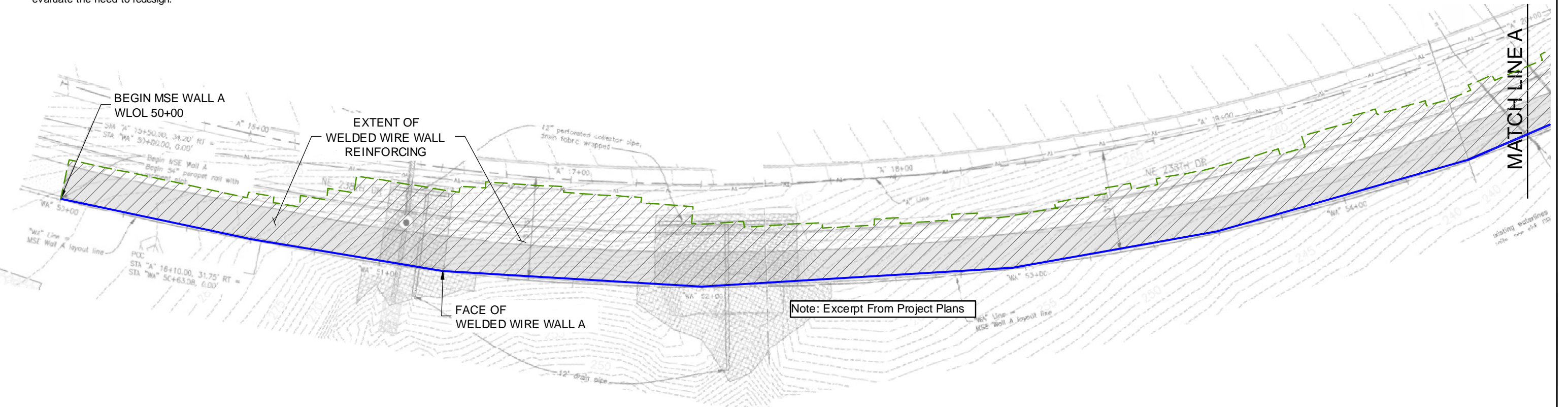


**DESIGN NOTES**

- Design is based on the assumption that backfill within the reinforced soil mass, methods of construction and quality of materials conform to the requirements of Hilfiker Retaining Walls.
- Assumed Soil Characteristics:  
 Wall Backfill:  
 Unit Weight: 130 pcf  
 Internal Friction Angle: 34°  
 Cohesion = 0 psf  
 Retained Backfill:  
 Unit Weight: 125 pcf  
 Internal Friction Angle: 32°  
 Cohesion = 0 psf  
 Foundation Soils:  
 Unit Weight: 120 pcf  
 Internal Friction Angle: 30°  
 Cohesion = 0 psf  
 Traffic Surcharge Loading (LL) = 250 psf
- If during construction, the wall location, structure location or loads are different than that proposed in this plan set and calculation package, HRW shall be notified to evaluate the need for a redesign.
- The design requires a non-saturated backfill. Surface and sub-surface drainage control may be required to prevent saturation of the backfill or relieve hydrostatic pressures.
- Design Procedure:  
 Mechanically Stabilized Earth walls and Reinforced Soil Slopes, FHWA report No. FHWA-NHI-00-043.
- All information hereon is derived from the reference drawings, and is subject to geometric and geotechnical confirmation. The applicable Hilfiker construction guide and specifications are an integral part of this submittal.
- Hilfiker Retaining Walls shall be responsible only for the internal stability of the retaining wall, and not for global stability or foundation bearing capacity. The Owner shall be responsible for global stability and foundation competence. The Owner is responsible for all job site drainage, safety and fall protection provisions for workers in compliance with OSHA and any other applicable requirements.

**Worst Case Applied Bearing Pressure by MSE Wall - @ 28' Height - 4330 psf.**

If actual characteristics, grades or dimensions of soil materials differ from those listed above or shown on the plans, Hilfiker Retaining walls shall be notified to evaluate the need to redesign.



**INSTALLED QUANTITIES:**

WELDED WIRE WALL A: 15376 FT<sup>2</sup>  
 WELDED WIRE WALL B: 2016 FT<sup>2</sup>  
 TOTAL WALL AREA: 17392 FT<sup>2</sup>

**WALL A - PLAN VIEW**

SCALE: 1" = 30'



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	4-09-21	KLC	Revised Plan Views
	4-15-21	KLC	Revised per 4.12.21 Plan Check

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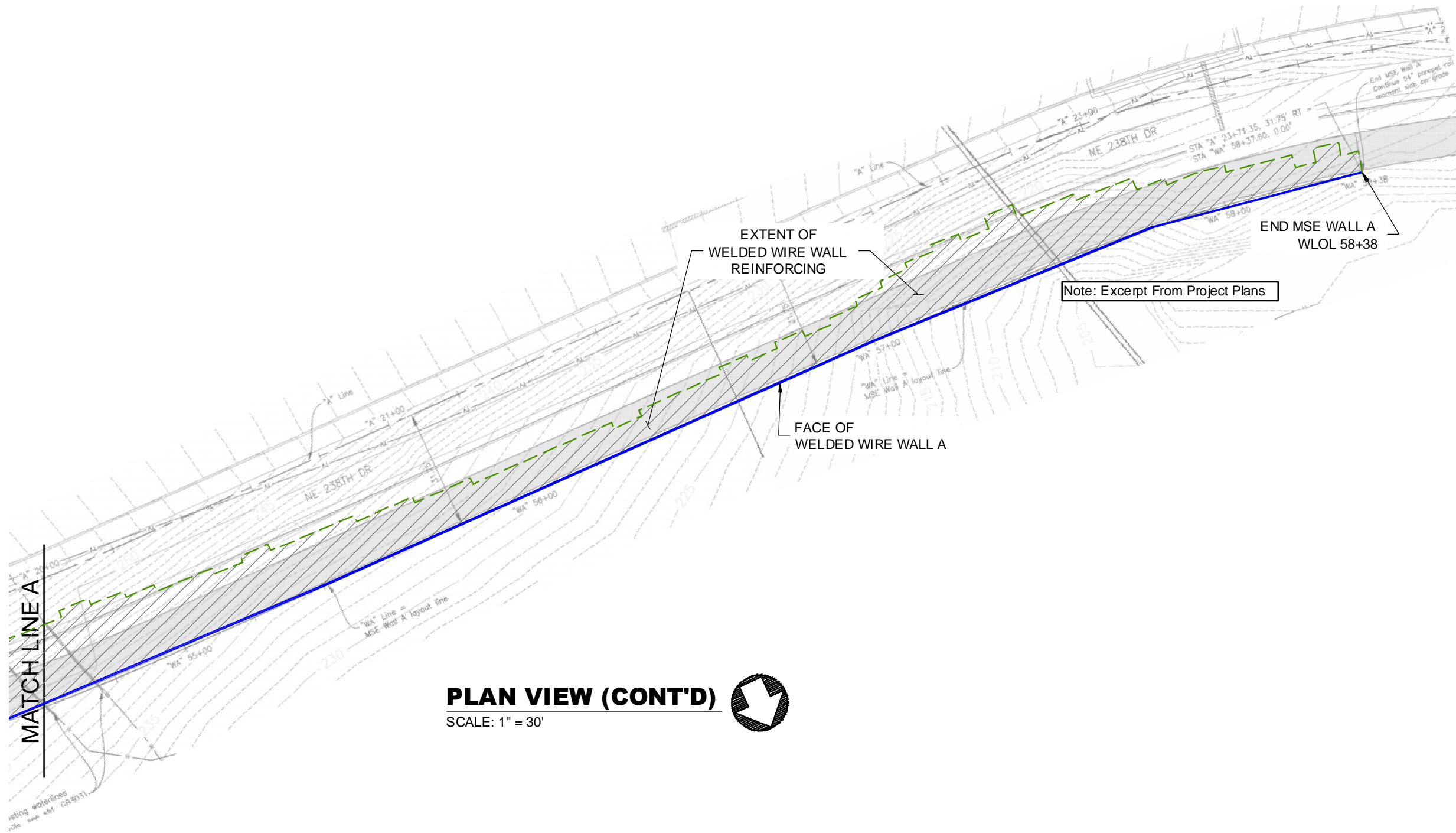
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**MSE WELDED WIRE WALL A  
 PLAN VIEW & GENERAL NOTES**

HW 200221CW

PROJECT	21-007
DATE	2-10-21
DESIGN	KLC
DRAWN	KLC
SHT	1 OF 10



**PLAN VIEW (CONT'D)**

SCALE: 1" = 30'



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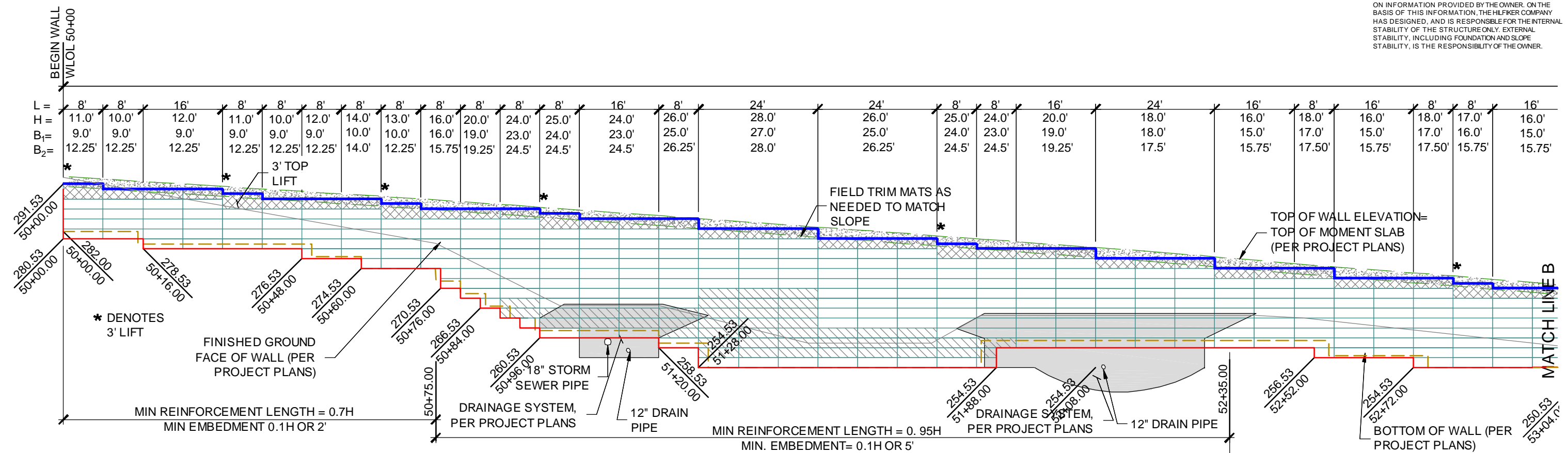
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**MSE WELDED WIRE WALL A**  
PLAN VIEW (CONT'D)

HW 200221CW

PROJECT	21-007
DATE	2-10-21
DESIGN	KLC
DRAWN	KLC
SHT	2 of 10

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### ELEVATION VIEW WALL A

SCALE: 1" = 20'

WELDED WIRE WALL PARAMETERS WALL STA 50+00 TO 50+75 (B=0.7H MIN)		
Height of Wall (H) ft	Length of Cap & Prongless Mats (B <sub>1</sub> ) ft	Base Length of Mats (B <sub>2</sub> ) ft
≤9'	9.0'	8.75'
10'-12'	9.0'	12.25'
13'	10.0'	12.25'
14'	10.0'	14.0'
15'	11.0'	14.0'
16'	12.0'	15.75'
18'	13.0'	17.5'
20'	14.0'	19.25'
21'	15.0'	19.25'
22'	16.0'	21.0'

WELDED WIRE WALL PARAMETERS WALL STA 50+75 TO 52+35 (B=0.95H MIN)		
Height of Wall (H) ft	Length of Cap & Prongless Mats (B <sub>1</sub> ) ft	Base Length of Mats (B <sub>2</sub> ) ft
14'	13.0'	14.0'
16'	16.0'	15.75'
18'	18.0'	17.5'
20'	19.0'	19.25'
22'	21.0'	21.0'
23'	22.0'	22.75'
24'	23.0'	24.5'
25'	24.0'	24.5'
26'	25.0'	26.25'
28'	27.0'	28.0'

WELDED WIRE WALL PARAMETERS WALL STA 52+35 TO 56+75 (B=0.9H MIN)		
Height of Wall (H) ft	Length of Cap & Prongless Mats (B <sub>1</sub> ) ft	Base Length of Mats (B <sub>2</sub> ) ft
14	13.0'	14.0'
16'	15.0'	15.75'
17'	16.0'	15.75'
18'	17.0'	17.5'

- WALL WIRE TYPE LEGEND**
- FINISH: HOT DIP GALVANIZED  
SERVICE LIFE: 100 YEARS
- TYPE 1 - 8X12 W7.0x3.5 MATS (CAP & PRONGLESS)
  - TYPE 3 - 8x21 W7.0x4.0 MATS (STANDARDS)
  - TYPE 4 - 8x21 W9.5x4.0 MATS (STANDARDS)

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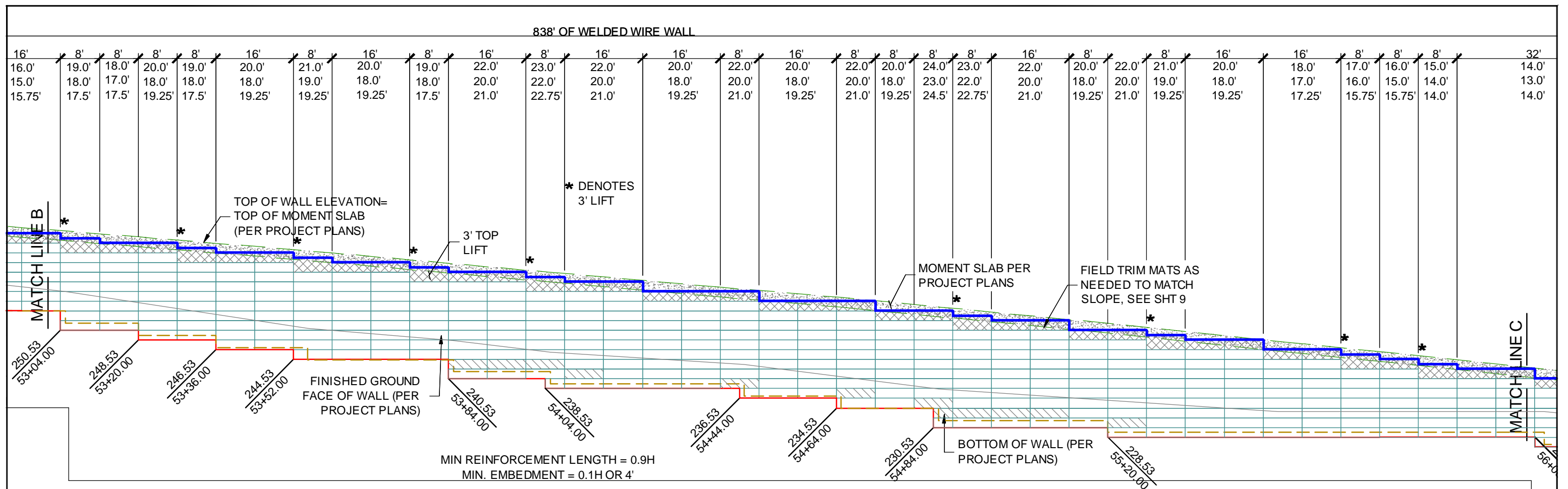
**MSE WELDED WIRE WALL A  
ELEVATION VIEW**

HW 200221CW

PROJECT	21-007
DATE	2-10-21
DESIGN	KLC
DRAWN	KLC

SHT **3** OF 10





**ELEVATION VIEW WALL A (CONT'D)**

SCALE: 1" = 20'

WELDED WIRE WALL PARAMETERS WALL STA 52+35 TO 56+75 (B=0.9H MIN)		
Height of Wall (H) ft	Length of Cap & Prongless Mats (B <sub>1</sub> ) ft	Base Length of Mats (B <sub>2</sub> ) ft
10'	9.0'	12.25'
11'	10.0'	10.5'
12'	11.0'	12.25'
13'	12.0'	12.25'
14'	13.0'	14.0'
15'	14.0'	14.0'

WELDED WIRE WALL PARAMETERS WALL STA 52+35 TO 56+75 (B=0.9H MIN) CONT'D		
Height of Wall (H) ft	Length of Cap & Prongless Mats (B <sub>1</sub> ) ft	Base Length of Mats (B <sub>2</sub> ) ft
16'	15.0'	15.75'
17'	16.0'	15.75'
18'	17.0'	17.5'
19'	18.0'	17.5'
20'	18.0'	19.25'
21'	19.0'	19.25'
22'	20.0'	21.0'

**WALL WIRE TYPE LEGEND**

FINISH: HOT DIP GALVANIZED  
SERVICE LIFE: 100 YEARS

- TYPE 1 - 8x12 W7.0x3.5 MATS (CAP & PRONGLESS)
- TYPE 3 - 8x21 W7.0x4.0 MATS (STANDARDS)
- TYPE 4 - 8x21 W9.5x4.0 MATS (STANDARDS)

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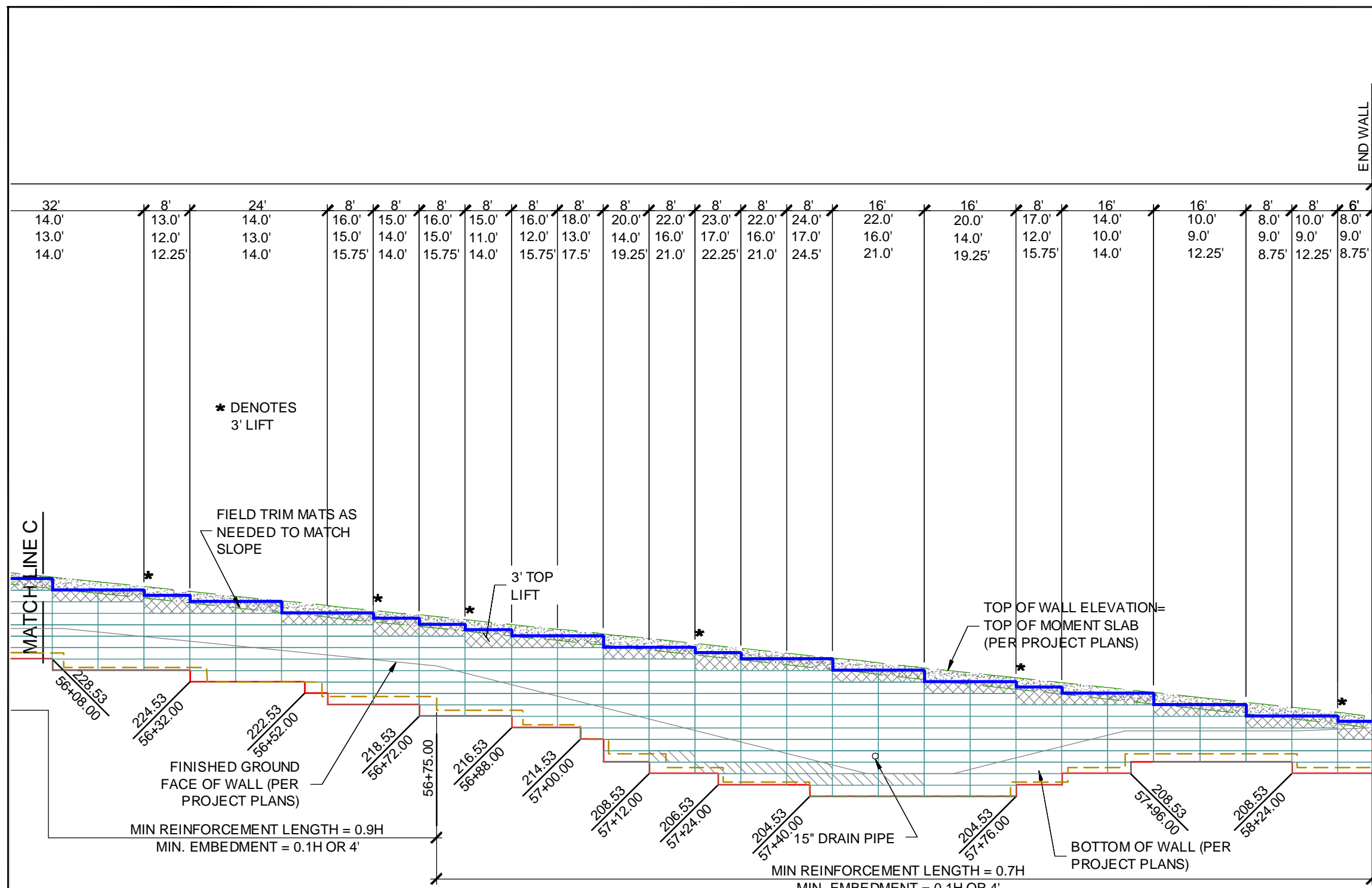
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**MSE WELDED WIRE WALL A  
ELEVATION VIEW (CONT'D)**

HW 200221CW

PROJECT	21-007
DATE	2-10-21
DESIGN	KLC
DRAWN	KLC
SHT	4 of 10



WELDED WIRE WALL PARAMETERS WALL STA 56+75 TO 58+38 (B=0.7H MIN)		
Height of Wall (H) ft	Length of Cap & Prongless Mats (B <sub>1</sub> ) ft	Base Length of Mats (B <sub>2</sub> ) ft
≤9'	9.0'	8.75'
10'-12'	9.0'	12.25'
13'	10.0'	12.25'
14'	10.0'	14.0'
15'	11.0'	14.0'
16'	12.0'	15.75'
17'	12.0'	15.75'
18'	13.0'	17.5'
20'	14.0'	19.25'
21'	15.0'	19.25'
22'	16.0'	21.0'
23'	17.0'	22.25'
24'	17.0'	24.5'

**ELEVATION VIEW WALL A (CONT'D)**  
SCALE: 1" = 20'

**WALL WIRE TYPE LEGEND**  
 FINISH: HOT DIP GALVANIZED  
 SERVICE LIFE: 100 YEARS

TYPE 1 - 8X12 W7.0x3.5 MATS (CAP & PRONGLESS)  
 TYPE 3 - 8x21 W7.0x4.0 MATS (STANDARDS)  
 TYPE 4 - 8x21 W9.5x4.0 MATS (STANDARDS)

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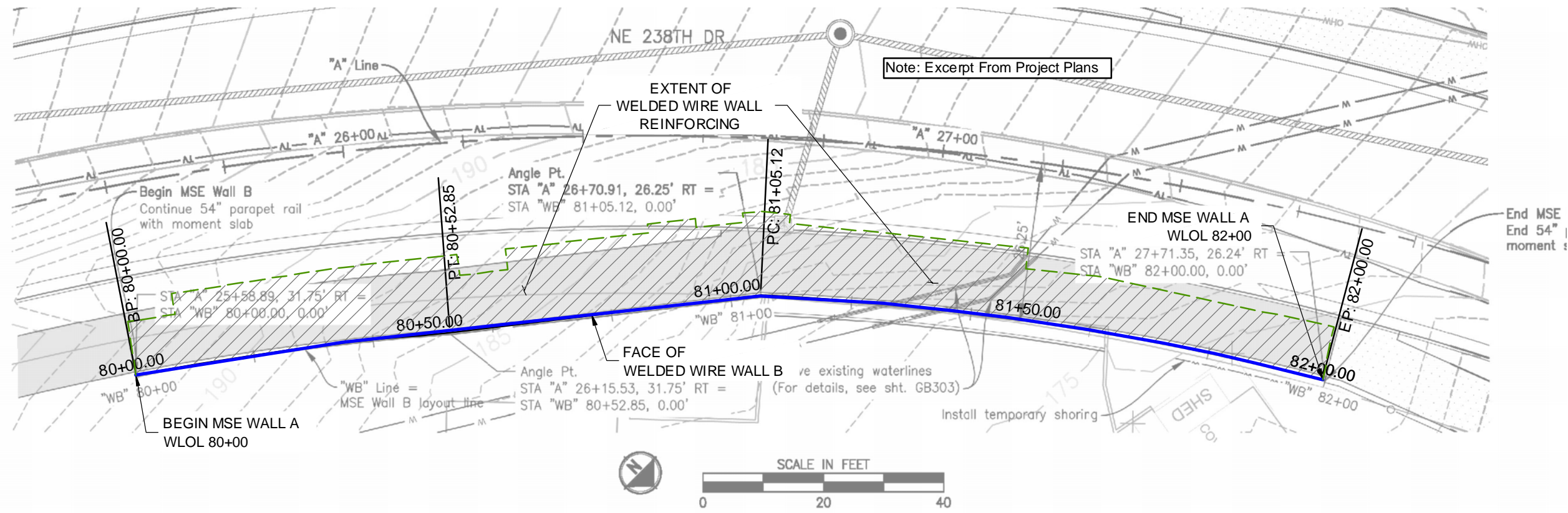
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**MSE WELDED WIRE WALL A  
ELEVATION VIEW (CONT'D)**

HW 200221CW

PROJECT	21-007
DATE	2-10-21
DESIGN	KLC
DRAWN	KLC

SHT **5** OF 10



**WALL B - PLAN VIEW**

SCALE: 1" = 20'



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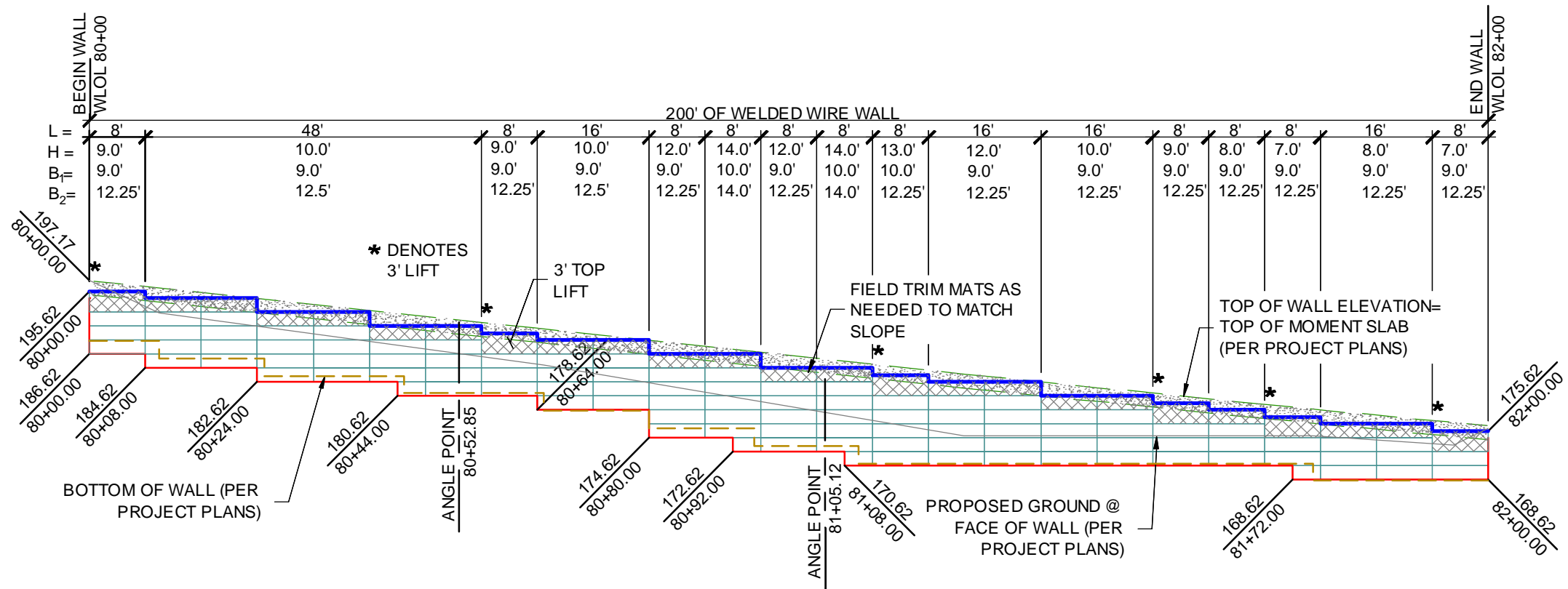
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**MSE WELDED WIRE WALL B  
PLAN VIEW**

HW 200221CW

PROJECT	21-007
DATE	2-10-21
DESIGN	KLC
DRAWN	KLC
SHT	6 of 10



### WALL B - ELEVATION VIEW

SCALE: 1" = 20'

#### WALL WIRE TYPE LEGEND

FINISH: HOT DIP GALVANIZED  
SERVICE LIFE: 100 YEARS

- TYPE 1 - 8X12 W7.0x3.5 MATS (CAP & PRONGLESS)
- TYPE 3 - 8x21 W7.0x4.0 MATS (STANDARDS)
- TYPE 4 - 8x21 W9.5x4.0 MATS (STANDARDS)

WELDED WIRE WALL PARAMETERS WALL STA 80+00 TO 82+00 (B=0.7H MIN)		
Height of Wall (H) ft	Length of Cap & Prongless Mats (B <sub>1</sub> ) ft	Base Length of Mats (B <sub>2</sub> ) ft
≤12'	9.0'	12.25'
13'	10.0'	12.25'
14'	10.0'	14.0'

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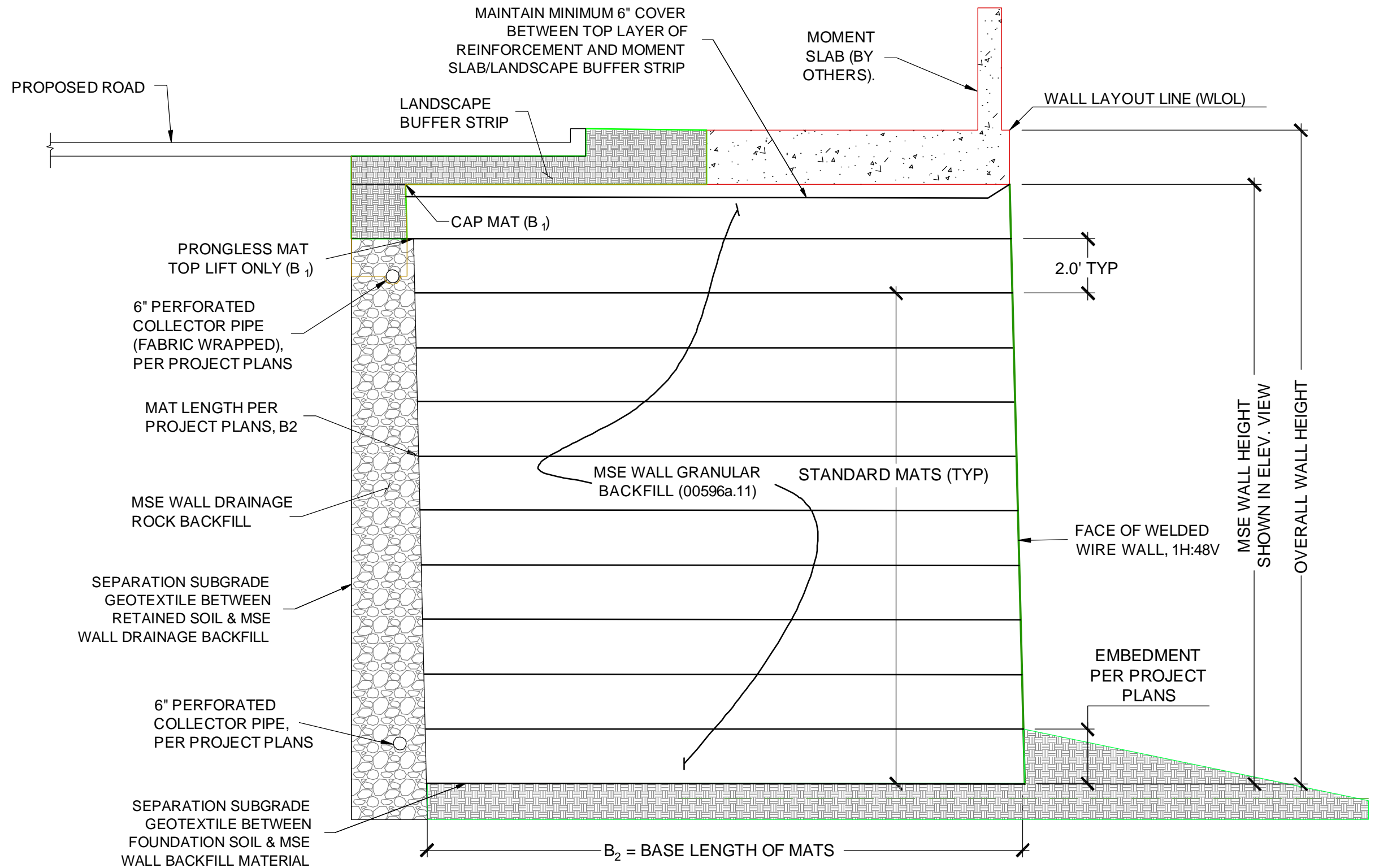
**MSE WELDED WIRE WALL B  
ELEVATION VIEW**

HW 200221CW

PROJECT	21-007
DATE	2-10-21
DESIGN	KLC
DRAWN	KLC

SHT 7 of 10





**CROSS SECTION, TYP**  
SCALE: 1" = 4'

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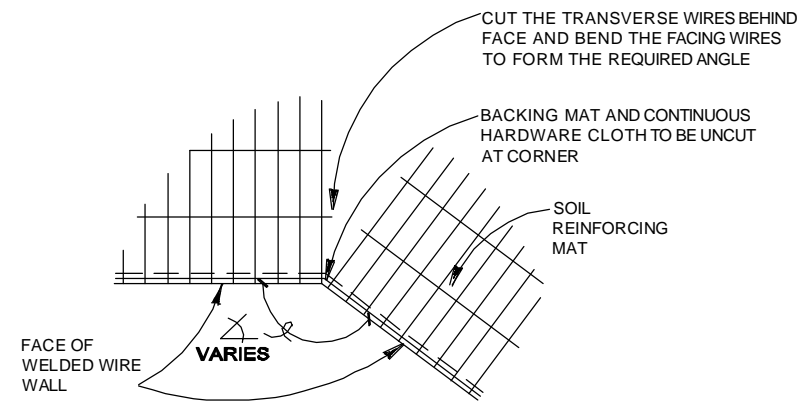
**MSE WELDED WIRES  
CROSS SECTION**

HW 200221CW

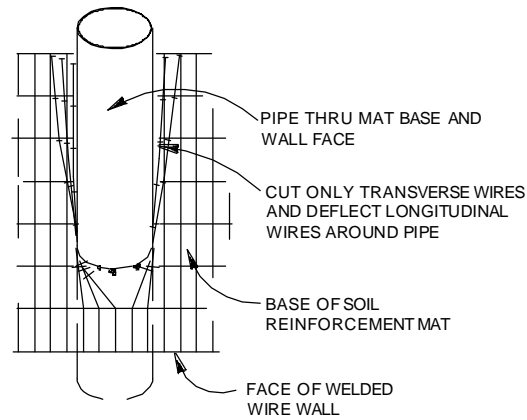
PROJECT	21-007
DATE	2-10-21
DESIGN	KLC
DRAWN	KLC

SHT **8** of 10

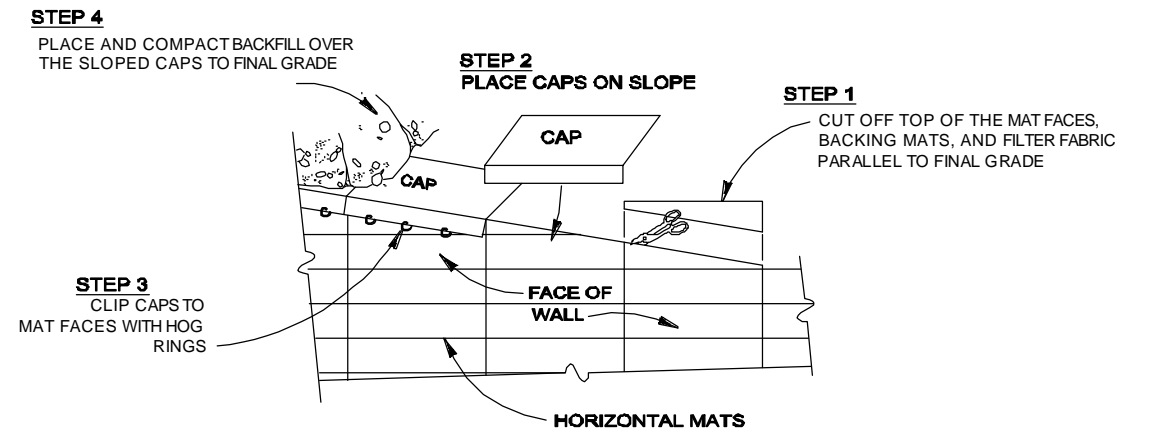




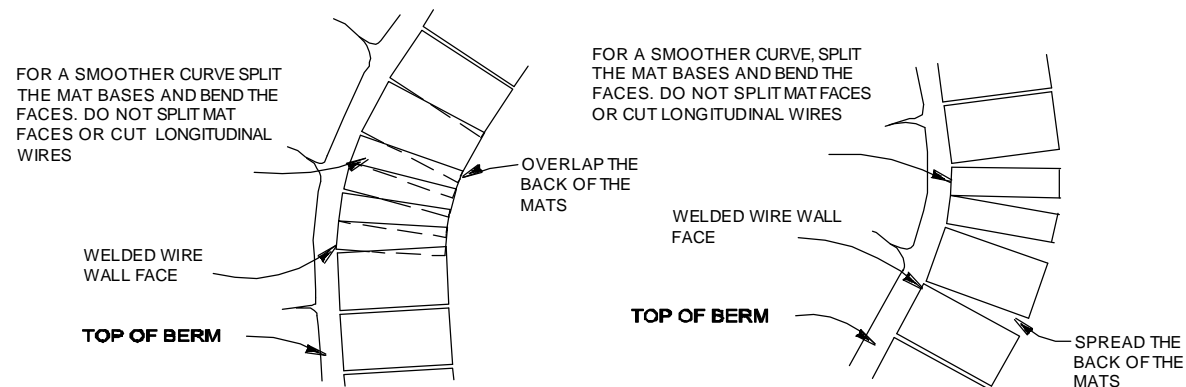
**PLAN VIEW  
CONCAVE ANGLE DETAIL**  
NOT TO SCALE



**PLAN VIEW  
PIPE OR SLEEVE PENETRATION**  
NOT TO SCALE

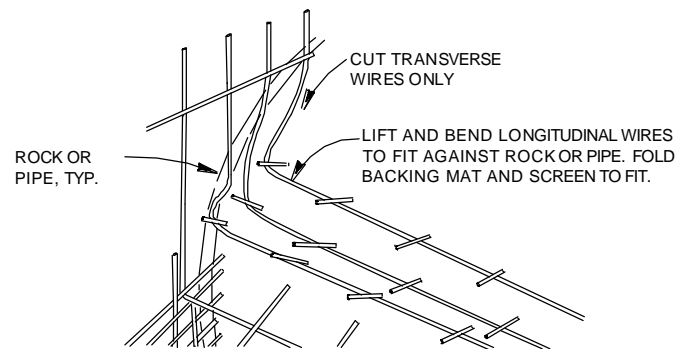


**PICTORIAL ELEVATION  
SLOPED CAP MAT DETAIL**  
NOT TO SCALE

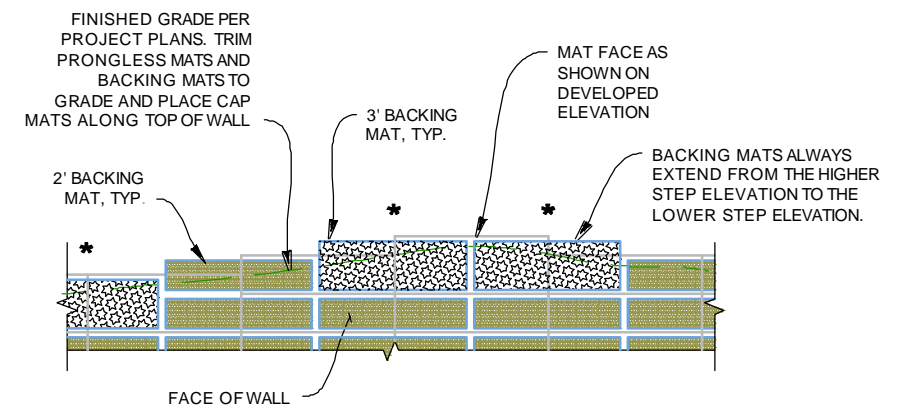
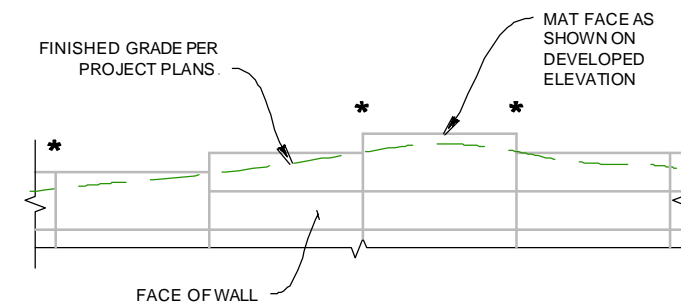


**PLAN VIEW  
CONVEX CURVE**  
NOT TO SCALE

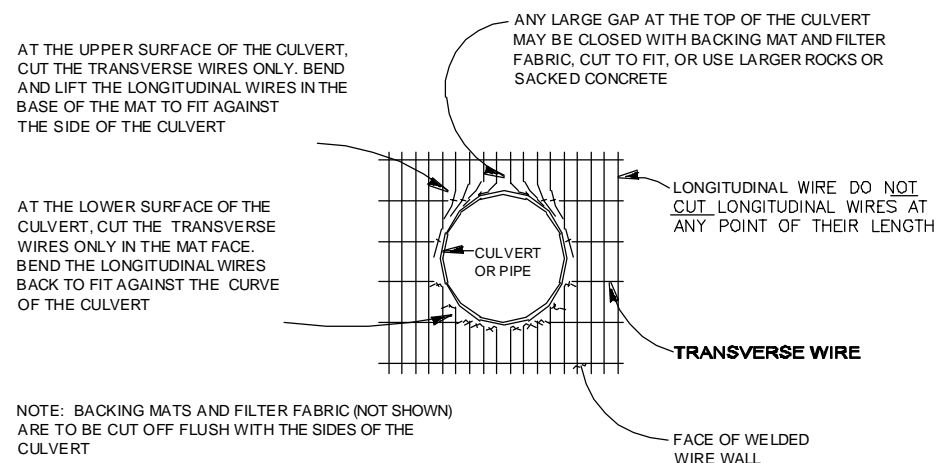
**PLAN VIEW  
CONCAVE CURVE**  
NOT TO SCALE



**PICTORIAL  
FITTING MATS TO OBSTRUCTION**  
NOT TO SCALE



**TRIMMING BACKING MATS ALONG TOP OF WALL**  
NOT TO SCALE



**ELEVATION  
CULVERT THRU WALL FACE**  
NOT TO SCALE

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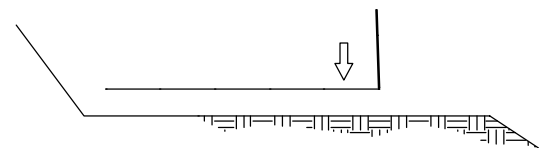
NE 238TH DR. - NE HALSY ST - NE GILISAN

MSE WELDED WIRES  
CROSS SECTION & DETAILS

HW 200221CW

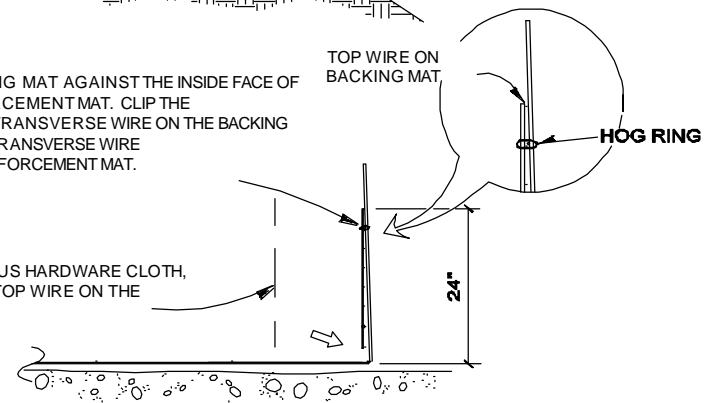
PROJECT	21-007
DATE	2-10-21
DESIGN	KLC
DRAWN	KLC
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**STEP 1**  
PLACE THE FIRST COURSE OF SOIL REINFORCEMENT MATS ON PREPARED FOUNDATION



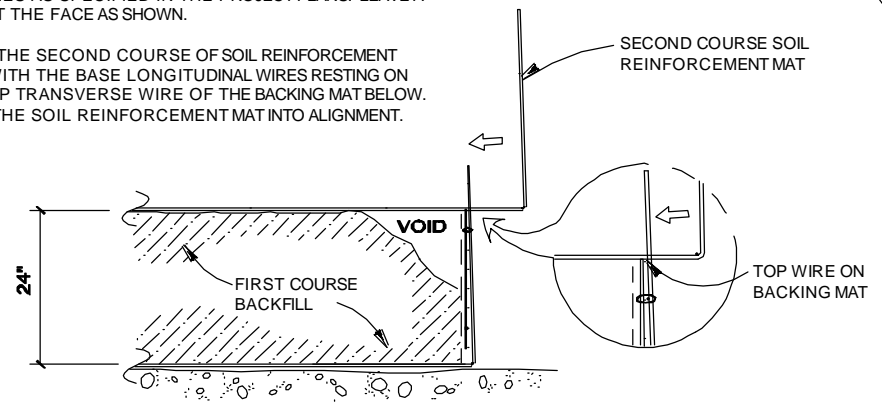
**STEP 2**  
PLACE THE BACKING MAT AGAINST THE INSIDE FACE OF THE SOIL REINFORCEMENT MAT. CLIP THE SECOND-TO-TOP TRANSVERSE WIRE ON THE BACKING MAT TO THE TOP TRANSVERSE WIRE ON THE SOIL REINFORCEMENT MAT.

INSTALL CONTINUOUS HARDWARE CLOTH, HOG-RING TO THE TOP WIRE ON THE BACKING MAT.



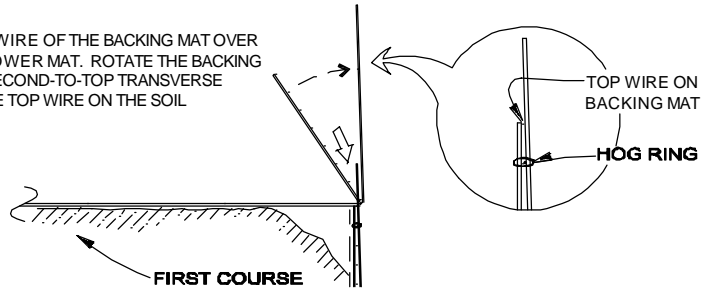
**STEP 3**  
PLACE AND COMPACT THE BACKFILL IN LAYERS AND DENSITIES AS SPECIFIED IN THE PROJECT PLANS. LEAVE A VOID AT THE FACE AS SHOWN.

PLACE THE SECOND COURSE OF SOIL REINFORCEMENT MATS WITH THE BASE LONGITUDINAL WIRES RESTING ON THE TOP TRANSVERSE WIRE OF THE BACKING MAT BELOW. SLIDE THE SOIL REINFORCEMENT MAT INTO ALIGNMENT.

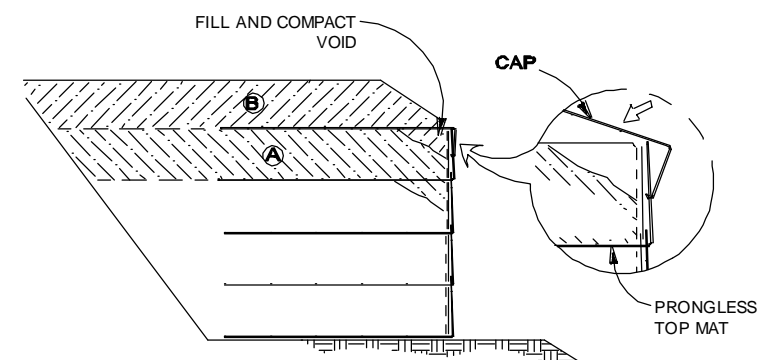
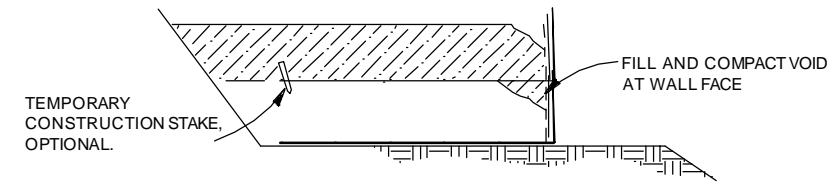


**CONSTRUCTION SEQUENCE**  
NOT TO SCALE

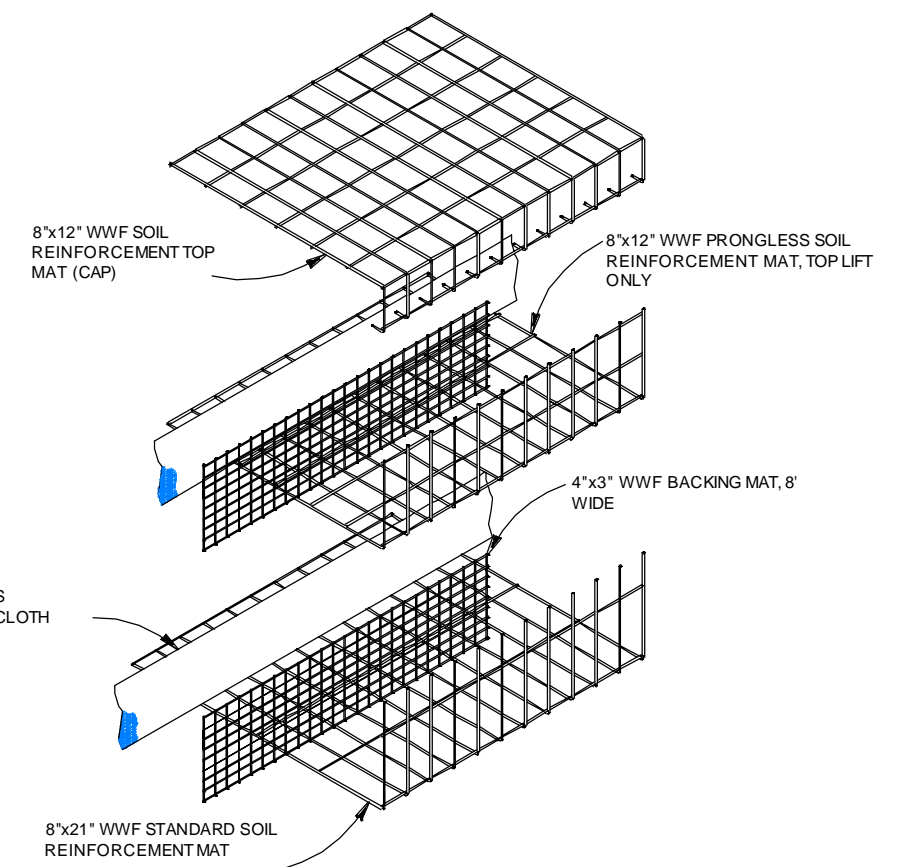
**STEP 4**  
HOOK THE BOTTOM TRANSVERSE WIRE OF THE BACKING MAT OVER THE VERTICAL PRONGS ON THE LOWER MAT. ROTATE THE BACKING MAT TO VERTICAL AND CLIP THE SECOND-TO-TOP TRANSVERSE WIRE ON THE BACKING MAT TO THE TOP WIRE ON THE SOIL REINFORCEMENT MAT.



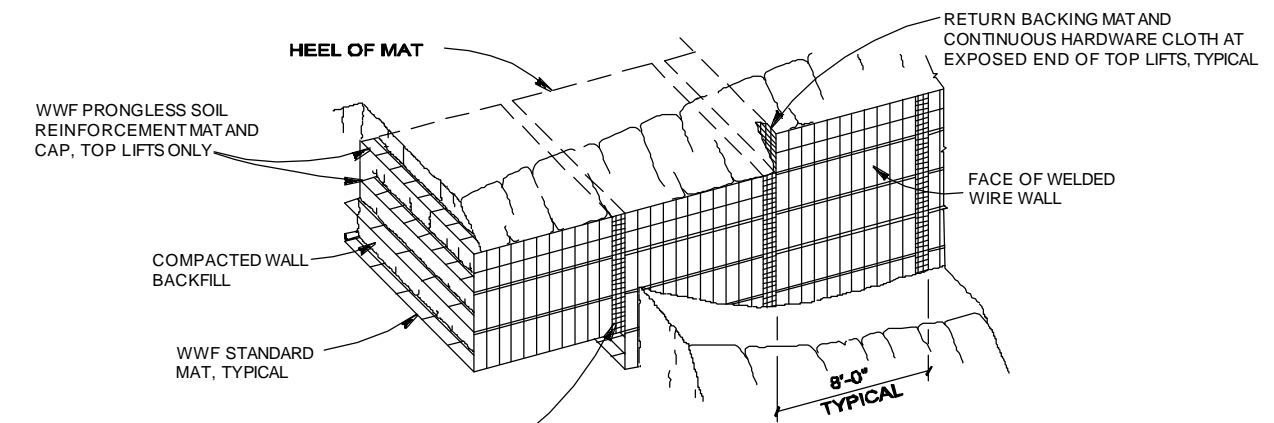
**STEP 5**  
INSTALL THE CONTINUOUS HARDWARE CLOTH. PLACE AND COMPACT THE BACKFILL TO THE BASE ELEVATION OF THE NEXT MAT. REPEAT STEPS 3 THROUGH 5 TO THE TOP LIFT.



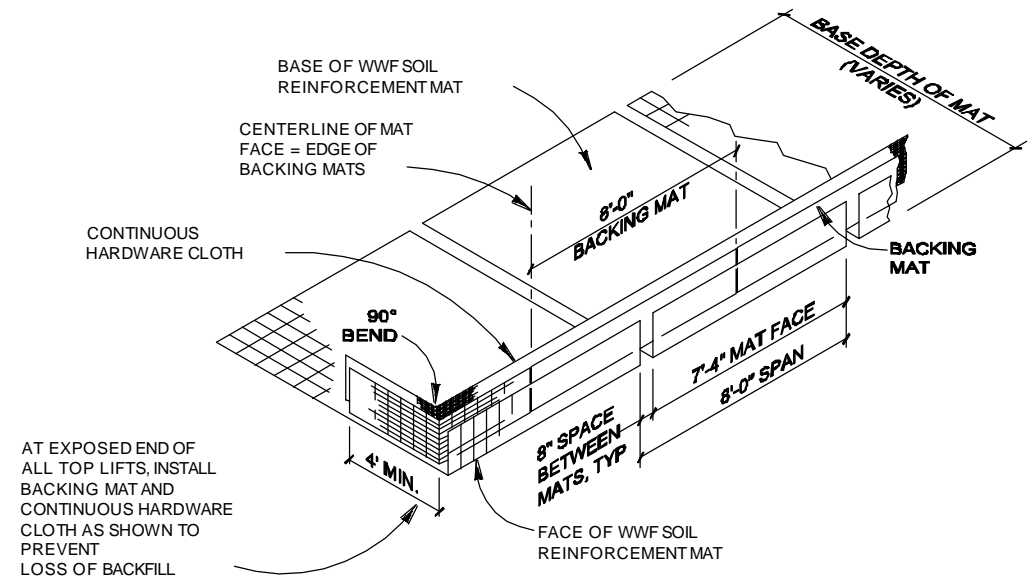
**STEP 6: TOP LIFT**  
PLACE THE TOP LIFT PRONGLESS MAT, BACKING MAT AND CONTINUOUS HARDWARE CLOTH. PLACE AND COMPACT BACKFILL IN AREA "A". HOOK THE CAP OVER THE MIDDLE TRANSVERSE WIRE ON THE PRONGLESS MAT, AND ROTATE INTO PLACE. BACKFILL "B" TO 1'-6" MIN. COVER OVER THE CAP.



**WALL COMPONENTS**  
NOT TO SCALE



**PICTORIAL ELEVATION**  
NOT TO SCALE



**ISOMETRIC VIEW**  
**WELDED WIRE WALL COMPONENTS WITH RETURN MAT**  
NOT TO SCALE

THE DESIGN CONTAINED ON THESE DRAWINGS IS BASED ON INFORMATION PROVIDED BY THE OWNER. ON THE BASIS OF THIS INFORMATION, THE HILFIKER COMPANY HAS DESIGNED, AND IS RESPONSIBLE FOR THE INTERNAL STABILITY OF THE STRUCTURE ONLY. EXTERNAL STABILITY, INCLUDING FOUNDATION AND SLOPE STABILITY, IS THE RESPONSIBILITY OF THE OWNER.

REV. NO.	DATE	BY	DESCRIPTION
	2-10-21	KLC	Initial .pdf Release
	3-16-21	KLC	Revised per 3.8.21 Plan Check
	3-30-21	KLC	Revised per 3.24.21 Plan Check

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