DESIGN NOTES

1. Design is based on the assumption that backfill within the reinforced soil mass, methods of construction and quality of materials are to be in accordance with Project Specification .

2. Soil Characteristics:
   - Wall Backfill:
     - Unit Weight: 125 pcf
     - Internal Friction Angle: 34°
     - Cohesion = 0 psf
   - Retained Backfill:
     - Unit Weight: 120 pcf
     - Internal Friction Angle: 28°
     - Cohesion = 0 psf
   - Foundation Soils:
     - Unit Weight: 115 pcf
     - Internal Friction Angle: 28°
     - Cohesion = 50 psf

Worst Case Unfactored Bearing Load by MSE Wall- @ 26' Height - 3915 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.

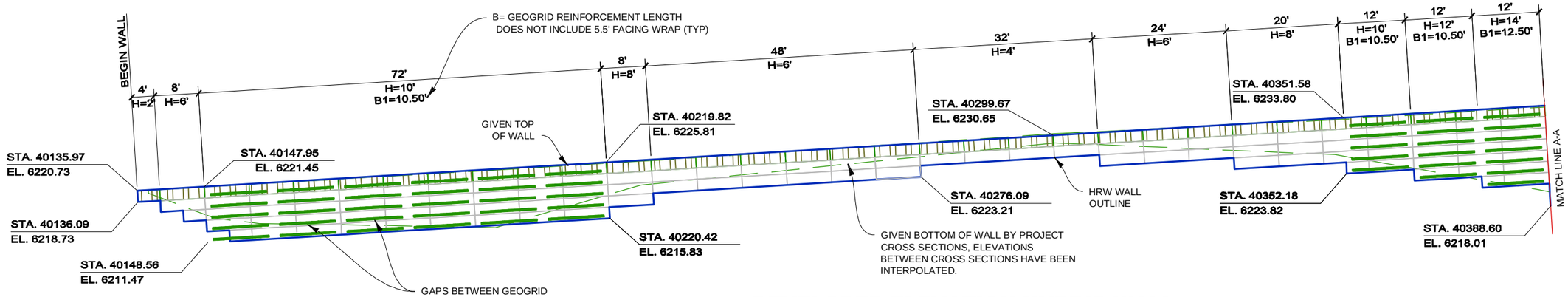
4. The design requires a non-saturated backfill. Surface and sub-surface drainage control may be required to prevent saturation of the backfill or relieve hydrostatic pressures.

5. Design Procedure:
   Mechanically Stabilized Earth walls and Reinforced Soil Slopes, FHWA report No. FHWA-NHI-00-044.

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 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.

SUPPLIED QUANTITIES	
WALL	13,744 SQ. FT.



DEVELOPED ELEVATION HYBRID WALL

SCALE: 1" = 20'

NOTE: As topography is potentially inaccurate and field adjustments may be required the following wall parameters table provides the required reinforcing design criteria.

WALL REINFORCING PARAMETERS				
Height of Wall (H) ft	Length of Cap, Prongless & Standard Facing Mats (B_1) ft	Length of Geogrid Reinforcing Mats (B_2) ft	Number of SR55 Geogrid, Top Reinforcing Area	Number of SR80 Geogrid, Bottom Reinforcing Area
≤8.0'	7.0'	-	-	-
10.0'	"	10.5'	5	-
12.0'	"	10.5'	6	-
14.0'	"	12.5'	7	-
16.0'	"	13.5'	8	-
18.0'	"	15.5'	7	2

WALL REINFORCING PARAMETERS				
Height of Wall (H) ft	Length of Cap, Prongless & Standard Facing Mats (B_1) ft	Length of Geogrid Reinforcing Mats (B_2) ft	Number of SR55 Geogrid, Top Reinforcing Area	Number of SR80 Geogrid, Bottom Reinforcing Area
20.0'	7.0'	17.5'	7	3
22.0'	"	18.5	7	4
24.0'	"	19.5'	7	5
26.0'	"	20.5'	7	6
28.0'	"	21.5'	7	7

LEGEND:

- 8"x12" W7.0xW3.5 PRONGLESS AND CAP MATS
- 8"x10.5" W7.0xW3.5 STANDARD MATS
- B1 SF55 GEOGRID (BY OTHERS)
- B2 SF80 GEOGRID (BY OTHERS)

HW 220810AW

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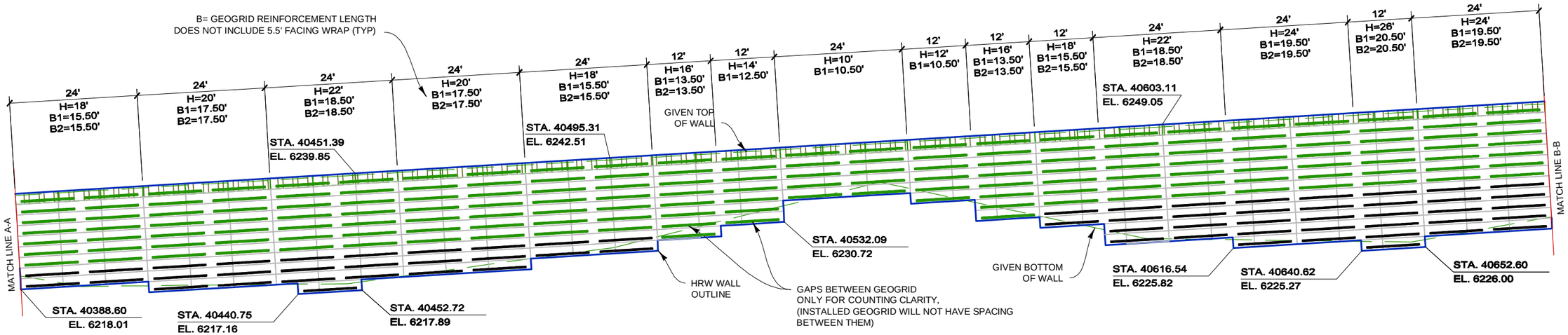
MSE HYBRID WALL
ELEVATION VIEW & GENERAL
NOTES

PROJECT	22-059
DATE	8-24-22
DESIGN	KLC
DRAWN	KLC

SHT 1 OF 5



DEVELOPED ELEVATION HYBRID WALL (CONTINUED)

SCALE: 1" = 20'

LEGEND:

- 8"x12" W7.0xW3.5 PRONGLESS AND CAP MATS
- 8"x10.5" W7.0xW3.5 STANDARD MATS
- B1 SF55 GEOGRID (BY OTHERS)
- B2 SF80 GEOGRID (BY OTHERS)

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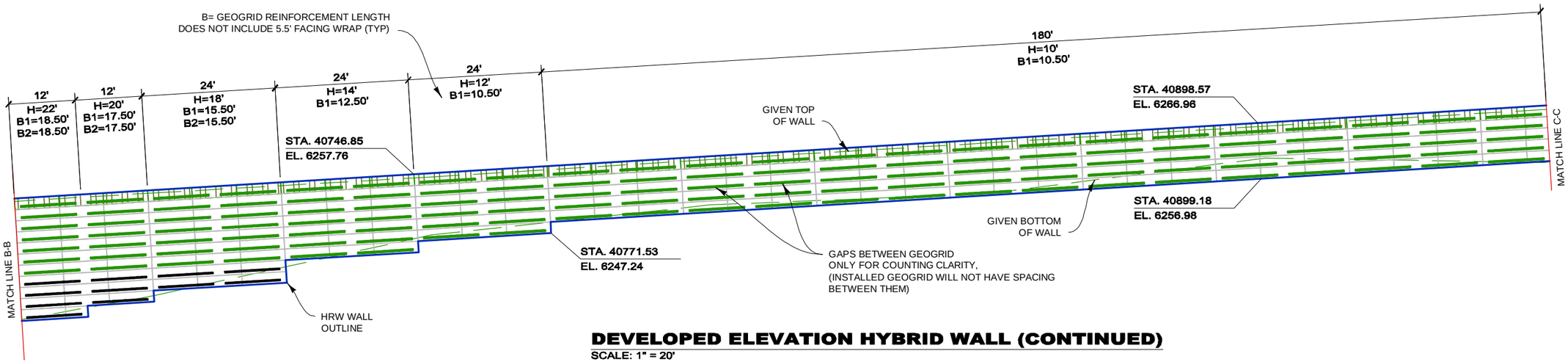
MSE HYBRID WALL ELEVATION PLAN (CON'TD)

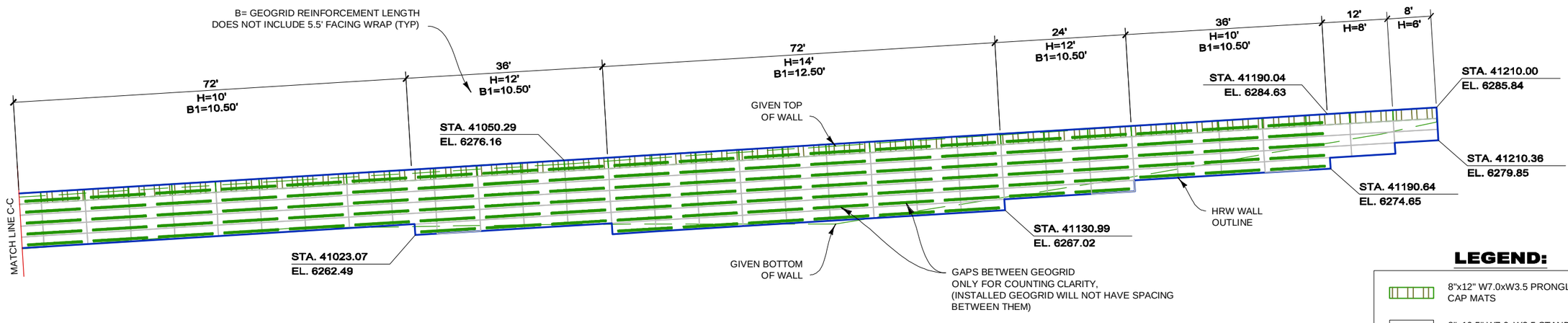
PROJECT	22-059
DATE	8-24-22
DESIGN	KLC
DRAWN	KLC

SHT 2 OF 5



DEVELOPED ELEVATION HYBRID WALL (CONTINUED)

SCALE: 1" = 20'



DEVELOPED ELEVATION HYBRID WALL (CONTINUED)

SCALE: 1" = 20'

LEGEND:

- 8"x12" W7.0xW3.5 PRONGLESS AND CAP MATS
- 8"x10.5" W7.0xW3.5 STANDARD MATS
- B1 SF55 GEOGRID (BY OTHERS)
- B2 SF80 GEOGRID (BY OTHERS)

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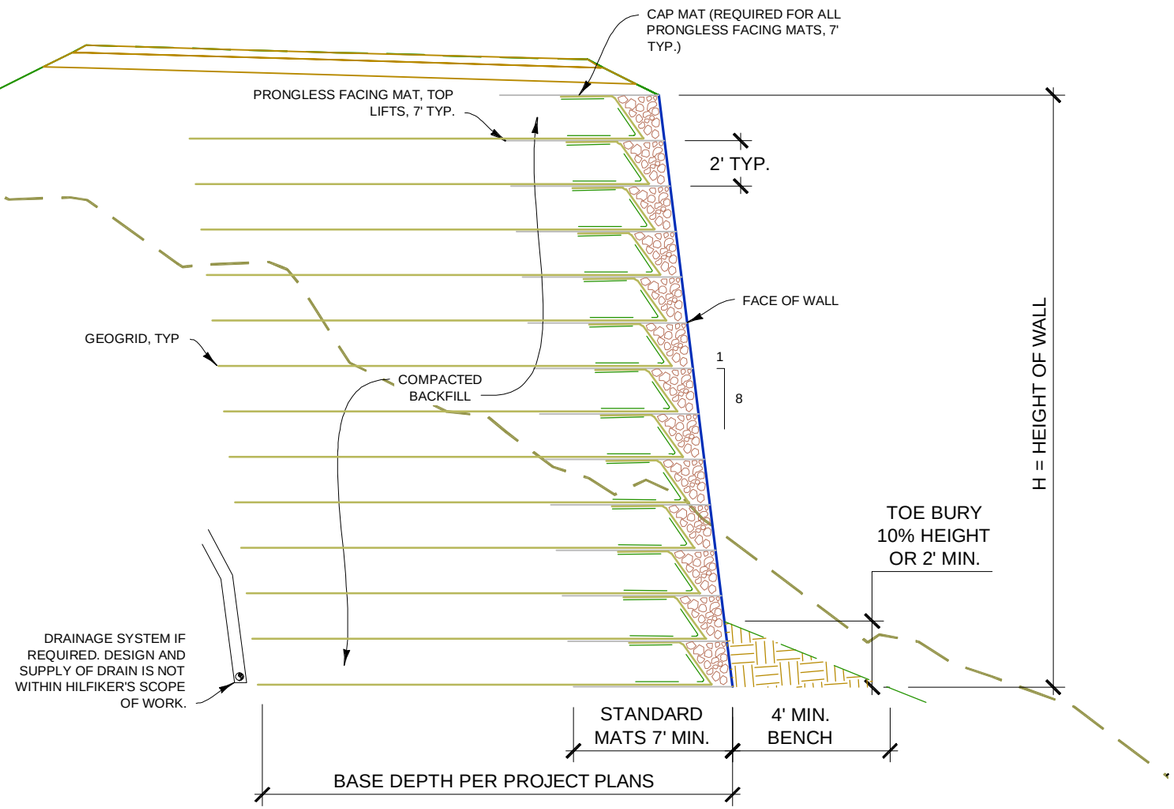
MSE HYBRID WALL
ELEVATION VIEW (CONT'D)

PROJECT	22-059
DATE	8-24-22
DESIGN	KLC
DRAWN	KLC

SHT 3 OF 5



CROSS SECTION, TYP

HW 220810AW

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MSE HYBRID WALL
CROSS SECTION

PROJECT	22-059
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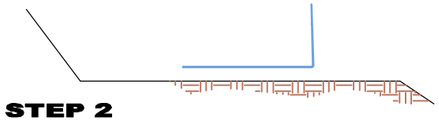
DESIGN	KLC
DRAWN	KLC

SHT 4 OF 5

STEP 1

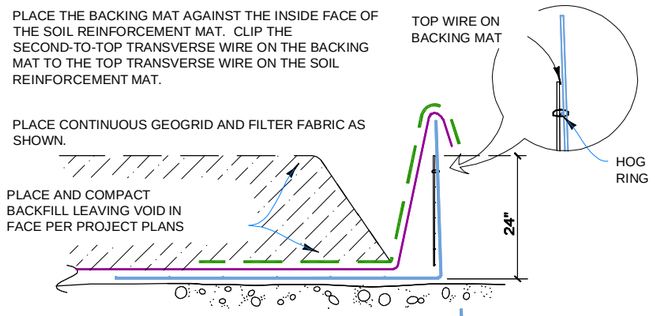
PLACE THE FIRST COURSE OF SOIL REINFORCEMENT MATS ON PREPARED FOUNDATION.



STEP 2

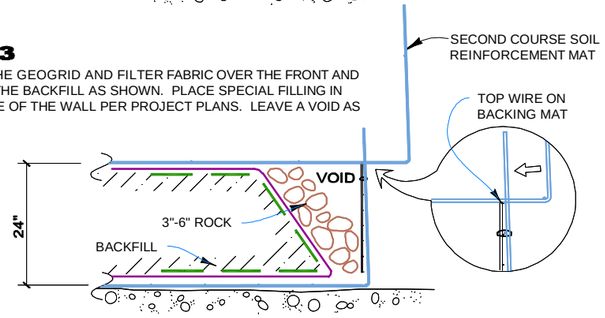
PLACE THE BACKING MAT AGAINST THE INSIDE FACE OF THE SOIL REINFORCEMENT MAT. CLIP THE SECOND-TO-TOP TRANSVERSE WIRE ON THE BACKING MAT TO THE TOP TRANSVERSE WIRE ON THE SOIL REINFORCEMENT MAT.

PLACE CONTINUOUS GEOGRID AND FILTER FABRIC AS SHOWN.



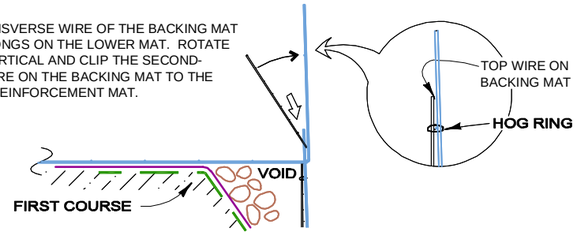
STEP 3

BRING THE GEOGRID AND FILTER FABRIC OVER THE FRONT AND TOP OF THE BACKFILL AS SHOWN. PLACE SPECIAL FILLING IN THE FACE OF THE WALL PER PROJECT PLANS. LEAVE A VOID AS SHOWN.



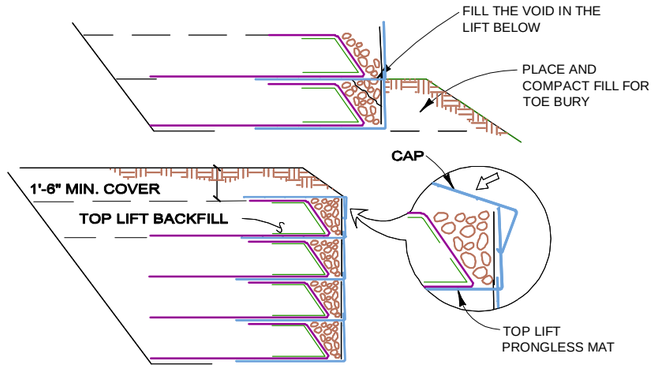
STEP 4

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.



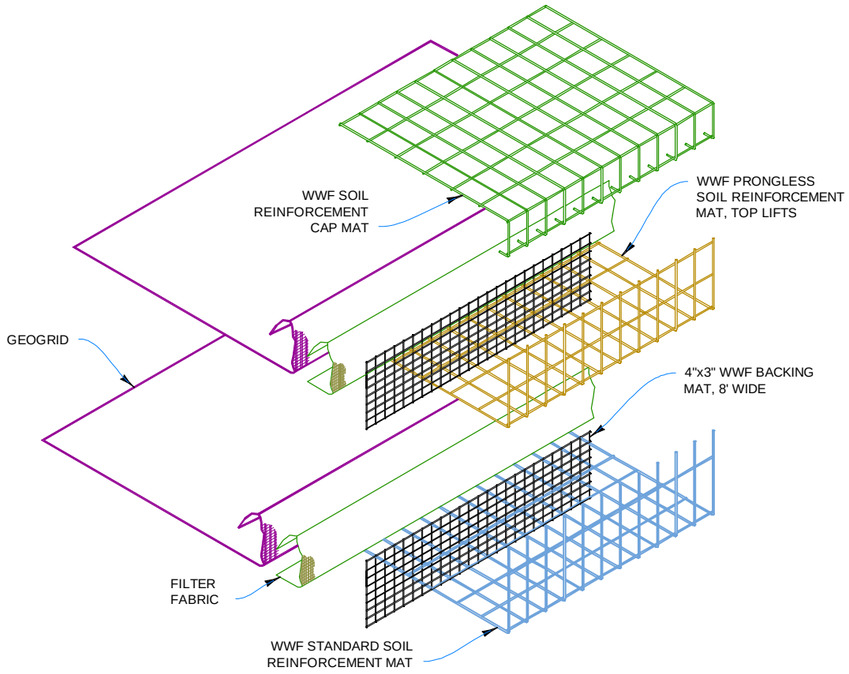
STEP 5

INSTALL GEOGRID AND FILTER FABRIC AS IN STEPS 1 AND 2. PLACE AND COMPACT THE BACKFILL AND ROCK TO THE BASE ELEVATION OF THE NEXT MAT. REPEAT STEPS 2 THROUGH 5 TO THE TOP LIFT.



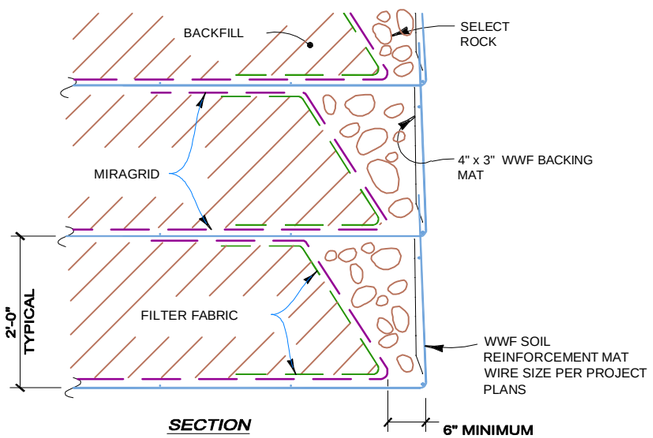
STEP 6: TOP LIFT

PLACE THE TOP LIFT PRONGLESS MAT, GEOGRID AND BACKING MAT. PLACE AND COMPACT BACKFILL AND ROCK OR SOIL 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.



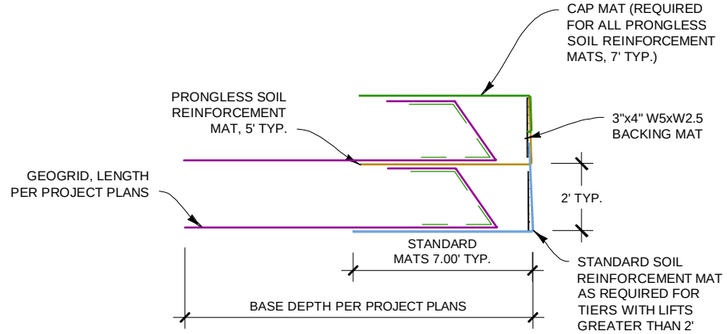
WALL COMPONENTS
NOT TO SCALE

CONSTRUCTION SEQUENCE
NOT TO SCALE



SECTION

WALL FACE DETAIL
NOT TO SCALE



WIRE FACED MIRAGRID WALL DETAILS
NOT TO SCALE

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MSE HYBRID WALL CONSTRUCTION SEQUENCE & DETAILS

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