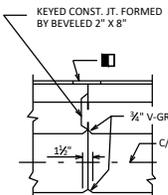


FRONT ELEVATION



VERT. CONST. JOINT

$$P = \gamma_{DC}(P_{DC}) + \gamma_{DW}(P_{DW}) + \gamma_{LL}(P_{LL})$$

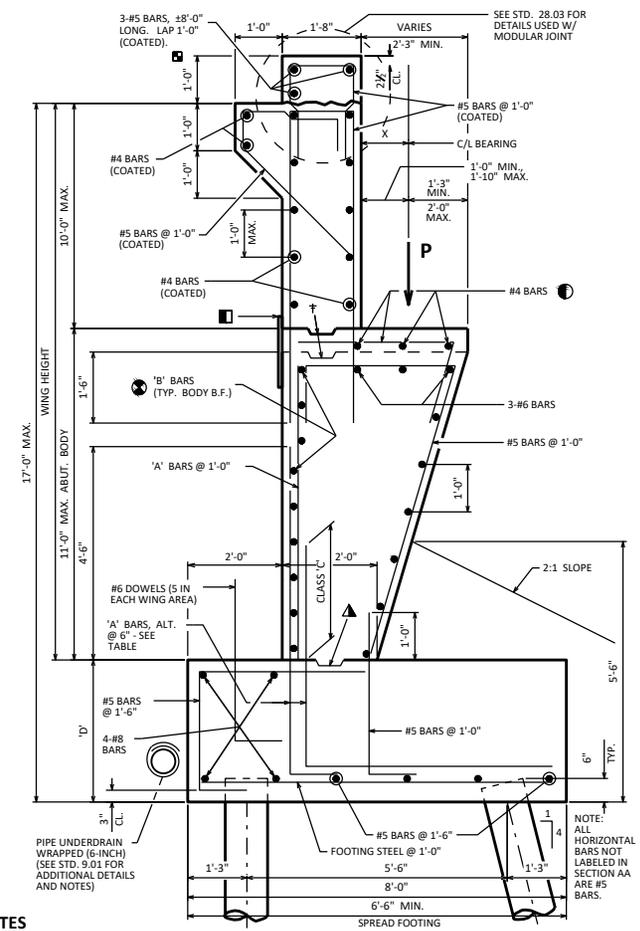
'p' K/FT	'A' BAR SIZE	FOOTING STEEL	FOOTING DEPTH 'D'
16	#6	#6	3'-0"
24	#7	#6	3'-0"
27	#7	#7	3'-0"
38	#8	#6	3'-3"
41	#8	#7	3'-3"
48	#9	#6	3'-3"
54	#9	#7	3'-3"

ABUTMENT BODY DEPTH	'B' BARS
< 7'	9- #11
≥ 7'	10- #10

h = WING HEIGHT

PILE REACTIONS PER FOOT IN KIPS	
BACK ROW =	$P(0.56 \cdot X/5.5) + h^2/915 + 17.2$
FRONT ROW =	$P(0.44 \cdot X/5.5) + h^2/425 + 7.9$

(PILES MUST ALSO BE DESIGNED TO ACCOUNT FOR LATERAL LOADS)



SECTION A-A

DESIGNER NOTES CONT'D

IN 'FRONT ELEVATION' VIEW, GIVE ELEVATION OF ALL BEARING AREAS AND ELEVATION AT BOTTOM OF PARAPETS AT EACH END OF WINGS. ALL ELEVATIONS ARE TAKEN AT FRONT FACE OF BACKWALL.

LAP LENGTHS FOR HORIZONTAL BARS SHALL BE BASED ON A "CLASS C" TOP TENSION LAP SPLICE.

PARAPET NOT SHOWN IN PLAN VIEW FOR CLARITY.

SEE STD. 12.03 FOR ADDITIONAL DETAILS.

ABUTMENT DETAILED WITHOUT STRUCTURAL APPROACH SLAB. SEE STD. 12.10 THRU 12.13 FOR STRUCTURAL APPROACH DETAILS.

DESIGNER NOTES

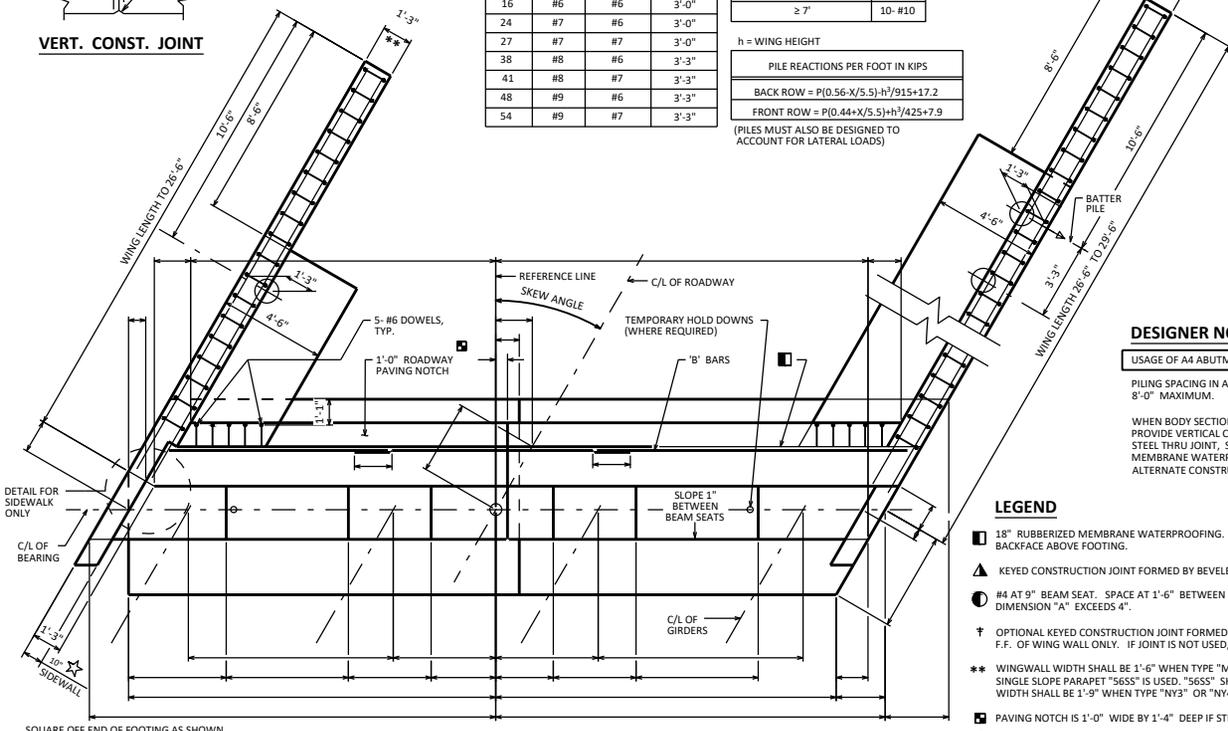
USAGE OF A4 ABUTMENTS IS DISCONTINUED.

PIILING SPACING IN ABUTMENT FOOTING SHALL BE 8'-0" MAXIMUM.

WHEN BODY SECTION IS MORE THAN 50'-0" LONG, PROVIDE VERTICAL CONSTRUCTION JOINT. RUN BAR STEEL THRU JOINT. SEAL JOINT WITH 18" RUBBERIZED MEMBRANE WATERPROOFING. SEE STD. 12.09 FOR ALTERNATE CONSTRUCTION JOINT.

LEGEND

- 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZ. AND VERT. JOINTS ON BACKFACE ABOVE FOOTING.
- ▲ KEYED CONSTRUCTION JOINT FORMED BY BEVELED 2" X 6".
- #4 AT 9" BEAM SEAT. SPACE AT 1'-6" BETWEEN SEATS. THIS STEEL IS REQUIRED ONLY IF DIMENSION "A" EXCEEDS 4'.
- † OPTIONAL KEYED CONSTRUCTION JOINT FORMED BY BEVELED 2" X 6". USE 3/4" "V" GROOVE ON F.F. OF WING WALL ONLY. IF JOINT IS NOT USED, WATERPROOFING IS NOT REQUIRED.
- ** WINGWALL WIDTH SHALL BE 1'-6" WHEN TYPE "M" RAILING, VERTICAL FACE PARAPET "TX", OR SINGLE SLOPE PARAPET "5655" IS USED. "5655" SHOULD NOT BE USED ON A SIDEWALK. WINGWALL WIDTH SHALL BE 1'-9" WHEN TYPE "NY3" OR "NY4" RAILING IS USED.
- PAVING NOTCH IS 1'-0" WIDE BY 1'-4" DEEP IF STRUCTURAL APPROACH SLAB (STD. 12.10) IS USED.
- ☆ SIDEWALL IS 1'-3" WIDE IF STRUCTURAL APPROACH SLAB (STD. 12.10) IS USED.
- SHOW ALL BARS FOR CLARITY.



PLAN

SQUARE OFF END OF FOOTING AS SHOWN WHEN ABUTMENT IS SKEWED OVER 20°

ABUTMENT A4 PILE FOOTING

BUREAU OF STRUCTURES

DATE: 1-18

APPROVED: *Laura Shadewald*