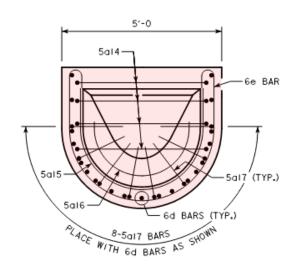


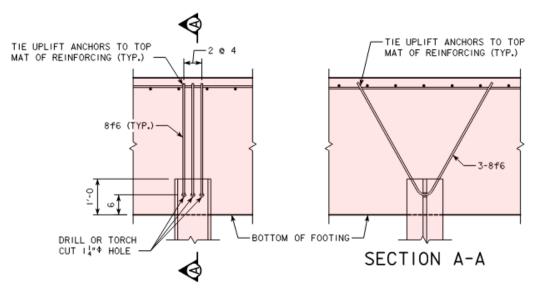
CAP END REINFORCEMENT DETAIL (SURFACE REINFORCING AND CAP STIRRUPS NOT SHOWN FOR CLARITY)

# 7′-6 5al4--5a17 (TYP.) 40 (a) da a a d a d d - 6d BARS (TYP.) 10-5a17 BARS PLACE WITH 6d BARS AS SHOWN

VIEW H-H (SHOWING PIER NO. 5A)



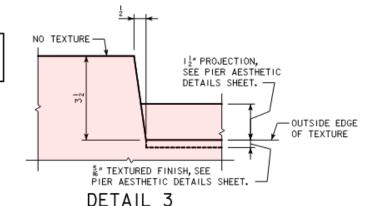
VIEW H-H (SHOWING PIER NOS. I THRU 4)

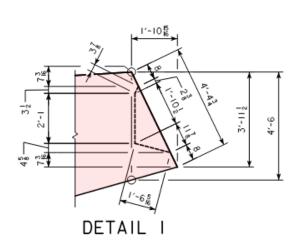


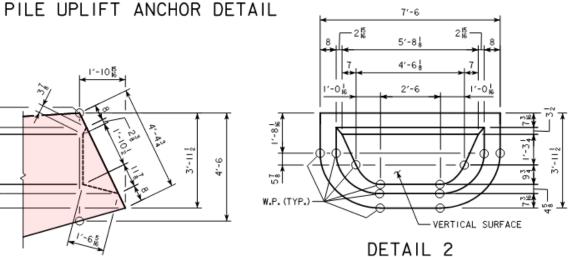
THE CONTRACTOR SHALL HOLD 8f6 BARS IN POSITION DURING CONSTRUCTION SUCH THAT THE BARS BEAR AGAINST THE TOP OF THE HOLES PLACED IN THE PILE.

REFER TO DESIGN NO. 120 OF THIS PROJECT FOR 3D PDF OF PIER CAP END. 7'-6 WIDE CAP SHOWN, 5'-0 WIDE CAP SIMILAR.

> FOR LOCATION OF DETAILS 1-3, SEE PIER DETAILS SHEET.







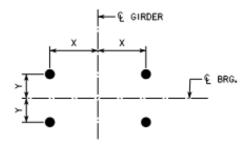
(SHOWING PIER NO. 5A)

5'-0 3'-2 2'-0 W.P. (TYP.) -VERTICAL SURFACE

DETAIL 2 (SHOWING PIER NOS. I THRU 4)

#### NOTES:

For the full plan set and additional structure information, see Br3-Steel and Concrete-Iowa DOT.pdf.



## ANCHOR BOLT LOCATION

(FOR ADDITIONAL DETAILS AND NOTES, SEE DISC BEARING DETAILS SHEETS)

ANCHOR BOLT LOCATION		
LOCATION	X (IN.)	Y (IN.)
PIER NOS. I-4	16	6
PIER NOS. 5 BK. & 5A BK.	16	5.5

### MECHANICAL SPLICE ASSEMBLY NOTES:

THE VERTICAL COLUMN BARS SHALL BE SPLICED AT THE LOCATIONS SHOWN ON THE PIER I DETAIL SHEETS USING MECHANICAL SPLICE ASSEMBLIES, MECHANICAL SPLICE ASSEMBLIES CONSIST OF MECHANICAL SPLICERS AND REINFORCING SPLICE BARS AS REQUIRED TO FACILITATE THE USE OF THE MECHANICAL SPLICER. THE MECHANICAL SPLICE ASSEMBLY USED SHALL MEET THE REQUIREMENTS OF MATERIALS I.M. 451, APPENDIX E.

THE COST OF ALL SPLICE ASSEMBLIES IS TO BE INCLUDED IN THE PRICE BID FOR "REINFORCING STEEL" AND NO SEPARATE PAYMENT WILL BE MADE. THE WEIGHT OF MECHANICAL SPLICE ASSEMBLIES IS NOT INCLUDED IN THE QUANTITY SHOWN FOR "REINFORCING STEEL".

#### PIER NOTES:

MINIMUM CLEAR DISTANCE FROM FACE OF CONCRETE TO NEAR REINFORCING BAR IS TO BE 2" UNLESS OTHERWISE NOTED OR SHOWN.

ALL BATTERED PILES SHALL BE TRIMMED TO A HORIZONTAL LINE TO AID IN THE PLACEMENT OF REINFORCING.

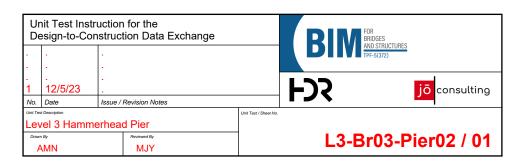
WELDING OF ANCHOR BOLTS SHALL NOT BE ALLOWED. THE CONTRACTOR SHALL OBTAIN A TEMPLATE FROM THE MANUFACTURER/FABRICATOR FOR PROPER PLACEMENT OF THE

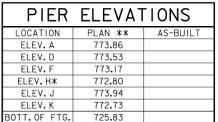
PIER BEARING PEDESTAL REINFORCING (M & N BARS) PLACEMENT SHALL BE ADJUSTED SLIGHTLY TO CLEAR PIER CAP REINFORCING

#### PIER FORMS NOTES:

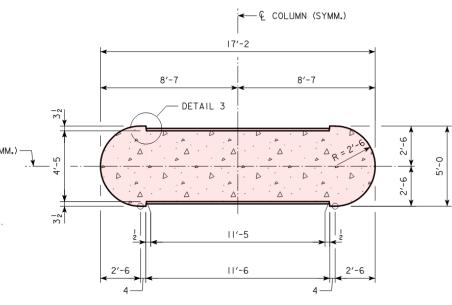
THE USE OF STEEL FORMS IS REQUIRED FOR THE FORMING OF ALL PIER CONCRETE SURFACES FROM THE TOP OF FOOTING TO THE TOP OF PIER CAP. USE OF UNFACED LUMBER OR PLYWOOD IS ALLOWED ONLY FOR BLOCKING AND SPACERS TO CREATE RECESSES AND TO SUPPORT FORM LINERS. DO NOT USE PLAIN PLYWOOD-FACED FORMS OR PLAIN LUMBER FOR ANY PORTION OF THE FINISHED PIER COLUMN OR CAP SURFACES.

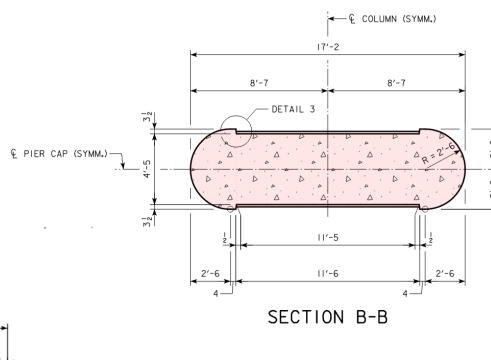
DUE TO THE COMPLEX GEOMETRY OF THE PIER CAP END RECESSES, A 3D BIM MODEL WILL BE MADE AVAILABLE TO THE CONTRACTOR FOR POSSIBLE USE IN AUTOMATED MACHINING OF EXPANDED POLYSTYRENE FOAM, PLASTIC OR OTHER MATERIAL TO CREATE FORM INSERTS OR INTERMEDIATE PROCESS MOLDS.

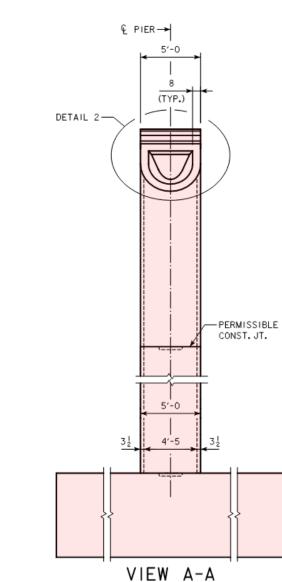




- \*\* ELEVATIONS AND PEDESTAL HEIGHT DEPENDENT
- ON FINAL BEARING HEIGHT, WHICH SHALL BE DETERMINED BY BEARING MANUFACTURER. CONTRACTOR SHALL VERIFY BEARING HEIGHT WITH MANUFACTURER, AND ADJUST ELEVATIONS IF NECESSARY, PRIOR TO PLACING CONCRETE.

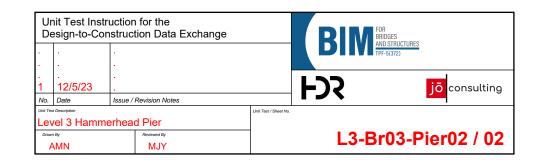


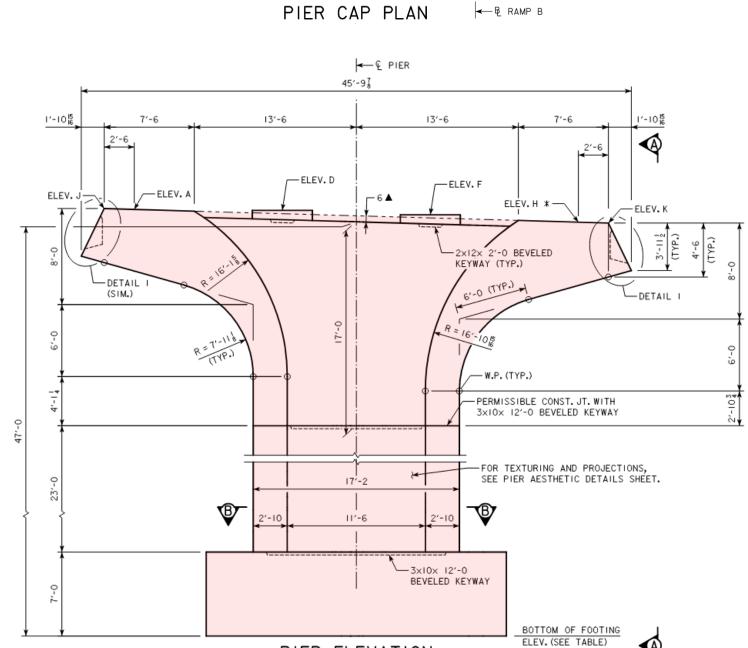






MEASURED PERPENDICULAR TO A LINE FROM FROM ELEV. A TO ELEV. H.





PIER ELEVATION

45'-97

42'-0

3 GIRDER SPA.@ 12'-4 = 37'-0

10'-0

← Q PIER

← € GIRDER D

<u>90</u>°00′00″

← Q GIRDER H

← Q GIRDER F

-PIER BEARINGS WITH ANCHOR BOLTS. (TYP.)

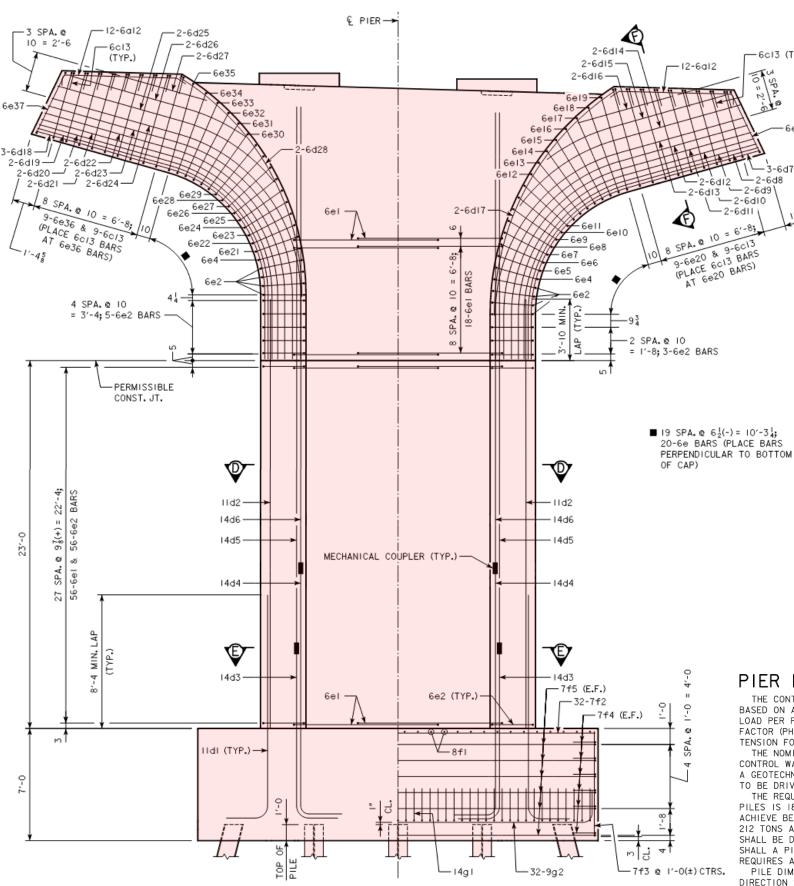
SEE DESIGN SHEETS 58 THRU 60 FOR DETAILS.

(TYP.) 2'-6 2'-6

← Q GIRDER A

1'-10 15

€ PIER CAP-



PIER REINFORCING ELEVATION

## PIER PILE NOTES:

-6cl3 (TYP.)

2-6d8

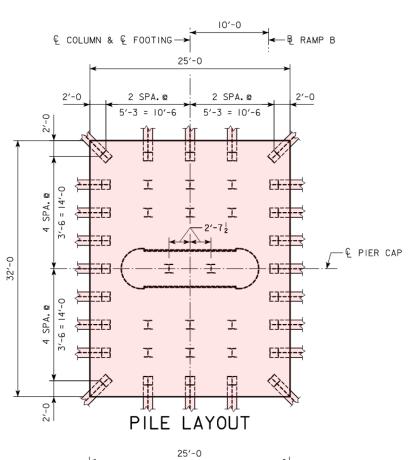
THE CONTRACT LENGTH OF 75 FEET FOR THE PIER NO. I PILES IS BASED ON A COHESIVE SOIL CLASSIFICATION, A TOTAL FACTORED AXIAL LOAD PER PILE (PU) OF 275 KIPS, AND A GEOTECHNICAL RESISTANCE FACTOR (PHI) OF 0.65. PIER PILES ALSO WERE DESIGNED FOR A FACTORED TENSION FORCE OF 27 KIPS.

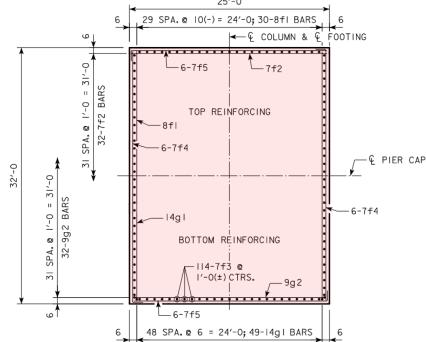
THE NOMINAL AXIAL BEARING RESISTANCE FOR CONSTRUCTION CONTROL WAS DETERMINED FROM A COHESIVE SOIL CLASSIFICATION AND A GEOTECHNICAL RESISTANCE FACTOR (PHI) OF 0.76. PILES ARE ASSUMED TO BE DRIVEN FROM A START ELEVATION AT THE BOTTOM OF FOOTING.

THE REQUIRED NOMINAL AXIAL BEARING RESISTANCE FOR PIER NO. I PILES IS 181 TONS AT END OF DRIVE. IF RETAPS ARE NECESSARY TO ACHIEVE BEARING, THE REQUIRED NOMINAL AXIAL BEARING RESISTANCE IS 212 TONS AT ONE-DAY OR LATER RETAPS. THE PILE CONTRACT LENGTH SHALL BE DRIVEN AS PER PLAN UNLESS PILES REACH REFUSAL. IN NO CASE SHALL A PILE BE EMBEDDED LESS THAN 10 FEET. CONSTRUCTION CONTROL REQUIRES A WEAP ANALYSIS WITH BEARING GRAPH.

PILE DIMENSIONS ARE AT BOTTOM OF FOOTING. BATTER PILES 1:4 IN

38 - HPI4x73 STEEL BEARING PILING ARE REQUIRED.





FOOTING REINFORCING LAYOUT

