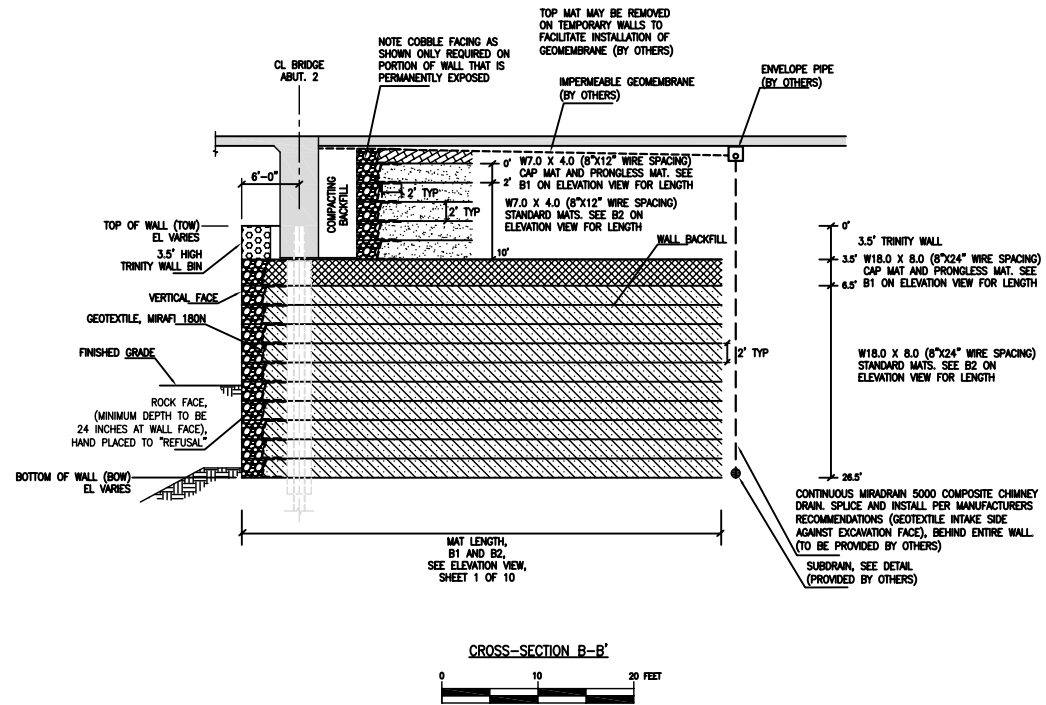
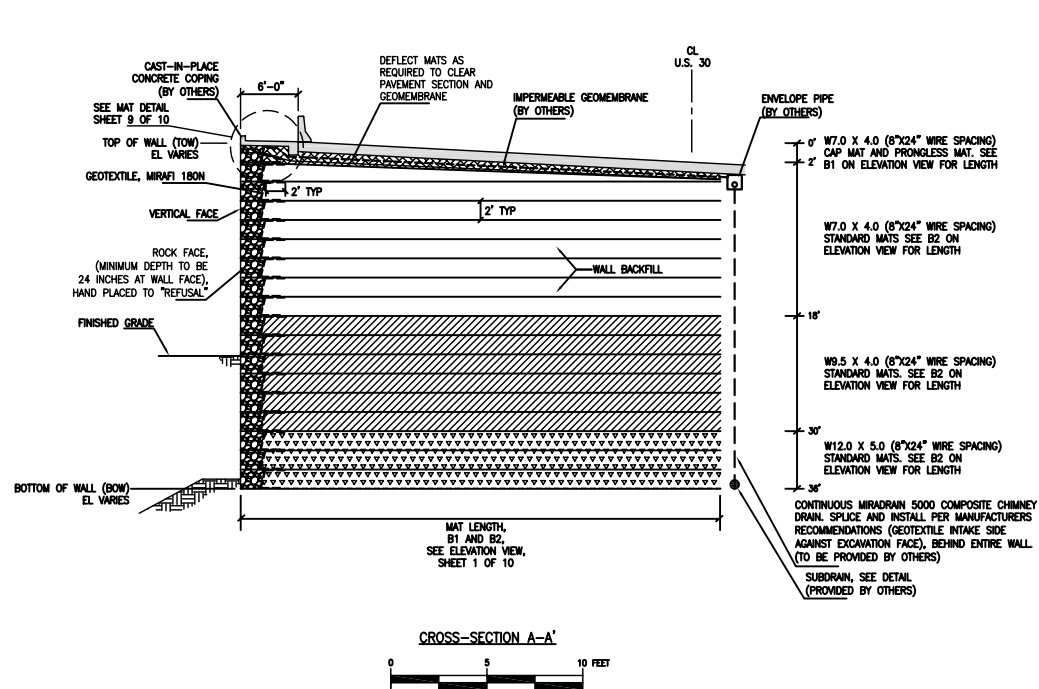


REFERENCES:
HDR ENGINEERING, PROJ. FILE: A009(898), DATED JUNE 2008
PLANS AND ELEVATIONS: SHEETS 16 OF 36, 11 OF 25, 1 OF 3, 1 OF 5, AND 1 OF 6
CROSS-SECTIONS: SHEETS 17 OF 36, 18 OF 36, AND 11 OF 25
PILE LOCATIONS: 7 OF 25 AND 8 OF 36
GEOMEMBRANE LOCATION: SHEET 5 OF 5

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HRW NO: 090127AW

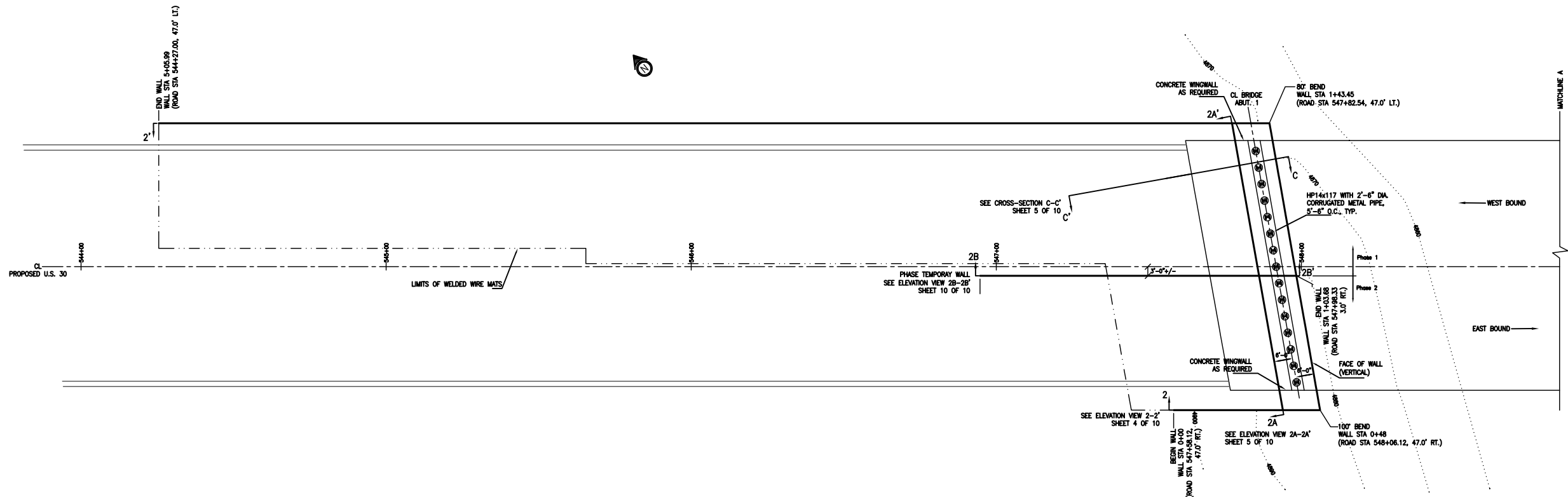


HILFIKER RETAINING WALLS
 e Eureka, CA Phone 707/443-5093 Fax 707/443-2891
 DESIGNED BY: BAD
 DRAWN BY: LAJ
 CHKD. BY: JB
 APPR. BY: JB
 GEOTECHNICAL DESIGN SYSTEMS INC.
 805 E 4800 S, Ste. 140, Salt Lake City, Utah 84107
 (801)262-1942 phone/262-1943 fax

REV. NO.	DATE	BY	DESCRIPTION
1	6-18-09	BD	Revise drawings per review comments by Terracon (5-15-09) & HDR-Parametrix (5-14-09)
DATE:	Apr 23, 2009		
CURRENT DATE:	June 18, 2009		

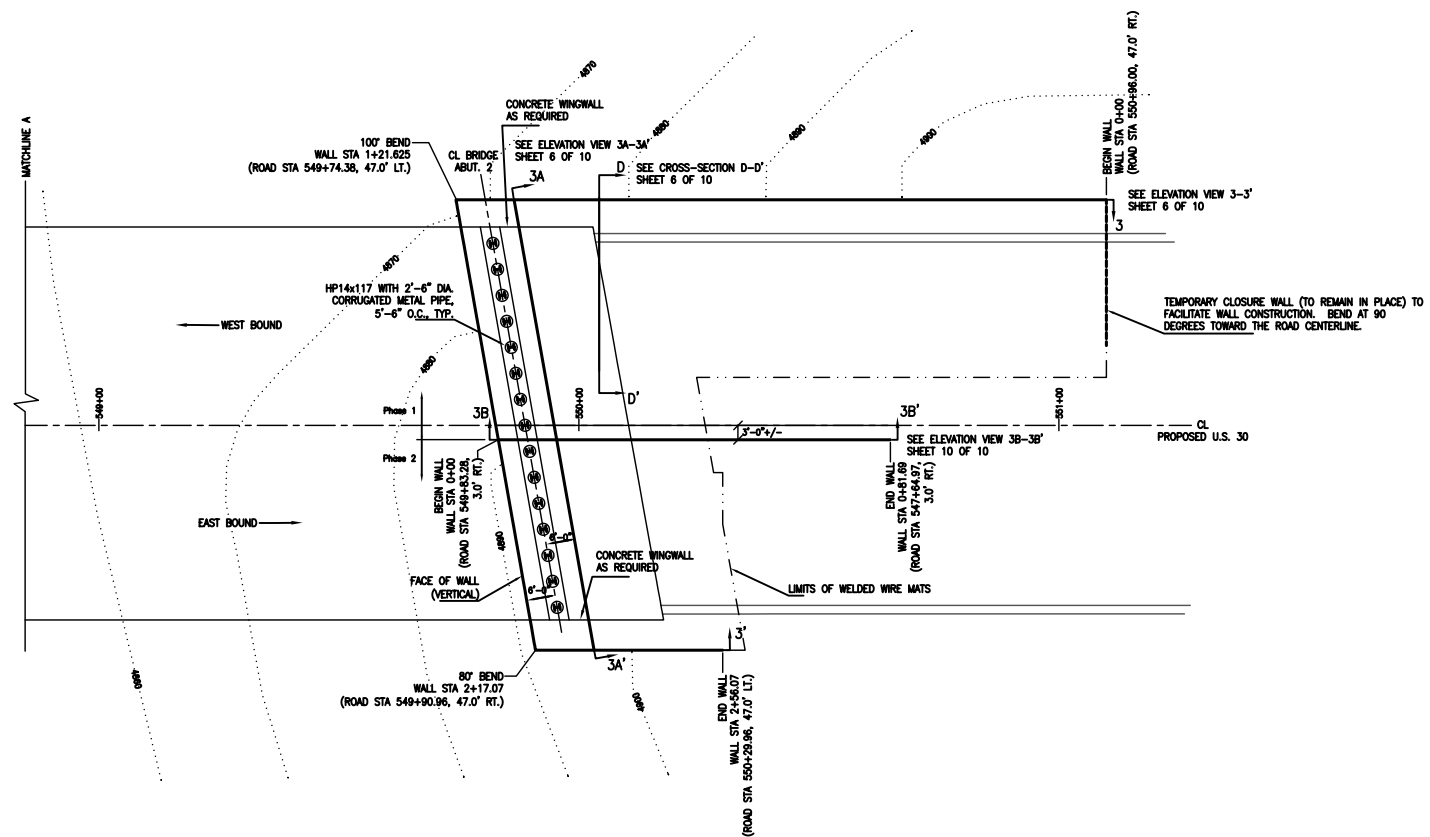
BRIDGE 1 - CROSS-SECTIONS A-A' AND B-B'
 Permanent Welded Wire Walls
 U.S. 30 over Portneuf River
 Bannock County, Idaho

PROJECT NO:
 09-03-20
 SHEET NO:
 2 of 10



PLAN VIEW - BRIDGE 2

0 20 40 FEET



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HRW NO: 090127AW



HILFIKER RETAINING WALLS
 eureka, CA Phone 707/443-5093 Fax 707/443-2891

DESIGNED BY: **BAD**
 DRAWN BY: **LAJ**
 CHKD. BY: **JB**
 APPR. BY: **JB**

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 805 E 4800 S, Ste. 140, Salt Lake City, Utah 84107
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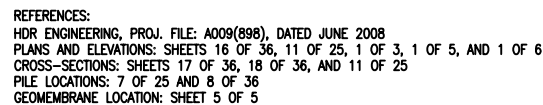
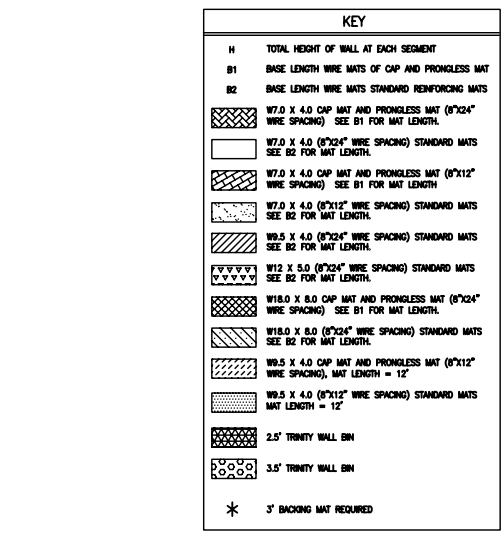
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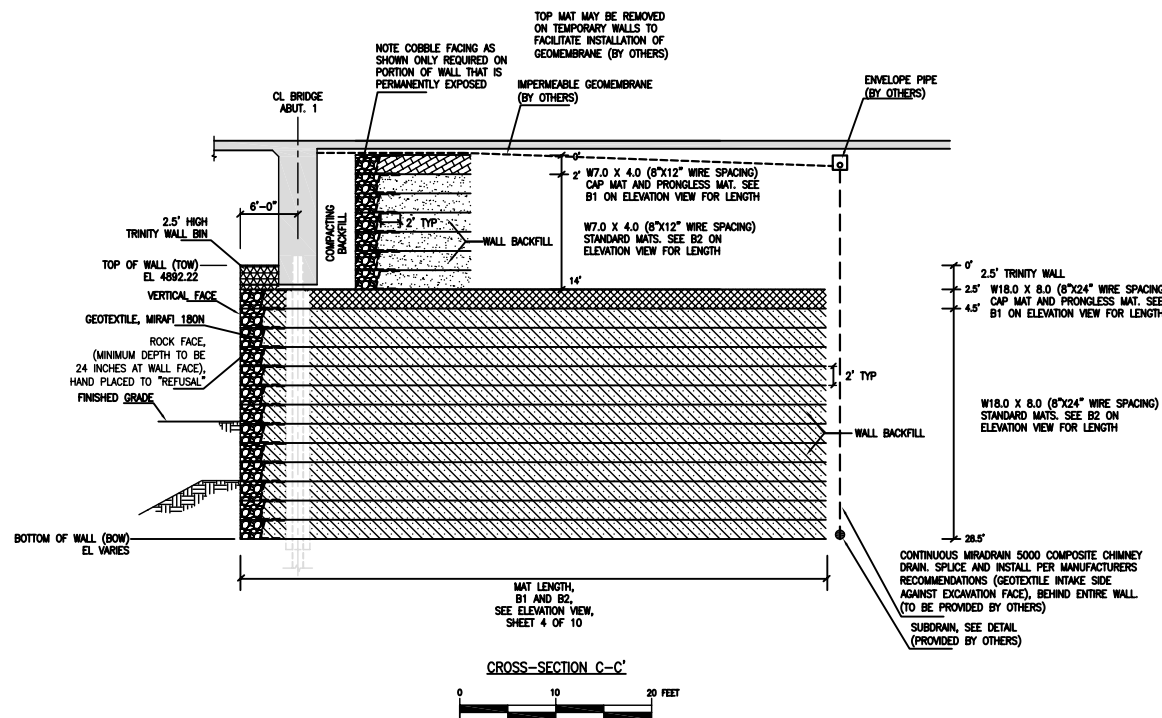
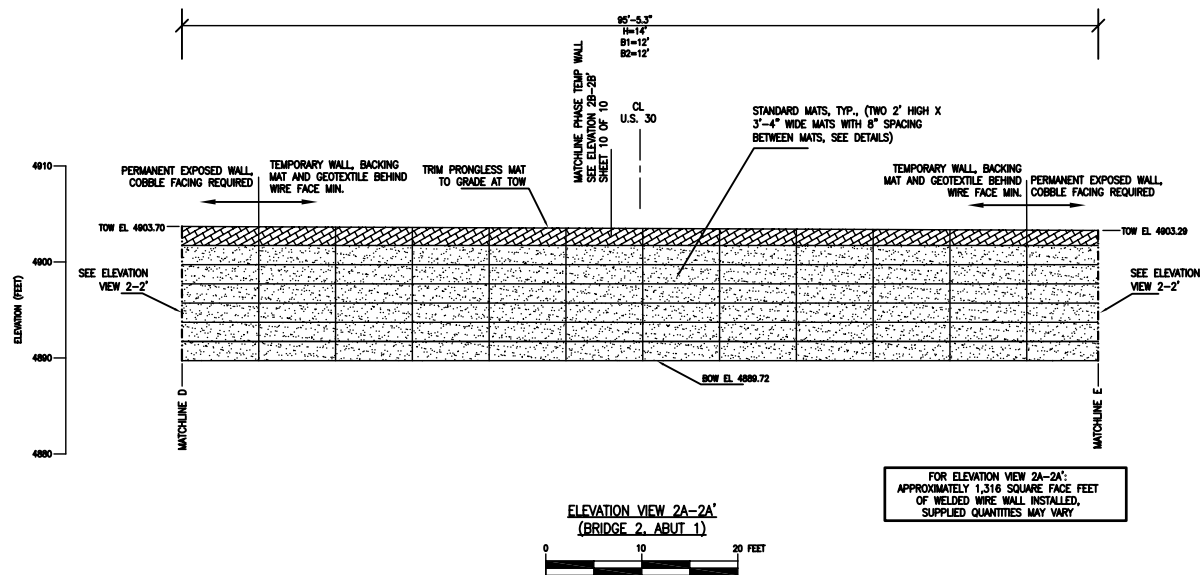
BRIDGE 2 - PLAN VIEWS
Permanent Welded Wire Walls
U.S. 30 over Portneuf River
Bannock County, Idaho

PROJECT NO:
09-03-20

SHEET NO:
3 of 10



HRW NO: 090127AW



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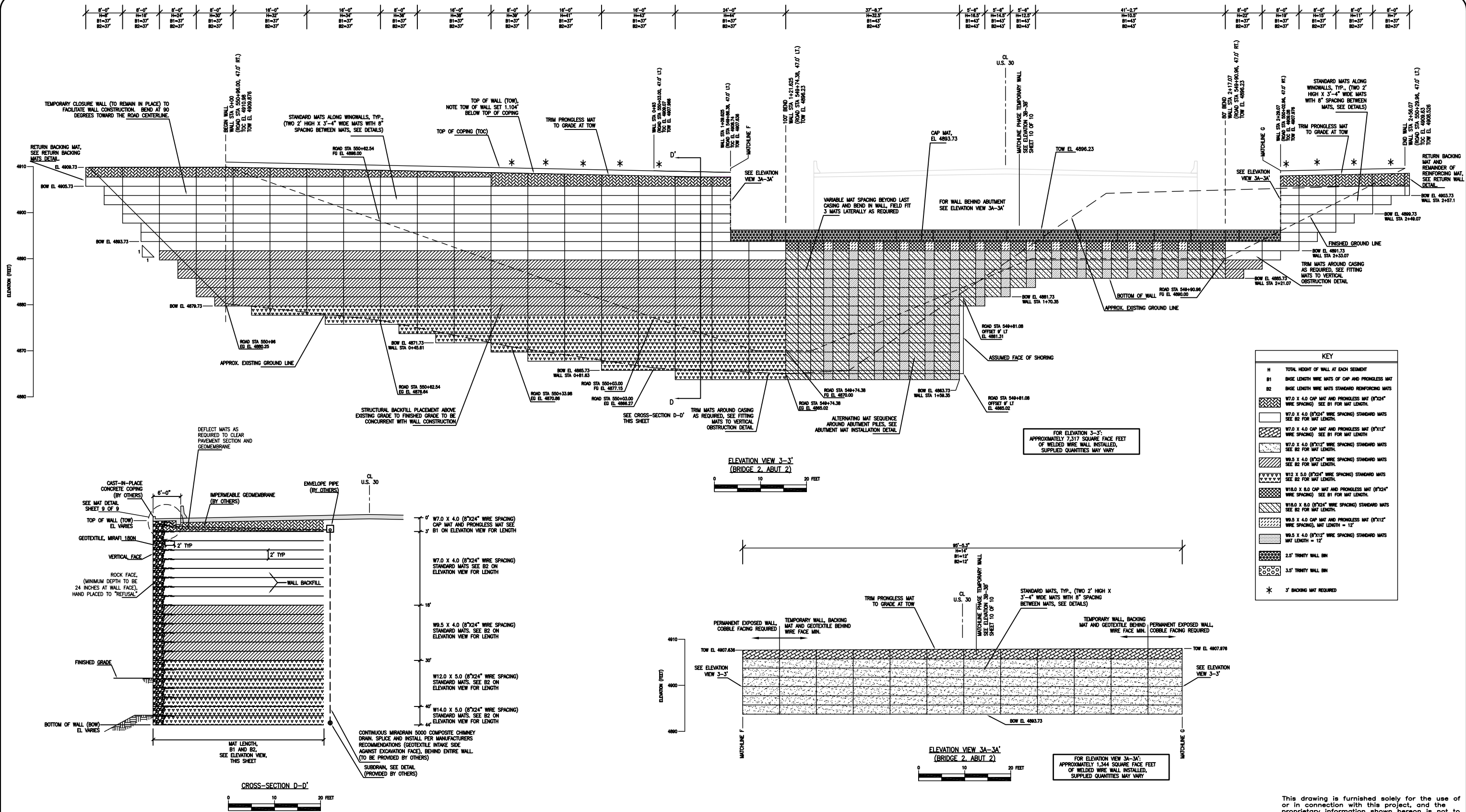
HILFIKER RETAINING WALLS
e Eureka, CA Phone 707/443-5093 Fax 707/443-2891
DESIGNED BY: BAD
DRAWN BY: LAJ
CHKD. BY: JB
APPR. BY: JB

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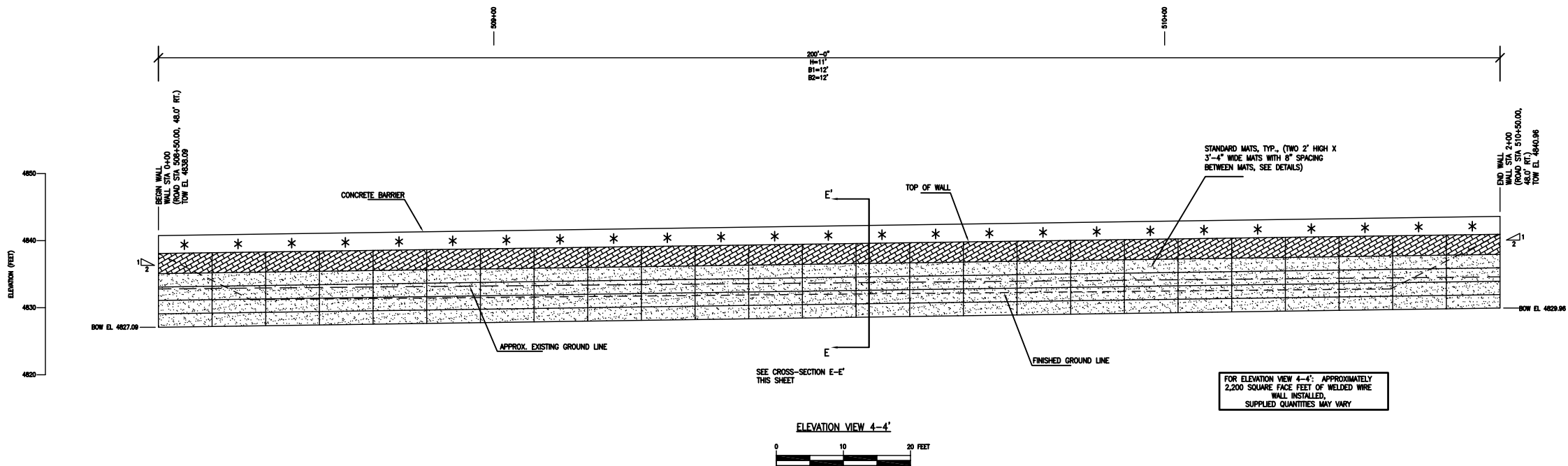
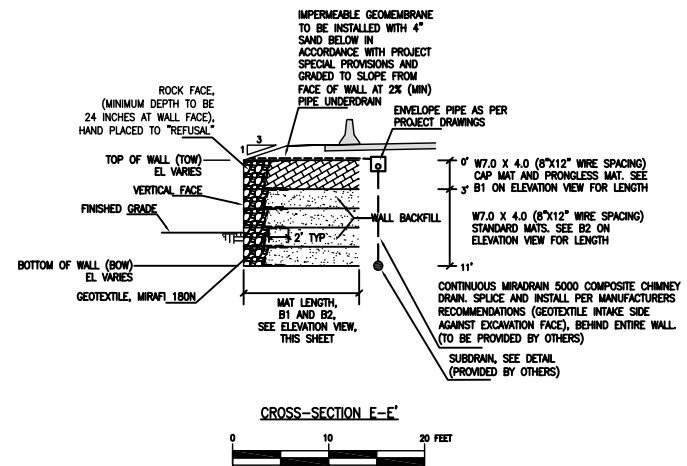
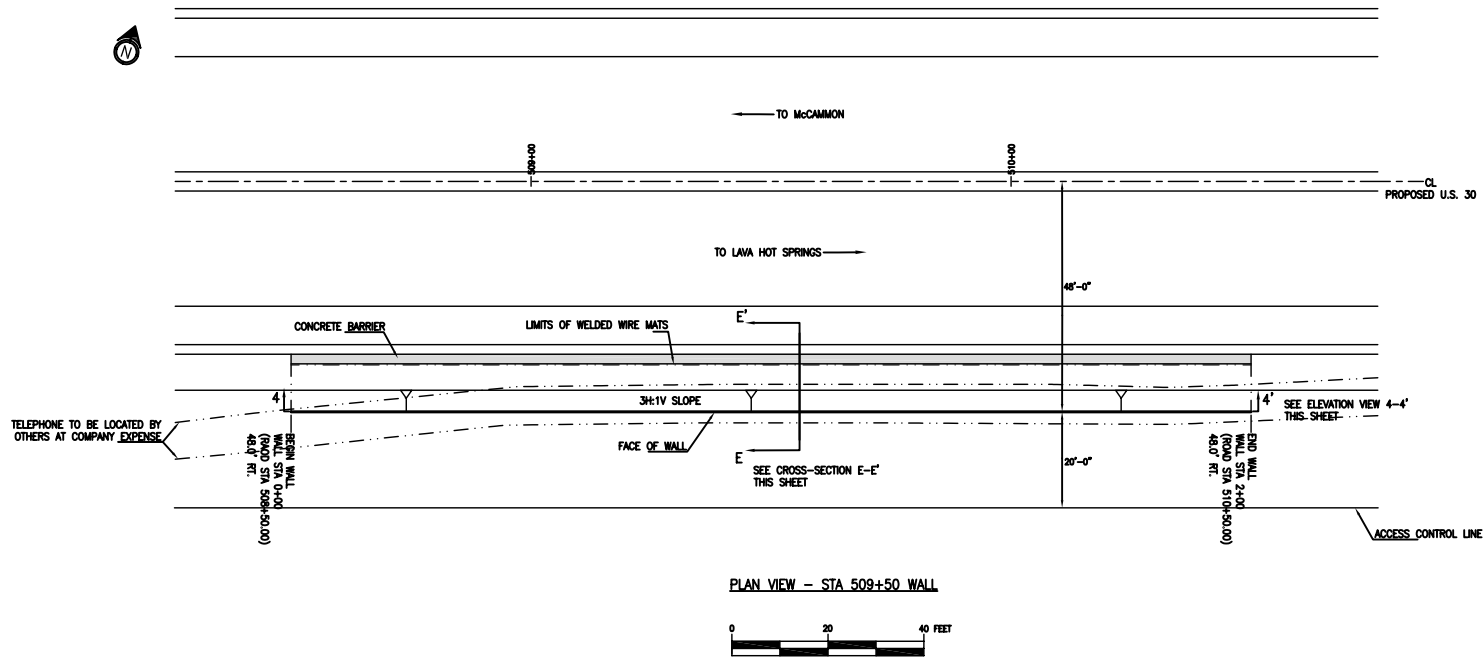
BRIDGE 2 - ELEVATION VIEW 2A-2A' AND CROSS-SECTION C-C'
Permanent Welded Wire Walls
U.S. 30 over Portneuf River
Bannock County, Idaho

PROJECT NO:
09-03-20
SHEET NO:
5 of 10



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 PILE LOCATIONS: 7 OF 25 AND 8 OF 36
 GEOMEMBRANE LOCATION: SHEET 5 OF 5

KEY	
H	TOTAL HEIGHT OF WALL AT EACH SEGMENT
B1	BASE LENGTH WIRE MATS OF CAP AND PRONGLESS MAT
B2	BASE LENGTH WIRE MATS STANDARD REINFORCING MATS
	W7.0 X 4.0 CAP MAT AND PRONGLESS MAT (8"x12" WIRE SPACING) SEE B1 FOR MAT LENGTH
	W7.0 X 4.0 (8"x12" WIRE SPACING) STANDARD MATS SEE B2 FOR MAT LENGTH
*	3' BACKING MAT REQUIRED



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HILFIKER RETAINING WALLS
e Eureka, CA Phone 707/443-5093 Fax 707/443-2891
DESIGNED BY: **BAD**
DRAWN BY: **LAJ**
CHKD. BY: **JB**
APPR. BY: **JB**

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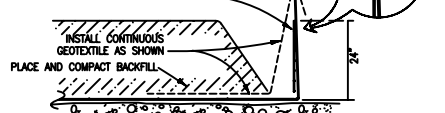
Sta 509+50 WALL, PLAN VIEW, CROSS-SECTION D-D' AND ELEVATION VIEW 4-4'
Permanent Welded Wire Walls
U.S. 30 over Portneuf River
Bannock County, Idaho

PROJECT NO:
09-03-20
SHEET NO:
7 of 10

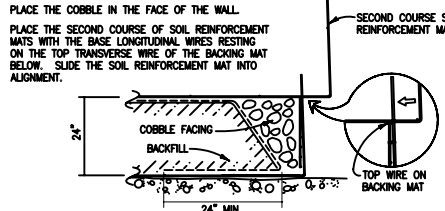
STEP 1
PLACE THE FIRST COURSE OF SOIL REINFORCEMENT MATS ON PREPARED FOUNDATION.



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.



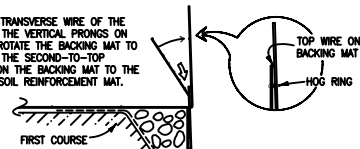
STEP 3
BRING THE GEOTEXTILE OVER THE FRONT AND TOP OF THE BACKFILL AS SHOWN.
PLACE THE COBBLE IN THE FACE OF THE WALL.
PLACE THE SECOND COURSE OF SOIL REINFORCEMENT MATS WITH THE BASE LONGITUDINAL WIRES RESTING ON THE TOP TRANSVERSE WIRE OF THE BACKING MAT BELOW. SLIDE THE SOIL REINFORCEMENT MAT INTO ALIGNMENT.



CONSTRUCTION SEQUENCE
NTS

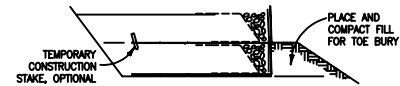
STEP 4

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.



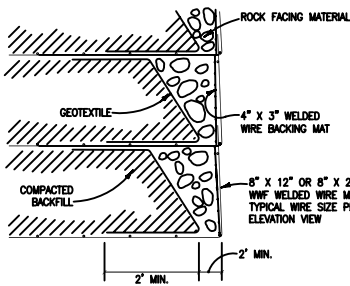
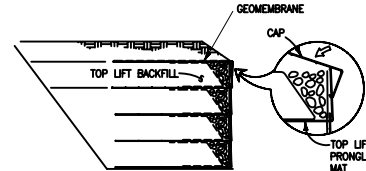
STEP 5

INSTALL THE GEOTEXTILE AS IN STEPS 2 AND 3. PLACE AND COMPACT THE BACKFILL AND ROCK TO THE BASE ELEVATION OF THE NEXT MAT. REPEAT STEPS 2 THRU 5 TO THE TOP LIFT.

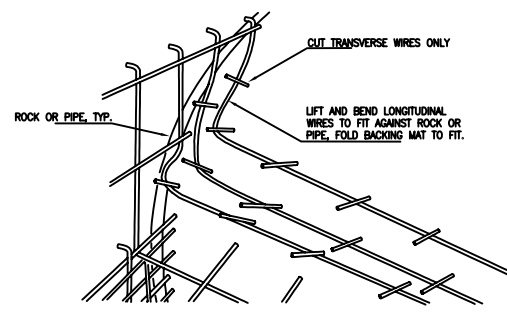


STEP 6: TOP LIFT

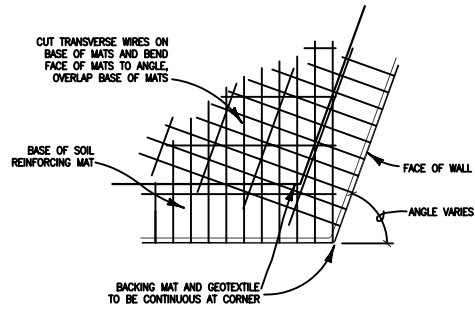
PLACE THE TOP LIFT PRONGLESS MAT, BACKING MAT, AND GEOTEXTILE FABRIC.
PLACE AND COMPACT BACKFILL AND ROCK IN THE TOP LIFT. HOOK THE CAP OVER THE MIDDLE TRANSVERSE WIRE ON THE PRONGLESS MAT, AND ROTATE INTO PLACE. PLACE AND COMPACT COVER, INSTALL GEOMEMBRANE, BACKFILL AND CONSTRUCT PAVEMENTS AS REQUIRED.



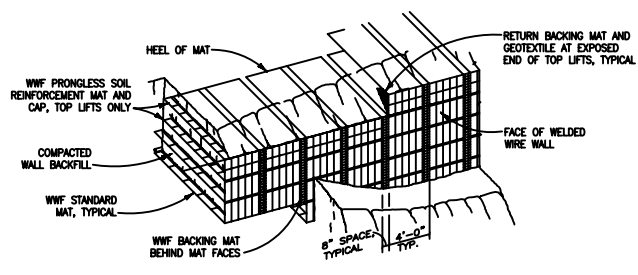
ROCK FACE DETAIL
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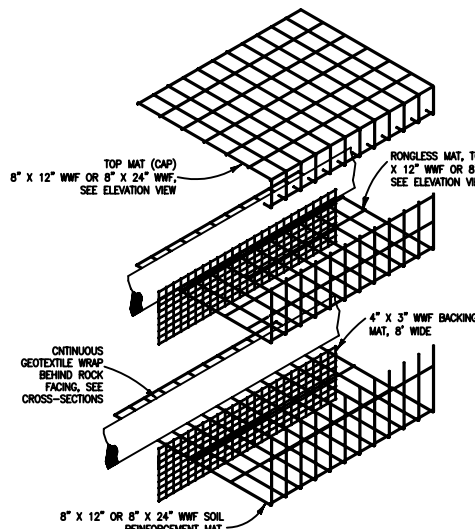
FITTING MATS TO OBSTRUCTION
NTS



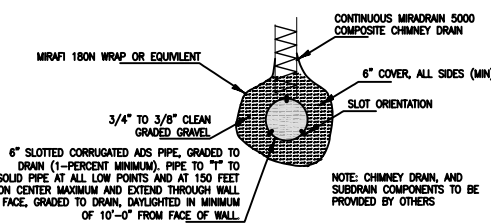
CONVEX ANGLE DETAIL
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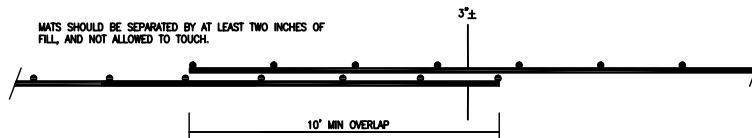
PICTORIAL ELEVATION
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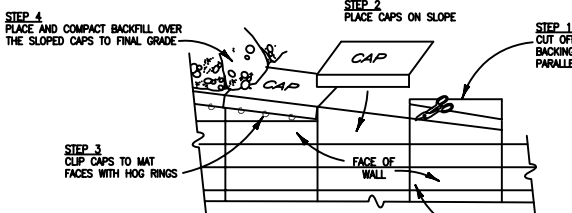
WALL COMPONENTS
NTS



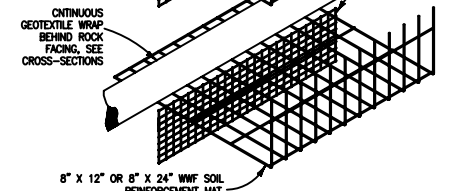
SUBDRAIN DETAIL
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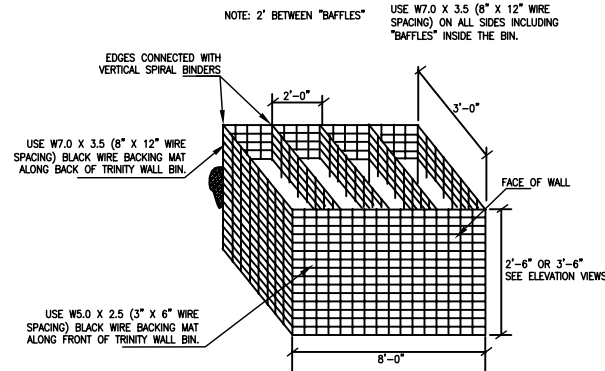
WELDED WIRE WALL - MAT SPlice
NTS



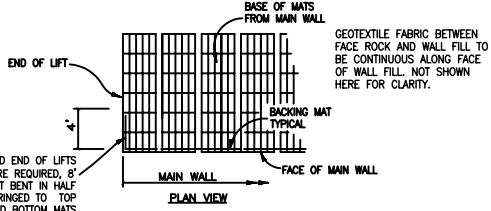
SLOPED CAP MAT DETAIL
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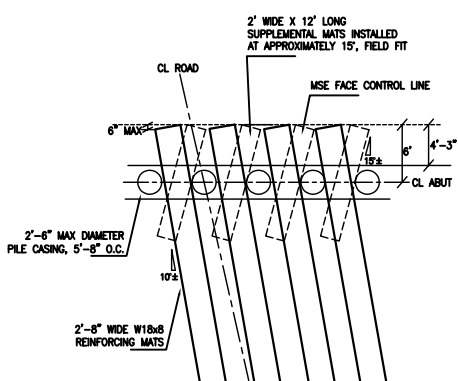
FITTING MATS TO VERTICAL OBSTRUCTIONS
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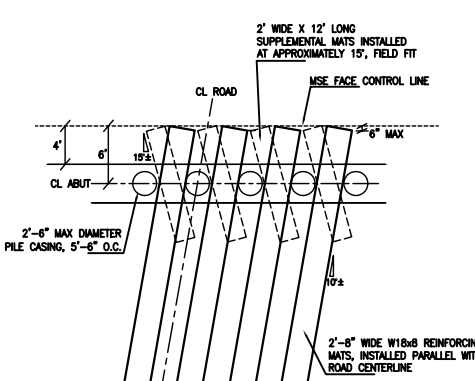
TRINITY WALL BIN DETAIL
NTS



RETURN BACKING MATS DETAIL
NTS



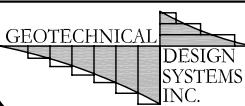
ABUTMENT MAT INSTALLATION DETAIL
(BRIDGE NO. 1 ABUTMENT 2)
NTS



ABUTMENT MAT INSTALLATION DETAIL
(BRIDGE NO. 2 ABUTMENT 1 & 2)
NTS

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HRW NO: 090127AW



HILFIKER RETAINING WALLS
e Eureka, CA Phone 707/443-5093 Fax 707/443-2891
DESIGNED BY: BAD
DRAWN BY: LAJ
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CONSTRUCTION DETAILS
Permanent Welded Wire Walls
U.S. 30 over Portneuf River
Bannock County, Idaho

PROJECT NO: 09-03-20
SHEET NO: 8 of 10

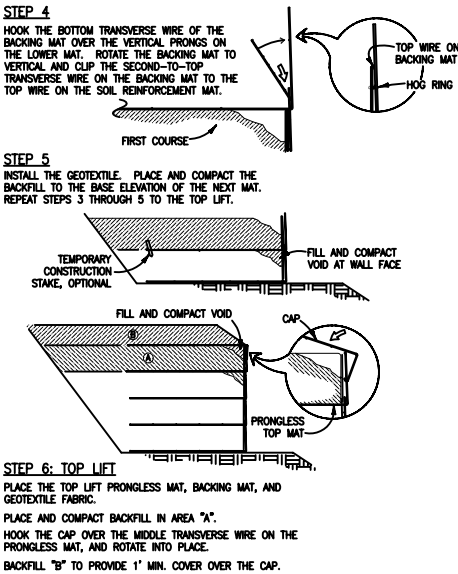
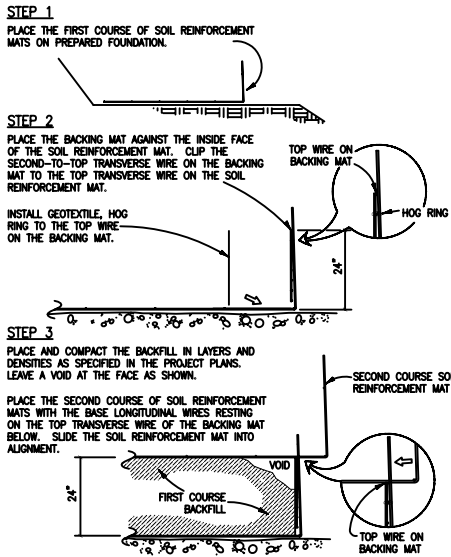
GENERAL NOTES

I. Introduction

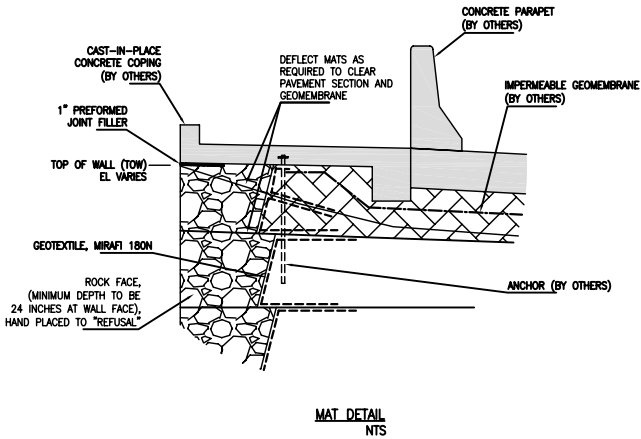
1. The scope of work outlined by these General Notes and Welded Wire Wall Specifications (separate document) , Project Special Provisions, and Project Plans include design and installation specifications for the Hilfiker Welded Wire Wall as shown on these plans.
2. Grades shown herein as well as Welded Wire Wall layout and beginning and ending stations are approximate. Field conditions (both topography and geotechnical conditions exposed during construction) must be considered in determining final design configurations for construction. Conflicts between these plans and other project plans shall be resolved by Geotechnical Design Systems Inc. (GDSI), whose decision shall be final.
3. Existing and proposed utilities to be verified in field by the General Contractor. Conflicts that arise shall be resolved by Geotechnical Design Systems of Salt Lake City, Utah, whose decision shall be final.

II. Welded Wire Walls

1. The work for this portion of the project shall consist of the construction of Welded Wire Walls to the lines, grades, details, and dimensions shown in these project plans and with the specifications provided for the project, as well as in conformance with all other project plans and specifications. Conflicts that arise shall be resolved by Geotechnical Design Systems of Salt Lake City, Utah, whose decision shall be final.
2. The contractor shall purchase all Welded Wire Wall materials including wire mesh reinforcing mats, and backing materials from Hilfiker Retaining Walls, 1902 Hilfiker Lane, Eureka, California, 95503, 707-443-5093. All wire reinforcing for the project shall consist of non-galvanized "black" wire.
3. All Welded Wire Wall installation shall be in accordance with the installation guide as manufactured by Hilfiker Retaining Walls, and these plans. Conflicts that arise shall be resolved by Geotechnical Design Systems of Salt Lake City, Utah, whose decision shall be final. No warranty is expressed or implied, only that the design was prepared in general accordance with the design principles and practices in use at the time this work was performed. Changes to the design or layout shall only be made with express written permission of Geotechnical Design Systems Inc.
4. Contractor is responsible for determining exact location of welded wire walls in accordance with the intent of these plans and the overall project objectives.
5. Soils used as Wall Backfill shall be a well graded, non-organic granular soil meeting all Welded Wire Wall Specifications and Project Special Provisions, and having the following gradation: 100% by weight passing the 4-inch sieve, 0% to 60% by weight passing the No 40 sieve, and 0 to 15% by weight passing the No. 200 sieve. The material shall have a Plasticity Index less than 6 and meet electrochemical properties indicated in Welded Wire Wall Specifications, and Project Special Provisions. Gradations and material properties of candidate backfill materials proposed for use may be submitted to Geotechnical Design Systems for review and approval. Backfill not conforming to these specifications shall not be used without express, written permission of Geotechnical Design Systems. Wall Backfill shall be compacted to 95% of the maximum dry density, as determined by AASHTO-T-100 compaction criteria. This exceeds the compaction requirement of 95 percent of the maximum dry density as determined by AASHTO-T99 criteria indicated in the Project Special Provisions. Maximum fill thickness shall be 8 inches and shall be reduced, if necessary, to obtain specified density. Refer to Welded Wire Wall Specifications and Project Special Provisions.
6. Wall Face Rock shall consist of a 7-inch minus clean rock gravel with 70 to 100 percent passing the 6-inch sieve and 0 to 2 percent passing the 4-inch sieve. This is slightly more restrictive than Project Special Provisions. The material shall consist of durable, angular rock, and shall also comply with all requirements outlined in Welded Wire Wall Specifications, and Project Special Provisions unless noted otherwise. Friable or fractured rock shall not be used. Wall Facing Rock is to be hand rodged to "refusal" in accordance with standard construction guidelines of Hilfiker Retaining Walls.
7. Wall Design life is 75 years.
8. The surface of all walls, during and after construction, shall be graded to drain. No ponding or uncontrolled flowing water shall be allowed on or around any walls, at any time.
9. Contractor to provide fall protection for workers and equipment during construction in compliance with OSHA and any other applicable requirements. Owner shall also provide and maintain permanent fall protection as required by applicable building codes.
10. The wall subgrade shall be properly prepared in accordance with Project Special Provisions with review by Project Geotechnical Engineer. As a minimum, the subgrade shall be proofrolled by passing a heavy steel drum roller over the surface at least 4 times in accordance with Welded Wire Wall specifications. All loose or disturbed soil, organic material, trash, disturbed or generally deleterious materials or unsuitable soils shall be removed. If soft or moist conditions are encountered, the Project Geotechnical Engineer shall provide appropriate recommendations with review by GDSI.
11. Expected settlement of Bridge No 2 walls as estimated by stone column designer is approximately 12 inches total and 6 inches differential. Although the welded wire wall materials incorporate a slip face, some distortion of the wall should be anticipated.
12. Wall contractor to keep accurate records of wall construction and modifications to provide necessary future as-built information.

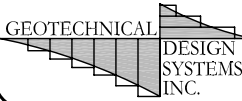


CONSTRUCTION SEQUENCE
(TEMPORARY WALLS ONLY)
NTS



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HRW NO: 090127AW



HW HILFIKER RETAINING WALLS
Eureka, CA Phone 707/443-5093 Fax 707/443-2891

DESIGNED BY: **BAD**
DRAWN BY: **LAJ**
CHKD. BY: **JB**
APPR. BY: **JB**

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(801)262-1942 phone/ 262-1943 fax

REV. NO.	DATE	BY	DESCRIPTION
1	6-18-09	BD	Revise drawings per review comments by Terracon (5-15-09) & HDR-Parametrix (5-14-09)

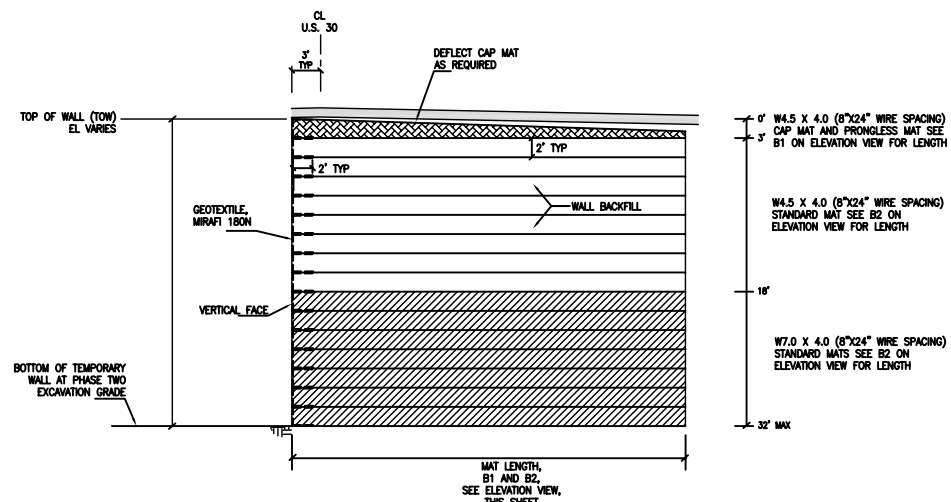
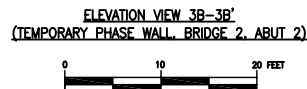
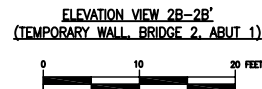
DATE: **Apr 23, 2009**

CURRENT DATE: **June 18, 2009**

GENERAL NOTES AND DETAILS
Permanent Welded Wire Walls
U.S. 30 over Portneuf River
Bannock County, Idaho





PROJECT NO:
09-03-20

SHEET NO:
9 of 10



TYPICAL CROSS-SECTION
TEMPORARY WELDED WIRE WALLS



NOTE: HATCHING PATTERN FOR TEMPORARY WALLS VARIES FROM PERMANENT WALLS	
KEY	
H	TOTAL HEIGHT OF WALL AT EACH SEGMENT
B1	BASE LENGTH WIRE MATS OF CAP AND PROLONGS MAT
B2	BASE LENGTH WIRE MATS STANDARD REINFORCING MATS
	W4.5 X 4.0 CAP AND PROLONGS MAT "6"x24" WIRE SPACING SEE B1 FOR MAT LENGTH.
	W4.5 X 4.0 "6"x24" WIRE SPACING STANDARD MATS SEE B2 FOR MAT LENGTH.
	W7.0 X 4.0 "6"x24" WIRE SPACING STANDARD MATS SEE B2 FOR MAT LENGTH.
	3' BACKING MAT REQUIRED

This drawing is furnished solely for the use of _____ in connection with this project, and the proprietary information shown hereon is not to be transmitted to any other organization without specific authorization by the Hilfiker Company. Hilfiker Retaining Walls are protected by one or more of the following patents: 3,632,682, 4,111,686, 4,268,686, 4,329,089, 4,324,088, 3,335,572, 3,391,557, 4,505,621, 4,616,959, 4,643,618, 4,681,023, 4,856,939, 5,173,072 and others pending.

HRW NO: 090127AW



HW **HILFIKER RETAINING WALLS**
Eureka, CA Phone 707/443-5093 Fax 707/443-2891

DESIGNED BY:
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DESIGN BY: BAD	DATE: Apr 23, 2009
DRAWN BY: LAJ	
CHKD. BY: JB	CURRENT DATE: June 18, 2009
APPR. BY: JB	

DATE:	Apr 23, 2009
CURRENT DATE:	June 18, 2009

REV. NO.	DATE	BY	DESCRIPTION
1	6-18-09	BD	Revise drawings per review comments by Terracon (5-15-09) & HDR-Parametrix (5-14-09)

ELEVATION VIEWS 1B-1B', 2B-2B' AND 3B-3B' AND TYPICAL CROSS-SECTION
Temporary Welded Wire Walls
U.S. 30 over Portneuf River
Bannock County, Idaho

PROJECT NO:	09-03-20
SHEET NO:	10 of 10