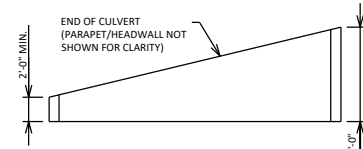


LIFTING HOLES

LIFTING INSERTS

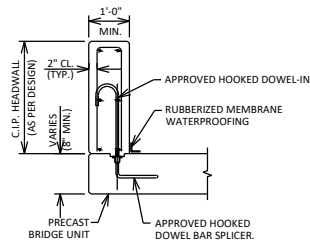
TYPICAL LIFT POINT SEALING DETAIL



SKEWED UNITS

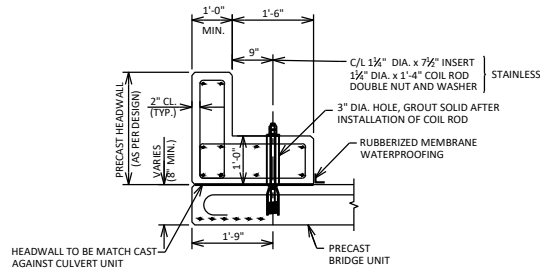
TYPICAL SKEW LIMITS PLAN VIEW - NOT TO SCALE

7'-0" MAX. FOR SPANS ≤ 24'-0"
5'-0" MAX. FOR SPANS 28'-0" - 42'-0"



CAST-IN-PLACE HEADWALL DETAIL

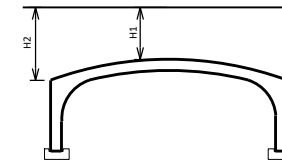
NOT TO SCALE



PRECAST HEADWALL DETAIL WITH COLLAR

NOT TO SCALE

	H1	H2
UNIT SPAN	MAX. HEIGHT @ CROWN TO T/HEADWALL (NO LIVE LOAD SURCHARGE)	MAX. APPROXIMATE HEIGHT @ EDGE OF SPAN
14'-0"	8'-0"	9'-6 1/2"
20'-0" - 28'-0"	7'-0"	10'-0"
36'-0"	6'-0"	10'-6"
42'-0"	4'-0"	10'-0"



LRFD COLLAR/HEADWALL DESIGN NOTES:

- HEADWALL DETAILS SHOWN HERE HAVE ONLY BEEN DESIGNED FOR THE FOLLOWING 2 LOAD CASES:
 - 1) EARTH PRESSURE ONLY
 - 2) EARTH PRESSURE + LIVE LOAD SURCHARGE
- THESE DETAILS ARE NOT TO BE USED WHERE A VEHICLE LOAD CAN BE TRANSMITTED THROUGH A BARRIER TO THE HEADWALL.
- 1'-0" HEADWALL THICKNESS
- 1'-0" COLLAR THICKNESS
- SOIL BEHIND HEADWALL IS AT SAME ELEVATION AS TOP OF HEADWALL
- ADDITIONAL HW HEIGHT MAY BE ACHIEVED WITH ADDITIONAL STEEL REINFORCEMENT OR THICKENED COLLAR
- FOR DETACHED HEADWALL DESIGNS ONLY

**PRECAST THREE-SIDED
BOX CULVERT
HEADWALL DETAILS**

**BUREAU OF
STRUCTURES**

APPROVED: *Laura Shadewald* DATE: 1-11