

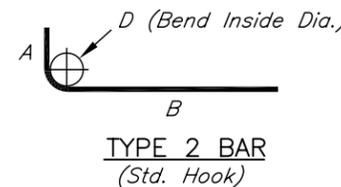
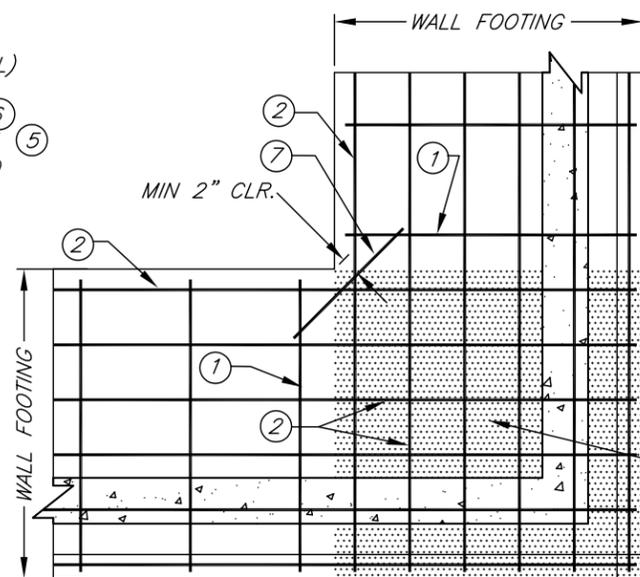
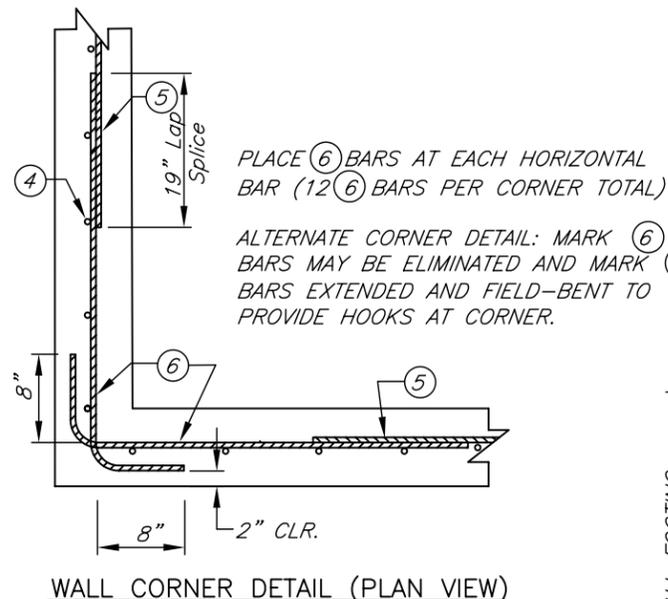
STEEL SCHEDULE						
MARK	SIZE	QUANTITY	TYPE	A	B	TOTAL LENGTH
①	#4		STR	---	---	4'-1"
②	#4		STR	---	---	
③	#4		2	0'-8"	1'-10"	2'-6"
④	#4		STR	---	---	3'-10"
⑤	#4		STR	---	---	
⑥	#4	2	2	0'-8"	3'-4"	4'-0"
⑦	#4		STR	---	---	3'-0"
#4 Bars Total Length						

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

Steel quantity include splice lengths? Y__ N__



NOT TO SCALE

CONDITIONS OF USE

Allowable backfill height = 0 to 4 ft
 Soil backfill type = low PI sandy/gravelly silts and clays, with 50% or more fines; or fine sand, with less than 50% fines
 Machinery surcharge load allowed on pavement slab.
 Machinery surcharge load NOT allowed directly on soil for backfill heights greater than 3 ft
 Not designed to support buildings or roofs

MATERIALS

Concrete compressive strength = 4,000 psi
 Reinforcing steel shall be Grade 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 = 57 psf horizontal pressure (modeling machinery on slab)

WALL SLIDING RESTRAINT REQUIREMENTS

Assumptions:
 5-inch thick floor slab, factor of safety against sliding 1.5
 Coefficient of friction (soil/concrete) = 0.4 (well-graded, angular gravel/sand base)

Backfill Height,ft.	Min. Floor Slab Length,ft.*	Backfill Height,ft.	Min. Floor Slab Length,ft.*
4	48	1	0
3	26	0**	1
2	9		

* 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 wall is not backfilled (height = 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.
- Minimum width of backfill against the wall shall be equal to or greater than the backfill height, but not less than 2 ft.
- Backfill height of 4 ft is recommended for frost protection.
- Minimum required subgrade bearing capacity = 2000 psf.
- Mark ② and ⑤ bars shall extend to 2-3 inches from edge of concrete at ends of straight wall sections.
- Mark ③ and ④ bars shall be placed a maximum of 6 inches from wall end or inside face of corner.
- Footing slab reinforcement at corners: extend Mark ② (longitudinal) bars into shaded Corner Region (see detail) from both sides of corner to 2-3 inches from edge of slab. Discontinue Mark ① (transverse) bars in shaded corner region.
- Construction joint shall be completed as described in Const. Spec. IA-31. Surface of construction joint shall be roughened to approximately 1/4" depth.

Date	07/08
Designed	JGibbs
Drawn	JGibbs
Checked	
Approved	

4-FT HIGH REINFORCED CONCRETE "L" WALL
0' TO 4' LOW P.I. BACKFILL, SURCHARGE ON SLAB
8" WALL THICKNESS

