

DESIGN NOTES

1. 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 the UDOT Special Provisions & Supplemental Specifications referenced in the Technical Specifications.
2. Assumed Soil Characteristics:

Wall Backfill:

Unit Weight: 135 pcf

Internal Friction Angle: 34°

Cohesion = 0 psf

Retained Backfill:

Unit Weight: 135 pcf

Internal Friction Angle: 34°

Cohesion = 0 psf

Foundation Soils:

Unit Weight: 135 pcf

Internal Friction Angle: 34°

Cohesion = 0 psf

Traffic Surcharge Loading (LL) = 270 psf (per AASHTO 3.11.6.4)

Worst Case Factored Bearing Pressure by MSE Wall- @ 34' Height - 8670 psf.

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

3. 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.
4. Design Data/Procedure:

Mechanically Stabilized Earth walls and Reinforced Soil Slopes: FHWA report No. FHWA-NHI-00-043

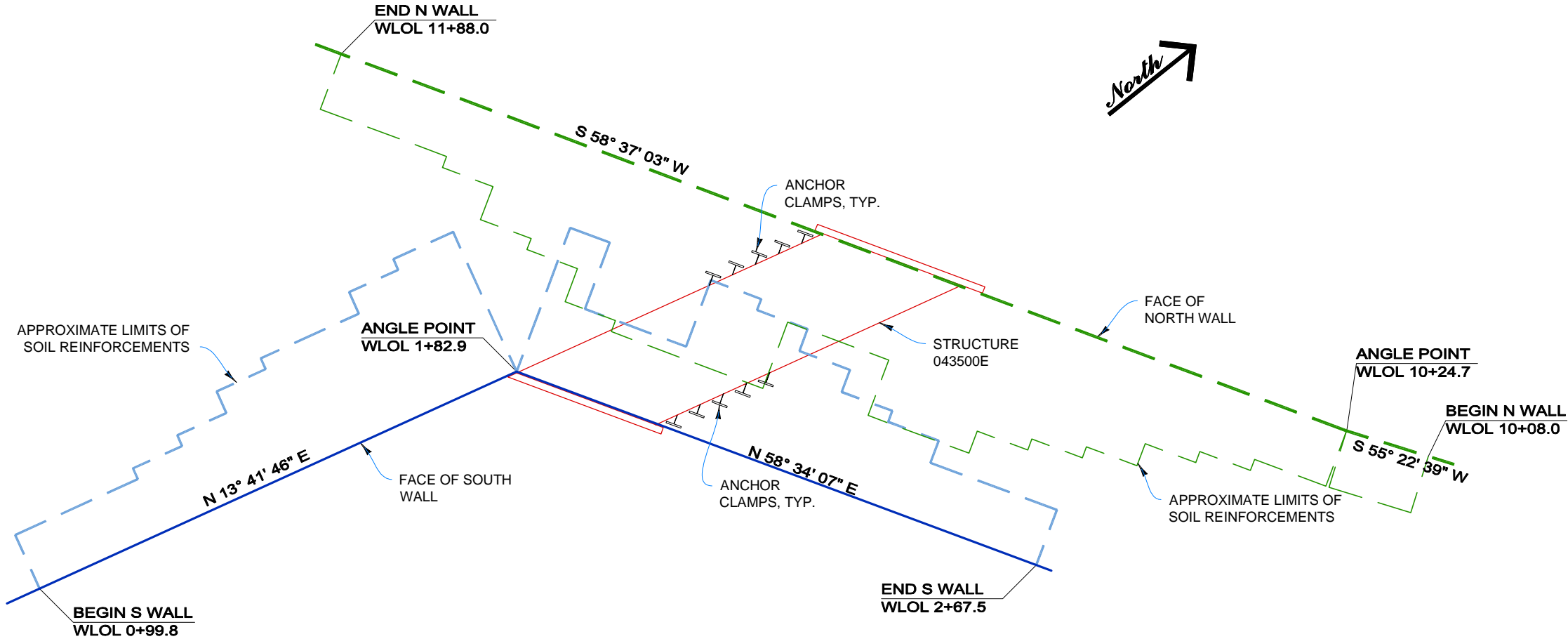
AASHTO 2012 6th Edition

UDOT Structures Design and Detailing Manual 2015

UDOT Geotechnical Manual of Instruction Sept. 2017

UDOT 2017 Standard Specifications for Road and Bridge Construction

UDOT Special Provisions & Supplemental Specifications
6. 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.
7. Hilfiker Retaining Walls shall be responsible only for the internal stability of the retaining wall, and not for global stability or the foundation bearing capacity. The Contractor shall be responsible for global stability and foundation competence. The Contractor is responsible for all job/construction site drainage, safety and fall protection provisions for workers in compliance with OSHA and any other applicable requirements.



PLAN VIEW  
SCALE: 1" = 20'

SUPPLIED QUANTITIES	
WALL NO.	FACE AREA
NORTH WALL	3,216 SQ. FT.
SOUTH WALL	2,992 SQ. FT.
TOTALS	6,208 SQ. FT.

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HW 180727EW

REV. NO.	DATE	BY	DESCRIPTION
	8-23-18	KLC	Initial .pdf Release
	9-25-18	KLC	Revised Per 9.10.18 Plan Check Comments
	10-5-18	KLC	Revised Per 9.10.18 Plan Check .XLS Comments
	10-24-18	KLC	Revised Per 10.18.18 Plan Check Comments

**HILFIKER RETAINING WALLS**



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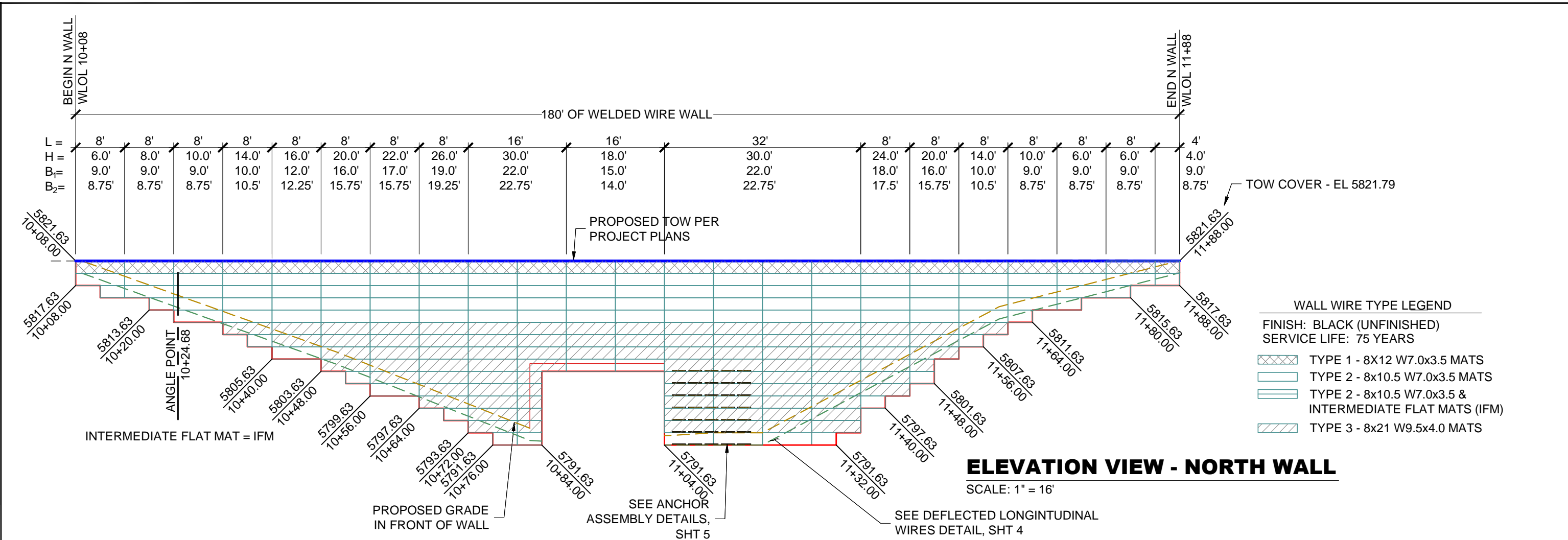
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HOYTSVILLE STRUCTURE REPLACEMENT  
043064C

MSE WELDED WIRE WALL  
PLAN VIEW & GENERAL NOTES

PROJECT	18-046
DATE	8-23-18
DESIGN	KLC
DRAWN	KLC
SHT	1 OF 6



ELEVATION VIEW - NORTH WALL

SCALE: 1" = 16'

WELDED WIRE WALL PARAMETERS		
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'	8.75'
14'	10'	10.5'
16'	12'	12.25'
18'	14'	14.0'
20'	16'	15.75'
Cap & Top Mats (B <sub>1</sub> ) are: 8x12 W7.0x3.5 WWR (Type 1) Standard Mats (B <sub>2</sub> ) are: 8x10.5 W7.0x3.5 WWR (Type 2) 8x21 W9.5x4.0 WWR (Type 3)		
Finish: Black (Unfinished) - 75 Year Service Life		

WELDED WIRE WALL PARAMETERS (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
22'	17'	15.75'
24'	18'	17.5'
26'	19'	19.25'
28'	21'	21.0'
30'	22'	22.75'
34'	25'	24.5'

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	10-25-18	KLC	Revised to accommodate (Ex)CIP Portal Footing

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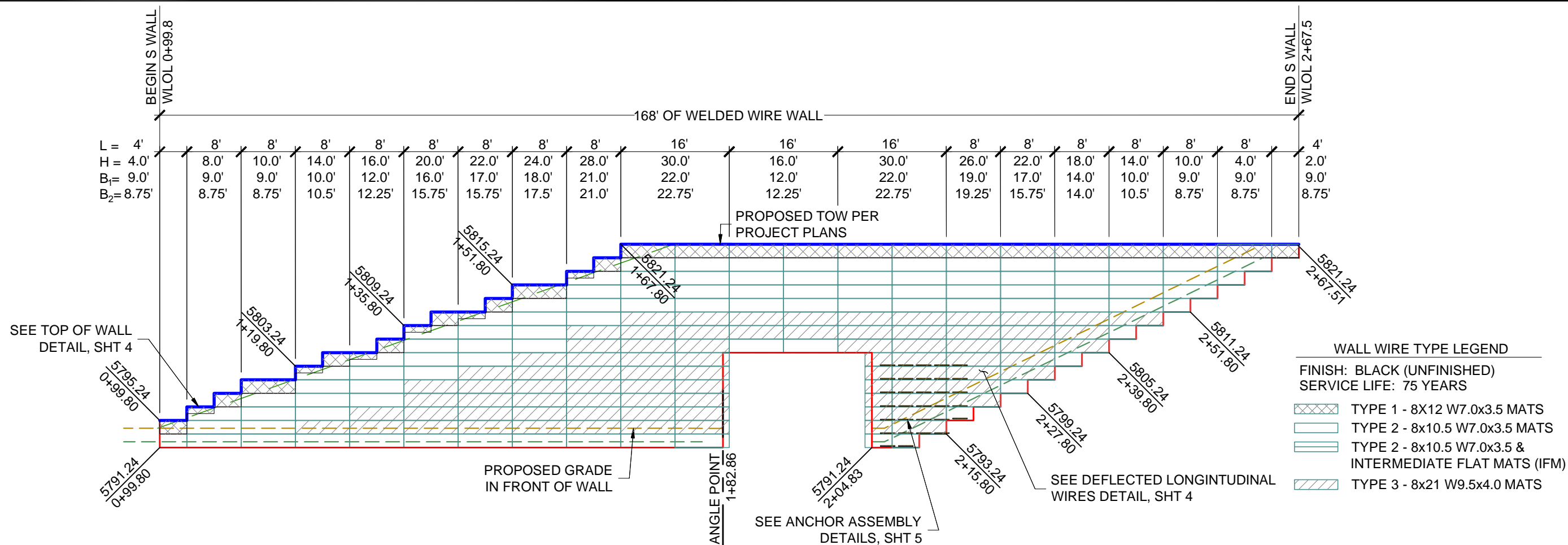
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MSE WELDED WIRE WALL  
N WALL - ELEVATION VIEW

PROJECT 18-046  
DATE 8-23-18  
DESIGN KLC  
DRAWN KLC

SHT 2 OF 6



WELDED WIRE WALL PARAMETERS		
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28'	21'	21.0'
30'	22'	22.75'
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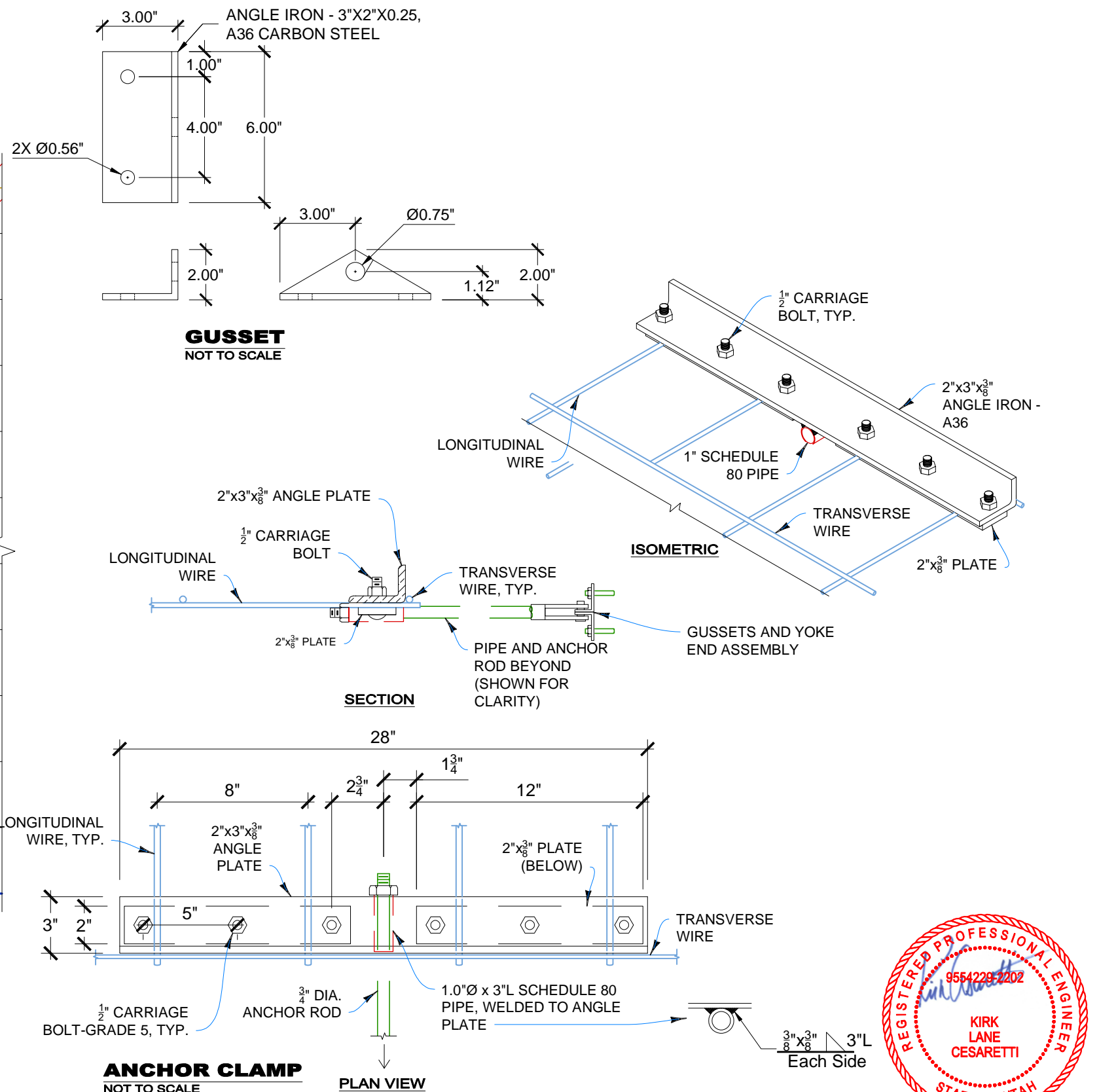
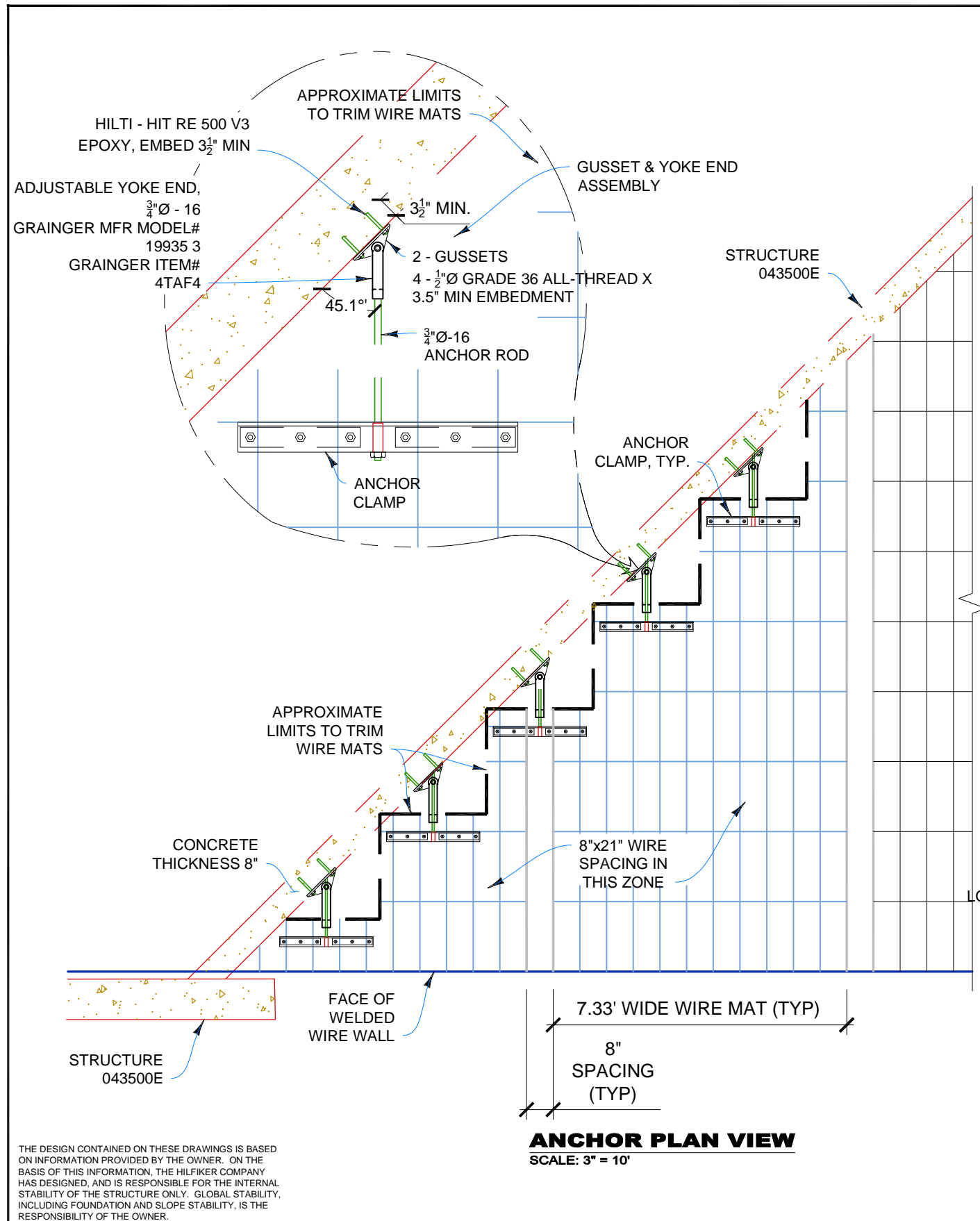
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 043064C

**MSE WELDED WIRE WALL**  
**S WALL - ELEVATION VIEW**

PROJECT 18-046
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DRAWN KLC
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HOYTSVILLE STRUCTURE REPLACEMENT  
043064C  
MSE WELDED WIRE WALL  
ANCHOR DETAILS

PROJECT 18-046
DATE 8-23-18
DESIGN KLC
DRAWN KLC
SHT 5 OF 6

**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 SEPARATION GEOTEXTILE AS SHOWN  
PLACE AND COMPACT BACKFILL

**STEP 3**  
BRING THE SEPARATION GEOTEXTILE OVER THE FRONT AND TOP OF THE BACKFILL AS SHOWN. PLACE THE ROCK IN THE FACE OF THE WALL. LEAVE A VOID 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.

**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 SEPARATION GEOTEXTILE AS IN STEPS 2 AND 3. PLACE AND COMPACT THE BACKFILL AND ROCK TO THE BASE ELEVATION OF THE NEXT MAT. REPEAT STEPS 2 THROUGH 5 TO THE TOP LIFT.

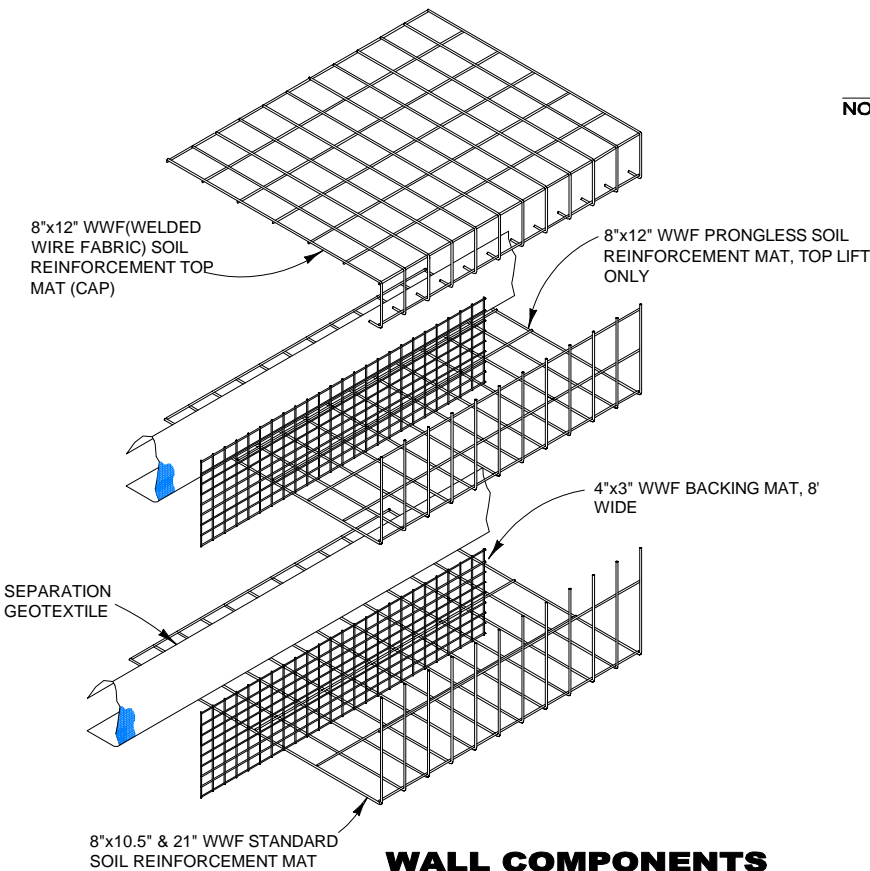
TEMPORARY CONSTRUCTION STAKE, OPTIONAL

FILL THE VOID IN THE LIFT BELOW

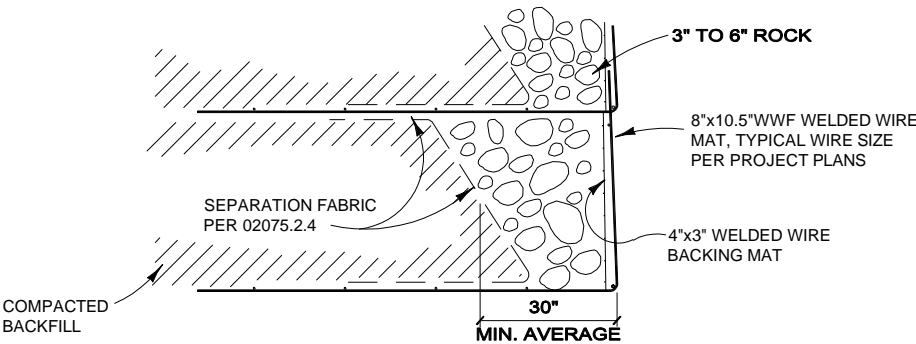
**STEP 6: TOP LIFT**  
PLACE THE TOP LIFT PRONGLESS MAT, BACKING MAT AND SEPARATION GEOTEXTILE. PLACE AND COMPACT BACKFILL AND ROCK IN THE TOP LIFT. HOOK THE CAP OVER THE MIDDLE TRANSVERSE WIRE ON THE PRONGLESS MAT, AND ROTATE INTO PLACE. PLACE AND COMPACT COVER OVER TOP MAT TO 1'-6" MINIMUM DEPTH.

**CONSTRUCTION SEQUENCE**

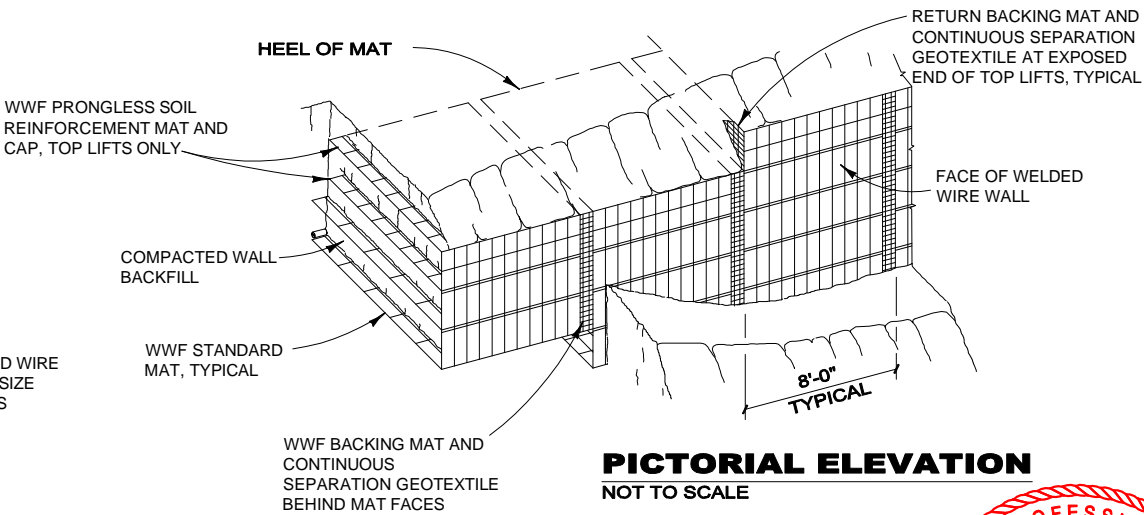
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**WALL COMPONENTS**  
NOT TO SCALE



**ROCK-FACE DETAIL**  
NOT TO SCALE



**PICTORIAL ELEVATION**  
NOT TO SCALE



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SHT	6 OF 6