILBOATS TO A LARGER BODY OF WATER SHALL BE THE SAME AS THAT REQUIRED FOR THE LARGER BODY OF WATER. 2002 NEC, NOTE 3, PG. 83
10. WHERE AN OVERWATER OBSTRUCTION RESTRICTS VESSEL HEIGHT TO LESS THAN THE FOLLOWING: 2002 NEC, TABLE 232-3, PG. 83

FOR A SURFACE AREA IN ACRES OF	A REFERENCE VESSEL HEIGHT IN FEET OF
LESS THAN 20	16
20 TO 200	24
OVER 200 TO 2000	30
OVER 2000	36

THE REQUIRED CLEARANCE MAY BE REDUCED BY THE DIFFERENCE BETWEEN THE REFERENCE VESSEL HEIGHT GIVEN ABOVE AND THE OVERWATER OBSTRUCTION HEIGHT, EXCEPT THAT THE REDUCED CLEARANCE SHALL NOT BE LESS THAN THAT REQUIRED FOR THE SURFACE AREA ON THE LINE-CROSSING SIDE OF THE OBSTRUCTION. 2002 NEC, NOTE 4, PG. 83

▶ = REVISION MARK

CLEARANCE OF WIRES FROM SWIMMING POOLS AND OTHER WATER AREAS

▶ = REVISION MARK

C1105B

REV: 3

DATE: 10-11-02

APPROVED BY: WWW

C1105B