

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.
- Assumed Characteristics - Light Weight Cellular Concrete Backfill (LWCC):

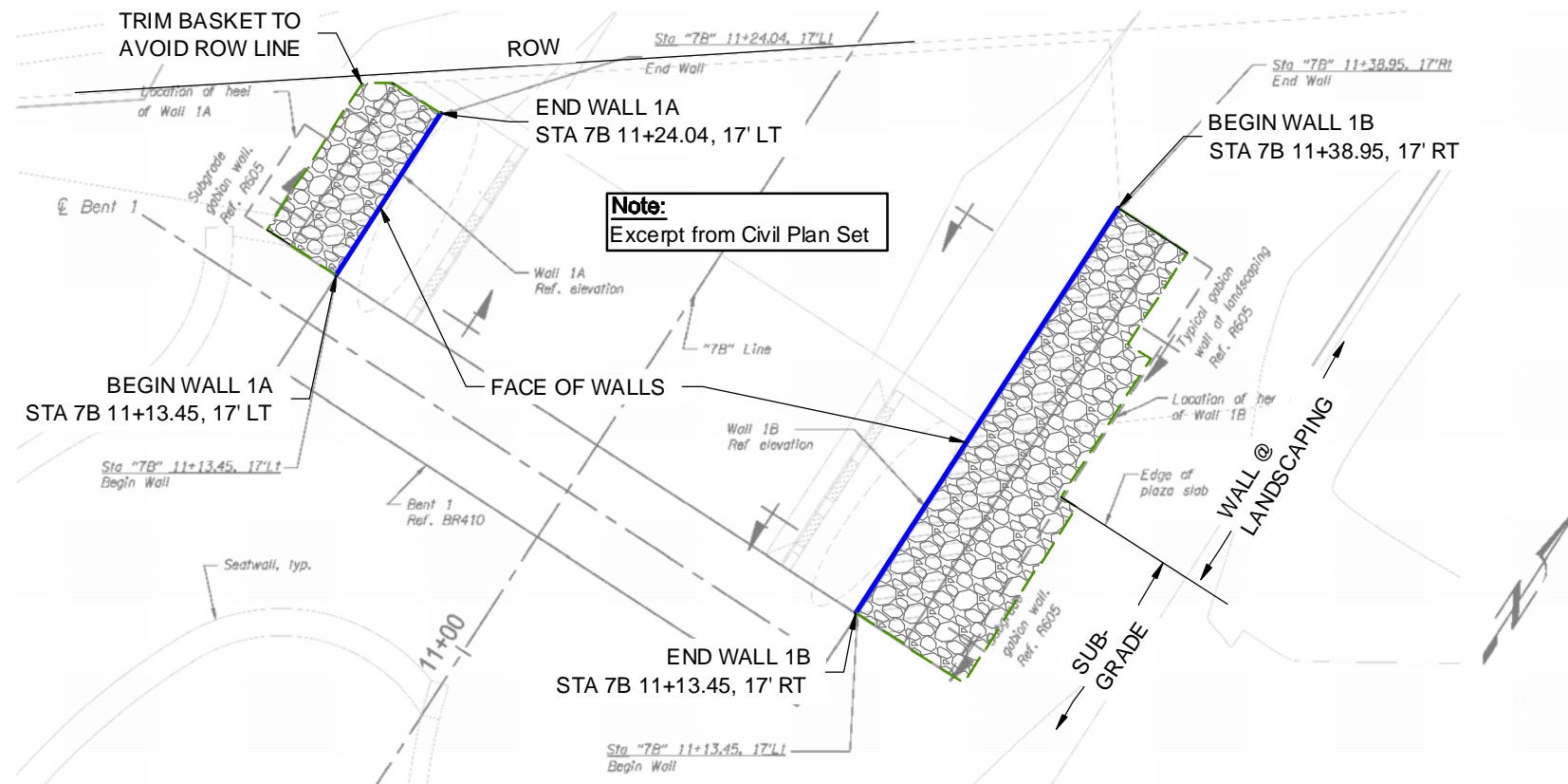
<p>Welded Wire Wall Backfill: Unit Weight: 36 pcf Internal Friction Angle: 40° Cohesion = 0 psf</p> <p>Retained Backfill: Unit Weight: 36 pcf Internal Friction Angle: 40° Cohesion = 0 psf</p> <p>Foundation Soils: Unit Weight: 110 pcf Friction Angle for Sliding: 32° Cohesion = 0 psf</p>	<p>Gabion Wall Parameters:</p> <p>Retained Backfill: Unit Weight: 120 pcf Internal Friction Angle: 34° Cohesion = 0 psf Basket Material: Unit Weight: 135 pcf</p>
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Worst Case Factored Bearing Pressure (Static/ Limit State Strength) by MSE Wall- @ 34' Height - 2490 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.

- 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.
- 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.
- Design Procedure:
 Mechanically Stabilized Earth walls and Reinforced Soil Slopes, FHWA report No. FHWA-NHI-00-043.
- All information hereon is derived from the reference drawings, and is subject to geometric and geotechnical confirmation. The applicable Hilfiker construction guide and specifications are an integral part of this submittal.
- 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 Contracting Officer (CO) shall be responsible for global stability and foundation competence. The CO is responsible for all job site drainage, safety and fall protection provisions for workers in compliance with OSHA and any other applicable requirements.

ESTIMATED QUANTITY			
SIZE LxWxH	CY	REQUIRED AMOUNT	TOTAL CY
6x7x3	4.67	6	28 CY
6x6x3	4.0	9	36 CY
3x4.5x3	1.5	3	4.5 CY
3x7x3	2.33	3	7 CY
3x3x3	1.0	1	1 CY
3x3x1.5	0.5	1	0.5 CY
TOTALS			77 CY



GABION WALLS - PLAN VIEW

SCALE: 1" = 10'



EXPIRATION DATE: 12/31/21

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REV. NO.	DATE	BY	DESCRIPTION
	12-28-19	KLC	Initial .pdf Release
	2-6-20	KLC	Revised per 1.8.20 HPC Plan Check Comments
	3-26-20	KLC	Revised per 3.17.20 Email Comments
	4-8-20	KLC	Revised per 3.27.20 Email Comments
	5-6-20	KLC	Revised per 4.27.20 Plan Check Comments

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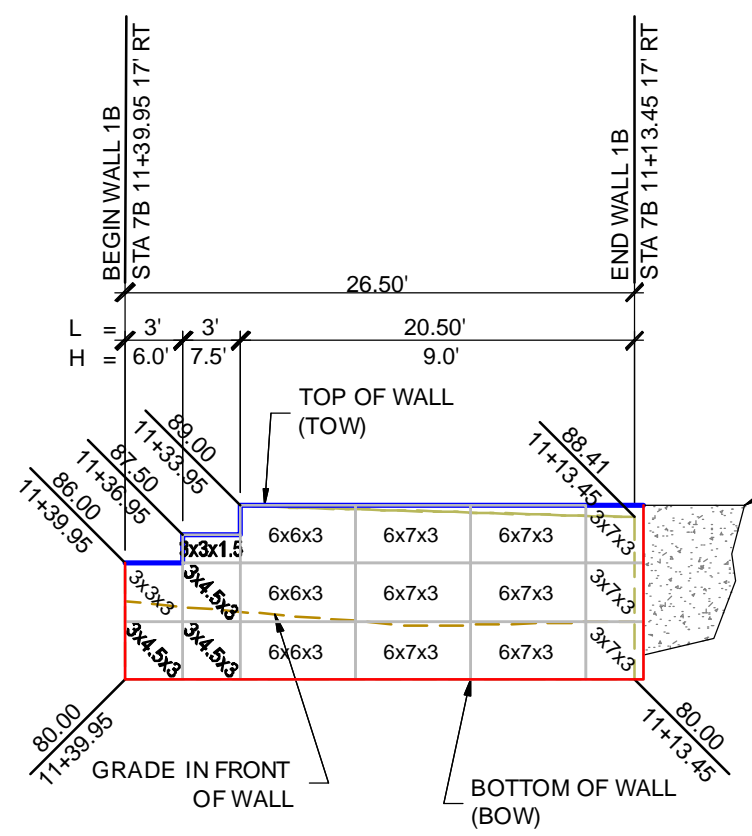
P.O. Box 132
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 Phone (707) 725-CESR
 (707) 498-7193
 CesarettiEngineered.com
 KCesaretti@att.net

SULLIVAN'S CROSSING BICYCLE & PEDESTRIAN
 BRIDGE
GABION WALLS
 PLAN VIEW & GENERAL NOTES

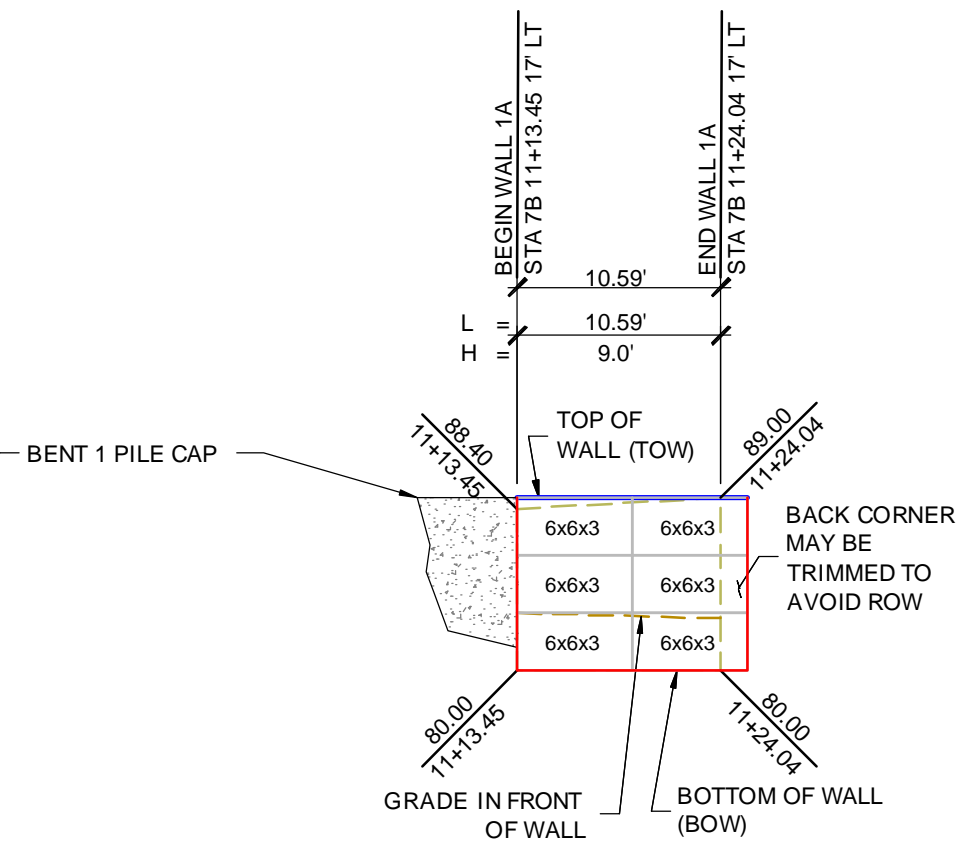
HW 190214CW

PROJECT	19-079
DATE	12-28-19
DESIGN	KLC
DRAWN	KLC
SHT	1 OF 9

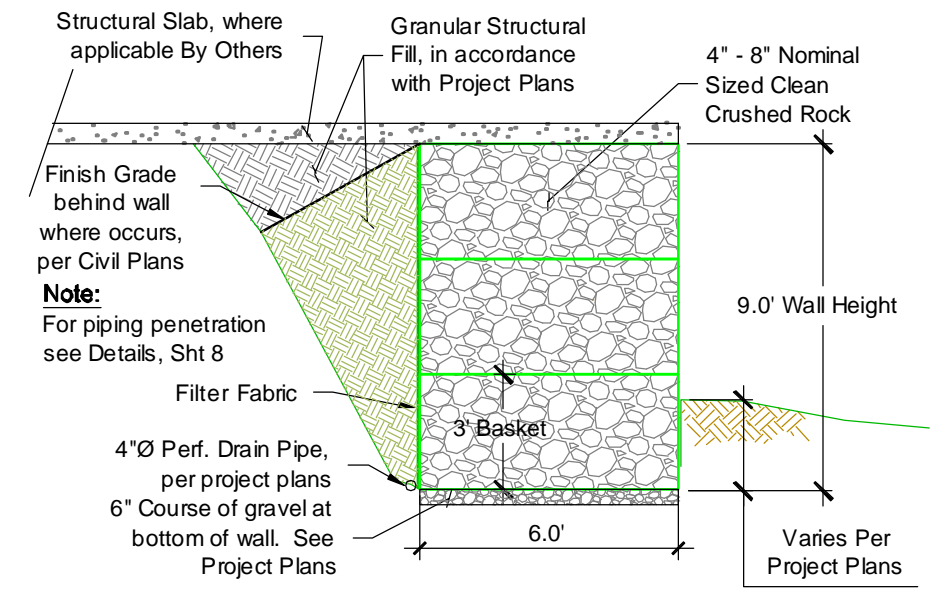
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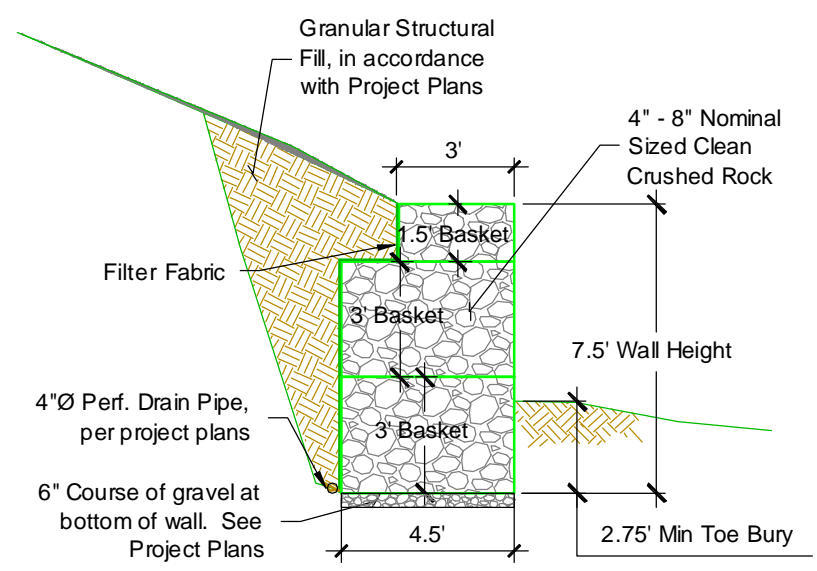
WALL 1B - ELEVATION VIEW
 SCALE: 1" = 10'



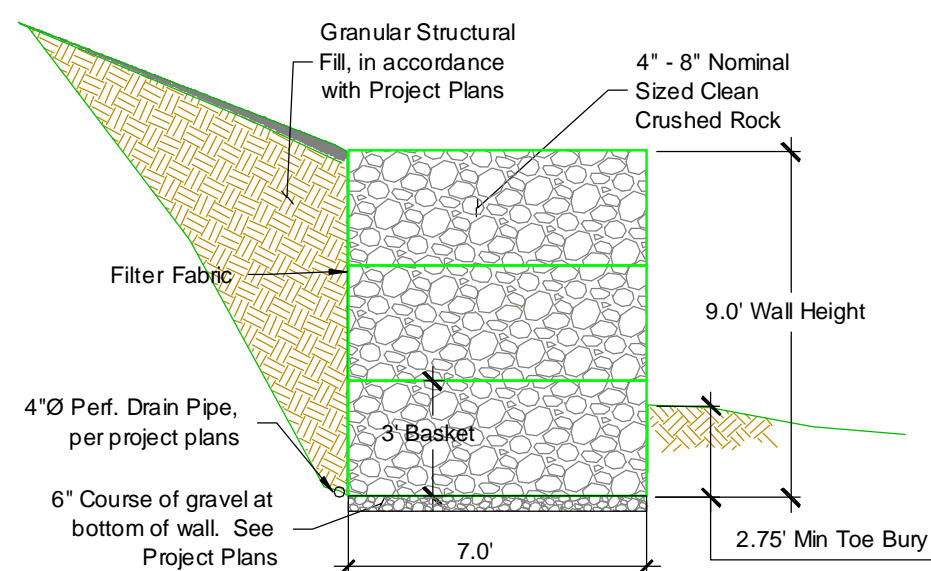
WALL 1A - ELEVATION VIEW
 SCALE: 1" = 10'



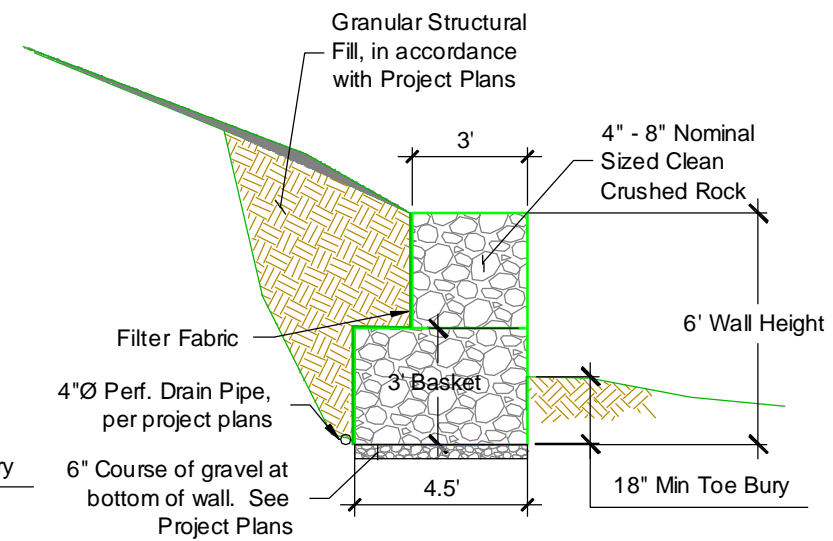
WALL 1B - 9.0'H CROSS SECTION (SUBGRADE)
 SCALE: 1" = 5'



7.5'H CROSS SECTION (@ LANDSCAPING)
 SCALE: 1" = 5'



WALL 1B - 9.0'H CROSS SECTION (@ LANDSCAPING)
 SCALE: 1" = 5'



6'H CROSS SECTION (@ LANDSCAPING)
 SCALE: 1" = 5'



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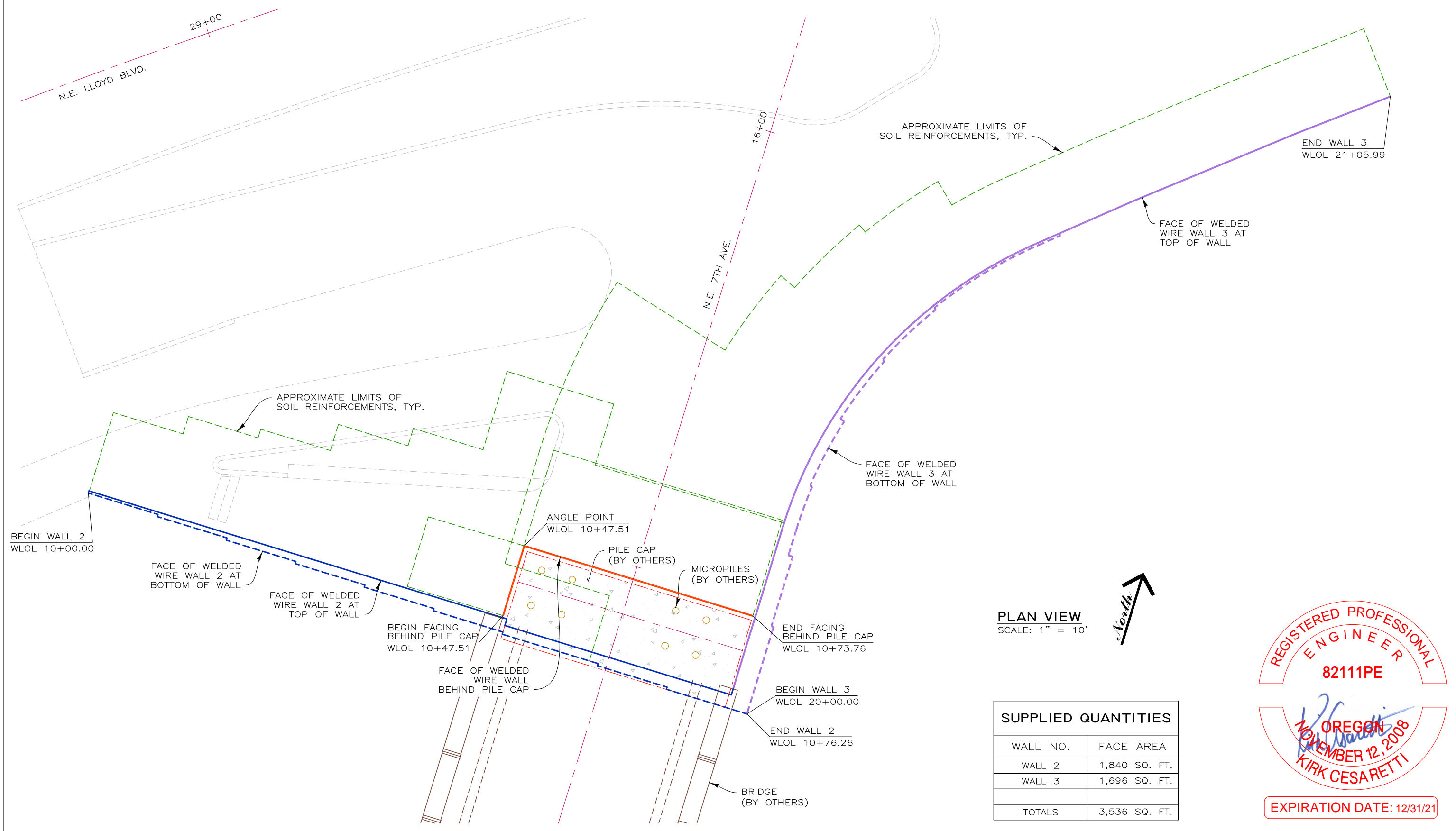
SULLIVAN'S CROSSING BICYCLE & PEDESTRIAN BRIDGE
 GABION WALLS
 ELEVATION VIEW & CROSS SECTION

HW 190214CW

PROJECT	19-079
DATE	12-28-19
DESIGN	KLC
DRAWN	KLC

SHT 2 OF 9

190214CW SULLIVAN'S CROSSING BICYCLE AND PEDESTRIAN BRIDGE



PLAN VIEW
SCALE: 1" = 10'



SUPPLIED QUANTITIES	
WALL NO.	FACE AREA
WALL 2	1,840 SQ. FT.
WALL 3	1,696 SQ. FT.
TOTALS	3,536 SQ. FT.

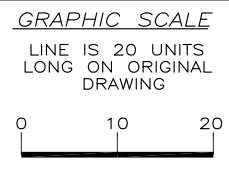
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Kirk Cesaretti
OREGON
NOVEMBER 12, 2008
KIRK CESARETTI

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REV. NO.	DATE	BY	DESCRIPTION
1	2 JUL 19	DH	FULL BID DRAWINGS
2	18 MAY 20	DH	SHOP DRAWINGS



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DWG DATE
17 JUN 19
REVISION DATE
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SCALE
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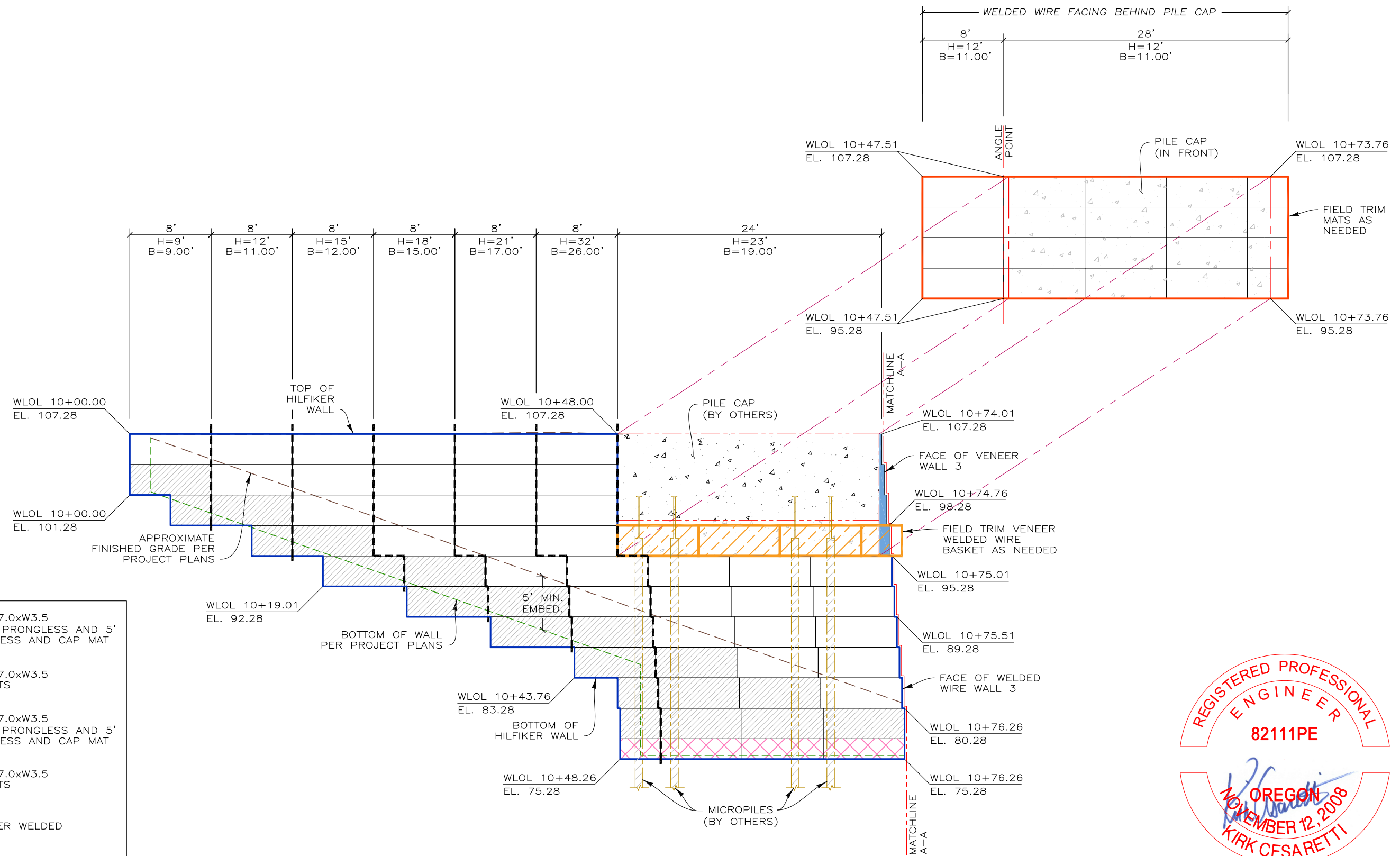
SHOP DRAWINGS

WELDED WIRE WALL AND ARTWELD GABION WALL
SULLIVAN'S CROSSING BICYCLE AND PEDESTRIAN BRIDGE
NE 7TH AVE/NE LLOYD BLVD, PORTLAND, OREGON

PLAN VIEW

PROJECT NO.
190214CW
SHEET
1
OF 7

190214CW SULLIVAN'S CROSSING BICYCLE AND PEDESTRIAN BRIDGE



DEVELOPED ELEVATION - WELDED WIRE WALL 2
SCALE: 1" = 10'

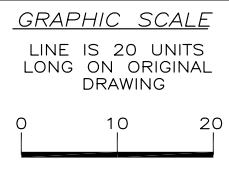
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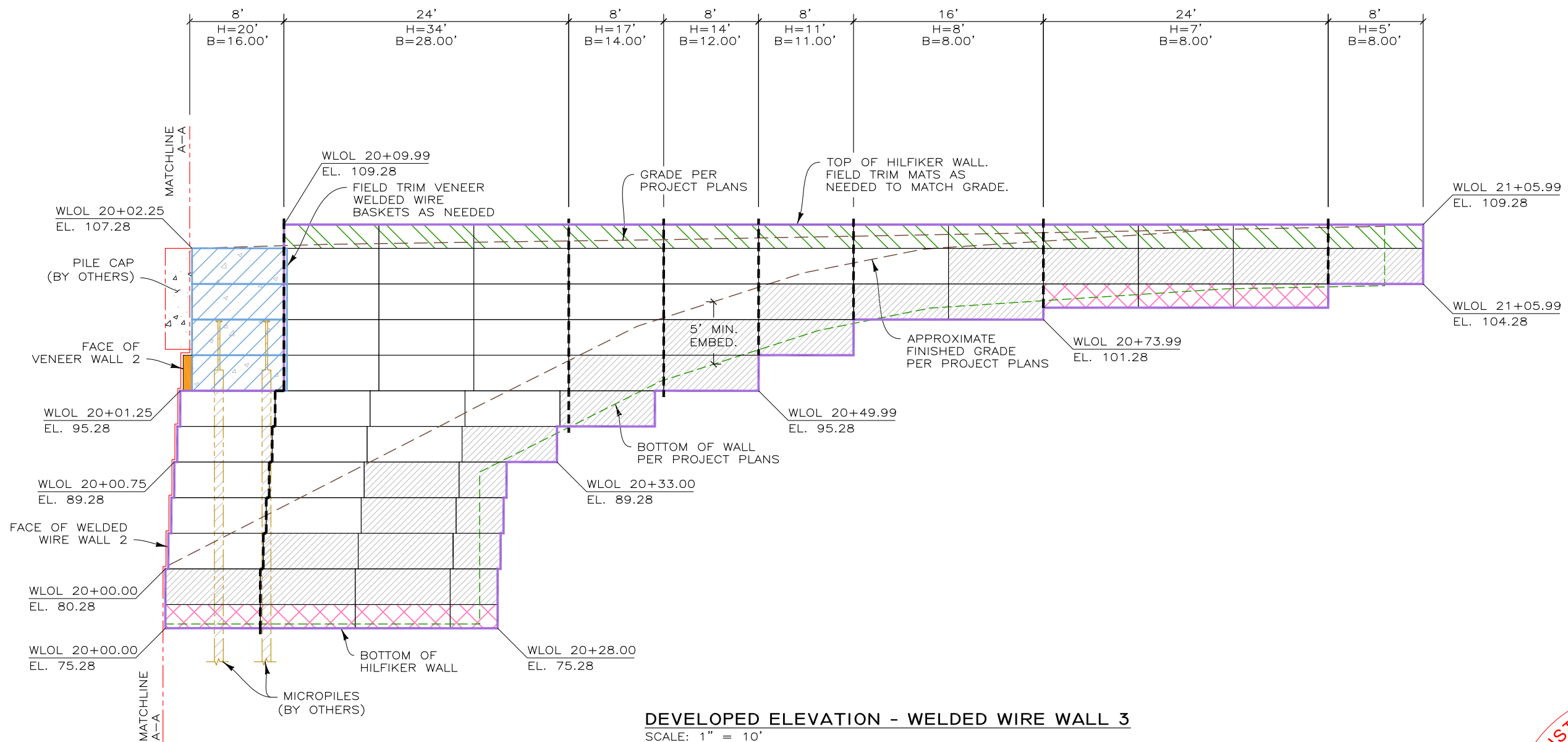
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SHOP DRAWINGS







WELDED WIRE WALL AND ARTWELD GABION WALL
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DEVELOPED ELEVATION

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SHEET
2
OF 7



DEVELOPED ELEVATION - WELDED WIRE WALL 3
SCALE: 1" = 10'

	(B) 8"x12" W7.0xW3.5 FULL LENGTH PRONGLESS AND 5' LONG PRONGLESS AND CAP MAT (3' LIFT)		(B) 8"x12" W7.0xW3.5 STANDARD MATS (2' LIFT)
	(B) 8"x12" W7.0xW3.5 STANDARD MATS (3' LIFT)		WALL 2 VENEER WELDED WIRE BASKET
	(B) 8"x12" W7.0xW3.5 FULL LENGTH PRONGLESS AND 5' LONG PRONGLESS AND CAP MAT (2' LIFT)		WALL 3 VENEER WELDED WIRE BASKET

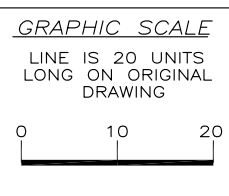
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2	18 MAY 20	DH	SHOP DRAWINGS



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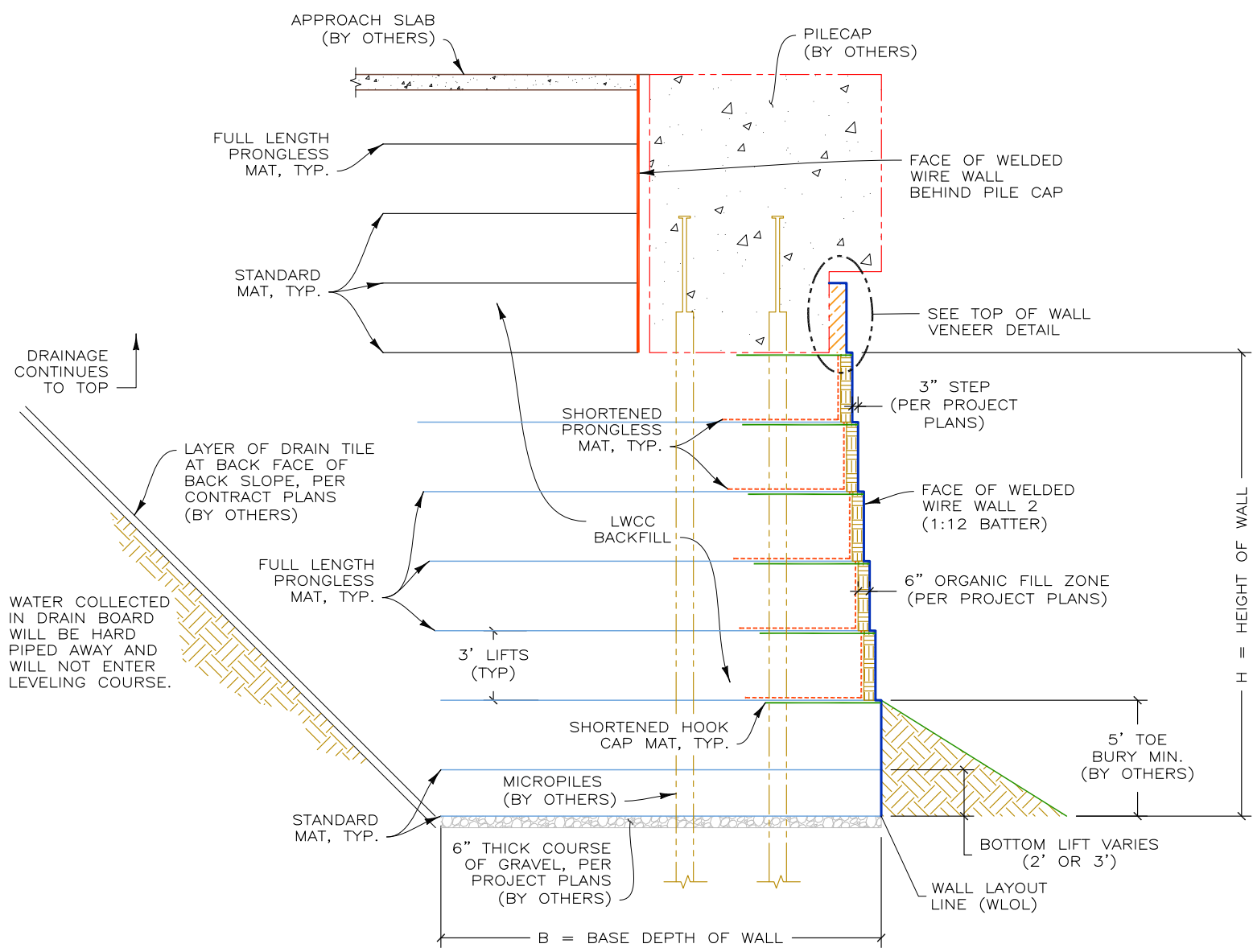
SHOP DRAWINGS

WELDED WIRE WALL AND ARTWELD GABION WALL
SULLIVAN'S CROSSING BICYCLE AND PEDESTRIAN BRIDGE
NE 7TH AVE/NE LLOYD BLVD, PORTLAND, OREGON

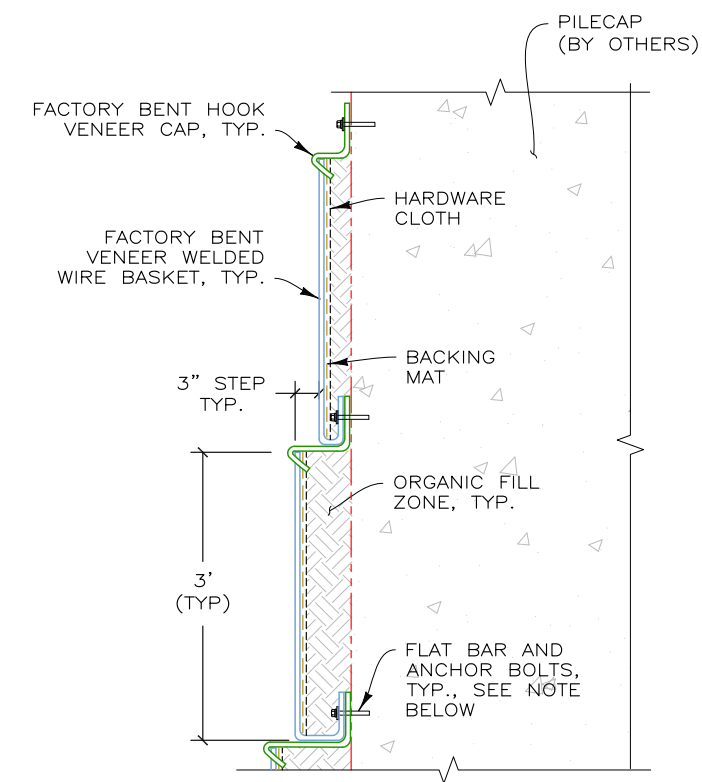
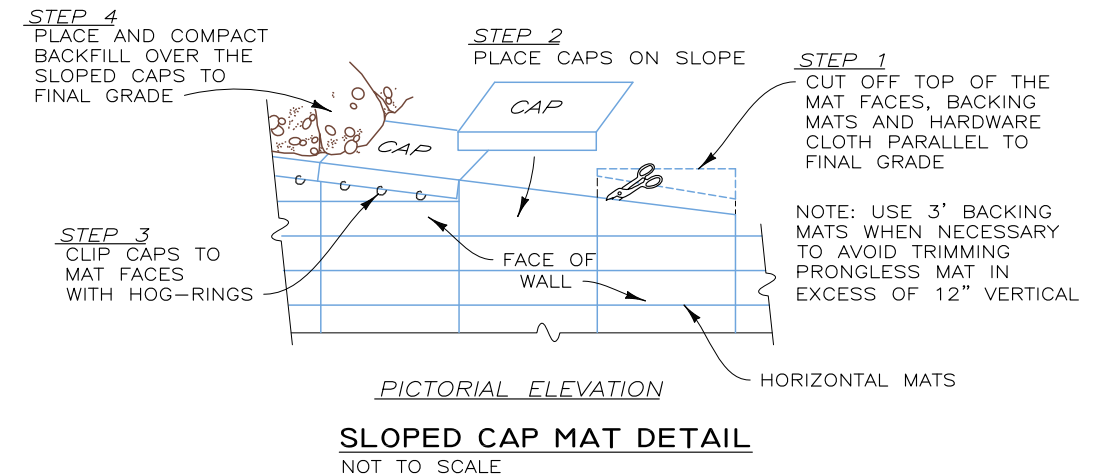
DEVELOPED ELEVATION

PROJECT NO.
190214CW
SHEET
3
OF 7

190214CW SULLIVAN'S CROSSING BICYCLE AND PEDESTRIAN BRIDGE



(WALL 2 AT PILE CAP)
TYPICAL WELDED WIRE WALL SECTION
 SCALE: 3" = 20'



TOP OF WALL (ORGANIC VENEER)
 NOT TO SCALE

FLAT BAR: 7'Lx1.5"Wx $\frac{1}{4}$ " THK, GALVANIZED A32 STEEL, ONE BAR PER FACING MAT, 4 - $\frac{3}{8}$ " ϕ HOLES EVENLY SPACED @ 26" OC.

ANCHOR BOLT: SIMPSON STRONG BOLT, MODEL NO. STB2-50 (LENGTH VARIES) SS, MIN EMBEDMENT DEPTH 3". MIN 4 BOLTS / BAR CONNECTION.

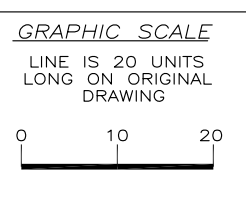
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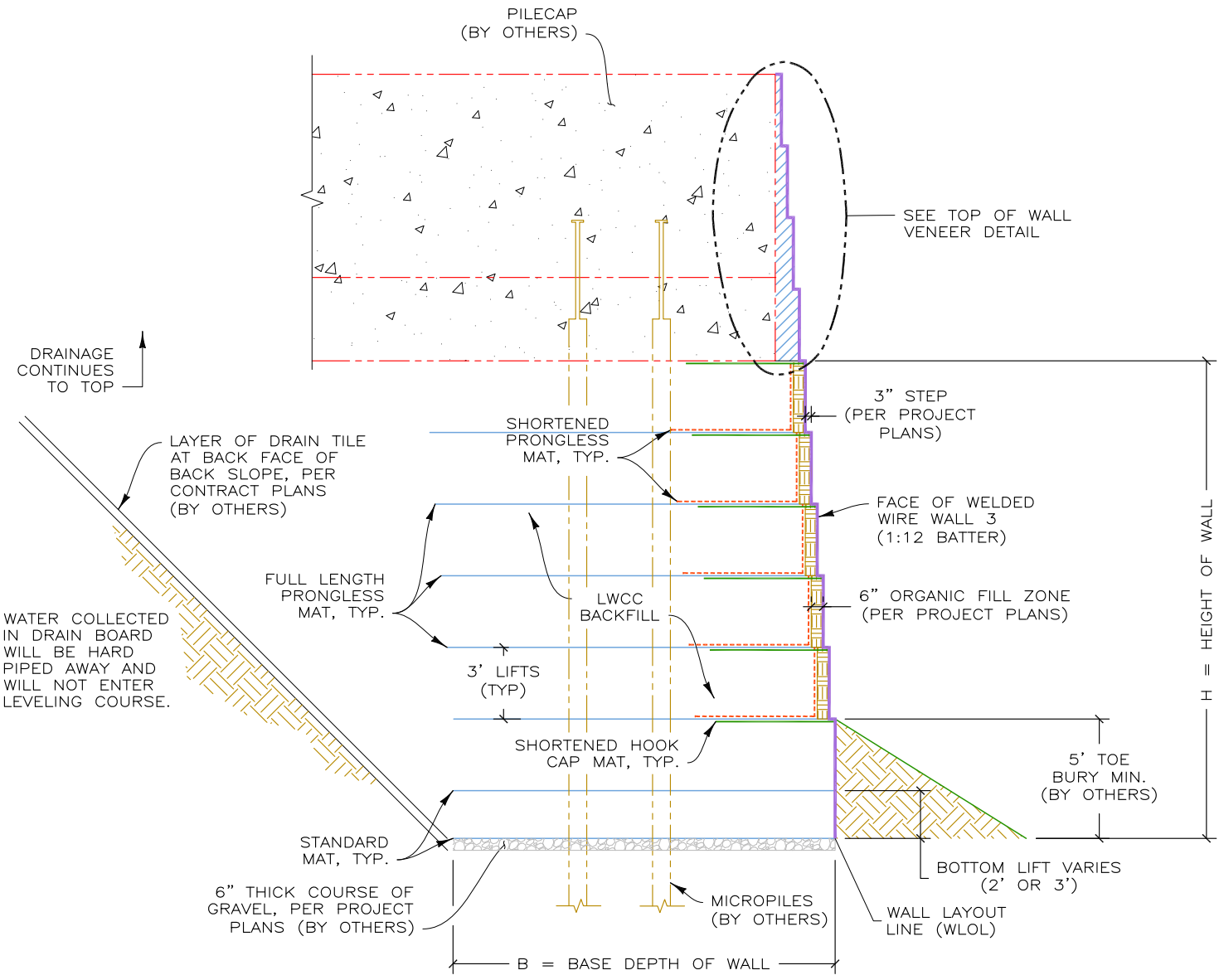
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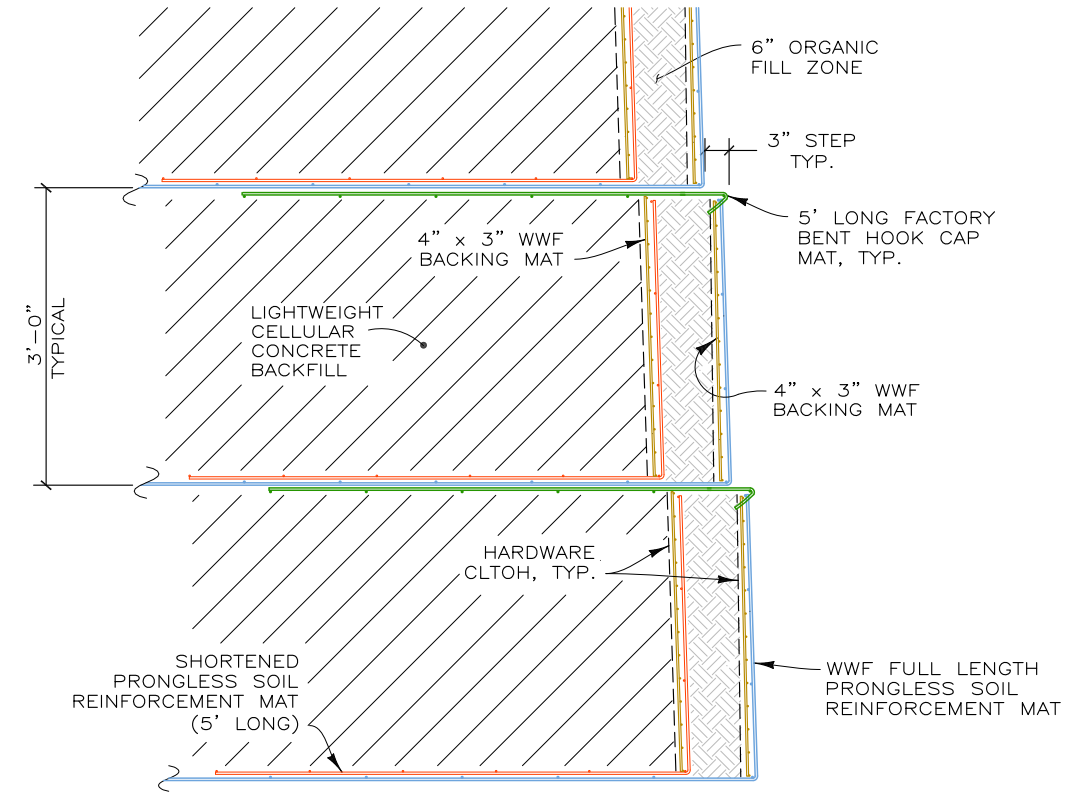
TYPICAL SECTION AND DETAILS

PROJECT NO.
 190214CW
 SHEET
4
 OF 7

190214CW SULLIVAN'S CROSSING BICYCLE AND PEDESTRIAN BRIDGE



(WALL 3 AT PILE CAP)
TYPICAL WELDED WIRE WALL SECTION
 SCALE: 3" = 20'



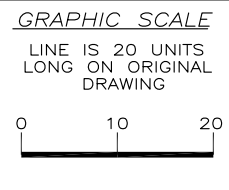
WALL FACE DETAIL
 NOT TO SCALE

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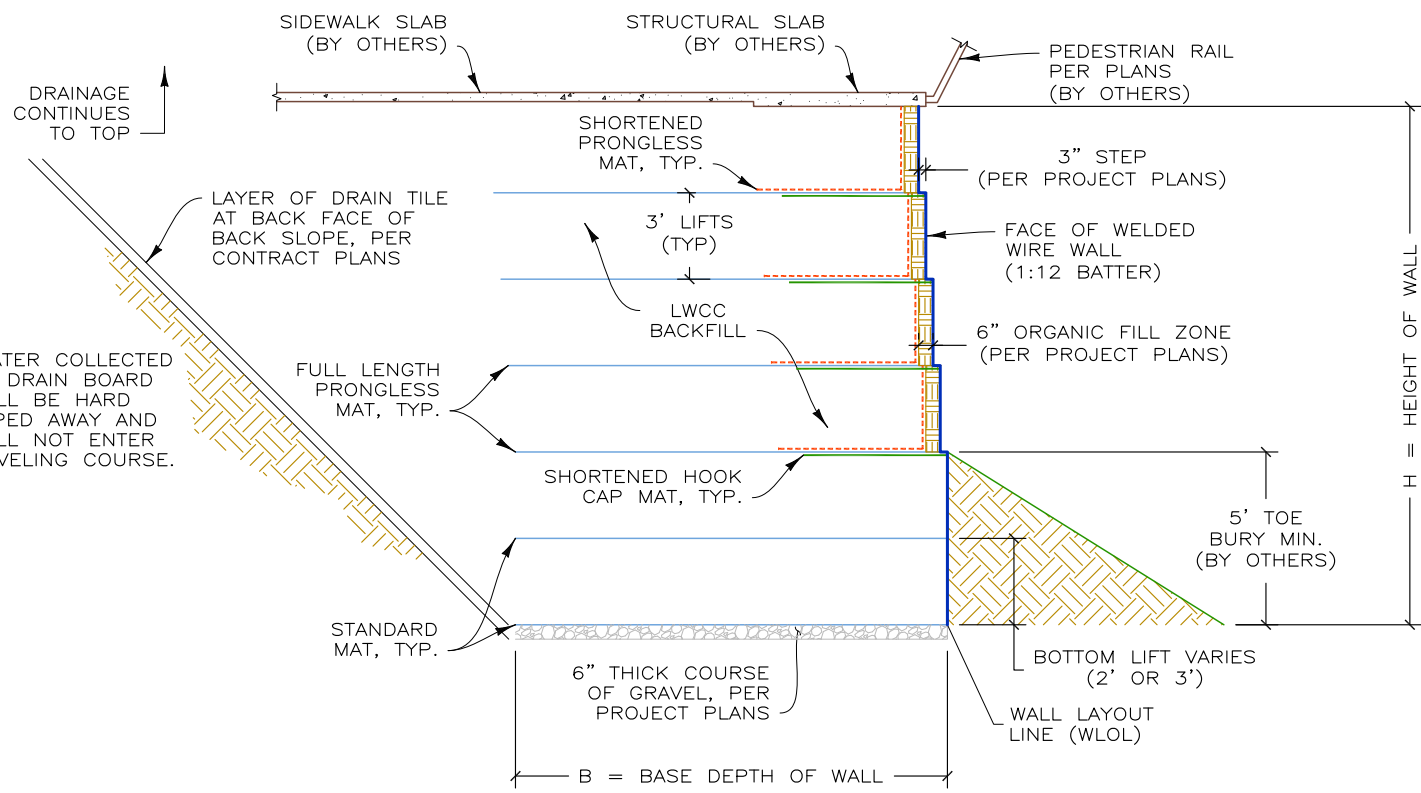
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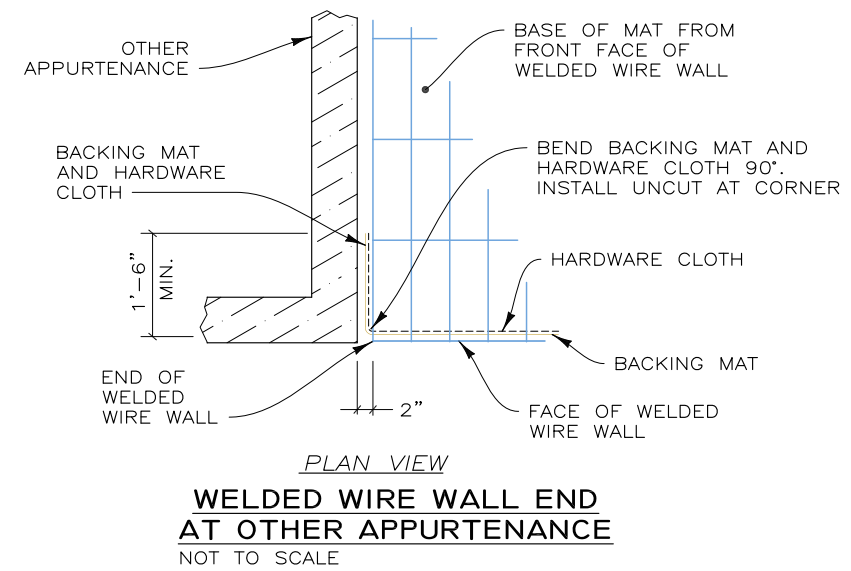
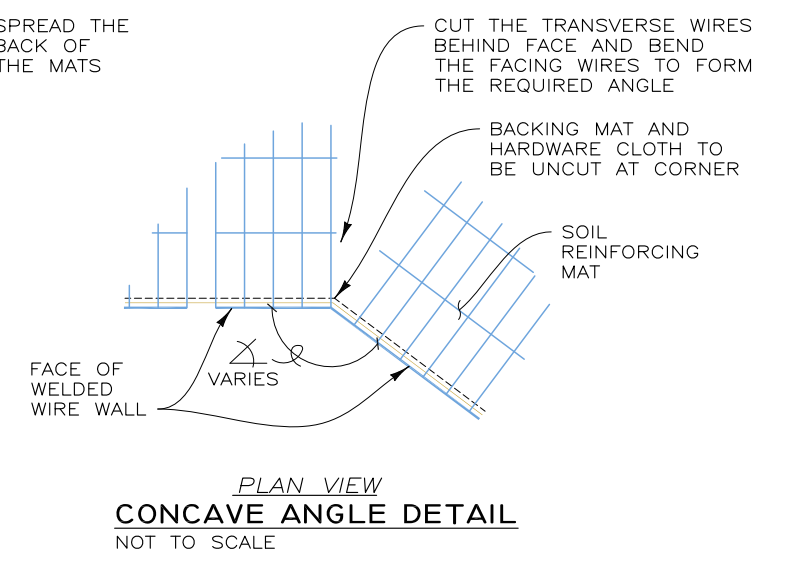
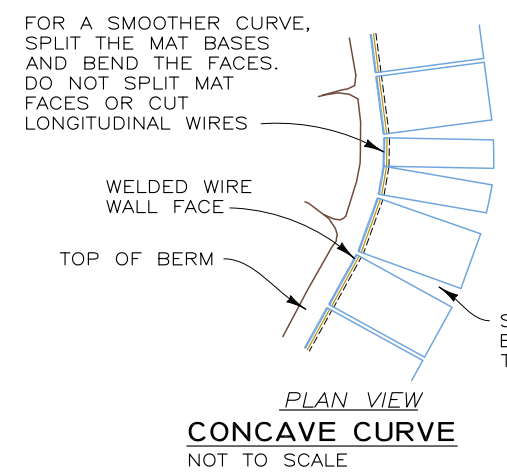
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 NE 7TH AVE/NE LLOYD BLVD, PORTLAND, OREGON
 TYPICAL SECTION AND DETAILS

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190214CW SULLIVAN'S CROSSING BICYCLE AND PEDESTRIAN BRIDGE



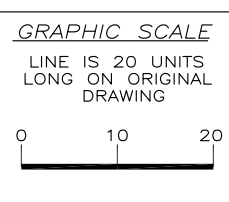
TYPICAL WELDED WIRE WALL SECTION
SCALE: 3" = 20'



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HILFIKER RETAINING WALLS

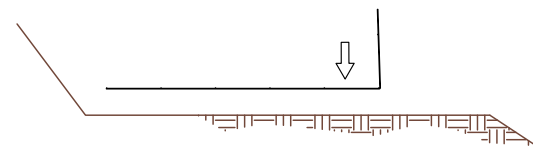
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SCALE
NOTED

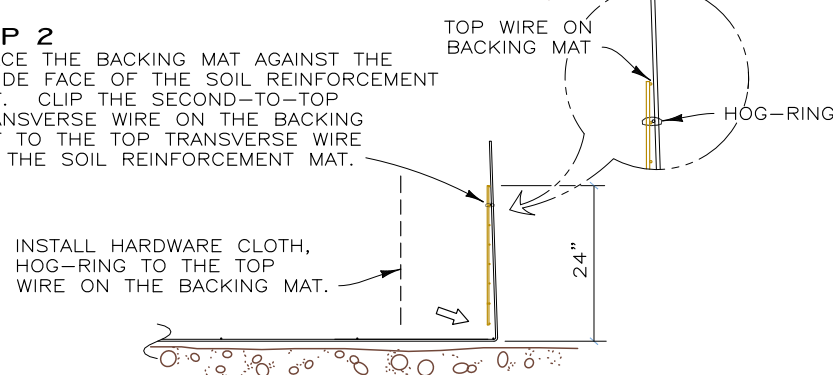
SHOP DRAWINGS
WELDED WIRE WALL AND ARTWELD GABION WALL
SULLIVAN'S CROSSING BICYCLE AND PEDESTRIAN BRIDGE
NE 7TH AVE/NE LLOYD BLVD, PORTLAND, OREGON
TYPICAL SECTION AND DETAILS

PROJECT NO.
190214CW
SHEET
6
OF 7

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

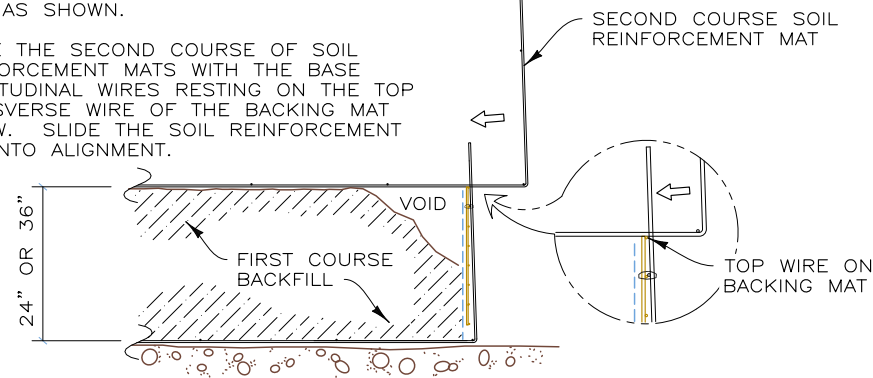


STEP 2
PLACE THE BACKING MAT AGAINST THE INSIDE FACE OF THE SOIL REINFORCEMENT MAT. CLIP THE SECOND-TO-TOP TRANSVERSE WIRE ON THE BACKING MAT TO THE TOP TRANSVERSE WIRE ON THE SOIL REINFORCEMENT MAT.

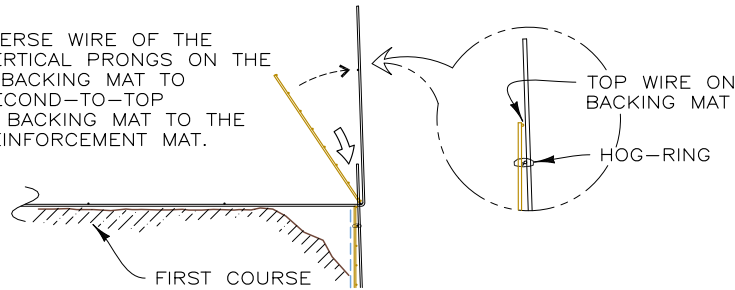


STEP 3
PLACE AND COMPACT THE BACKFILL IN LAYERS AND DENSITIES AS SPECIFIED IN THE PROJECT PLANS. LEAVE A VOID AT THE FACE AS SHOWN.

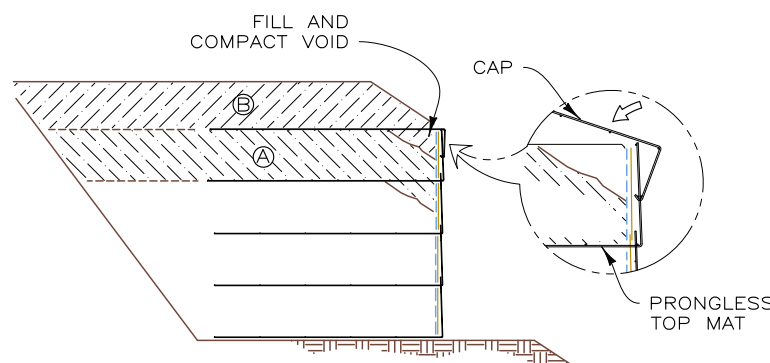
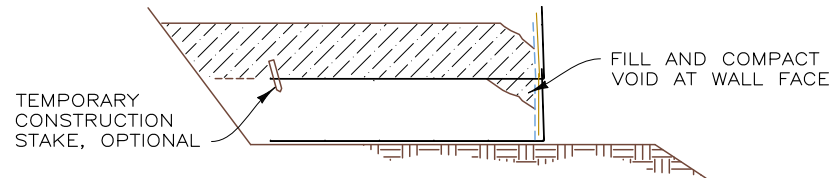
PLACE THE SECOND COURSE OF SOIL REINFORCEMENT MATS WITH THE BASE LONGITUDINAL WIRES RESTING ON THE TOP TRANSVERSE WIRE OF THE BACKING MAT BELOW. SLIDE THE SOIL REINFORCEMENT MAT INTO ALIGNMENT.



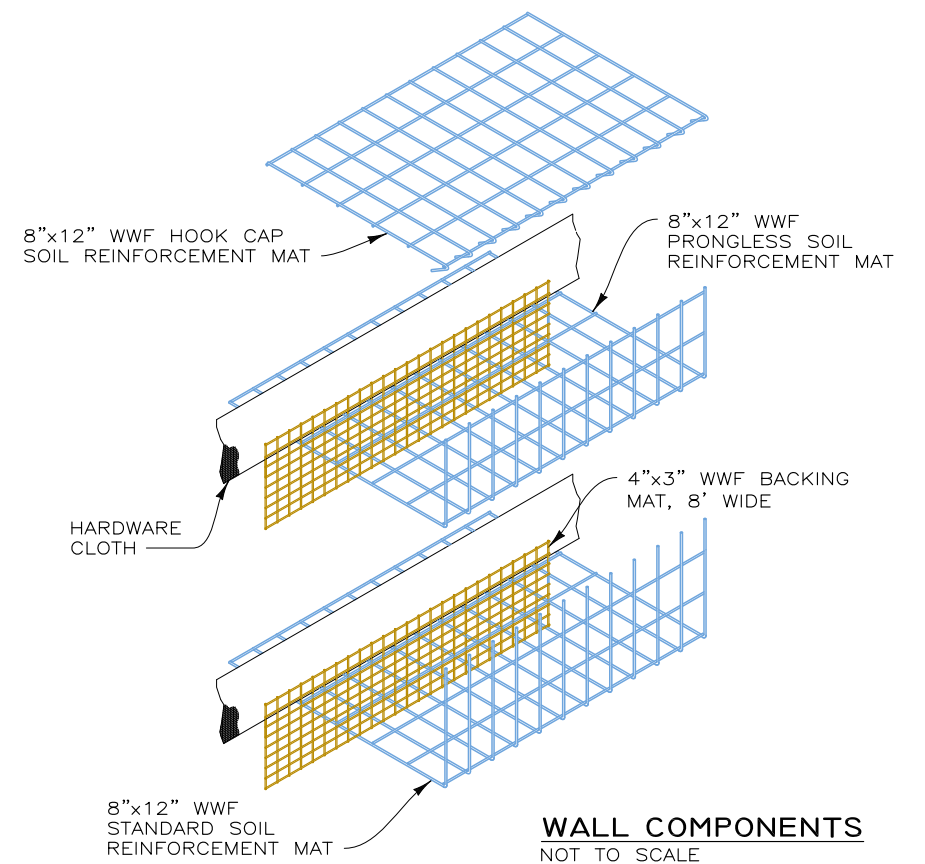
STEP 4
HOOK THE BOTTOM TRANSVERSE WIRE OF THE BACKING MAT OVER THE VERTICAL PRONGS ON THE LOWER MAT. ROTATE THE BACKING MAT TO VERTICAL AND CLIP THE SECOND-TO-TOP TRANSVERSE WIRE ON THE BACKING MAT TO THE TOP WIRE ON THE SOIL REINFORCEMENT MAT.



STEP 5
INSTALL THE 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 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.

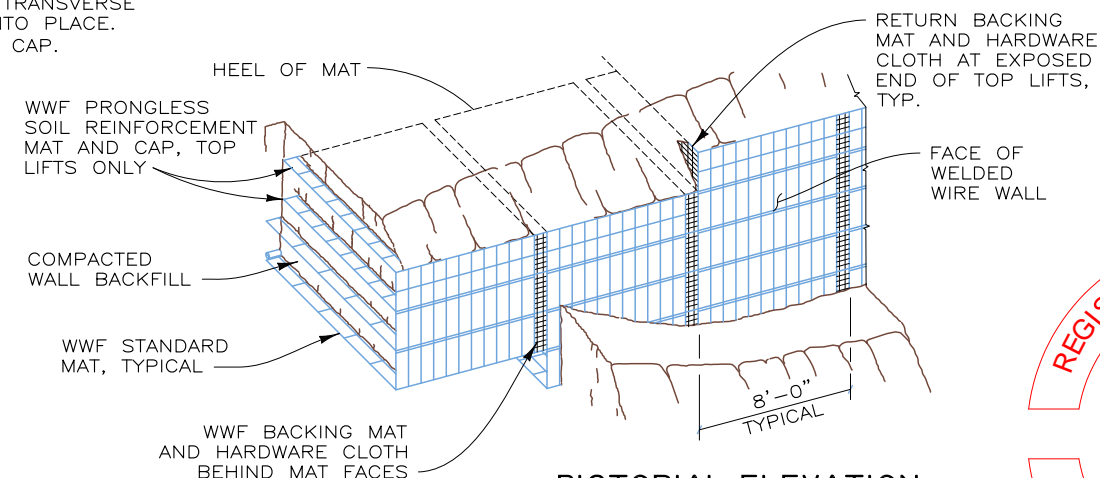


WALL COMPONENTS
NOT TO SCALE

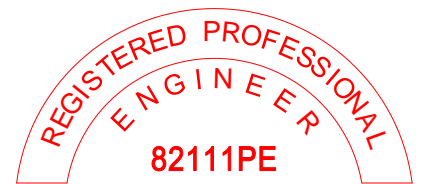
CONSTRUCTION SEQUENCE
NOT TO SCALE

PROJECT-SPECIFIC NOTES:

- REFERENCE DRAWINGS: BASED ON CONTRACT PROJECT PLANS FROM PORTLAND BUREAU OF TRANSPORTATION DATED OCTOBER 2019, SHEETS BR210, BR211, BR501, AND R600-R605.
- BLACK AND WHITE REPRODUCTION OF THIS COLOR ORIGINAL MAY REDUCE ITS EFFECTIVENESS AND LEAD TO INCORRECT INTERPRETATION.
- IT IS ASSUMED THAT ALL MATERIALS, BACKFILL AND CONSTRUCTION METHODS FOR HILFIKER M.S.E. WALLS WILL CONFORM TO HILFIKER'S SPECIFICATIONS AND/OR THOSE OF THE HILFIKER ENGINEERING CONSULTANT.
- ALL INFORMATION HEREON IS DERIVED FROM THE REFERENCE DRAWINGS, AND IS SUBJECT TO GEOMETRIC AND GEOTECHNICAL CONFIRMATION. THE APPLICABLE HILFIKER CONSTRUCTION GUIDE AND SPECIFICATIONS ARE AN INTEGRAL PART OF THIS SUBMITTAL.
- 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.
- WALL DESIGN SHALL REQUIRE A NON-SATURATED BACKFILL. SURFACE AND SUBSURFACE DRAINAGE CONTROL MAY BE REQUIRED TO PREVENT SATURATION OF THE BACKFILL OR TO RELIEVE HYDROSTATIC PRESSURES. DRAINAGE CONTROL SHALL BE AS SPECIFIED IN THE OWNER'S PROJECT PLANS AND SPECIFICATIONS, OR AS DIRECTED BY THE OWNER'S ENGINEER.



PICTORIAL ELEVATION
NOT TO SCALE

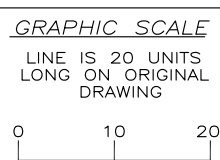


EXPIRATION DATE: 12/31/21

190214CW SULLIVAN'S CROSSING BICYCLE AND PEDESTRIAN BRIDGE

THIS DRAWING IS FURNISHED SOLELY FOR THE USE OF OR 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: 243,613; 243,697; 288,616; 4,117,886; 4,329,089; 4,324,506; 4,391,557; 4,505,821; 4,343,318; 4,661,023; 4,856,939; 4,929,125; 5,076,735; 5,647,695; 5,722,799; 5,733,072; 6,357,970B1; 6,874,975B2; 7,033,118B2; AND OTHERS. OTHER PATENTS PENDING (2008)

REV. NO.	DATE	BY	DESCRIPTION
1	2 JUL 19	DH	FULL BID DRAWINGS
2	18 MAY 20	DH	SHOP DRAWINGS



PROJ. MGR.
HKH
ENGINEER
CADD BY
DH

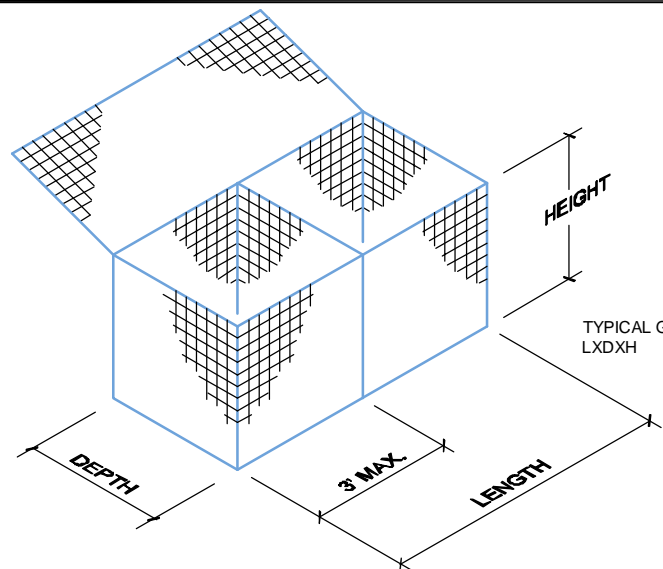
HILFIKER RETAINING WALLS

1902 Hilfiker Lane
Eureka, CA 95503-5711
TOLL-FREE 800.762.8962
PH 707.443.5093 FAX 707.443.2691
WEB SITE www.hilfiker.com E-MAIL info@hilfiker.com

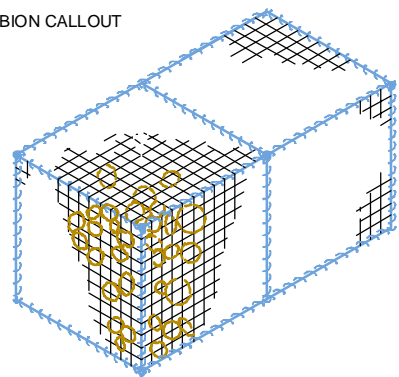
DWG DATE
17 JUN 19
REVISION DATE
18 MAY 20
SCALE
NOTED

SHOP DRAWINGS
WELDED WIRE WALL AND ARTWELD GABION WALL
SULLIVAN'S CROSSING BICYCLE AND PEDESTRIAN BRIDGE
NE 7TH AVE/NE LLOYD BLVD, PORTLAND, OREGON
CONSTRUCTION SEQUENCE AND NOTES

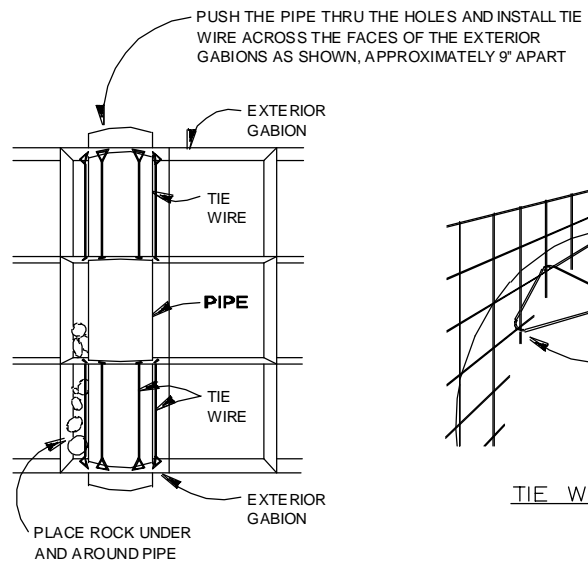
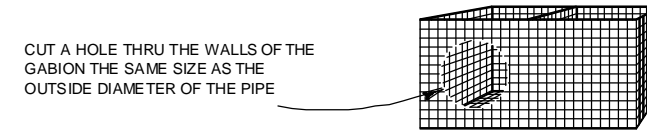
PROJECT NO.
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SHEET
7
OF 7



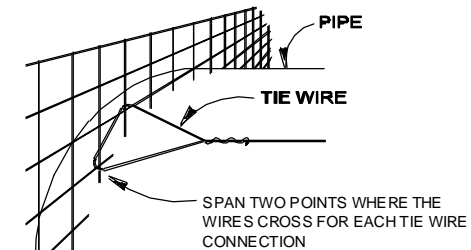
TYPICAL GABION
NOT TO SCALE



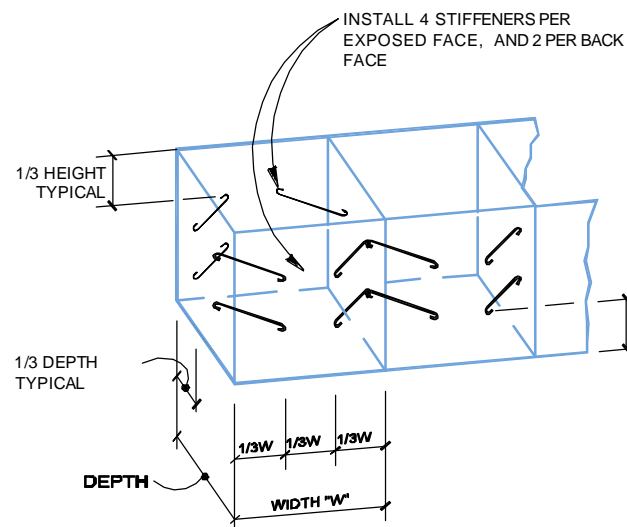
TYPICAL ASSEMBLED GABION
NOT TO SCALE



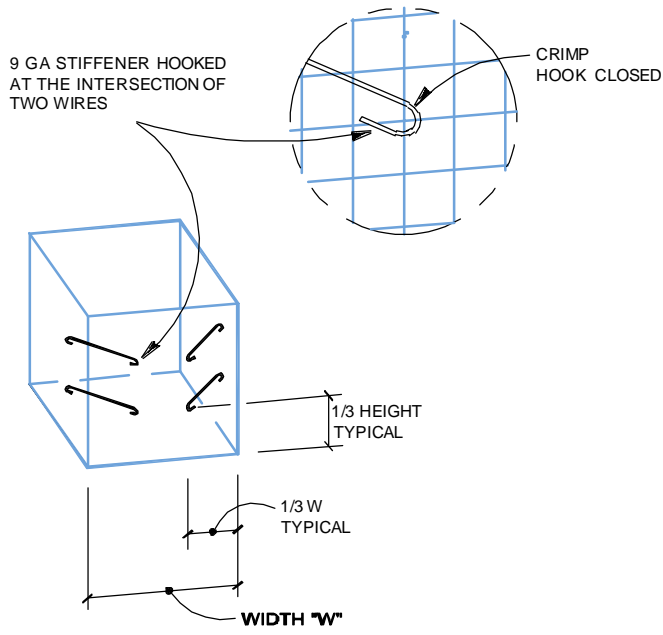
PIPE THRU GABION DETAIL
NOT TO SCALE



TIE WIRE DETAIL



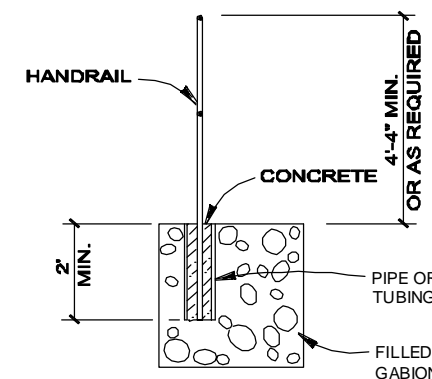
END CELLS



EXPOSED FACES

WHERE HEIGHT OF GABION IS 2' OR LESS, INSTALL 2 STIFFENERS PER FACE WHERE HEIGHT IS 12', NO STIFFENERS REQUIRED

STIFFENER DETAILS
NOT TO SCALE



HANDRAIL ANCHORED IN GABION
NOT TO SCALE



EXPIRATION DATE: 12/31/21

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.

REV. NO.	DATE	BY	DESCRIPTION
	12-28-19	KLC	Initial .pdf Release
	2-6-20	KLC	Revised per 1.8.20 HPC Plan Check Comments

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SULLIVAN'S CROSSING BICYCLE & PEDESTRIAN
BRIDGE
GABION WALL
CONSTRUCTION SEQUENCE &
DETAILS

HW 190214CW

PROJECT	19-079
DATE	12-28-19
DESIGN	KLC
DRAWN	KLC

SHT 8 OF 9