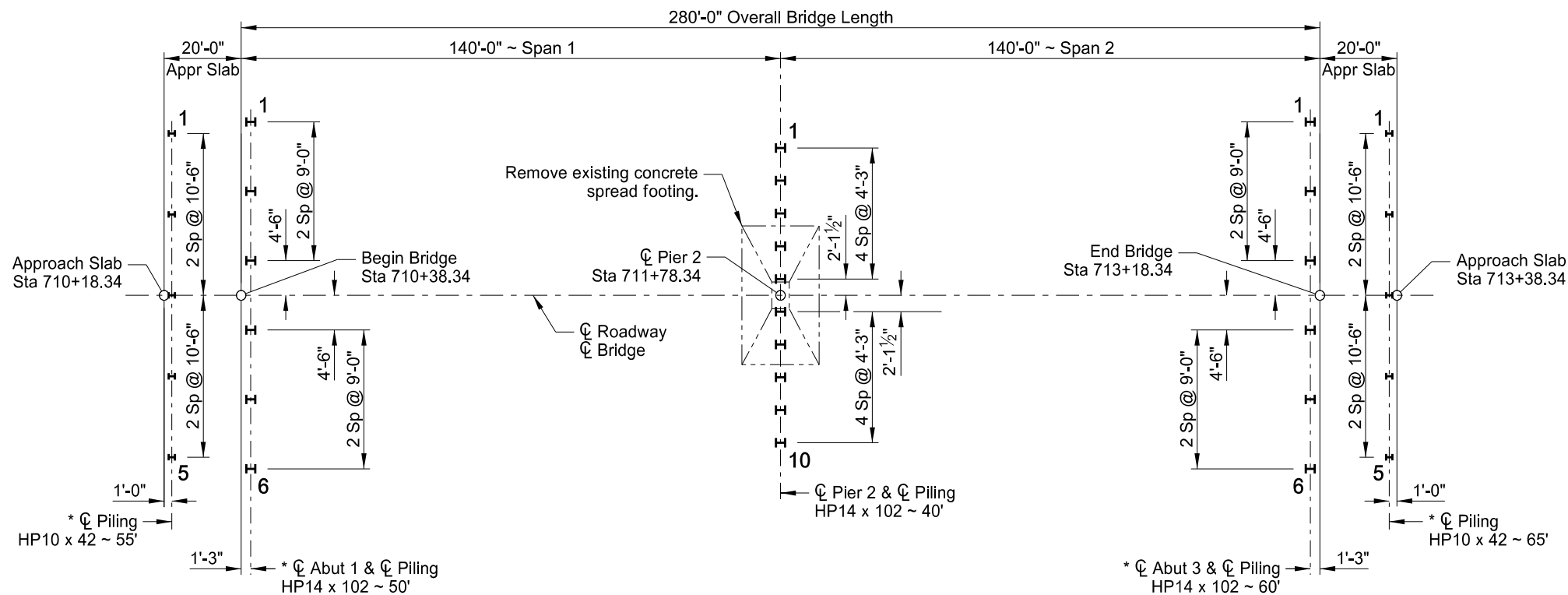


STATE	PROJECT NUMBER	SECTION NO.	SHEET NO.
ND	BND-IM-1-094(192)164	170	5



NOTE:

For double acting or single acting diesel hammers, calculate the bearing resistance of piles by the following formula:

$$\Phi R_n = \frac{4.5E}{S + 0.2} \times \frac{W + 0.2M}{W + M}$$

Where:

- ΦR_n = Nominal pile bearing resistance, in pounds. The Φ factor is included in equation.
- W = Weight of striking parts (ram), in pounds.
- M = Weight of parts being driven, in pounds. Includes pile weight, anvil (if any), driving cap, etc.
- E = Energy per blow, in foot-pounds.
- S = Average penetration of pile in inches per blow for last ten blows.

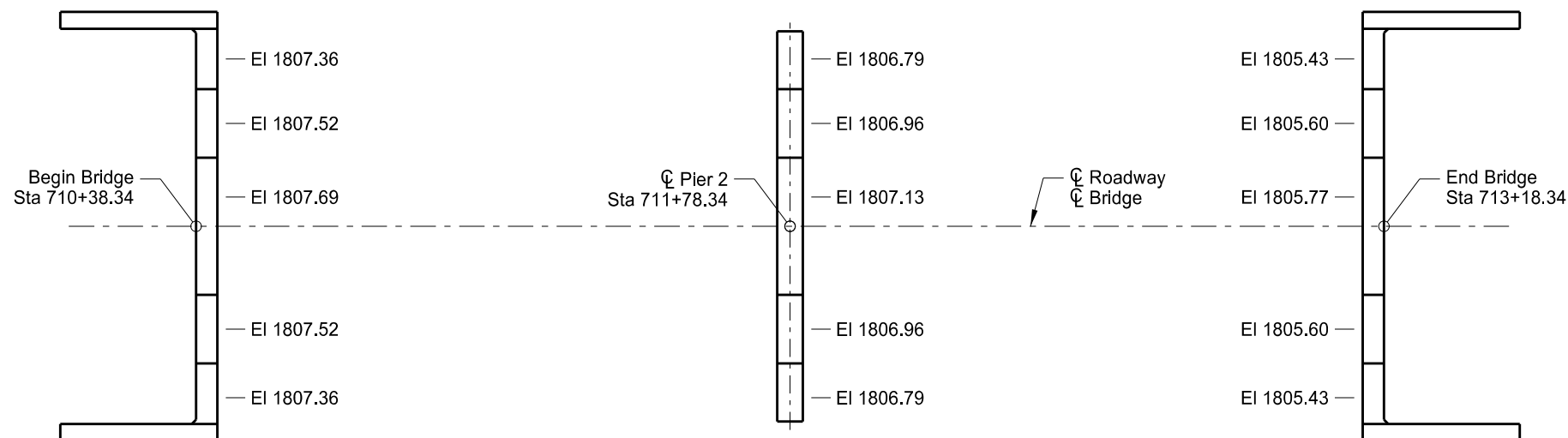
For single acting hammers, calculate E by multiplying observed stroke (ft) and W (lbs).

PILE COORDINATES			
	PILE	NORTHING	EASTING
SOUTH APPR SLAB	1	427,329.86	1,926,865.39
	5	427,329.67	1,926,907.39
ABUT 1	1	427,350.12	1,926,863.98
	6	427,349.91	1,926,908.98
PIER 2	1	427,488.85	1,926,867.98
	10	427,488.68	1,926,906.23
ABUT 3	1	427,627.61	1,926,865.23
	6	427,627.41	1,926,910.23
NORTH APPR SLAB	1	427,647.86	1,926,866.82
	5	427,647.67	1,926,908.82

* Do not drive approach slab or abutment piling until all constructed embankment is in place.

Drive the HP10 x 42 Pile to a bearing resistance of 105 tons.
Drive the HP14 x 102 Pile to a bearing resistance of 250 tons.

PILING LAYOUT



Elevations shown are to top of finished concrete.

BEARING ELEVATIONS

This drawing is preliminary and not for construction or implementation purposes.

GIBBS TOWNSHIP SEPARATION

PILING LAYOUT & BEARING ELEVATIONS