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: 40°
     - Cohesion = 0 psf
   - Retained Backfill:
     - Unit Weight: 130 pcf
     - Internal Friction Angle: 33°
     - Cohesion = 0 psf
   - Foundation Soils:
     - Unit Weight: 130 pcf
     - Internal Friction Angle for Sliding: 36°
     - Cohesion = 0 psf

   Surcharge Loading on Wall
   Dead Load (DL) = 5.0' of Soil
   Traffic Surcharge (LL) - 250 psf 10' From face of Wall
   Applied Bearing Pressure - applied at 52' Height - 6,340 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.

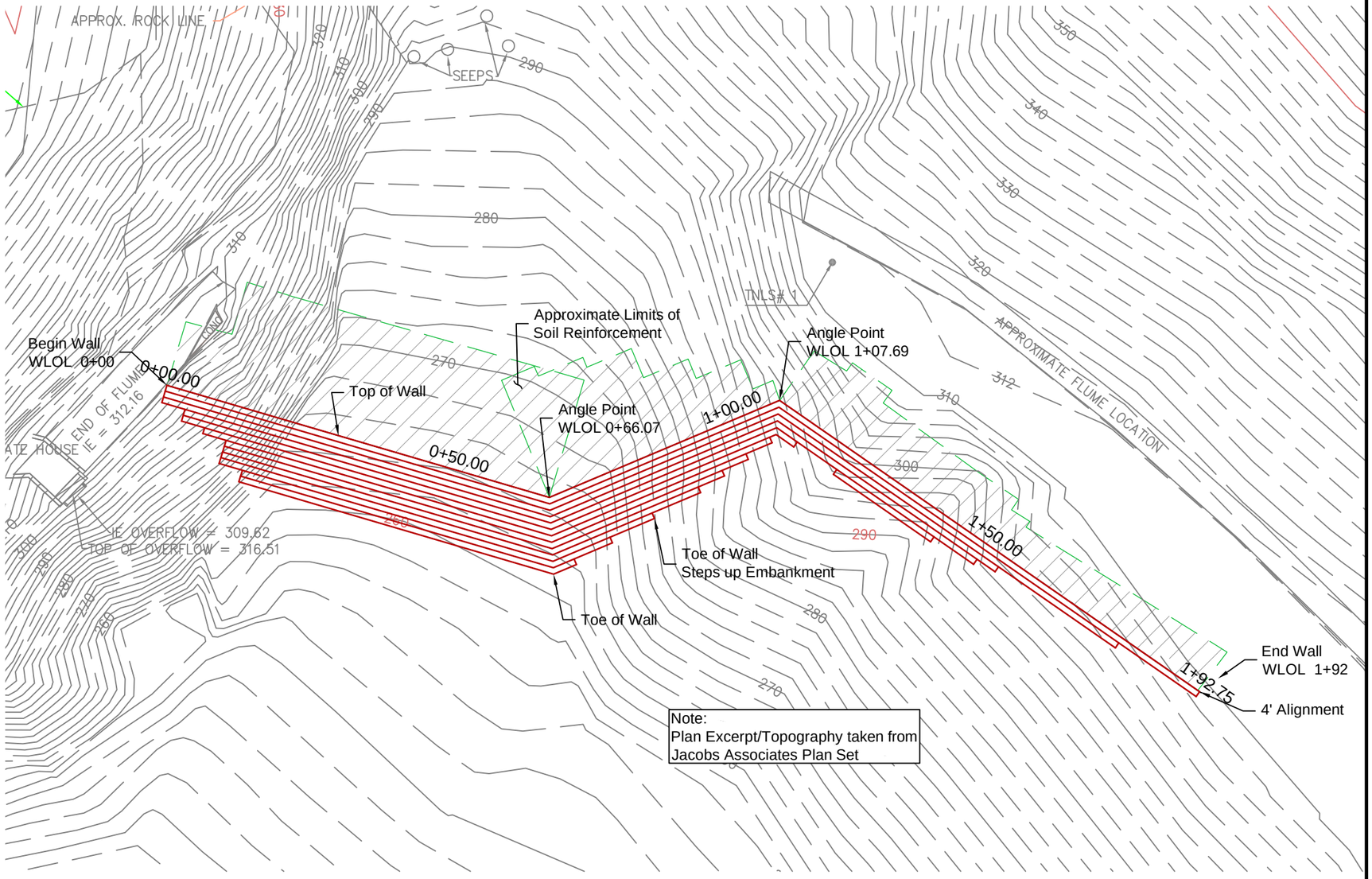
4. The design requires a non-saturated backfill. Surface and sub-surface drainage control may be required to prevent saturation of the backfill or relieve hydrostatic pressures.

   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 referenced Drawings and Reports in the Technical Specifications, and is subject to geometric and geotechnical confirmation. OCP has not performed a Survey of the Site or any Geologic investigation. 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/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.



SUPPLIED QUANTITIES:

WIRE WALL AREA:	6,048 SF (For TOW El 311.0')
	5,280 SF (For TOW El 307.0')

WELDED WIRE WALL PLAN VIEW

SCALE: 1"= 20'

HW 120315BW

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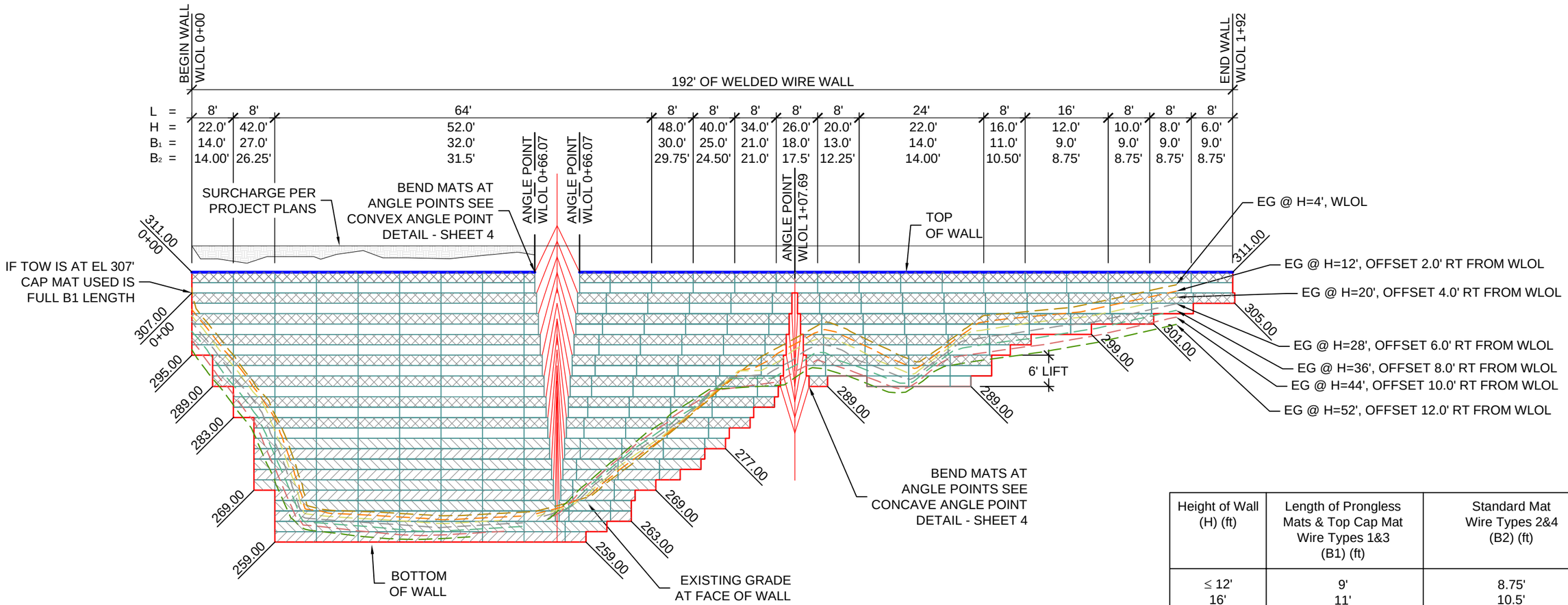
LILLIWAP FALLS POWER PROJECT

GENERAL NOTES AND
WELDED WIRE WALL(WWW)
PLAN VIEW

PROJECT	14-054
DATE	6-12-14
DESIGN	KLC
DRAWN	KLC

SHT 1 OF 5



ELEVATION VIEW - WELDED WIRE WALL (FRONT SIDE)

SCALE: 1" = 20'

WALL WIRE TYPE LEGEND

FINISH: BLACK
SERVICE LIFE: 75 YEARS
INTERMEDIATE (7.0') CAP MATS ARE 8X12 W4.5XW3.5
TOP CAP MAT IS FULL LENGTH (B1) AND 8X12 W7.0XW3.5

- TYPE 1 - 8x12 W7.0x3.5 MATS
- TYPE 2 - 8x21 W7.0x4.0 MATS
- TYPE 3 - 8x21 W9.5x4.0 MATS
- TYPE 4 - 8x12 W9.5x4.0 MATS

Height of Wall (H) (ft)	Length of Prongless Mats & Top Cap Mat Wire Types 1&3 (B1) (ft)	Standard Mat Wire Types 2&4 (B2) (ft)
≤ 12'	9'	8.75'
16'	11'	10.5'
20'	13'	12.25'
22'	14'	14'
26'	18'	17.5'
34'	21'	21'
40'	25'	24.5'
42'	27'	26.25'
48'	30'	29.75'
52'	32'	31.5'

Intermediate Cap Mats (7.0'):	8x12 W4.5x3.5 WWR
Reinforcing Mats	
Prongless Mats (B1):	8x12 W9.5x4.0 WWR (Type 4)
	8x12 W7.0x3.5 WWR (Type 1) Top Cap Mat
Standard Mats (B2):	8x21 W9.5x4.0 WWR (Type 3)
	8x21 W7.0x4.0 WWR (Type 2)

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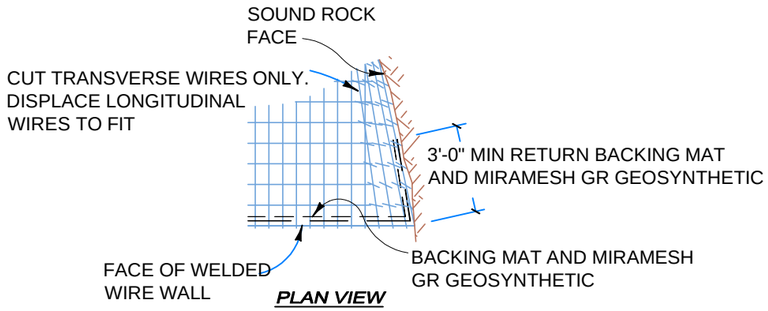
LILLIWAP FALLS POWER PROJECT

WWW ELEVATION VIEW

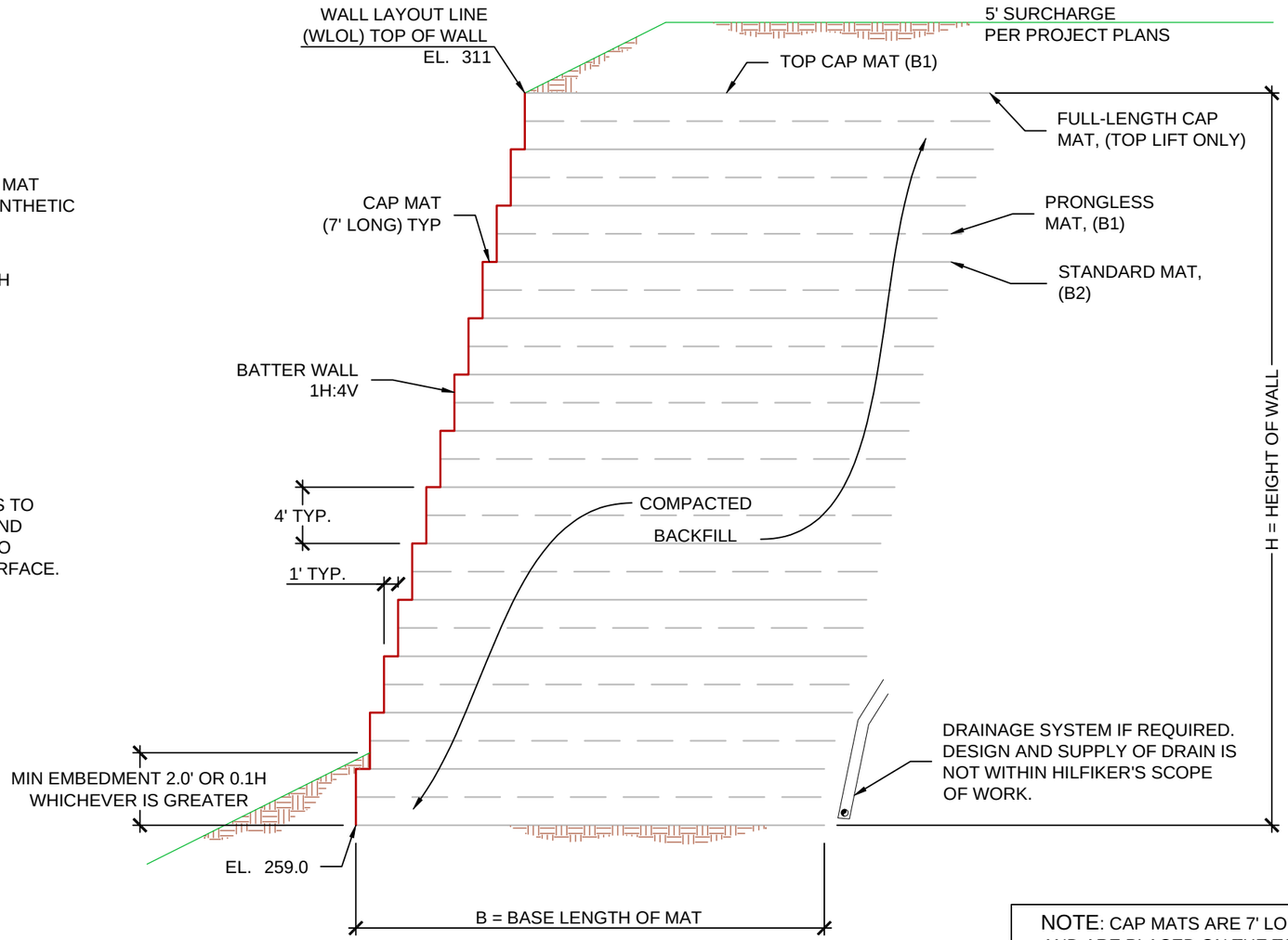
PROJECT 14-054
DATE 6-12-14
DESIGN KLC
DRAWN KLC

SHT 2 OF 5



WIRE WALL DETAIL AT ROCK FACE

NOT TO SCALE



TYPICAL WELDED WIRE WALL SECTION

SCALE: 1" = 10'

NOTE: CAP MATS ARE 7' LONG AND ARE PLACED ON THE TOP OF EACH PRONGLESS MAT EXCEPT THE TOP CAP MAT WHICH IS FULL LENGTH. SEE DETAIL SHT 4.

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LILLIWAP FALLS POWER PROJECT

SECTION VIEW & DETAILS

PROJECT	14-054
DATE	6-12-14
DESIGN	KLC
DRAWN	KLC

SHT 3 OF 5

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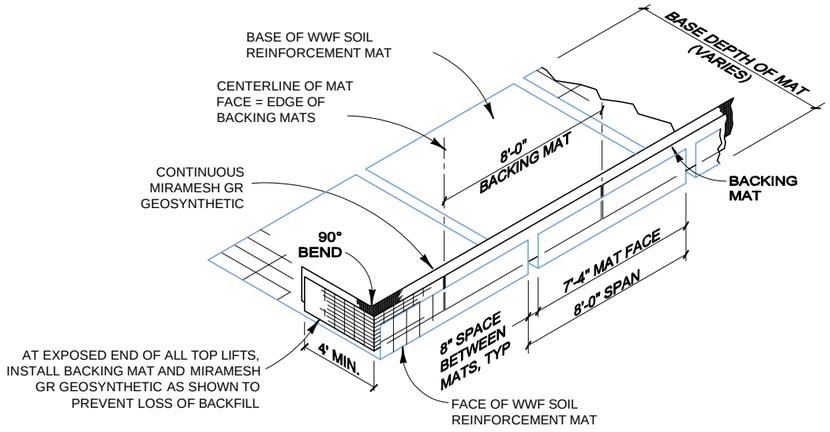
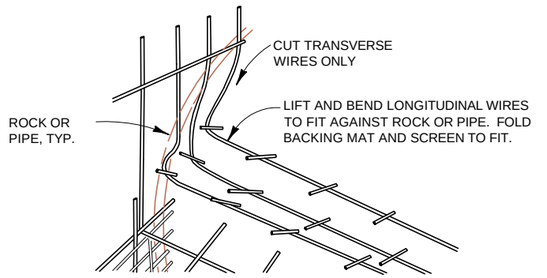


ISOMETRIC VIEW

WELDED WIRE WALL COMPONENTS WITH RETURN MAT

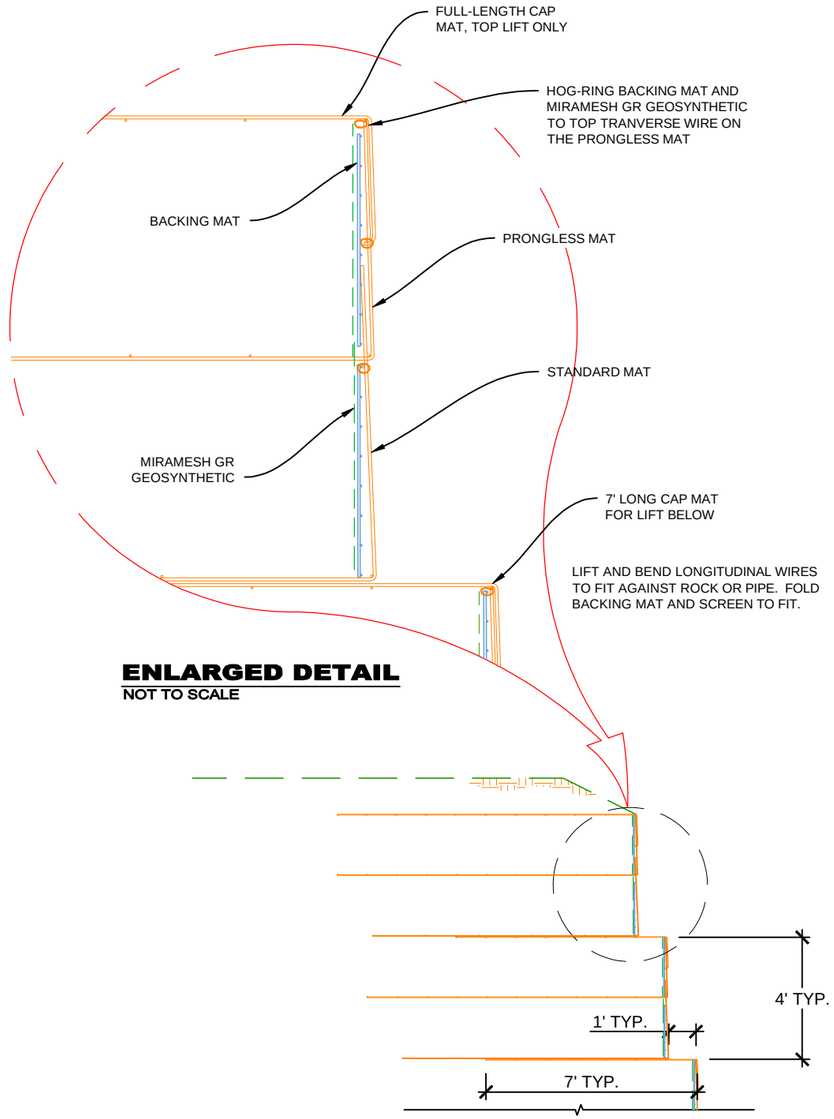
NOT TO SCALE



PICTORIAL

FITTING MATS TO OBSTRUCTION

NOT TO SCALE

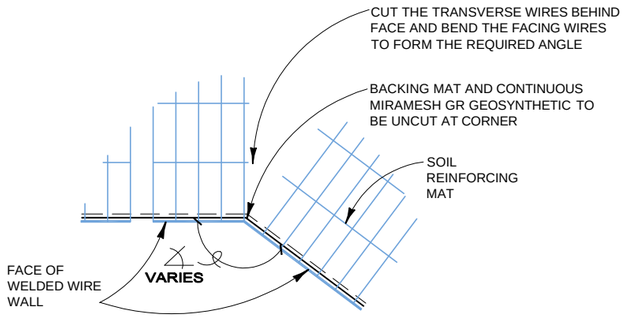


ENLARGED DETAIL

NOT TO SCALE

SECTION DETAIL

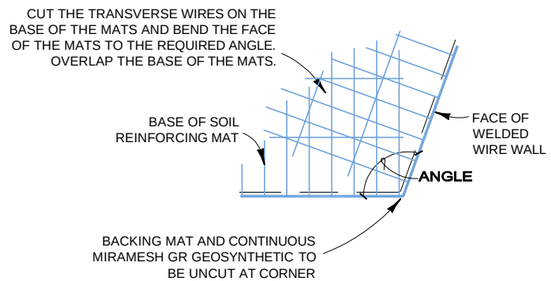
SCALE: 1" = 5'



PLAN VIEW

CONCAVE ANGLE DETAIL

NOT TO SCALE



PLAN VIEW

OBTUSE CONVEX ANGLE

NOT TO SCALE

HW 120315BW

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LILLIWAP FALLS POWER PROJECT
LILLWAP FALLS GENERATING COMPANY

WELDED WIRE WALL DETAILS

PROJECT	14-054
DATE	6-12-14
DESIGN	KLC
DRAWN	KLC

SHT 4 OF 5

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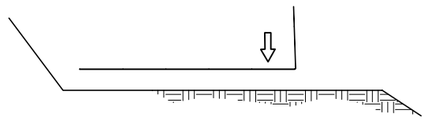
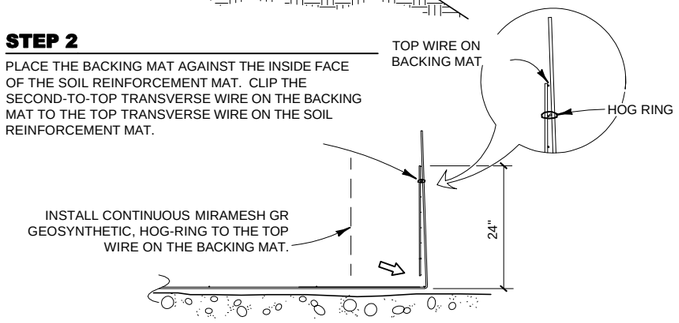
STEP 1

PLACE THE FIRST COURSE OF SOIL REINFORCEMENT MATS ON PREPARED FOUNDATION



STEP 2

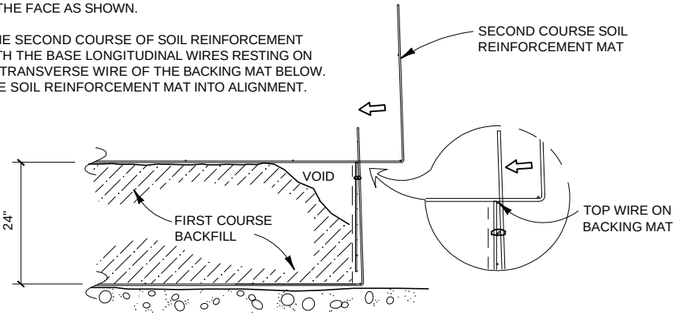
PLACE THE BACKING MAT AGAINST THE INSIDE FACE OF THE SOIL REINFORCEMENT MAT. CLIP THE SECOND-TO-TOP TRANSVERSE WIRE ON THE BACKING MAT TO THE TOP TRANSVERSE WIRE ON THE SOIL REINFORCEMENT MAT.



STEP 3

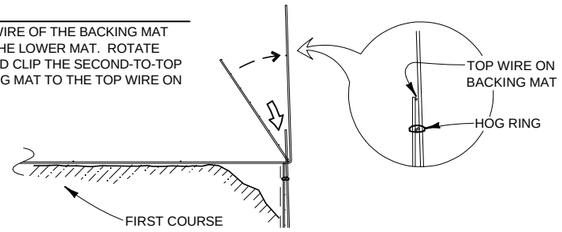
PLACE AND COMPACT THE BACKFILL IN LAYERS AND DENSITIES AS SPECIFIED IN THE PROJECT PLANS. LEAVE A VOID AT THE FACE AS SHOWN.

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.



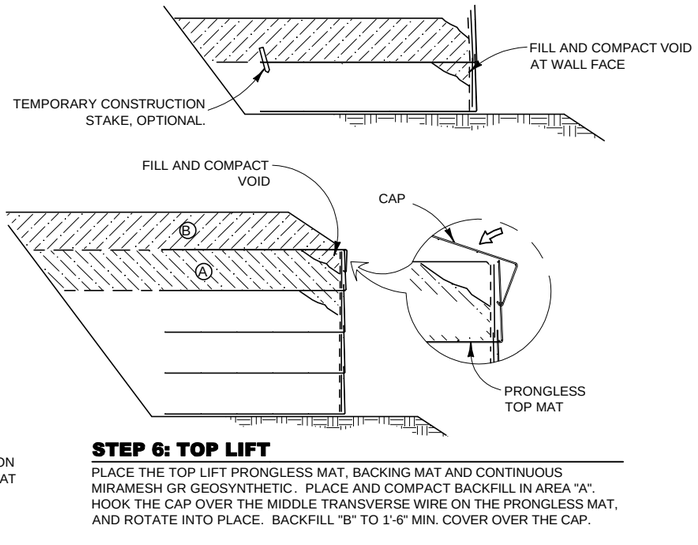
STEP 4

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 MIRAMESH GR GEOSYNTHETIC. PLACE AND COMPACT THE BACKFILL TO THE BASE ELEVATION OF THE NEXT MAT. REPEAT STEPS 3 THROUGH 5 TO THE TOP LIFT.

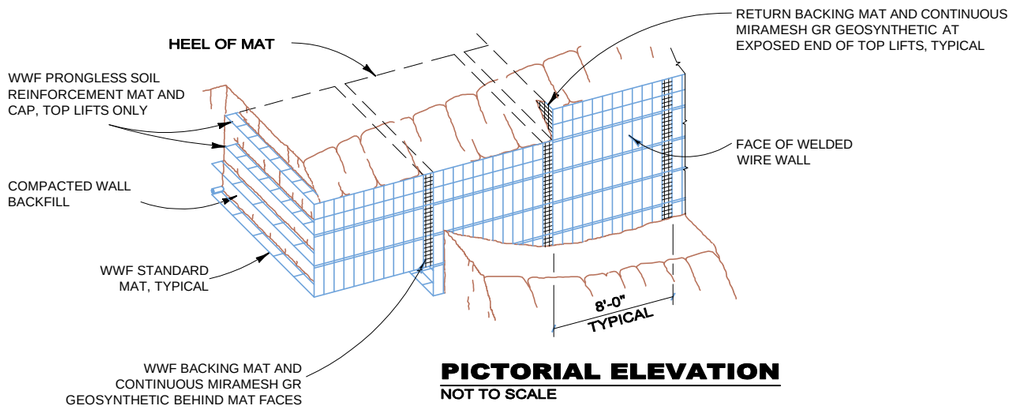


STEP 6: TOP LIFT

PLACE THE TOP LIFT PRONGLESS MAT, BACKING MAT AND CONTINUOUS MIRAMESH GR GEOSYNTHETIC. 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.

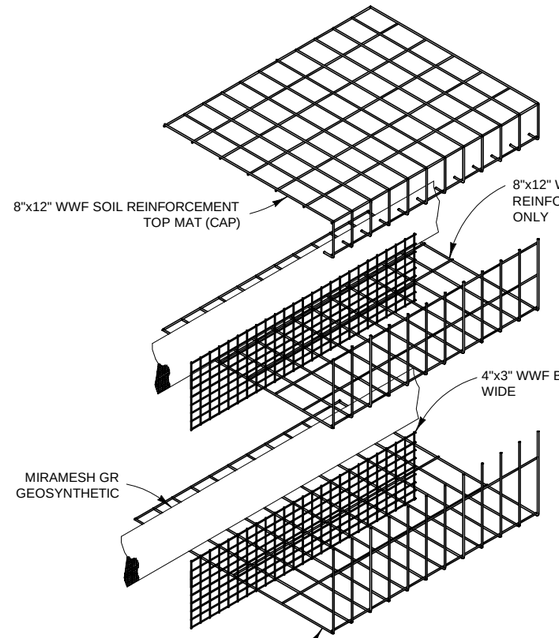
CONSTRUCTION SEQUENCE

NOT TO SCALE



PICTORIAL ELEVATION

NOT TO SCALE



WALL COMPONENTS

NOT TO SCALE

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LILLIWAP FALLS POWER PROJECT
LILLWAP FALLS GENERATING COMPANY

WELDED WIRE WALL DETAILS

PROJECT	14-054
DATE	6-12-14
DESIGN	KLC
DRAWN	KLC

SHT 5 OF 5

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