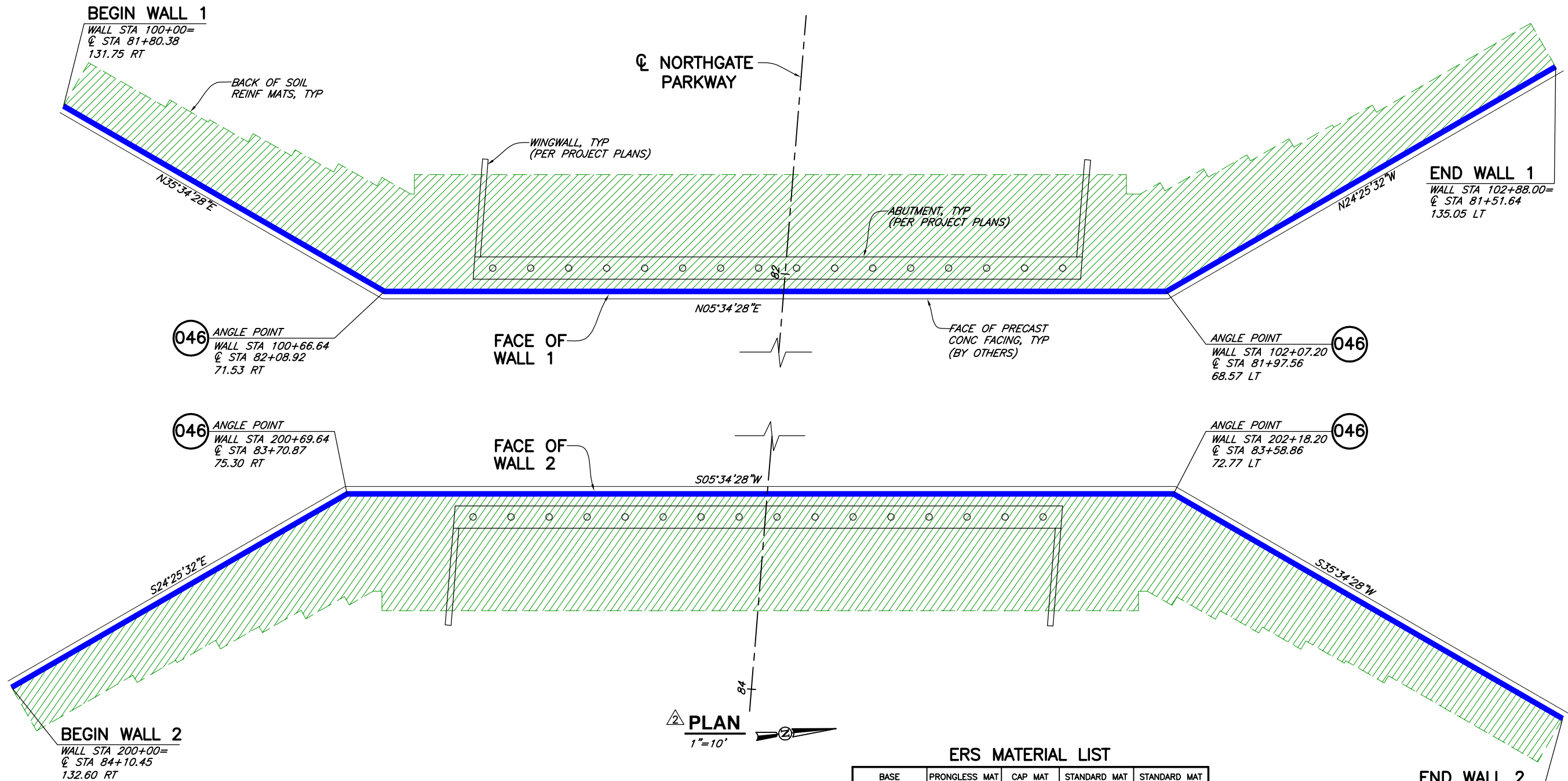


CAD: \\EUREKA\PROJECTS\2018\018213-1-15-NORTHGATE\DWGS\018213-NORTHGATE-R2.DWG  
(HRW 180522 AE)



#### DESIGN NOTES

- 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: 125 PCF  
INTERNAL FRICTION ANGLE: 34°  
COHESION: 0 PSF  
RANDOM BACKFILL:  
UNIT WEIGHT: 125 PCF  
INTERNAL FRICTION ANGLE: 34°  
COHESION: 0 PSF  
COEFFICIENT OF ACTIVE SOIL PRESSURE: 0.283  
FOUNDATION SOILS:  
FRICTION ANGLE FOR SLIDING: 30°  
COHESION: 0 PSF  
MAXIMUM APPLIED BEARING PRESSURE: 4.72 KSF (D.L+L.L.)
- 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. THE DESIGN REQUIRES A NON-SATURATED BACKFILL TO PREVENT HYDROSTATIC PRESSURES AND ACCELERATED CORROSION OF THE SOIL REINFORCEMENT.**  
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.
- REFERENCE DOCUMENTS:  
PLANS AND SPECIFICATIONS PROVIDED IN PDF, PREPARED BY IDAHO TRANSPORTATION DEPARTMENT (BRIDGE PLANS), DATED JULY 2018.

#### ERS MATERIAL LIST

BASE DEPTH	PRONGLESS MAT W7xW3.5 (8x12)	CAP MAT W7xW3.5 (8x12)	STANDARD MAT W7xW4 (8x21)	STANDARD MAT W7xW3.5 (8x10.5)
21'-0"	33	33	330	-
17'-6"	-	-	72	-
17'-0"	8	8	-	-
15'-9"	-	-	32	-
15'-0"	4	4	-	-
14'-0"	4	4	28	-
12'-3"	-	-	24	-
12'-0"	4	4	-	-
11'-0"	4	4	-	-
10'-6"	-	-	32	4
10'-0"	4	4	-	-
9'-0"	13	13	-	-
8'-9"	-	-	23	-
WALL FACE SUPPLIED	11,088 SQ FT			
MSE BACKFILL (BY OTHERS)	*6,610 C.Y.			
BACKING MATS (2'-0" HIGH)	723 EA			
FILTER FABRIC (2'-6" WIDE)	5,784 LIN FT			
FACE ANCHORS	148 EA			
CLOSURE MATS	74 EA			
HOG RINGS	14,900 EA			
PLIERS	5 EA			

\* TOP MAT TO BOTTOM MAT, NEAT



10/26/18

E.R.S.

**HILFIKER RETAINING WALLS**

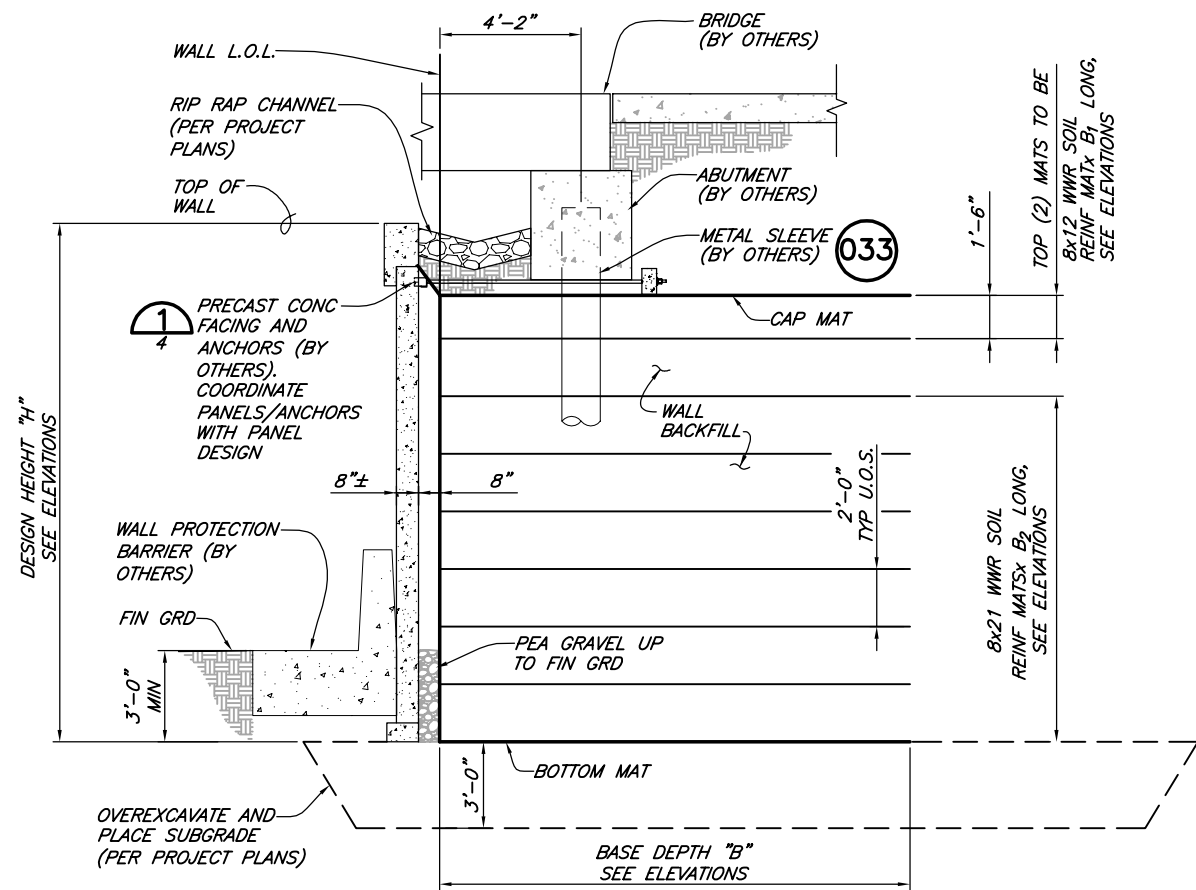


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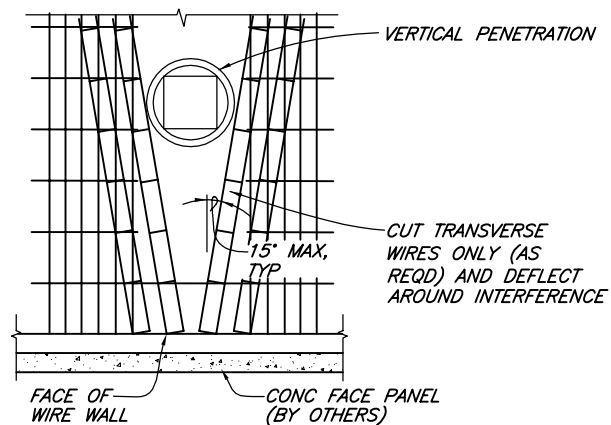


IDAHO TRANSPORTATION DEPARTMENT I-15 NORTHGATE IC-PROJ NO. A020(314) POCAATELLO, BANNOCK COUNTY, IDAHO  <b>WALL ELEVATIONS</b>	DSGN	K/JN					<b>CONSULTING ENGINEERS &amp; GEOLOGISTS, INC.</b>  812 W. WABASH EUREKA, CA 95501  <a href="http://WWW.SH-ENG.COM">WWW.SH-ENG.COM</a> 707-441-8855	THIS IS ONE INCH TO ONE HUNDRED FEET ORIGINAL DRAWING  IF NOT ONE INCH TO ONE HUNDRED FEET, ADJUST THIS SHEET, AND ALL OTHER SCALES ACCORDINGLY.
	DR	NMD						
	CHK	K/JN						
	APVD							
SHEET	2	OF 5						
DATE	10/26/18							
PROJ. NO.								

CAD: ||EUREKA|PH  
(HRW 180522 AE)



**SECTION**    
*NOT TO SCALE* 2

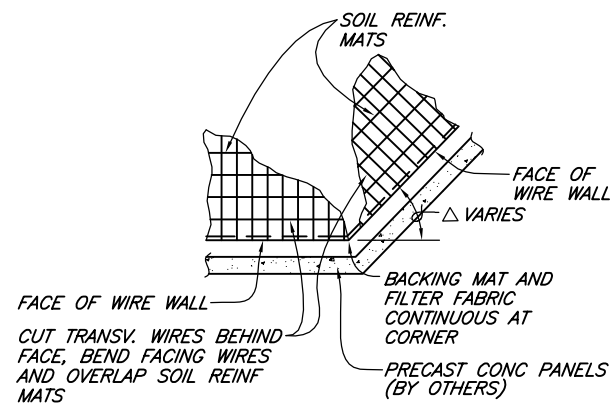


**SOIL REINF.  
PENETRATION**

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*NOT TO SCALE*

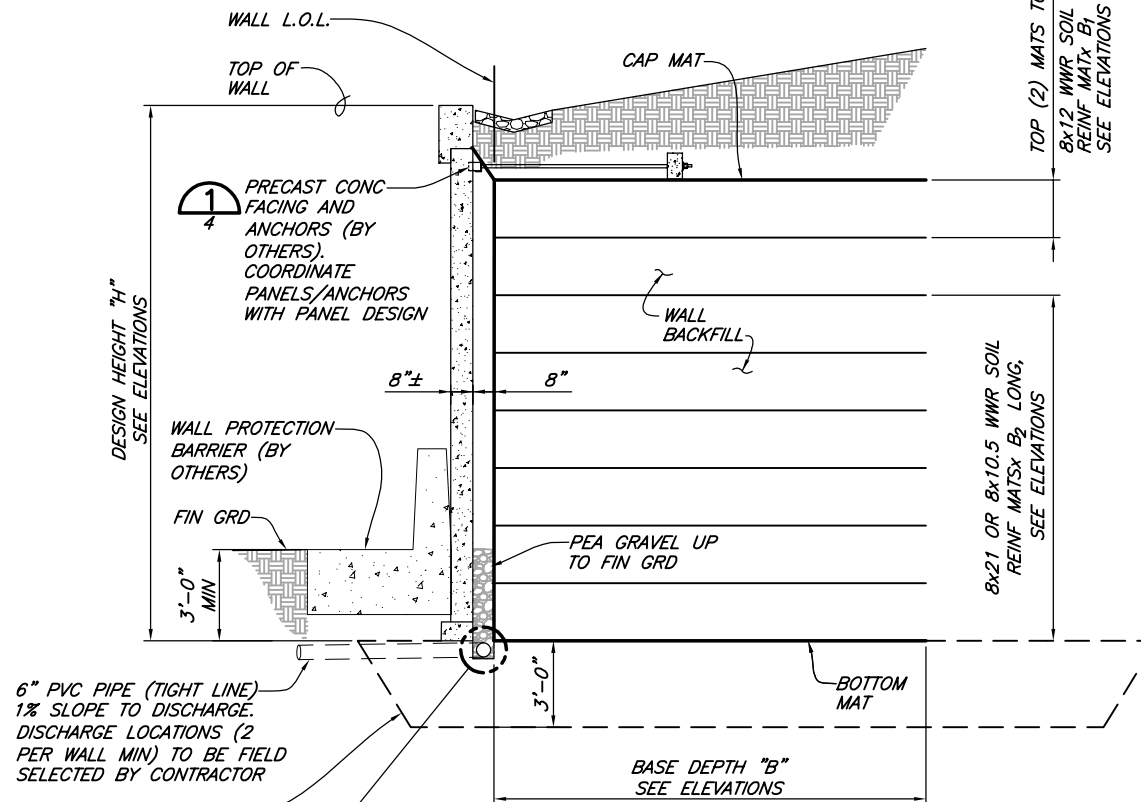
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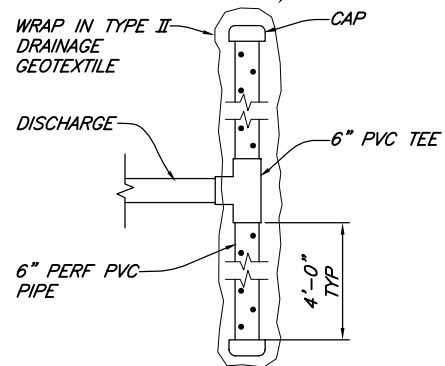
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NOT TO SCALE

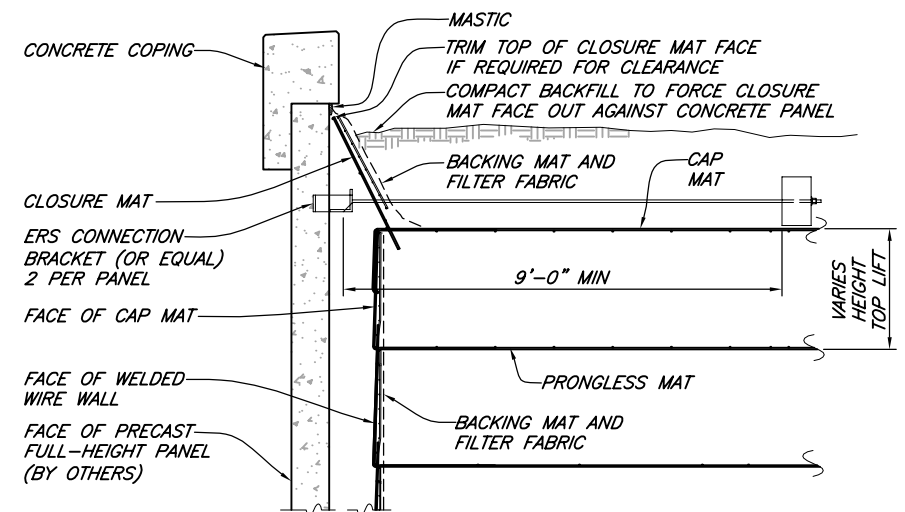
046



**SECTION**  **B**  
*NOT TO SCALE* 2



### PLAN VIEW



NOTE: METHOD OF ATTACHING PANELS MAY VARY FROM THIS DETAIL, AT CONTRACTOR'S OPTION.

**TOP OF WALL AND  
PANEL CONNECTION DETAILS**  
*NOT TO SCALE*


E.R.S.

## HILFIKER RETAINING WALLS

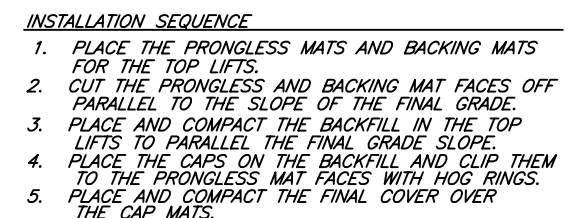
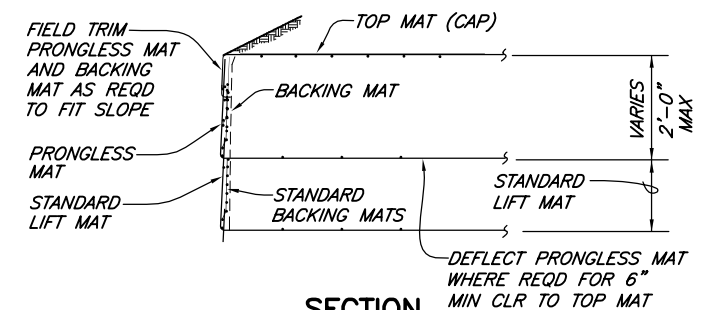
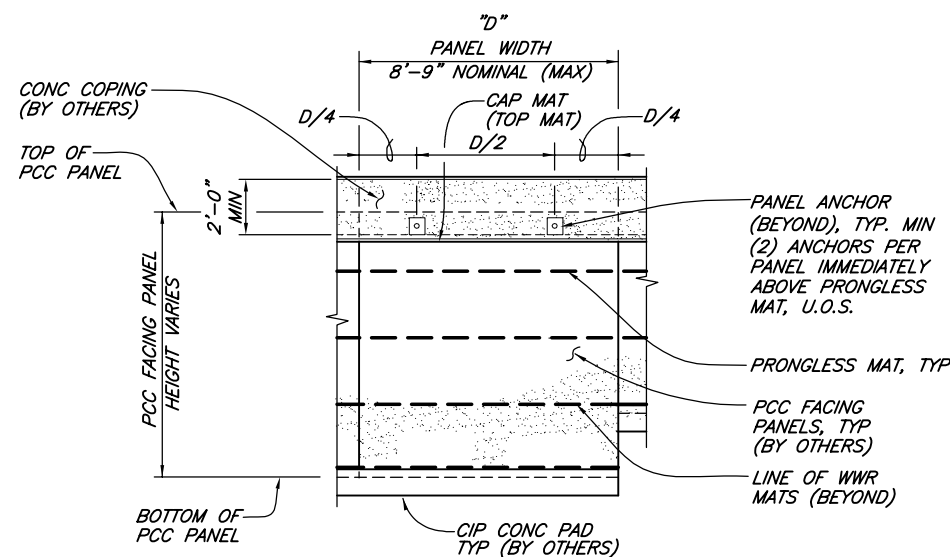
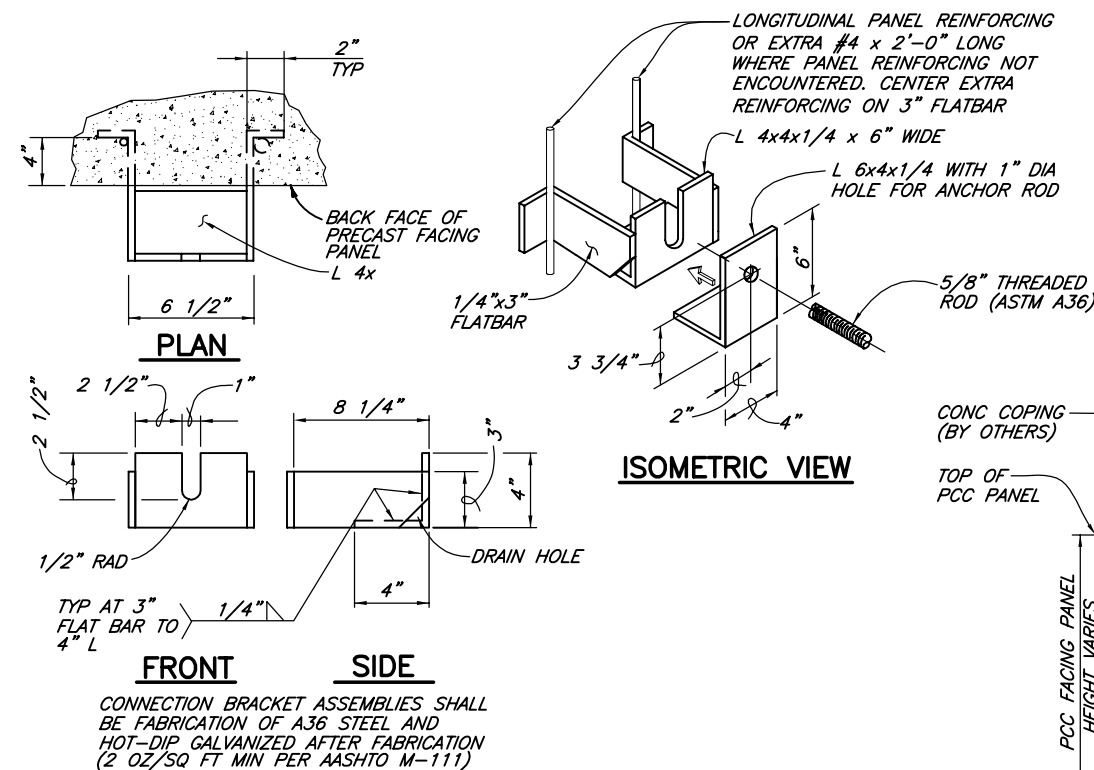
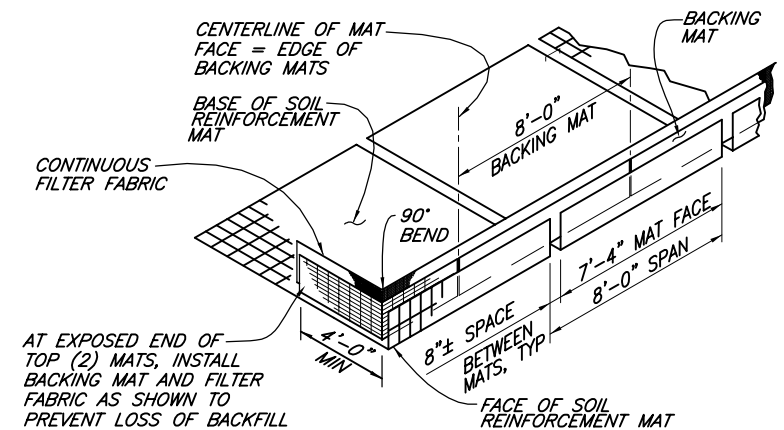
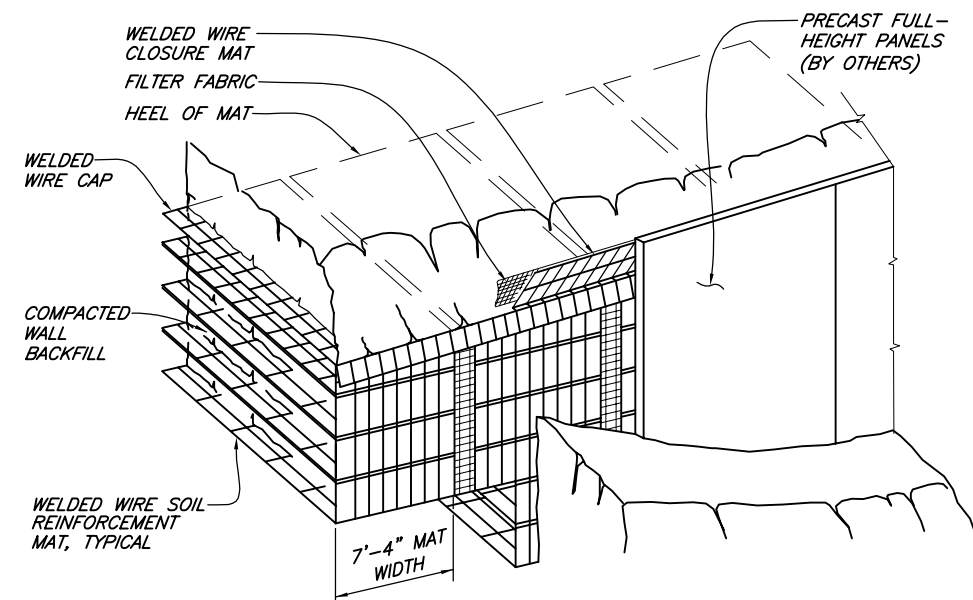
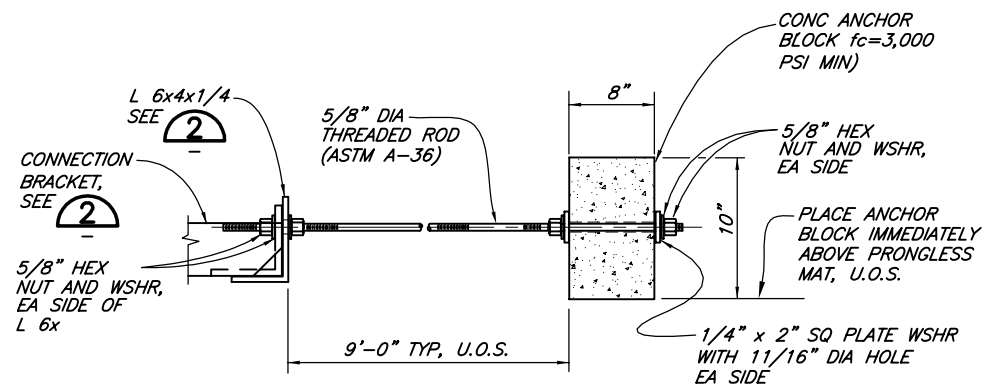


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SHEET <b>3</b> OF 5 DATE <u>10/26/18</u>		PROJECT NO. <u>018213</u>	
IDAHO TRANSPORTATION DEPARTMENT I-15 NORTHGATE IC-PROJ NO. A020(314) POCASTELLO, BANNOCK COUNTY, IDAHO		<h1>SECTIONS &amp; DETAILS</h1>	
DR	<u>MMD</u>	NO.	
CHK	<u>K/JN</u>	DATE	
APVD		REVISION	
<u>△</u>	<u>04/11/19</u>	REMOVE UNDERDRAIN	<u>K/JN</u>
<u>△</u>	<u>04/04/19</u>	PLAN CHECK COMMENTS	<u>K/JN</u>
<u>△</u>	<u>01/22/19</u>	REVISED ANCHOR BLOCK	<u>K/JN</u>
			BY
<b>CONSULTING ENGINEERS &amp; GEOLOGISTS, INC.</b> 812 W. WABASH EUREKA, CA 95501 WWW.SHIN-ENG.COM 707-441-8855			BAR IS ONE INCH ON ORIGINAL DRAWING IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY 0" 1"





E.R.S.

## HILFIKER RETAINING WALLS

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SHEET <b>4</b> OF 5 DATE <u>10/26/18</u> PROJ. NO. <u>0182113</u>						<p align="center"><b>DETAILS</b></p> <p>I-15, NORTHGATE IC--PROJ NO. A020(314)          POCATELLO, BANNOCK COUNTY, IDAHO</p>						<div style="display: flex; justify-content: space-between;"> <div>             DR <u>K/JW</u>              CHK <u>NMD</u>              APVD <u>K/JW</u> </div> <div>   <b>NO.</b> </div> <div> <b>DATE</b>  <u>01/22/19</u> </div> <div> <b>REVISION</b>  <u>REVISED ANCHOR BLOCK</u> </div> <div> <b>BY</b>  <u>K/JW</u> </div> </div>												<p align="center"> <b>CONSULTING ENGINEERS &amp; GEOLOGISTS, INC.</b>              812 W. WABASH              EUREKA, CA 95501  <a href="http://WWW.SH-N-ENGR.COM">WWW.SH-N-ENGR.COM</a>              707-441-8855           </p>						<p> <small>               BAR IS ONE INCH ON ORIGINAL DRAWING                IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY             </small> </p>					
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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.

INSTALL CONTINUOUS FILTER FABRIC AND HOG-RING TO THE TOP WIRE ON THE BACKING 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

HOOKE 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.

PLACE AND COMPACT THE BACKFILL TO THE BASE ELEVATION OF THE NEXT MAT.

REPEAT STEPS 3 THRU 5 TO THE TOP LIFT.

## STEP 6: TOP LIFT

PLACE THE TOP LIFT PRONGLESS MAT, BACKING MAT AND FILTER FABRIC. INSTALL ANCHOR BLOCKS AND THREADED RODS.

PLACE AND COMPACT BACKFILL IN AREA "A"

HOOKE THE CAP OVER THE MIDDLE TRANSVERSE WIRE ON THE PRONGLESS MAT, AND ROTATE INTO PLACE.

BACKFILL "B" TO 2'-0" MINIMUM COVER OVER THE CAP.

## STEP 7

WAIT FOR SETTLEMENT PERIOD (PER CONTRACT SPECIFICATIONS) AND THEN POUR CIP LEVELING PAD TO ELEVATION SHOWN. INSTALL PCC FACING PANELS TO CIP PAD AND THREADED RODS FROM ANCHOR BLOCKS. PLACE CLOSURE MAT WITH BACKING MAT AND FILTER FABRIC.

## STEP 8

BACKFILL AT TOE TO FINAL GRADE.

PLACE AND COMPACT BACKFILL AT CLOSURE MAT.

FINISH TOP OF WALL PER PROJECT PLANS.

## CONSTRUCTION SEQUENCE

NO SCALE

## WALL COMPONENTS

NO SCALE

THE DESIGN CONTAINED ON THESE DRAWINGS IS BASED ON INFORMATION PROVIDED BY THE OWNER. ON THE BASIS OF THIS INFORMATION, THE HILFIKER COMPANY HAS DESIGNED, AND IS RESPONSIBLE FOR THE INTERNAL STABILITY OF THE STRUCTURE ONLY. EXTERNAL STABILITY, INCLUDING FOUNDATION AND SLOPE STABILITY, IS THE RESPONSIBILITY OF THE OWNER.



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BY	K/JN	REVISION
DATE	01/22/19	REVISED ANCHOR BLOCK
NO.	1	NO.
DSGN	K/JN	DR
CHK	MMD	APVD
DEPARTMENT	IDAHO TRANSPORTATION DEPARTMENT	PROJECT NO.
PROJECT NO.	1-15 NORTHGATE IC-PROJ NO. A020(314)	POCATELLO, BANNOCK COUNTY, IDAHO
WALL COMPONENTS AND CONSTRUCTION SEQUENCE		
SHEET	5	OF 5
DATE	10/26/18	PROJ. NO.
	018213	