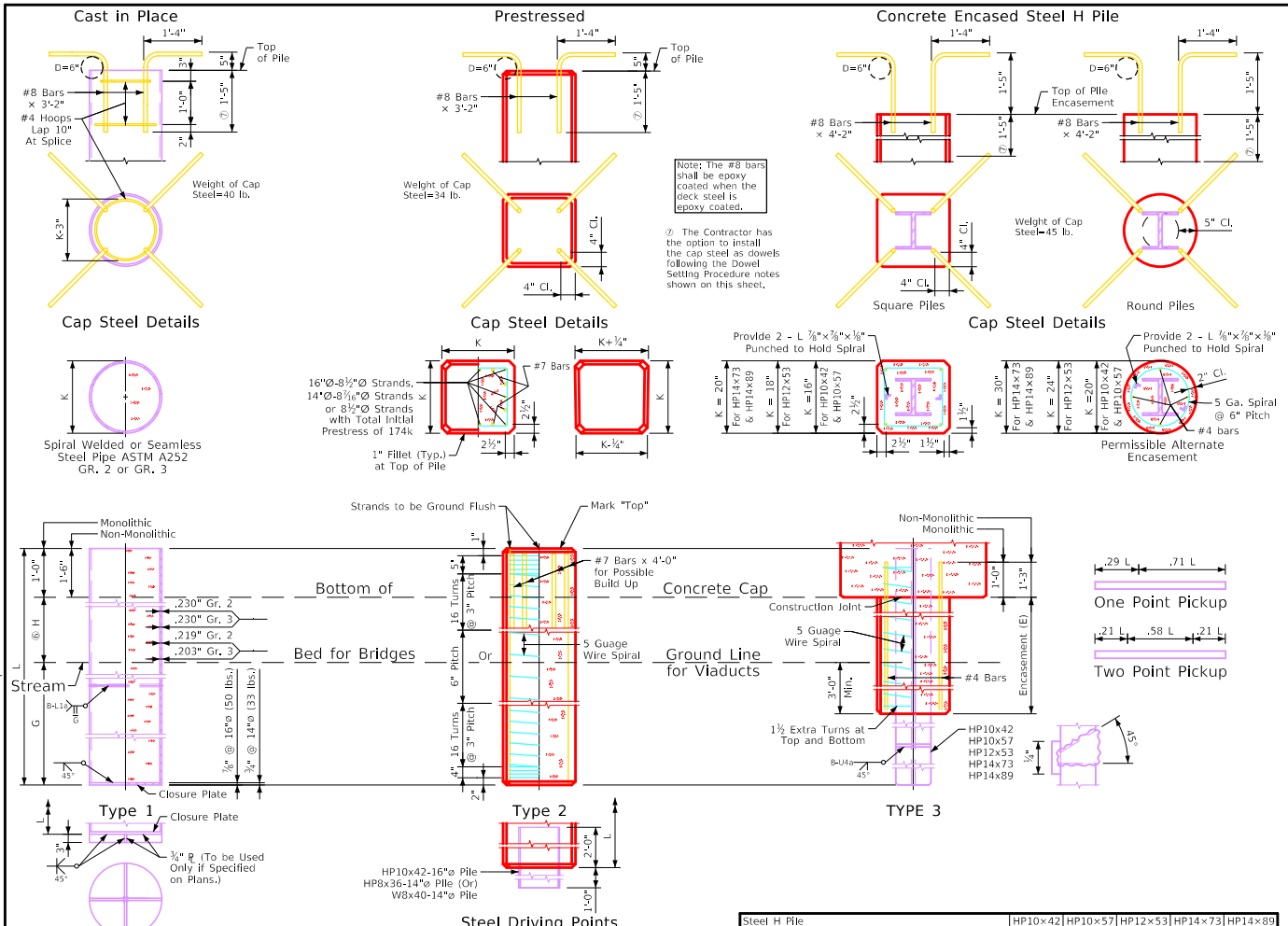

General Notes:

Except as noted elsewhere, material, construction, driving and extensions or build ups when necessary shall be in accordance with Standard Specifications of the Iowa D.O.T. and current Supplemental Specifications and Special Provisions applicable.

Cap steel shall be as detailed on this sheet (D=Pin Diameter). It shall be used if pile embedment is less than 1'-6".

"Nominal resistance Pn", "G", and "H" as given in tables are recommended design values for ordinary conditions, but may be modified for special conditions on any given job.

Nominal resistance Pn and pile size required shall in all cases be as specified on the plans.

Nominal resistance Pn shown are for friction resistance except for Type 3 piling where the resistance values shown could be either friction or point resistance.

Cost of all driving points and cap steel is to be included in the price bid per linear foot for piling.

Wire spiral shall conform to ASTM A1064 Grade 70.

Cast in Place Pile Notes:

Shell thicknesses shown are minimum requirements. The method of driving steel shell piles shall be adapted to the type and thickness of shell specified. Any shells which have been improperly driven, broken or are otherwise defective shall be removed and replaced by the bridge Contractor.

All cast in place piles shall have a closure plate. Driving points shall be used if specified on the plans.

Prestressed Pile Notes:

Except as otherwise noted all exposed corners 90° or sharper shall be filleted ¾".

Driving points for prestressed piles, if called for on the plans, shall be as detailed.

Heads of prestressed piles to be finished smooth and normal to axis of pile.

Bidding Notes:

The plans shall designate the size of pile to be used. They shall also specify the type, either Type 1, Type 2, or Type 3. If the option of Type 1 or 2 is given on the plans, the Contractor shall choose the type to be used. If Type 3 is specified, Type 3 shall be used, but the Contractor may choose the shape of the encasement. It should be kept in mind that for a given size and resistance value, length may vary with the shape (square or round).

Piles shall be bid designating the size, type and length.

Type 1 piling will be bid per linear foot of pile.

Type 2 piling will be bid per linear foot of pile.

Type 3 piling will be bid per linear foot of pile and linear foot of encasement. Price bid for encasement shall be full payment for necessary excavation and for furnishing and placing all material.

Dowel Setting Procedure:

If cap steel is required for the prestressed piles, the #8 deformed bars are to be set as dowels into the piles with polymer grout in accordance with Article 2301.03, E, of the Standard Specifications or by the following procedure.

- Drill hole approximately twice the diameter of the dowel bar and to the depth indicated.
- Fill hole with water and allow to stand long enough to thoroughly saturate the surrounding concrete (about four hours).
- Blow out all free water and fill hole 2/3 full of mortar.
- Insert dowel by driving, if necessary, and manipulate or tap with a hammer to consolidate mortar and secure complete embedment.
- Add more mortar, if necessary, to fill hole.
- Mortar shall consist of equal parts portland cement and sand with just enough water to make a workable mix.

K Dimension	in	14Ø		16Ø	
G Min. Below Ground	ft	24		27	
⑥ H Max. Above Ground	ft	18		22	
Shell ASTM A-252		Gr. 2	Gr. 3	Gr. 2	Gr. 3
Concrete (L=40')	cy	1.49	1.49	1.95	1.95
Concrete 1' Change	cy	0.0372	0.0373	0.0488	0.0488
① Wt. of Shell (L=40')	lb	1325	1231	1600	1600
Wt. of Shell 1' Change	lb	32.26	29.94	38.77	38.77
f'c	ksi	4.0	4.0	4.0	4.0
⑤ Nominal Resistance Pn	kips	119	119	137	137

① Includes Weight of Closure Plate.

Strand Strength		270k	
K Dimension	In	14Ø	16Ø
G Min. Below Ground	ft	24	27
⑥ H Max. Above Ground	ft	18	22
Concrete (L=40')	cy	2.01	2.62
Concrete 1' Change	cy	0.050	0.066
② Reinforcing (L=40")	lb	232	280
Reinforcing 1' Change	lb	3.93	5.10
Max. L 1 Pt. Pick-Up	ft	57	60
Max. L 2 Pt. Pick-Up	ft	82	86
f'c	ksi	5.0	5.0
⑤ Nominal Resistance Pn	kips	127	146
③ Initial Prestress	kips	174	231

② Includes Prestressing Strands.
③ Increase 5% for Artificial Curing.

Steel H Pile		HP10×42	HP10×57	HP12×53	HP14×73	HP14×89
G Min. Below Ground	ft	18	18	21	24	24
⑥ H Max. Above Ground W/ Monolithic	ft	19	19	23	28	29
⑥ H Max. Above Ground W/ Non-Monolithic	ft	15	16	20	25	26
Square Concrete (E=18')	cy	1.12	1.10	1.41	1.74	1.72
Square Concrete 1' Change	cy	0.062	0.061	0.078	0.097	0.096
Square ④ Reinforcing (E=18')	lb	96	96	99	103	103
Square ④ Reinforcing 1' Change	lb	4.98	4.98	5.13	5.28	5.28
Round Concrete (E=18')	cy	1.40	1.38	2.02	3.17	3.15
Round Concrete 1' Change	cy	0.078	0.076	0.112	0.176	0.175
Round ④ Reinforcing (E=18')	lb	97	97	102	110	110
Round ④ Reinforcing 1' Change	lb	5.02	5.02	5.26	5.62	5.62
⑤ Nominal Resistance Pn	kips	154	208	192	265	324
f'c = 4.0 ksi						

④ Includes Weight of Punched L ⅞"×⅞"×⅛"
⑤ See Bridge Design Manual 6.6.4.2 for Additional Information

Approved By: Bridge Engineer

Latest Revision 11-2023
Date:

LRFD Trestle Pile Bents - P10L

FILE NO.	ENGLISH	DESIGN TEAM	LRFD Designed Trestle Pile Bents	Standard Sheet P10L	COUNTY	PROJECT NUMBER	SHEET NUMBER	

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Revised 03-2022: Updated Spiral Requirements to ASTM A1054 Grade 70 (was ASTM A82).
Issued 01-09.
MIscellaneousBridges.dgn - P10L - This Sheet Re-Issued 11-2023. Sheet Format Update.