

STEEL SCHEDULE

MARK	SIZE	QUANTITY	TYPE	A	B	C	LENGTH	TOTAL LENGTH
①	#4		STR	---	---	---	4'-1"	
②	#4		STR	---	---	---		
③	#4	2		0'-8"	3'-3"	---	3'-11"	
④	#4		STR	---	---	---		
⑤	#4	20		---	2'-0"	2'-0"	4'-0"	
#4 Bars Total Length								

STEEL DETAILS

BAR SIZE	INSIDE BEND DIAMETER (D) INCHES	LONGITUDINAL STEEL LAP SPLICE LENGTH, INCHES (MIN.)	
		Wall bars	Footing bars
#4	3	19	16

Total length of wall (measured along ϕ wall) = _____ ft.

ESTIMATED QUANTITIES

CONCRETE (0.167 CU.YD./FT OF WALL) = _____ CU.YD.
 STEEL #4 BARS (0.668 LB./FT.) = _____ LB.

Steel quantity include splice lengths? Y__ N__

CONDITIONS OF USE

Allowable backfill height = 0 to 3 ft
 Soil backfill type = low PI gravelly/sandy silts and clays, with 50% or more fines; or fine sands, with less than 50% fines
 Water table below footing
 Machinery surcharge load allowed on soil or pavement slab
 Not designed to support buildings or roofs

MATERIALS

Concrete compressive strength = 4,000 psi
 Reinforcing steel may be Grade 40 or 60.
 Concrete and reinforcing steel shall meet requirements of Construction Specification IA-31.

WALL DESIGN LOADINGS

Manure load inside = 65 psf/ft EFP (Equivalent Fluid Pressure)
 Soil backfill density = 110 pcf
 Soil backfill load = 75 psf/ft EFP
 Design surcharge load = 150 psf horizontal pressure (modeling machinery load on soil)

WALL SLIDING RESTRAINT REQUIREMENTS

Assumptions:
 5-inch thick floor slab, factor of safety against sliding 1.5.
 Coefficient of friction (soil/concrete) = 0.25 (wet, medium to dense clay foundation)

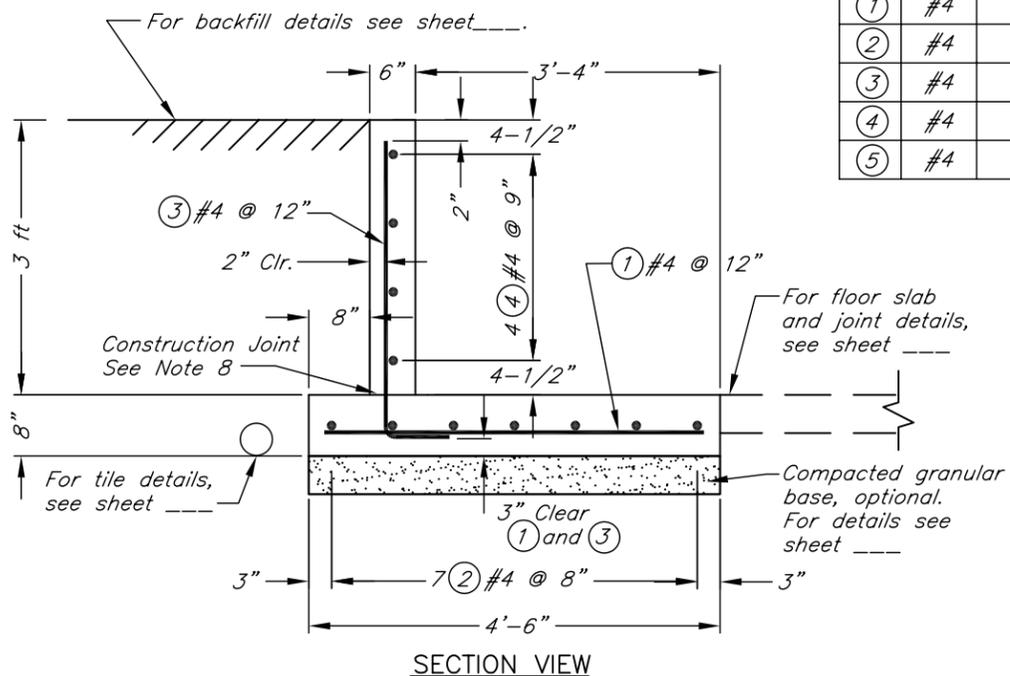
Backfill Height, ft.*	Min. Floor Slab Length, ft.*
3	88
2	51
1	21
0**	1

* Min. floor slab length for restraint is not required if L-wall forms a tank with opposing wall having approximately the same backfill height.

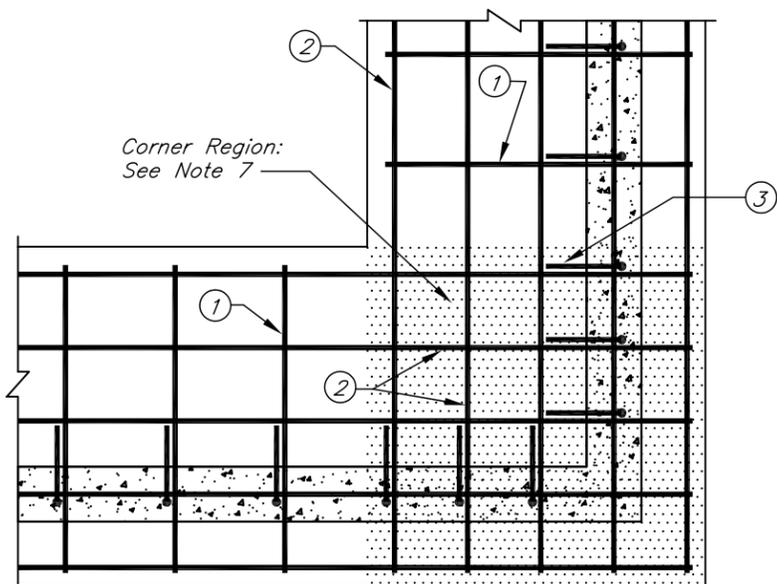
**When backfill height is 0 ft, floor slab shall be tied to wall footing with tension steel (deformed bar reinforcement). Provide minimum 0.07 sq.in./ft (equiv. #3 @ 18") as 36 in. long tie bars, or extend slab steel into footing a minimum of 18 inches.

GENERAL DESIGN NOTES

- Design loadings and soil pressures based upon criteria found in Conservation Practice Standard 313 (Waste Storage Facility).
- Drainage shall be away from the wall.
- Backfill to top of wall is recommended for frost protection.
- Minimum width of backfill against wall shall be equal to or greater than the backfill height, but not less than 2 ft.
- Mark ② and ④ bars shall extend to 2 to 3 inches from edge of concrete at ends of straight wall sections.
- Mark ① and ③ bars shall be placed a maximum of 6 inches from wall end.
- Footing slab reinforcement at corners (see detail): extend Mark ② (longitudinal) bars into shaded Corner Region from both sides of corner to 2-3 inches from edge of slab. Discontinue Mark ① bars in Corner Region. Match spacing of vertical wall steel (Mark ③) to footing steel (Mark ②) in Corner Region.
- Construction joint shall be completed as described in Construction Specification IA-31. Surface of construction joint shall be roughened to approximately 1/4" depth.

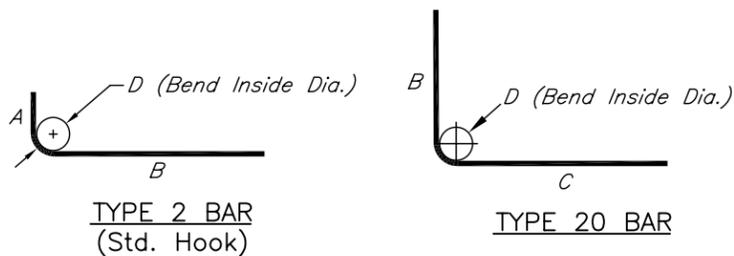


SECTION VIEW

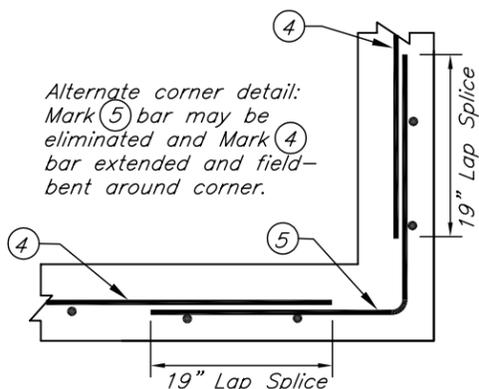


FOOTING SLAB CORNER DETAIL (PLAN VIEW)

Schematic only - not all bars shown



Alternate corner detail:
 Mark ⑤ bar may be eliminated and Mark ④ bar extended and field-bent around corner.



WALL CORNER DETAIL (PLAN VIEW)

NOT TO SCALE

STANDARD DWG. NO. IA-1670a

DATE 03/08 SHEET 1 OF 1

Date _____
 07/08
 Designed _____
 Drawn JGibbs
 Checked _____
 Approved _____

3-FT HIGH REINFORCED CONCRETE "L" WALL
 0' TO 3' LOW-P.I. BACKFILL, WITH SURCHARGE
 6" WALL THICKNESS



File No. IA-1670a.dwg

Drawing No. _____

Sheet of _____