

GENERAL NOTES:

- Concrete shall be designed to provide a 28-day compressive strength of 4000 PSI. All concrete shall be 6 inches thick. The concrete shall be placed with all the steel tied securely in place on 3 inch of approved base course material.
- The walls and the floor will be built with expansion joints. No section of wall or floor will be over 30 foot long between expansion joints. See Expansion Joint Details.
- A construction joint must be placed anywhere the concrete placement is not continuous. See Construction Joint Notes on page 4
- Steel in the floor shall be #4 rebar at 12 inches each way, or 6"x 6"x 8/8 WWF.
- The steel in the walls shall be #4 rebar, with spacing as shown. The vertical rebar in the endwall shall be bent 90 degrees with the shorter leg of rebar tied to the floor reinforcing. The steel in the sloped walls shall be bent as shown on Steel Schedule. Where the #4 rebar join other #4 rebar, the bar lap shall be a minimum of 15 inches, unless noted.
- The 18 inch diameter pipe inlet of the basin drain shall have 3 rows of 1 inch x 4 inch vertical slots with a 4 inch space between rows and 3 slots per row spaced at 120 degree intervals around the pipe. Start the bottom row of slots of 1 inch from the bottom of the pipe and stagger the slots between rows.
- The entire inlet may be covered with 2 layers of 1/2 inch mesh hardware cloth loosely wrapped to allow for lifting and cleaning.
- PVC pipe shall meet the requirements of ASTM D-1785 PVC PLASTIC PIPE SCHEDULE 40 or 80.
- Dual wall PE pipe shall meet the requirements of ASTM F2306 or F2648 and shall have watertight joints (for basin outlet).
- Corrugated Metal Pipe (CMP) shall be 14 gauge (0.079) or thicker.
- Basin width and length are inside dimensions. Basin length excludes the ramp. Flat work includes the key wall at top of ramp and the extensions of the floor underneath the walls.
- Approved base course material includes IDOT Grad No. CA 7, 8, 11, 12, 13, 14, 15, 16, or FA 1, 2, 4.

Slope Wall Height Above Floor, Ft. = 2
End Wall Height Above Floor, Ft. = 3

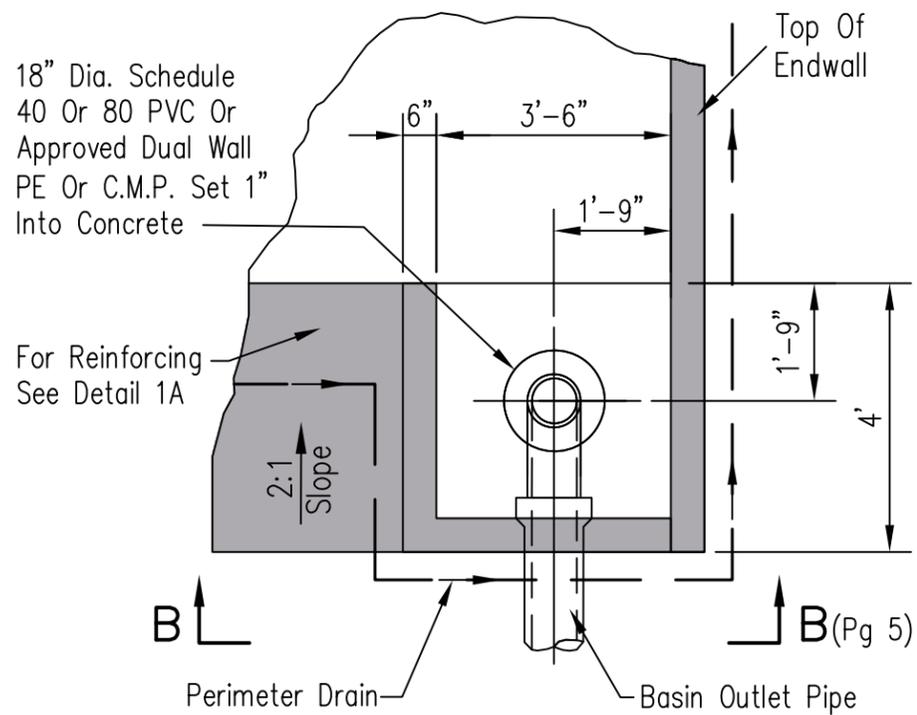
Date	5/1/14
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**ANIMAL WASTE MANAGEMENT
SETTLING BASIN DETAILS
SLOPING SIDEWALLS**

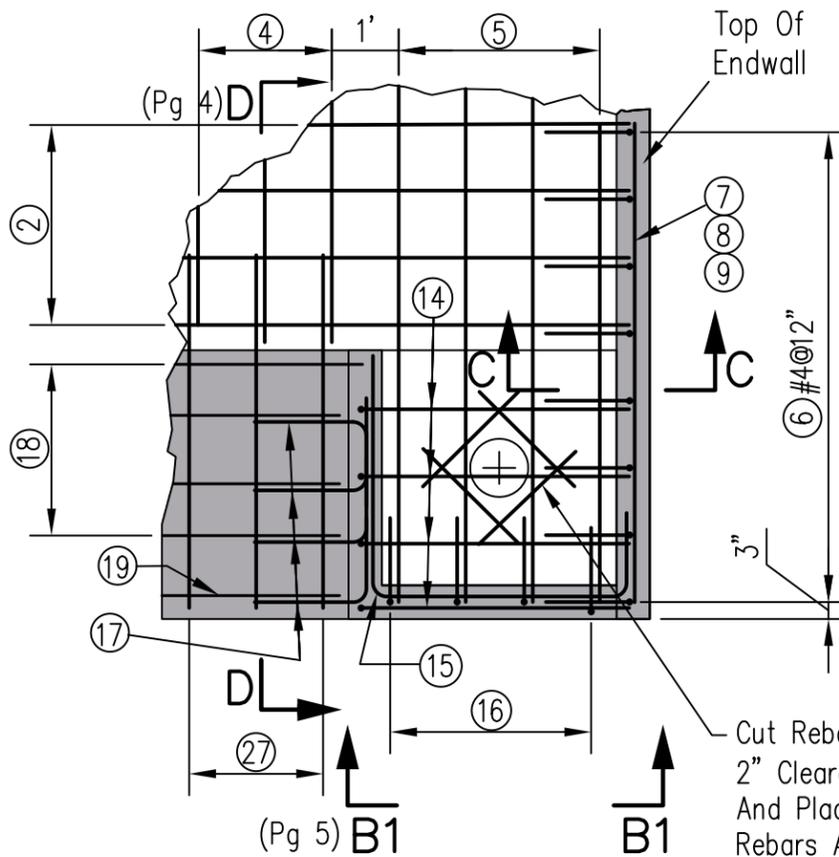


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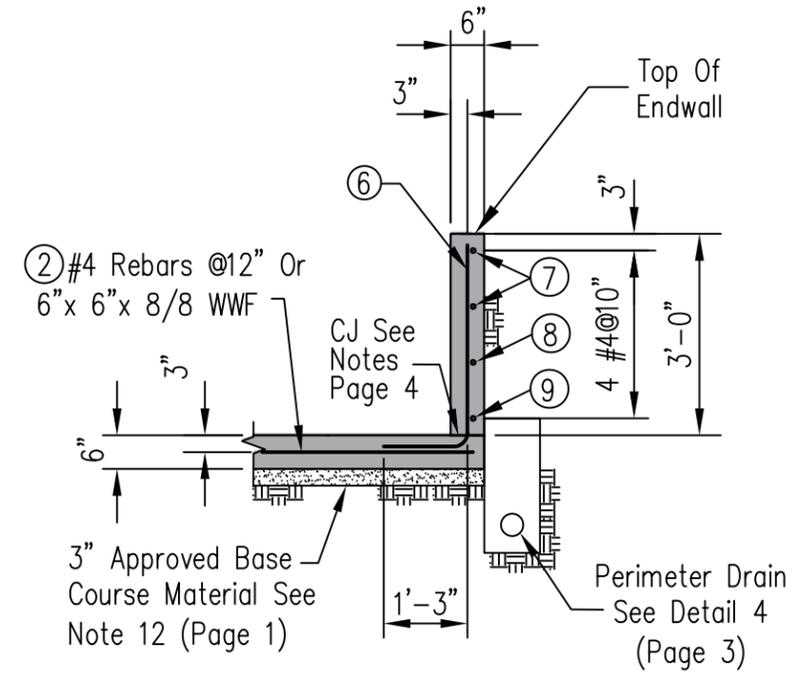
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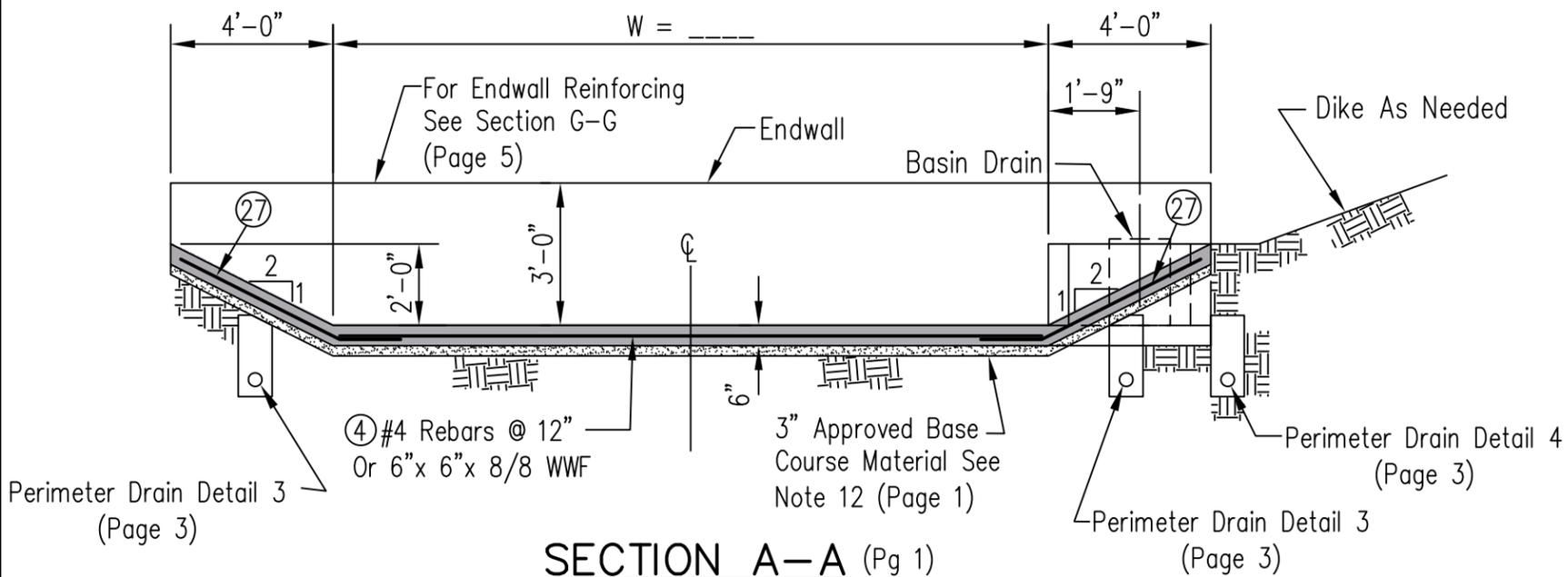
DETAIL 1 (Pg 1)
Scale 3/8" = 1'-0"



DETAIL 1A (Pg 6)
Scale 3/8" = 1'-0"



SECTION C-C (Pg 1)
Scale 3/8" = 1'-0"



SECTION A-A (Pg 1)
Scale 1/4" = 1'-0"

ESTIMATED QUANTITIES		
ITEM	UNIT	QUANTITY
Concrete (28 Days, 4000 PSI)	Cu. Yd.	
Reinforcing Steel #4 Rebars	Lbs.	
Reinforcing 6"x 6"x 8/8 WWF	Sq. Ft.	
3/4"x 18" Long Plain Steel Dowel Bar	Lin. Ft.	
Expansion Chamber	Each	
6" Nonmetallic Water Stop	Lin. Ft.	
18" Dia. Basin Drain Pipe Inlet	Lin. Ft.	2'-1 1/2"
Basin Drain PVC Long Radius Elbow - 8" Dia.	Each	1
Basin Outlet _____ Dia. _____ Pipe	Lin. Ft.	
Base Course Material	Tons	
Perimeter Drain Fill	Tons	
4" Perforated CPT	Lin. Ft.	

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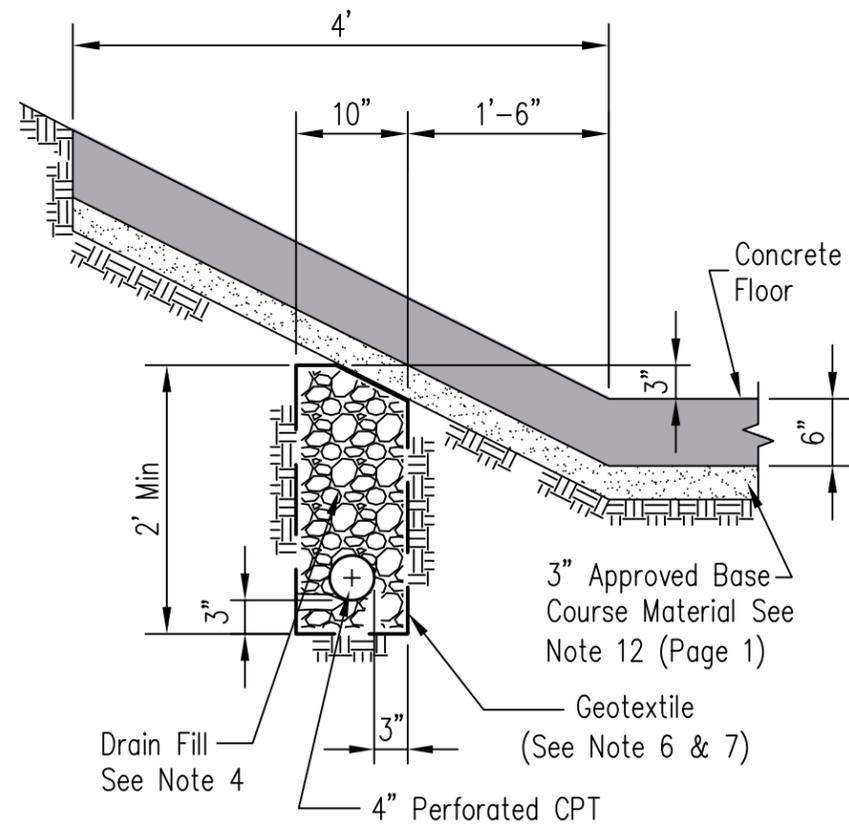
**ANIMAL WASTE MANAGEMENT
SETTLING BASIN DETAILS
SLOPING SIDEWALLS**



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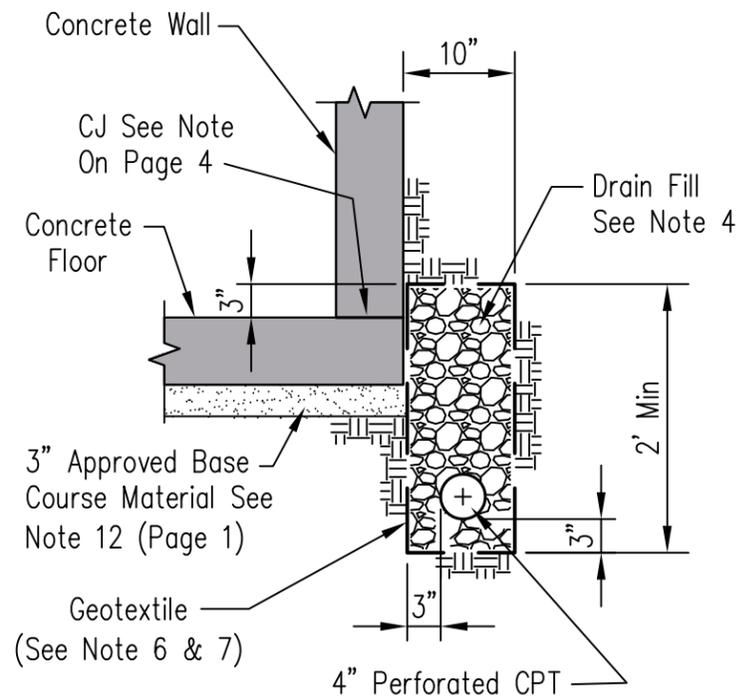
Approximate Concrete Volume For Settling Basin

Basin (L) Length, Ft.	20		30		40		50		60		80		100	
	Flat Work	Formed Work												
Basin (W) Width, Ft.	Cu. Yds.	Cu. Yds.												
10	9.9	9.2	11.7	10.9	13.6	12.6	15.4	14.2	17.3	15.9	21.0	19.2	24.7	22.5
12	11.8	9.4	14.0	11.0	16.3	12.7	18.5	14.3	20.7	16.0	25.1	19.3	29.6	22.6
14	13.7	9.5	16.3	11.1	18.9	12.8	21.5	14.4	24.1	16.1	29.3	19.4	34.5	22.7
16	15.6	9.6	18.6	11.2	21.6	12.9	24.5	14.5	27.5	16.2	33.4	19.5	39.4	22.8
20	19.5	9.8	23.2	11.5	26.9	13.1	30.6	14.8	34.3	16.4	41.7	19.7	49.1	23.0
24	23.3	10.0	27.8	11.7	32.2	13.3	36.7	15.0	41.1	16.6	50.0	20.0	58.9	23.3
28	27.2	10.2	32.4	11.9	37.5	13.6	42.7	15.2	47.9	16.9	58.3	20.2	68.6	23.5
32	31.0	10.5	36.9	12.1	42.9	13.8	48.8	15.4	54.7	17.1	66.6	20.4	78.4	23.7
36	34.8	10.7	41.5	12.3	48.2	14.0	54.8	15.7	61.5	17.3	74.8	20.6	88.2	23.9
40	38.7	10.9	46.1	12.6	53.5	14.2	60.9	15.9	68.3	17.5	83.1	20.8	97.9	24.2



PERIMETER DRAIN DETAIL 3

Scale 3/4" = 1'-0"



PERIMETER DRAIN DETAIL 4

Scale 3/4" = 1'-0"

DRAINAGE NOTES:

1. Provide perimeter drain to adequate outlet if water table can rise above floor level.
2. Perimeter drain pipe and gravel/geotextile filter is to be routed around 3 sides of the basin and drain freely to a surface water outlet or other subsurface drainage outlet.
3. Perimeter drain pipe and fittings shall be perforated corrugated polyethylene (CPT) meeting ASTM specifications listed below:

CPT	ASTM F405, F667
Dual Wall CPT	ASTM F2306, F2648, F405, F667

4. Drain fill shall consist of sand, gravel or concrete aggregate mixture with a maximum size of 3" and not more than 5% passing a #200 sieve. Qualifying IDOT gradations for drain fill include:
CA-1, CA-3, CA-5, CA-7, CA-8, CA-11, CA-12, CA-13, CA-14, CA-15, CA-16, CA-18
5. Geotextile (non-woven, needle punched) minimum criteria:
Grab tensile strength (lb) ASTM D 4632.....202
Elongation at failure (%) ASTM 4632.....≥50
Trapezoidal tear strength (lb) ASTM D 4533.....79
Puncture strength (lb) ASTM D 6241.....433
Ultraviolet light (% retained strength) ASTM D 4355.....min 50
Apparent opening size (AOS) ASTM D 4751.....
max 0.22 mm (US sieve size 70)
Permittivity sec⁻¹ ASTM D 4491.....min 0.70
6. Any geotextile splices shall overlap a minimum 18 inches.
7. Geotextile shall encase all drain fill.

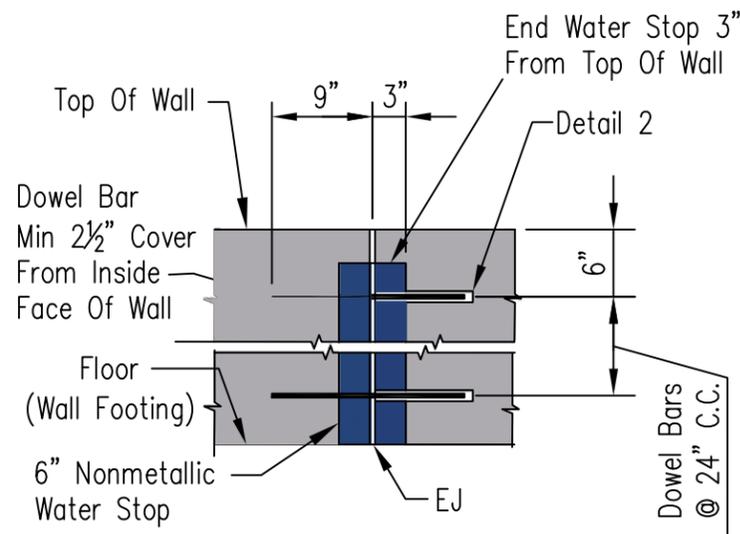
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SETTLING BASIN DETAILS
SLOPING SIDEWALLS**

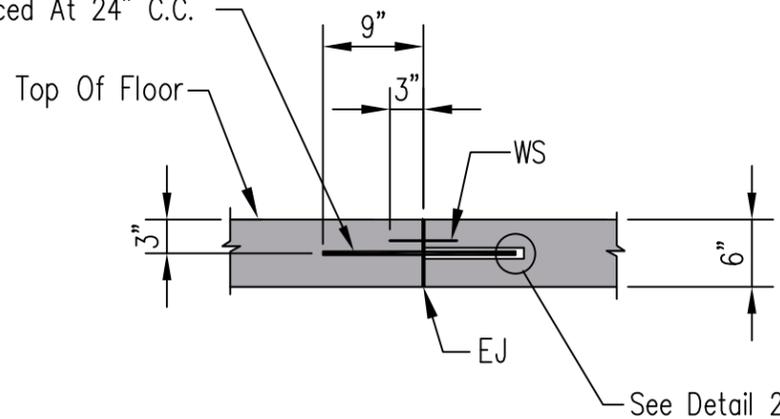


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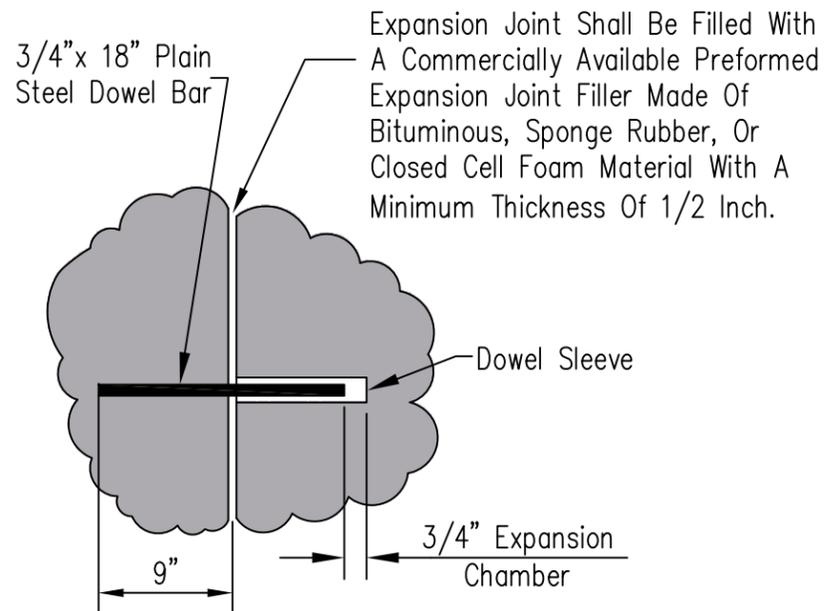


Spacing Not Greater Than 30' C.C.
EXPANSION JOINT
DETAIL-WALL
 Scale 3/4" = 1'-0"

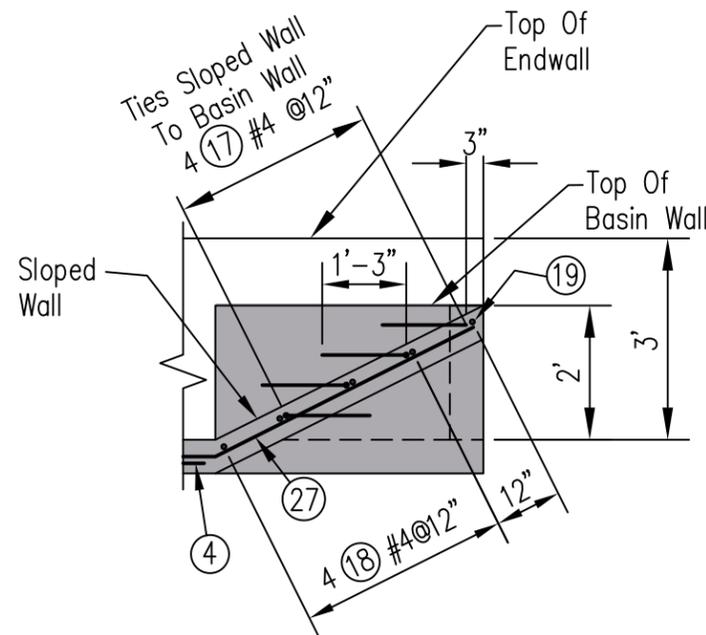
Dowel Bar (3/4" Dia. Plain Steel Bar 18" Long With Expansion Chamber For 3/4" Joint Expansion) Spaced At 24" C.C.



EXPANSION JOINT
DETAIL-FLOOR
 Scale 3/4" = 1'-0"



DETAIL 2
 Scale 1" = 1'-0"



SECTION D-D (Pg 2)
 Scale 3/8" = 1'-0"

Construction Joint Notes

1. A construction joint must be prepared when the concrete pour is not continuous, typically between the floor and wall.
2. Prepare all surfaces that will be in contact with new concrete as per note 5.
3. Let concrete cure at least 12 hours prior to steel tying and form construction for the next pour.
4. New concrete must not be placed until the hardened concrete has cured at least 12 hours.
5. Construction joints must be prepared using one of the following two methods:

Method 1 – Water–Air or Sandblasting. Clean the joint surface of all unsatisfactory concrete, laitance, coating, stains, and debris by sandblasting or high–pressure air–water cutting, or both. Sandblasting can be used after the concrete has gained sufficient strength to resist excessive cutting, and high–pressure air–water cutting can be used as soon as the concrete has hardened sufficiently to prevent the jet from displacing the coarse aggregates. The surface of the concrete in place must be cut to expose clean, sound aggregate, but not so deep as to undercut the edges of larger particles of the aggregate. Cut the surface to at least 1/4" depth. Thoroughly wash the surface to remove all material after cutting.

Method 2 – Mechanical. Clean the joint surface of all unsatisfactory concrete, laitance, coatings, stains, and debris by washing and scrubbing with a wire brush, wire broom, or other means approved by the engineer to expose coarse aggregate without displacing it. The surface must be roughened to at least 1/4" depth.

6. All construction joints must be wetted and standing water removed immediately before new concrete is placed.
7. New concrete must be sufficiently vibrated to ensure good contact into the prepared joint.
8. Keyways or steel plates cannot be substituted for the construction joint methods above.

LEGEND

- WS = 6" Nonmetallic Water Stop
- EJ = Expansion Joint
- CJ = Construction Joint

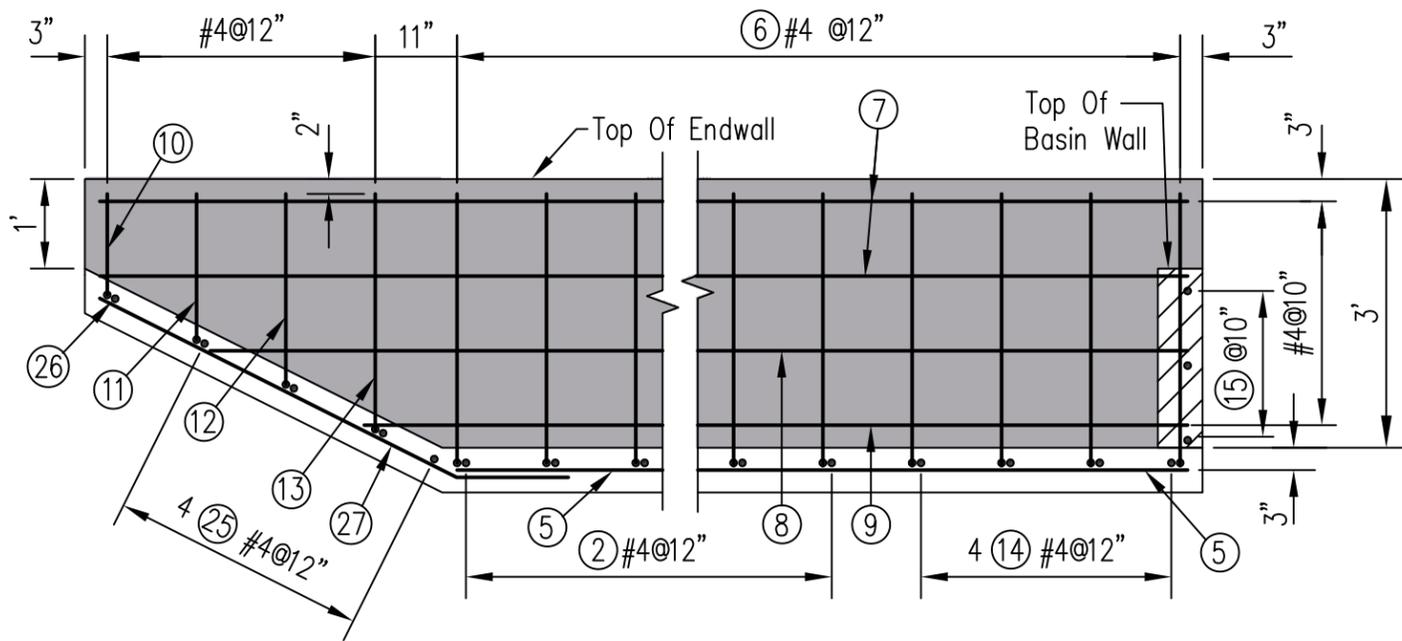
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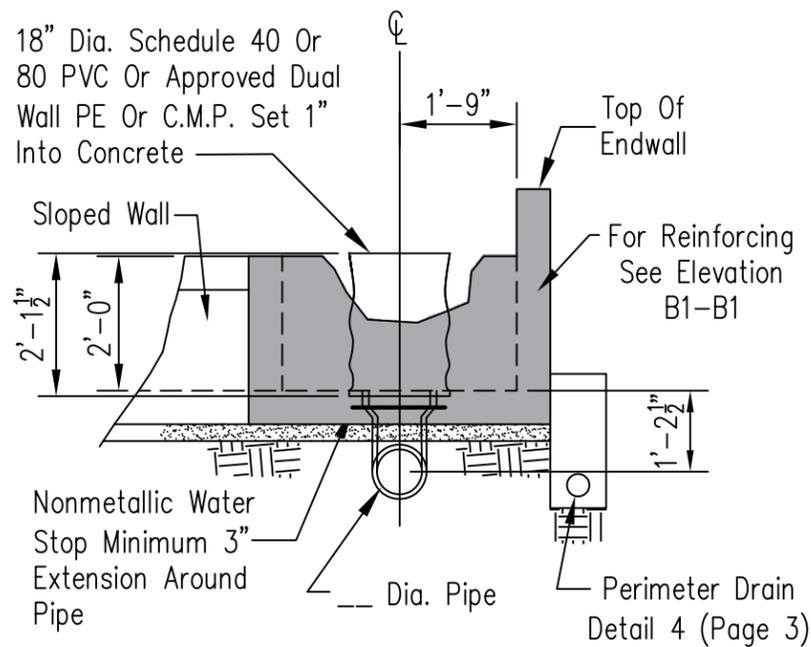


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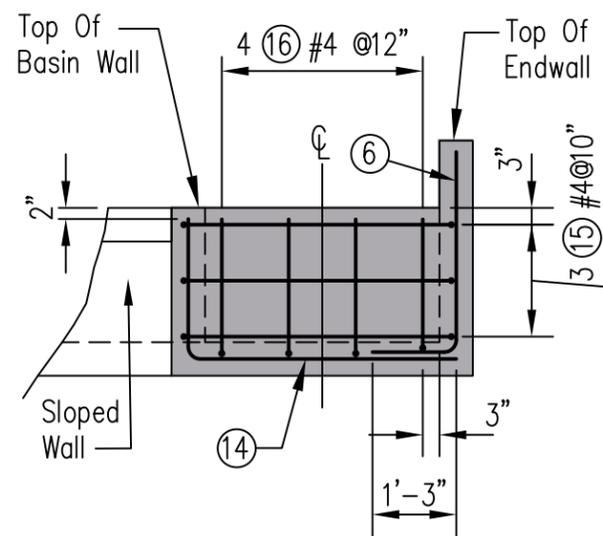
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(End Wall Reinforcing)
SECTION G-G (Pg 6)
 Scale 1/2" = 1'-0"



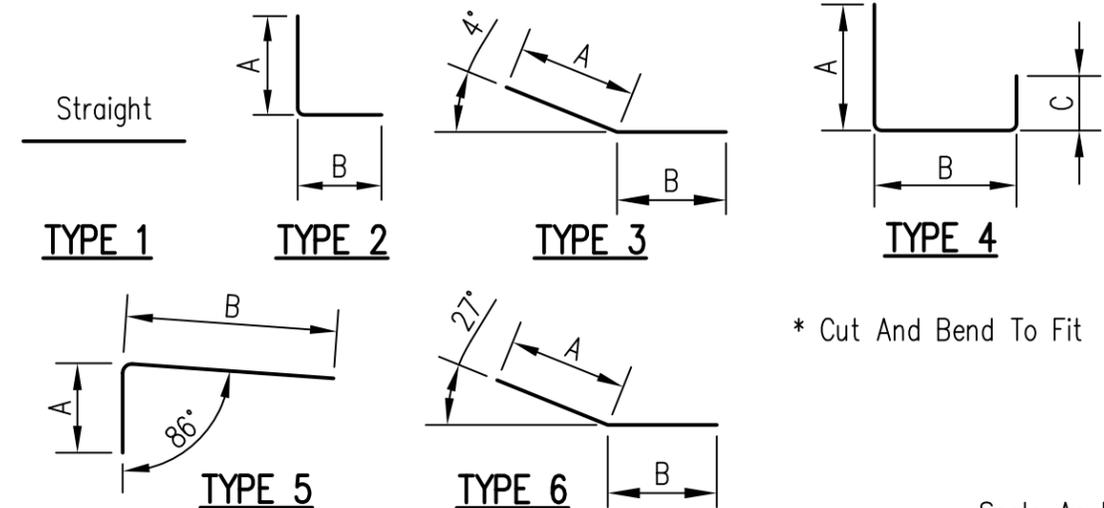
ELEVATION B-B (Pg 2)
 Scale 3/8" = 1'-0"



ELEVATION B1-B1 (Pg 2)
 Scale 3/8" = 1'-0"

REINFORCING STEEL SCHEDULE (60,000 PSI)

Location	Mark	Size	Qty	Length	Type	A	B	C	Total LG. Ft. In.	Total LG. Decimal
Ramp Floor	①	#4		30'-8"	5	1'-0"	29'-8"			
Basin Floor	②	#4			1	-	-			
Ramp Floor	③	#4	30		1	-	-			
Basin Floor	④	#4			1	-	-			
Basin Floor	⑤	#4	4		1	-	-			
Endwall To Floor	⑥	#4		4'-4"	2	3'-1"	1'-3"			
Endwall	⑦	#4	2		1	-	-			
Endwall	⑧	#4	1		1	-	-			
Endwall	⑨	#4	1		1	-	-			
Endwall To Slope Wall	⑩	#4	1	2'-5"	2	1'-2"	1'-3"		2'-5"	2.42
Endwall To Slope Wall	⑪	#4	1	2'-11"	2	1'-8"	1'-3"		2'-11"	2.92
Endwall To Slope Wall	⑫	#4	1	3'-5"	2	2'-2"	1'-3"		3'-5"	3.42
Endwall To Slope Wall	⑬	#4	1	3'-11"	2	2'-8"	1'-3"		3'-11"	3.92
Basin Wall To Floor	⑭	#4	4	6'-2"	2	2'-1"	4'-1"		24'-8"	24.67
Basin Wall/End Wall	⑮	#4	3	9'-1"	4	3'-7"	4'-0"	1'-6"	27'-3"	27.25
Basin Wall To Floor	⑯	#4	4	3'-4"	2	2'-1"	1'-3"		13'-4"	13.33
Basin Wall/Sloped Wall	⑰	#4	4	2'-11"	2	1'-8"	1'-3"		11'-8"	11.67
Sloped Wall	⑱	#4	4		3					
Basin Wall	⑲	#4	1		3					
Ramp Sloped Wall	⑳	#4	2	30'-2"	1	-	-		60'-4"	60.33
Ramp Sloped Wall	㉑	#4	2	6'-2"	1	-	-		12'-4"	12.33
Ramp Sloped Wall	㉒	#4	2	13'-0"	1	-	-		26'-0"	26.00
Ramp Sloped Wall	㉓	#4	2	19'-9"	1	-	-		39'-6"	39.50
Ramp Sloped Wall	㉔	#4	2	26'-6"	1	-	-		53'-0"	53.00
Basin Sloped Wall	㉕	#4	4		3		1'-3"			
Basin Sloped Wall	㉖	#4	1		3	*	1'-3"			
Basin Sloped Wall	㉗	#4		5'-9"	6	4'-6"	1'-3"			
Ramp Sloped Wall	㉘	#4	50		6	*	1'-3"			
Drain Pipe Fl. Opening	㉙	#4	4	2'-0"	1	-	-		8'-0"	8.00
Total Weight										



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