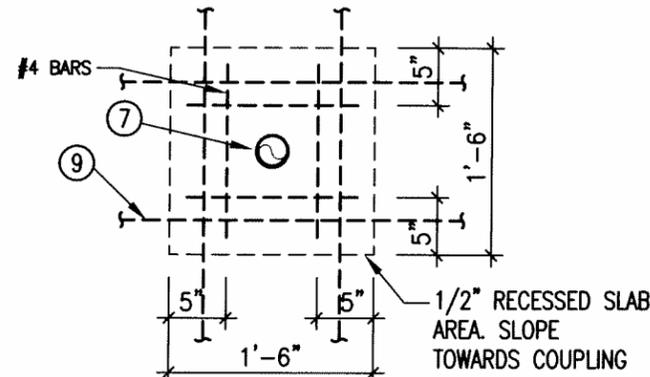


STORAGE IN GALLONS						
H HEIGHT (FEET)	D WATER DEPTH (FEET)	D INSIDE DIAMETER (FEET)				
		10	15	20	25	30
2	1.75	1,028	2,313	4,113	6,426	9,253
4	3.75	2,203	4,957	8,813	13,770	19,829
6	5.75	3,378	7,601	13,513	21,114	30,404
8	7.75	4,553	10,245	18,213	28,458	40,979
10	9.75	5,728	12,889	22,913	35,802	51,555



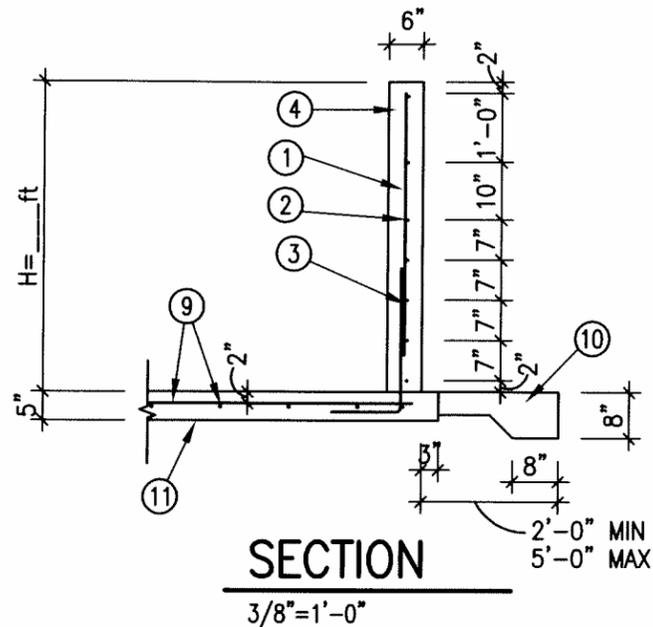
SUMP DETAIL

NO SCALE

KEYED NOTES

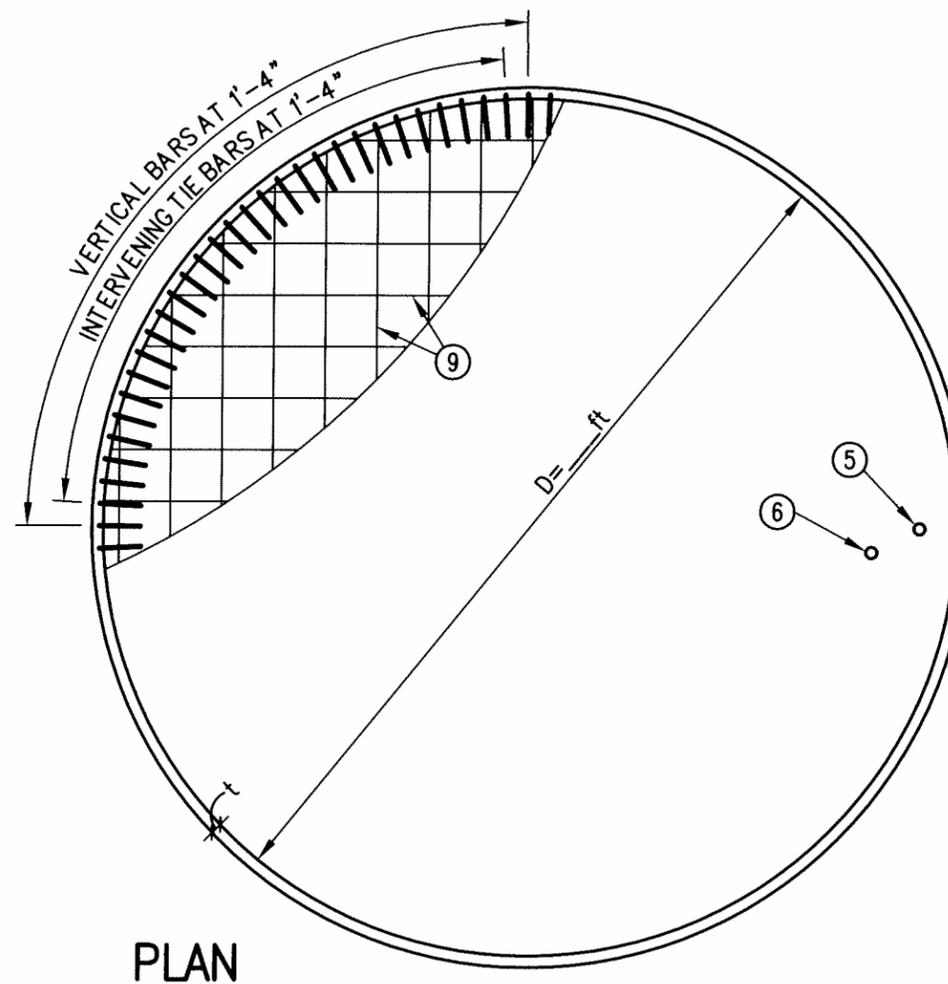
AS INDICATED BY:

- ① VERTICAL REINFORCING #3 BARS
- ② HORIZONTAL REINFORCING:
#3 UP TO H=6'-0"
#4 FOR H=6'-0" TO 10'-0"
- ③ INTERVENING TIE BARS #3 \perp 27"
15"
- ④ CIRCULAR CONCRETE TANK WALL
- ⑤ 2" OUTLET PIPE
- ⑥ 2" OVERFLOW & DRAIN PIPE OR PROVIDE AUTOMATIC LEVEL CONTROL VALVES AND FLOAT.
- ⑦ 2" THREADED COUPLING.
- ⑧ SMALL SUMP REFER DETAIL THIS SHEET.
- ⑨ SLAB REINFORCEMENT #3 AT 12" EACH WAY
- ⑩ 4" THICK CONCRETE APRON - PROVIDE CONCRETE MIX WITH 1.0 POUNDS PER CUBIC YARD OF POLYPROPYLENE FIBERS SPECIFICALLY INTENDED FOR USE AS SECONDARY CONCRETE REINFORCEMENT.
- ⑪ DRAIN PIPE IS REQUIRED AND MUST DISCHARGE AT A POINT AWAY FROM THE WATERING FACILITY THAT IS STABLE AND SUITABLE FOR RELEASE OF DRAIN AND/OR OVERFLOW WATER.
PLANNED MINIMUM LENGTH: _____ FT.
INSTALLED LENGTH: _____ FT.



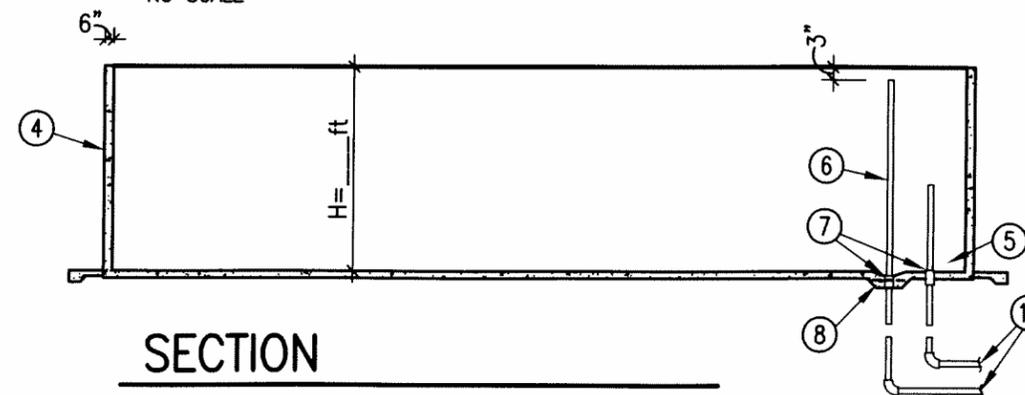
SECTION

3/8"=1'-0"



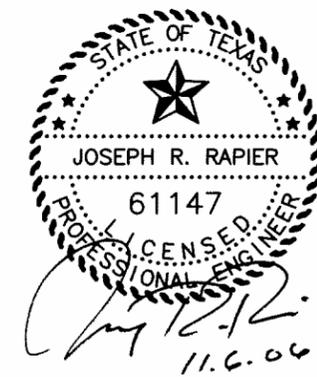
PLAN

NO SCALE



SECTION

NO SCALE



THIS DRAWING WAS PREPARED FOR APCS BY:

DESIGNED BY: SRS
DRAWN BY: AND
CHECKED BY: EED
FILE NAME: TX-EN-0495.DWG
DATE PLOTTED: 28 MAY 2008

WATERING FACILITY REINFORCED CONCRETE FLOOR WITH FORMED REINFORCED CONCRETE WALLS (MAXIMUM 10' HEIGHT AND MAXIMUM 30' DIAMETER)



NRC
Natural Resources Conservation Service
U.S. Department of Agriculture

REVISIONS DATE

DRAWING NO.
TX-EN-0495

SHEET

GENERAL NOTES

1. DIMENSIONS MAY VARY AS FOLLOWS: MAXIMUM DIAMETER OF 30 FEET; MAXIMUM HEIGHT 10 FEET.
2. MATERIAL PROPERTIES
 CONCRETE; FLOOR SLAB AND WALLS: 3000psi AT 28 DAYS
 REINFORCING: GRADE 60 ASTM A-615
 PIPING: NEW GALVANIZED, BRONZE, COOPER, OR PLASTIC PVC. PVC SHALL BE SCHEDULED 40 OR SCHEDULE 80 IF THREADED
3. OVERFLOW MAY BE PASSED THROUGH WATERING TROUGH TO KEEP SCUM REMOVED FROM TROUGH.
4. VALVES OR PIPES SHALL BE PROTECTED BY SHIELDS OR COVERS TO PREVENT DAMAGE BY LIVESTOCK.
5. CONSTRUCTION PROCEDURES:
 - A. PREPARE FOUNDATION BY LEVELING AND SMOOTHING AREA WHERE FACILITY IS TO BE CONSTRUCTED. EXCAVATE TRENCH FOR WALL FOOTING. A MINIMUM OF A 4" LAYER OF LOOSE FRIABLE MATERIAL IS REQUIRED BETWEEN BOTTOM OF THE CONCRETE FLOOR SLAB AND SUBGRADE. THIS LAYER SHALL BE FREE OF DEBRIS AND ROCKS OR PEBBLES LARGER THAN 1/2 INCH IN DIAMETER. THE OUTLET AND DRAIN PIPES SHOULD BE POSITIONED BEFORE FINAL SMOOTHING OF THE FOUNDATION. PLACE A VAPOR BARRIER CONSISTING OF POLYETHYLENE SHEET 10 MILS THICK BETWEEN THE SUBGRADE AND THE CONCRETE.
 - B. REINFORCING STEEL IS TIED IN PLACE BY TYING THE VERTICAL BARS TO THE FIRST THREE RING BARS. GUY THE VERTICAL BARS IF NECESSARY FOR RIGIDITY. SPLICES IN THE RING BARS ARE TO BE LAPPED A MINIMUM OF 18 INCHES. RIG THE INTERVENING TIE BARS SO THAT THE HORIZONTALLY PROJECTING LEG IS 2 INCHES BELOW THE FINISHED SURFACE OF THE FLOOR SLAB. TIE THE FLOOR SLAB REINFORCEMENT IN PLACE SO THAT IT IS 2 INCHES BELOW THE FINISHED SURFACE OF THE FLOOR SLAB. THE SLAB REINFORCEMENT WILL REST ON THE HORIZONTALLY PROJECTING LEGS OF THE VERTICAL BARS. SPLICES IN THE SLAB REINFORCEMENT WILL BE LAPPED A MINIMUM OF 12 INCHES.
 - C. MAINTAIN A 2" CLEAR COVER FOR ALL CONCRETE.
 - D. THE CONCRETE FOR THE FLOOR SLAB IS POURED AFTER THE VERTICAL BARS, THE INTERVENING TIE BARS, AND THE SLAB REINFORCEMENT ARE IN PLACE. CARE SHOULD BE USED IN PLACING THE CONCRETE TO AVOID SEGREGATION. THE TOP OF THE FLOOR SLAB SHOULD BE TROWELED TO A REASONABLY SMOOTH FINISH. THE BOND AREA BETWEEN THE FLOOR SLAB AND THE WALL IS TO BE LEFT ROUGH OR ROUGHENED IF NECESSARY TO INSURE A GOOD BOND BETWEEN THE FLOOR AND WALL.
 - E. AFTER THE FLOOR IS POURED THE REMAINING RING BARS ARE TIED IN PLACE. THE FORMS FOR THE WALL ARE TO BE POSITIONED AS SOON AS POSSIBLE AFTER THE PLACEMENT OF THE CONCRETE IN THE FLOOR SLAB. EITHER METAL OR WOOD FORMS MAY BE USED.
 - F. CONCRETE FOR THE WALL SHALL BE POURED AFTER THE FORMS ARE POSITIONED. CARE SHOULD BE USED IN POURING THE CONCRETE TO AVOID SEGREGATION. TAMP THE CONCRETE INTO THE FORMS AS IT IS POURED TO INSURE TIGHT BOND TO REINFORCING STEEL AND TO YIELD A DENSE CONCRETE REASONABLY FREE OF VOIDS. AFTER THE FORMS ARE REMOVED ALL EXPOSED VOIDS SHOULD BE FILLED WITH CEMENT-SAND MORTAR AND THE ENTIRE SURFACE WET RUBBED TO ACCOMPLISH A DENSE SMOOTH SURFACE.
6. INTERVENING TIE BARS WILL NOT BE REQUIRED FOR WALL HEIGHTS OF 3'-0" OR LESS.



FRIABLE MATERIAL QUANTITY (CUBIC YARDS) 4" THICK BEDDING BELOW SLAB					
	DIAMETER - FEET				
	10	15	20	25	30
QUANTITY- cy	1	3	4	6	9

CONCRETE QUANTITY (CUBIC YARDS) CONCRETE WATERING FACILITY DRAWING NO. TX-EN-0495						
		DIAMETER - FEET				
		10	15	20	25	30
WALL HEIGHT - H - FEET	2	3	5	8	12	16
	4	4	7	11	15	19
	6	6	9	13	18	23
	8	7	11	15	21	26
	10	8	13	18	24	30
CONCRETE QUANTITY (CUBIC YARDS) FOR APRON ONLY						
APRON WIDTH - FEET	2	1	1	2	2	2
	3	1	2	2	3	3
	4	2	2	3	3	4
	5	2	3	3	4	4

REINFORCING QUANTITY (FEET) CONCRETE WATERING FACILITY DRAWING NO. TX-EN-0495						
#3 BARS		DIAMETER - FEET				
		10	15	20	25	30
WALL HEIGHT - H - FEET	2	316	599	963	1408	1938
	4	483	721	958	1184	1421
	6	715	1066	1416	1749	2099
	8	508	879	1332	1855	2474
	10	419	620	821	1005	1206
#4 BARS						
WALL HEIGHT - H - FEET	2					
	4					
	6					
	8	378	568	758	946	1136
	10	441	663	884	1104	1324

Notes:

1. QUANTITIES SHOWN INCLUDE WALL AND SLABS.
2. QUANTITIES DO NOT INCLUDE ALLOWANCE FOR WASTE.
3. QUANTITIES ARE ROUNDED UP TO THE NEAREST WHOLE YARD OR FOOT.

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 DRAWN BY: []
 CHECKED BY: []
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 DATE PLOTTED: 21 SEPTEMBER 2008

WATERING FACILITY REINFORCED CONCRETE FLOOR WITH FORMED REINFORCED CONCRETE WALLS (MAXIMUM 10' HEIGHT AND MAXIMUM 30' DIAMETER)



REVISIONS: [] DATE: []
 DRAWING NO. TX-EN-0495
 SHEET 2 OF 2