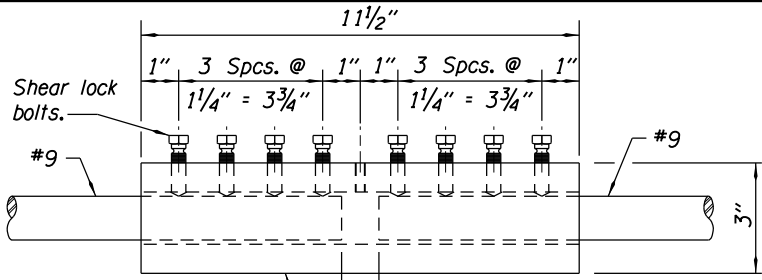


NOTE:
Center the coupler on the gap "G" between bars.
"Shear-Lock" Bolts break off cleanly when properly tightened.



Bar-Lock "L-Series" coupler or approved equal.

Gap between #9 bars
1" maximum for 95% of ultimate tensile strength for Grade 60 reinforcing. (160% of specified yield strength).
or
3" maximum for 90% of ultimate tensile strength for Grade 60 reinforcing. (130% of specified yield strength).

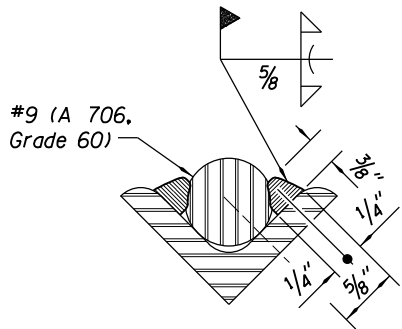
NOTE TO DESIGNER:

Increasing the gap to engage only 3 "Shear-Lock" bolts for each bar reduces the "L-Series" coupler capacity to that of the "S-Series" coupler, still adequate to resist the one time deck pour construction loading.

MECHANICAL SPLICE EXAMPLE

NOTE:

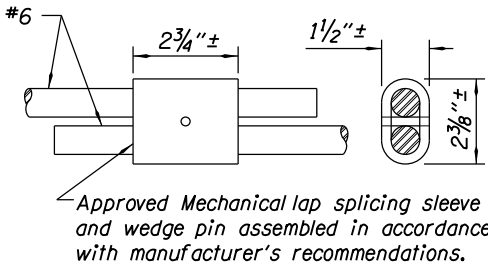
Ensure all welds conform to AWS D1.4 (Structural Welding Code for Reinforcing Steel). Submit welder certification and welding procedure for approval prior to welding.



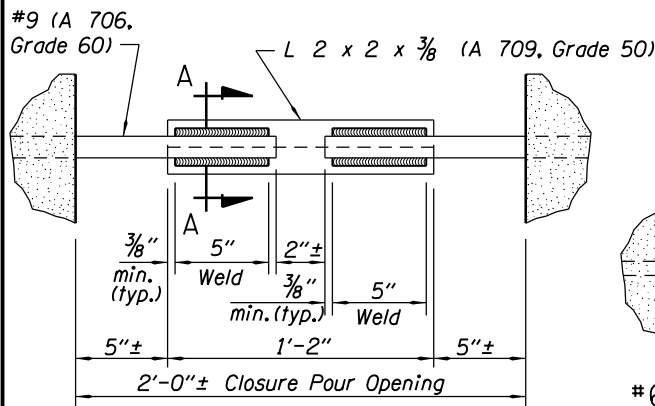
SECTION A-A

NOTE TO DESIGNER:

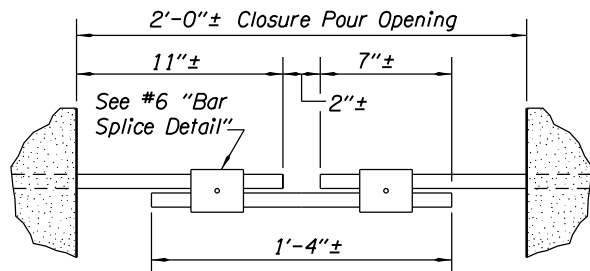
This drawing is used for designing. Use the necessary details in project plans. DO NOT INCLUDE THIS DRAWING IN PROJECT PLANS.



#6 BAR SPLICE



WELDED SPLICE EXAMPLE



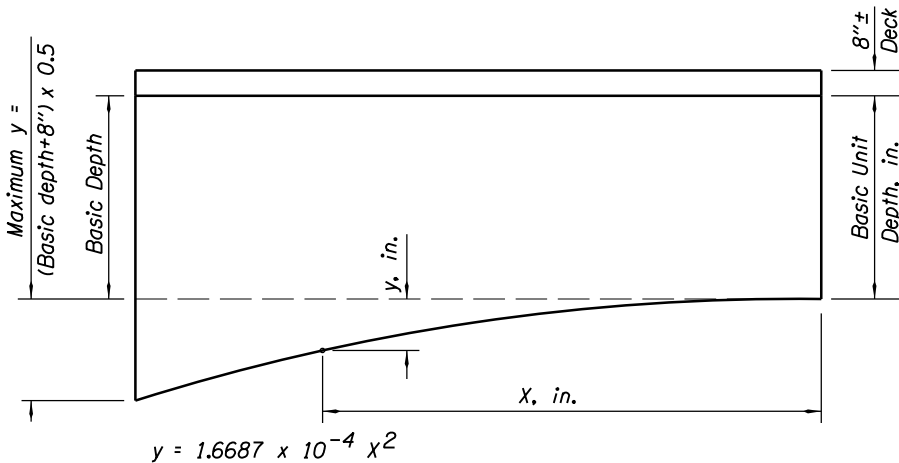
#6 BAR SPLICE AT CLOSURE POUR

PRECAST PRESTRESSED TRAPEZOIDAL BOXES					
SPAN TYPE	EST. MAX. SPAN (ft.)	BASIC UNIT DEPTH (in.)	BASIC TOTAL DEPTH (in.)	* MAX. HAUNCH DEPTH (in.)	MAX. HAUNCH LENGTH
Simple	125	52	60	30	35'-4"
	137.5	58	66	33	37'-1"
	150	64	72	36	38'-9"
	162.5	70	78	39	40'-4"
	175	76	84	42	41'-10"
One End Continuous	150	52	60	30	35'-4"
	162.5	58	66	33	37'-1"
	175	64	72	36	38'-9"
	187.5	70	78	39	40'-4"
	200	76	84	42	41'-10"
Both Ends Continuous	175	52	60	30	35'-4"
	187.5	58	66	33	37'-1"
	200	64	72	36	38'-9"
	212.5	70	78	39	40'-4"
	225	76	84	42	41'-10"

*The maximum haunch depth is based on a haunch total depth to the basic total depth ratio of 1.5 to 1. Deeper haunch depths could be used for the shallower units, keeping in mind the increased transport vertical clearance and weight problems.

Use a 2'-0" opening for closure pours between precast units. Splice reinforcing bars using approved welded or mechanical splices. Use ASTM A 706 bars for all reinforcement protruding from the precast units. Add additional reinforcement to carry the negative moment loads (deck weight, finishing machine weight, overhang bracket loads, etc.) in the top of the stems at the closure pour. Add additional steel or prestressing in the bottom slab as necessary to carry the positive moment construction loads. The Contractor is responsible for any additional reinforcement if the reinforcement on the plans is not adequate to support his construction loads. Provide an inspection access hole in the bottom slab in each span of each girder run. Locate inspection hole so that it will not interfere with required bottom slab reinforcing.

Design the falsework supporting the exterior stem of exterior trapezoidal boxes to prevent rotation and/or excessive settlement of the boxes when pouring the deck. Modern deck finishing machines are very heavy and can add large torque loads to the box units when the finishing machine is supported on deck overhang brackets. Spans typically consist of three precast units. Four units may be required in some spans while two units may be sufficient in others.



PARABOLIC HAUNCH DEFINITION

BOTTOM SLAB TRANSVERSE BAR WIDTHS IN HAUNCH **							
X, in.	Y, in.	W _{BT} , in.	W _{TT} , in.	X, in.	Y, in.	W _{BT} , in.	W _{TT} , in.
0	0	83.0	74.5	371.3	23	71.5	63.0
77.4	1	82.5	74.0	379.3	24	71.0	62.5
109.5	2	82.0	73.5	387.1	25	70.5	62.0
134.1	3	81.5	73.0	394.8	26	70.0	61.5
154.9	4	81.0	72.5	402.3	27	69.5	61.0
173.1	5	80.5	72.0	409.7	28	69.0	60.5
189.7	6	80.0	71.5	417.0	29	68.5	60.0
204.9	7	79.5	71.0	424.1	30	68.0	59.5
219.0	8	79.0	70.5	431.1	31	67.5	59.0
232.3	9	78.5	70.0	438.0	32	67.0	58.5
244.9	10	78.0	69.5	444.8	33	66.5	58.0
256.8	11	77.5	69.0	451.5	34	66.0	57.5
268.2	12	77.0	68.5	458.1	35	65.5	57.0
279.2	13	76.5	68.0	464.6	36	65.0	56.5
289.7	14	76.0	67.5	471.0	37	64.5	56.0
299.9	15	75.5	67.0	477.3	38	64.0	55.5
309.7	16	75.0	66.5	483.5	39	63.5	55.0
319.2	17	74.5	66.0	489.7	40	63.0	54.5
328.5	18	74.0	65.5	495.8	41	62.5	54.0
337.5	19	73.5	65.0	501.8	42	62.0	53.5
346.3	20	73.0	64.5	507.7	43	61.5	53.0
354.8	21	72.5	64.0	513.6	44	61.0	52.5
363.2	22	72.0	63.5	519.4	45	60.5	52.0

SECTION PROPERTIES SUMMARY * PRECAST PRESTRESSED TRAPEZOIDAL BOXES					
LOCATION	UNIT DEPTH (in.)	BTM. SLAB DEPTH (in.)	AREA (in ²)	Y _b , in.	I, in. ⁴ x 10 ³
MIDSPAN	52	6	1544	20.56	441.300
MAXIMUM HAUNCH	82	6*	2074	35.98	1439.000
MIDSPAN	58	6	1668	23.30	595.000
MAXIMUM HAUNCH	91	6*	2250	40.48	1902.000
MIDSPAN	64	6	1792	26.10	779.700
MAXIMUM HAUNCH	100	6*	2427	45.04	2452.500
MIDSPAN	70	6	1916	28.91	995.100
MAXIMUM HAUNCH	109	6*	2604	49.63	3094.500
MIDSPAN	76	6	2039	31.74	1244.750
MAXIMUM HAUNCH	118	6*	2780	54.21	3831.500

NOTE: *Adjust section properties at maximum haunch when bottom slab thickness is greater than 6".

**** NOTE:**

Dimensions based on a 6" thick bottom slab with 1 1/2" stem and bottom of bottom slab concrete clearance to reinforcing. Adjust as necessary for thicker bottom slabs.

See BAR SCHEMATIC on dwg. BR133 for dimension locations.

Reference to dwg. BR133

The selection and use of this detail, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

OREGON DEPARTMENT OF TRANSPORTATION TECHNICAL SERVICES DETAILS	
TRAPEZOIDAL BOX and BAR SPLICE DESIGN SHEET	DETAIL NO. DET3134