

GENERAL NOTES

1. DESIGN IS BASED ON THE ASSUMPTION THAT BACKFILL WITHIN THE REINFORCED SOIL MASS, METHODS OF CONSTRUCTION AND THE QUALITY OF MATERIALS CONFORM TO THE REQUIREMENTS OF HILFIKER RETAINING WALLS.

2. ASSUMED MATERIAL CHARACTERISTICS:

NORTH WALL (11.48)

WALL BACKFILL (CONTRACTOR TO VERIFY BY TEST):

TOTAL UNIT WEIGHT: 130 PCF
INTERNAL FRICTION ANGLE: 36° (ASTM D3080)
COHESION: 0 PSF

RETAINED BACKFILL:

TOTAL UNIT WEIGHT: 115 PCF
INTERNAL FRICTION ANGLE: 32°
COHESION: 0 PSF

FOUNDATION SOILS:

TOTAL UNIT WEIGHT: 130 PCF
INTERNAL FRICTION ANGLE: 40°
COHESION: 0 PSF

SOUTH WALL (11.08)

WALL BACKFILL (CONTRACTOR TO VERIFY BY TEST):

TOTAL UNIT WEIGHT: 130 PCF
INTERNAL FRICTION ANGLE: 36° (ASTM D3080)
COHESION: 0 PSF

RETAINED BACKFILL:

TOTAL UNIT WEIGHT: 125 PCF
INTERNAL FRICTION ANGLE: 35°
COHESION: 0 PSF

FOUNDATION SOILS:

TOTAL UNIT WEIGHT: 125 PCF
INTERNAL FRICTION ANGLE: 35°
COHESION: 50 PSF

IF ACTUAL MATERIAL 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. 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.

4. SURFACE DRAINAGE CONTROL SHALL BE AS SPECIFIED IN THE PROJECT PLANS AND SPECIFICATIONS OR AS DIRECTED BY THE OWNER'S ENGINEER. PAYMENT FOR DRAINAGE SHALL BE AS SPECIFIED IN THE PROJECT SPECIFICATIONS.

5. SOIL REINFORCEMENTS SHALL BE FABRICATED OF WELDED WIRE FABRIC CONFORMING TO AASHTO M-32 AND M-55 AND SHALL BE GALVANIZED IN ACCORDANCE WITH AASHTO M-111 FOLLOWING FABRICATION.

6. THIS DESIGN SUBMITTAL IS BASED ON ASTM A1115 - STANDARD PRACTICE FOR CONSTRUCTION OF MECHANICALLY STABILIZED EARTH WALLS WITH INEXTENSIBLE SOIL REINFORCEMENT (LATEST APPROVAL).

7. THIS SUBMITTAL INCLUDES PERMANENT MSE WALLS. PERMANENT MSE WALLS ARE DESIGNED FOR 75 YEARS OF SERVICE. THE OWNER IS THE WASHINGTON STATE DEPARTMENT OF TRANSPORTATION.

8. SHANNON & WILSON IS NOT THE OWNER'S "ENGINEER OF RECORD" OR THE OWNER'S "GEOTECHNICAL ENGINEER" OR THE OWNER'S "HYDRAULIC ENGINEER," AS DESCRIBED IN ASTM A1115. THE OWNER IS RESPONSIBLE FOR THE FOLLOWING:

- A. EVALUATING GLOBAL STABILITY
- B. ESTABLISHING FOUNDATION BEARING RESISTANCE DESIGN CRITERIA
- C. IMPLEMENTING AN ADEQUATE QUALITY CONTROL PROGRAM

8. HILFIKER RETAINING WALLS, INC (800-762-8962) IS THE "WALL SUPPLIER" WHOSE SYSTEM AND COMPONENTS ARE THE SOLE BASIS OF THIS SUBMITTAL.

9. SHANNON & WILSON (208-658-8700) IS THE "WALL DESIGN ENGINEER," AS DESCRIBED IN ASTM A1115. SHANNON & WILSON HAS SPECIFIED THE TYPE(S), SIZES, AND LOCATIONS OF BURIED REINFORCEMENTS FOR THIS SUBMITTAL.

10. THE ENGINEER OF RECORD ADMINISTERS THE OWNER'S REQUIREMENTS FOR THE LONG-TERM STABILITY OF THE MSE WALL (MSEW), INCLUDING:

- A. FOUNDATION PREPARATION REQUIREMENTS OF THE GEOTECHNICAL ENGINEER
- B. SCOUR COUNTERMEASURES ALONG THE TOE
- C. EROSION COUNTERMEASURES AT THE ENDS
- D. SURFACE WATER DRAINAGE CONTROLS ABOVE THE WALL

E. CONSTRUCTION OF THE SUPPLIED MSEW SYSTEM WITH ALL OF ITS APPURTENANT COMPONENTS

F. PROTECTION OF REINFORCEMENT, SUCH THAT UNAUTHORIZED CUTTING OF WIRES DOES NOT OCCUR

11. HEAVY CRANES OR SIMILAR HEAVY LOADS SHALL BE SET BACK A MINIMUM DISTANCE EQUAL TO THE WALL HEIGHT FROM THE WALL FACE (EXAMPLE: 20-FOOT SET BACK FROM A 20-FOOT-HIGH WALL). DO NOT STOCKPILE SOIL ON THE MSE WALLS.

12. IF THERE ARE BOTTOM OF WALL ELEVATION DISCREPANCIES, NOTIFY THE ENGINEER SO THAT REDESIGN CAN BE CONSIDERED.

SUPPLIED REINFORCEMENT QUANTITIES				
BASE LENGTH	CAP MAT W7XW3.5 (8"X12")	PRONGLESS MAT W7XW3.5 (8"X12")	STANDARD MAT W7XW3.5 (8"X10.5")	STANDARD MAT W7XW4 (8"X21")
18'	4	4		
17.5'				36
16'	8	8		
15.75'			8	56
15'	19	19		
14'			17	112
11'	1	1		
10.5				4
9'	3	3		
8.75'			1	5

WALL FACE SUPPLIED	4,384 SF
BACKING MATS (2'-0" HIGH)	282 EA
FILTER FABRIC (7'-6" WIDE)	2,256 LF
HOG RINGS	6,600 EA
PLIERS	4 EA

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2	9/26/2022	RGV	ISSUED FOR OWNER REVIEW	SGC

HILFIKER RETAINING WALLS



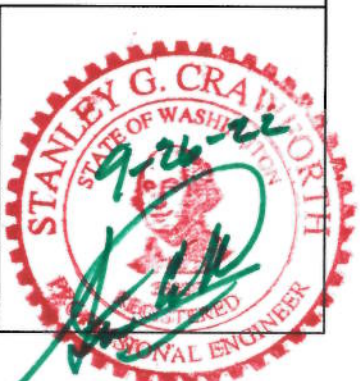
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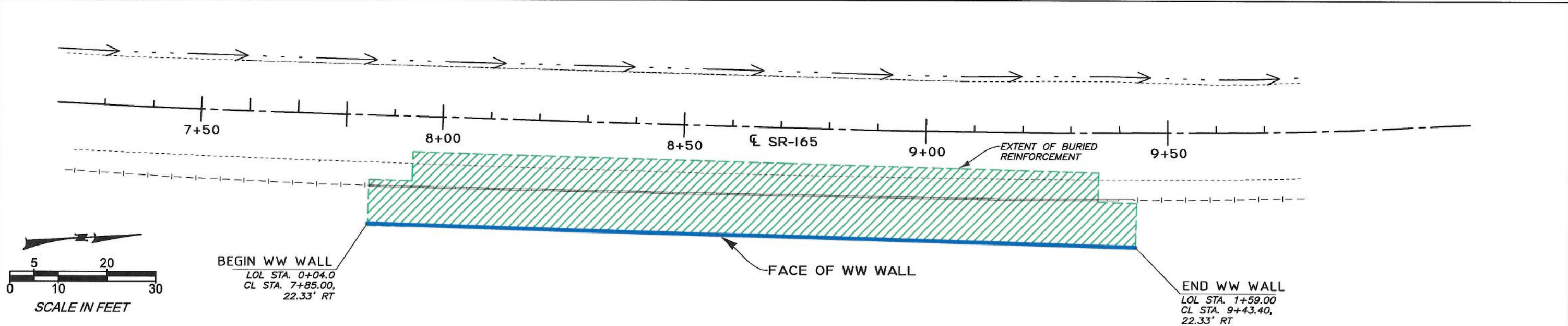
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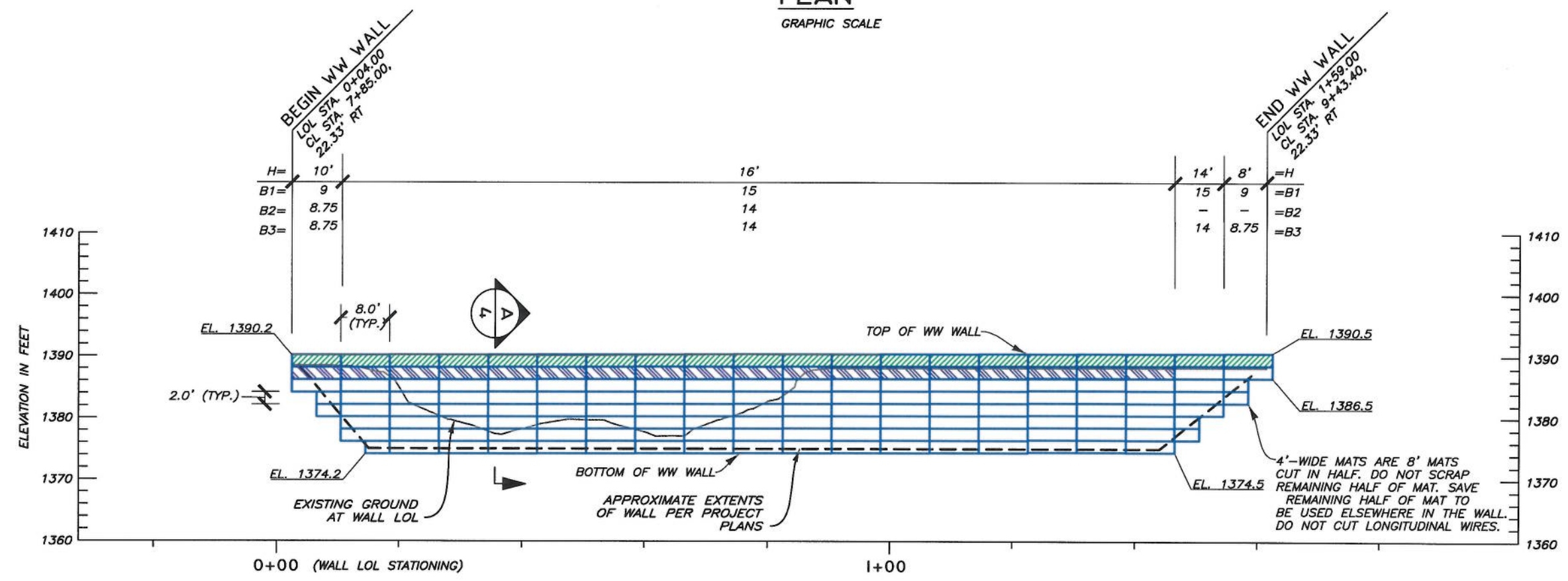
NOTES, QUANTITIES
WELDED WIRE WALLS
SR 165 S. OF FAIRFAX
BRIDGE EMERGENCY PROJECT
WSDOT PIERCE COUNTY, WA

DWG DATE:
27 SEP 2022
HRW NO.:
220727EW
SHEET
1
OF
6





PLAN
GRAPHIC SCALE



DEVELOPED ELEVATION - SOUTH WALL (FRONT FACE)
GRAPHIC SCALE

LEGEND

	B1	8"x12", W7xW3.5-HDG		
	B2	8"x10.5", W7xW3.5-HDG	LOL	LAYOUT LINE
	B3	8"x21", W7xW4-HDG	H	WALL HEIGHT (BOTTOM MAT TO CAP MAT)
			B	MAT LENGTH (FT)
			WW	WELDED WIRE

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CADD: RGV
DESIGNED: RGV
CHECKED: SGC

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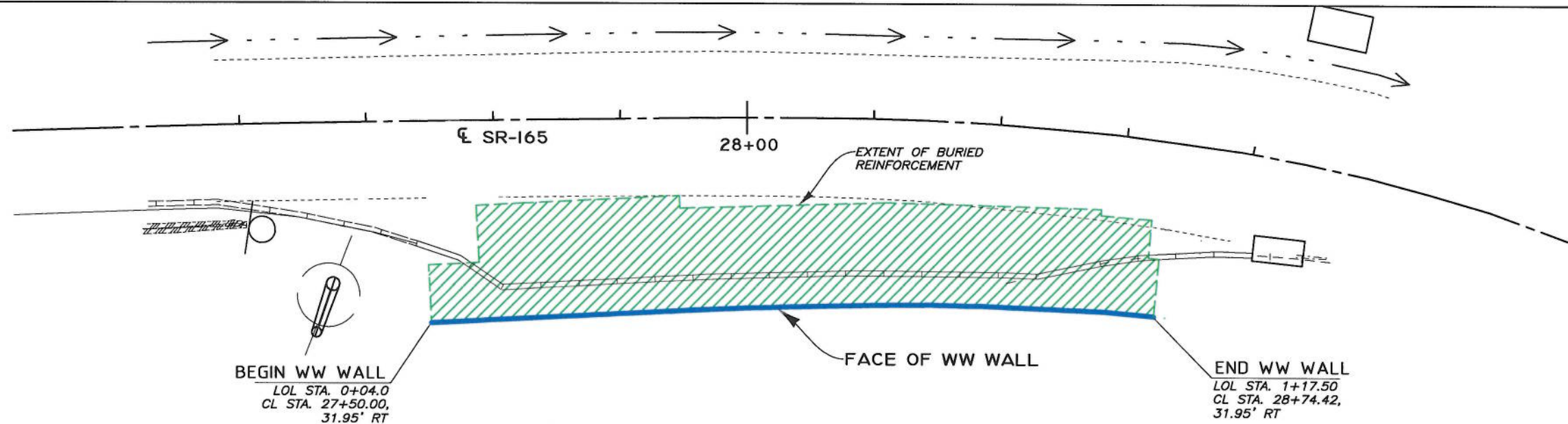
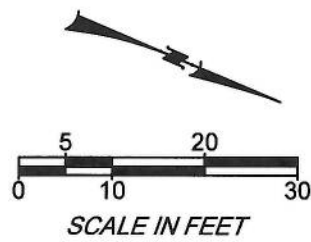
PLAN & ELEVATION
WELDED WIRE WALLS
SR 165 S. OF FAIRFAX
BRIDGE EMERGENCY PROJECT
WSDOT PIERCE COUNTY, WA

DWG DATE: 27 SEP 2022
HRW NO.: 220727EW
SHEET 2 OF 6

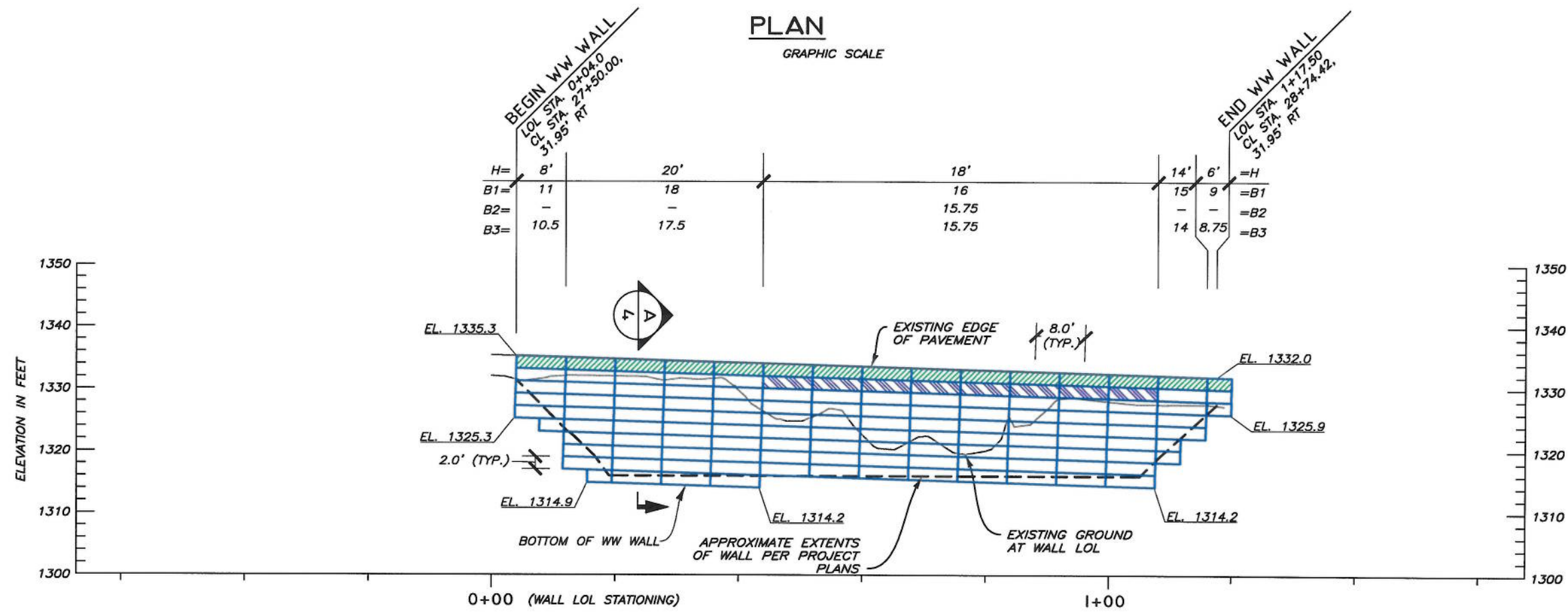


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PLAN
GRAPHIC SCALE



DEVELOPED ELEVATION - NORTH WALL (FRONT FACE)

LEGEND

	B1	8"x12", W7xW3.5-HDG		
	B2	8"x10.5", W7xW3.5-HDG	LOL	LAYOUT LINE
	B3	8"x21", W7xW4-HDG	H	WALL HEIGHT (BOTTOM MAT TO CAP MAT)
			B	MAT LENGTH (FT)
			WW	WELDED WIRE

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RGV

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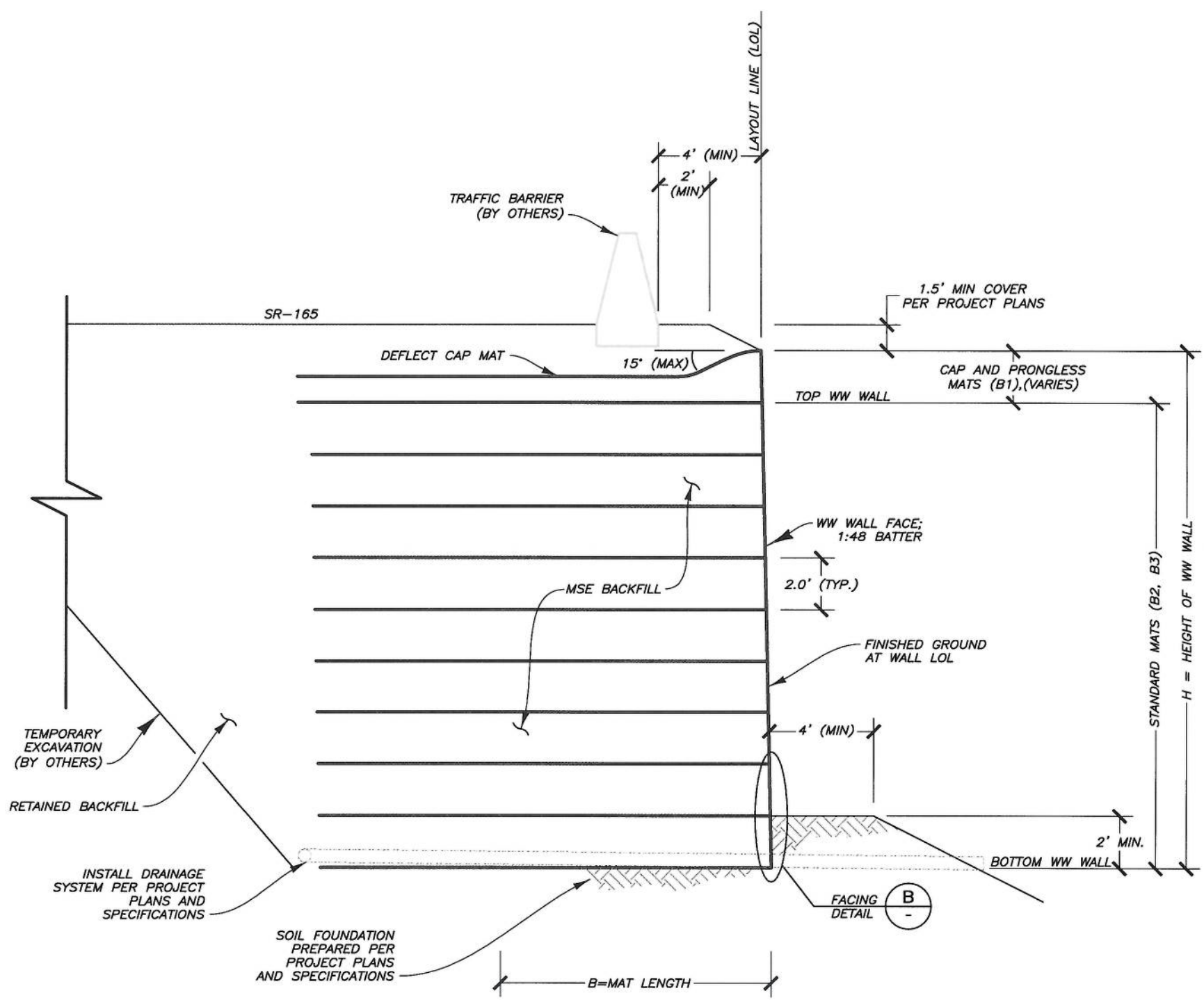
PLAN & ELEVATION	DWG DATE: 27 SEP 2022
WELDED WIRE WALLS	HRW NO.: 220727EW
SR 165 S. OF FAIRFAX	SHEET 3
BRIDGE EMERGENCY PROJECT	OF 6
WSDOT	PIERCE COUNTY, WA



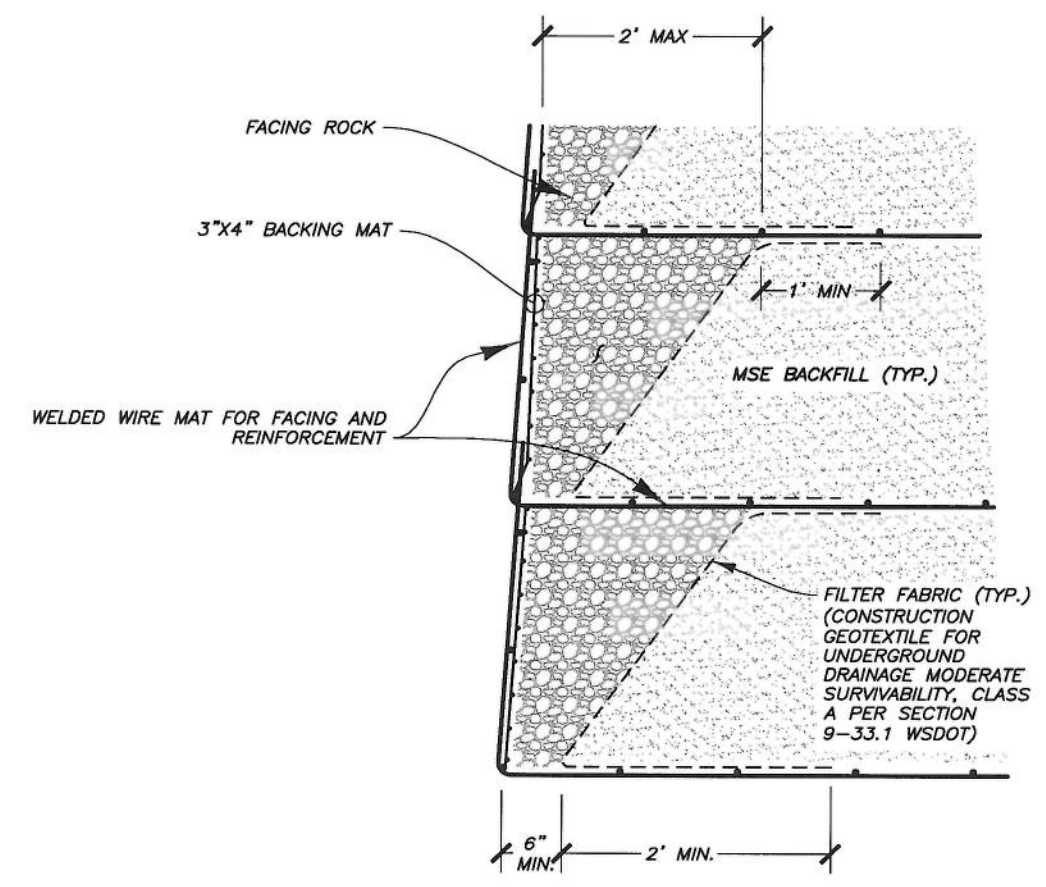
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RGV



TYPICAL SECTION A
3
NOT TO SCALE



FACING DETAIL B
NOT TO SCALE

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HILFIKER RETAINING WALLS

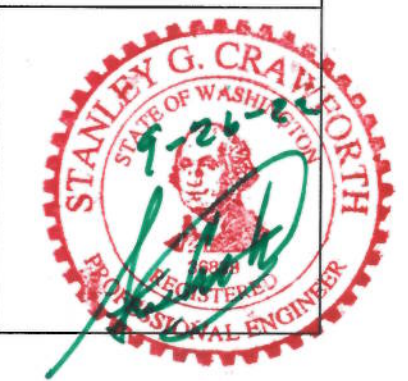
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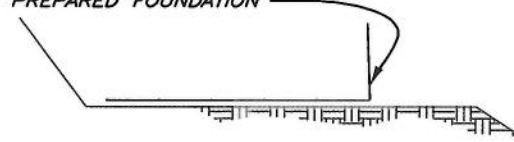
SECTION & DETAIL
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SHEET 4 OF 6



STEP 1

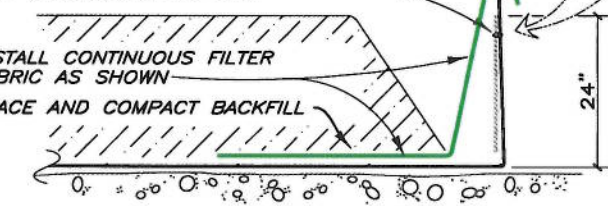
PLACE THE FIRST COURSE OF SOIL REINFORCEMENT MATS ON PREPARED FOUNDATION



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.

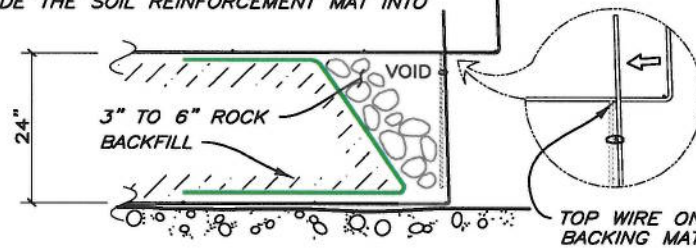
INSTALL CONTINUOUS FILTER FABRIC AS SHOWN
PLACE AND COMPACT BACKFILL



STEP 3

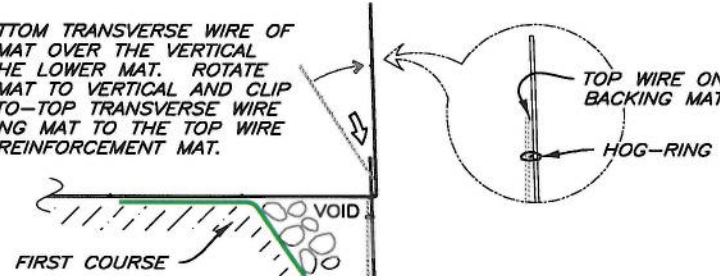
BRING THE FILTER FABRIC OVER THE FRONT AND TOP OF THE BACKFILL AS SHOWN. PLACE THE ROCK IN THE VOID OF THE WALL. LEAVE A VOID AS SHOWN.

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.



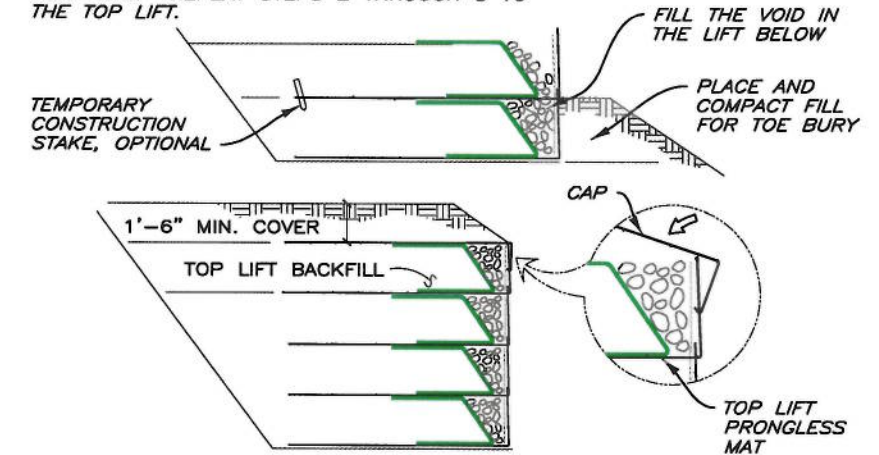
STEP 4

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

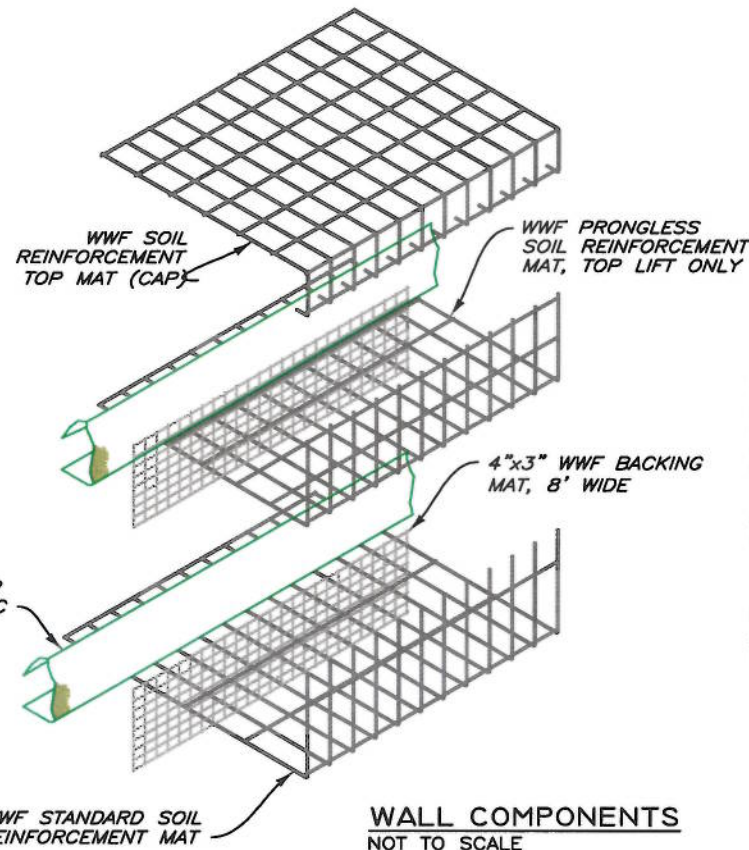


STEP 6: TOP LIFT

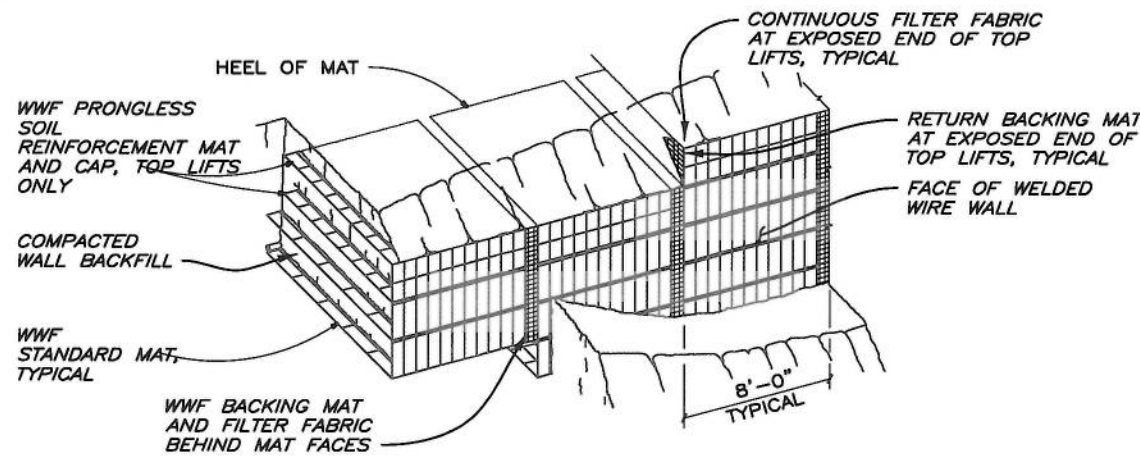
PLACE THE TOP LIFT PRONGLESS MAT, BACKING MAT AND FILTER FABRIC. PLACE AND COMPACT BACKFILL AND ROCK IN THE TOP LIFT. HOOK THE CAP OVER THE MIDDLE TRANSVERSE WIRE ON THE PRONGLESS MAT, AND ROTATE INTO PLACE. PLACE AND COMPACT COVER OVER TOP MAT TO 1'-6" MINIMUM DEPTH.

CONSTRUCTION SEQUENCE

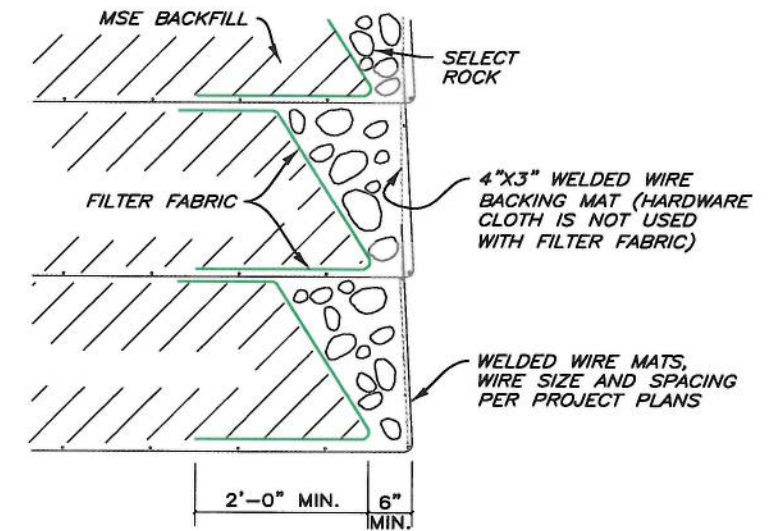
NOT TO SCALE



WALL COMPONENTS
NOT TO SCALE



PICTORIAL ELEVATION
NOT TO SCALE



SECTION
ROCK FACING DETAIL
NOT TO SCALE

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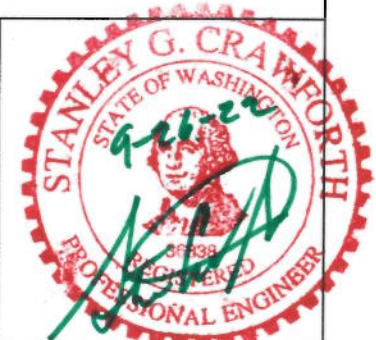
HILFIKER RETAINING WALLS

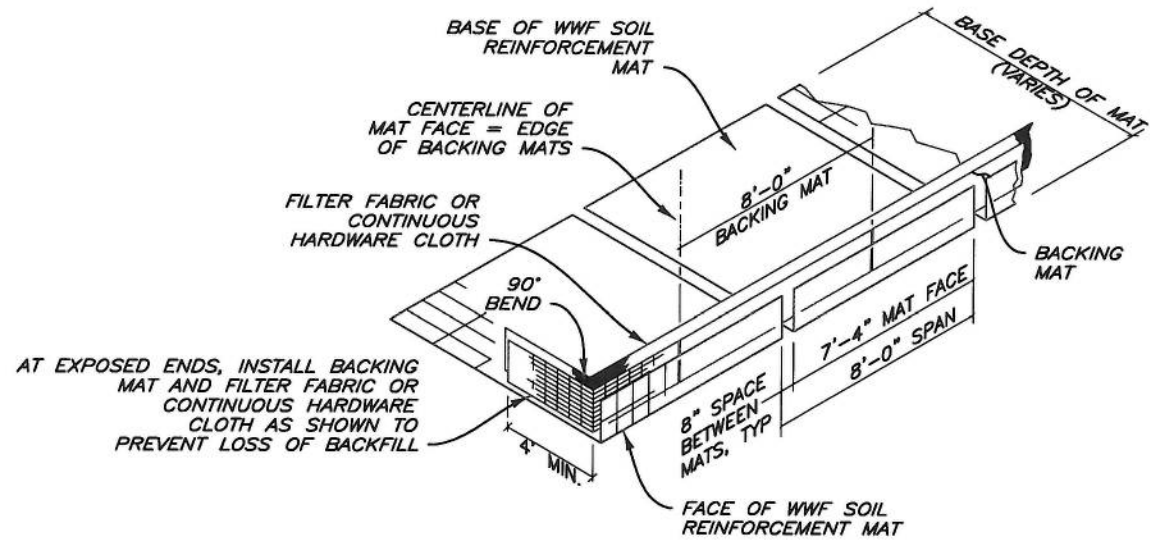
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SEQUENCE & DETAILS		DWG DATE:
WELDED WIRE WALLS		27 SEP 2022
SR 165 S. OF FAIRFAX		HRW NO.:
BRIDGE EMERGENCY PROJECT		220727EW
WSDOT	PIERCE COUNTY, WA	SHEET
		5
		OF 6





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

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CHECKED:	SGC

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DETAIL
WELDED WIRE WALLS SR 165 S. OF FAIRFAX BRIDGE EMERGENCY PROJECT
WSDOT
PIERCE COUNTY, WA

DWG DATE:	27 SEP 2022
HRW NO.:	220727EW
SHEET	6
OF	6

