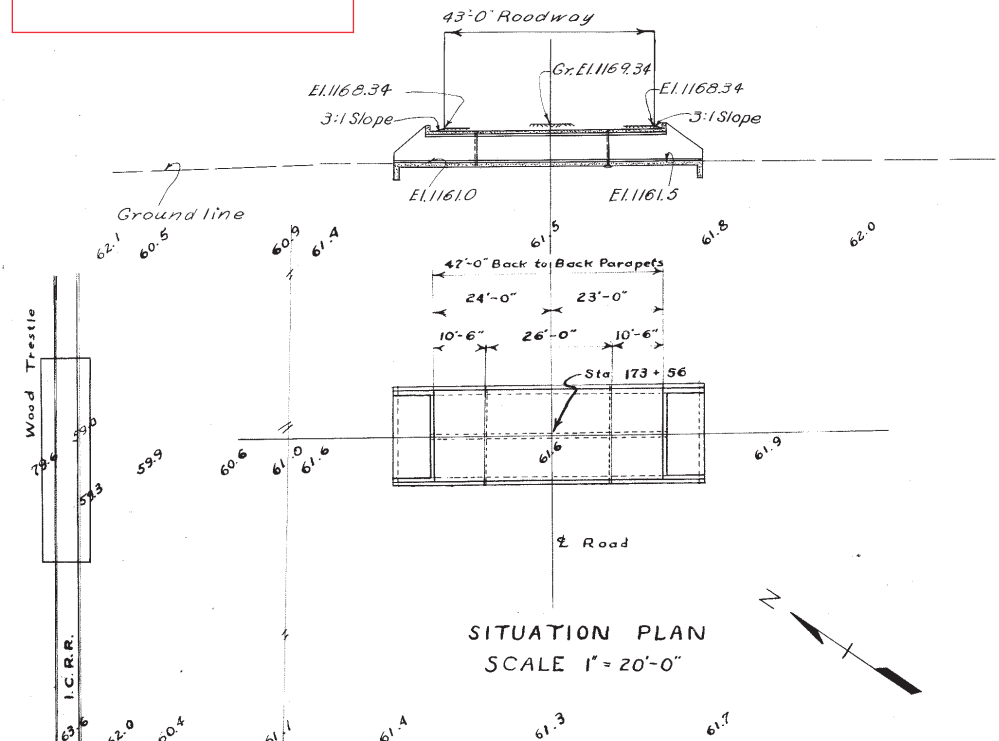
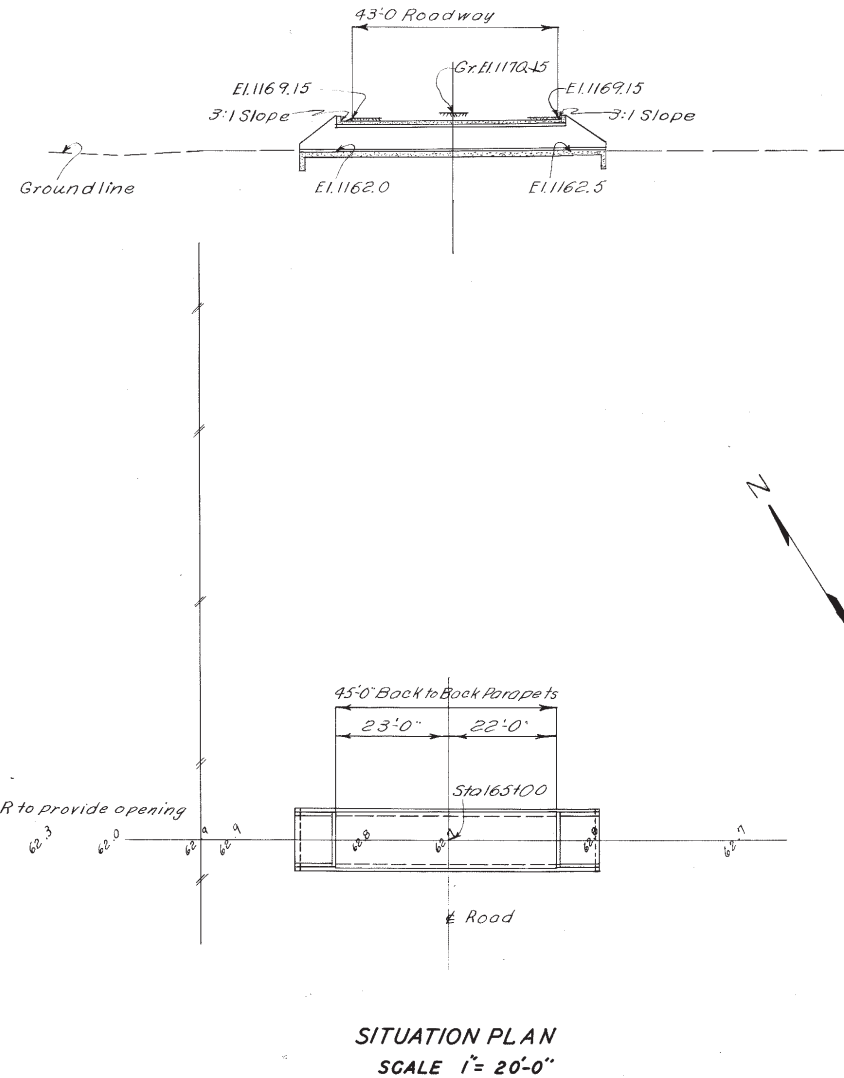


BENCH MARK: No 17 Sta 170+33 R.R. spike in elec. pole 50' Lt Elev. 1165.18

Design No. 1848
10'x5'x45' Sta 165+00
Design No. 0127,
FHWA No. 900515

Design No. 1948, 8'x5'x47'
Sta 173+56 Design No.
0227, FHWA No. 900520



BILL OF REINFORCING							
Additional To That For Single 8'x5'x4'							
Location	Bar	Shape	No.	Size	Spacing	Length	Weight
Wall Center: Vertical	a ₁		48	1/2" ϕ	2'-0"	6'-10"	218.8
" " Horizontal	b ₂	—	6	1/2" ϕ	2'-0"	25'-8"	102.7
" " " Ends	b ₃	—	12	1/2" ϕ	2'-0"	10'-6"	84.0
(1) Slab: Longitudinal	e	—	10	3/4" ϕ	Shown	25'-8"	267.7
(1) " " Ends	e ₁	—	20	5/8" ϕ	Shown	10'-10"	226.0
(1) Floor: Longitudinal	f	—	7	3/4" ϕ	Shown	25'-8"	269.9
(1) " " Ends	f ₁	┌	14	3/4" ϕ	Shown	21'-0"	441.6
" " Bottom	f ₂	—	2	1/2" ϕ	Shown	25'-8"	34.2
" " " Ends	f ₃	—	4	1/2" ϕ	Shown	10'-6"	28.0
(1) Parapet: Vertical	i	L	18	1/2" ϕ	1'-0"	2'-7"	31.0
(2) " Transverse	j ₁	—	2	1/2" ϕ	Lap J Bars	10'-4"	13.8
(3) Slab: Transverse	k	┐	42	3/4" ϕ	7" c/s	19'-0"	1198.6
(4) " " Corners	k ₁	┐ No	0	Order	— See Note (4)		
" " Top	k ₂	—	84	3/4" ϕ	7" c/s	8'-0"	1009.3
Floor: Transverse Bottom	m ₁	—	83	3/4" ϕ	7" c/s	8'-0"	997.3
(5) " " Top	m ₂	—	106	3/4" ϕ	Lap m Bars 7"	11'-2"	1777.9
(1) Slab: Dowels	r	—	18	1/2" ϕ	1'-0"	4'-0"	48.0
Total							6748.8

- (1) Additional number required for twin $8' \times 5' \times 47'$
- (2) Additional length, including 40 dia. lap, to make j bars fit twin $8' \times 5' \times 47'$
- (3) One-half number needed - Rest of K bars formed by straightening one end of single span K bars and lapping straightened ends. Lapped bars alternated with single piece bars.
- (4) Formed by single span K₁ bars cut in half.
- (5) Additional length, including lap, needed to fit single $8' \times 5' \times m$ bars

DETAILS TO BE LIKE IOWA STATE HIGHWAY COMMISSION STANDARDS <i>C-10-P</i>			
DRAINAGE AREA <i>200 Flat to Very Hilly</i>		SECTION <i>15</i>	
SIZE AND TYPE <i>10x5x45 H.C.B</i>		TOWNSHIP <i>Willow</i>	
DEPTH OF FILL <i>2' 0"</i>		COUNTY <i>Cherokee</i>	
PIPE _____ LIN FT		STATION <i>165+00</i>	
ESTIMATED QUANTITIES	EXCAVATION <i>66</i>	C. Y	PROJECT <i>FA 744</i>
	CONCRETE <i>73.3</i>	C. Y	DATE <i>11-7-47</i>
	REINFORCING <i>1009</i>	LBS	DESIGN NO <i>1848</i>

DETAILS TO BE LIKE IOWA STATE HIGHWAY COMMISSION STANDARDS	
DRAINAGE AREA <u>140 ac. Flat to Very Hilly</u>	SECTION <u>15</u>
SIZE AND TYPE <u>3x5'x47 RCB (TWIN)</u>	TOWNSHIP <u>Willow</u>
DEPTH OF FILL <u>1'-0"</u>	COUNTY <u>Cherokee</u>
PIPE _____ LIN FT	STATION <u>173+26</u>
ESTIMATED EXCAVATION <u>44</u> 90 C Y	PROJECT <u>FA 744 II</u>
QUANTITIES CONCRETE <u>56.6</u> 98.4 C Y	DATE <u>11-7-47</u>
REINFORCING <u>36.38</u> 12.58 LBS	DESIGN NO <u>1948</u>