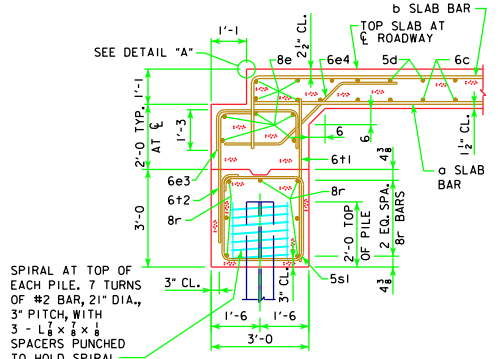


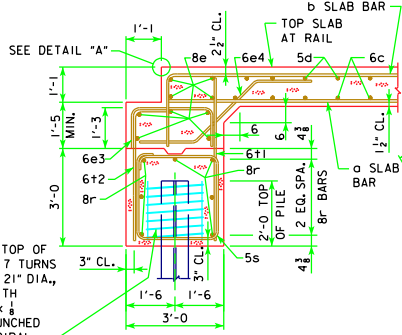
REAR ELEVATION

NOTE: THE BOTTOM OF FOOTING IS TO BE SLOPED TO COMPENSATE FOR GRADE ON THIS SKEWED ABUTMENT. THEREFORE BOTTOM OF FOOTING ELEVATIONS WILL BE REQUIRED AT EACH EXTERIOR PILE.



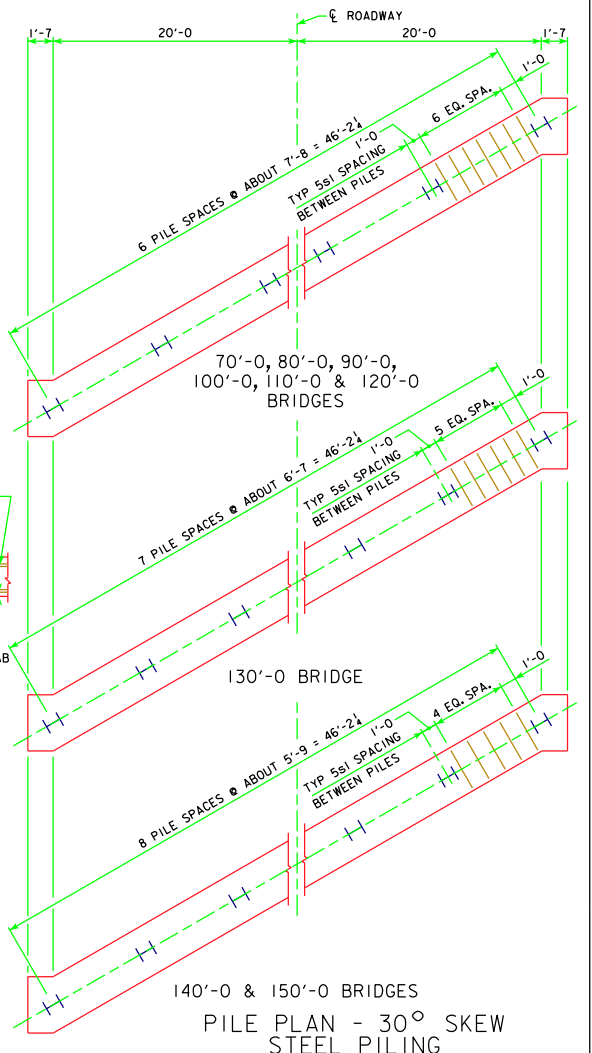
SECTION NORMAL TO ABUTMENT AT CL

SPIRAL AT TOP OF EACH PILE. 7 TURNS OF #2 BAR, 21" DIA., 3" PITCH, WITH 3 - L 1/2 x 1/4 x 3/8 SPACERS PUNCHED TO HOLD SPIRAL

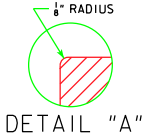


SECTION NORMAL TO ABUTMENT AT GUTTERLINE

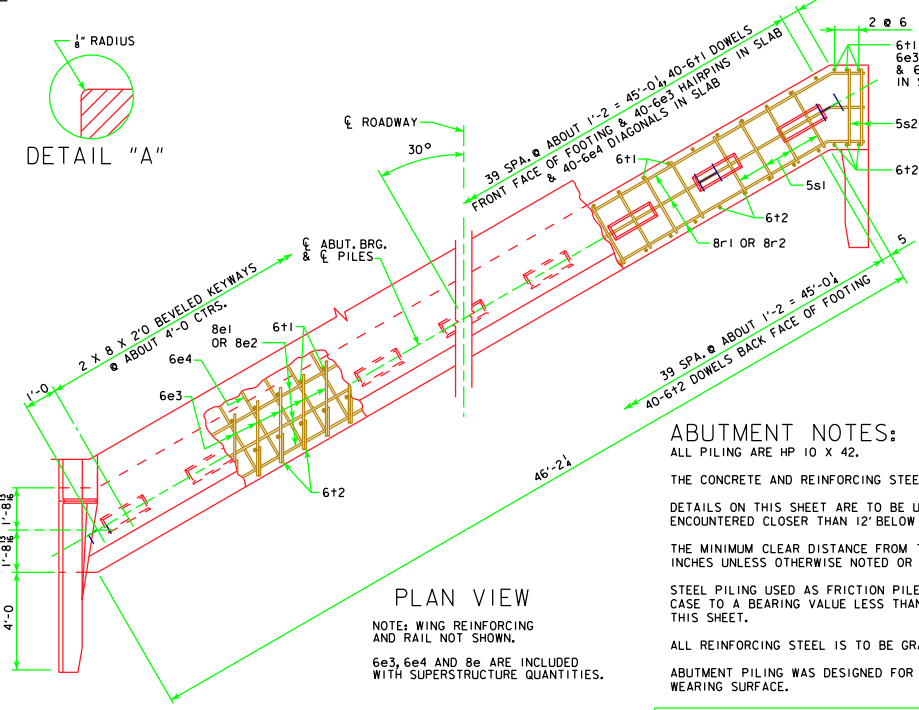
SPIRAL AT TOP OF EACH PILE. 7 TURNS OF #2 BAR, 21" DIA., 3" PITCH, WITH 3 - L 1/2 x 1/4 x 3/8 SPACERS PUNCHED TO HOLD SPIRAL



PILE PLAN - 30° SKEW STEEL PILING



DETAIL "A"



PLAN VIEW

NOTE: WING REINFORCING AND RAIL NOT SHOWN.
6e3, 6e4 AND 8e ARE INCLUDED WITH SUPERSTRUCTURE QUANTITIES.

ABUTMENT NOTES:

- ALL PILING ARE HP 10 X 42.
- THE CONCRETE AND REINFORCING STEEL FOR THE WINGS IS INCLUDED WITH THE SUPERSTRUCTURE.
- DETAILS ON THIS SHEET ARE TO BE USED ONLY WHEN ABUTMENTS ARE PLACED ON STEEL PILES. IF ROCK IS ENCOUNTERED CLOSER THAN 12' BELOW ABUTMENT FOOTING, SPECIAL ANALYSIS MAY BE REQUIRED.
- THE MINIMUM CLEAR DISTANCE FROM THE FACE OF THE CONCRETE TO NEAR REINFORCING BAR IS TO BE 2 INCHES UNLESS OTHERWISE NOTED OR SHOWN.
- STEEL PILING USED AS FRICTION PILE SHALL BE DRIVEN TO FULL PENETRATION IF PRACTICABLE BUT IN NO CASE TO A BEARING VALUE LESS THAN THE PILE BEARING REQUIRED FOR EACH BRIDGE LENGTH AS SHOWN ON THIS SHEET.
- ALL REINFORCING STEEL IS TO BE GRADE 60.
- ABUTMENT PILING WAS DESIGNED FOR HL-93 LOADING WITH AN ALLOWANCE FOR 20 LBS. PER SQ. FT. FUTURE WEARING SURFACE.

REACTION, PILE NUMBER & BEARING

BRIDGE LENGTH	70'-0"	80'-0"	90'-0"	100'-0"	110'-0"	120'-0"	130'-0"	140'-0"	150'-0"
REACTION - KIPS	382	405	425	451	476	506	534	Δ 609	Δ 643
BEARING - TONS	28	29	31	33	35	37	34	34	36
PILING - NUMBER	7	7	7	7	7	7	8	9	9
STRENGTH I REACTION - KIPS	503	536	566	606	644	687	729	Δ 852	Δ 901

Δ INCLUDES IMPACT

11-08
LATEST REVISION DATE

Iowa Department of Transportation
Highway Division

STANDARD DESIGN - 40' ROADWAY, 3 SPAN BRIDGES
CONTINUOUS CONCRETE
SLAB BRIDGES
NOVEMBER, 2006

Thomas C. McQuinn
APPROVED BY BRIDGE ENGINEER

30° ABUTMENT DETAILS
30° SKEW - STEEL PILING

J40-41-06