

DOUBLE BARREL 9'-0" X 9'-0" CONCRETE BOX CULVERT EXTENSION

STA 112+54 LANDER - HUDSON ROAD P-20 (WY 789)

N202050

FREMONT COUNTY

PRELIMINARY

ESTIMATED QUANTITIES - CODE 13				
ITEM NO.	ITEM	UNIT	TOTAL QUANTITY	ESTIMATE
206.03300	CULVERT SUBEXCAVATION	CY	X	
212.03900	PERVIOUS BACKFILL MATERIAL	CY	X	
217.01010	GEOTEXTILE, EROSION CONTROL	SY	X	
217.01020	GEOTEXTILE, MATERIAL SEPARATION (WOVEN)	SY	X	
301.01020	CRUSHER RUN SUBBASE	TON	X	
511.02000	GABIONS	SY	X	
513.00005	CLASS A CONCRETE	LS	LUMP SUM	X CY
514.00015	REINFORCING STEEL	LS	LUMP SUM	X LB
900.60000	CONTRACTOR QUALITY CONTROL (CONCRETE)	LS	LUMP SUM	

DESIGN DATA

SPECIFICATIONS: AASHTO LRFD Bridge Design Specifications, 8th Edition.

ADT: 3500 (Year 2005)

LOADING:

Live Load: HL93
Lateral live load surcharge: 2 ft earth or 72 psf
Dead Load: Design fill: 7.0 ft
Vertical earth pressure: 120 pcf
Lateral earth pressure: 72 pcf

REINFORCED CONCRETE: Load and Resistance Factor Design -
Class A Concrete $f'_c = 4000$ psi
Reinforcing Steel $f_y = 60,000$ psi (Grade 60)

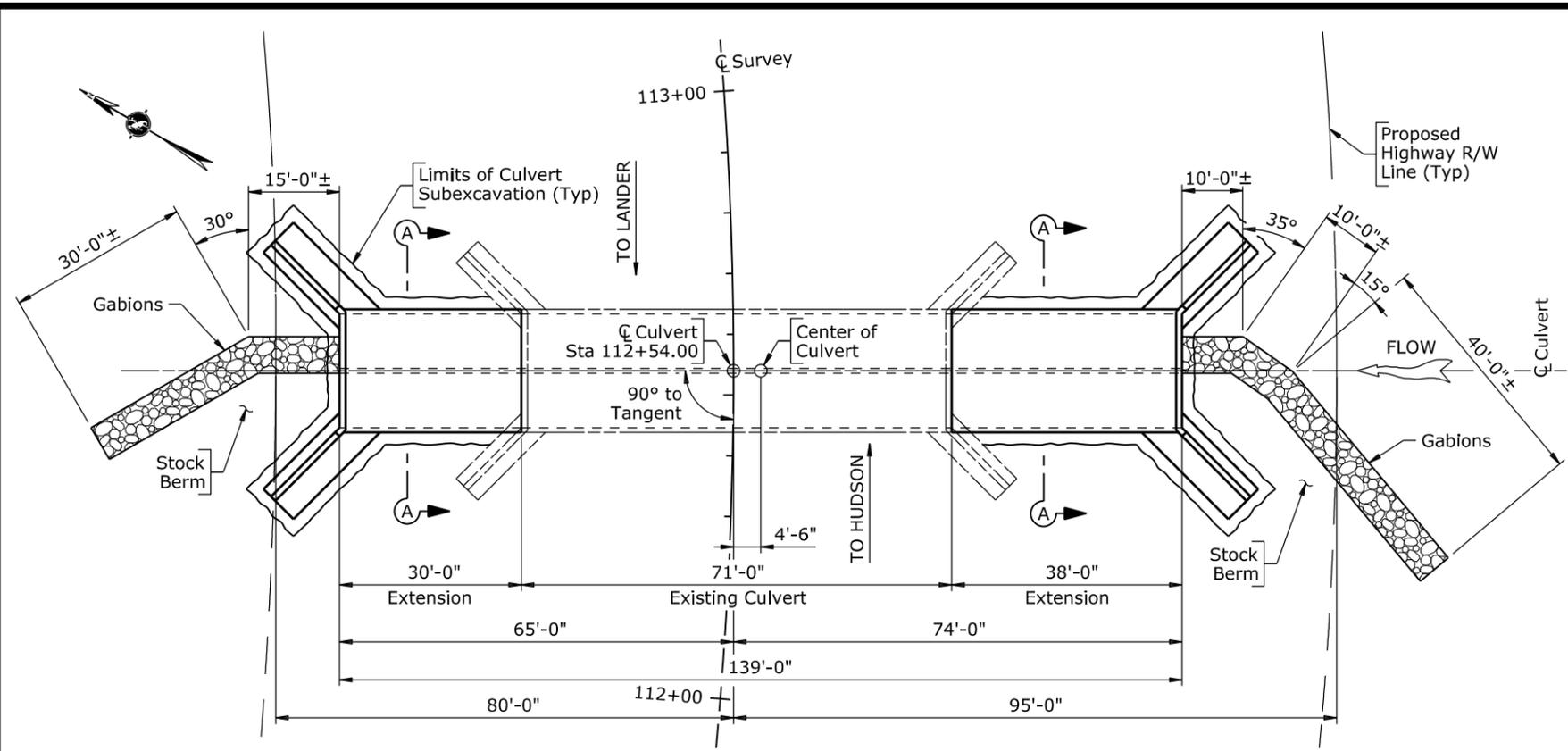
APPROACH ROADWAY WIDTH: 72'-0"

STRUCTURE NO. M-OTT-C
ML20B, RM 83.22

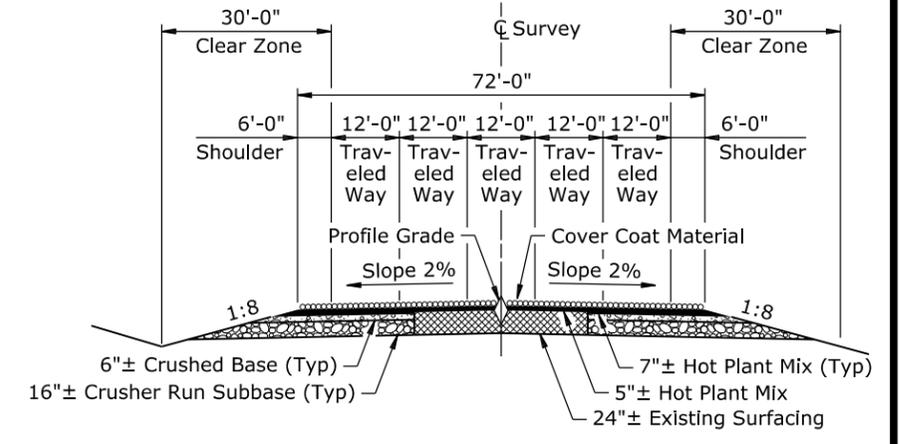
WYOMING DEPARTMENT OF TRANSPORTATION BRIDGE PROGRAM			
REVISIONS			
REVIEW	DESIGN	DETAIL	Design Section Q R Stuv
		LLL ✓ HHH	Drwg No. P-0008 Sheet 1 of 3
APPROVAL	QTY'S		

Nov 2018

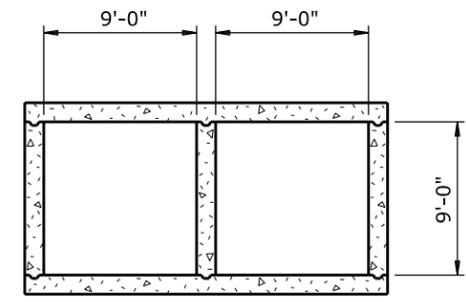
Wyo. Proj. N202050
 Sheet of Sheets



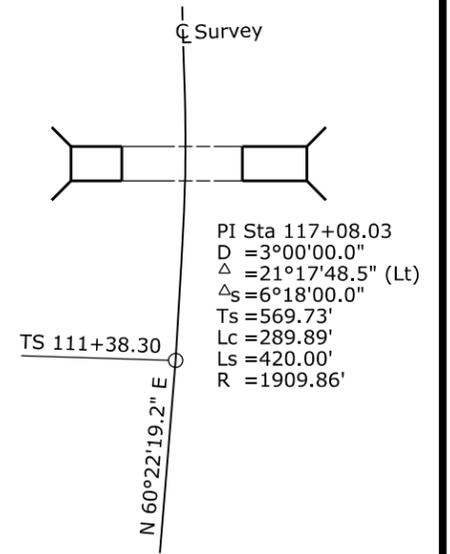
LOCATION PLAN



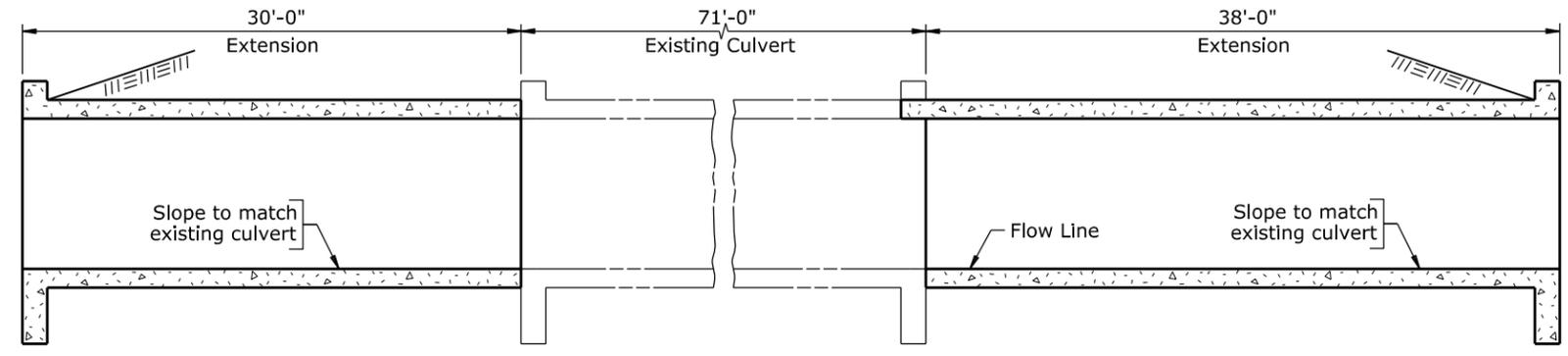
TYPICAL ROADWAY SECTION



SECTION A-A



HORIZONTAL CURVE DATA



LONGITUDINAL SECTION

WYOMING DEPARTMENT OF TRANSPORTATION BRIDGE PROGRAM			
PRELIMINARY LAYOUT			
DOUBLE BARREL 9'-0" X 9'-0" CONCRETE BOX CULVERT EXTENSION STA 112+54 Lander - Hudson Road P-20 (WY 789)			
N202050		Fr	
DESIGN	_____	Design Section Q R Stuv	
DETAIL	LLL ✓ HHH	Drwg No. P-0008 Sheet 3 of 3	
APPROVAL	_____	QTY'S _____	

N202050_1pl3.dgn

4.01 - Example

Section 4.01 - Preliminary

DOUBLE BARREL 9'-0" X 9'-0" CONCRETE BOX CULVERT EXTENSION

STA 112+54 LANDER - HUDSON ROAD P-20 (WY 789)

N202050

FREMONT COUNTY

ESTIMATED QUANTITIES - CODE 13				
ITEM NO.	ITEM	UNIT	TOTAL QUANTITY	ESTIMATE
206.03300	CULVERT SUBEXCAVATION	CY	360	
212.03900	PERVIOUS BACKFILL MATERIAL	CY	10	
217.01010	GEOTEXTILE, EROSION CONTROL	SY	80	
217.01020	GEOTEXTILE, MATERIAL SEPARATION (WOVEN)	SY	350	
301.01020	CRUSHER RUN SUBBASE	TON	713	
511.02000	GABIONS	SY	70	
513.00005	CLASS A CONCRETE	LS	LUMP SUM	172.8 CY
514.00015	REINFORCING STEEL	LS	LUMP SUM	20,630 LB
900.60000	CONTRACTOR QUALITY CONTROL (CONCRETE)	LS	LUMP SUM	

DESIGN DATA

SPECIFICATIONS: AASHTO LRFD Bridge Design Specifications, 8th Edition.

ADT: 3500 (Year 2005)

LOADING:

Live Load: HL93
Lateral live load surcharge: 2 ft earth or 72 psf
Dead Load: Design fill: 7.0 ft
Vertical earth pressure: 120 pcf
Lateral earth pressure: 72 pcf

REINFORCED CONCRETE: Load and Resistance Factor Design -

Class A Concrete $f'_c = 4000$ psi
Reinforcing Steel $f_y = 60,000$ psi (Grade 60)

APPROACH ROADWAY WIDTH: 72'-0"

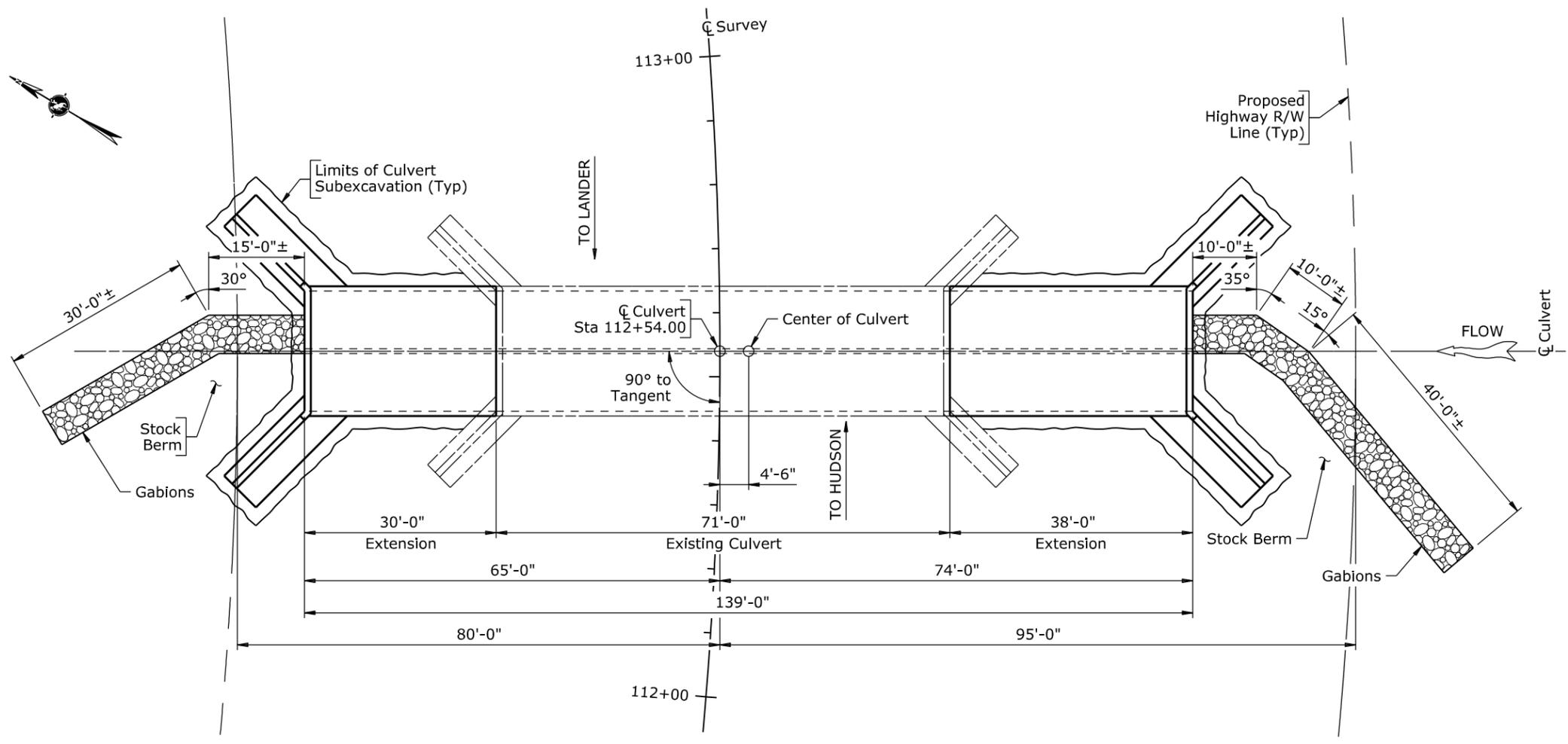
STRUCTURE NO. M-OTT-C
ML20B, RM 83.22

WYOMING DEPARTMENT OF TRANSPORTATION BRIDGE PROGRAM			
REVISIONS			
REVIEW	DESIGN	Design Section Q R Stuv	
	LLL ✓ HHH		
APPROVAL	QTY'S	Drwg No. 0008	Sheet 1 of 6

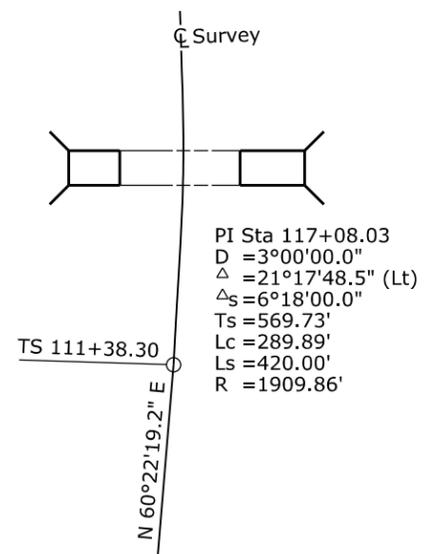
Nov 2018

4.17 - Example

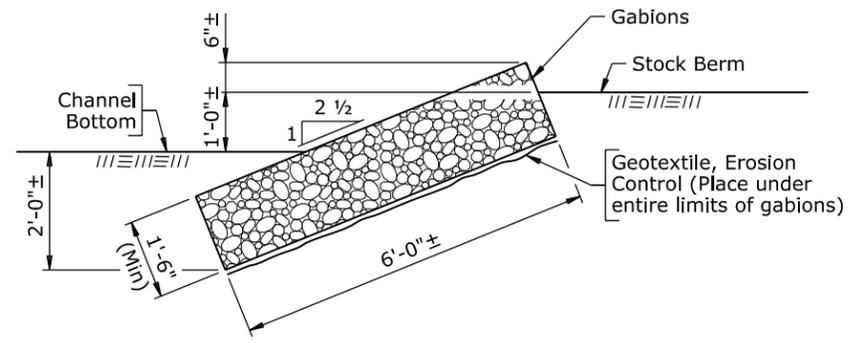
Wyo. Proj. N202050
 Sheet B3 of B25 Sheets



LOCATION PLAN



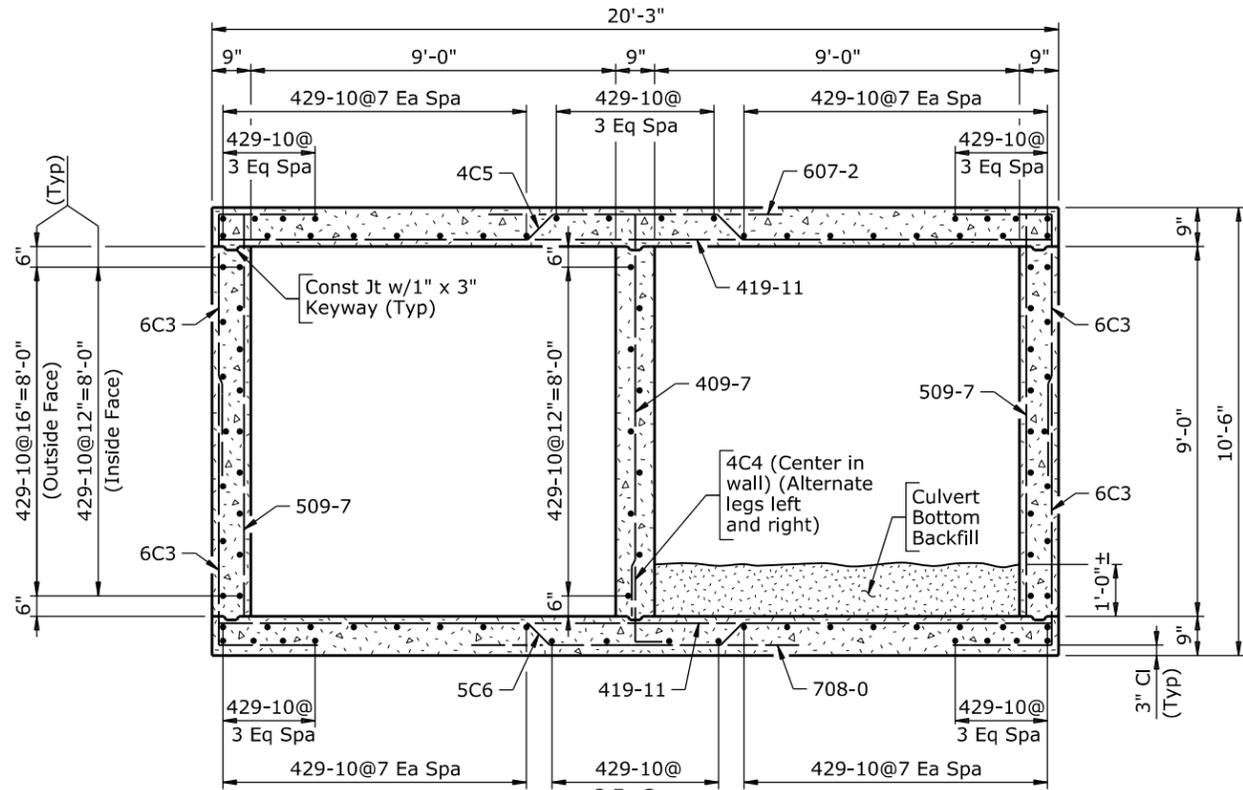
HORIZONTAL CURVE DATA



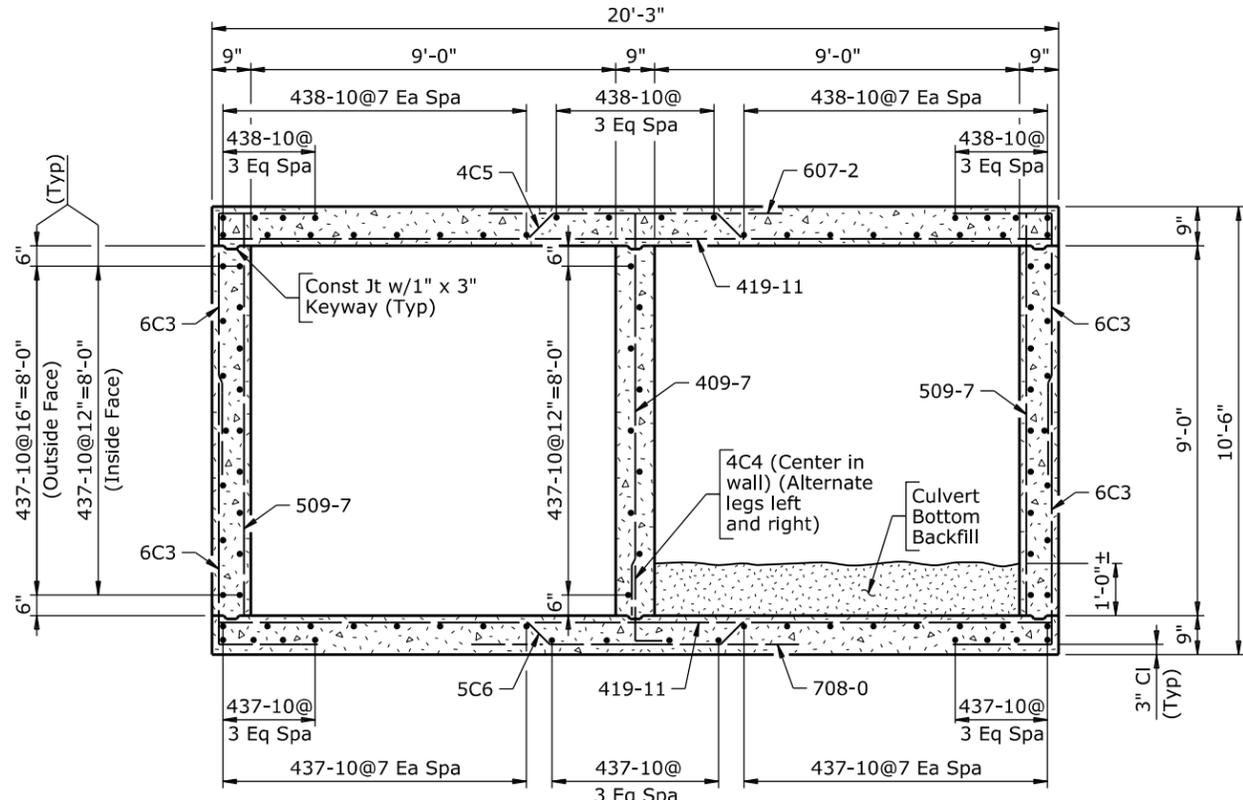
TYPICAL SECTION THRU RIPRAP

WYOMING DEPARTMENT OF TRANSPORTATION BRIDGE PROGRAM			
CULVERT DETAILS			
DOUBLE BARREL 9'-0" X 9'-0"			
CONCRETE BOX CULVERT EXTENSION			
STA 112+54			
Lander-Hudson Road			
P-20 (WY 789)			
N202050		Fr	
DESIGN	PPP ✓ OOO	Design Section Q R Stuv	
DETAIL	LLL ✓ HHH/PPP	Drwg No. 0008 Sheet 3 of 6	
APPROVAL	JJJ ✓ MMM		

Section 4.17 - Culverts



SECTION A-A

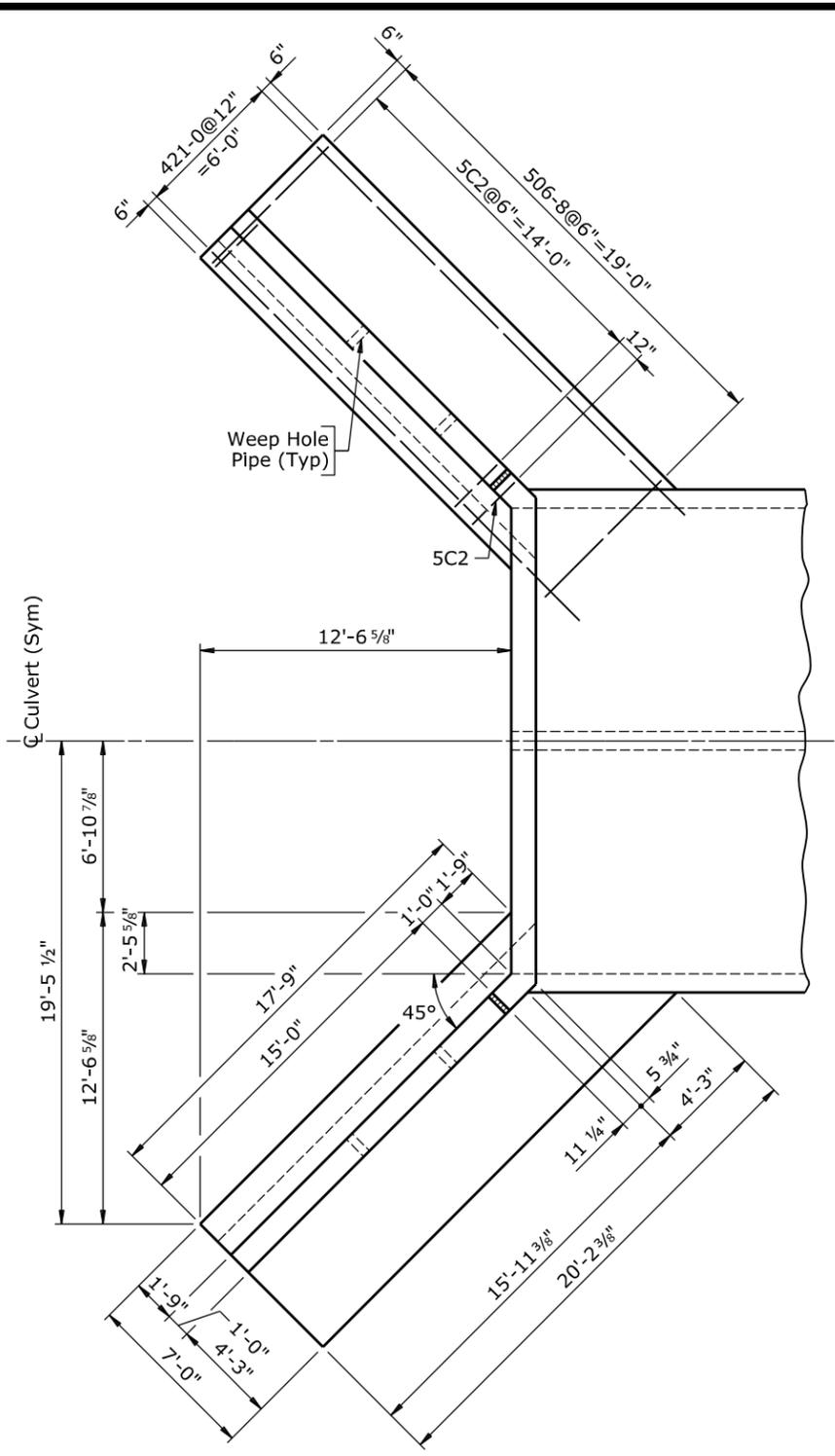


SECTION B-B

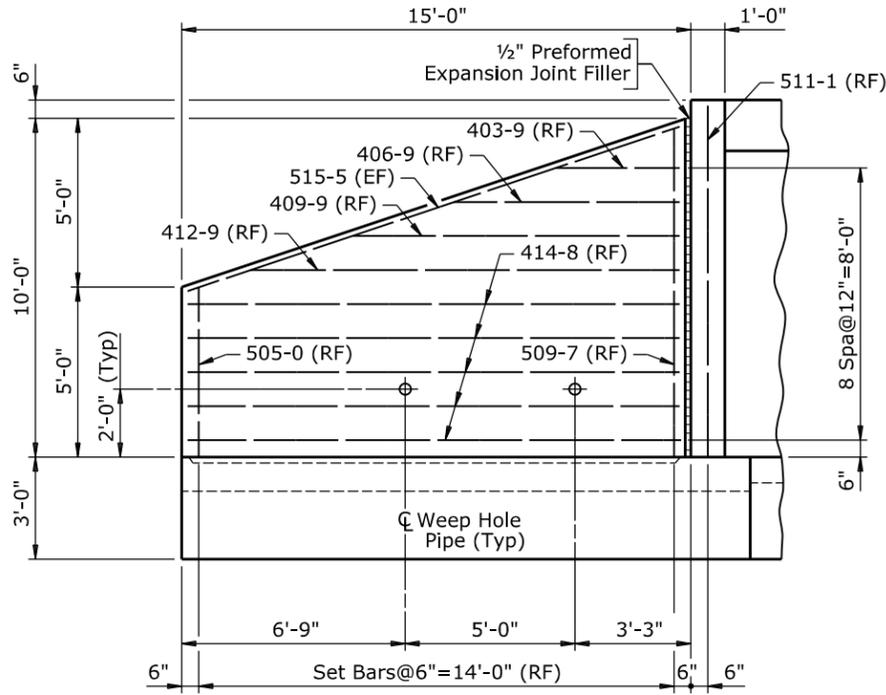
BILL OF REINFORCEMENT					
Location	Mark	Number Required	Bending Diagrams		
Bottom Slabs and Footings	4C4	68			
	419-11	68			
	421-0	28			
	429-10	28			
	437-10	28			
	5C2	120			
	5C6	66			
	506-8	156			
	6C3	136			
	603-0	40			
	708-0	68			
	Weight	9071 LB			
	Walls	409-7		68	
		429-10		41	
437-10		41			
509-7		136			
511-1		4			
6C3		136			
603-0		60			
Weight		5893 LB			
Top Slabs and Parapets		4C1	40		
		4C5	67		
	419-11	67			
	429-10	28			
	438-10	28			
	603-0	40			
	607-2	66			
	619-6	2			
	619-11	3			
	620-8	4			
Weight	4365 LB				
Wingwalls	403-9	4			
	406-9	4			
	409-9	4			
	412-9	4			
	414-8	20			
	Set Bars	4			
	515-5	8			
	Weight	1295 LB			

- Note:
- 1) Place long leg of 6C3 bars in exterior walls.
 - 2) Place short leg of 4C4 bars in bottom slabs.
 - 3) Place 409-7 bars with 4C4 bars.
 - 4) Place 607-2 and 708-0 bars symmetrical about interior wall.
 - 5) For location of Sections A-A and B-B, see Sheet No. 4.

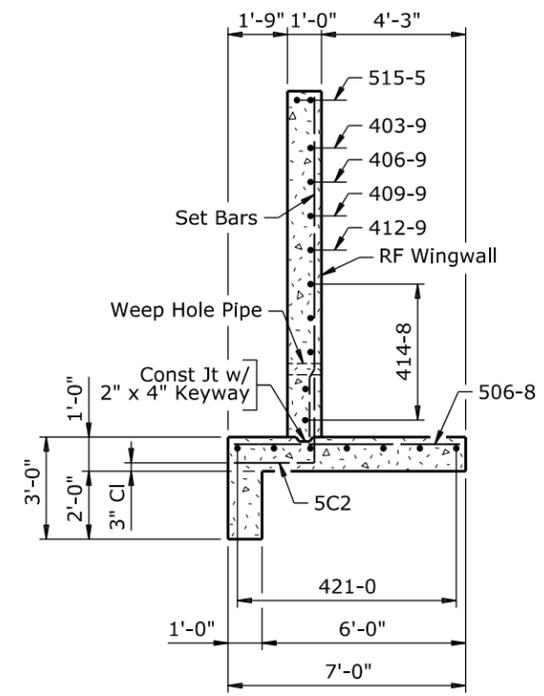
WYOMING DEPARTMENT OF TRANSPORTATION BRIDGE PROGRAM			
CULVERT DETAILS			
DOUBLE BARREL 9'-0" X 9'-0"			
CONCRETE BOX CULVERT EXTENSION			
STA 112+54			
Lander-Hudson Road			
P-20 (WY 789)			
N202050		Fr	
DESIGN	PPP ✓ OOO	Design Section Q R Stuv	
DETAIL	LLL ✓ HHH/PPP	Drwg No. 0008 Sheet 5 of 6	
APPROVAL	JJJ ✓ MMM		



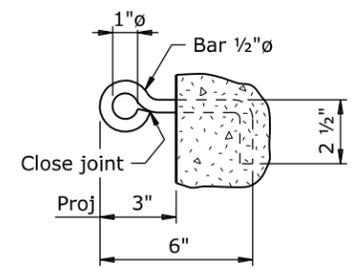
WINGWALL PLAN
(Outlet shown, inlet similar)



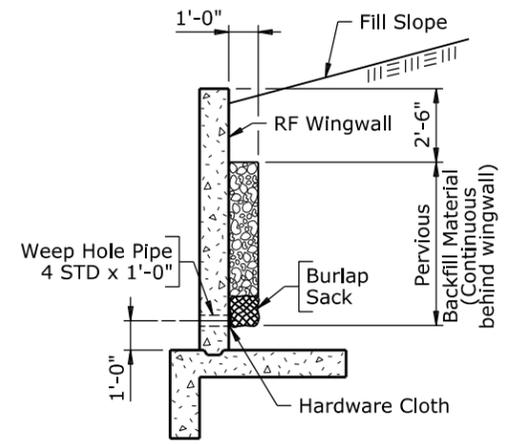
TYPICAL WINGWALL ELEVATION



TYPICAL WINGWALL SECTION



EYEBOLT DETAIL
(16 req'd for securing fence)



WEEP HOLE ASSEMBLY DETAIL

- Note:**
- 1) Place short leg of 5C2 bars in footing.
 - 2) Place Set Bars and 511-1 bars with 5C2 bars.
 - 3) Each weep hole assembly consists of a pipe 4 STD through the wingwall, one 6" x 6" piece of aluminum or galvanized steel wire 4 mesh hardware cloth (Minimum wire diameter 0.03") centered over pipe end and firmly anchored to rear face of wingwall, and one cubic foot of coarse aggregate in a securely tied burlap sack.

WYOMING DEPARTMENT OF TRANSPORTATION BRIDGE PROGRAM			
CULVERT DETAILS			
DOUBLE BARREL 9'-0" X 9'-0"			
CONCRETE BOX CULVERT EXTENSION			
STA 112+54			
Lander-Hudson Road			
P-20 (WY 789)			
N202050		Fr	
DESIGN	PPP ✓ OOO	Design Section	Q R Stuv
DETAIL	LLL ✓ HHH/PPP	Drwg No.	0008
APPROVAL	JJJ ✓ MMM	Sheet	6 of 6