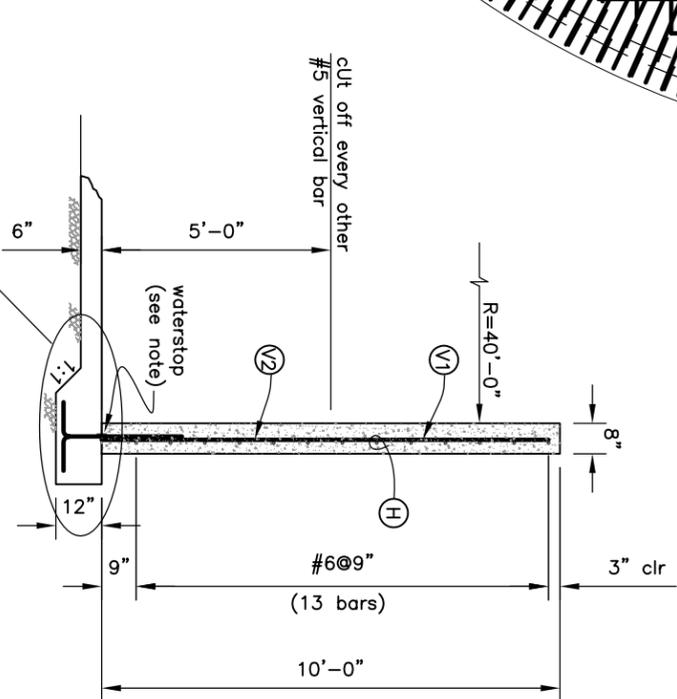


**QUARTER PLAN OF FLOOR STEEL**

NOTE: Circumferential footing steel not shown.



**TYPICAL WALL SECTION**



**CONCRETE SPECIFICATIONS**

- The concrete shall have a minimum compressive strength at 28 days of 3000 psi. Minimum cement content shall be 6 bags/cy and maximum net water content shall be 5.2 gal/bag. The slump shall be 2 to 4 inches and the air content shall be 5 to 8% of the volume of concrete.
- Forms shall be mortar tight, substantial and unyielding and shall be constructed so that the finished concrete will conform to the specified dimensions. Metal ties within the forms shall be equipped with a device that permits their removal to a depth of at least 1 inch without injury to the concrete.
- The concrete shall be deposited as closely as possible to its final position in the forms and around all reinforcement. Immediately after placement the concrete shall be consolidated by vibrating.
- Waterstops shall be held firmly in correct position as the concrete is placed.
- Unless otherwise shown, the concrete cover over reinforcement shall be 3" for concrete cast against earth or gravel and 2" for concrete cast against forms.
- Adjustments to the reinforcing steel around embedded fittings shall be approved in advance by the Engineer.
- Forms shall not be removed before 24 hours after placement of concrete.
- Holes produced by the removal of form ties, cone bolts, etc., shall be cleaned, wetted, and filled with dry pack mortar.
- Construction joints shall be left rough and shall be thoroughly cleaned and wetted prior to placing the subsequent lift of concrete. Construction joints shall be moist cured without curing compound, or curing compound shall be removed by sand blasting or high pressure washing.
- Concrete shall be prevented from drying for a curing period of at least 7 days after it is placed. The slab and footings shall be kept continuously moist for the entire period or until curing compound is applied. Moisture shall be maintained by sprinkling, flooding, covering with plastic sheeting, continuously moistened canvases, cloth mats, straw, or other approved material. The walls shall be thoroughly wetted immediately after forms are removed and shall be kept wet until patching and repairs are made. After patching and repairs are made, curing compound may be applied in lieu of wetting. Curing compound shall meet the requirements of ASTM C 309, Type 2.
- Concrete shall not be dropped more than 5 feet vertically unless suitable equipment is used to prevent segregation.
- Concrete shall be protected from freezing for the first 72 hours after placement.

**DESIGN AND CONSTRUCTION NOTES**

- Waterstops shall be a non-metallic waterstop of vinyl chloride polymer or copolymer 5" wide, 3/16-inch thick, double-bulbed shaped, or similar. If wall is poured in more than one lift, a waterstop shall be used at each construction joint.
- Foundation is to be field investigated to determine adequacy to support structure. Footing bearing pressure used in design is 725 psf.
- Reinforcing steel shall meet the requirements of ASTM A 615, Grade 60. The vertical reinforcing steel in the wall shall be centered in the section.
- The structure is designed for an internal hydrostatic load of 65 psf/ft of depth and an external wind load (net) of 10 psf.
- Warning signs, ladders, ropes, bars, rails, and other devices shall be provided as appropriate to insure the safety of people operating pumping equipment, etc.
- Frost heave potential should be considered on a site-by-site basis. Additional free-draining rock or other protection methods should be provided as needed.
- If backfill is to be placed against this structure, it shall be done in accordance with Oregon Backfill Detail Drawing (filename: or\_awn\_above\_circular\_backfill.dwg).
- Design folder is available at:  
 USDA - NRCS  
 1201 NE Lloyd Blvd., Suite 900  
 Portland, Oregon 97232  
 Attn: State Conservation Engineer

**ESTIMATED QUANTITIES**

Concrete (to neat lines)	
Item	Volume (cy)
Floor & Footing	114.6
Walls	62.6
<b>Total</b>	<b>177.2</b>

Steel Reinforcement (including splices)		
Bar No.	Length (ft)	Weight (lbs)
4	9,889	6,606
5	3,591	3,746
6	3,852	5,746

**LAP SPlice LENGTHS**

bar size	lap length
#4	18"
#5	28"
#6	34"

All laps in the horizontal wall steel shall be staggered at least one lap length.

**UTILITY NOTE:**

NRCS makes no representation as to the existence or non-existence of utilities. It is the responsibility of landowners or operators and contractors to comply with the provisions of ORS 757.541 to 757.571. Landowners or operators and contractors will be liable for any damage resulting from disruption of service caused by construction activities.

**LANDOWNER ACKNOWLEDGMENT STATEMENT**

I have reviewed the drawings and applicable specifications and understand their construction requirements.

Landowner/Operator \_\_\_\_\_

Date \_\_\_\_\_

Practice Code \_\_\_\_\_ Job Class \_\_\_\_\_

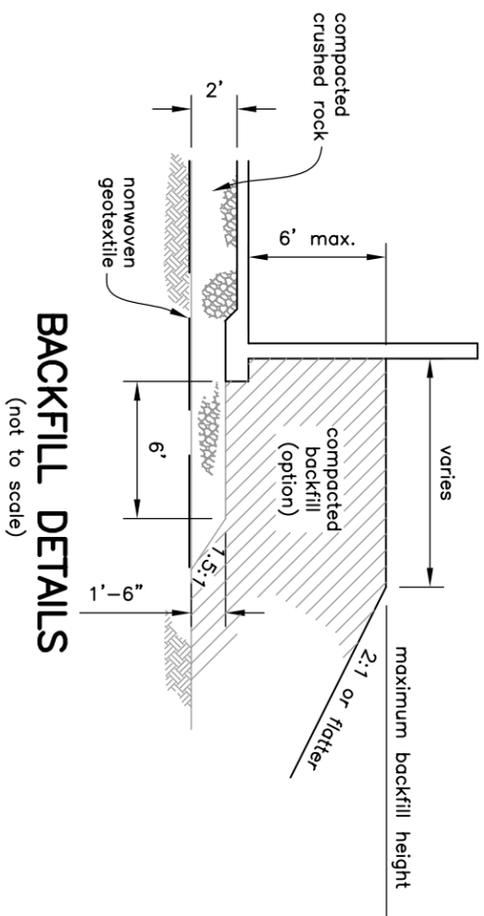
	Date
Designed <b>Ben Doerge</b>	10/2000
Drawn <b>LLK / KLY</b>	10/2000
Checked <b>Ben Doerge</b>	10/2000
Approved <b>Dave Dishman</b>	9/2000
Title <b>State Conservation Engineer</b>	

**WASTE STORAGE TANK**  
 ABOVE GROUND CIRCULAR CONCRETE  
 10' HIGH X 80' DIA. - 50,265 Cu Ft.



File Name  
or\_awn\_above\_10h80dia.dwg  
Drawing No.

**STANDARDIZED DESIGNS**  
 Must Be Adopted To The Specific Site

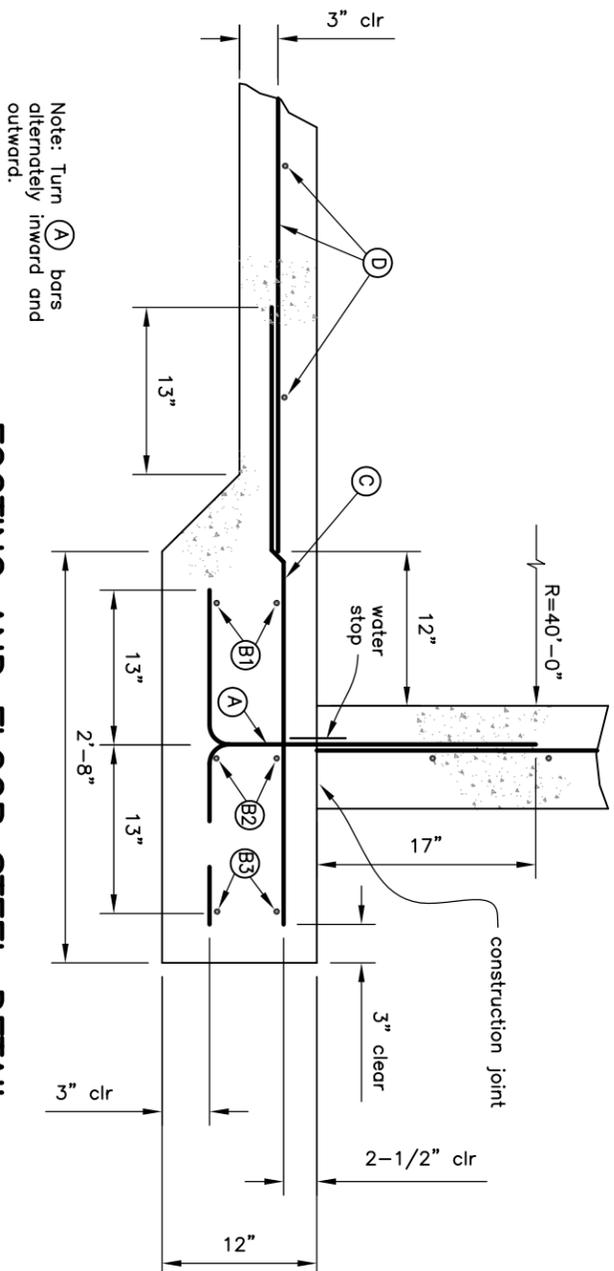


- NOTES:**
- Strip all vegetation, organic matter and unsuitable material from foundation.
  - Level entire foundation area by excavating to a level surface (no fill allowed).
  - Overlap adjacent panels of geotextile 3 feet (minimum).
  - Backfill to top of footing (min.) after removal of forms.
  - See Oregon Backfill Detail Drawing (filename: or\_awn\_above\_circular\_backfill.dwg) for additional backfill details.
  - The crushed rock shall consist of hard, durable mineral particles with no more than 12% (by dry weight) passing the No. 200 sieve.
  - The crushed rock shall be compacted in 12-inch lifts by at least two passes of a smooth drum roller, or approved equivalent method.

### Requirements for Nonwoven Geotextiles

Property	Units	Test Method	Maximum Rock Size on Geotextile	
			Larger than 3-inch Class I	3-inch or smaller Class IV
Tensile Strength (MARV)	pounds	ASTM D4632 Grub Test	180 minimum	115 minimum
Bursting Strength (MARV)	psi	ASTM D3786 Diaphragm Tester	320 minimum	180 minimum
Elongation at Failure (MARV)	percent	ASTM D4632	>50	>50
Puncture	pounds	ASTM D4833	80 minimum	40 minimum
Ultraviolet Light	percent residual tensile strength	ASTM D4355 (150 hrs. exposure)	70 minimum	70 minimum
Apparent Opening Size	U.S. Standard Sieve Size	ASTM D4751	Max. #40	Max. #40
Permeivity	sec <sup>-1</sup>	ASTM D4491	0.70 minimum	0.70 minimum

MARV = Minimum Average Roll Value (weakest principal direction)



Note: Turn (A) bars alternately inward and outward.

### FOOTING AND FLOOR STEEL DETAIL

(not to scale)

### STEEL SCHEDULE

Quantity	Mark	Bar Type	Bar Size	a	b	L*	Spacing
338	(A)	A	#5	26"	13"	3'-3"	9" @ R=40'-4"
2	(B1)	C	#4	-	-	247'-1 1/2"	Circumferential bars @ R=39'-4"
2	(B2)	C	#4	-	-	253'-9 1/2"	Circumferential bars @ R=40'-4"
2	(B3)	C	#4	-	-	259'-8 1/2"	Circumferential bars @ R=41'-4"
338	(C)	C	#4	-	-	4'-0"	9" @ R=40'-4"
-	(D)	C	#4	-	-	varies	18" each way, floor steel
13	(H)	C	#6	-	-	253'-9 1/2"	9"
169	(V1)	C	#5	-	-	9'-9"	18" @ R=40'-4", alt. w/ (V2) bars
169	(V2)	C	#5	-	-	5'-0"	18" @ R=40'-4", alt. w/ (V1) bars

\* Lengths shown do not include splice lengths.



Date	
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