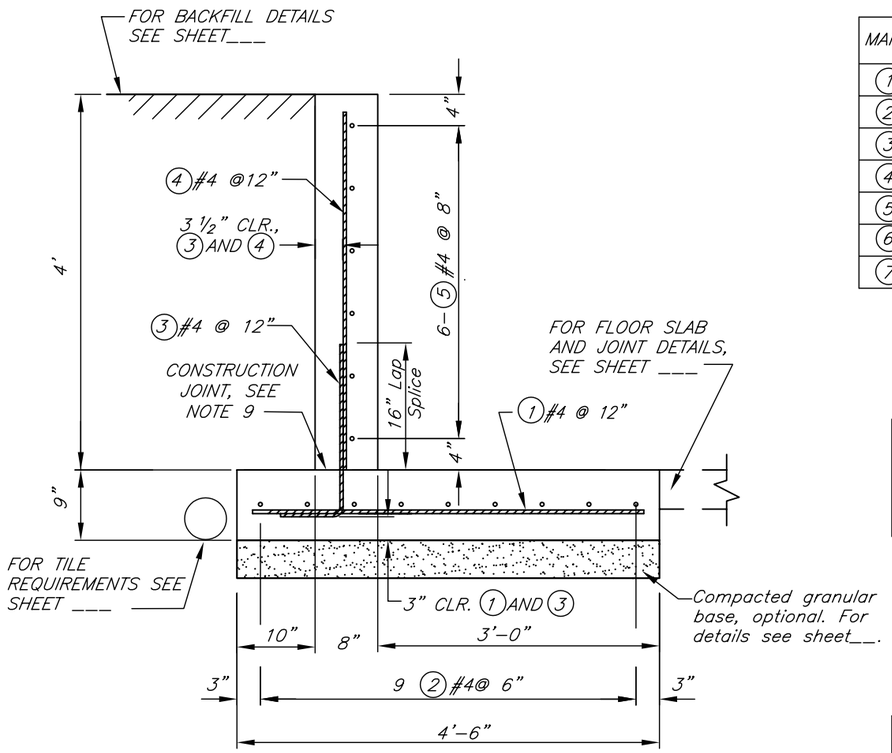



WALL SECTION

## STEEL SCHEDULE

| MARK | SIZE | QUANTITY | TYPE | A | B | LENGTH | 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 | 0'–8" | 3'–4" | 4'–0" | |
| 7 | #4 | | STR | --- | --- | 3'–0" | |
| | | | | | #4 Bars Total Length | | |

## STEEL DETAILS

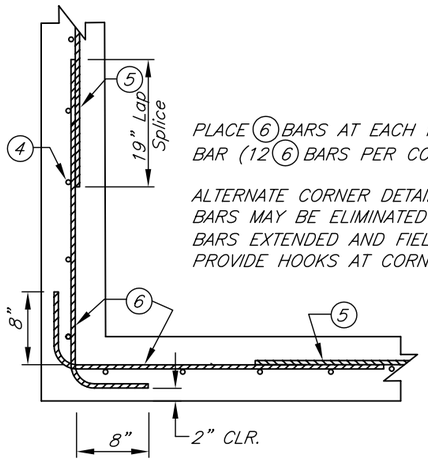
| BAR SIZE | INSIDE BEND DIAMETER (D) INCHES | LONGITUDINAL STEEL LAP SPLICE LENGTH, INCHES (MIN.) Wall bars | Footing bars |
|---|---|---|---|
| #4 | 3 | 19 | 16 |

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

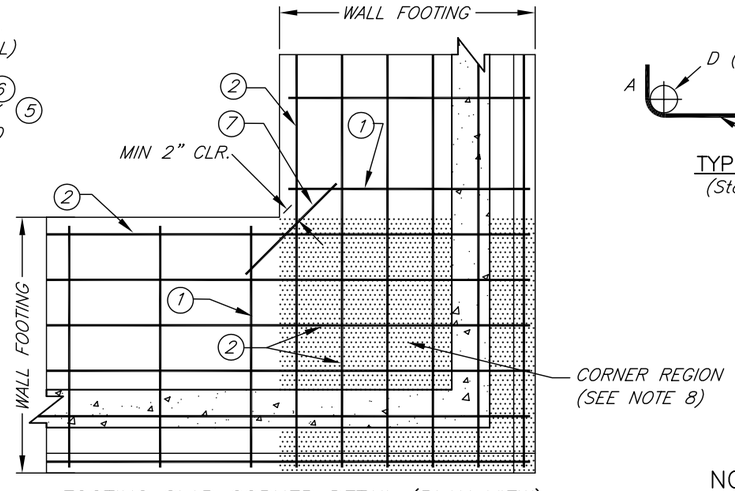
## ESTIMATED QUANTITIES

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

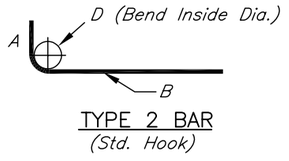
Steel quantity include splice lengths? Y__ N__




WALL CORNER DETAIL (PLAN VIEW)




FOOTING SLAB CORNER DETAIL (PLAN VIEW)
*Schematic only – not all bars shown*




TYPE 2 BAR
(Std. Hook)

NOT TO SCALE

*Adapted from Wisconsin drawing WI–542*

## CONDITIONS OF USE

*Allowable backfill height = 0 to 4 ft*
*Soil backfill type = low to medium PI silts/clays, with 50% or more fines*
*Water table below footing*
*Machinery surcharge load NOT allowed 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 = 85 psf/ft EFP*

## 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)*
*No surcharge*

| Backfill Height, ft. | Min. Floor Slab Length, ft.* | Backfill Height, ft. | Min. Floor Slab Length, ft.* |
|---|---|---|---|
| 4 | 39 | 1 | 0 |
| 3 | 18 | 0** | 1 |
| 2 | 2 | | |

** 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

1. *Design loadings and soil pressures based upon criteria found in Conservation Practice Standard 313 (Waste Storage Facility).*
2. *Drainage shall be away from the wall.*
3. *Minimum width of backfill against the wall shall be equal to or greater than the backfill height, but not less than 2 ft.*
4. *Backfill height of 4 ft is recommended for frost protection.*
5. *Minimum required subgrade bearing capacity = 2000 psf.*
6. *Mark 2 and 5 bars shall extend to 2–3 inches from edge of concrete at ends of straight wall sections.*
7. *Mark 3 and 4 bars shall be placed a maximum of 6 inches from wall end or inside face of corner.*
8. *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.*
9. *Construction joint shall be completed as described in Const. Spec. IA–31. Surface of construction joint shall be roughened to approximately 1/4" depth.*

STANDARD DWG. NO. IA–1675c

DATE 03/08 | SHEET 1 OF 1

Date 07/08
Designed
Drawn JGibbs
Checked
Approved

# 4–FT HIGH REINFORCED CONCRETE "L" WALL
## 0' TO 4' CL BACKFILL, NO SURCHARGE
## 8" WALL THICKNESS

NRCS
Natural Resources Conservation Service
United States Department of Agriculture

File No. IA–1675c.dwg

Drawing No. ----

Sheet of