

CONCRETE RETAINING WALL

STA 40+50 - STA 43+60

WORLAND STREETS

WEST RIVER ROAD & BIG HORN CANAL

2202016 **WASHAKIE COUNTY**

DESIGN DATA

SPECIFICATIONS: AASHTO LRFD Bridge Design Specifications, 4th Edition

REINFORCED CONCRETE: Load and Resistance Factor Design -
Class B Concrete $f'_c = 3250$ psi
Reinforcing Steel $f_y = 60,000$ psi (Grade 60)
 $f_y = 40,000$ psi (Grade 40)

ESTIMATED QUANTITIES				
ITEM NO.	ITEM	UNIT	TOTAL QUANTITY	ESTIMATE
209.01000	WATER	MG	125	610.8 CY 65,230 LB
212.02100	DRY EXCAVATION	CY	6550	
212.02200	WET EXCAVATION	CY	490	
301.01020	CRUSHER RUN SUBBASE	TON	8032	
513.00015	CLASS B CONCRETE	LS	LUMP SUM	
514.00015	REINFORCING STEEL	LS	LUMP SUM	
900.60000	CONTRACTOR QUALITY CONTROL (CONCRETE)	LS	LUMP SUM	

RETAINING WALL DESIGN DATA									
Foundation Material					Retained Soil			Reinforced Backfill Material	
ϕ	μ	γ	q_{all}	q_{act}	ϕ	γ	c	ϕ	γ
39°	0.81	120 pcf	4.0 tsf	1.66 tsf	26°	85 pcf	0 psf	32°	125 pcf

GENERAL NOTES

SPECIFICATIONS: WYDOT Standard Specifications for Road and Bridge Construction, 2003 Edition

DIMENSIONS: Longitudinal dimensions are horizontal and include no correction for grade.

REINFORCING STEEL: Concrete cover to face of reinforcing steel is 2" unless noted. Dimensions for bent bars are out to out.



PREFORMED EXPANSION JOINT FILLER: Use preformed expansion joint filler conforming to AASHTO M 153 Type I. Work necessary for the joint filler is incidental to the contract pay item Class B Concrete.

WATERSTOP: Work necessary for the waterstop is incidental to the contract pay item Class B Concrete.

CRUSHER RUN SUBBASE: Use crusher run subbase conforming to Grading J.

WATER: Water at 13.6 gallons per ton has been estimated for compaction of the crusher run subbase.

DRY EXCAVATION: The estimated quantity of dry excavation is calculated below the existing ground line to elevation 4072.0.

WET EXCAVATION: The estimated quantity of wet excavation is calculated below elevation 4072.0.

FOUNDATION: The retaining wall is on a footing founded on dense sand and gravel.

REFERENCES

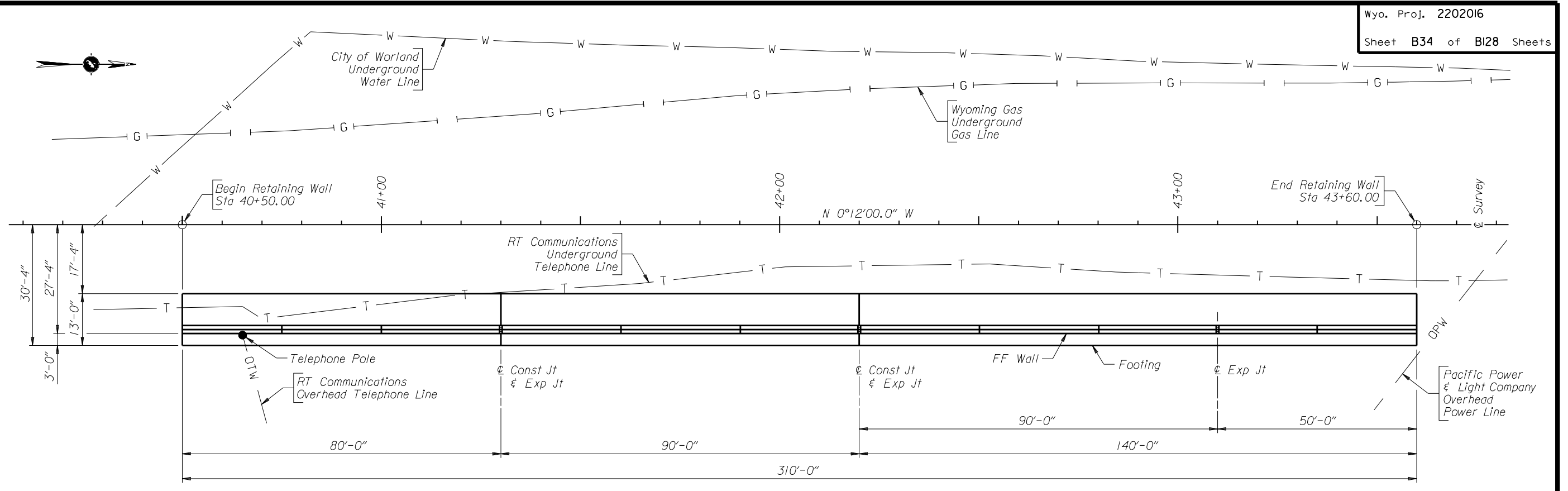
Supplementary Specifications: _____ Dated _____
SS-5006 Structural Concrete With Quality Control and
Quality Acceptance ----- Rev 5-2-07

STRUCTURE NO. LVH
ML2202B, RM 0.6I
SEC 26, T47N, R93W

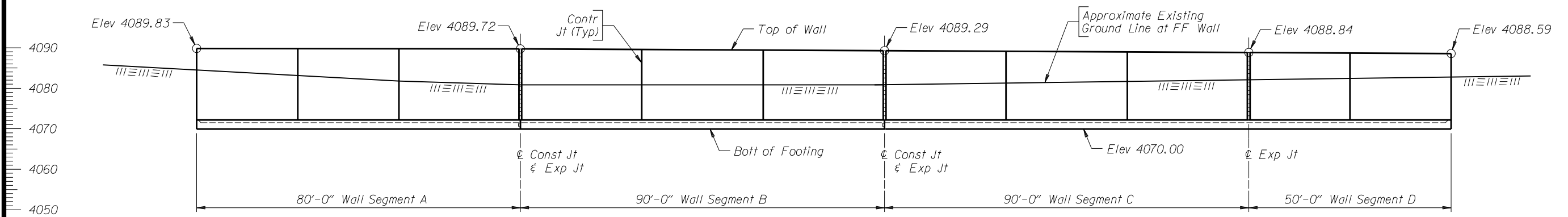
WYOMING DEPARTMENT OF TRANSPORTATION			
BRIDGE PROGRAM			
REVISIONS			
APPROVED	DESIGN _____	Design Section O R Stuv	
DATE	DETAIL <u>JJJ</u> <u>PPP</u>	Drwg. No. 0021 Sheet 1 of 8	
	Q'S. _____		

Dec 2008

Wyo. Proj. 2202016
Sheet B34 of B128 Sheets



PLAN

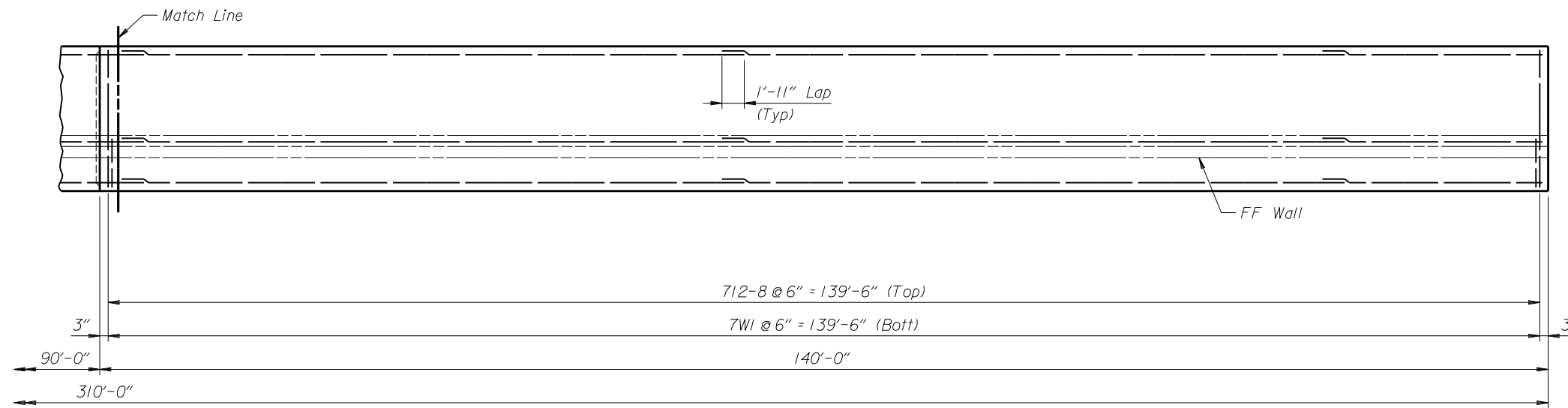
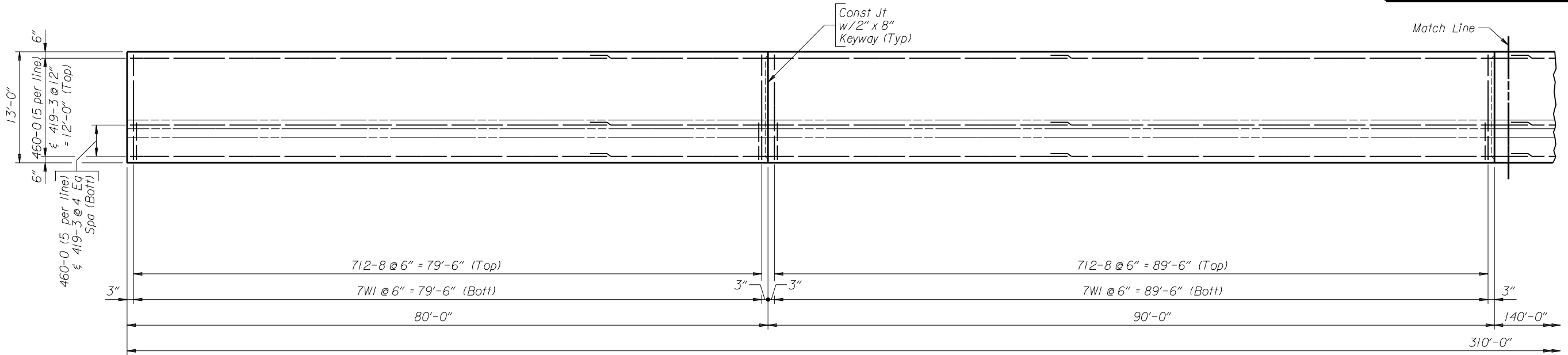


ELEVATION

4.21 - Example

Section 4.21 - Earth Retaining Structures

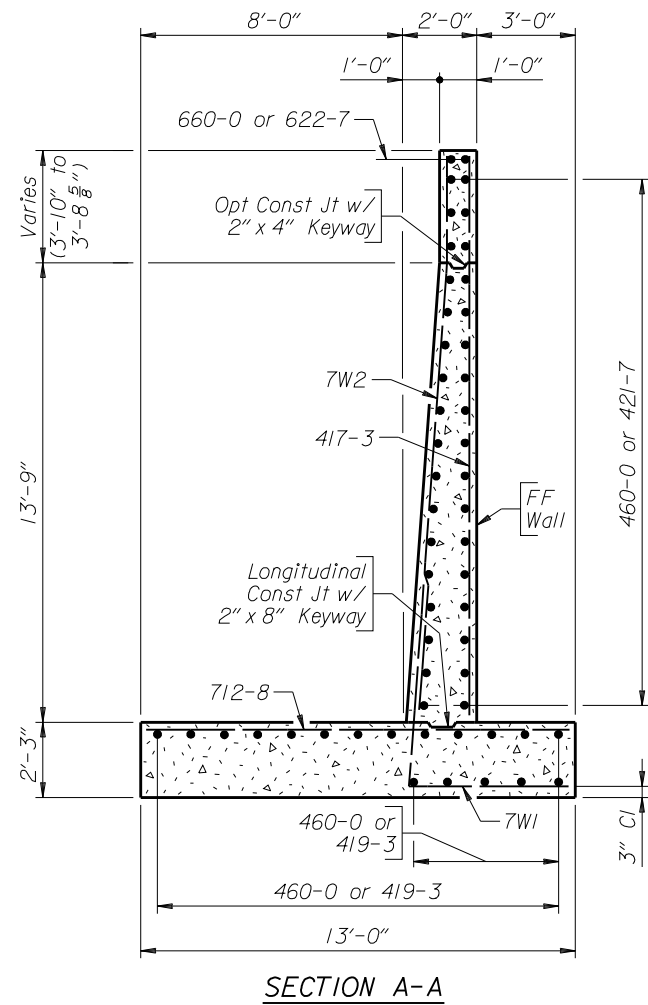
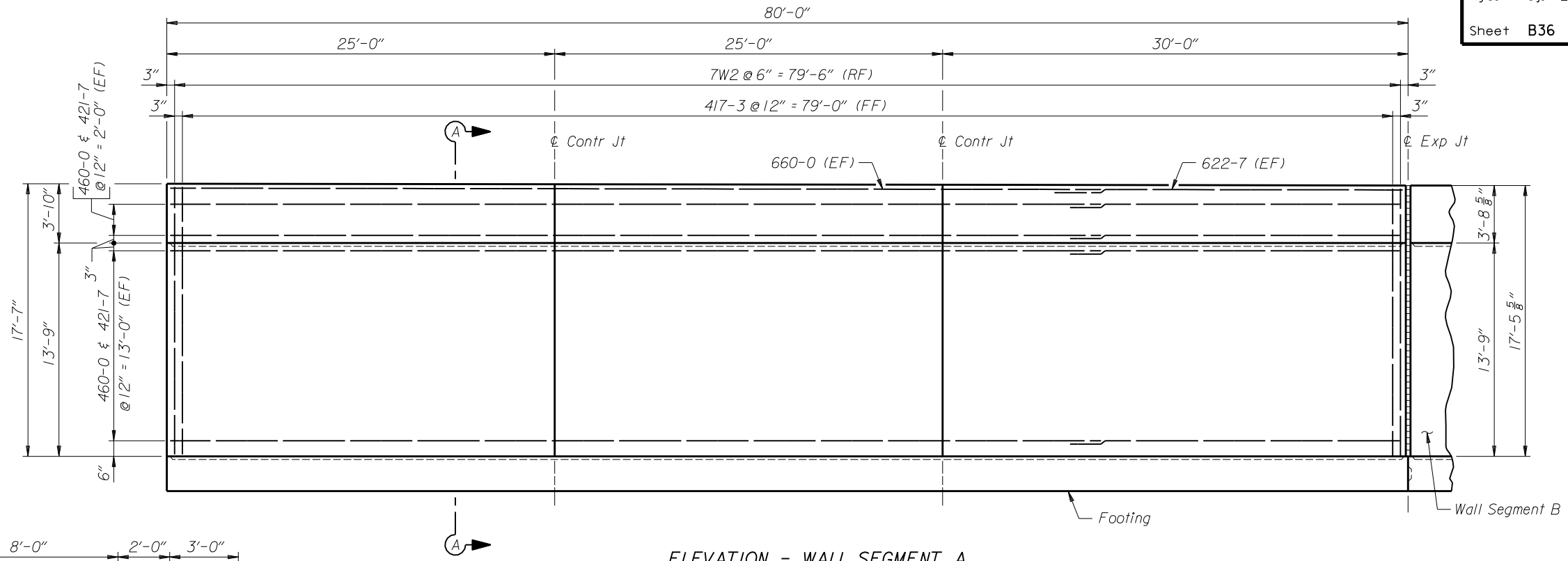
WYOMING DEPARTMENT OF TRANSPORTATION BRIDGE PROGRAM			
REVISIONS		GENERAL PLAN AND ELEVATION	
		CONCRETE RETAINING WALL	
		STA 40+50 - STA 43+60	
		Worland Streets	
		West River Road & Big Horn Canal	
		2202016 Wa	
APPROVED	DESIGN PPP ✓ NNN ✓	Design Section 0 R Stuv	
DATE	DETAIL JJJ ✓ PPP ✓	Drwg. No. 0021 Sheet 2 of 8	
	Q'S. MMM ✓ NNN ✓		



FOOTING PLAN
 (Longitudinal keyway not shown)

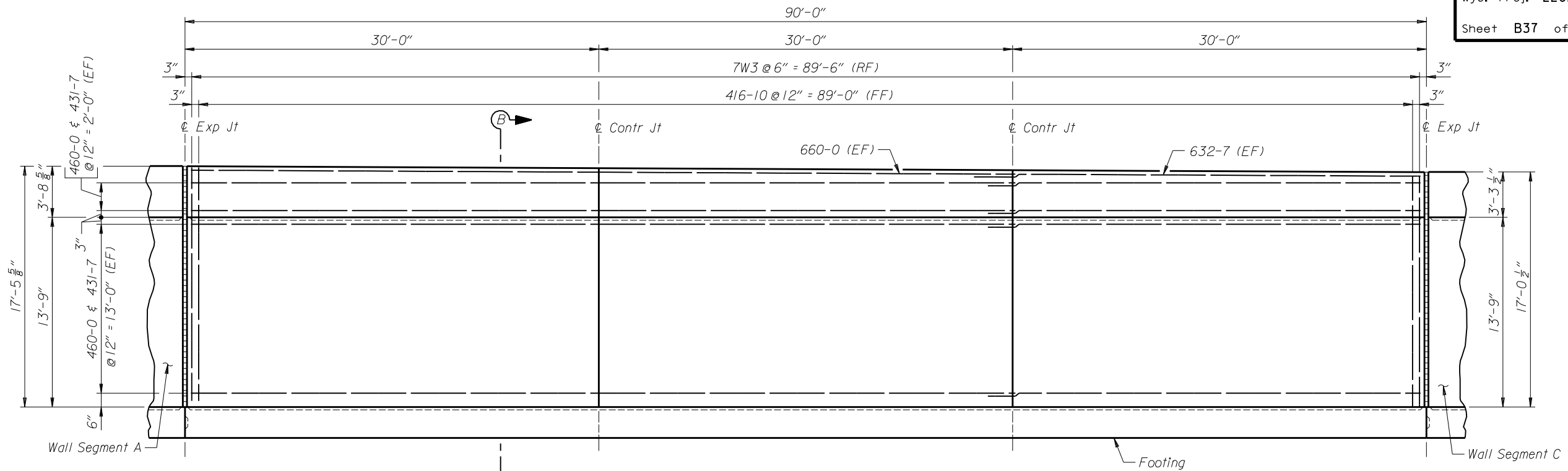
Note: Place short leg of 7WI bars in footing.

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BRIDGE PROGRAM			
REVISIONS	RETAINING WALL DETAILS		
	CONCRETE RETAINING WALL		
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	Worldland Streets West River Road & Big Horn Canal		
		2202016	Wa
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DATE	DETAIL	JJJ ✓ PPP	Drwg. No. 0021 Sheet 3 of 8
	Q'S.	MMM ✓ NNN	

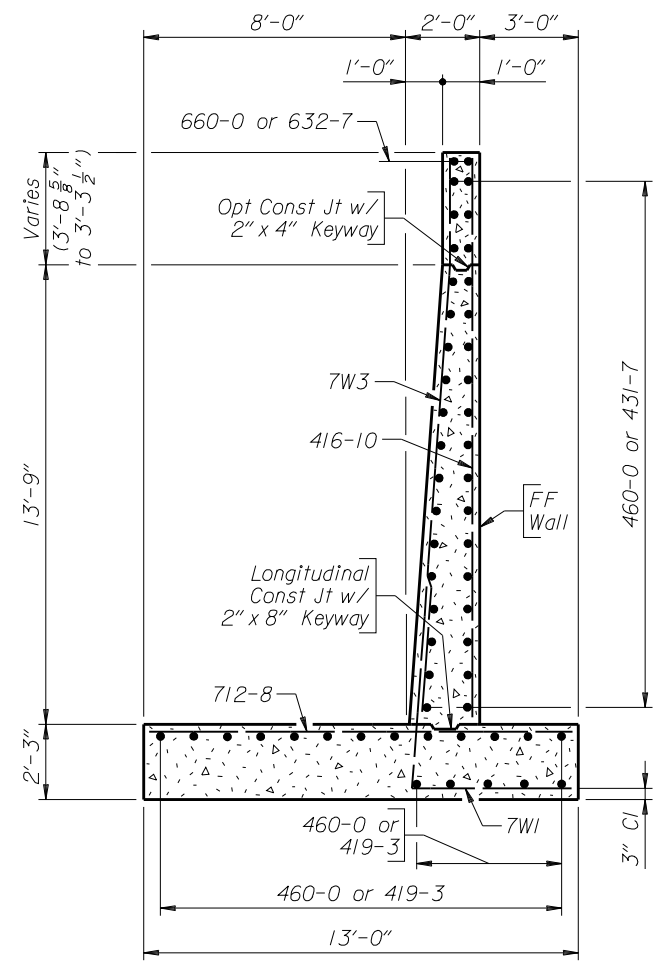


Note: 1) Place 7W2 bars with 7W1 bars.
2) Place 7W2 and 417-3 bars to maintain 2" clearance from top of wall.
3) Trim contraction joints with 1/2" bevel strips.

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BRIDGE PROGRAM			
RETAINING WALL DETAILS			
CONCRETE RETAINING WALL			
STA 40+50 - STA 46+60			
Worland Streets			
West River Road & Big Horn Canal			
2202016 Wa			
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DATE	DETAIL JJJ ✓ PPP	Drwg. No. 0021 Sheet 4 of 8	
	Q'S. MMM ✓ NNN		



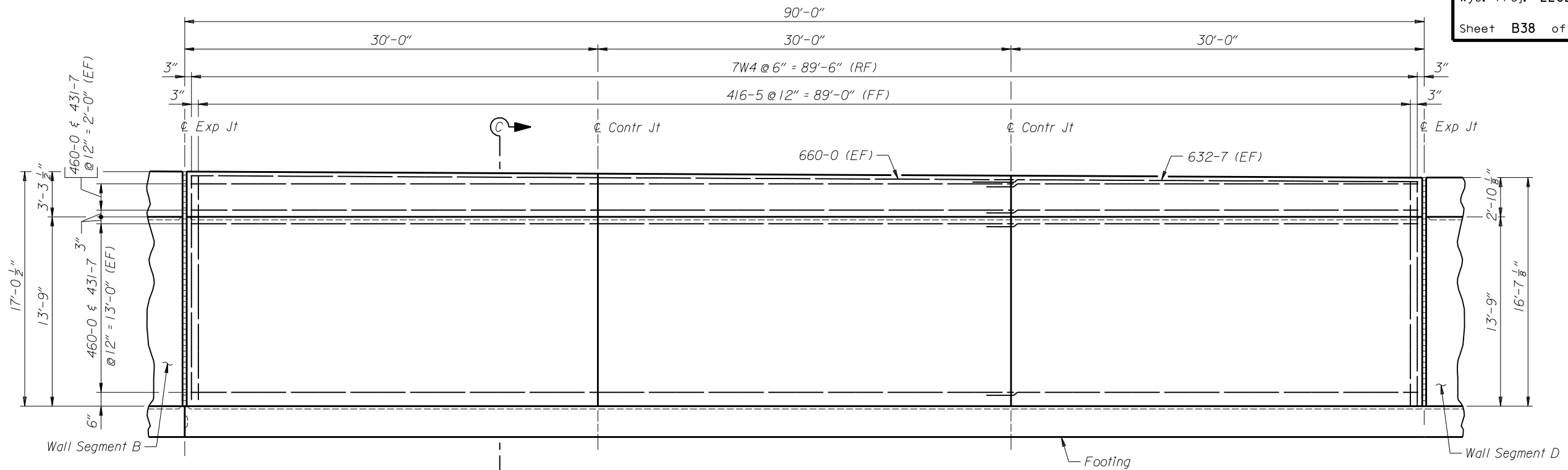
ELEVATION - WALL SEGMENT B



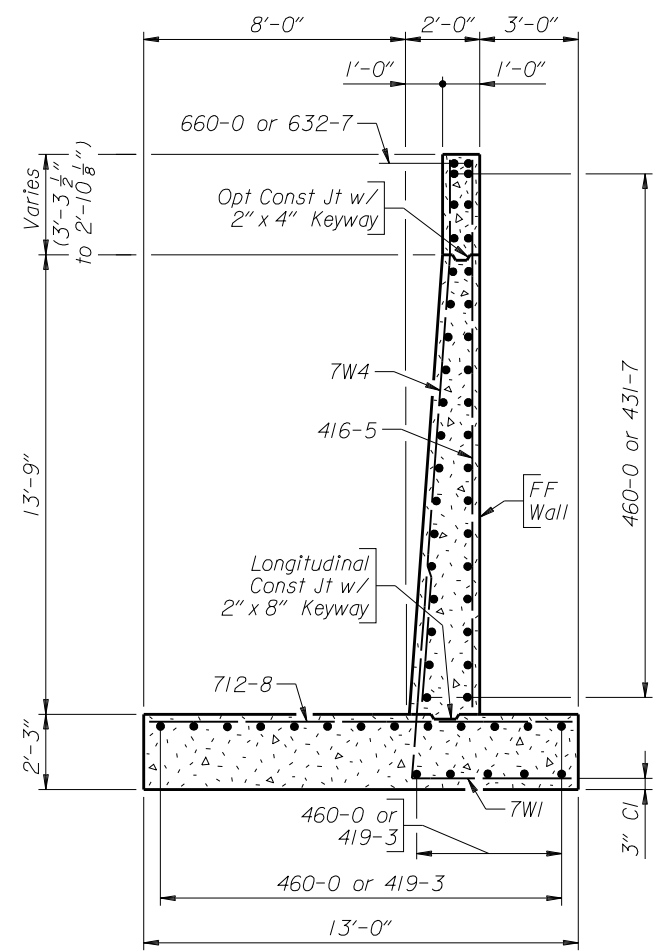
SECTION B-B

- Note: 1) Place 7W3 bars with 7W1 bars.
2) Place 7W3 and 416-10 bars to maintain 2" clearance from top of wall.
3) Trim contraction joints with 1/2" bevel strips.

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STA 40+50 - STA 46+60			
Worland Streets			
West River Road & Big Horn Canal			
2202016 Wa			
APPROVED	DESIGN PPP ✓ NNN	Design Section 0 R Stuv	
DATE	DETAIL JJJ ✓ PPP	Drwg. No. 0021 Sheet 5 of 8	
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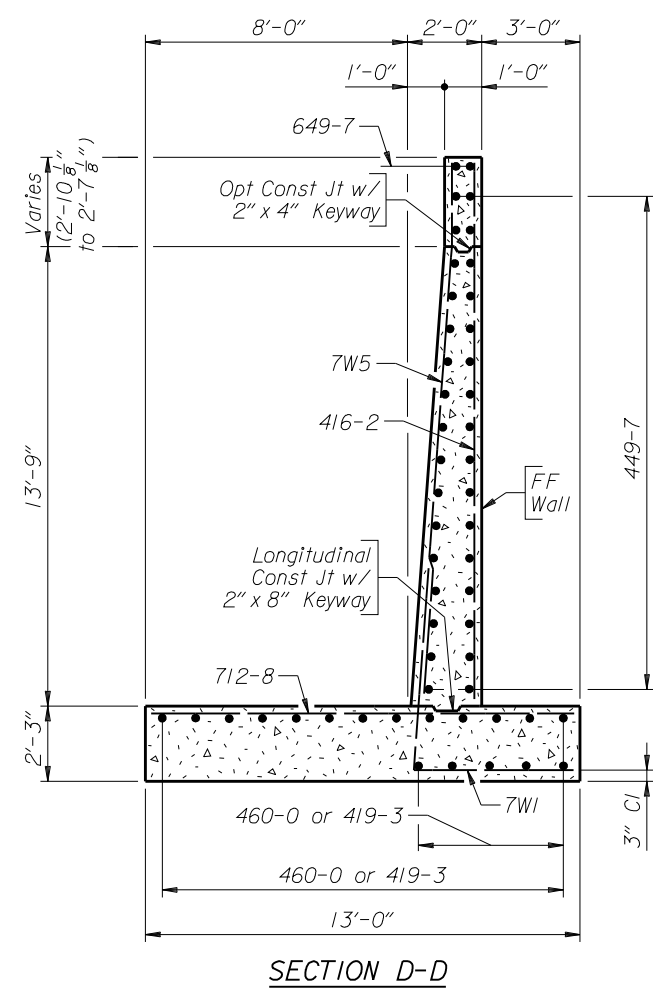
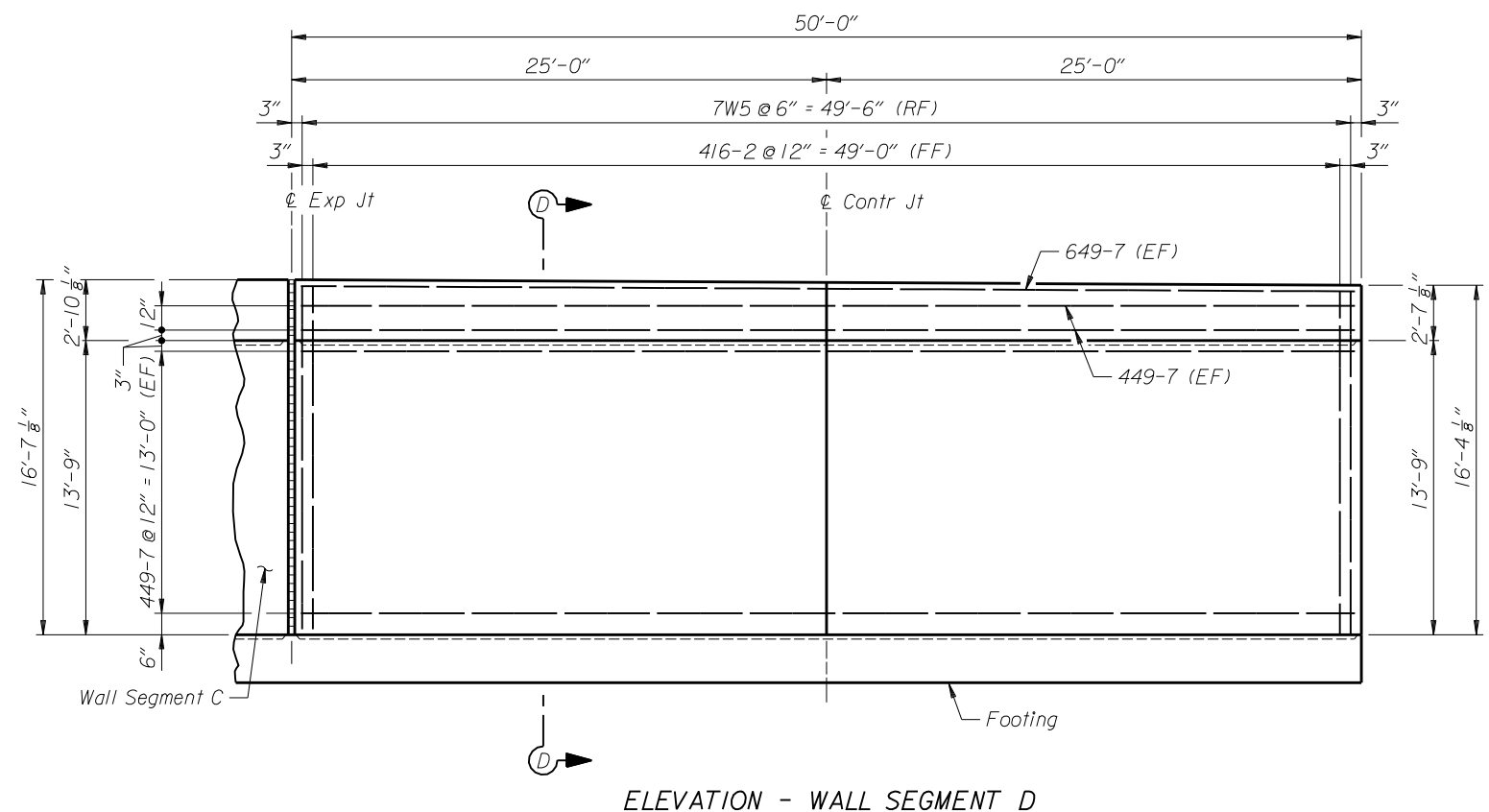
ELEVATION - WALL SEGMENT C



SECTION C-C

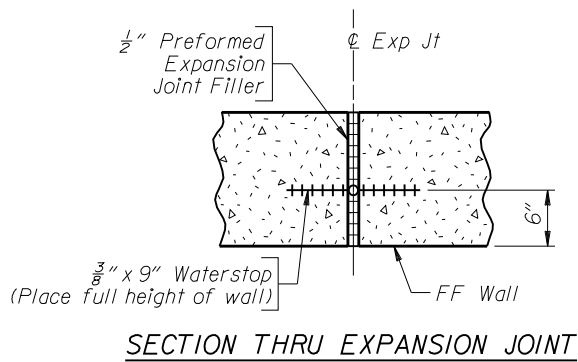
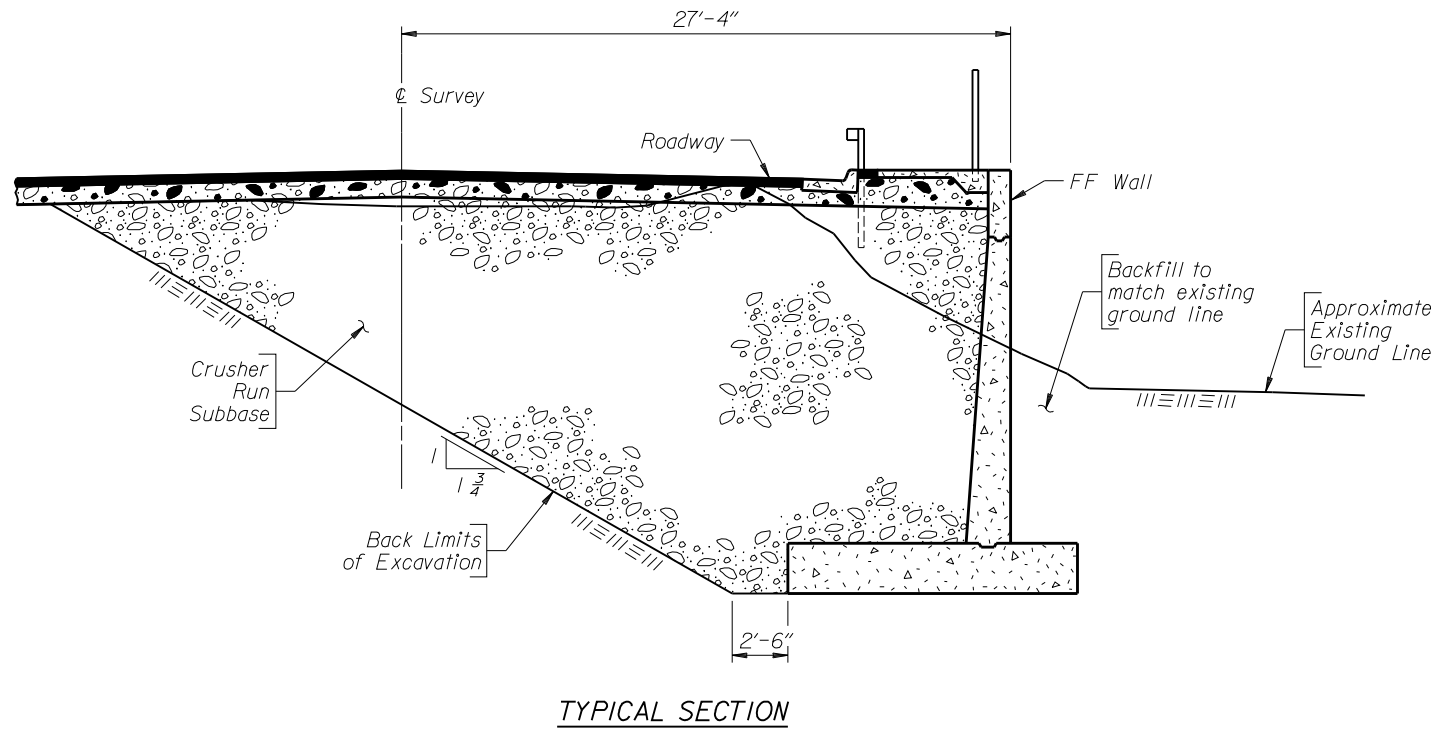
- Note: 1) Place 7W4 bars with 7W1 bars.
2) Place 7W4 and 416-5 bars to maintain 2" clearance from top of wall.
3) Trim contraction joints with 1/2" bevel strips.

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West River Road & Big Horn Canal			
2202016 Wa			
APPROVED	DESIGN PPP ✓ NNN	Design Section 0 R Stuv	
DATE	DETAIL JJJ ✓ PPP	Drwg. No. 0021 Sheet 6 of 8	
	Q'S. MMM ✓ NNN		



Note: 1) Place 7W5 bars with 7W1 bars.
 2) Place 7W5 and 416-2 bars to maintain 2" clearance from top of wall.
 3) Trim contraction joints with 1/2" bevel strips.

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STA 40+50 - STA 46+60			
World Streets			
West River Road & Big Horn Canal			
2202016 Wa			
APPROVED	DESIGN PPP ✓ NNN	Design Section 0 R Stuv	
DATE	DETAIL JJJ ✓ PPP	Drwg. No. 0021 Sheet 7 of 8	
	Q'S. MMM ✓ NNN		



BILL OF REINFORCEMENT			Bending Diagrams	
Location	Mark	Number Required		
Footing	419-3	18		
	460-0	90		
	7W1	620		
	712-8	620		
	Weight	32,458 LB		
Wall	416-2	50		
	416-5	90		
	416-10	90		
	417-3	80		
	421-7	34		
	431-7	68		
	449-7	32		
	460-0	102		
	622-7	2		
	632-7	4		
	649-7	2		
	660-0	6		
	7W2	160		
	7W3	180		
	7W4	100		
Weight	32,772 LB			

Note: The estimated quantity of class B concrete for footing is 335.8 CY. The estimated quantity of class B concrete for wall is 275.0 CY.

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West River Road & Big Horn Canal			
2202016 Wa			
APPROVED	DESIGN PPP ✓ NNN	Design Section 0 R Stuv	
DATE	DETAIL JJJ ✓ PPP	Drwg. No. 0021 Sheet 8 of 8	
	Q'S. MMM ✓ NNN		