

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 Hilfiker Retaining Walls.
2. Assumed Soil Characteristics:

Wall Backfill:

Unit Weight: 120 pcf

Internal Friction Angle: 34°

Cohesion = 0 psf

Retained Backfill:

Unit Weight: 120 pcf

Internal Friction Angle: 34°

Cohesion = 0 psf

Foundation Soils:

Unit Weight: 120 pcf

Friction Angle for Sliding: 34°

Cohesion = 0 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.
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. 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.

Drainage control shall be as specified in the project plans and specifications or as directed by the engineer.
5. Design Procedure:

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

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.

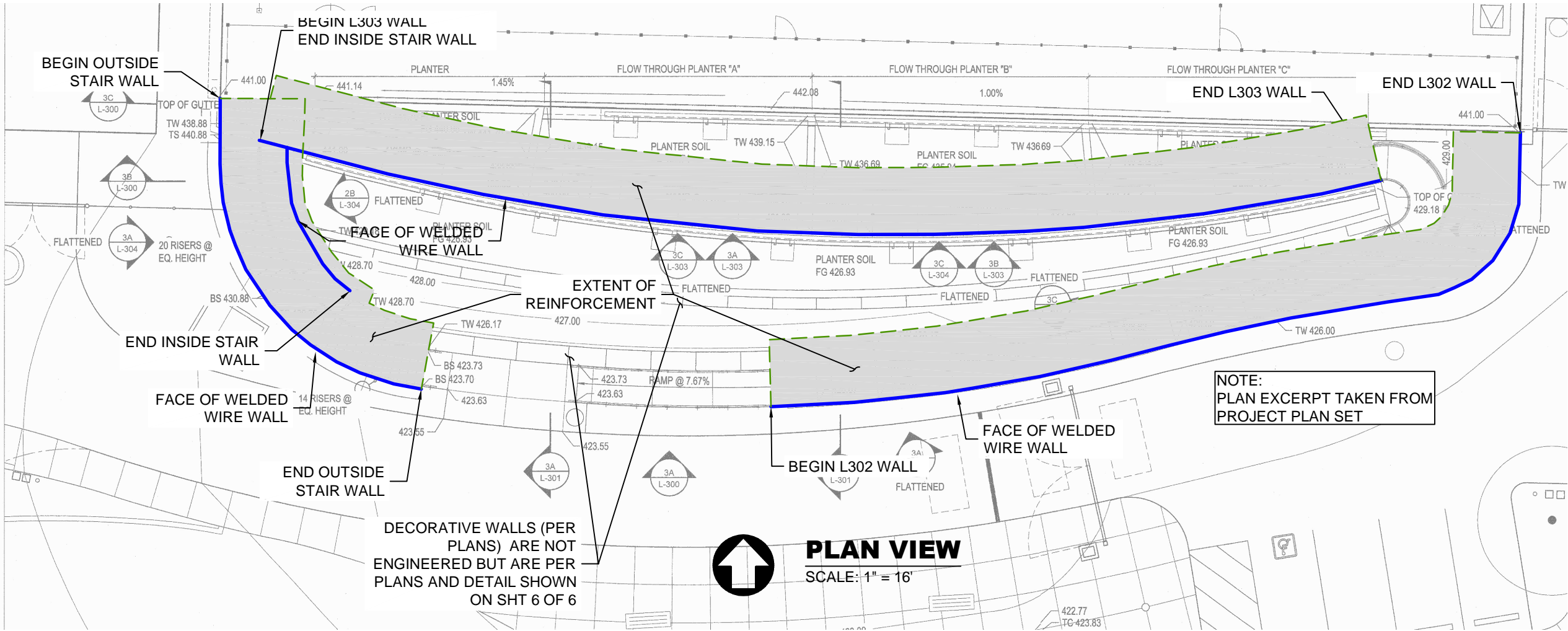
Reference Documents:

Civil Plans - By AECOM, Tualatin Valley Water District, Proj. No. 60273015, Dated June 1014.
7. 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/contractor shall be responsible for all job site drainage, safety and fall protection provisions for workers in compliance with OSHA and any other applicable requirements.

INSIDE STAIR WALL AREA:	256 SF
OUTSIDE STAIR WALL AREA:	672 SF
L303 WALL:	1,240 SF
L302 WALL:	808 SF
TOTAL SUPPLIED QTY:	2,976 SF

SUPPLIED QUANTITIES:

Applied Bearing Pressure (@ 20' High Section) - 3100 psf



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REV.NO.	DATE	BY	DESCRIPTION
	11-5-14	KLC	Soft Copy .pdf Release
	11-12-15	KLC	Modified per Plan Check Comments
	12-21-15	KLC	Added Notation concerning the Added Sheet 6

HILFIKER RETAINING WALLS



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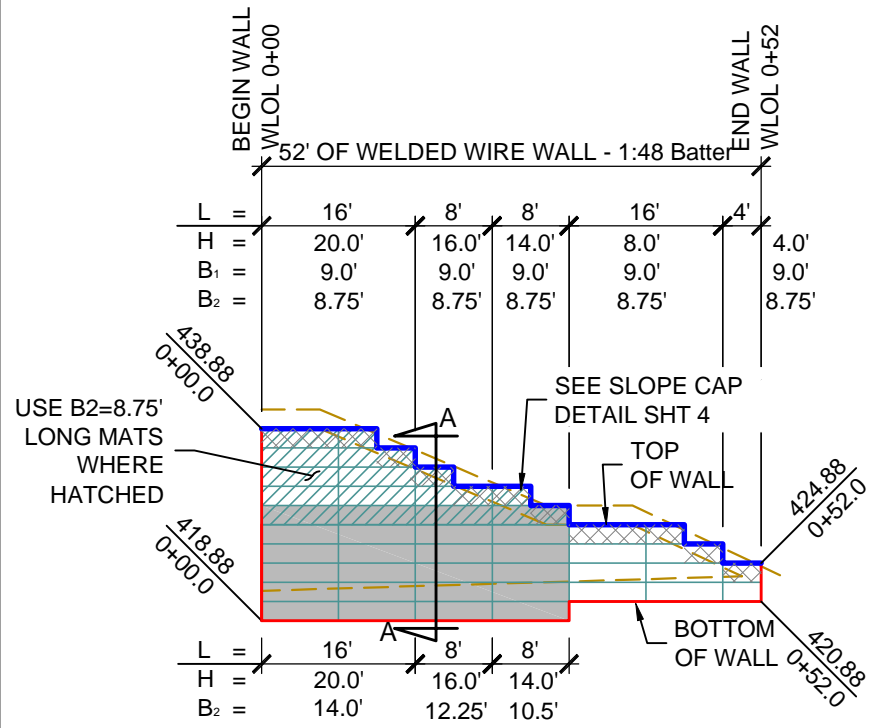
MSE PLAN VIEW & GENERAL NOTES

HW 130829AG

PROJECT	14-110
DATE	11-5-14
DESIGN	KLC
DRAWN	KLC

SHT 1 OF 5

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ELEVATION VIEW OF OUTSIDE STAIR WALL

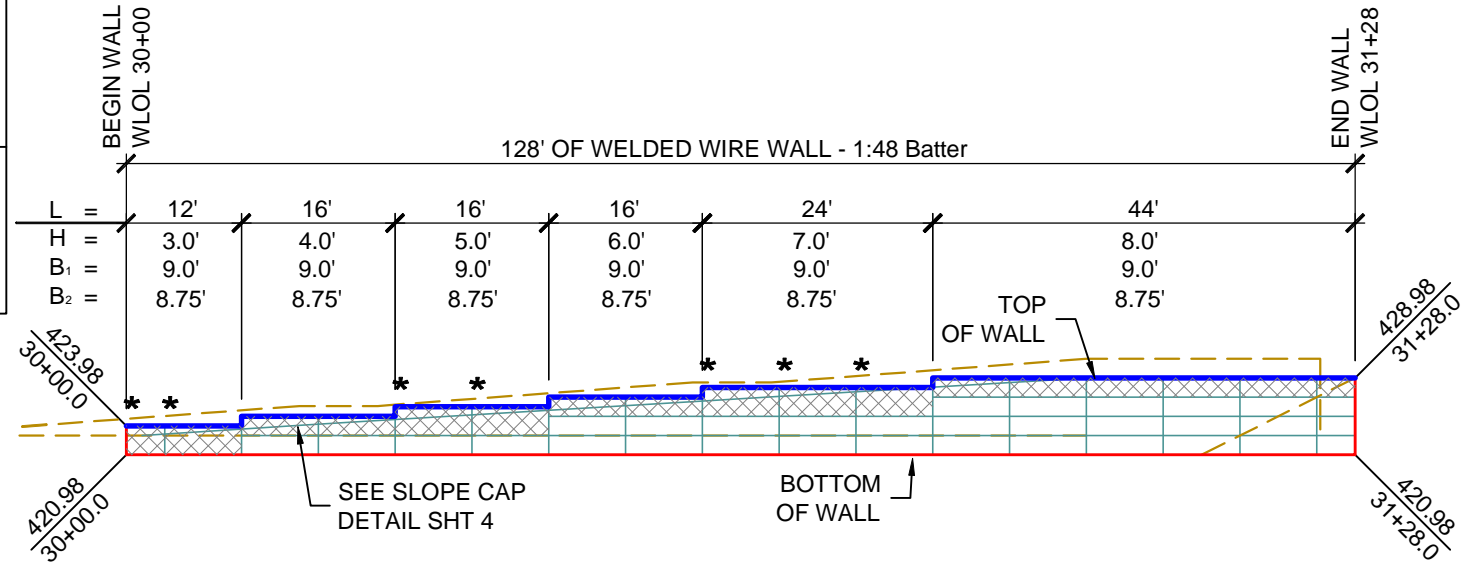
SCALE: 1" = 20'

WELDED WIRE WALL PARAMETERS		
Height of Wall (H) ft	Length of Cap & Prongless Mats (B ₁) ft	Base Length of Mats (B ₂) ft
≤12'	9'	8.75'
14'	9'	8.75' & 10.5'
16'	9'	8.75' & 12.25'
20'	9'	8.75' & 14'

Cap & Top Mats (B₁) are 8x12 W4.5x3.5 WWR (Type 1)
Standard Mats (B₂) are 8x10.5 W4.5x3.5 WWR (Type 2) & are also 8x10.5 W7.0x3.5 WWR (Type 3) where shown.

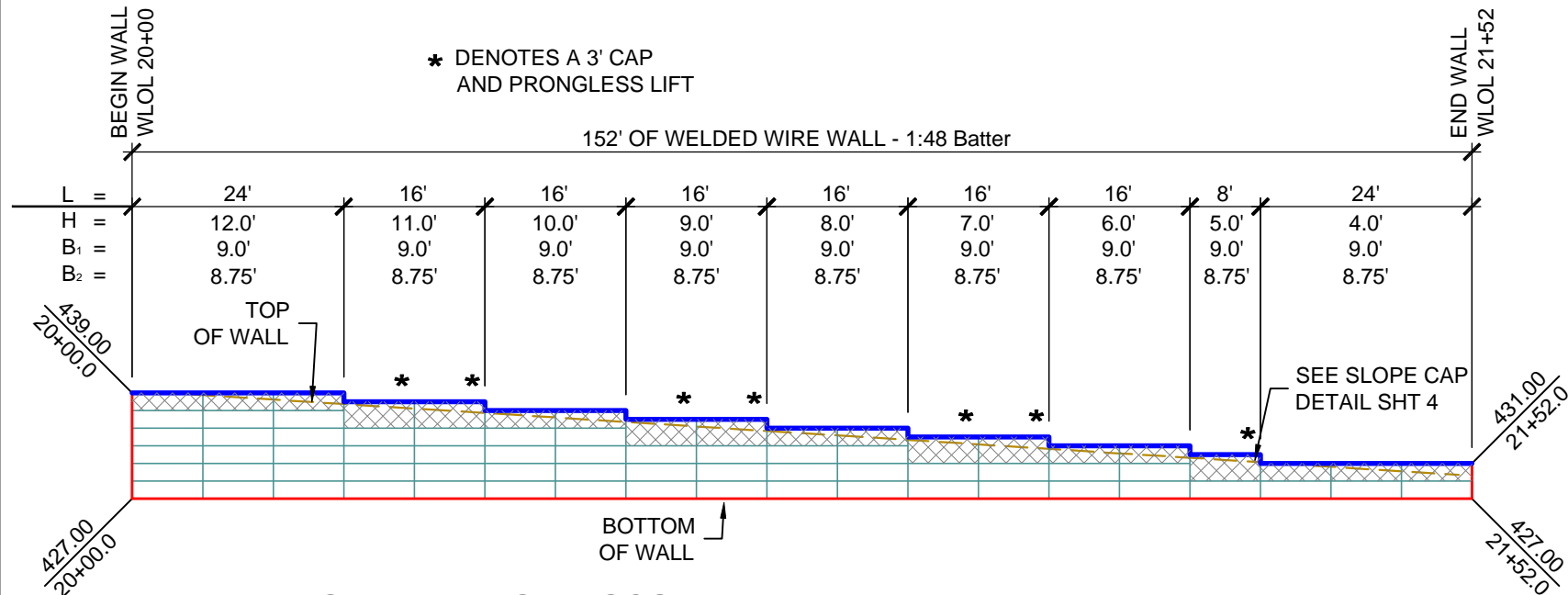
Finish: Hot Dip Galvanized - 75 Year Service Life

WALL WIRE TYPE LEGEND	
FINISH: HOT DIPPED GALVANIZED SERVICE LIFE: 75 YEARS	
	TYPE 1 - 8x12 W4.5x3.5 MATS
	TYPE 2 - 8x10.5 W4.5x3.5 MATS
	TYPE 3 - 8x10.5 W7.0x3.5 MATS



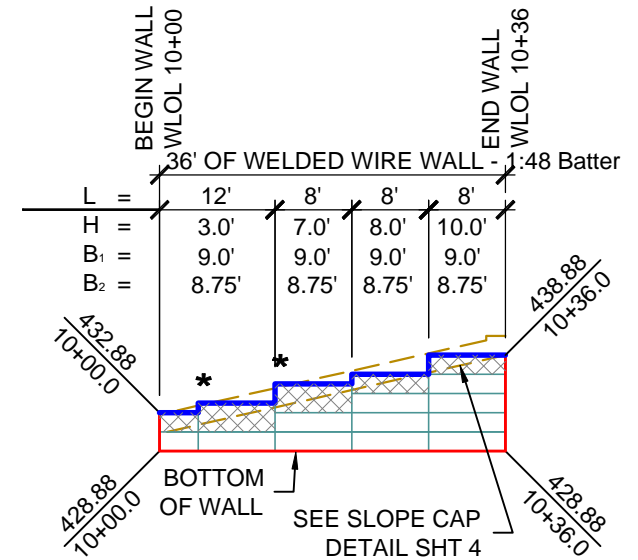
ELEVATION VIEW OF L302 WALL

SCALE: 1" = 20'



ELEVATION VIEW OF L303 WALL

SCALE: 1" = 20'



ELEVATION VIEW OF INSIDE STAIR WALL

SCALE: 1" = 20'

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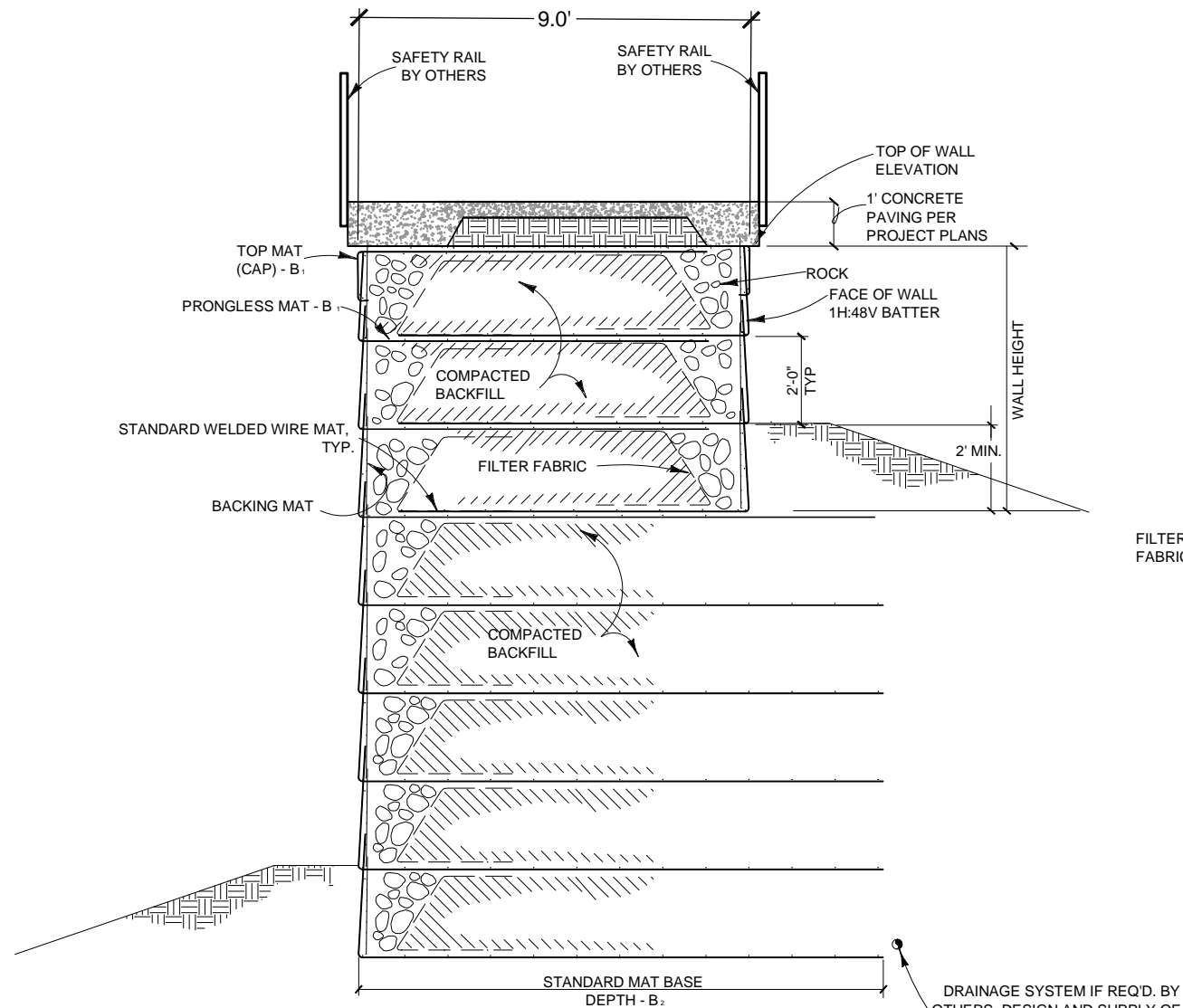
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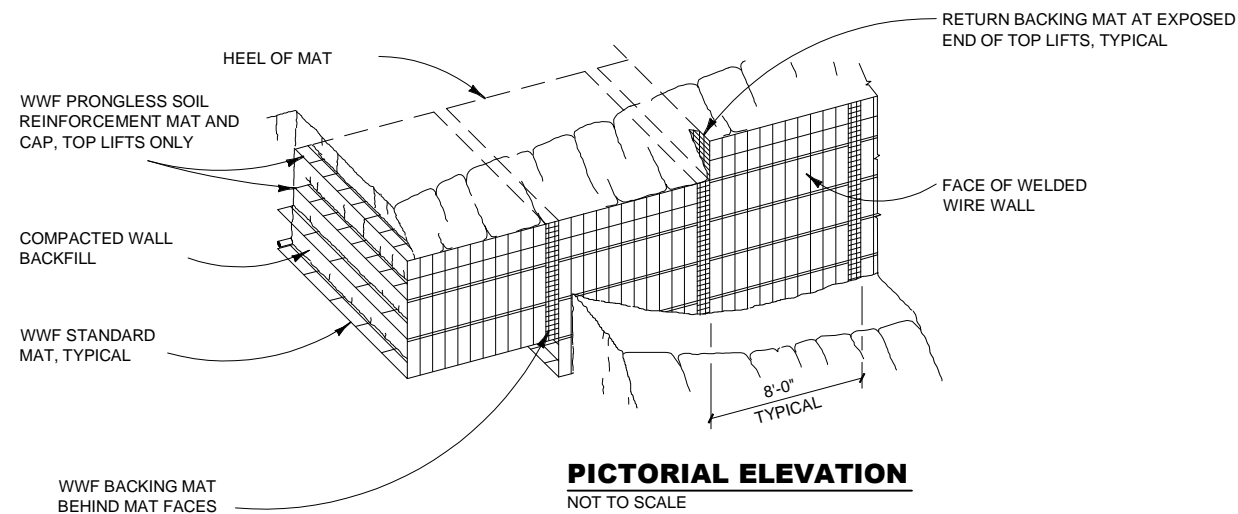
MSE ELEVATION VIEW

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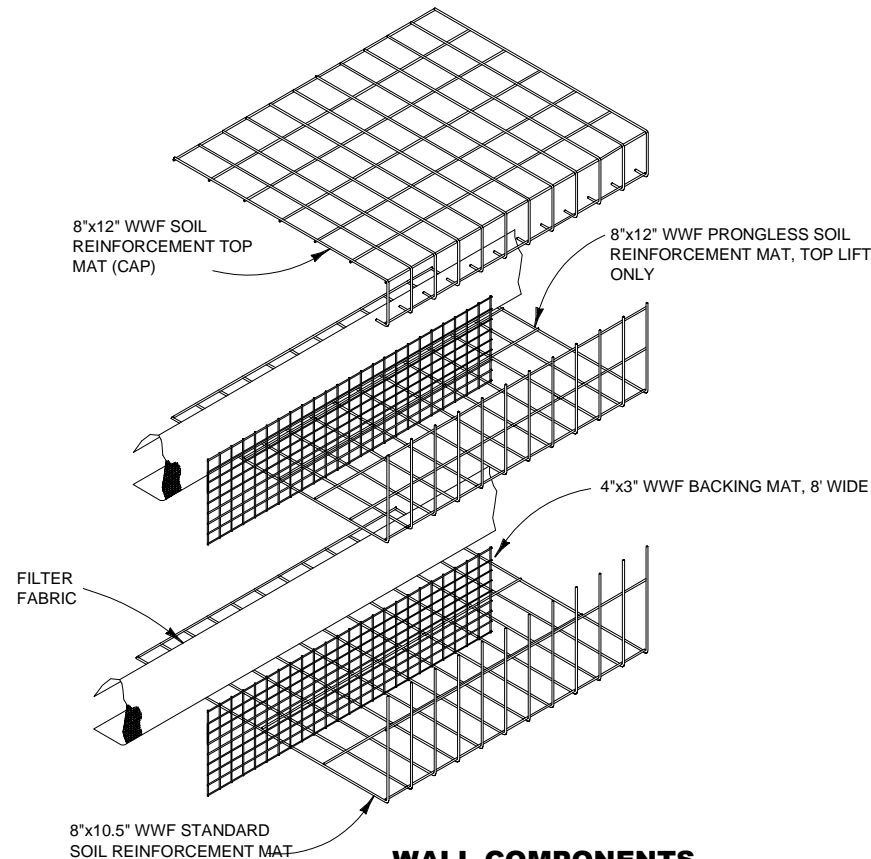
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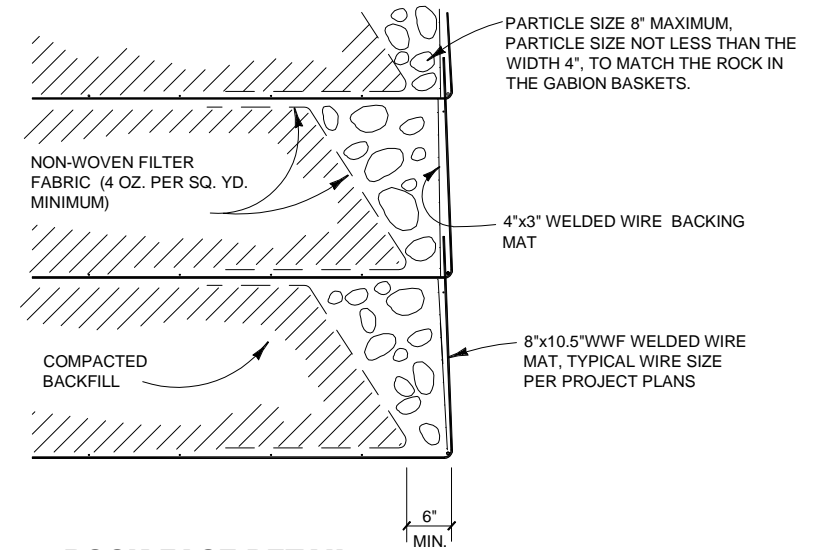
STAIRWAY CROSS SECTION-A



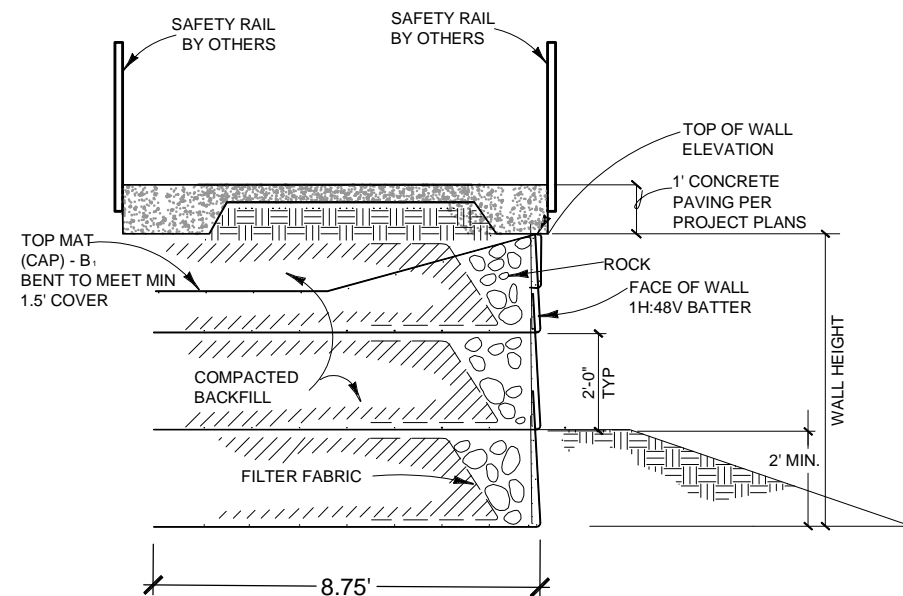
PICTORIAL ELEVATION
NOT TO SCALE



WALL COMPONENTS
NOT TO SCALE



ROCK-FACE DETAIL
NOT TO SCALE



TYPICAL CROSS SECTION

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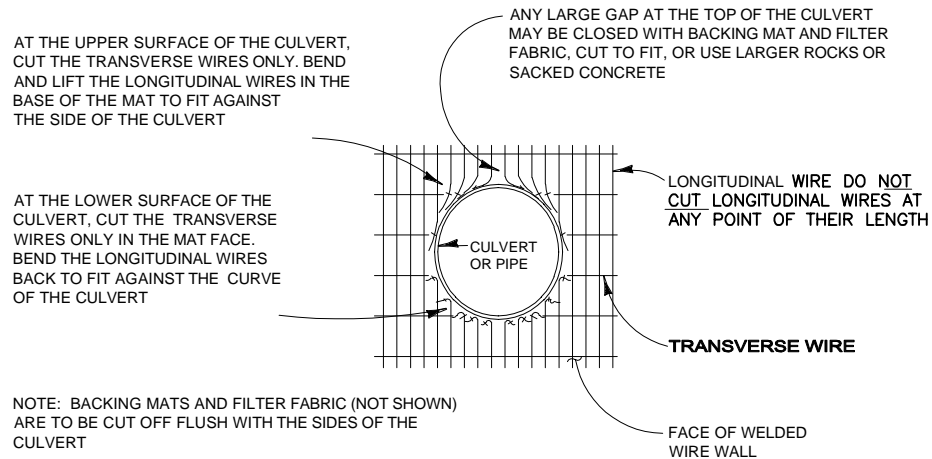
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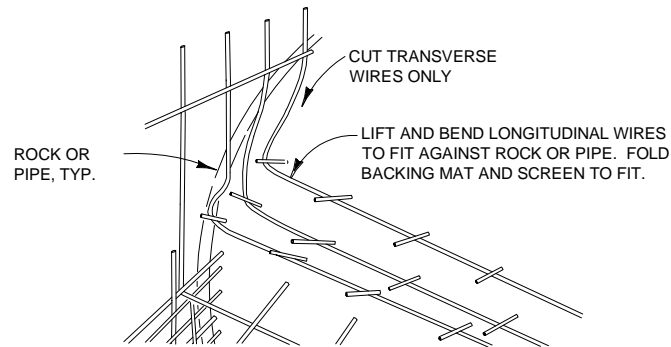
MSE DETAILS

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SHT	3 OF 5

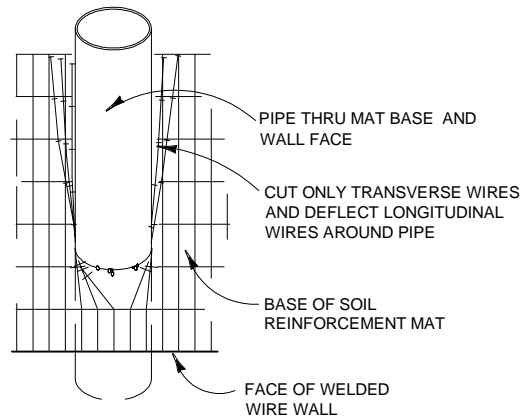
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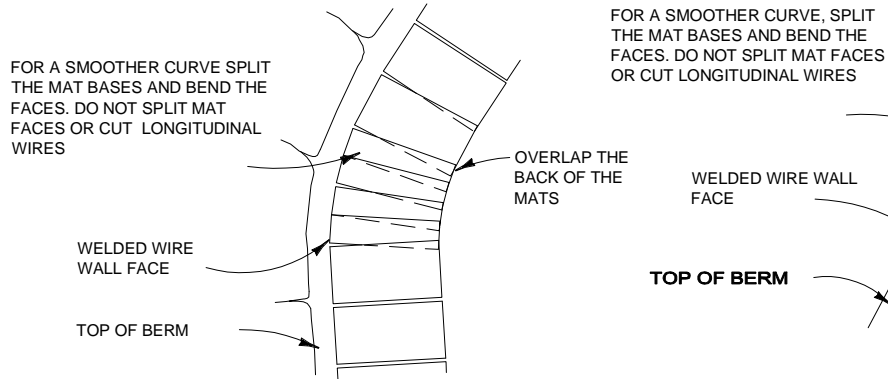
ELEVATION
CULVERT THRU WALL FACE
NOT TO SCALE



PICTORIAL
FITTING MATS TO OBSTRUCTION
NOT TO SCALE

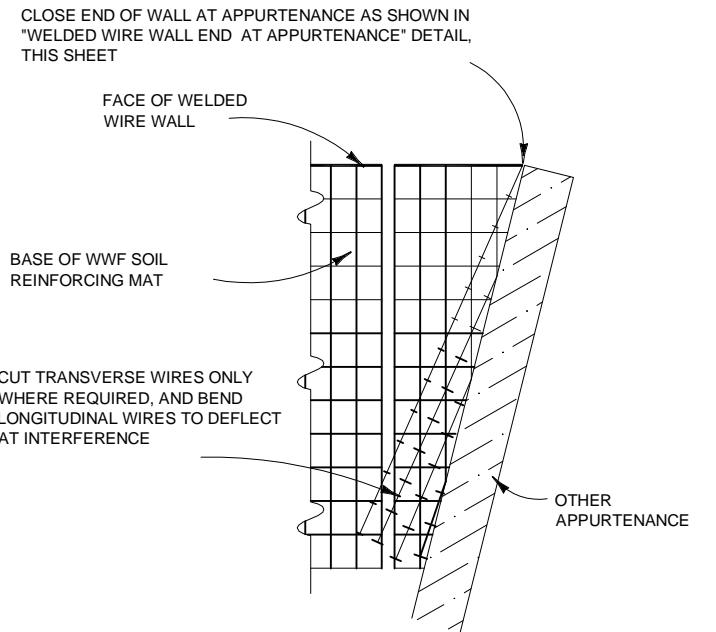


PLAN VIEW
ANGLED PIPE PENETRATION
NOT TO SCALE



PLAN VIEW
CONVEX CURVE
NOT TO SCALE

PLAN VIEW
CONCAVE CURVE
NOT TO SCALE



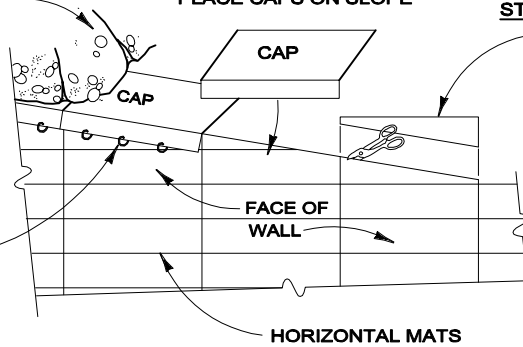
PLAN VIEW
DEFLECTED LONGITUDINAL WIRES
NOT TO SCALE

STEP 4
PLACE AND COMPACT BACKFILL OVER THE SLOPED CAPS TO FINAL GRADE

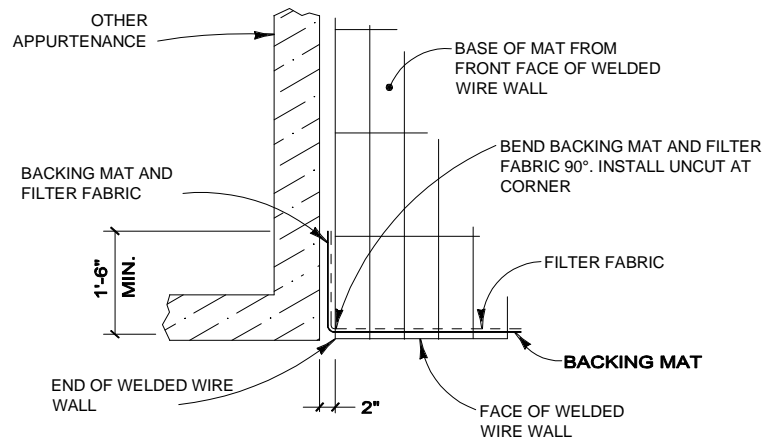
STEP 2
PLACE CAPS ON SLOPE

STEP 1
CUT OFF TOP OF THE MAT FACES, BACKING MATS, AND FILTER FABRIC OR CONTINUOUS HARDWARE CLOTH PARALLEL TO FINAL GRADE

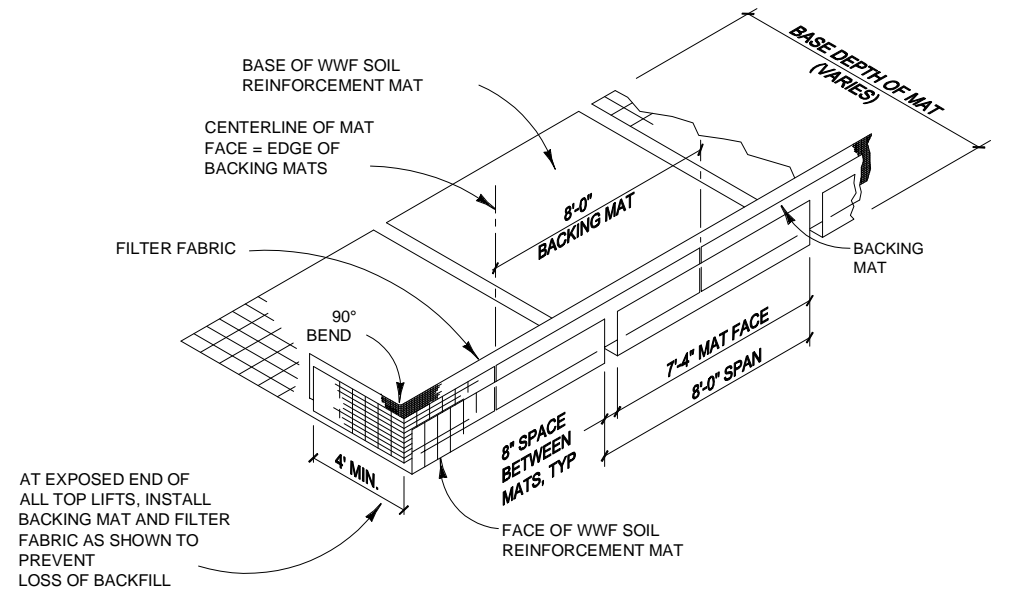
STEP 3
CLIP CAPS TO MAT FACES WITH HOG RINGS



PICTORIAL ELEVATION
SLOPED CAP MAT DETAIL
NOT TO SCALE



PLAN VIEW
WELDED WIRE WALL END AT OTHER APPURTENANCE
NOT TO SCALE



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

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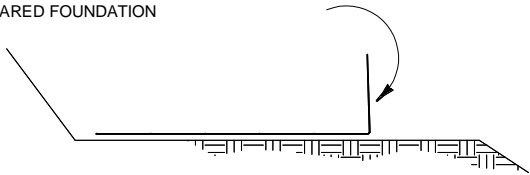
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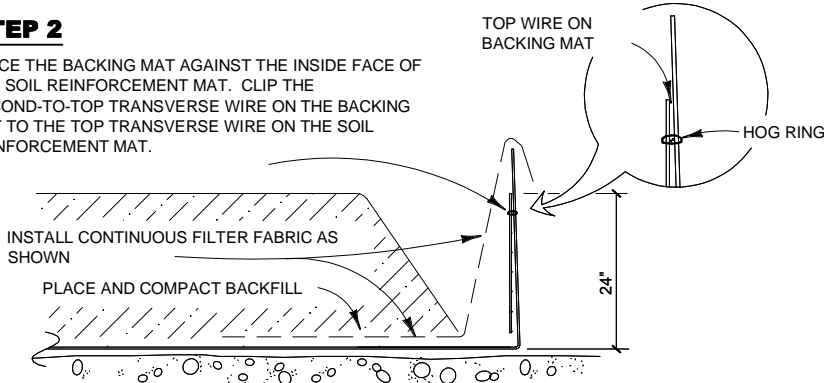
STEP 1

PLACE THE FIRST COURSE OF SOIL REINFORCEMENT MATS ON PREPARED FOUNDATION



STEP 2

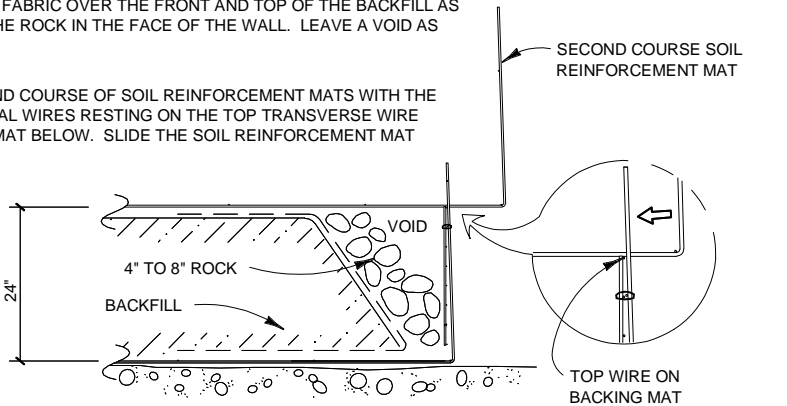
PLACE THE BACKING MAT AGAINST THE INSIDE FACE OF THE SOIL REINFORCEMENT MAT. CLIP THE SECOND-TO-TOP TRANSVERSE WIRE ON THE BACKING MAT TO THE TOP TRANSVERSE WIRE ON THE SOIL REINFORCEMENT MAT.



STEP 3

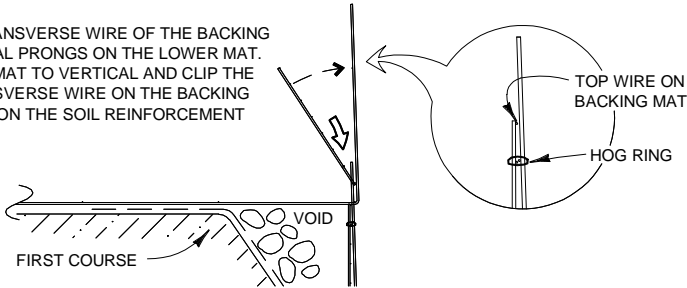
BRING THE FILTER FABRIC OVER THE FRONT AND TOP OF THE BACKFILL AS SHOWN. PLACE THE ROCK IN THE FACE OF THE WALL. LEAVE A VOID AS SHOWN.

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.



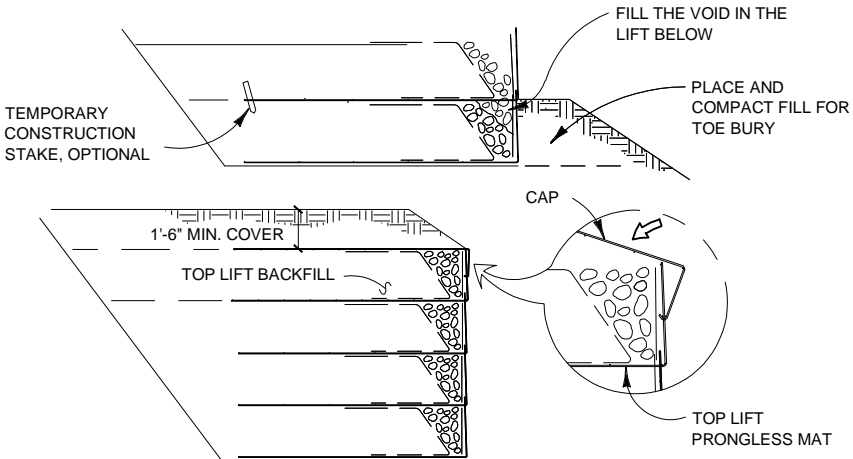
STEP 4

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 FILTER FABRIC AS IN STEPS 2 AND 3 AND THE BACKING MAT. PLACE AND COMPACT THE BACKFILL AND ROCK TO THE BASE ELEVATION OF THE NEXT MAT. REPEAT STEPS 2 THROUGH 5 TO THE TOP LIFT.



STEP 6: TOP LIFT

PLACE THE TOP LIFT PRONGLESS MAT AND BACKING MAT. 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.

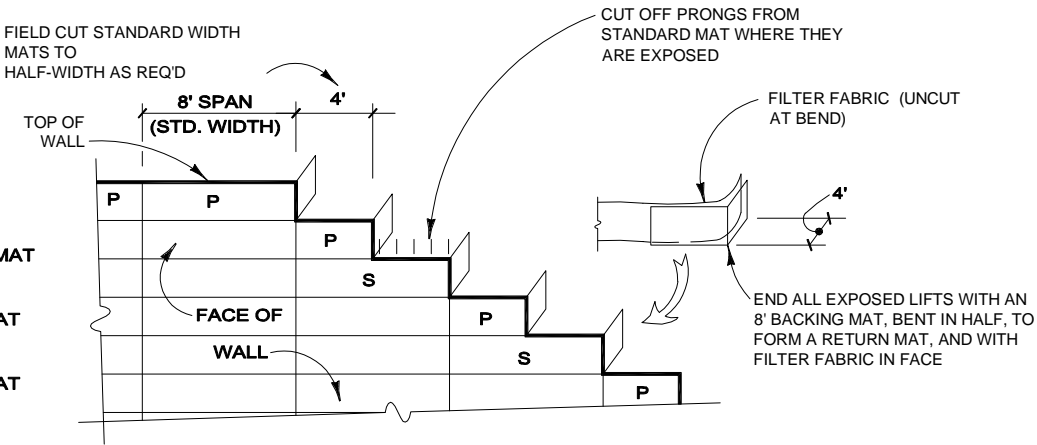
CONSTRUCTION SEQUENCE

NOT TO SCALE

LEGEND

(THIS DETAIL ONLY)

P	PRONGLESS MAT
S	STANDARD MAT
	STANDARD MAT



RETURN MATS AND TOP OF WALL DETAIL

NOT TO SCALE

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