

SECTION VIEW

**STEEL SCHEDULE**

MARK	SIZE	QUANTITY	TYPE	A	B	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		2	0'-8"	3'-4"	4'-0"	
#4 Bars Total Length							

**STEEL DETAILS**

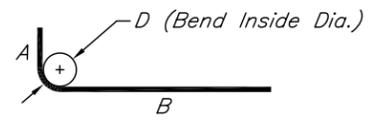
BAR SIZE	INSIDE BEND DIAMETER (D) INCHES	LONGITUDINAL STEEL LAP SPLICE LENGTH, INCHES (MIN.)	
		Wall bars	Footing bars
#4	3	19	16

Total length of wall (measured along  $\phi$  wall) = \_\_\_\_\_ ft.

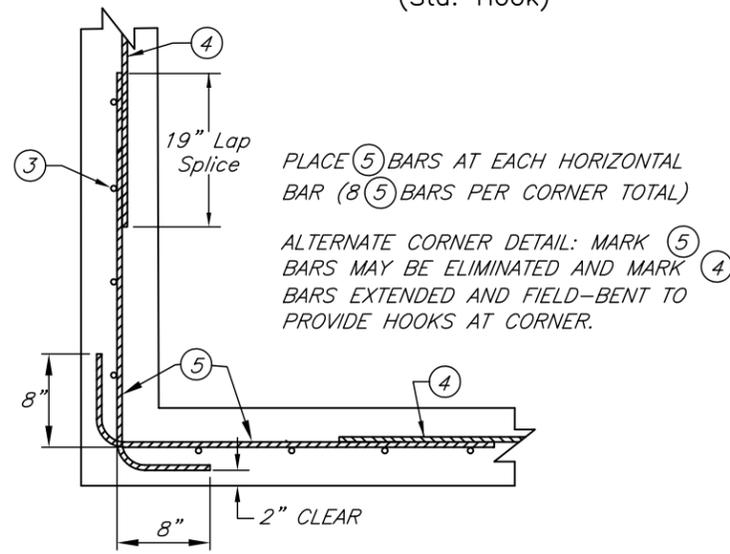
**ESTIMATED QUANTITIES**

CONCRETE (0.185 CU.YD./FT OF WALL)=_____ CU.YD.
STEEL #4 BARS (0.668 LB./FT.)=_____ LB.

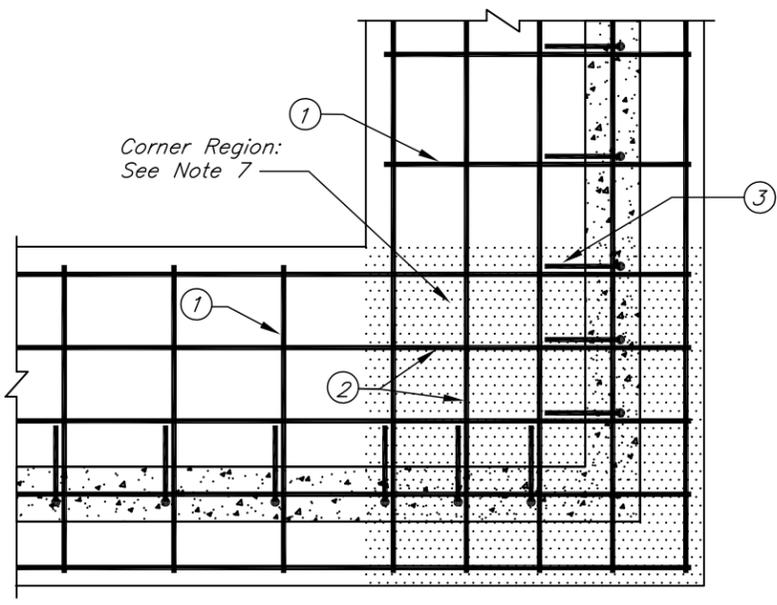
Steel quantity include splice lengths? Y\_\_ N\_\_



TYPE 2 BAR (Std. Hook)



WALL CORNER DETAIL (PLAN VIEW)



FOOTING SLAB CORNER DETAIL (PLAN VIEW)

Schematic only - not all bars shown

**CONDITIONS OF USE**

Allowable backfill height = 0 to 3 ft  
 Soil backfill type, CL = low to medium PI silts and clays, with 50% or more fines  
 Water table below footing  
 Machinery surcharge load allowed on pavement slab  
 Machinery surcharge load NOT allowed directly on soil for backfill heights greater than 2 ft.  
 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 = 85 psf/ft EFP  
 Design surcharge load = 64 psf horizontal pressure (modeling machinery on pavement slab)

**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	65
2	32
1	9
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.

Date: 07/08  
 Designed: JGibbs  
 Drawn: JGibbs  
 Checked: \_\_\_\_\_  
 Approved: \_\_\_\_\_

3-FT HIGH REINFORCED CONCRETE "L" WALL  
 0' TO 3' CL BACKFILL, SURCHARGE ON SLAB  
 8" WALL THICKNESS



File No: 1A-1672b.dwg

Drawing No. \_\_\_\_\_

Sheet of \_\_\_\_\_

STANDARD DWG. NO. IA-1672b

NOT TO SCALE

DATE 03/08 SHEET 1 OF 1