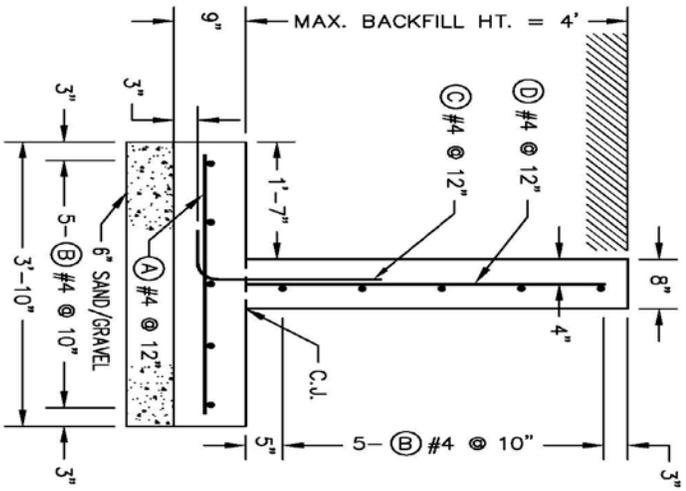


PA-020D 4' high, T-wall (without surcharge)  
Standard Drawings Folder



STEEL SCHEDULE

MARK	SIZE	QUAN	TYPE	R	S	LENGTH	TOTAL LENGTH
A	4		SIR	---	---	3'-6"	
B	4		SIR	---	---	3'-9"	
*C	4	2	2'-0"	9"	2'-9"		
*D	4	2	2'-0"	9"	3'-9"		
L	4	2	2'-0"	9"	2'-9"		
L1	4		SIR	---	---	3'-9"	

\* MARK C & D BARS MAY BE COMBINED TO AVOID SPUCE. THEN MARK C BAR IS 4'-3" x 9".

NOTES:

- FOR FROST PROTECTION, A 2-FOOT BACKFILL IS RECOMMENDED.
- DIMENSIONS ARE TO THE REINFORCING BAR SURFACE.

ESTIMATED QUANTITIES

CONCRETE (0.21 CU.YDS./LIN.FT.)	_____	CU. YDS.
STEEL (20.67 FT./LIN. FT.)	_____	FT.
STEEL (35.0 FT./CORNER)	_____	FT.

- CONCRETE SHALL MEET PA 315 OR 561 SPECIFICATION REQUIREMENTS.
- MINIMUM SPUCE LENGTH FOR ALL #4 BARS IS 16".
- STEEL QUANTITY DOES NOT INCLUDE SPUCE LENGTHS.
- SUBSTITUTION OF GRADE 60 BARS IS PERMITTED.

TOTAL LENGTH OF WALL \_\_\_\_\_ FT.

C.L. = CONSTRUCTION JOINT

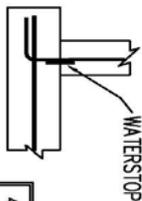
LIQUID-TIGHT JOINT \_\_\_\_ YES \_\_\_\_ NO

LIQUID-TIGHT JOINT OPTIONS

- NON-METALLIC WATERSTOP (PVC)
- HYDROPHILIC WATERSTOP

CONSTRUCTION JOINT OPTIONS

- IF SLAB AND WALL ARE POURED SEPARATELY, THE SLAB SURFACE MUST BE THOROUGHLY CLEANED WITH WATER AND A WIRE BRUSH. THE SURFACE OF THE JOINT SHALL BE KEPT MOST FOR AT LEAST 1 HOUR PRIOR TO PLACEMENT OF NEW CONCRETE.
- THE SLAB AND WALL MAY BE POURED AT THE SAME TIME ELIMINATING THE NEED FOR A CONSTRUCTION JOINT.



4-FOOT WALL CORNER DETAILS SEE PA-025  
SLAB CORNER DETAILS SEE PA-023  
RESTRAINING SLAB OPTIONS SEE PA-024

GENERAL DESIGN NOTES:

- DRAINAGE SHALL BE AWAY FROM THE WALL.
- THE MINIMUM TOP WIDTH OF THE BACKFILL AGAINST THE WALL SHALL BE EQUAL TO OR GREATER THAN THE BACKFILL HEIGHT.
- MAXIMUM FOOTING CONTACT PRESSURE IS 900 psf/ft.

DESIGN STRENGTHS: WORKING STRESS DESIGN

CONCRETE  $f_c = 4,000$  psi STEEL  $f_s = 20,000$  psi (GRADE 40)

WALL DESIGN LOADING: 313 STANDARD - LATERAL EARTH PRESSURE VALUES, SEE SECTION IV OF THE FIELD OFFICE TECHNICAL GUIDE.

- MANURE LOAD INSIDE = 65 psf/ft.
- SOIL BACKFILL LOAD OUTSIDE = 60 psf/ft. AND 85 psf/ft.
- NO HORIZONTAL SURCHARGE ADDED.
- SOIL BACKFILL DENSITY = 110 pcf.
- WATER TABLE MUST BE BELOW THE FOOTING ELEVATION

WALL RESTRAINT REQUIREMENTS:

-5" THICK SLAB, SAFETY FACTOR AGAINST SLIDING 1.5 MIN.

BACKFILL HEIGHT (OUTSIDE LOAD)	SLAB LENGTH NO INSIDE LOAD	SLAB LENGTH FULL INSIDE LOAD
4 FEET	22 FEET	NO SLAB
3 FEET	7 FEET	NO SLAB
2 FEET	NO SLAB	NO SLAB
1 FOOT	NO SLAB	2 FOOT **
0 FEET	NO SLAB	2 FOOT **

\*\*MINIMUM SLAB LENGTH OF 2 FEET REQUIRED AND MUST BE TIED INTO THE WALL FOOTING.

- SLAB POURED WITH WALL FOOTING:
- #3 BARS @ 18" SPACING (MINIMUM REINFORCEMENT)
- SLAB NOT POURED WITH WALL FOOTING:
- #3 DOWEL BARS - 3'-0" LENGTH @ 4'-0" SPACING.

THIS STANDARDIZED DESIGN MUST BE ADAPTED TO THE SPECIFIC SITE. IT WAS DEVELOPED IN COOPERATION WITH THE WISCONSIN DEPARTMENT OF AGRICULTURE, TRADE AND CONSUMER PROTECTION. THE DESIGN FOLDER IS FILED AT THE NRCS STATE OFFICE, 6515 WATTS ROAD, MADISON, WI. 53717-2906

(ADAPTED FROM WI-543, APRIL 2005)



\_\_\_\_\_ COUNTY, PENNSYLVANIA

4' HIGH, 8" T-WALL (W/O SURCHARGE)

Designed	_____	06/28/05
Drawn	TJA	
Checked	_____	
Approved by	_____	

PA-020D

06/21/09 12:06

PA-020D