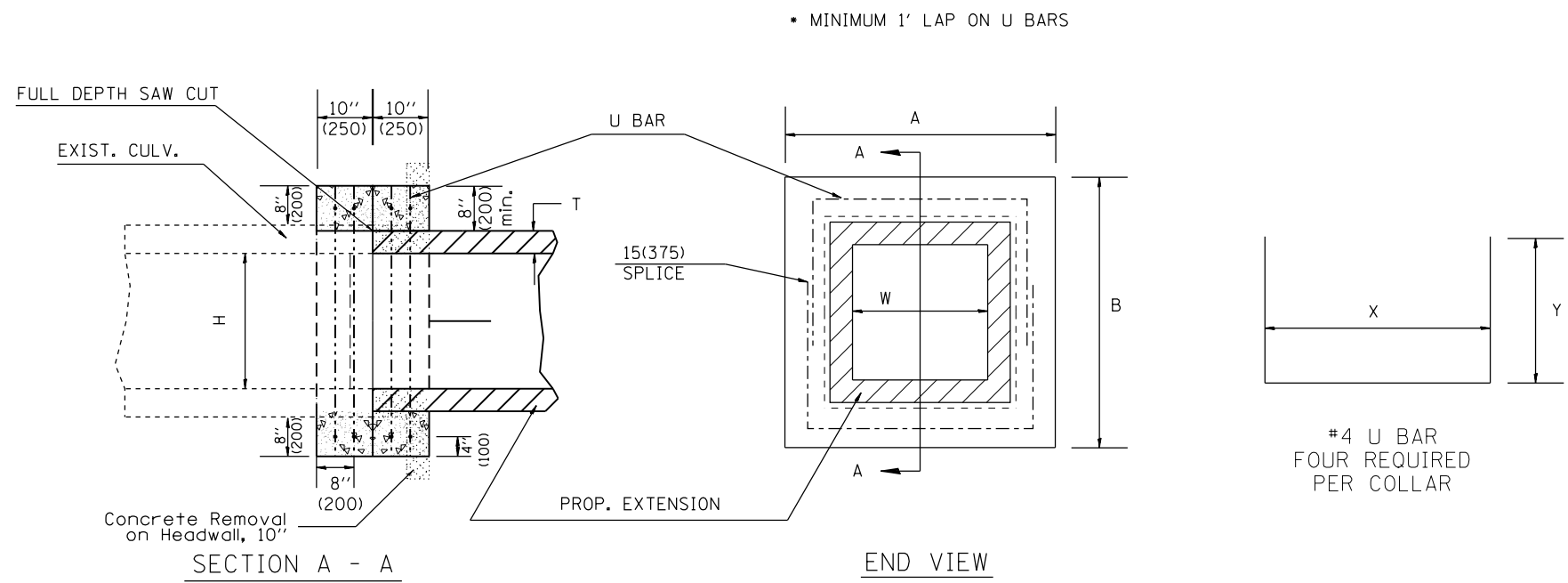


DESIGNER NOTES:
 1. IF REMOVING EXISTING HEAD WALL AND DETERIORATED PORTION OF EXISTING CULVERT PAY FOR REMOVAL AS CUBIC YARDS OF CONCRETE REMOVAL.
 2. IF ONLY REMOVING EXISTING HEADWALL THE DESIGNER HAS THE OPTION TO PAY AS CUBIC YARDS OF CONCRETE REMOVAL OR AS AN EACH FOR CONCRETE HEADWALL REMOVAL.



• MINIMUM 1' LAP ON U BARS

GENERAL NOTES

1. The collar shall be constructed entirely of class SI concrete and in accordance with the applicable portions of section 503 of the Standard Specifications. Reinforcement bars shall conform to section 508.
2. Expansion bolts shall consist of approved expansions anchors, and 3/4" (M20) hook bolts which conform to Section 1006.09. These bolts shall extend at least 8" (200) into the new concrete.
3. This work will be paid for by the cubic yard (cubic meter) for CONCRETE COLLAR, by the pound (kg) for REINFORCEMENT BARS, and by Each for EXPANSION BOLTS of the size indicated.
4. Class SI quantity is only an estimate. Revise based on thickness of existing box wall thickness.

DIMENSIONS

EXISTING BOX		A	B	T	EACH COLLAR			
W ft (mm)	H ft (mm)				CL SI CU YD (m ³)	REINFORCEMENT X	BARS Y	POUNDS (kg)
2 (600)	2 (600)	4'-0" (1.22m)	4'-0" (1.22m)	4(100)	0.27(0.21)	3'-4" (1.02m)	27.5(698)	21 (9.5)
3 (900)	2 (600)	5'-0" (1.52m)	4'-0" (1.22m)	4(100)	0.32(0.24)	4'-4" (1.32m)	27.5(698)	24 (11)
3 (900)	2.5 (750)	5'-0" (1.52m)	4'-6" (1.37m)	4(100)	0.34(0.26)	4'-4" (1.32m)	30.5(774)	25 (11.5)
3 (900)	3 (900)	5'-0" (1.52m)	5'-0" (1.52m)	4(100)	0.36(0.28)	4'-4" (1.32m)	33.5(850)	26.5 (12)
3 (900)	4 (1200)	5'-2" (1.57m)	6'-2" (1.88m)	5(125)	0.41(0.31)	4'-6" (1.37m)	40.5(1.03m)	30 (13.5)
4 (1200)	3 (900)	6'-2" (1.88m)	5'-2" (1.57m)	5(125)	0.41(0.31)	5'-6" (1.68m)	34.5(876)	30 (13.5)
4 (1200)	4 (1200)	6'-2" (1.88m)	6'-2" (1.88m)	5(125)	0.45(0.34)	5'-6" (1.68m)	40.5(1.03m)	33 (15)
4 (1200)	5 (1500)	6'-4" (1.93m)	7'-4" (2.24m)	6(150)	0.51(0.39)	5'-8" (1.73m)	3'-11.5"(1.21m)	36 (16.5)
5 (1500)	4 (1200)	7'-4" (2.24m)	6'-4" (1.93m)	6(150)	0.51(0.39)	6'-8" (2.03m)	3'-4.5"(1.05m)	36 (16.5)
5 (1500)	5 (1500)	7'-4" (2.24m)	7'-4" (2.24m)	6(150)	0.55(0.42)	6'-8" (2.03m)	3'-11.5"(1.21m)	39 (17.5)
5 (1500)	6 (1800)	7'-6" (2.29m)	8'-6" (2.59m)	7(175)	0.60(0.46)	6'-10" (2.08m)	4'-6.5"(1.38m)	42.5 (19)
6 (1800)	4 (1200)	8'-6" (2.59m)	6'-6" (1.98m)	7(175)	0.56(0.43)	7'-10" (2.39m)	3'-6.5"(1.08m)	40 (18)
6 (1800)	5 (1500)	8'-6" (2.59m)	7'-6" (2.29m)	7(175)	0.60(0.46)	7'-10" (2.39m)	4'-0.5"(1.23m)	42.5 (19)
6 (1800)	6 (1800)	8'-6" (2.59m)	8'-6" (2.59m)	7(175)	0.64(0.49)	7'-10" (2.39m)	4'-6.5"(1.38m)	45 (20.5)
6 (1800)	8 (2400)	8'-8" (2.64m)	10'-8" (3.25m)	8(200)	0.74(0.57)	8'-0" (2.44m)	5'-7.5"(1.71m)	51.5 (23)
8 (2400)	8 (2400)	10'-8" (3.25m)	10'-8" (3.25m)	8(200)	0.82(0.63)	10'-0" (3.05m)	5'-7.5"(1.71m)	57 (26)

QUANTITIES

CALC. BY: _____ DATE: _____

CHECKED BY: _____ DATE: _____

QUANTITY CALCULATIONS ARE ON FILE AT THE DISTRICT 4 OFFICE; BUREAU OF PROJECT IMPLEMENTATION; DOCUMENTATION SECTION

All dimensions are in inches (millimeters) unless otherwise noted.