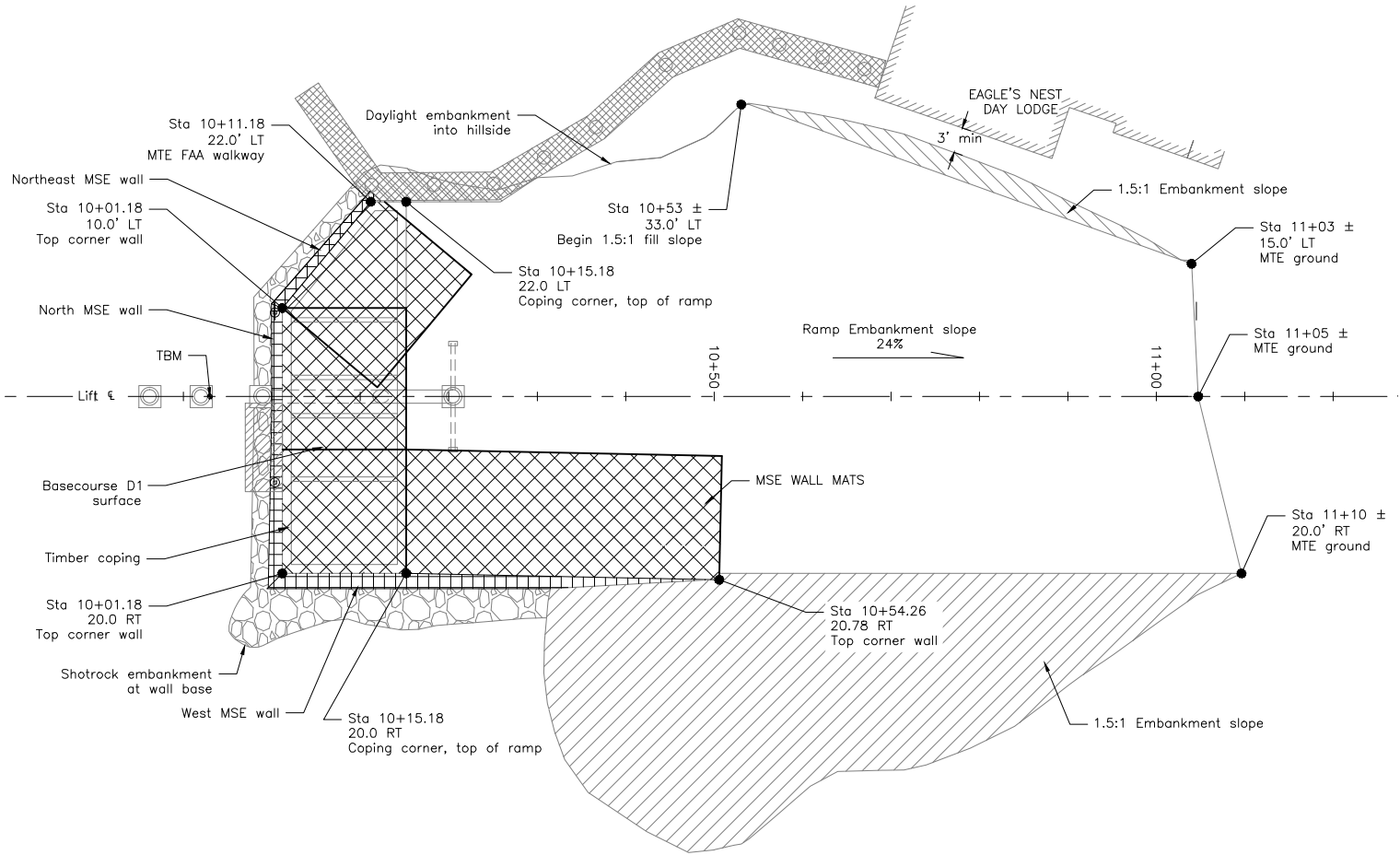


DESIGN NOTES:

1. DESIGN IS BASED ON PROJECT PLANS BY CITY AND BOROUGH OF JUNEAU, EAGLECREST PTARMIGAN LIFT OFF-LOAD RAMP, CONTRACT NO. BEI7-256, DATED APRIL 28, 2017. IT IS ASSUMED THAT BACKFILL WITHIN THE REINFORCED SOIL MASS, METHODS OF CONSTRUCTION AND QUALITY OF MATERIALS CONFORM TO THE REQUIREMENTS OF THE PROJECT PLANS AND HILFIKER RETAINING WALLS.
2. ASSUMED SOIL CHARACTERISTICS (TO BE VERIFIED BY PROJECT ENGINEER):
- WALL BACKFILL:
- UNIT WEIGHT: 120 PCF
- INTERNAL FRICTION ANGLE: 32°
- COHESION: 0 PSF
- RETAINED BACKFILL:
- UNIT WEIGHT: 120 PCF
- INTERNAL FRICTION ANGLE: 32°
- COHESION: 0 PSF
- FOUNDATION SOILS:
- UNIT WEIGHT: 120 PCF
- INTERNAL FRICTION ANGLE: 32°
- COHESION: 0 PSF
3. ASSUMED DESIGN LOADS (TO BE VERIFIED BY PROJECT ENGINEER):
- SEISMIC: MAXIMUM GROUND ACCELERATION COEFFICIENT, A: 0.230 g
- LIVE LOADS: SURCHARGE LOAD=240 PSF
4. WORST CASE FACTORED BEARING PRESSURE (TO BE APPROVED BY PROJECT ENGINEER):
- STATIC 4,440 PSF
- SEISMIC 5,106 PSF
- SERVICE 3,107 PSF
5. IF ACTUAL CHARACTERISTICS, GRADES OR DIMENSIONS OF SOILS DIFFER FROM THOSE LISTED ABOVE OR SHOWN ON THE PLANS, HILFIKER RETAINING WALLS AND PACIFIC AFFILIATES SHALL BE NOTIFIED TO VERIFY WALL DESIGN IS ADEQUATE FOR ACTUAL SOILS CONDITIONS.
6. THE DESIGN REQUIRES A NON-SATURATED BACKFILL AND ASSUMES THE WATER TABLE DOES NOT AFFECT THE BEARING CAPACITY OF THE SOIL. 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 PROJECT ENGINEER.
7. IF THE WALL BACKFILL CONTAINS MORE THAN 50% BY WEIGHT SANDS AND FINES (PASSING THE NO. 4 SIEVE) GRAVEL OR OTHER METHODS AS APPROVED BY THE HILFIKER COMPANY SHALL BE USED TO CONTAIN THE BACKFILL AT THE FACE OF THE WALL.
8. DESIGN PROCEDURE: MECHANICALLY STABILIZED EARTH WALLS AND REINFORCED SOIL SLOPES, FHWA REPORT NO. FHWA-NHI-00-043. 2012 AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS.
9. ALL INFORMATION HEREON IS DERIVED FROM THE PROJECT PLANS, AND IS SUBJECT TO GEOMETRIC AND GEOTECHNICAL CONFIRMATION. THE APPLICABLE HILFIKER CONSTRUCTION GUIDE AND SPECIFICATIONS ARE AN INTEGRAL PART OF THIS SUBMITTAL. PROJECT PLANS: CITY AND BOROUGH OF JUNEAU, EAGLECREST PTARMIGAN LIFT OFF-LOAD RAMP, CONTRACT NO. BEI7-256, DATED APRIL 28, 2017.



PLAN VIEW
SCALE: 1"=10'

FOR PLAN REVIEW ONLY - NOT FOR CONSTRUCTION

REVISIONS	BY
8-15-17 NM	
5-10-18 NM	

PACIFIC AFFILIATES
CONSULTING ENGINEERS
990 W. WATERFRONT DRIVE, EUREKA, CA 95501
TEL (707) 445-3001 • FAX (707) 445-3003



DESIGN NOTES AND WALL PLAN

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MECHANICALLY STABILIZED EARTH WALL FOR:
HILFIKER RETAINING WALLS
EAGLECREST PTARMIGAN LIFT
OFF-LOAD RAMP
JUNEAU, ALASKA
PROJECT NO. HRW 170523CW

Date: July 31, 2017
Scale: As Noted
Drawn by: NM

SHEET NUMBER
S-1

JOB NUMBER
17-2141

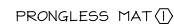
1. ALL MATS SHOWN ARE STANDARD WIDTH (8 FT.) OR HALF WIDTH (4 FT.), WHICH ARE FIELD CUT OUT OF A STANDARD MAT.
2. WALL HEIGHTS ARE BASED ON ASSUMED BEDROCK LOCATION. WHERE BEDROCK IS ENCOUNTERED AT HIGHER ELEVATIONS, BOTTOM OF WALL CAN BE STEPPED UP PROVIDED FOUNDATION STEP IS APPROVED BY GEOTECHNICAL ENGINEER OF RECORD.
3. CAP MAT CAN BE SLOPED DOWN TO ACHIEVE 1'-6" COVER AT BACK OF MAT

① 8x12 - W7.0xW3.5 - B₁ = MAT DEPTH
② 8x10.5 - W7.0xW3.5 - B₂ = MAT DEPTH

NOTES:

1. ALL WIRE TO BE HOT DIPPED GALVANIZED (2.0 OZ/SF, ASTM A-123)
2. DESIGN SERVICE LIFE = 75 YEARS
3. ALL MATS ARE STANDARD EXCEPT AT THE FOLLOWING LOCATIONS:

CAP MAT①



- INTERMEDIATE MATS BETWEEN THE TYPICAL 2 FT INCREMENT ARE TO BE FLAT MATS



SCALE: 1/16"=1'-0"



SCALE: 1/8"=1'-0"

PACIFIC AFFILIATES
CONSULTING ENGINEERS
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WALL ELEVATIONS &
SECTION

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MECHANICALLY STABILIZED EARTH WALL

FOR:
HILFIKER RETAINING WALLS
EAGLECREST PTARMIGAN LIFT

JUNEAU, ALASKA
PROJECT NO. HRW 170523CW

Date:

July 31, 2017

Scale:	Drawn by:
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As Noted	NM
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SHEET NUMBER

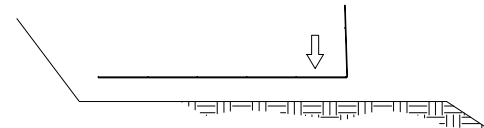
S-2

JOB NUMBER

17-2141

STEP 1

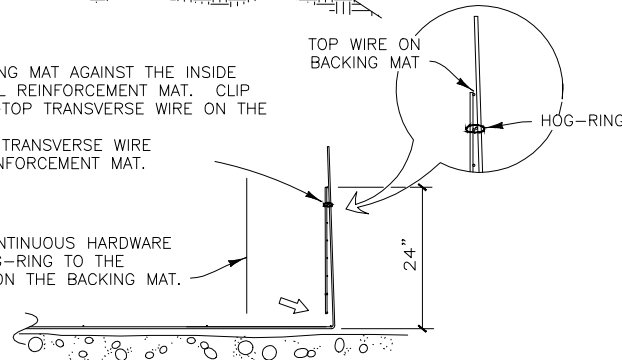
PLACE THE FIRST COURSE OF SOIL REINFORCEMENT MATS ON PREPARED FOUNDATION



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.

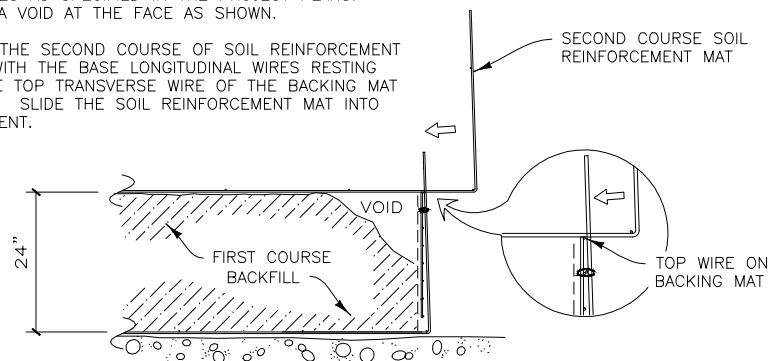
INSTALL CONTINUOUS HARDWARE CLOTH, HOG-RING TO THE TOP WIRE ON THE BACKING MAT.



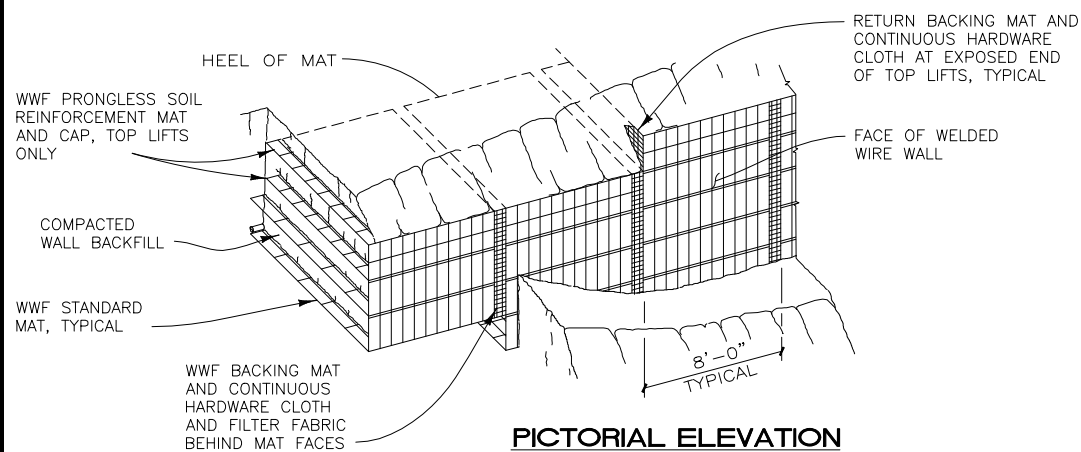
STEP 3

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.



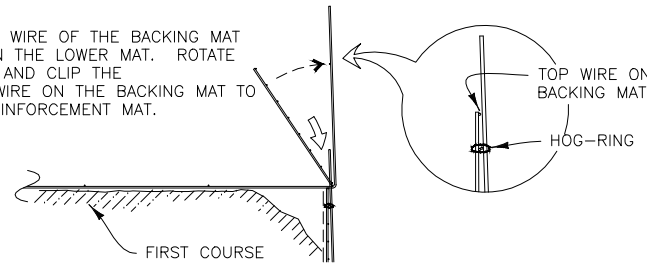
CONSTRUCTION SEQUENCE
NOT TO SCALE



PICTORIAL ELEVATION
NOT TO SCALE

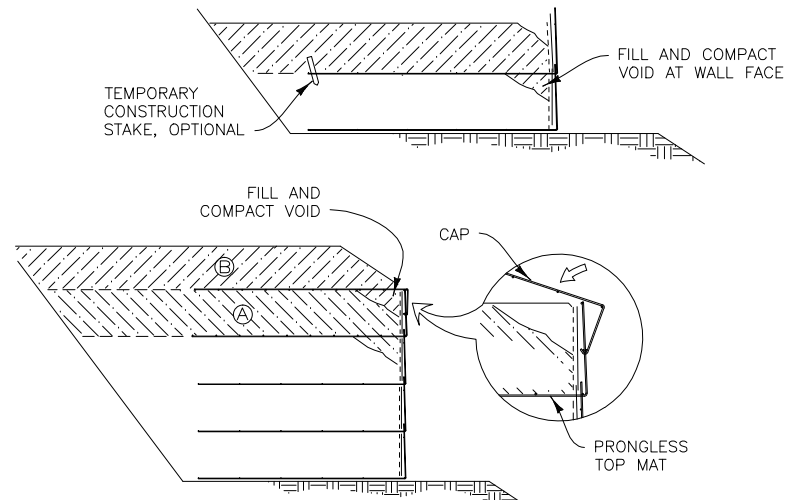
STEP 4

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

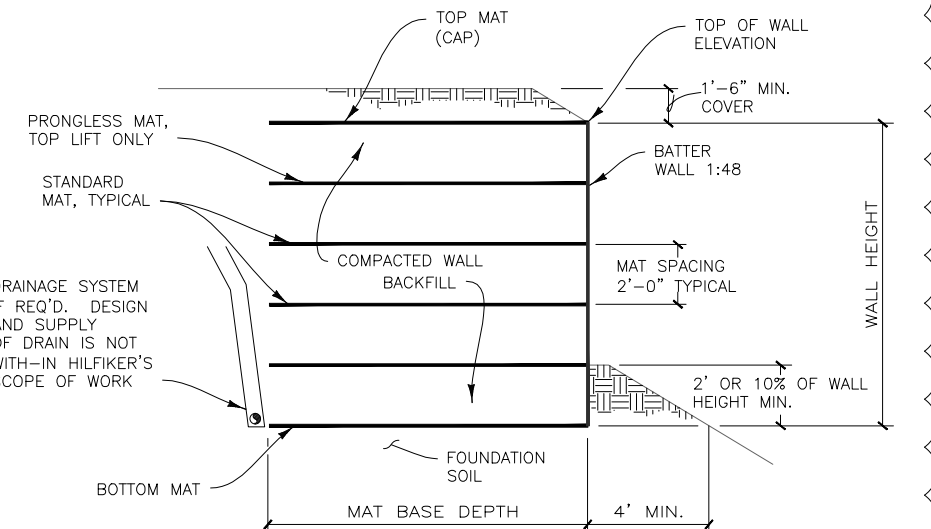
INSTALL THE CONTINUOUS HARDWARE CLOTH. PLACE AND COMPACT THE BACKFILL TO THE BASE ELEVATION OF THE NEXT MAT. REPEAT STEPS 3 THROUGH 5 TO THE TOP LIFT.



STEP 6: TOP LIFT

PLACE THE TOP LIFT PRONGLESS MAT, BACKING MAT AND CONTINUOUS HARDWARE CLOTH. 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.

1



TYPICAL SECTION
NOT TO SCALE

8"x12" WWF SOIL REINFORCEMENT TOP MAT (CAP)

8"x12" WWF PRONGLESS SOIL REINFORCEMENT MAT, TOP LIFT ONLY

4"x3" WWF BACKING MAT, 8' WIDE

CONTINUOUS HARDWARE CLOTH

8"x21" WWF STANDARD SOIL REINFORCEMENT MAT

WALL COMPONENTS
NOT TO SCALE

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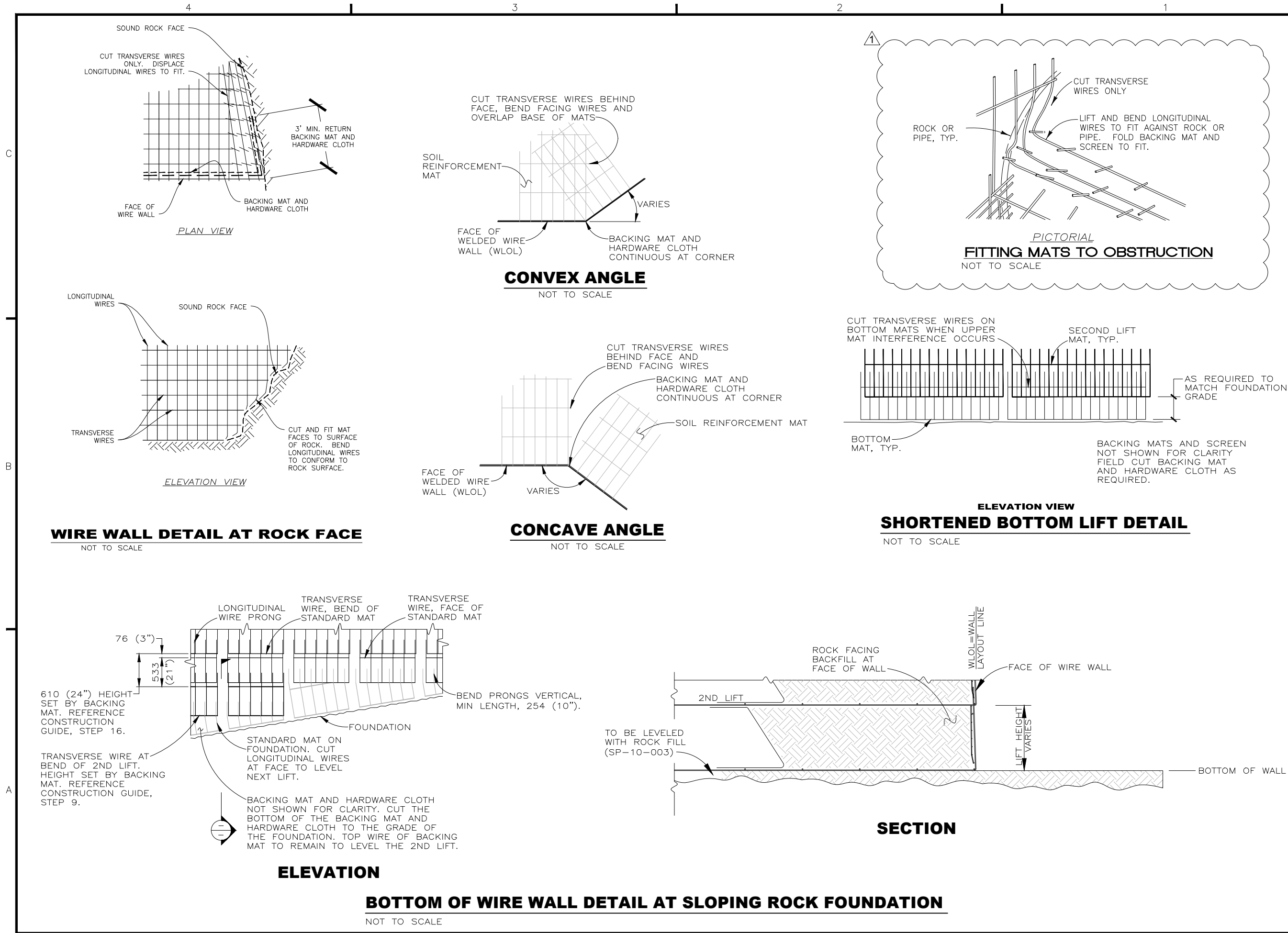
STANDARD HILFIKER
DETAILS

MECHANICALLY STABILIZED
EARTH WALL
FOR:
HILFIKER RETAINING WALLS
EAGLECRIST PTARMIGAN LIFT
OFF-LOAD RAMP
JUNEAU, ALASKA
PROJECT NO. HRW 170523CW

Date:
July 31, 2017
Scale:
As Noted

SHEET NUMBER
S-3


JOB NUMBER
17-2141




FOR PLAN REVIEW ONLY - NOT FOR CONSTRUCTION

REVISIONS	BY
1 8-15-17	NM
2 5-10-18	NM

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STANDARD HILFIKER
DETAILS

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MECHANICALLY STABILIZED
EARTH WALL
FOR:
HILFIKER RETAINING WALLS
EAGLECREST PTARMIGAN LIFT
OFF-LOAD RAMP
JUNEAU, ALASKA
PROJECT NO. HRW 170523CW

Date:
July 31, 2017

Scale:
As Noted

Drawn by:
NM

SHEET NUMBER
S-4

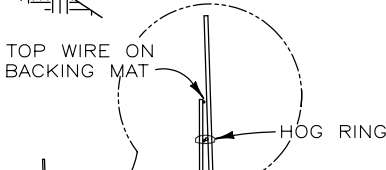
JOB NUMBER
17-2141

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



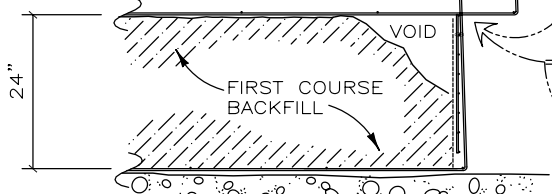
STEP 2
PLACE THE BACKING MAT AGAINST THE INSIDE FACE OF THE SOIL REINFORCEMENT MAT. CLIP THE SECOND-TO-TOP TRANSVERSE WIRE ON THE BACKING MAT TO THE TOP TRANSVERSE WIRE ON THE SOIL REINFORCEMENT MAT.

INSTALL FILTER FABRIC OR CONTINUOUS HARDWARE CLOTH, HOG-RING TO THE TOP WIRE ON THE BACKING MAT.

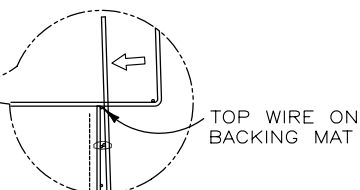


STEP 3
PLACE AND COMPACT THE BACKFILL IN LAYERS AND DENSITIES AS SPECIFIED IN THE PROJECT PLANS. LEAVE A VOID AT THE FACE AS SHOWN.

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.



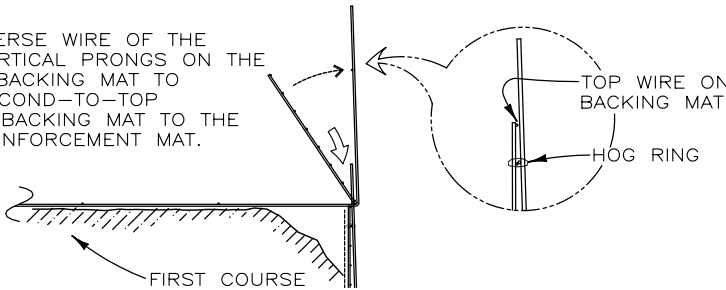
SECOND COURSE SOIL REINFORCEMENT MAT



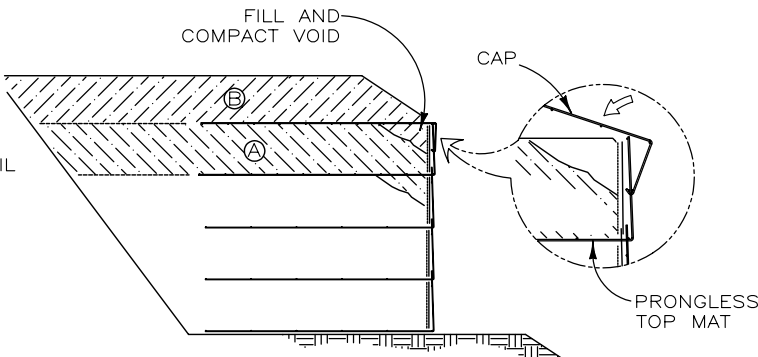
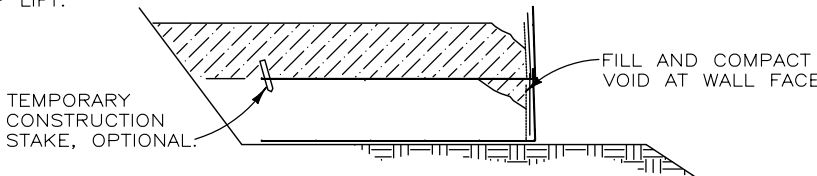
CONSTRUCTION SEQUENCE

NOT TO SCALE

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.

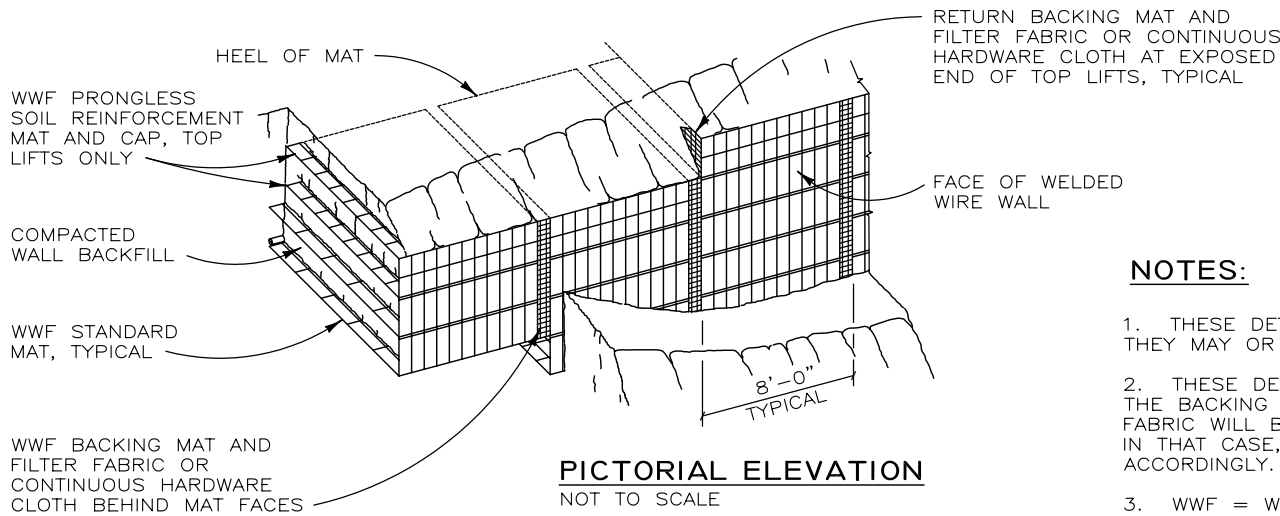


STEP 5
INSTALL THE FILTER FABRIC OR CONTINUOUS HARDWARE CLOTH. PLACE AND COMPACT THE BACKFILL TO THE BASE ELEVATION OF THE NEXT MAT. REPEAT STEPS 3 THROUGH 5 TO THE TOP LIFT.



STEP 6: TOP LIFT

PLACE THE TOP LIFT PRONGLESS MAT, BACKING MAT AND FILTER FABRIC OR CONTINUOUS HARDWARE CLOTH. 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.

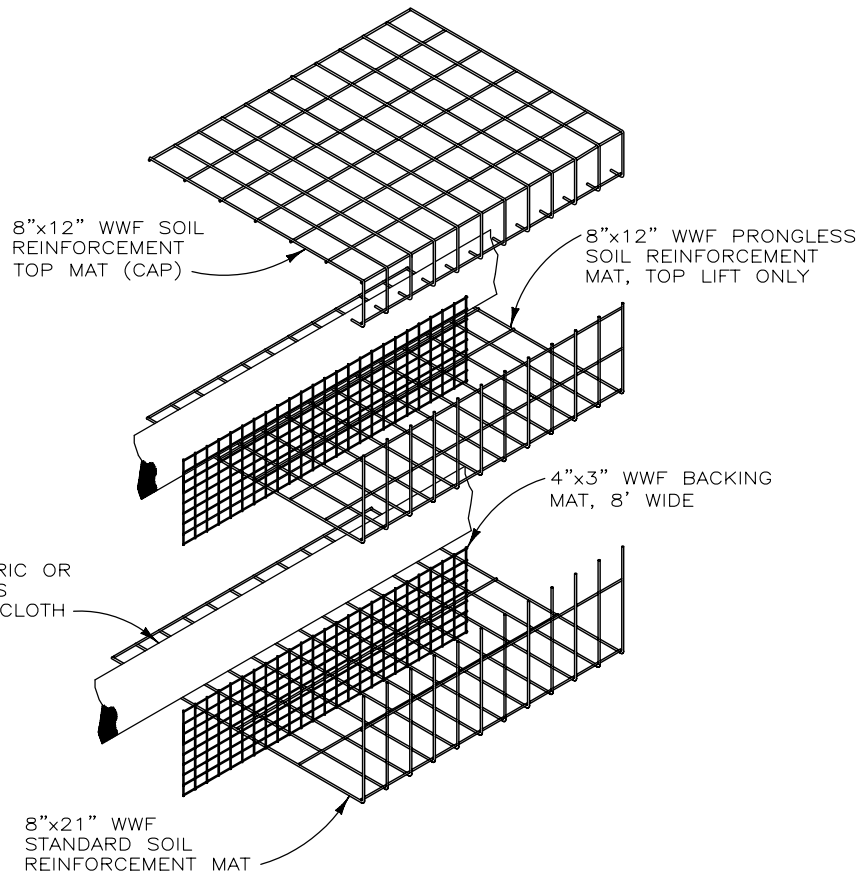


PICTORIAL ELEVATION

NOT TO SCALE

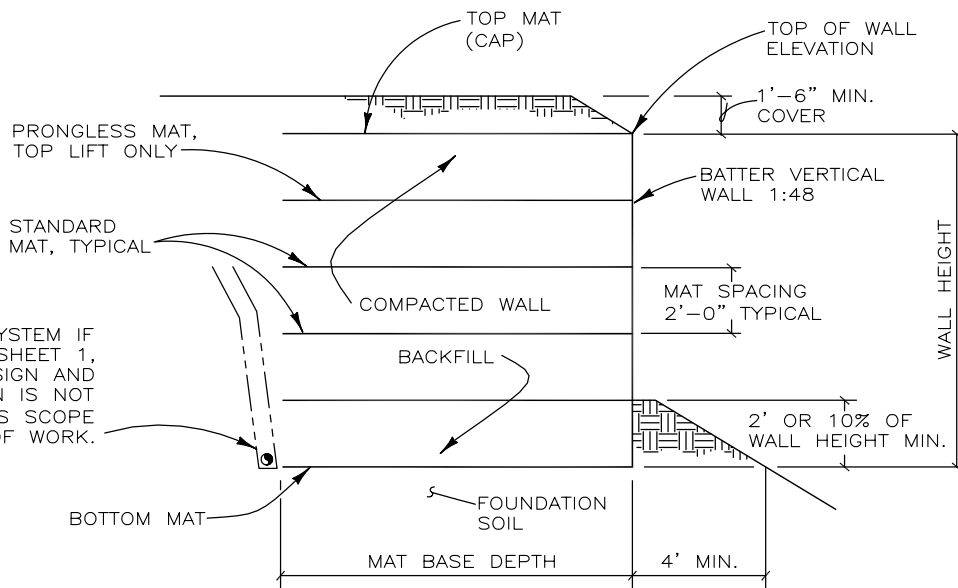
NOTES:

- THESE DETAILS ARE INTENDED FOR INFORMATION ONLY. THEY MAY OR MAY NOT APPLY TO SPECIFIC PROJECTS.
- THESE DETAILS SHOW HARDWARE CLOTH USED BEHIND THE BACKING MATS. IN SOME APPLICATIONS, FILTER FABRIC WILL BE REQUIRED INSTEAD OF HARDWARE CLOTH. IN THAT CASE, THESE DETAILS SHOULD BE REVISED ACCORDINGLY.
- WWF = WELDED WIRE FABRIC



WALL COMPONENTS

NOT TO SCALE

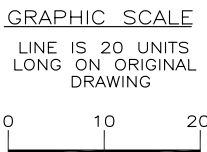


TYPICAL SECTION

NOT TO SCALE

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REV.NO.	DATE	BY	DESCRIPTION
1	6 JAN 03	DR	MINOR REVISIONS
2	25 SEP 06	AMJ	MINOR REVISIONS
3	12 SEP 07	AMJ	MINOR REVISIONS, UPDATED BORDER
4	17 SEP 07	JTE	CHANGED LOGO, FIXED LEADERS



PROJ.MGR.
ENGINEER
CADD BY
DR/AMJ

HILFIKER RETAINING WALLS

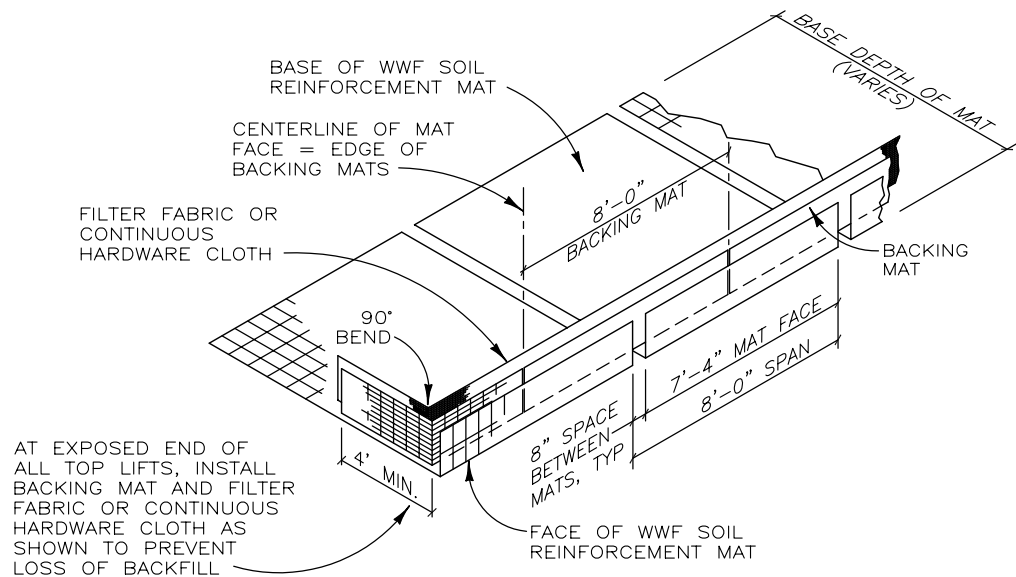
1902 Hilfiaker Lane
Eureka, CA 95503-5711
TOLL-FREE 800.762.8962
PH 707.443.5093 FAX 707.443.2891
WEBSITE www.hilfiaker.com E-MAIL info@hilfiaker.com

1902
QUALITY
PRODUCTS

DWG DATE
NOV 98
REVISION DATE
1 NOV 07
SCALE
NOTED

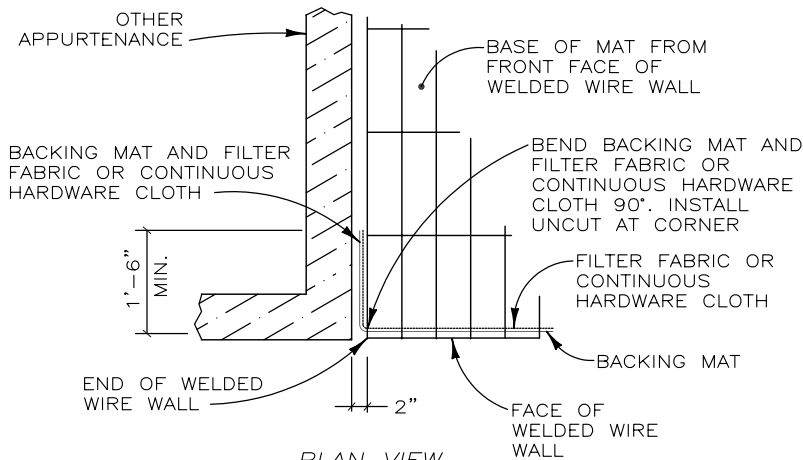
STANDARD DRAWING
WELDED WIRE RETAINING WALL 24" LIFTS
STANDARD DETAILS

PROJECT NO.
SHEET
1
OF 3



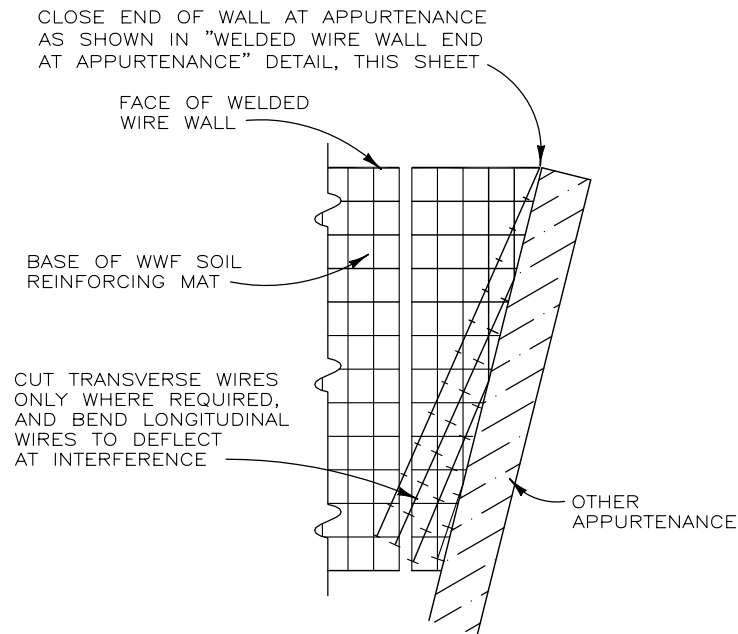
ISOMETRIC VIEW

WELDED WIRE WALL COMPONENTS WITH RETURN MAT
NOT TO SCALE



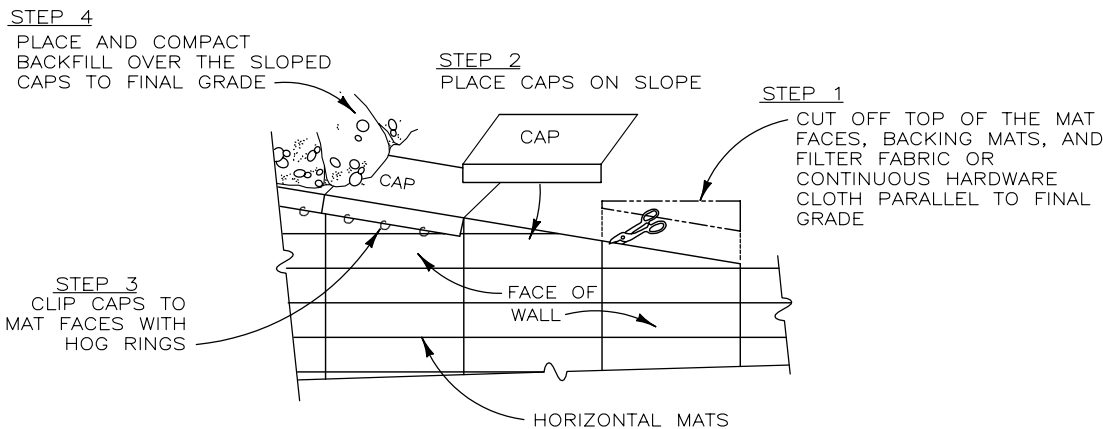
PLAN VIEW

WELDED WIRE WALL END AT OTHER APPURTENANCE
NOT TO SCALE



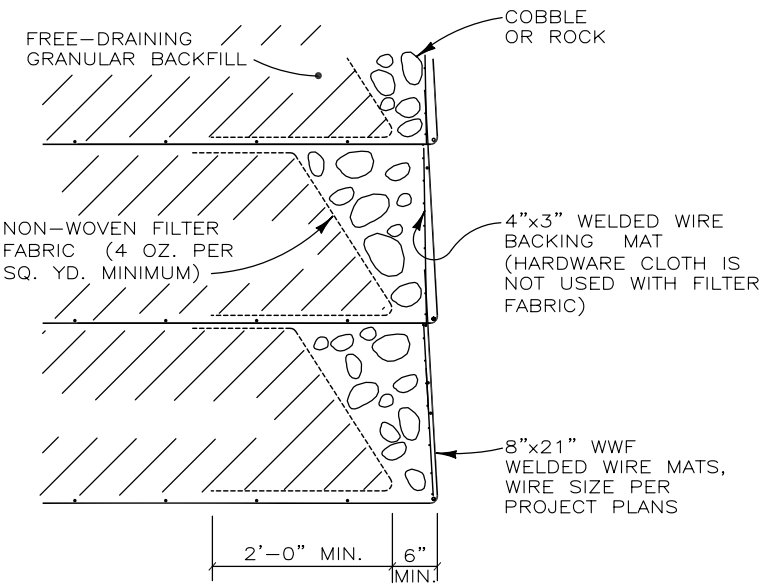
PLAN VIEW

DEFLECTED LONGITUDINAL WIRES
NOT TO SCALE



PICTORIAL ELEVATION

SLOPED CAP MAT DETAIL
NOT TO SCALE

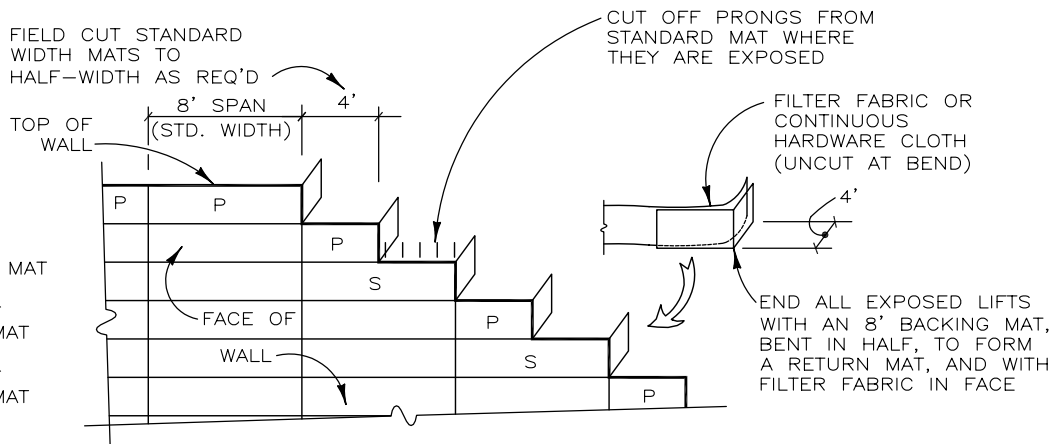


SECTION

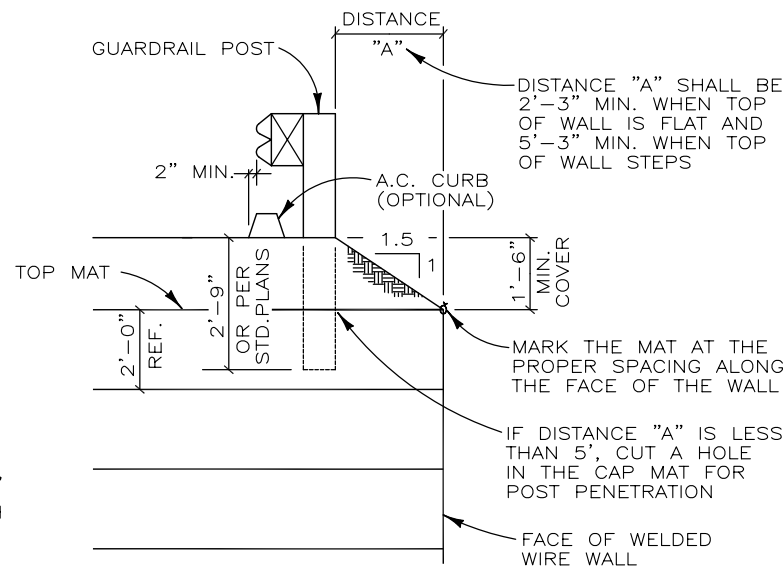
ROCK FACING DETAIL
NOT TO SCALE

LEGEND
(THIS DETAIL ONLY)

P	8"x12" WWF PRONGLESS MAT
S	8"x12" WWF STANDARD MAT
	8"x21" WWF STANDARD MAT



RETURN MATS AND TOP OF WALL DETAIL
NOT TO SCALE

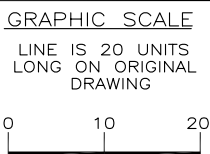


SECTION

GUARDRAIL DETAIL
NOT TO SCALE
(FENCE DETAIL SIMILAR)

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REV.NO.	DATE	BY	DESCRIPTION
1	6 JAN 03	DR	MINOR REVISIONS
2	25 SEP 06	AMJ	MINOR REVISIONS
3	12 SEP 07	AMJ	MINOR REVISIONS, UPDATED BORDER
4	1 NOV 07	JTE	CHANGED LOGO, FIXED LEADERS



PROJ.MGR.
ENGINEER
CADD BY
DR/AMJ

HILFIKER RETAINING WALLS

HW

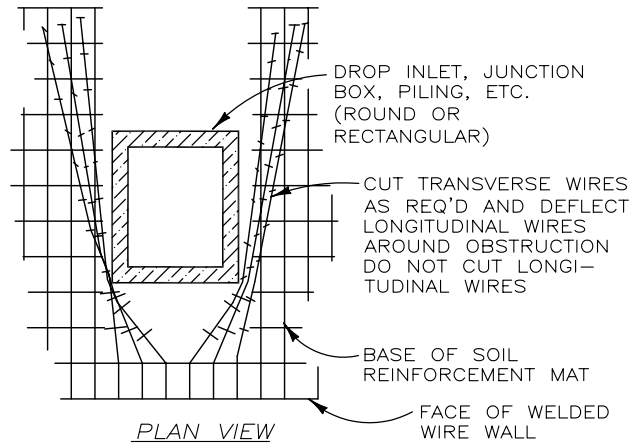
1902 Hilfiker Lane
Eureka, CA 95503-5711
TOLL-FREE 800.762.8962
PH 707.443.5093 FAX 707.443.2891
WEBSITE www.hilfiker.com E-MAIL info@hilfiker.com

1902
SINCE 1902

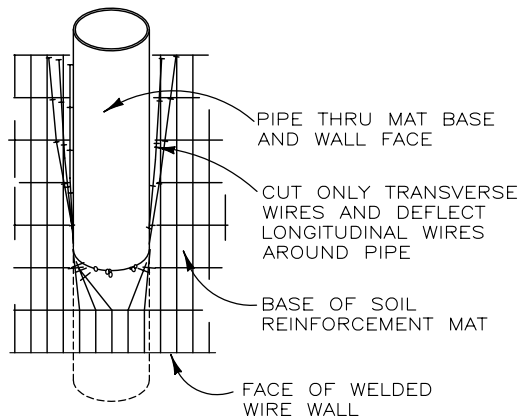
DWG DATE
NOV 98
REVISION DATE
1 NOV 07
SCALE
NOTED

STANDARD DRAWING
WELDED WIRE RETAINING WALL 24" LIFTS
STANDARD DETAILS

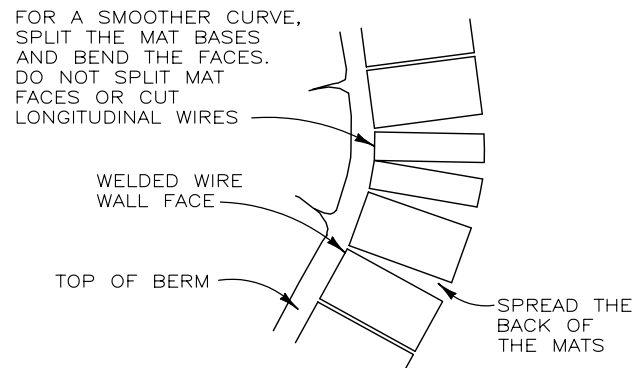
PROJECT NO.
SHEET
2
OF 3



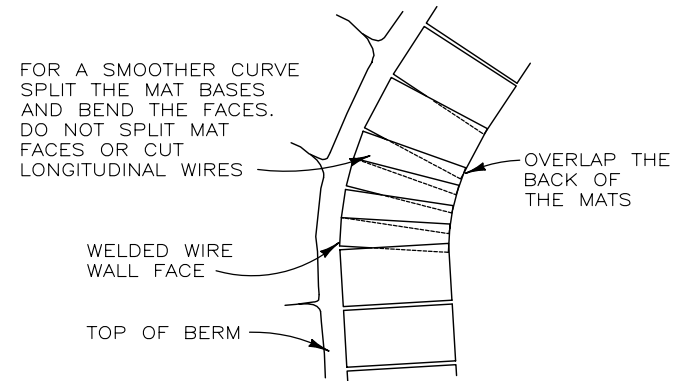
PLAN VIEW
MAT PENETRATION DETAIL
NOT TO SCALE



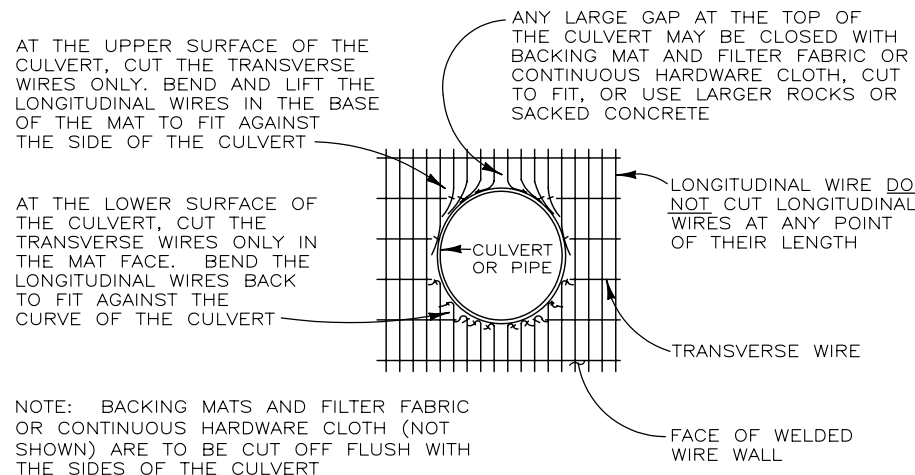
PLAN VIEW
ANGLED PIPE PENETRATION
NOT TO SCALE



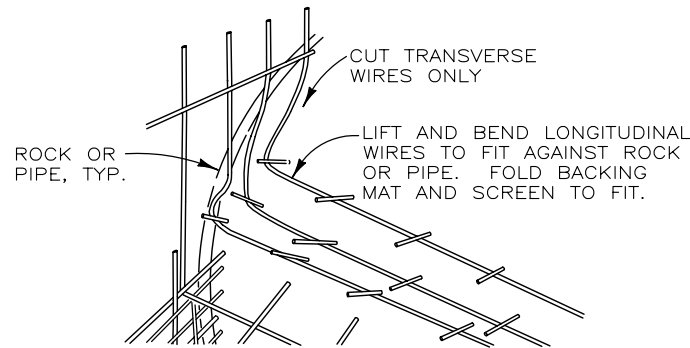
PLAN VIEW
CONCAVE CURVE
NOT TO SCALE



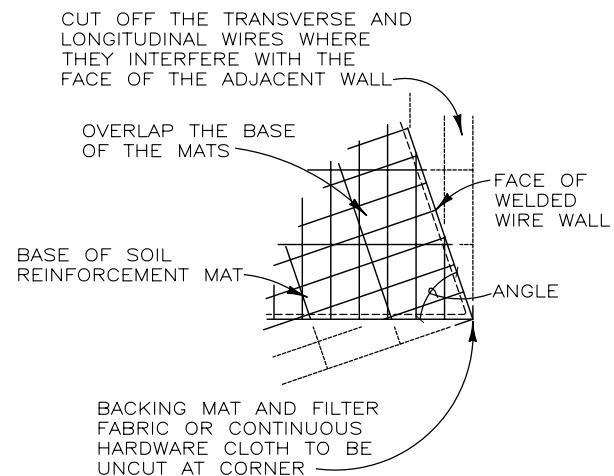
PLAN VIEW
CONVEX CURVE
NOT TO SCALE



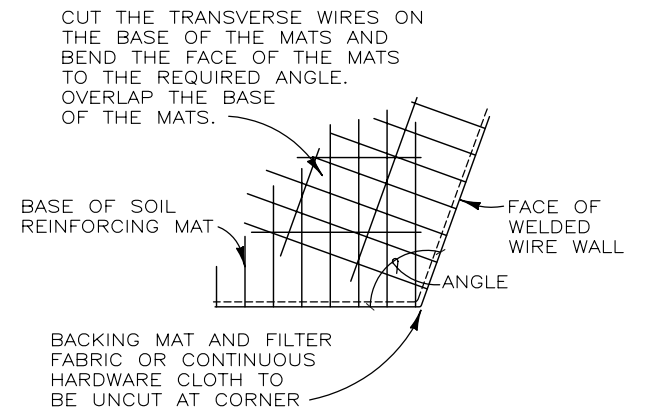
ELEVATION
CULVERT THRU WALL FACE
NOT TO SCALE



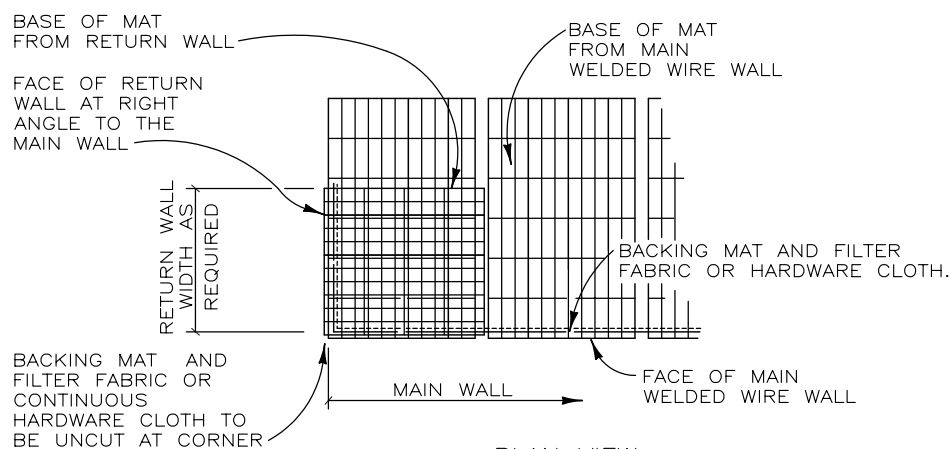
PICTORIAL
FITTING MATS TO OBSTRUCTION
NOT TO SCALE



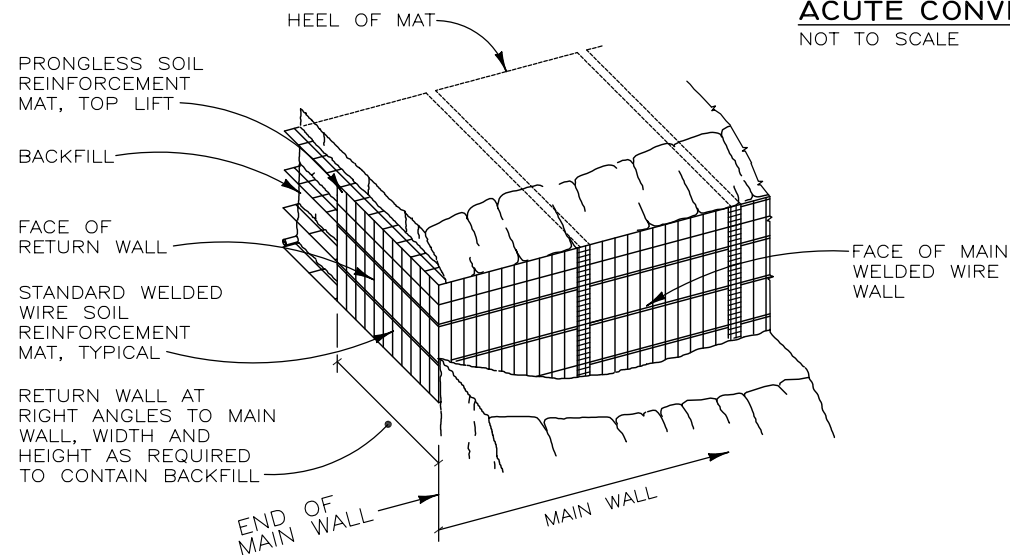
ACUTE CONVEX ANGLE
NOT TO SCALE



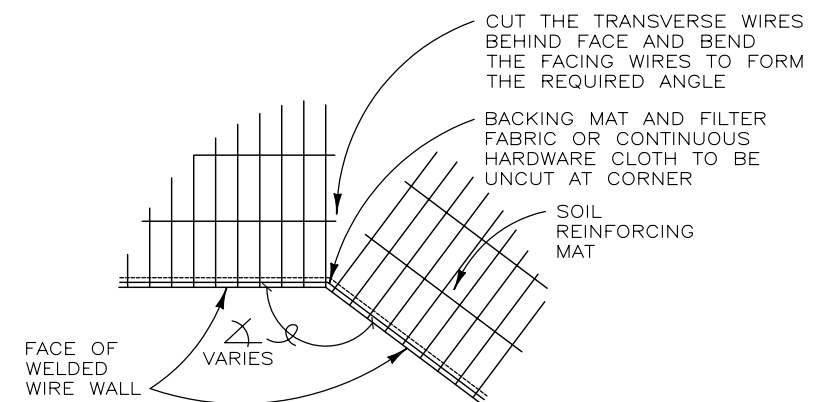
PLAN VIEW
OBTUSE CONVEX ANGLE
NOT TO SCALE



PLAN VIEW
RETURN WALL DETAIL
NOT TO SCALE



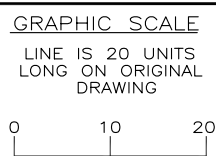
PICTORIAL
RETURN WALL DETAIL
NOT TO SCALE



PLAN VIEW
CONCAVE ANGLE DETAIL
NOT TO SCALE

WELDED WIRE WALL STANDARD DETAILS

REV.NO.	DATE	BY	DESCRIPTION
1	6 JAN 03	DR	MINOR REVISIONS
2	25 SEP 06	AMJ	MINOR REVISIONS
3	12 SEP 07	AMJ	MINOR REVISIONS, UPDATED BORDER
4	1 NOV 07	JTE	CHANGED LOGO, FIXED LEADERS



PROJ.MGR.

ENGINEER

CADD BY DR/AMJ

HILFIKER RETAINING WALLS

HW

1902 Hilfiker Lane
Eureka, CA 95503-5711
TOLL-FREE 800.762.8962
PH 707.443.5093 FAX 707.443.2891
WEBSITE www.hilfiker.com E-MAIL info@hilfiker.com

1902
QUALITY WALLS

DWG DATE NOV 98

REVISION DATE 1 NOV 07

SCALE NOTED

STANDARD DRAWING

WELDED WIRE RETAINING WALL

24" LIFTS

STANDARD DETAILS

PROJECT NO.

SHEET **3** OF 3