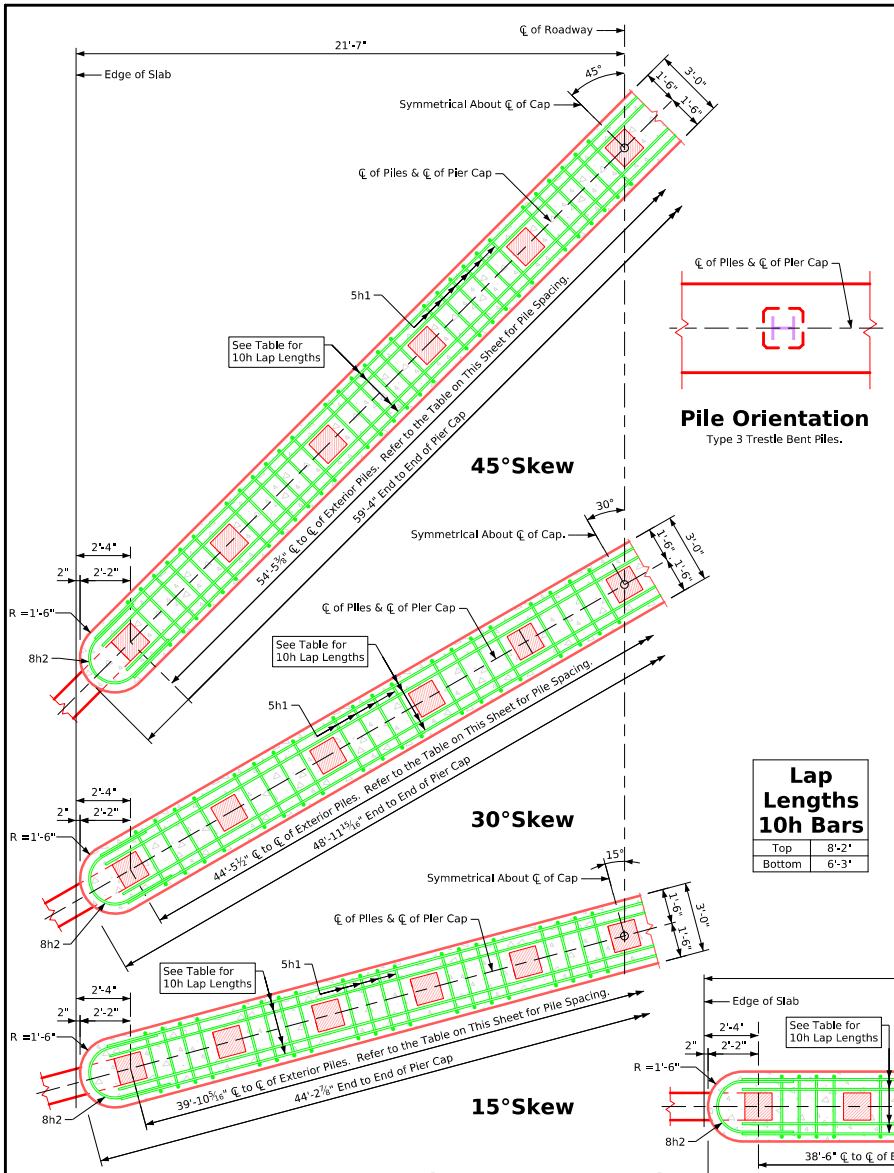

Pile Orientation

Type 3 Trestle Bent Piles.

Lap Lengths 10h Bars

Top	8'-2"
Bottom	6'-3"

Half Section Below Slab

Note: The number of piles and stirrups shown are for a 100'-0" bridge w/ HP 10x42 piles. Cap dimensions are typical for all bridges.

0°Skew

*Factored Loads And Number Of Piles Monolithic - 40' Roadway

Bridge Length	HP 10 x 42 Pu (kips)	HP 10 x 42 Number of Piles 0°	15°	30°	45°	HP 10 x 57 Pu (kips)	HP 10 x 57 Number of Piles 0°	15°	30°	45°	HP 12 x 53 Pu (kips)	HP 12 x 53 Number of Piles 0°	15°	30°	45°	HP 14 x 73 Pu (kips)	HP 14 x 73 Number of Piles 0°	15°	30°	45°	HP 14 x 89 Pu (kips)	HP 14 x 89 Number of Piles 0°	15°	30°	45°
70'-0	856	8	8	8	8	855	6	6	7	8	881	7	7	7	8	928	6	6	7	8	927	6	6	7	8
80'-0	950	9	9	9	9	942	7	7	7	8	968	8	8	8	8	1014	6	6	7	8	1014	6	6	7	8
90'-0	1055	10	10	10	10	1040	8	8	8	8	1066	8	8	8	8	1113	6	6	7	8	1112	6	6	7	8
100'-0	1170	11	11	11	11	1148	8	8	8	8	1184	9	9	9	9	1220	7	7	7	8	1219	6	6	7	8
110'-0	1282	12	12	12	12	1259	9	9	9	9	1299	10	10	10	10	1325	8	8	8	8	1324	6	6	7	8
120'-0	1420	14	14	14	14	1391	10	10	10	10	1433	11	11	11	11	1449	8	8	8	8	1449	7	7	7	8
130'-0	1550	15	15	15	15	1521	11	11	11	11	1567	12	12	12	12	1588	9	9	9	9	1571	7	7	7	8
140'-0	1686	16	16	16	16	1656	12	12	12	12	1705	13	13	13	13	1733	10	10	10	10	1700	8	8	8	8
150'-0	1844	N.A	N.A	17	18	1807	13	13	13	13	1859	14	14	14	14	1893	11	11	11	11	1860	9	9	9	9

*Factored Loads And Number Of Piles Monolithic - 40' Roadway

Bridge Length	Prestressed 14" Pu (kips)	Prestressed 14" Number of Piles 0°	15°	30°	45°	Prestressed 16" Pu (kips)	Prestressed 16" Number of Piles 0°	15°	30°	45°	Cast In Place 14" Pu (kips)	Cast In Place 14" Number of Piles 0°	15°	30°	45°	Cast In Place 16" Pu (kips)	Cast In Place 16" Number of Piles 0°	15°	30°	45°
70'-0	901	10	10	10	10	919	9	9	9	9	891	10	10	10	10	906	9	9	9	9
80'-0	998	11	11	11	11	1019	10	10	10	10	987	11	11	11	11	1005	9	9	10	10
90'-0	1107	12	12	12	12	1130	11	11	11	11	1095	12	12	12	12	1115	10	10	11	11
100'-0	1224	13	13	13	13	1251	12	12	12	12	1212	13	13	13	13	1235	12	12	12	12
110'-0	1349	14	14	14	15	1369	N.A	N.A	13	13	1325	14	14	14	14	1351	N.A	N.A	13	13
120'-0	1484	N.A	N.A	16	16	1507	N.A	N.A	14	14	1468	N.A	N.A	16	16	1488	N.A	N.A	14	14
130'-0	1617	N.A	N.A	N.A	17	1656	N.A	N.A	N.A	16	1601	N.A	N.A	N.A	17	1622	N.A	N.A	N.A	15
140'-0	1766	N.A	N.A	N.A	19	1798	N.A	N.A	N.A	17	1747	N.A	N.A	N.A	19	1775	N.A	N.A	N.A	17
150'-0	1930	N.A	N.A	N.A	N.A	1955	N.A	N.A	N.A	N.A	1900	N.A	N.A	N.A	N.A	1930	N.A	N.A	N.A	N.A

N.A. indicates the pile spacing for this pile size does not satisfy the maximum or minimum spacing requirements.

*Pu is Strength 1 Pier Design load which includes factored dead and live loads including dynamic load allowance (IM) pier cap weight based on 45° skew, and weight of pile encasement.

Pile Spacing - Monolithic - 40' Roadway Width

No. Piles	No. Spaces	0° Skew	15° Skew	30° Skew	45° Skew
6	5	7'-8"	8'-0"	N.A.	N.A.
7	6	6'-5"	6'-8"	7'-5"	N.A.
8	7	5'-6"	5'-8"	6'-4"	7'-9"
9	8	4'-10"	5'-0"	5'-7"	6'-10"
10	9	4'-3"	4'-5"	4'-11"	6'-1"
11	10	3'-10"	4'-0"	4'-5"	5'-5"
12	11	3'-6"	3'-7"	4'-0"	4'-11"
13	12	3'-2"	3'-4"	3'-8"	4'-6"
14	13	3'-0"	3'-1"	3'-5"	4'-2"
15	14	2'-9"	2'-10"	3'-2"	3'-11"
16	15	2'-7"	2'-8"	3'-0"	3'-8"
17	16	N.A.	N.A.	2'-9"	3'-5"
18	17	N.A.	N.A.	2'-7"	3'-2"
19	18	N.A.	N.A.	N.A.	3'-0"

N.A. Indicates the pile spacing for this pile size cannot satisfy for the limits of the maximum or minimum spacing requirements.

Pier Notes:

The minimum clear distance from the face of the concrete to the nearest reinforcing bar is to be 2" unless otherwise noted or shown.

Pier piles are to 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 in plans. Additional driving capacity may be required through scourable layers. For General Plan Notes for additional information, Sheet **J40-01-25**.

Cap steel, as detailed on the P10L Standard Pile Drawing, is required for monolithic pier caps.

Concrete quantities are based on the use of Type 3 piling. If Type 1 or Type 2 is used, concrete quantities may be adjusted to account for the concrete displaced by the piling.

All reinforcing steel is to be Grade 60.

Pier piling was designed for HL-93 loading with an allowance for 20 lbs. per sq. ft. of future wearing surface.

Note:
For Monolithic Pier Cap Details And Quantities, See Sheet **J40-26-25**.

Latest Revision Date

Approved by Bridge Engineer

IOWA | DOT

Standard Design-40'-0" Roadway, 3 Span Bridge

Continuous Concrete Slab Bridge

July, 2025

Pier Cap Monolithic Details All Bridges (1 of 2)

J40-25-25