

CONCRETE RETAINING WALL

STA 40+50 - 43+60

WORLAND STREETS

WEST RIVER ROAD & BIG HORN CANAL

2202016

WASHAKIE COUNTY

ESTIMATED QUANTITIES				
ITEM NO.	ITEM	UNIT	TOTAL QUANTITY	ESTIMATE
209.01000	WATER	MG	125	
212.02100	DRY EXCAVATION	CY	6550	
212.02200	WET EXCAVATION	CY	490	
301.01020	CRUSHER RUN SUBBASE	TON	8032	
513.00005	CLASS A CONCRETE	LS	LUMP SUM	610.8 CY
514.00015	REINFORCING STEEL	LS	LUMP SUM	65,230 LB
900.60000	CONTRACTOR QUALITY CONTROL (CONCRETE)	LS	LUMP SUM	

DESIGN DATA

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

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

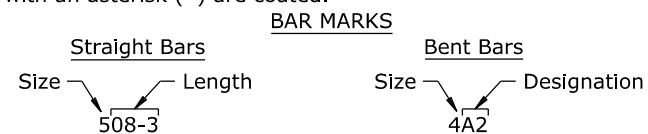
RETAINING WALL DESIGN DATA							
Foundation Material					Retained Soil		
ϕ	μ	γ	q_r	q_{max}	ϕ	γ	c
39°	0.81	120 pcf	0.0 tsf	0.0 tsf	26°	85 pcf	0 pcf

GENERAL NOTES

SPECIFICATIONS: WYDOT Standard Specifications for Road and Bridge Construction, 2010 Edition.

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

REINFORCING STEEL: Ensure reinforcing steel conforms to ASTM A 615 (Grade 60) for all bars, including ties and stirrups. Concrete cover to face of reinforcing steel is 2" unless noted. Dimensions for bent bars are out to out. Ensure bars marked with an asterisk (*) are coated.



PREFORMED EXPANSION JOINT FILLER: Work necessary for the preformed expansion joint filler is incidental to the contract pay item Class A Concrete.

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

CRUSHER RUN SUBBASE: Use crusher run subbase conforming to grading J from a contractor furnished source. Compact the crushed base in accordance with Subsection 301.4.2.3, Placing.

WATER: The estimated quantity of water for compaction of crushed base is 0.014 MG per ton.

DRY EXCAVATION: The estimated quantity of dry excavation is calculated below existing ground line to Elev 4072.0. Dry excavation will be paid to actual ground water elevation.

WET EXCAVATION: The estimated quantity of wet excavation is calculated below Elev 4072.0. Wet excavation will be paid below actual ground water elevation.

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

TEMPORARY SHORING: Use a temporary excavation or shoring system located outside the neat lines of excavation shown to prevent sloughing or sliding of material. Submit excavation and shoring details to the engineer before beginning excavation. Work necessary for temporary shoring is incidental to the contract pay items Dry Excavation and Wet Excavation.

REFERENCES

Supplementary Specifications:
SS-100K Adjustment for Structural Steel
SS-500G Structural Concrete with Quality Control and Quality Acceptance

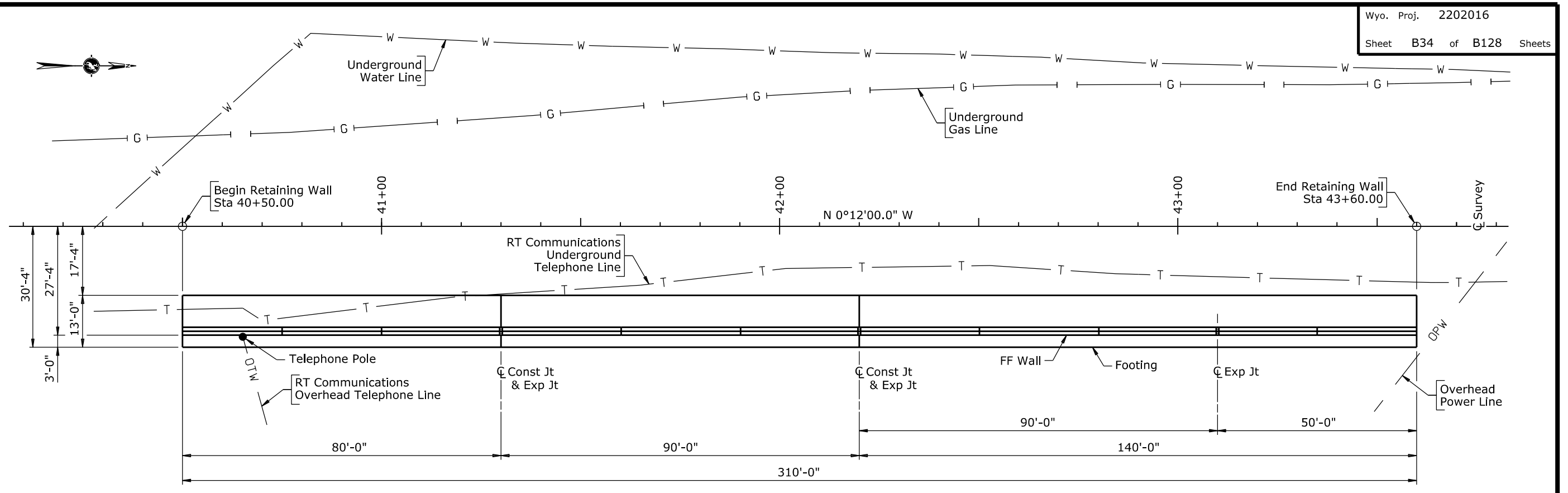
STRUCTURE NO. M-LVH-W
ML2202B, RM 0.61
SEC 26, T47N, R93W

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

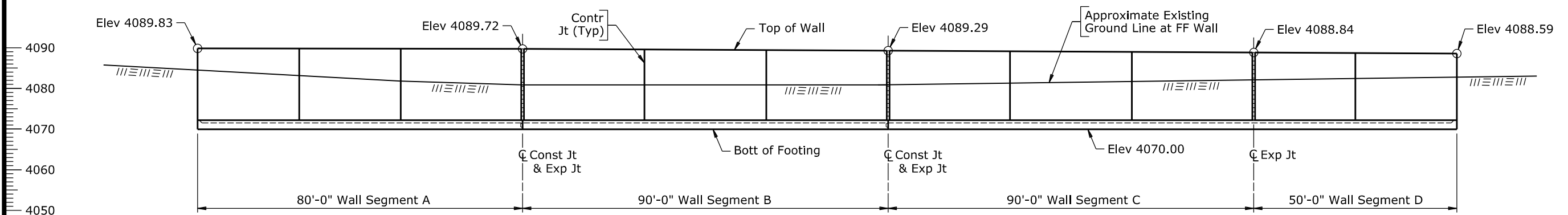
Nov 2019

4.21 - Example

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PLAN



ELEVATION

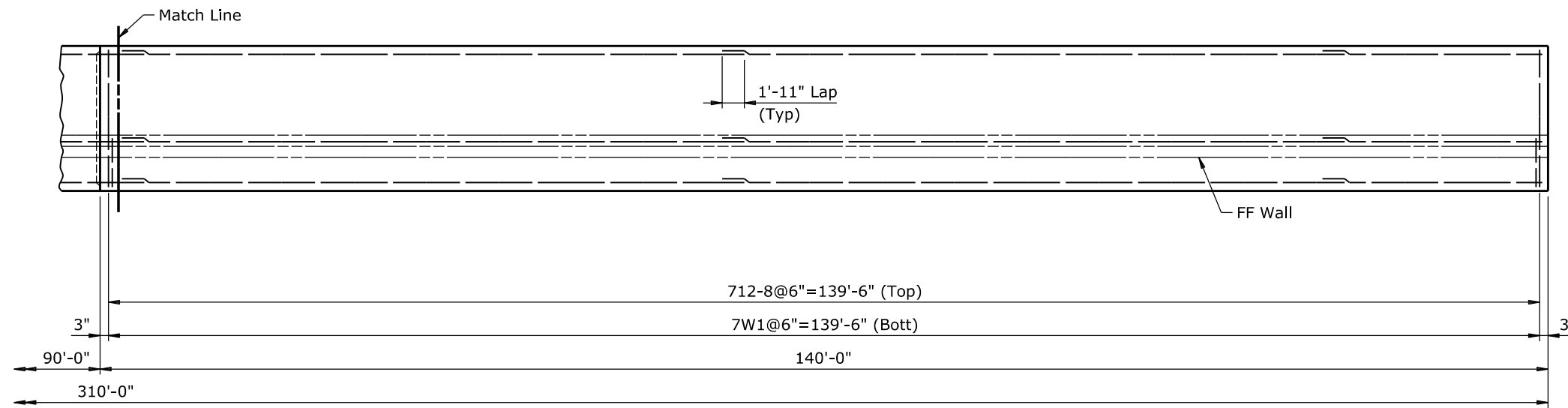
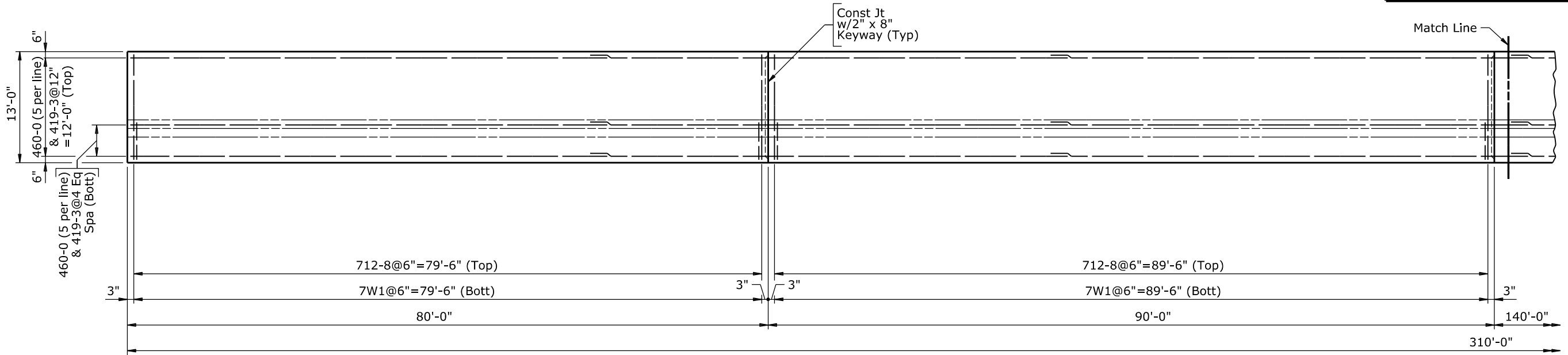
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GENERAL PLAN AND ELEVATION			
CONCRETE RETAINING WALL			
STA 40+50 - STA 43+60			
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	DETAIL: JJJ ✓ PPP		
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FOOTING PLAN
 (Longitudinal keyway not shown)

Note: Place short leg of 7W1 bars in footing.

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	QTY'S	MMM ✓ NNN	Drwg No. 0021 Sheet 3 of 8

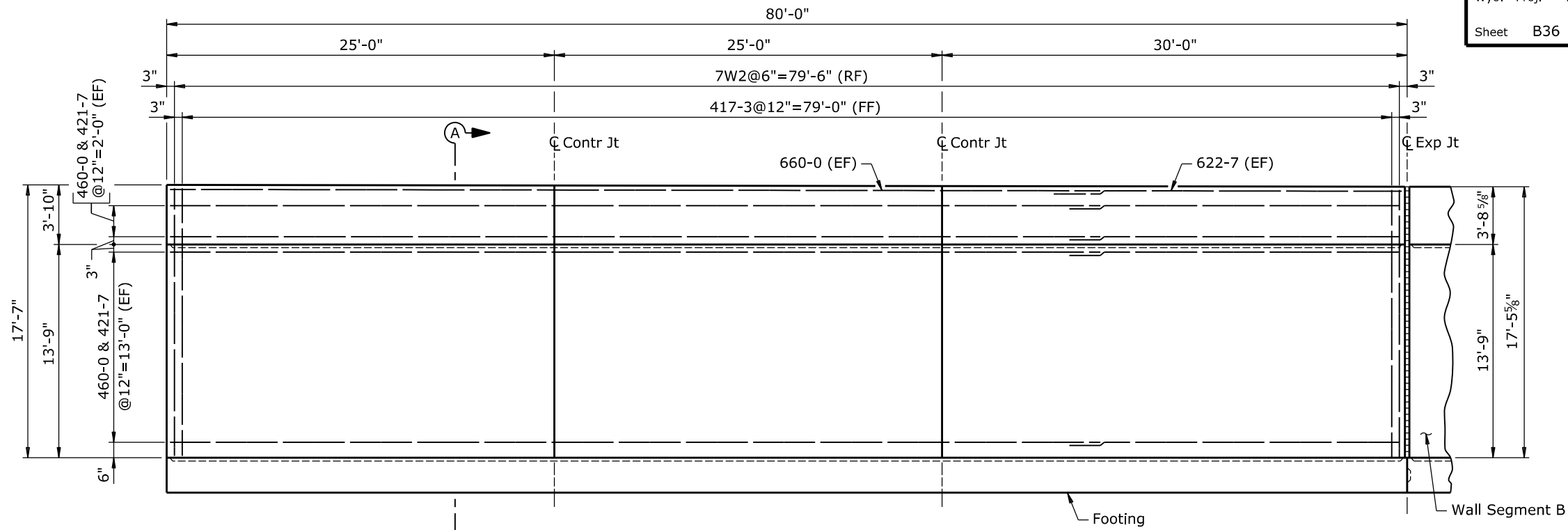
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Section 4.21 - Earth Retaining Structures

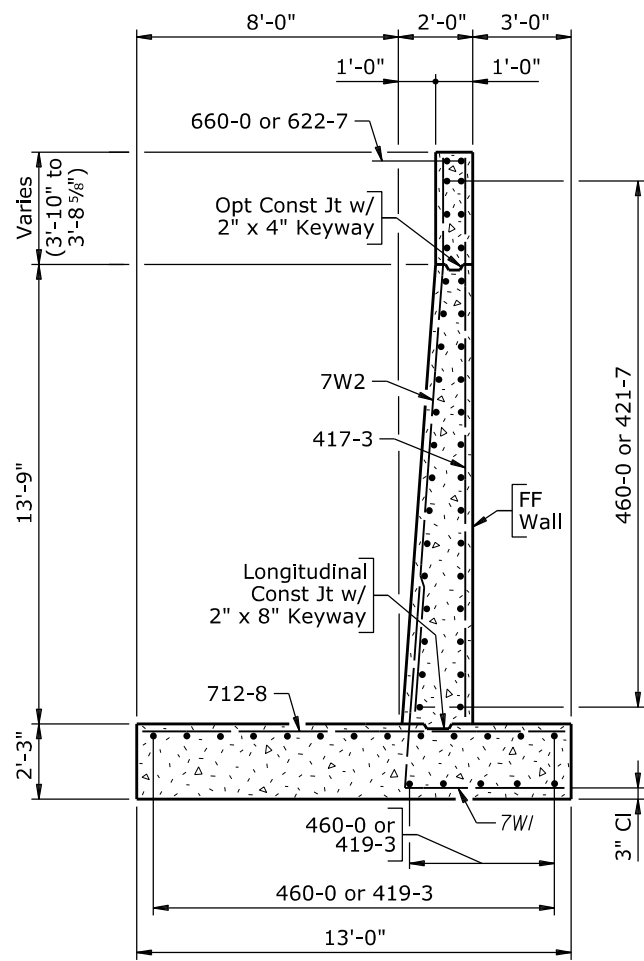
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ELEVATION - WALL SEGMENT A



SECTION A-A

- 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.

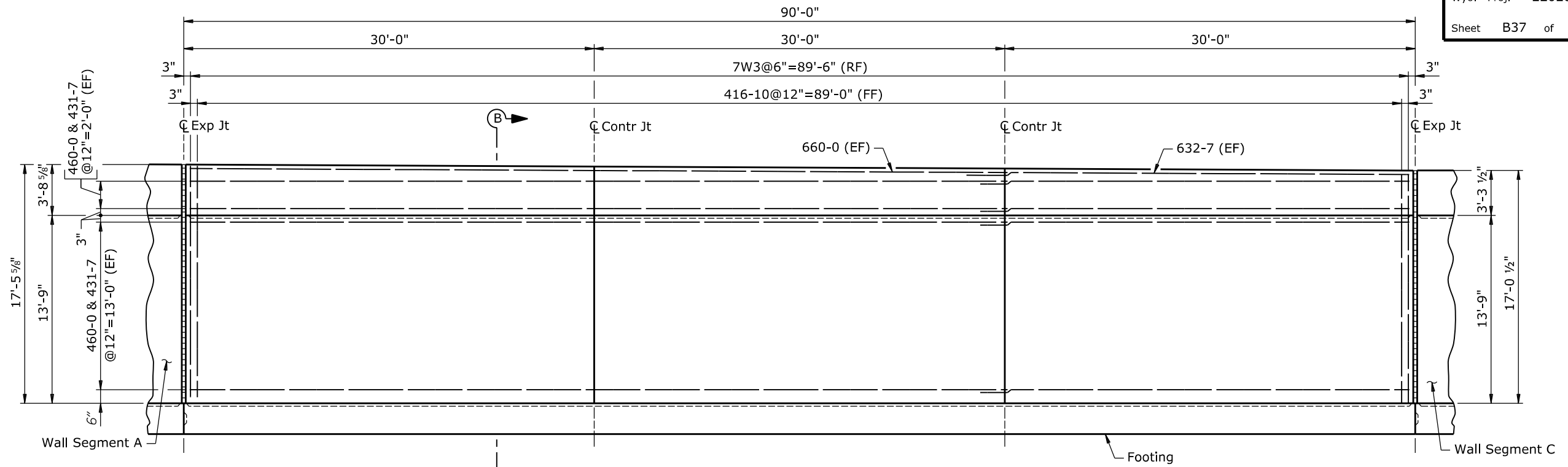
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Section 4.21 - Earth Retaining Structures

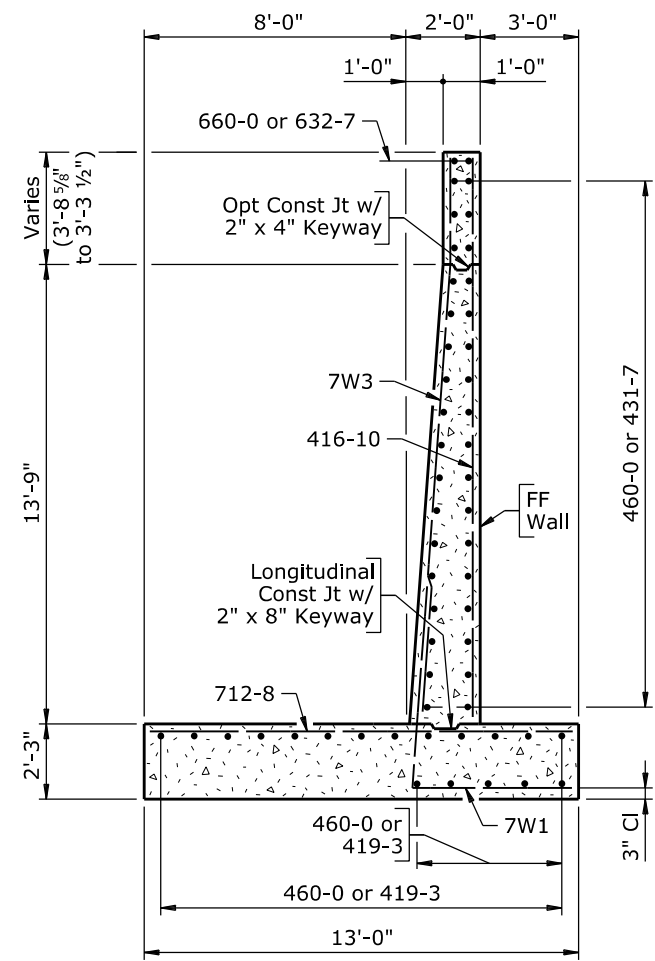
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ELEVATION - WALL SEGMENT B



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.

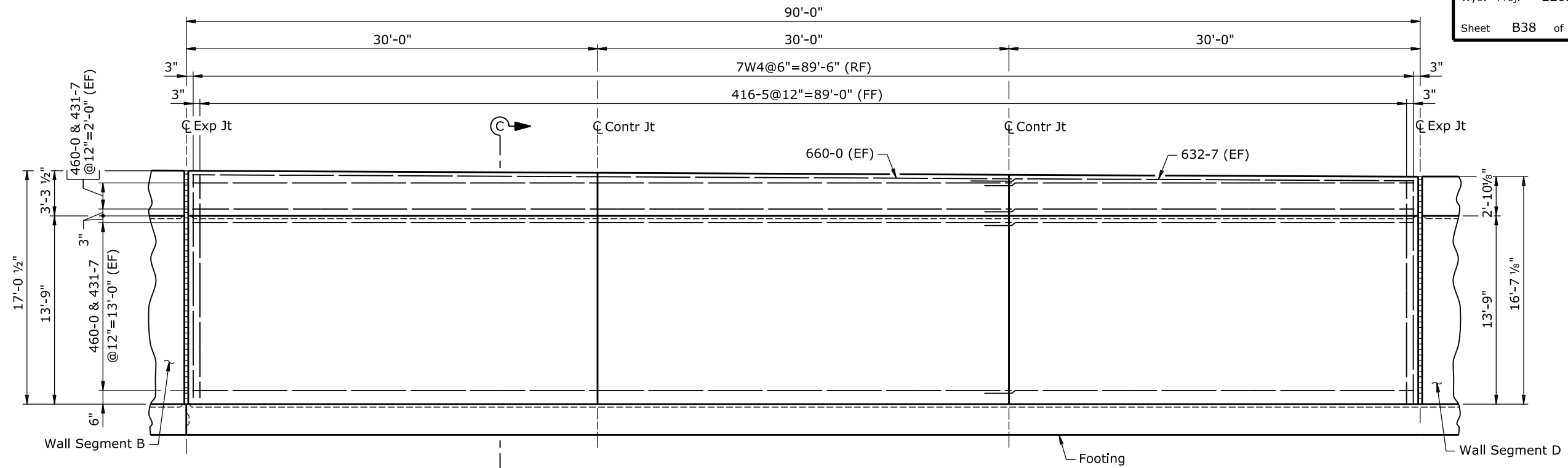
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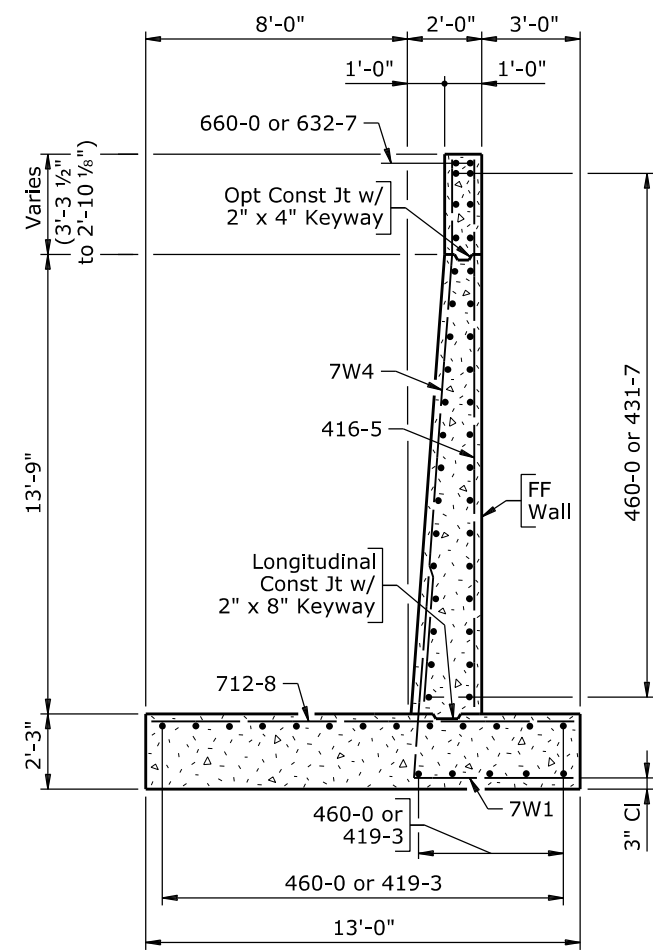
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ELEVATION - WALL SEGMENT C

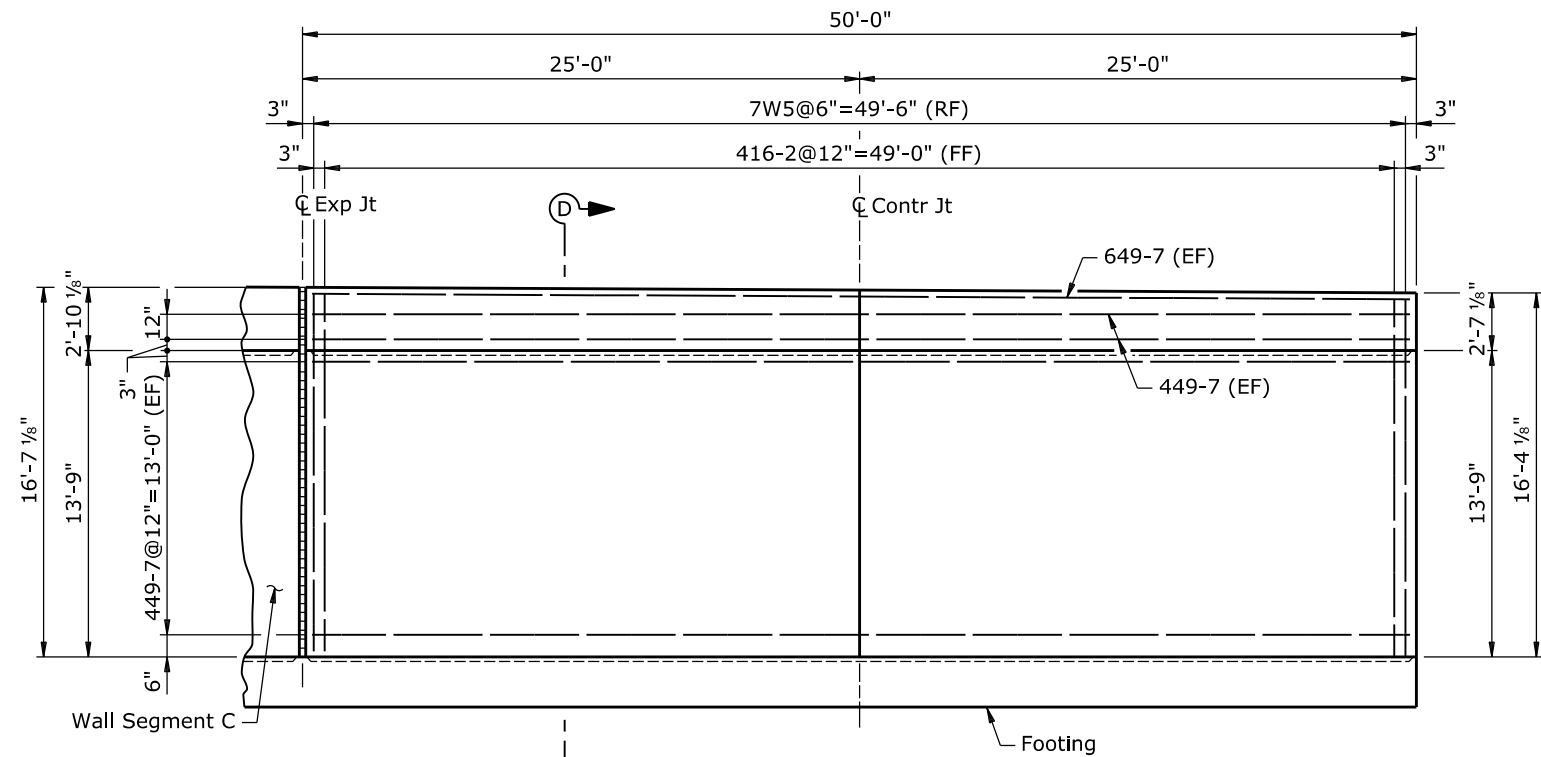


SECTION C-C

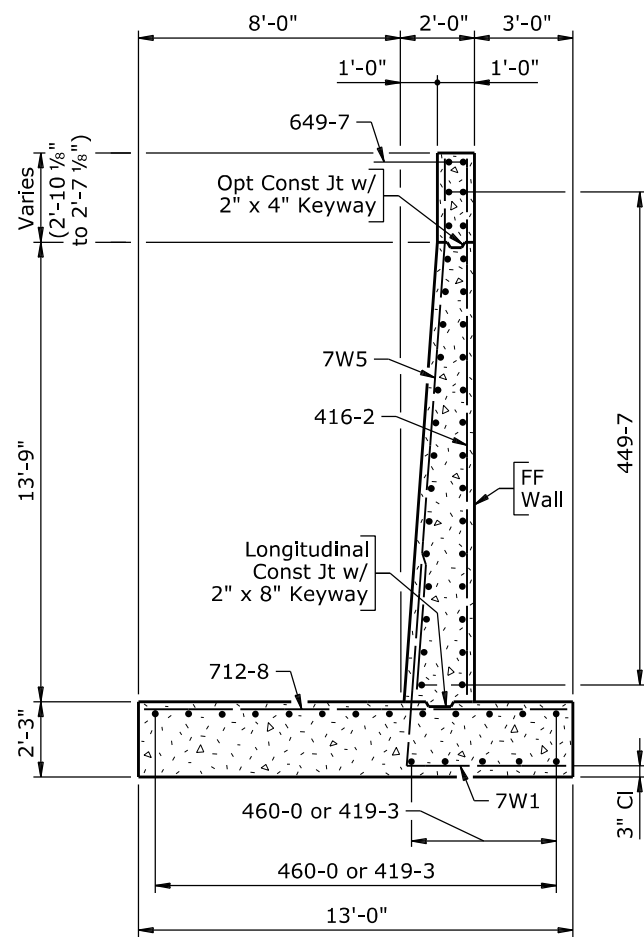
- Note:
- 1) Place 7W4 bars with 7W1 bars.
 - 2) Place 7W4 and 416-5 bars to maintain 2" clearance from top of wall.
 - 3) Trim contraction joints with 1/2" bevel strips.

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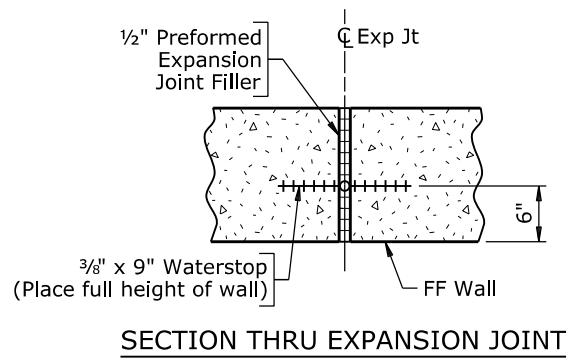
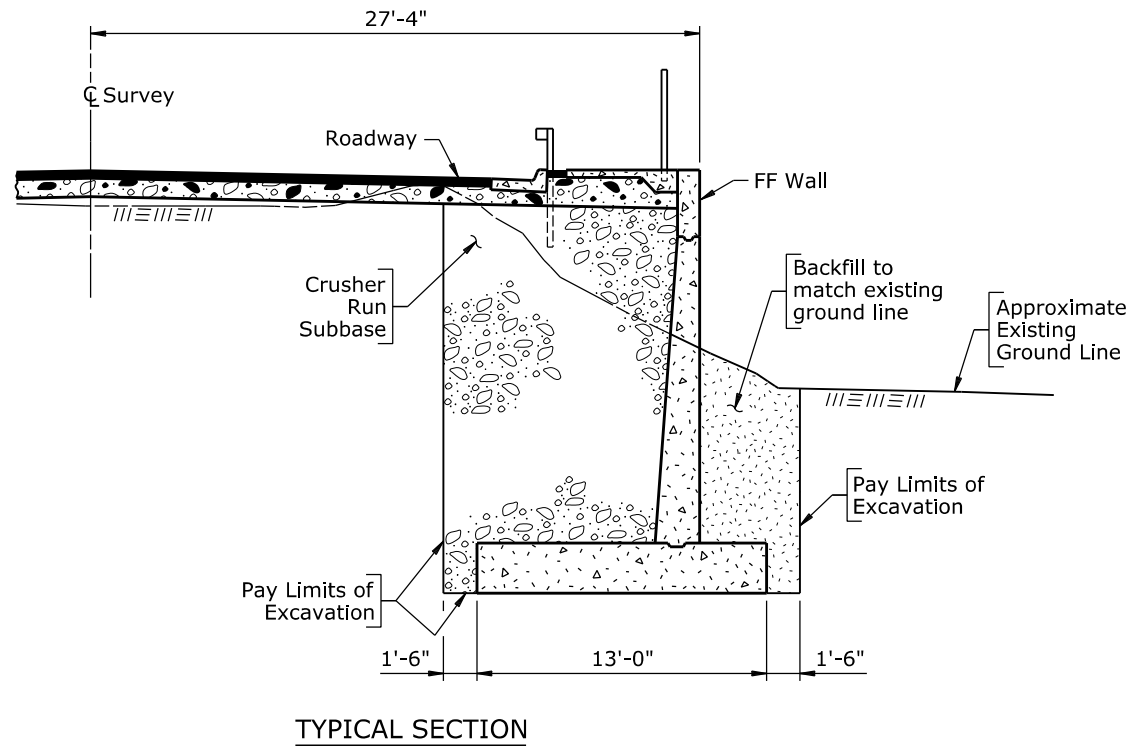
ELEVATION - WALL SEGMENT D



SECTION D-D

- 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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	APPROVAL	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	180				
7W5	100					
Weight	32,772 LB					

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

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