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: 130 pcf
     - Internal Friction Angle: 34°
     - Cohesion = 0 psf
   - Retained Backfill:
     - Unit Weight: 125 pcf
     - Internal Friction Angle: 40°
     - Cohesion = 0 psf
   - Foundation Soils:
     - Unit Weight: 140 pcf
     - Internal Friction Angle: 45°
     - Cohesion = 500 psf
   - Traffic Surcharge Loading (LL) = 250 psf

   Worst Case Factored Bearing Pressure (Static/ Limit State Strength I) by MSE Wall- @ 28' Height - 5562 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.

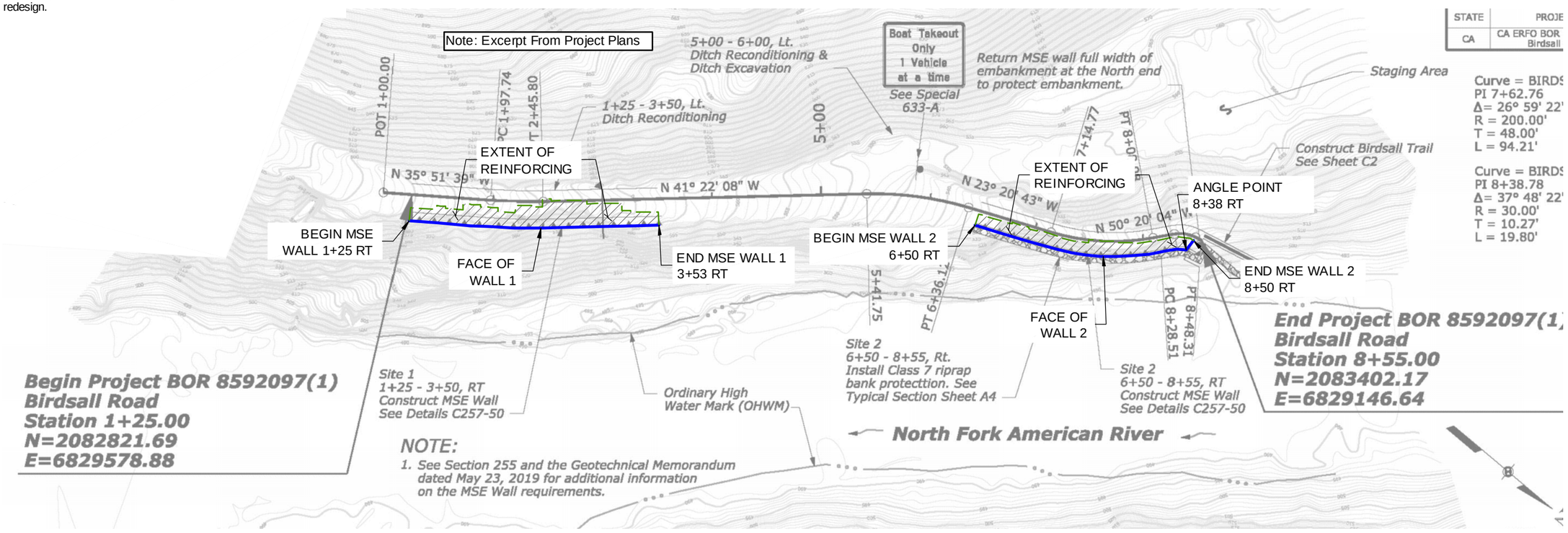
5. Design Procedure:
   Design and Construction of Mechanically Stabilized Earth Walls and Reinforced Soil Slopes - Volume I, Publication No. FHWA-NHI-10-024.

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 foundation bearing capacity. The Contracting Officer (CO) shall be responsible for global stability and foundation competence. The Contractor is responsible for all job site drainage, safety and fall protection provisions for workers in compliance with OSHA and any other applicable requirements.

SUPPLIED QUANTITIES:

WELDED WIRE WALL 1:	3424 FT^2
WELDED WIRE WALL 2:	**3232 FT^2**
TOTAL WALL AREA :	6656 FT^2



PLAN VIEW

SCALE: 1" = 20'

HW 190724AW

REV.NO.	DATE	BY	DESCRIPTION
	10-7-19	KLC	Initial .pdf Release
	10-14-19	KLC	Revised per 10.10.19 Plan Check Comments
	10-17-19	KLC	Revised per 10.17.19 Plan Check Comments

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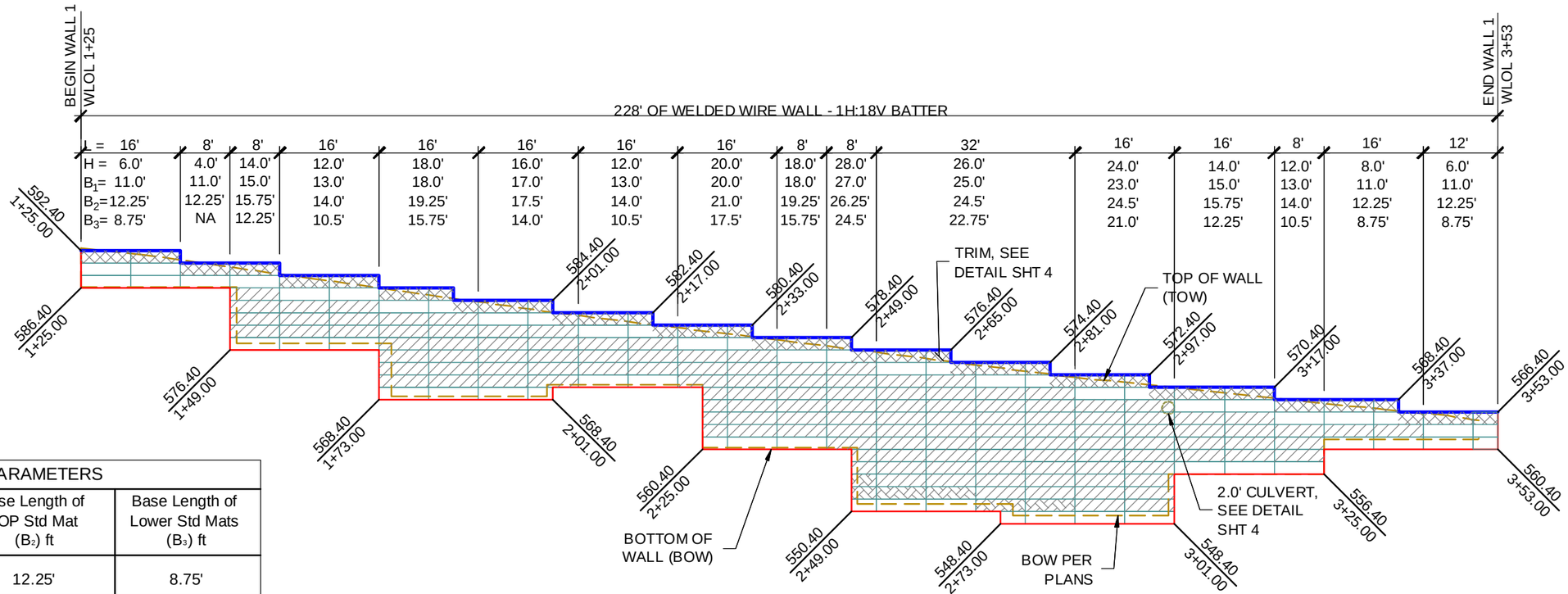
MSE WELDED WIRE WALLS
PLAN VIEW & GENERAL NOTES

PROJECT	19-060
DATE	10-7-19
DESIGN	KLC
DRAWN	KLC

SHT 1 OF 4



WALL 1 - ELEVATION VIEW

SCALE: 1" = 20'

WELDED WIRE WALL PARAMETERS			
Height of Wall (H) ft	Length of Cap & Prongless Mats (B_1) ft	Base Length of TOP Std Mat (B_2) ft	Base Length of Lower Std Mats (B_3) ft
≤ 8'	11.0'	12.25'	8.75'
12'	13.0'	14.0'	10.5'
14'	15.0'	15.75'	12.25'
16'	17.0'	17.5'	14.0'
18'	18.0'	19.25'	15.75'
20'	20.0'	21.0'	17.5'
24'	23.0'	24.5'	21.0'
26'	25.0'	24.5'	22.75'
28'	27.0'	26.25'	24.5'

Cap & Top Mats (B1) are: 8x12 W4.5x3.5 WWR (Type 1)
Standard Mats (B2) are: 8x21 W4.5x4.0 WWR (Type 2)
8x21 W7.0x4.0 WWR (Type 3)
8x21 W9.5x4.0 WWR (Type 4)
Finish: Hot Dip Galvanized - 75 Year Service Life

WALL WIRE TYPE LEGEND

FINISH: HOT DIP GALVANIZED
SERVICE LIFE: 75 YEARS

- TYPE 1 - 8X12 W4.5x3.5 MATS
- TYPE 2 - 8x21 W4.5x4.0 MATS
- TYPE 3 - 8x21 W7.0x4.0 MATS
- TYPE 4 - 8x21 W9.5x4.0 MATS

HW 190724AW

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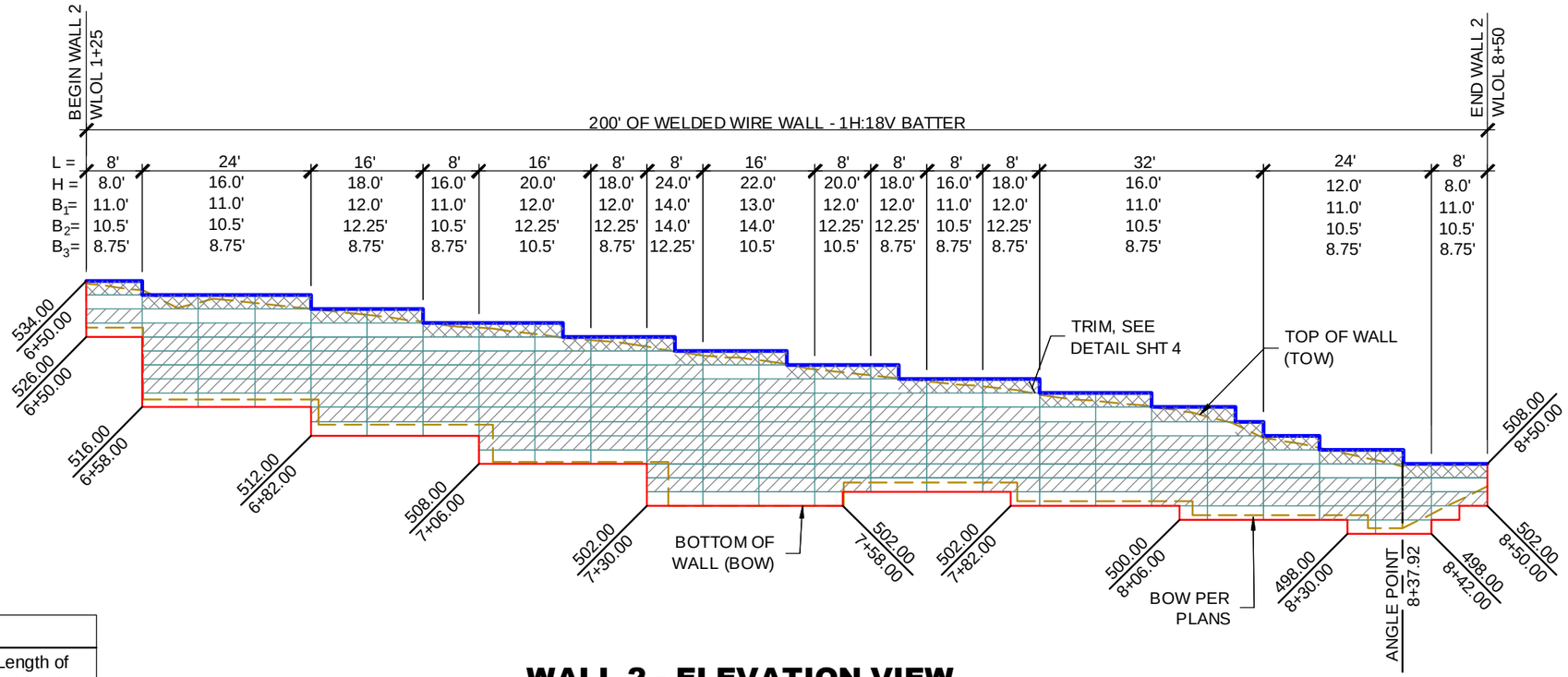
MSE WELDED WIRE WALL
WALL 1 - ELEVATION VIEW

PROJECT 19-060
DATE 10-7-19
DESIGN KLC
DRAWN KLC
SHT 2 OF 4

WALL WIRE TYPE LEGEND

FINISH: HOT DIP GALVANIZED
SERVICE LIFE: 75 YEARS

- TYPE 1 - 8X12 W4.5x3.5 MATS
- TYPE 2 - 8x21 W4.5x4.0 MATS
- TYPE 3 - 8x10.5 W7.0x3.5 MATS
- TYPE 4 - 8x21 W9.5x4.0 MATS



WALL 2 - ELEVATION VIEW

SCALE: 1" = 20'

WELDED WIRE WALL PARAMETERS			
Height of Wall (H) ft	Length of Cap & Prongless Mats (B_1) ft	Base Length of TOP Std Mat (B_2) ft	Base Length of Lower Std Mats (B_3) ft
≤12'	11.0'	10.5'	8.75'
16'	11.0'	10.5'	8.75'
18'	12.0'	12.25'	8.75'
20'	12.0'	12.25'	10.5'
22'	13.0'	14.0'	10.5'
24'	14.0'	14.0'	12.25'

Cap & Top Mats (B1) are: 8x12 W4.5x3.5 WWR (Type 1)
Standard Mats (B2) are: 8x21 W4.5x4.0 WWR (Type 2)
8x10.5 W7.0x3.5 WWR (Type 3)
8x21 W9.5x4.0 WWR (Type 4)
Finish: Hot Dip Galvanized - 75 Year Service Life

HW 190724AW

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CA ERFO BOR 8592097(1) Birdsall Road

MSE WELDED WIRE WALL
WALL 2 - ELEVATION VIEW

PROJECT 19-060
DATE 10-7-19
DESIGN KLC
DRAWN KLC
SHT 3 OF 5

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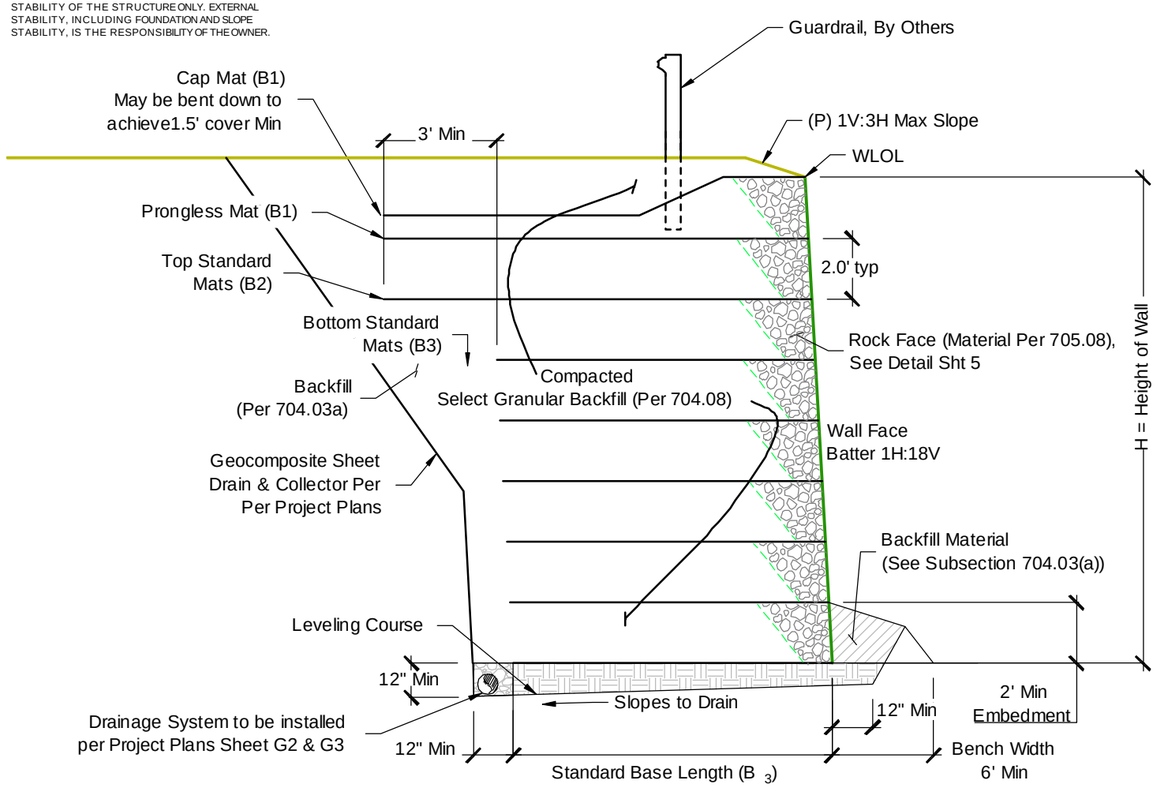
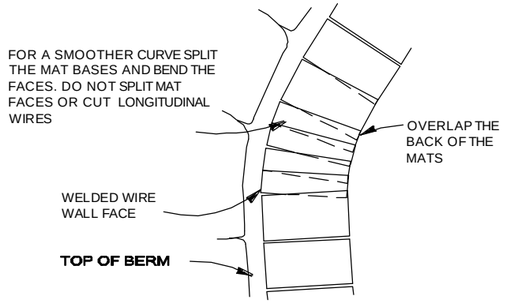


CROSS SECTION, TYP

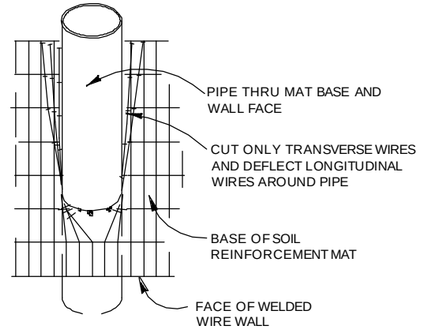
SCALE: 1" = 5'



PLAN VIEW

CONVEX CURVE

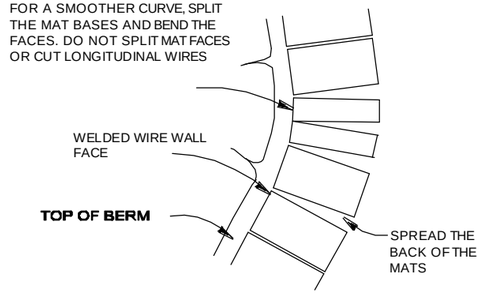
NOT TO SCALE



PLAN VIEW

PIPE OR SLEVE PENETRATION

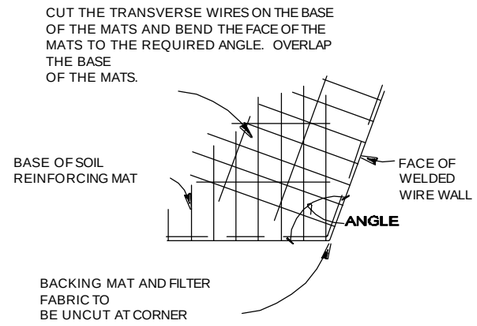
NOT TO SCALE



PLAN VIEW

CONCAVE CURVE

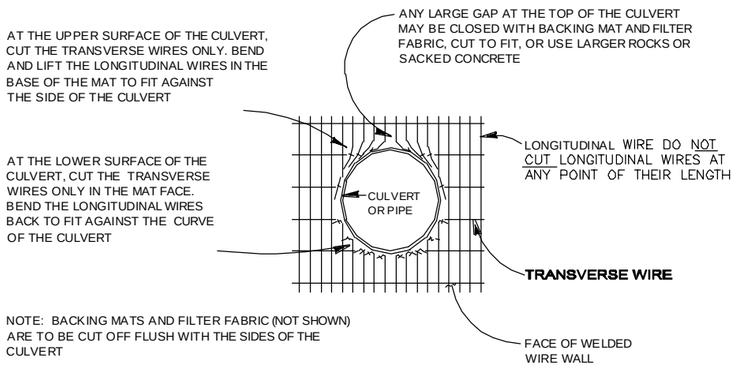
NOT TO SCALE



PLAN VIEW

OBTUSE CONVEX ANGLE

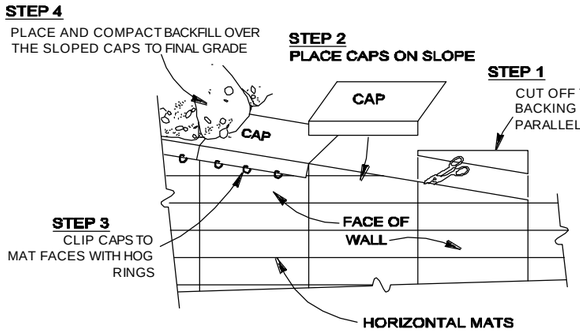
NOT TO SCALE



ELEVATION

CULVERT THRU WALL FACE

NOT TO SCALE



PICTORIAL ELEVATION

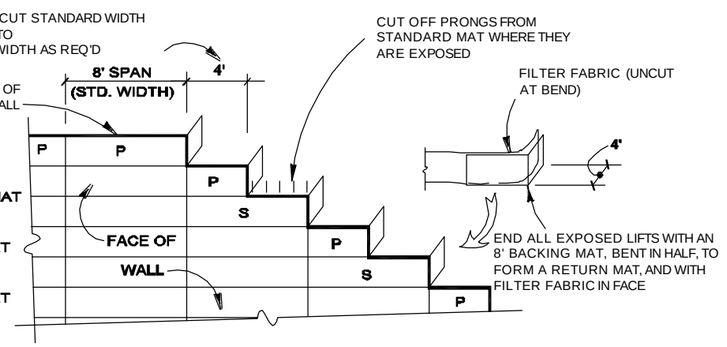
SLOPED CAP MAT DETAIL

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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CA ERFO BOR 8592097(1) Birdsall Road

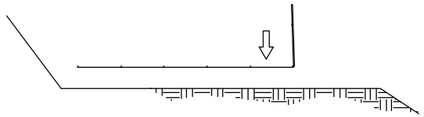
MSE WELDED WIRE WALLS
CROSS SECTION & DETAILS

PROJECT	19-060
DATE	10-7-19
DESIGN	KLC
DRAWN	KLC

SHT 4 OF 5

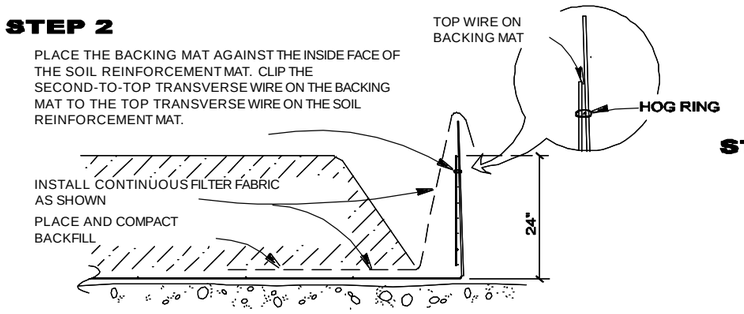
STEP 1

PLACE THE FIRST COURSE OF SOIL REINFORCEMENT MATS ON PREPARED FOUNDATION.



STEP 2

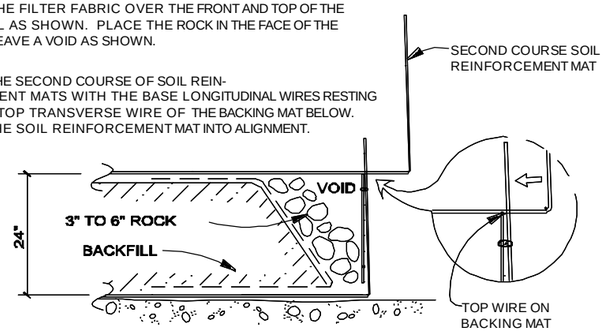
PLACE THE BACKING MAT AGAINST THE INSIDE FACE OF THE SOIL REINFORCEMENT MAT. CLIP THE SECOND-TO-TOP TRANSVERSE WIRE ON THE BACKING MAT TO THE TOP TRANSVERSE WIRE ON THE SOIL REINFORCEMENT MAT.



STEP 3

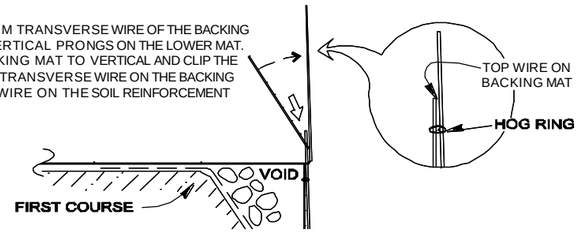
BRING THE FILTER FABRIC OVER THE FRONT AND TOP OF THE BACKFILL AS SHOWN. PLACE THE ROCK IN THE FACE OF THE WALL. LEAVE A VOID AS SHOWN.

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



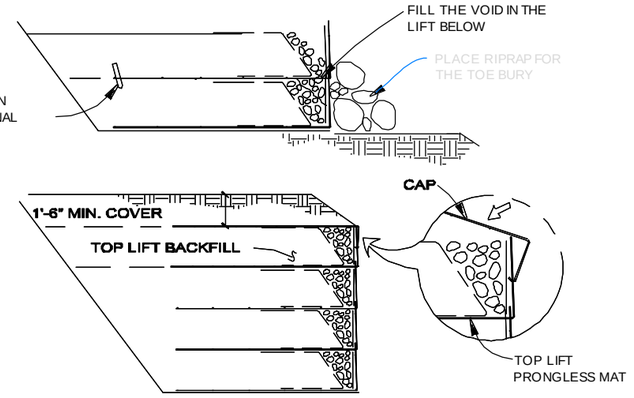
STEP 4

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. PLACE AND COMPACT THE BACKFILL AND ROCK TO THE BASE ELEVATION OF THE NEXT MAT. REPEAT STEPS 2 THROUGH 5 TO THE TOP LIFT.

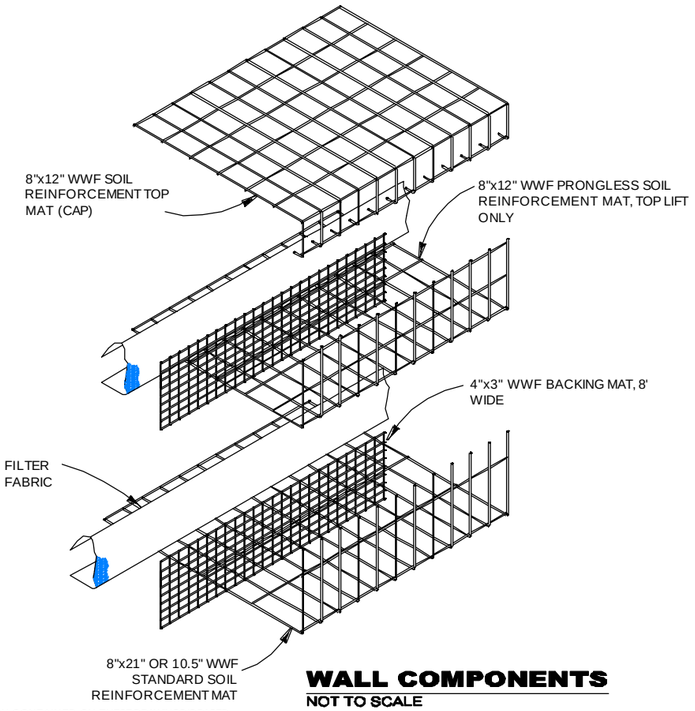


STEP 6: TOP LIFT

PLACE THE TOP LIFT PRONGLESS MAT, BACKING MAT AND FILTER FABRIC. 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.

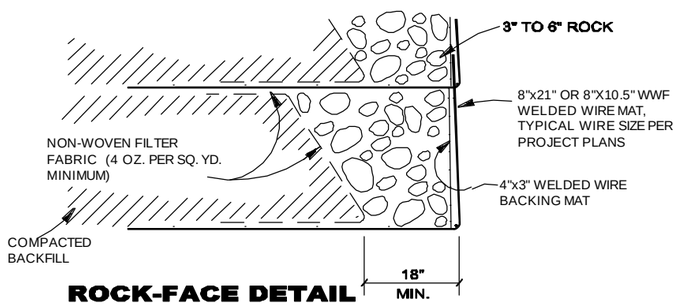
CONSTRUCTION SEQUENCE

NOT TO SCALE



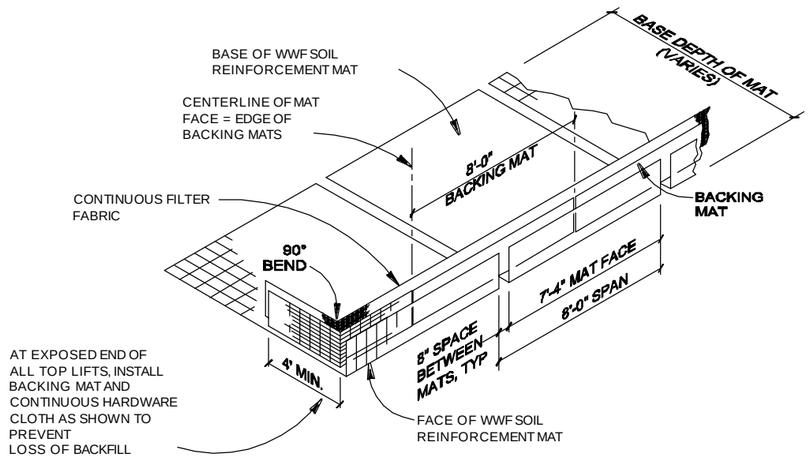
WALL COMPONENTS

NOT TO SCALE



ROCK-FACE DETAIL

NOT TO SCALE



ISOMETRIC VIEW

WELDED WIRE WALL COMPONENTS WITH RETURN MAT

NOT TO SCALE

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MSE WELDED WIRE WALLS CONSTRUCTION SEQUENCE & DETAILS

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SHT 5 OF 5